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IS THE DOUBLE TAXATION OF SAVINGS UNFAIR?
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The fairness of the double taxation of savings is an old issue in tax policy. The issue was first raised over a century ago by John Stuart Mill, who pointed out that an income tax affects savers in two different ways. First, it reduces the amount of income they are able to save and thus indirectly reduces the interest they receive on their savings. Second, it directly taxes the interest they do receive. Mill felt that this "twice taxation" of interest was unfair to savers. In the first half of this century, Irving Fisher reached the same conclusion. Other tax theorists have disagreed with Mill and Fisher and argued that double taxation is fair rather than unfair. The most interesting of these arguments have been presented in recent years by Alvin Warren and Mark Kelman. Although Fisher's theory is more complex than Mill's, and Warren's and Kelman's are more complex than Fisher's, the double taxation issue still is unresolved.

This article makes another attempt to resolve the double taxation issue. In the process, it injects still more complexity into the debate. This complexity is unavoidable if the issue is to be resolved in a satisfactory manner. The article is divided into five parts. Part I explains why the double taxation of savings occurs and why it can be thought to be unfair. Part II considers the validity of three theories of the fairness of the double taxation of savings, including two that are similar to those proposed by Warren and Kelman. All three theories are based upon the assumption that the utility (psychic income) of a taxpayer is relevant to the fairness issue. The implications of this assumption are further considered in Part III, which shows that the fairness of double taxation may depend upon whether utility is received solely from income or also from wealth, and upon whether or not the disutility received from work is thought to be

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6. Neither Warren nor Kelman claims to have resolved the double taxation issue. Although Warren prefers the income tax to the consumption tax, he merely concludes that the argument that double taxation is unfair is "not convincing." Warren, Fairness, supra note 4, at 1101. Kelman argues that double taxation will be fair under certain assumptions and unfair under others. Kelman, Fairness, supra note 5, at 657-58, 679-80.
relevant to fairness. Part IV questions the assumption that utility is important. Part V shows why double taxation could be unfair to borrowers as well as to savers.

I. THE DOUBLE TAXATION ISSUE

This part of the article describes the basic concepts underlying the double taxation issue. First, it explains the meaning of the phrase "double taxation of savings" and demonstrates that double taxation occurs under an income tax, but not under either a consumption tax or a wage tax. Second, it discusses the concept of fairness and shows why double taxation may be unfair.

A. Double Taxation

As John Stuart Mill pointed out, an income tax causes two separate reductions in the interest income of savers. First, it reduces the amount of income they are able to save and thus indirectly reduces their interest income. Second, it directly taxes the interest income they do receive. These two separate reductions in the aftertax interest income of savers are commonly referred to as the "double taxation of savings."[10]

[7. See supra note 1 and accompanying text.
8. This will be true of a comprehensive income tax which taxes all income regardless of its source or use. It will be less true of a loophole-ridden income tax, which may be closer to a wage or consumption tax than to an income tax. Andrews, A Consumption-Type or Cash Flow Personal Income Tax, 87 HARV. L. REV. 1113, 1117-18 (1974) (hereinafter cited as Andrews, Consumption Tax). In recent years there has been a lively debate about the desirability of a comprehensive tax base. A sampling of the literature is B. Bittker, C. Galvin, R. Musgrave & J. Pechman, A Comprehensive Income Tax Base? A Debate (1968); Aaron, What Is a Comprehensive Tax Base Anyway?, 22 NAT'L TAX J. 543 (1969); Bittker, A "Comprehensive Tax Base" as a Goal of Income Tax Reform, 80 HARV. L. REV. 925 (1967); Pechman, Comprehensive Income Taxation: A Comment, 81 HARV. L. REV. 63 (1967); Pechman, Erosion of the Individual Income Tax, NAT'L TAX J. 1 (1957).
9. This assumes that an income tax will cause savers to reduce their savings as well as their consumption. It is possible, of course, that savers would instead keep their savings at the same level as in a taxfree world, and they would reduce their consumption by the full amount of the income tax. This is implausible, however. People save more as their incomes increase and less as their incomes decrease. Since an income tax reduces aftertax incomes, it should reduce savings. In fact, since the percentage as well as the amount of income saved increases with income, an income tax should reduce savings by proportionately more than the tax rate. For example, an increase in income from $80 to $100 might cause savings to increase from $10 to $15. If so, a 20% income tax would reduce income from $100 to $80 and savings from $15 to $10. Thus, savings would fall by 33%, proportionately more than the 20% tax rate.
10. The phrase "double taxation of savings" is semantically imprecise for two reasons. First, only interest income is reached by the direct tax on interest, so only it is reduced twice by the income tax. Thus, the double taxation of savings really is the "double taxation of interest." Second, double taxation is not limited to the interest received from savings but extends to the capital gains and dividends received from investments. An income tax reduces the amount that investors are able to invest, thereby indirectly reducing the return that they receive on their investments. It then imposes a direct tax on their capital gains or dividends. Thus, there is "double taxation" of investments as well as of savings. In order to keep the terminology in this article from becoming unwieldy, "savers" will be used as a shorthand for "savers and investors," "savings" will be used as shorthand for "savings and investments," and "interest" will be used as a shorthand for "interest, dividends, and capital gains."

Double taxation will be less pronounced in the case of capital gains than in the case of interest or dividends. A capital gain is never realized until disposition of the property, I.R.C. § 61(a)(3), sometimes is not realized even then, see, e.g., I.R.C. § 1031, or if realized may not be recognized, see, e.g., I.R.C. § 351.]
The double taxation of savings can be illustrated by an example. Imagine a saver who lives in a taxfree world with a 10% interest rate. He receives $1,000 of income at the end of the first year and saves it all. At the 10% interest rate, he will receive $100 of interest income by the end of the second year, leaving him with total funds of $1,100. Now imagine that a flatrate 20% income tax is imposed in this world. The saver pays a $200 tax on his $1,000 of income received at the end of the first year, reducing the amount he can save from $1,000 to $800. The interest rate is unchanged at 10%, so his $800 of savings give him interest income of $80. Thus, his interest income is reduced by $20 even before a tax is imposed on interest. When the 20% tax is imposed on his interest income, his interest income falls by another $16 (20% of $80) to $64.

The income tax has imposed a double "tax" on the saver. The first "tax" is the $20 reduction in the saver's interest income that results from the tax-induced reduction in his savings from $1,000 to $800. The second tax is the direct $16 tax on his interest income. The two "taxes" combined impose a $36, or 36%, tax on the interest income the saver would receive in a taxfree world.

The definition of "taxation" that is implicit in the concept of double taxation requires a brief discussion. Taxation is commonly thought to occur when the government collects money from taxpayers. It is clear that the second component of the double tax—the direct $16 tax on interest income—is a tax in this sense. It is just as clear, however, that the first component—the $20 reduction in interest income caused by the $200 reduction in savings—is not. Since there is no tax collection that corresponds to this first component, it might be argued that the first component of the double tax is not a "tax" at all and should be ignored. Such an argument has two flaws.

11. The analysis in the text will assume that tax rates are flat rather than progressive. This assumption has no implications for fairness except in the case of a wage tax. See infra text accompanying notes 120-21 for an analysis of the fairness of a wage tax under progressive rates.

12. In the example all income is saved, so savings necessarily fall by the tax rate. When taxpayers save only a portion of their incomes, an income tax is likely to cause them to reduce their savings by proportionately more than the tax rate. See supra note 9.

13. If double taxation were eliminated, the second component would be $20 rather than $16. Thus, the first component might be viewed as $16 rather than $20.

14. When taxpayers save only a portion of their incomes, the income tax probably will cause them to reduce their savings by proportionately more than the tax rate. See supra note 9. Thus, the two taxes combined would impose a tax on interest that exceeds 36%. However, since savings are reduced by proportionately more than the tax rate, consumption will be reduced by proportionately less than the tax rate. The proportionately smaller reduction in consumption would offset the proportionately greater reduction in savings. For the sake of simplicity, it will be assumed that an income tax always causes the same proportionate reduction in savings as in income.

15. It appears that no one has argued in writing that the first component of the double tax is not really a tax. Instead, writers on the subject often just assume that the first "tax" is not really a tax. See, e.g., Warren, Fairness and a Consumption-Type or Cash Flow Personal Income Tax, 88 Harv. L. Rev. 931, 940 (1975) (a wage tax "effectively exempts all property income from taxation while including all income from personal services"); Klein, Timing in Personal Taxation, 6 J. Legal Stud. 461 (1977) (a wage tax imposes a "zero tax rate on income from invested savings"). Warren and Klein are correct in one sense, because a wage tax (the first component of the income tax) imposes no tax on the income that is actually received from property or savings.
First, if the first component of the double tax is ignored, the tax rate on interest will be calculated by reference to a world in which the saver receives only $80 of interest. Such a world is one in which the income tax already has been imposed on the income received at the end of the first year. Thus, the tax rate on interest would be calculated by reference to a world that already contains the tax under consideration. This simply is not a valid way to calculate tax rates. If tax rates are to have any meaning, they must be calculated by reference to a world that is unaffected by the tax under consideration.\textsuperscript{16}

Second, the first component of the double tax is a tax in all respects except for its form. It affects the saver like a direct tax on interest, because it causes him to forego $20 of interest he otherwise would have received. The saver does not care that the $20 is extracted indirectly rather than directly. It also affects the government like a direct tax on interest. When the government collects the $200 tax on the saver’s first year income, it has $200 it could save. If it did, it would receive the $20 of interest income that the saver would have received in a taxfree world.\textsuperscript{17} Viewed in another way, at the end of the second year the saver and the government are both in the same position as if the government had allowed the saver to keep the $200 but had taken the entire $20 of interest the saver received on that $200. It must be concluded that the government has indeed collected the $20 first component as well as the $16 second component of the double tax.

The importance that is attached here to the indirect component of the double tax is similar to the importance that tax theorists attach to the indirect effects of other taxes. For example, the corporate income tax is directly collected from corporations, but this does not mean that tax theorists necessarily consider it to be a tax on either corporations or their shareholders. Rather, they consider it to be a tax on customers to the extent that it causes corporations to charge higher prices and a tax

\textsuperscript{16} One perhaps could argue that a taxfree world is not the appropriate standard by which to judge the fairness of a tax system. See infra note 81. It may be assumed, however, that the fairness of a tax system should never be judged by reference to a world in which a component of the tax under consideration had already been imposed.

\textsuperscript{17} This assumes that the government would face the same interest rate as the saver. Such an assumption probably is realistic. The government could save money by putting it in a bank account or in investments, but as long as it runs a deficit it probably would “save” money by reducing its borrowing. A reduction in borrowing would not directly give the government any interest income, but it would give the government the equivalent, a reduction in the interest it must pay on its debts. The interest saved would equal the interest rate paid on government securities. Taxpayers can save at that interest rate by putting their money in certain mutual funds.
on employees to the extent that it causes corporations to pay lower wages. Since tax theorists attach importance to the indirect effects of the corporate tax, they hardly can ignore the indirect effects of the double taxation of interest.

In order to avoid semantic confusion, this article will use "effective tax rate" to refer to the tax rate represented by the sum of the two components of the double tax. "Nominal tax rate" or "tax rate" will be used to refer to the usual concept of tax rate. Applying this terminology to the above example, the saver's interest income is taxed at a 20% nominal tax rate and at a 36% effective tax rate.

Because double taxation causes the effective tax rate on interest income to exceed the nominal tax rate, the income tax falls relatively more heavily on savers than on nonsavers. This phenomenon can be illustrated by returning to the example of the taxfree world. Consider a nonsaver who, like the saver we have been considering, has a first year income of $1,000 and a second year income of $100. Like the saver, his first year income will be taxed at a 20% nominal (and effective) tax rate, leaving him with an aftertax income of $800. Unlike the saver, however, his $100 of second year income will be unaffected by the tax on his first year income, because his second year income consists of wage income rather than interest income. Consequently, he faces only a 20% effective tax rate on his second year income, leaving him with a second year aftertax income of $80. This contrasts with the saver's second year aftertax income of $64. It may be concluded that the income tax imposes equal taxes on the saver and the nonsaver in the first year but imposes a greater tax on the saver in the second year.

Double taxation does not exist under either a wage tax or a consumption tax.


interest income. With interest income removed from the tax base, the only remaining income is wage (labor) income and windfall income such as prizes. Because windfall income is a relatively unimportant source of income, a wage tax essentially is just a tax on wages (hence its name). If a wage tax were imposed in our taxfree world, the saver’s $1,000 of first year wage income would be taxed at 20%, leaving him with $800 of savings. That $800 will give him $80 of interest at the 10% interest rate. Since interest is not taxed by the wage tax, the saver will end up with $800 of savings and $80 of interest. Since both his first year and his second year income is 20% below what he would receive in a taxfree world, he faces an effective tax rate of 20% on all of his income. The double tax on interest has been eliminated. The elimination of the double tax does not affect the nonsaver, who still has an aftertax income of $800 in the first year and $80 in the second year. Accordingly, the saver and the nonsaver now have identical aftertax incomes.

Double taxation could also be eliminated by a consumption tax. The consumption tax that will be considered here is the cash-flow consumption tax. Such a tax is like the present income tax, except taxpayers would be allowed a deduction for the net increase in their savings and investments during the year. This exclusion of savings and investments from tax eliminates the double taxation of savings, as can be seen by the example of the saver and nonsaver. The consumption tax will impose no tax on the saver’s $1,000 of first year income, because such a tax does not tax saved income. By the end of the second year the saver will have received a full $100 of interest on his $1,000 of savings. If at that time he consumes his $1,100 of savings and interest, he will face a 20% tax. That tax will equal $220, leaving him with $880 of aftertax income. His effective tax rate is 20%, because his interest income has been taxed only once, at the time of consumption. The double tax has been eliminated.

The saver, like the nonsaver, pays total taxes of $220 and has an aftertax

20. As explained in supra note 10, “interest” is defined to include all income from savings and investments.
21. The present tax law does not include gifts and bequests in the definition of income. See I.R.C. § 102. If a wage tax were to use the same definition of income, gifts and bequests would escape tax.
22. In order to keep the analysis from getting too complicated, it will be assumed that the saver’s first year income is composed entirely of wage income. If a portion were composed of interest income, the effect of double taxation upon first year as well as upon second year income would have to be considered.
23. Since the nonsaver’s income is comprised entirely of wage income, he is affected in the same way by the wage tax as by the income tax. Thus, he has the same aftertax income under the wage tax as under the income tax.
24. For discussion of the cash-flow consumption tax, see the sources in supra note 19.
25. Taxpayers would have to pay tax on any net decrease in savings and investments during the year.
26. The wage and consumption taxes both impose a $220 tax burden on the saver. However, while $200 of the wage tax’s burden is imposed in the first year and $20 in the second year, the consumption tax’s entire $220 burden is delayed until the second year. Thus, the present value of the $220 tax burden is less under the consumption tax than under the wage tax. For the significance of this, see infra note 115.
income of $880. Thus, a consumption tax imposes the same tax burden upon savers as upon nonsavers.

B. Fairness

"Fairness" in the context of the double taxation of savings refers to horizontal equity. Horizontal equity occurs when equal taxes are imposed upon equally situated taxpayers. The concept of horizontal equity is easier to state than to apply, because it can be interpreted in several different ways.

First, there is the question of the meaning of "equal taxes." As explained above, the double taxation of savings occurs because taxes have an indirect as well as a direct component. If both of those components are viewed as taxes, the phrase "equal taxes" in the definition of horizontal equity should refer to equal tax burdens, or the sum of the indirect as well as the direct component of taxes. Thus, horizontal equity would occur when equal tax burdens are imposed upon equally situated taxpayers. However, as will be seen below, not all theories of the fairness of double taxation follow this view of the meaning of horizontal equity. Such theories are flawed, as will be pointed out in section D of Part II of the article.

Second, there is the problem of the meaning of "equally situated taxpayers." Equally situated taxpayers can be viewed either as those with equal utilities ("psychic incomes"), or as those with equal monetary incomes. The fairness of double taxation may vary depending on which of these views is followed. Parts II and III of the article will consider fairness under the first view. Part IV will present the argument that fairness is more appropriately determined under the second view.

It must be kept in mind that the fairness of double taxation is just one of many factors that bear on the relative attractiveness of the income, wage, and consumption taxes. Other relevant factors are vertical equity, the adequacy of tax revenues in the absence of double taxation, the effect of double taxation upon economic efficiency, and the transitional problems involved in the shift to a new tax system. This article addresses none of those other factors and thus will be unable to draw any conclusions about the overall attractiveness of the income, wage, and consumption taxes.

27. Since the nonsaver consumes all of his income, he is affected in the same way by the consumption tax as by the income tax. Under either he will have a 20% tax on his first year income of $1,000, and a 20% tax on his second year income of $100, leaving him with a total aftertax income of $880.

28. In one sense the consumption tax taxes the saver more lightly than the nonsaver. All of the saver's taxes are postponed until the second year, while much of the nonsaver's taxes are paid in the first year. See supra note 26 and infra note 115.


30. See infra text accompanying notes 37, 46, 66 and 67.

31. For a general discussion of the factors to be considered when choosing between various tax systems, see Sneed, supra note 29.
II. THREE THEORIES THAT COMPARE UTILITIES

Horizontal equity occurs when equal taxes are imposed upon equally situated taxpayers. As noted above, equally situated taxpayers can be either those with equal monetary incomes or those with equal utilities. This part of the article will assume that horizontal equity occurs when equal taxes are imposed upon taxpayers with equal utilities.

"Utility" will be used as shorthand for the subjective well-being, satisfaction, or psychic income that a taxpayer receives from holding or spending monetary income or its substitutes (such as fringe benefits). Utility will not include the well-being, satisfaction, or psychic income that is received from sources, such as friendships, that are unrelated to monetary income or its substitutes. There are several reasons for ignoring the satisfaction or psychic income received from sources other than monetary income. One is that such psychic income is impossible to measure. Another is that psychic income received from nonmonetary sources tends to flow from the personal aspects of our lives, and it probably should be beyond the reach of the government and its tax system. Still another is that psychic income received from sources other than monetary income is likely to vary randomly rather than systematically among taxpayers, and so it is unlikely to be related to monetary income. Thus, a tax system which imposes taxes upon monetary income could not reach such utility.

All three of the theories presented in this part of the article attempt to resolve the double taxation issue by comparing the utilities of savers and nonsavers. First, the "present value theory" claims that the present value of a person's utility will be no greater if he saves his income than if he consumes it, and thus that it is unfair to tax a saver more heavily than a nonsaver. Second, the "additional utility theory" is based on the idea that the utilities of savers must exceed those of nonsavers, because savers receive utility from interest income. A variation of this theory proposed by Mark Kelman also is considered. If either this theory or Kelman's variant of it is correct, the double taxation of savings is fair. Third, the "expectation theory" claims that the present value theory erroneously focuses on the expected, rather than on the actual, utilities of savers and nonsavers. If the focus were on actual utilities, the double taxation of savings would be fair. This theory is similar to one proposed by Alvin Warren.

We will see that none of these theories adequately resolves the fairness issue. It should be noted that each of these three theories is based upon the implicit assumption that the utilities of savers and nonsavers are relevant to the fairness issue. The soundness of that assumption will be considered in Part IV of the article.

32. Psychic income from sources other than monetary income typically is ignored by tax theorists. See Warren, Fairness, supra note 4, at 1107; Kelman, Fairness, supra note 5, at 667-69.
33. Kelman, Fairness, supra note 5, at 670-79.
34. Warren, Fairness, supra note 4, at 1097-1101.
A. The Present Value Theory

The "present value theory" states that the present value of a person's consumption expenditures measures the utility that he receives from those consumption expenditures. Let us use the example of a saver and a nonsaver, each of whom in a taxfree world has $1,000 of first year wage income that can be either consumed or saved. Neither has any second year wage income. However, at the 10% interest rate the saver has $100 of second year interest income. The nonsaver consumes his $1,000 of wage income at the end of the first year. The present value at the time of consumption of that $1,000 of immediate consumption is $1,000. By contrast, the saver saves his entire $1,000, and at a 10% interest rate receives $100 of interest during the second year. He then consumes his $1,100 of interest and principal. If his $1,100 of second year consumption is discounted back to the end of the first year at the 10% interest rate, his consumption has a present value of $1,000.36 Thus, the consumption expenditures of both the saver and the nonsaver have a present value (discounted to the first year) of $1,000. If the present value theory is correct in its assumption that the present value of consumption measures the utility received from consumption, it must be the case that the saver and the nonsaver have equal utilities. A wage tax is therefore a fair tax, since it will impose equal taxes on equally situated taxpayers by imposing equal taxes on first year income. An income tax is not a fair tax, because it imposes an additional tax on the saver (the tax on interest) even though his utility is no greater than that of the nonsaver.

Before we investigate the soundness of the present value theory, we should note that it ignores the indirect tax on the saver's interest income when determining the taxes imposed on the saver. The only taxes on the saver that it considers are the tax on wage income in the first year and the direct tax on interest income in the second year. Consequently, it fails to use the most direct method of "proving" that the double taxation of savings is unfair. That method is to note that the wage tax will indirectly reduce the saver's second year income by reducing the amount that he can save. Thus, a wage tax is fair because it will tax the saver upon any utility that he may receive from his interest income. An income

35. Apparently no author has asserted that the present value theory demonstrates the unfairness of double taxation. However, the present value theory is mentioned in the literature. See Warren, FAIRNESS, supra note 4, at 1097-1101; Klein, supra note 15, at 469-70; Gunn, supra note 3, at 375-77. Gunn, in fact, says that "[r]eduction to present value is essential to the argument that the income tax involves 'double taxation of savings' and is therefore unfair to savers." Id. at 377.

36. The present value of any future expenditure is the amount of money that would have to be presently saved to make that expenditure in the future. For example, in order to make an expenditure of $121 in two years, $100 would have to be saved now at a 10% interest rate. After one year, the $100 of savings would have grown to $110, and after two years it would have grown to $121. If the interest rate were greater than 10%, less would have to be saved, and thus the present value of $121 would be less than $100. The present value of any expenditure can be viewed as the present cost of that expenditure. In the example, the present cost of the $121 expenditure is $100. See generally J. HIRSCHLEIFER, PRICE THEORY AND APPLICATIONS 487-501 (2d ed. 1980).
tax is unfair because it will reduce the saver's interest income by more than the tax rate (in comparison to a taxfree world). Since the present value theory ignores the indirect component of the tax on interest, it is one of those theories which, as noted above, is based upon the wrong notion of horizontal equity.

Even if the notion of horizontal equity underlying the present value theory were correct, the theory still would be wrong. This can be seen by considering the example of the saver and nonsaver who, as the present value theory would have us believe, have equal utilities at a 10% interest rate in a taxfree world. Imagine that the interest rate in that taxfree world were to increase to 15%. The nonsaver would gain no utility from that higher interest rate, because changes in the interest rate cannot have any effect on the utility of someone who does not save. However, the saver would gain utility from the higher interest rate, because now he would receive $150 rather than $100 of interest on his $1,000 of savings. If the saver and the nonsaver had equal utilities when the saver received $100 of interest, they cannot have equal utilities when the saver receives $150 of interest. Instead, the utility the saver will receive from consumption of his additional $50 of interest must cause his utility to exceed that of the nonsaver.

According to the present value theory, however, the increase in the interest rate from 10% to 15% does not cause the saver's utility to exceed the nonsaver's. Instead, the saver's utility is no greater than it was when he was receiving only $100 of interest income. The present value theory arrives at this peculiar result because it focuses on a mathematical concept—the present value of consumption—rather than on the level of actual consumption. The increase in the interest rate not only causes the saver's consumption to be $50 greater than before, but for purposes of the present value calculation causes a heavier discount rate to be applied to future consumption. This heavier discount rate exactly offsets the saver's increased consumption, leaving the present value of his consumption at the same $1,000 level as previously. Since the present value of consumption is thought to measure utility, the saver is no better off with $150 of interest than with $100 of interest. This bizarre result demonstrates that the present value theory fails to show that double taxation is unfair.

Although the present value theory is wrong, its underlying rationale is attractive. In order to explain that rationale, we must assume that the saver allocates his first year income between savings and first year consumption, rather than just saving all of his income as has been assumed thus far. From this assumption, it follows that the saver will allocate his first year income between first year consumption and savings so as

37. See supra text accompanying note 30.
38. Some readers may both be convinced that the present value theory is wrong and be uninterested in the intricacies of that theory. They should feel free to skip to the next section.
to maximize his utility. His utility will be maximized when the last dollar of his first year income gives him the same utility whether it is saved or consumed (the utility received from a dollar of savings includes the utility that will be received from the corresponding interest income). Otherwise, the saver could increase his utility by reallocating his income between savings and first year consumption.

For example, if the last dollar of first year income resulted in more utility when saved than when consumed, the saver could increase his utility by shifting income from first year consumption to savings. The utility he would gain from his additional savings would outweigh the utility he would lose from his reduced first year consumption. Similarly, if the last dollar of income resulted in more utility when consumed than when saved, the saver could shift income from savings to first year consumption, causing him to gain more utility from his additional first year consumption than he would lose from his reduced savings.

Since the last dollar of first year income gives a saver the same utility whether it is saved or consumed, it must be the case that any given amount of consumption gives the same utility as the same amount of savings (again, the utility received from savings includes the utility that will be received from the corresponding interest income). Because consumption and savings give the same utility, savers and nonsavers with equal first year incomes will have equal utilities if they receive equal amounts of utility from any given amount of consumption.

This argument is ingenious but flawed. While it is true that the last dollar of first year income will give a saver the same utility whether it is saved or consumed, it does not follow that any given amount of savings gives the same utility as the same amount of consumption. Instead, the law of diminishing returns suggests that the utility received from a given amount of savings could be either greater than or less than the utility received from an equivalent amount of first year consumption.

According to the law of diminishing returns, the additional utility received from additional savings or consumption will fall as savings or consumption increases. Thus, a taxpayer receives less utility from the last dollar saved or consumed than from other dollars saved or consumed. If diminishing returns are not very pronounced, the utility received from the last dollar saved or consumed may not be significantly less than the utility received from other dollars saved or consumed. However, if diminishing returns are very pronounced, the utility received from the last dollar saved or consumed may be much greater than the utility received from other dollars saved or consumed.

Thus, if diminishing returns are less pronounced in the case of consumption than in the case of savings (and if first year income is divided

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39. A basic premise of economic theory is that individuals will act in the manner which maximizes their utilities. See, e.g., A. MAHANTY, INTERMEDIATE MICROECONOMICS WITH APPLICATIONS 24 (1980).
40. Gunn, supra note 3, at 375-77; Klein, supra note 15, at 469-70.
equally between consumption and savings), a given amount of first year consumption would represent less utility than the same amount of savings.\footnote{41} This would be the case even though the last dollar saved had the same utility as the last dollar consumed. Similarly, if diminishing returns are less pronounced in the case of savings than in the case of first year consumption (and if first year income is divided equally between consumption and savings), a given amount of savings would represent less utility than the same amount of first year consumption. Again, this would be the case even though the last dollar saved had the same utility as the last dollar consumed.

This analysis assumes that first year income is divided equally between savings and consumption. If there is not such an equal division between savings and consumption, the relationship between utility received from consumption and utility received from savings is even harder to discern. The reason for this is that, given a constant rate of diminishing returns, the extent of diminishing returns will be greater the more that is saved or consumed. For example, if just a few dollars are saved, the utility received from the first dollar saved may not be much greater than that from the last dollar saved. Thus, the relationship between the utility received from any dollar of saving or consumption, and the last dollar of saving or consumption, will depend both on the rate of diminishing returns and the allocation of income between savings and consumption.

Still another problem with the present value theory is its assumption that the utility received from any given amount of consumption will be the same for savers as for nonsavers. The reason that some people save more than others is that different people attach different relative utilities to saving and consumption.\footnote{42} There is no reason to believe that savers will receive the same utility from consumption as nonsavers.

It may be concluded that the present value theory is wrong. The utility of savers could easily exceed that of nonsavers even though the last dollar of income represents the same utility whether it is saved or consumed.

**B. The Additional Utility Theory**

We have seen that the present value theory attempts to show that the double taxation of savings is unfair. The “additional utility theory” attempts to show just the opposite—that the double taxation of savings is fair. The additional utility theory is based on the idea that the act of saving gives a saver utility in addition to that which he would receive from immediate consumption.\footnote{43} Since only savers save,\footnote{44} only they receive

\begin{footnotes}
\item[41] This does not mean that people can increase their utility by reallocating income from consumption to savings. Utility could be gained from such a reallocation only if the last dollar of saving represented a greater utility than the last dollar of consumption, which it does not.
\item[42] See infra text accompanying note 48.
\item[43] Again, the utility that is received from saving includes the utility from the interest received on those savings.
\item[44] The remainder of the article will return to the original assumption that nonsavers save none of their incomes, and savers save all of their incomes.
\end{footnotes}
this additional utility. It follows that the utility of a saver will exceed that of a nonsaver, where the saver and the nonsaver have equal first year incomes. Thus, a wage tax is horizontally inequitable because such a tax will impose the same tax upon the saver as upon the nonsaver even though the saver has a greater utility. If horizontal equity is to be achieved, a tax must be imposed on interest.45

Before we investigate the soundness of the additional utility theory, we should note that it ignores the indirect tax on interest imposed by the wage tax. If that indirect tax is taken into account, the wage tax will impose a greater tax burden on the saver than on the nonsaver. This is because both the saver and the nonsaver will face the wage tax, but only the saver will face the additional tax on interest income. Thus, contrary to the conclusion of the additional utility theory, the saver does face a greater tax burden to go along with his greater utility. Because the additional utility theory ignores the indirect tax on interest, it, like the present value theory,46 is based upon the wrong notion of horizontal equity.

The additional utility theory clearly is correct in its assertion that the act of saving gives a saver utility in addition to that which he would receive from immediate consumption. If it did not, he would not bother to save. Thus, the utility of the saver must exceed that of the nonsaver if the saver and nonsaver would have equal utilities in a world in which there was no opportunity to save.

In a world in which there was no opportunity to save, however, the utility of the saver might be less than that of the nonsaver. If so, the additional utility that the saver does receive by saving rather than consuming his income might be insufficient to cause his utility to exceed that of the nonsaver. The validity of the additional utility theory depends, therefore, on a comparison of the utilities of a saver and a nonsaver in a world in which savers are unable to save.

The saver and the nonsaver would appear to have equal utilities in a world in which savers are unable to save. Both would spend their incomes as soon as they earned them, so both would have the same level of present consumption. Intuitively, it seems that a saver and a nonsaver with equal levels of present consumption should receive equal levels of utility.47 It doubtless is this intuitive feeling upon which the additional utility theory is based. This is an instance, however, when intuition is wrong.

45. See Kelman, Fairness, supra note 5, at 655-57, 660; Warren, Fairness, supra note 4, at 1097-1101.
46. See supra text accompanying note 30.
47. One of the assumptions underlying the present value theory was that savers and nonsavers who are free to allocate their incomes between present consumption and savings will receive equal utilities from a given amount of present consumption. See supra text accompanying note 42. That assumption differs from the view being considered here, which is that savers and nonsavers who are forced to spend their entire incomes on present consumption will receive equal utilities from a given amount of present consumption.
Imagine a world in which no present consumption is possible. This is a world in which both the saver and the nonsaver must save their entire incomes and then consume their savings at a given time in the future. Since the saver and the nonsaver have equal present incomes, they will have equal savings and equal levels of future consumption. If equal levels of present consumption imply equal levels of utility—as is assumed by the additional utility theory—it should also be true that equal levels of future consumption imply equal levels of utility. Thus, in our imaginary world in which only future consumption is possible, the saver and the nonsaver should have equal levels of future utility.

Now imagine that the ability to consume in the present is introduced into our imaginary world. The saver will not shift his consumption to the present, because he receives more utility from saving than from present consumption. The nonsaver, however, will stop saving and consume his income immediately, because he receives more utility from present consumption than from saving. Thus, the utility of the nonsaver will increase, while that of the saver will be unchanged. Since the saver and the nonsaver had equal utilities when all income had to be saved, it follows that the nonsaver has a greater utility when immediate consumption is possible. Thus, the present utility of the nonsaver exceeds that of the saver when people are free to either save or consume. This conclusion, of course, is just the opposite of what the additional utility theory strives to prove.

In summary, one can “prove” that the present utility of a saver exceeds that of a nonsaver by assuming that the saver and the nonsaver have equal utilities in a world in which all consumption must occur in the present. One also can “prove” that the present utility of a nonsaver exceeds that of a saver by assuming that the saver and the nonsaver have equal utilities in a world in which all consumption must occur in the future. The additional utility theory concludes that the double taxation of savings is fair because it bases its analysis on the first assumption rather than on the second. Because reliance on the second assumption leads to the opposite conclusion, the additional utility theory is unsound. If one is to make assumptions, one probably should assume that the people who will have the greatest utility in a given world are those who prefer that world. Given a choice, the saver would prefer to save, while the nonsaver would prefer to consume. A world in which no current consumption is possible is a world which fits the preferences of the saver but not the preferences of the nonsaver. In such a world the utility of the saver probably would exceed that of the nonsaver. Similarly, a world in which no saving is possible is a world which fits the preferences of the nonsaver but not the saver. In such a world the utility of the nonsaver probably would exceed that of the saver.

Since the utility of a saver would fall short of that of a nonsaver in a world in which no saving was possible, it cannot be known whether

48. See supra text accompanying note 42.
the utility received from saving causes the saver's utility to exceed the nonsaver's. It follows that the additional utility theory is wrong when it claims that the utility of the saver will exceed that of the nonsaver.

Mark Kelman proposed a modification of the additional utility theory. According to Kelman, the utility that the saver receives by saving rather than by consuming his income should be taxed if it is due to rent, but it should not be taxed if due to consumer surplus. Rent and consumer surplus refer to the two different ways in which a saver could receive utility from the act of saving.

The concept of consumer surplus is closely related to the law of diminishing returns. According to the law of diminishing returns, the utility that the saver receives from additional savings will fall as the level of his savings increases. Thus, the saver will receive less utility from his second dollar of saving than from his first, less utility from his third dollar of saving than from his second, and so on. He will gain no additional utility from saving rather than consuming his last dollar of saving if, as explained in the discussion of the present value theory, he has allocated his income between first year consumption and savings in the manner which maximizes his utility. Consumer surplus is the name given to the utility received from the act of saving when diminishing returns cause the utility from each extra dollar of savings to smoothly dwindle away to nothing.

Rent is the name given to a gain which does not dwindle away to essentially nothing for the last few dollars saved. When the saver receives significant utility even from the last dollar saved, he is receiving rent. Rent occurs when people have some desired level of savings, and will save that amount regardless of the interest rate. For example, the saver might save $100 if the interest rate were anywhere between 5% and 15%. Only if the interest rate fell below 5% would he reduce his savings below $100, and only if the interest rate rose above 15% would he increase his savings above $100. Because he would be willing to save $100 if the interest rate were only 5%, any interest rate above 5% but below 15% will give him significant utility even from the last few dollars saved. That significant utility is rent. At an interest rate of 12%, for example, he would receive rent of 7% (the amount by which 12% exceeds 5%).

It must be emphasized that it is only for the last few dollars saved that there is any significant difference between consumer surplus and rent. Although in the case of consumer surplus the utility from additional savings dwindles away to essentially nothing for the last few dollars saved,

51. Although the additional increments to utility are falling in size, total utility still is increasing.
52. See * supra* text accompanying note 39. Of course, a saver will be able to allocate his income between first year consumption and savings only if he does not save all of his income.
53. The law of diminishing returns could apply in the case of rent. However, although the utility from additional savings would fall as savings increase, it would not fall smoothly to zero. Instead, at some point any additional savings would cause it to immediately plunge to zero.
a significant gain still is received from all other dollars saved. Thus, for most of the dollars that he saves, the saver receives significant utility in the case of consumer surplus as well as in the case of rent.

According to Kelman, the fairness of the double taxation of savings depends on whether the gain that the saver receives from the act of saving is due to consumer surplus or to rent. If it is due to consumer surplus, the double taxation of savings is unfair. If it is due to rent, the double taxation of savings is fair. Kelman does not explain why he takes this position. This lack of explanation is unfortunate, because there is no apparent reason for his position. The existence or absence of significant utility from the last few dollars saved would seem to have no relevance to the issue of whether or not interest from all other dollars saved should be taxed. True, the utility of the saver will be somewhat greater if the saver receives significant rather than insignificant additional utility from the last few dollars saved. Accordingly, it might be argued that a tax on interest should be somewhat greater in the case of rent than in the case of consumer surplus. It does not appear, however, that this has any relevance to the more basic question of whether there should even be a tax on interest.

Even if Kelman is right in treating the utility from rent differently from the utility from consumer surplus, his argument has the same flaw as the more traditional additional utility argument. Namely, a demonstration that the saver receives more utility from the act of saving than from immediate consumption does not imply that the utility of the saver is greater than that of the nonsaver. As explained above, the nonsaver probably would have a greater utility than the saver in a world in which no one could save, because such a world fits the preferences of the nonsaver but not the saver. Although the opportunity to save will give the saver additional utility, there probably is no way to know whether this additional utility will cause his utility to exceed that of the nonsaver. The fact that the additional utility comes from rent rather than consumer surplus will not change this result.

Even if Kelman's argument were theoretically correct, it probably would be wrong on empirical grounds. This is not surprising. It is difficult to think of a reason that a saver would wish to save a fixed amount regardless of the interest rate. The only plausible reason that comes to

54. "The tax system has never paid attention to the sort of psychic benefit that consumer surplus represents. Only if all, or nearly all, [savers] are earning [rent] does a real problem exist." Kelman, Fairness, supra note 4, at 657 n.23.

55. Kelman, however, claims that it does. "Without question, if [Kelman's theory] is correct, the saver is better off than the consumer . . . ." Kelman, Fairness, supra note 5, at 675.

56. The additional utility is likely to be somewhat greater if it comes from rent than if it comes from consumer surplus, so the probability that the saver's utility will exceed the nonsaver's is somewhat greater in the case of rent than in the case of consumer surplus.

57. See Boskin, Taxation, Savings, and the Rate of Interest, 86 J. Pol. Econ. S3 (1978) (the level of saving is not fixed, but rather varies with the interest rate).

58. Kelman cites to three economic theories in his attempt to show that changes in the interest rate will not affect the level of savings. Kelman, Fairness, supra note 5, at 673-75. These theories
mind is that the saver might desire to save for one specific future purchase with no desire to save for any other future purchases. But, even then, the amount he saves would vary with the interest rate. Consider, for example, a saver who desires to purchase $1,100 of merchandise next year. If the interest rate were 10%, he would have to save $1,000 this year in order to have enough to make the $1,100 purchase next year. If the interest rate were 5%, he would have to save somewhat more—$1048—because he would be receiving less interest than at the 10% interest rate. If the interest rate were 15%, he would have to save only $957, because he would be receiving more interest than at the 10% interest rate. Thus, even when a saver plans to make one definite purchase, changes in the interest rate would cause changes in his level of saving. It follows that the saver is very unlikely to receive rent from his savings.

C. The Expectation Theory

The basic idea underlying the "expectation theory" was first proposed by Alvin Warren, and later developed by Mark Kelman. The expectation theory is similar in many respects to the present value theory described above. The expectation theory differs from the present value theory in its conclusion regarding the utilities of a saver and a nonsaver with equal first year incomes. Whereas the present value theory concludes that the utility of the saver equals that of the nonsaver, the expectation theory concludes that the utility of the saver exceeds that of the nonsaver. Accordingly, while the present value theory finds that the double taxation of savings is unfair, the expectation theory finds that it is fair.

Since the expectation theory is similar to the present value theory, the present value theory should be briefly reviewed. The present value theory involves four steps. First, the theory focuses on the manner in which taxpayers allocate their incomes between savings and consumption. It observes that a taxpayer will maximize his utility by allocating his income so that he will receive the same utility from the last dollar he saves as from the last dollar he consumes. Second, the theory reasons that—since the saver receives the same utility from the last dollar he saves as from the last dollar he consumes—he must receive the same utility from a given amount of saving as from an equivalent amount of consumption. Third, it assumes that the saver receives the same utility from consumption as the nonsaver does. Fourth, it deduces from the second and third steps

are Friedman’s permanent income hypothesis, Marglin’s disequilibrium hypothesis, and Duesenberry’s relative income hypothesis. It is not at all clear that these theories have the implications Kelman claims for them. For example, Professor Paul Wonnacott, an economist who is an expert on macroeconomics, expressly states that under Friedman’s theory the rate of interest will be a factor influencing the level of saving. Wonnacott, Macroeconomics 333-36 (1974).

59. An implausible reason is that savers do not have any present consumption. Although at times this article has simplified the analysis by assuming that savers do not have any present consumption, this assumption certainly does not describe behavior in the real world.

60. Warren, Fairness, supra note 4, at 1097-1101.

61. Kelman, Fairness, supra note 5, at 653-70.

62. See section A of this part of the article.
that the saver must receive the same utility from a given amount of savings as the nonsaver receives from an equivalent amount of consumption. From this analysis, it concludes that the double taxation of savings is fair. We have seen that the second and third steps of the present value theory are wrong. Thus, the present value theory does not show that the utility of the saver equals that of the nonsaver.

The expectation theory assumes (for the sake of argument) the validity of all the steps of the present value theory except for the first. It questions the soundness of the first step, because at the time that the saver allocates his income he does not know the actual utility he will receive from his savings. He will know that only at the time that he actually consumes his savings in the future. Thus, there is no reason to believe that the saver will be able to maximize his utility by allocating his income so that he receives the same utility from his last dollar of consumption as from his last dollar of savings.

The expectation theory points out that the saver allocates his income between consumption and savings on the basis of the utility that he expects to receive from his savings. Thus, the present value theory is based on the premise that the saver allocates his income so that his expected utility (not his actual utility) from his last dollar of savings equals his actual utility from his last dollar of consumption. The present value theory accordingly shows that the expected utility the saver receives

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63. See supra text accompanying notes 40-41.
64. Warren's argument may be more of a criticism of the present value theory than an advocacy of the expectation theory. If so, he may not be willing to accept the other steps of the present value theory.
65. The expectation theory as presented here differs somewhat from that presented by Warren and Kelman. Warren's argument is unclear, but it appears that rather than looking at the present value of present and future consumption, as the present value theory does, he would look at the present value of past and present consumption. See Warren, Fairness, supra note 4, at 1100. The present value he would place on past consumption is the present utility people would receive from their memories of past consumption. Id. The utility received from memories of past consumption almost certainly will be very slight, which means that nonsavers—who consumed everything in the past, and have nothing to consume now—will have only a nominal present utility. Savers, however, have some present consumption, and they get significant utility from it. Thus, the present utility of savers will exceed that of nonsavers.

If this is Warren's argument, it cannot be reconciled with his position, infra note 68, that tax liability should depend on outcomes. The relevant outcome would be the utility that people received from their past consumption at the time of that consumption, not the utility that they later receive from memories of that consumption. Utility received from memories of that past consumption would only slightly increase their total utility, but otherwise should have no effect on utility.

Kelman's version of the expectation theory also is unclear, but appears to make more sense than Warren's. Under Kelman's version, the present value of past consumption apparently is the actual utility that was received from past consumption minus any disutility received since then. Kelman, Fairness, supra note 5, at 659-60. Disutility could be received since then because people might regret that they spent their income in the past rather than in the present. Id. Kelman's version thus looks at actual outcomes—actual utility received at the time of consumption minus actual disutility received since the time of consumption. Since it is nonsavers who receive the most disutility from past consumption, their utility will be less than that of nonsaver's. Kelman's version is not presented in this article because any disutility received from regret about past consumption choices probably would be very slight. Kelman also presents another version of the expectation theory which is very similar to that presented here. Id. at 655-56.
from a given amount of savings equals the actual utility that the nonsaver receives from an equivalent amount of consumption.

Needless to say, this distinction between actual and expected utility from savings is irrelevant if actual utility equals expected utility. But if actual utility exceeds expected utility, the actual utility that the saver receives from a given amount of savings would exceed the actual utility that the nonsaver receives from an equivalent amount of consumption. Thus, the saver’s actual utility would exceed the nonsaver’s. If actual rather than expected utility is the proper measure of horizontal equity, horizontal equity will be achieved only if the saver bears a heavier tax than the nonsaver. A tax on interest will impose such a heavier tax, and thus the double taxation of savings is fair.

It must be noted, as it was noted above for the present value and additional utility theories, that the expectation theory ignores the indirect tax on interest imposed by the wage tax. If that indirect tax is taken into account, the wage tax will impose a greater tax burden on the saver than on the nonsaver, because both the saver and the nonsaver will face the wage tax, but only the saver will face the additional tax on interest income. Thus, contrary to the conclusion of the expectation theory, the saver does face a greater tax burden to go along with his greater utility. Because the expectation theory ignores the indirect tax on interest, it is based upon the wrong notion of horizontal equity.

The expectation theory clearly is correct in its position that actual utility, rather than expected utility, is the proper measure of utility. Tax policy questions are seldom, if ever, thought to depend on the expectations of taxpayers—in this case, the expected utility of the saver. Instead, they depend on outcomes—in this case, the actual utility that the saver will receive when he consumes his savings. As an example of this distinction between expectations and outcomes, a person who expects to make a fortune on an investment which actually results in a loss is not taxed on his erroneous expectation of future wealth. Similarly, a person who expects to receive a low return on an investment which is spectacularly successful is taxed on his wealth despite his modest expectations. Following the same reasoning, if the actual utility that the saver receives from his savings differs from his expected utility, he should be taxed on his actual rather than on his expected utility.

The expectation theory still must show, however, that the utility the saver actually receives from his savings exceeds the utility he expected to receive at the time that he saved. There are two possible ways to show this. The first is to show that the saver is shortsighted, and the

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66. See supra text accompanying note 37.
67. See supra text accompanying note 46.
69. Kelman mentions a third way—people may erroneously believe they will not have as much capacity to enjoy consumption in the future as in the present. Kelman, *Fairness*, supra note 5, at 669. Kelman appears to believe that this argument is weak, and it is not clear why he mentions it. There can be little doubt that people often incorrectly estimate their capacity to enjoy consumption in the future, but overestimation probably is just as likely as underestimation. There is no apparent reason that people would err more on one side than on the other.
second is to show that the saver takes the probability of his death into account when deciding how much to save. A saver may be shortsighted in the sense that he underestimates the utility he will receive from his consumption of his savings. This argument cannot be pushed too far, because it is clear there are limits to shortsightedness. If the saver were very shortsighted, his expected utility from savings would be so low that he would not save at all. All that the expectation theory need show, however, is that the saver is shortsighted to some extent. As long as the saver underestimates the utility he will receive from future consumption, his actual utility will exceed the nonsaver’s.

There is an intuitive appeal to the idea that the saver will underestimate his future utility. The saver doubtless gets more utility from present consumption than from the knowledge that he will be able to consume in the future, so he may underestimate his future utility when deciding how much to save. One must be careful, however, not to confuse two separate types of utility. The first is the future utility that the saver expects to receive when he consumes his savings. This is expected utility. The second is the current utility that he receives from his anticipation of that future consumption. The saver could receive no current utility from the anticipation of future consumption, yet correctly estimate the future utility that he will receive from that future consumption. For example, someone who has just finished a meal may receive no current utility from the knowledge that he will have a similar meal the next day. However, the odds are good that he will correctly estimate the utility that he will receive from the next day’s meal, and that he will budget for that meal. Similarly, a family that has just returned from a vacation trip might get no utility (or even negative utility) from the knowledge that they will have a similar vacation trip the next year. However, their past experience with vacation trips should enable them to correctly estimate the utility they will receive from next year’s trip and to set aside the appropriate level of savings for that trip. Thus, expected utility could equal actual utility even if no current utility is received from the anticipation of future consumption.

If people actually are shortsighted, the expectation theory should be more applicable to young savers than to older savers. In hindsight, savers will realize that they consumed too much of their past incomes and saved too little. People doubtless learn from their mistakes, so their shortsightedness should disappear with age. It follows that the expectation theory is more likely to be valid when applied to younger savers than when applied to older savers. Thus, the double taxation of savings should be more easily justified in the case of young savers than in the case of older savers.

70. See Kelman, *Fairness*, supra note 5, at 658-60; Warren, *Fairness*, supra note 4, at 1100-01.
71. See Kelman, *Fairness*, supra note 5, at 658-60, for reasons this may occur.
72. An estimate of future utility is unlikely to be completely accurate. All that is required, however, is that estimates of future utility are accurate on average.
73. A well-designed survey could be used to test the idea that people are shortsighted. If people
The second reason that the saver's actual utility might exceed his expected utility is that the saver may take the probability of his own death into account when deciding how much to save. The greater the probability that a saver will die before consuming his savings, the less will be his expected utility from those savings. For example, a saver might correctly estimate the utility he would receive from consumption in his one-hundredth year if he were to live that long. Since he is unlikely to live that long, however, he would not expect to receive much utility from savings that were not consumed before his one-hundredth year. If he did live to be one hundred, the actual utility he received from consumption in his one-hundredth year would turn out to be much greater than the utility he had expected to receive. Thus, his actual utility would exceed his expected utility. According to the expectation theory, this means that a tax should be imposed on his interest income.

This argument is flawed, because it considers only the utility of a saver who survives to a certain age. The utility of savers who do not survive must also be considered. Imagine a group of five savers, each with a 20% chance of surviving to a given age. In accordance with the probabilities, only one member of the group actually survives to the given age. As we have seen above, the actual utility of the saver who survives to the given age will exceed his expected utility. The other four savers die before they are able to consume their savings. Those unconsumed savings give each of them an actual utility of zero, less than his expected utility. Thus, each of the four savers who dies receives even less utility than a nonsaver. In these circumstances, the expectation theory would indicate that horizontal equity will be achieved only if the four savers are taxed less heavily than nonsavers.

Thus, depending on whether or not a saver survived, his actual utility could be either greater than or less than his expected utility. Unfortunately, there is no way to know which it will be until he either survives to the given age or dies. By that time the taxes already will have been imposed, and it will be too late to adjust his tax burden. Thus, there is no way to impose the appropriate tax burden on individual savers.

The next best thing is to design the tax system so that savers as a group bear the appropriate tax burden. Consider the expected utility of the five savers as a group. Since each saver has only a 20% chance of surviving to the given age, the expected utility of each is approximately 20% of the utility he would receive were he actually to survive to that age. The expected utility of the group as a whole is five times the 20% expected utility of each of its members, or 100%. Thus, the expected

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74. For an extensive discussion of this possibility, see Kelman, Fairness, supra note 5, at 660-69. The discussion here is similar to Kelman's.
75. This assumes that people receive less utility from their bequests than from their consumption. If that is not the case, this argument cannot be made. In order to keep the argument relatively simple, it will be assumed that no utility is received from bequests.
utility of the group as a whole equals the actual utility that the surviving member of the group will receive. Since the actual utility of the group consists entirely of the surviving member's actual utility, it follows that the group's expected utility equals its actual utility. Thus, there is no reason to tax savers more heavily than nonsavers.

In summary, we have considered two reasons that a saver's actual utility may exceed his expected utility. First, his shortsightedness may cause him to underestimate the utility he will receive from the consumption of his savings. If so, the expectation theory demonstrates that a saver's actual utility exceeds his expected utility. If certain premises of the present theory are valid, the expectation theory also demonstrates that the saver will have a greater utility than a nonsaver with the same first year income. We have seen, however, that the premises of the present value theory are invalid. Thus, the expectation theory, while interesting, does not demonstrate that a saver will have a greater utility than a nonsaver.

The second reason that a saver's actual utility could exceed his expected utility is that he might consider the probability of death when deciding how much to save. We have seen, however, that the probability of death will not cause actual utility to exceed expected utility, at least when savers are viewed as a group.

One final aspect of the expectation theory must be considered—its implications for the concept of economic efficiency. Theories of the fairness of double taxation seldom have any implications for economic efficiency, because the economic efficiency of a tax system usually is the same whether it is fair or unfair. This would not be the case, however, if the expectation theory's principal assertion were sound. That assertion—that a saver's actual utility from savings exceeds his expected utility—has unusual implications for economic efficiency. If a saver's actual utility exceeds his expected utility, he will not allocate his income between present consumption and savings in the way which maximizes his utility. Instead, he will allocate too much to present consumption and not enough to savings because he will underestimate the utility he will receive from his savings. His utility, and thus economic efficiency, would be increased if there were some way to make him shift some of his income from present consumption to savings. Typically, a government subsidy of the interest rate would be used for that purpose. The economic efficiency

76. Economic efficiency can be improved if there is a way to reallocate resources so that the gains of the winners exceed the losses of the losers. If the gains of the winners do exceed the losses of the losers, the winners would be able to make a payment to the losers that fully compensated them for their losses, yet the winners still would be better off than if the resources had not been reallocated. Since such payments never are made, increases in economic efficiency may not be desirable. See generally Due & Friedlaender, Government Finance 9-20 (6th ed. 1977).

77. Thus, analyses of the fairness of various tax systems can usually safely ignore the efficiency issue. Warren, for example, states that he will not consider economic efficiency. Warren, Fairness, supra note 4, at 1082 n.7.

78. Increases in economic efficiency usually result in gains to some people and losses to others, and thus may or may not be desirable. An increase in economic efficiency due to a reallocation of income between savings and present consumption, however, has no apparent losers. Thus, this is one instance where an increase in economic efficiency clearly is desirable.
of such a subsidy is unique to the expectation theory. Under other theories of the fairness of double taxation, economic efficiency would be maximized if there were no subsidy of the interest rate.\textsuperscript{79}

The expectation theory thus leads to two opposing policy recommendations. When applied to the subject of fairness, it recommends that interest income be taxed. When applied to the subject of economic efficiency, it recommends that interest income be subsidized. We have seen that the first policy recommendation is unsound because it is based on the unsound present value theory. The second policy recommendation is sound, however, if actual utility does exceed expected utility. The second recommendation is not based on the present value theory, so it is unaffected by any flaws in that theory. It may be concluded that the expectation theory supports a subsidy, rather than a tax, on interest. Thus, the expectation theory fails to justify the double taxation of savings.

\subsection*{D. The Indirect Tax on Interest}

As mentioned above,\textsuperscript{80} the present value theory, the additional utility theory, and the expectation theory all are based on the assumption that horizontal equity occurs when savers and nonsavers with equal utilities bear equal direct taxes, even though the saver's tax burden (the sum of indirect and direct taxes) may be much greater than the nonsaver's. Such an approach to the issue of the fairness of double taxation is fundamentally flawed.

The fairness of double taxation is an issue in tax policy because of the possibility that there is something unfair about a "double tax" on savers. This ostensible unfairness (and the concept of double taxation) is due solely to the existence of the indirect as well as the direct component of the tax on interest. An analysis of the fairness issue must therefore either consider the effect of that indirect component upon fairness or must explain why that component is not relevant to fairness.\textsuperscript{81} The three theories described above, however, just ignore that indirect component. By so doing, they ignore the very component that creates the possibility of unfairness. Thus, they could not conclude that double taxation is unfair even though the possibility of such unfairness is the very issue that they purport to explain.\textsuperscript{82}

\textsuperscript{79}. In a perfectly functioning economy, economic efficiency will be maximized if the government does not intervene in economic matters. \textit{Due \& Friedlaender}, \textit{supra} note 76, at 17. The expectation theory is the only theory that implies that the economy will not function perfectly, so it is the only one that implies that government intervention is desirable.

\textsuperscript{80}. See \textit{supra} text accompanying notes 30, 37, 46, 66 and 67.

\textsuperscript{81}. One approach might be to argue that a taxfree world is not the appropriate standard by which to judge the fairness of a tax system. Gunn suggests such an approach, but he offers no alternative to the taxfree world. Gunn, \textit{supra} note 3, at 374.

\textsuperscript{82}. It may appear that the theories are investigating the fairness of double taxation. However, it is logically impossible for them to consider the fairness of double taxation when they ignore one component of that tax. Since the theories assume that the direct component of the tax on interest should not be imposed unless savers benefit from their interest income, and assume that the indirect component is not a tax, they actually are considering whether there is enough utility from interest income to justify even a single tax on interest.
III. OTHER THEORIES THAT INVOLVE UTILITY

This part of the article will continue with the assumption that utility is the appropriate measure of horizontal equity, but it will be based upon the view that horizontal equity occurs when equally situated savers and nonsavers bear equal tax burdens (the sum of the indirect and direct components of taxes) rather than equal direct taxes only. Tax burdens will be measured in terms of utility rather than in terms of money, with a person's tax burden equaling the reduction in utility caused by the tax under consideration. This differs from the above theories, which use a hybrid of utility and money to measure horizontal equity. They use utility when determining whether savers and nonsavers are equally situated, but they use money when determining whether savers and nonsavers face equal taxes. Here, utility will both measure tax burdens and determine whether savers and nonsavers are equally situated. This has the advantage of consistency. If utility is the appropriate measure of equally situated taxpayers, it is the appropriate measure of a tax system's effect upon equally situated taxpayers.

Section A will show that the double taxation of savings is unfair if savers receive utility only from consumption. Section B will show that double taxation can be fairer than a consumption tax (but not a wage tax) if savers additionally receive utility from the holding of wealth. Finally, section C will show that double taxation can be fair if the disutility of work is thought to be relevant to fairness. It may be concluded that the fairness of double taxation depends upon the source of utility and upon the relevance of disutility.

A. Utility is Received Solely From Consumption

This section of the article will assume that utility is received solely from consumption, either present or future, with no utility received from the holding of wealth. We will use the example of a saver with a wage income of $1,000 in the first year and $100 of interest income in the second year compared with a nonsaver with a wage income of $1,000 in the first year and a wage income of $100 in the second year. Assume that the saver consumes all of his income by the end of the second year and that the saver and the nonsaver have equal utilities. If we focus only on utility flowing from the saver's and nonsaver's first year wage incomes and any second year interest income, the saver will have a greater utility than the nonsaver. Thus, a dollar of first year income gives more utility to the saver than to the nonsaver. This is what the additional utility and the expectation theories claim. Accordingly, this example will enable us to determine the fairness of double taxation when a saver does

83. It also makes possible a more comprehensive analysis. For example, see infra sections B and C for analyses that would not be possible if tax burdens were measured in money.

84. The example is one in which savers and nonsavers with equal incomes have equal utilities. However, since we are focusing on utility, not money, we could just as easily use an example in which savers and nonsavers have unequal incomes. The only requirement is that they have equal utilities.
in fact receive more utility than a nonsaver from a given wage income. Because the saver and the nonsaver have equal utilities, they are equally situated. Horizontal equity requires that such equally situated taxpayers bear equal tax burdens, where tax burdens are measured in foregone utility. A 20% wage tax will impose such equal tax burdens. It will cause 20% reductions in the first year wage incomes of the saver and the nonsaver. It will also cause 20% reductions in the second year incomes of the saver and the nonsaver, with the nonsaver's $100 of second year wage income directly taxed at the 20% rate, and the saver's $100 of second year interest income indirectly taxed at the 20% rate. Since the saver and the nonsaver have equal reductions in their monetary incomes, they will have equal reductions in their consumption. Because they receive utility solely from consumption, they also will have equal reductions in their utilities. The wage tax therefore achieves horizontal equity, because it imposes equal tax burdens (measured in foregone utility) upon equally situated savers and nonsavers. This is true even though the analysis is based upon the assumption that a saver's interest income will cause his utility to exceed that of a nonsaver with the same wage income.

Since a wage tax achieves horizontal equity, an income tax necessarily is horizontally inequitable. The reason is that an income tax is merely a wage tax with a supplemental tax on interest income. That supplemental tax will cause savers, but not nonsavers, to be taxed more heavily by an income tax than by a wage tax. Since equally situated savers and nonsavers face equal tax burdens under a wage tax, it follows that they will face unequal tax burdens under the income tax. Thus, the income tax is horizontally inequitable. A consumption tax is horizontally equitable because, like a wage tax, it reduces the consumption of both the saver and the nonsaver by the tax rate, and thus causes equally situated taxpayers to forego equal amounts of utility.

It must be concluded that both a wage tax and a consumption tax are horizontally equitable, while an income tax is horizontally inequitable. This will be true even if a saver has a greater utility than a nonsaver with the same wage income. Thus, when utility is received solely from consumption, double taxation is horizontally inequitable.

85. This conclusion depends on a couple of assumptions. See infra text accompanying notes 120-21.

86. The expectation and additional utility theories would arrive at the same conclusion if they focused on utility rather than on money. Because the saver receives the same utility from $1,000 of wage income as the nonsaver receives from $1,100 of wage income (where the utility from wage income includes the interest received when that income is saved), each dollar of the saver's wage income represents a 10% greater utility than each dollar of the nonsaver's wage income. A 20% wage tax will cause the saver to pay a $200 tax on his $1,000 of first year wage income. Because each dollar of the saver's wage income represents a 10% greater utility than each dollar of the nonsaver's wage income, that tax represents the same amount of foregone utility as a $220 tax on the nonsaver. Since the nonsaver does face a $220 tax, the equally situated saver and nonsaver bear equal tax burdens.

87. As noted infra text accompanying notes 120-21, the income tax could be fairer than the wage tax when tax rates vary over time or are progressive.

88. As noted infra text accompanying notes 120-21, a graduated rate will have no effect on the horizontal equity of a consumption tax.
B. Utility is Received From Wealth

We next must consider whether double taxation is unfair if savers receive utility not only from consumption but also from wealth. Utility could be received from wealth for several reasons. First, wealth in large quantities gives prestige and power. Second, wealth provides the ability to consume at any time, so there are no lost consumption opportunities during a wait for the next paycheck. Third, wealth gives a feeling of financial security. Fourth, wealth provides people with the opportunity to receive satisfaction from the management of their investments. Other sources of utility from wealth doubtless also exist.

Consider again the example of a saver and a nonsaver who have equal utilities in a taxfree world. Now, however, the saver receives utility not only from consumption but also from his unconsumed wealth (his savings). Accordingly, the saver now receives less utility from consumption than does the nonsaver. Because a consumption tax only reaches utility from consumption, it reduces the saver’s utility by less than the nonsaver’s. Accordingly, a consumption tax is horizontally inequitable. It is important to note that this analysis applies only to unconsumed wealth. Wealth which is held in the form of something that has been purchased (such as a yacht) is taxed by the consumption tax and can be viewed as just another consumption expenditure. The only wealth that escapes the consumption tax is wealth which has not been purchased (unconsumed wealth). It is only with respect to such wealth that the consumption tax is unfair.

In order to be horizontally equitable, a tax must reduce utility from unconsumed wealth by the same proportion that it reduces utility from consumption. A wage tax will be horizontally equitable. We have previously seen that a wage tax reduces both wage income and interest income by the tax rate. Since wage and interest income are the two...
sources of wealth (whether unconsumed or not), a wage tax reduces unconsumed wealth by the tax rate. We also know that the wage tax reduces consumption by the tax rate. If utility is affected in the same manner by reductions in unconsumed wealth as by reductions in consumption, the wage tax will cause equal reductions in the utilities of the saver and the nonsaver.

Since the wage tax is horizontally equitable, the income tax necessarily is horizontally inequitable. An income tax is merely a wage tax combined with a direct tax on interest, and that direct tax on interest causes the effective tax rate on savers to be greater under the income tax than under the wage tax. The effective tax rate on nonsavers, however, is no greater than under the wage tax. This unequal treatment of savers and nonsavers destroys the horizontal equity achieved by the wage tax.

It is interesting to compare the horizontal inequity of the income tax with that of the consumption tax. Assume that a typical saver receives a 10% "rate of return" on his unconsumed wealth. That is, the utility he annually receives from the various nonmonetary benefits of unconsumed wealth equals the utility he would receive if he were to annually consume 10% of his unconsumed wealth. The rate of return on wealth is just the counterpart of the interest rate. One measures a benefit of unconsumed wealth that is purely nonmonetary, and the other represents a benefit of unconsumed wealth that is monetary (but which will be nonmonetary when held as wealth or consumed). The sum of the two represents the total benefit of unconsumed wealth (of saving). At a 10% rate of return on unconsumed wealth, a saver with $100 of unconsumed wealth values the nonmonetary benefits of unconsumed wealth at $10. Horizontal equity requires that those benefits be taxed. If they were taxed at a 20% tax rate, the saver would pay a $2 tax, leaving him with a net benefit from unconsumed wealth of $8. Since the consumption tax fails to tax those benefits, the consumption tax is horizontally inequitable to the extent of the $2 that escapes tax.

At a 10% interest rate, a saver with $100 of unconsumed wealth (savings) will receive $10 of interest. A 20% income tax rate will impose a $2 tax. That $2 tax represents the horizontal inequity of the income tax. Thus, where the rate of return on wealth equals the interest rate, the horizontal inequity of the income tax equals that of the consumption

93. Inheritances and gifts are a source of wealth, but their source is interest or wage income.
94. Shachar erroneously states that wage and income taxes do "not reach the current benefits of holding wealth. The initial accumulation is taxed, but the later, nonphysical return—the accumulation benefit—is received and consumed free of charge." Shachar, supra note 89, at 1601. Although it is true that neither a wage tax nor an income tax will reach the utility received from the portion of income that actually is saved, the income that actually is saved is only a portion of the income that would have been saved in a taxfree world. Since both the income and wage taxes reduce the amount saved, they reduce the utility received from the holding of wealth. Shachar's analysis considers only the reduction in utility that the wage and income taxes would cause in a world in which those taxes had already been imposed. Warren makes a similar mistake when he claims that "only income taxation reaches wealth or the return to wealth." Warren, Fairness, supra note 4, at 1122.
tax. One imposes a tax burden that is too heavy by $2, and the other imposes a tax burden that is too light by $2.95

If the rate of return on wealth were to fall below the interest rate, the inequity of the consumption tax would be reduced, while that of the income tax would be unchanged. Thus, the consumption tax would be less inequitable than the income tax. If the rate of return on wealth were to increase above the interest rate, the inequity of the consumption tax would be increased, making it more inequitable than the income tax. However, the income tax’s relative superiority would be due solely to the consumption tax’s greater unfairness, not to any fairness of the income tax.

It may be concluded that the income tax will be fairer than the consumption tax only if substantial utility is received from unconsumed wealth. A comparison of the fairness of these two taxes therefore depends on a knowledge of the actual rate of return on unconsumed wealth. As we saw above,96 utility is received from the holding of wealth for several reasons. First, wealth in large quantities results in prestige and power. Second, wealth gives the ability to consume at any time, so there are no lost consumption opportunities during a wait for the next paycheck. Third, wealth provides a feeling of financial security. Fourth, the wealthy may receive satisfaction from their ability to manage their investments.

Prestige is probably the benefit of wealth most likely to give significant utility. The prestige that comes from unconsumed wealth (savings) must be distinguished, however, from the prestige that comes from the consumption of wealth. The bulk of the prestige enjoyed by the wealthy probably comes from their consumption of boats, airplanes, expensive cars, opulent homes, and the like. Such prestige is not relevant here, both because it will be reached by a consumption tax and because it is enjoyed by wealthy nonsavers as well as by wealthy savers. The prestige that is relevant here is prestige that is received before wealth is consumed. Such prestige probably is relatively small, because wealth is likely to be unknown until it is consumed, and unknown wealth carries no prestige.

Power and the ability to consume whenever desired are two more sources of utility to the wealthy.97 However, both of these sources of utility are also available to the non-wealthy. Power is available to relatively poor business executives and politicians,98 and the ability to consume

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95. An income tax base is broader than a consumption tax base, and accordingly can raise the same revenues with a lower tax rate. Consequently, an income tax will be somewhat fairer than indicated here.

96. See supra text accompanying note 89.

97. Warren apparently refers to the ability to consume at any time when he says that from “the perspective of the income tax, the consumption tax is deficient because it fails to take into account the fact that productive nonconsumers receive claims for future consumption in the form of property rights. Such producers have not only current consumption, but they also have an option for additional consumption that can be exercised at will. Why, from the point of view of distributional fairness, should the existence of such options be ignored?” Warren, Fairness, supra note 4, at 1094.

98. Business executives and politicians seem to quickly acquire wealth upon obtaining their positions, however.
whenever desired is available to anyone who can freely borrow. Thus, an income tax will reach only a portion of the utility from these sources.\textsuperscript{99} It therefore is unclear whether the tax system is the appropriate means to reach utility from power and the ability to consume whenever desired.\textsuperscript{100} Perhaps it could be argued that the power that comes from wealth is especially invidious and for that reason alone deserves tax. However, that argument focuses not on the utility received from wealth, but instead on the effects of power upon other people. That is unrelated to the horizontal equity issue being considered here.\textsuperscript{101}

The two final sources of utility from wealth are a feeling of financial security and the ability to manage one’s investments. There is not much that can be said about these sources of utility, except to note that the utility received from them probably is relatively small. The combined utility received from all of these sources must be quite large if the rate of return on unconsumed wealth is to be great enough to cause the income tax to be fairer than the consumption tax. One may wonder if these sources provide utility of this magnitude.

Even if savers do receive very substantial utility from unconsumed wealth, it could be argued that a consumption tax necessarily is fairer than an income tax. The argument would be that utility from nonmarket sources such as prestige and power is irrelevant to the fairness of various tax systems. Tax theorists typically argue for a comprehensive tax base, but they rarely go so far as to argue that utility from nonmarket sources should be considered when determining a taxpayer’s tax liability. Many tax theorists argue for the inclusion in the tax base of items such as fringe benefits and imputed rent, but those items are merely market goods that some people are able to acquire without entering the market. For each person receiving a nontaxable fringe benefit there is someone who has to purchase the same item on the market, and for each person receiving imputed rent there is a renter who pays income tax on his housing expenses. A tax on the utility received from the holding of wealth differs from a tax on fringe benefits or imputed rent, because it is a tax on utility that cannot be acquired on the market. Such a tax would

\textsuperscript{99} A portion of the burden of double taxation probably will fall on borrowers. See \textit{infra} Part V. Thus, an income tax will reach the utility that borrowers receive from their borrowing. It will not, however, reach the utility that borrowers receive from their ability to consume whenever they desire, because such utility is received regardless of whether borrowing actually occurs.

\textsuperscript{100} It has been argued that there should not be a tax on a type of utility unless the tax can be imposed on all possible sources of the utility. See Klein, \textit{supra} note 15, at 467-69. On this view, an income tax should not be used to reach utility from power and the ability to consume, because it would reach only one source of that utility. Warren, however, argues that one can validly tax the benefits of wealth even though similar benefits are untaxed when received from sources other than wealth. He draws a distinction between utility from persons (for example, the power of a politician) and from things (utility from wealth), and he argues that it is appropriate to tax the latter even when the former escapes tax. See Warren, \textit{Fairness}, \textit{supra} note 4, at 1123.

\textsuperscript{101} Also unrelated to the issue of horizontal equity is the argument that utility is highly correlated with wealth, and thus it must be taxed if the wealthy are not to escape their fair share of taxes. This argument is merely an argument for a more progressive tax system. If the wealthy are escaping their fair share of taxes, tax rates should be made more progressive.
be similar to a tax on the value of leisure, or a tax imposed on both the donor and donee of a gift in order to reach the utility that both receive.102

The issue of the desirability of a tax on utility received from nonmarket sources is beyond the scope of this article.103 However, the position that is taken on that issue should determine whether utility from unconsumed wealth is relevant to the double taxation issue. If it is generally believed that a tax system should not attempt to reach the utility received from nonmarket consumption, it would seem to follow that the utility received from unconsumed wealth is irrelevant to tax liability, and thus to the double taxation issue. In contrast, if one takes the position that utility from unconsumed wealth is relevant to tax liability, then it would seem to follow that utility from other nonmarket sources also is relevant to tax liability.104

To summarize, savers probably receive utility from unconsumed wealth. Such utility will be relevant to the fairness of double taxation if utility from nonmarket sources is thought to be relevant to tax policy. If such utility is thought to be relevant, a wage tax will be horizontally equitable, and both income and consumption taxes will be horizontally inequitable.105 A consumption tax will be less horizontally inequitable than an income tax unless substantial utility is received from unconsumed wealth.

C. Disutility From Work

The final issue that will be investigated in this part of the article is the fairness of double taxation when disutility is received from work. Consider a saver and a nonsaver, each who receive the same utility from a given amount of consumption and incur the same disutility from a given amount of work.106 However, due to the disutility of work, $2 of wage income gives the same utility as $1 of interest income. Accordingly, a nonsaver with $200 of wage income and a saver with $100 of interest income are equally situated in a taxfree world. In other words, $100 of the nonsaver's income merely compensates him for the disutility of work. Only the remaining $100 gives him positive utility.

102. See Blueprints, supra note 19, at 36-38, 41. Only the donee of a gift receives utility from market consumption. The donor's utility comes from the satisfaction of giving the gift. If utility from nonmarket consumption is to be untaxed, there should be a tax only upon the utility of the donor. Such a tax could be achieved by imposing a tax only on the donor (reducing the size of his gift), or only on the donee (reducing the portion of the gift he could spend on consumption). In fact, however, even a tax on only the utility of the donee would be likely to reduce the utility of the donor. The donor's utility doubtless depends on the utility the donee receives from the gift, so the greater the tax on the donee's utility, the less the utility the donor receives from the gift.

103. Warren takes the view that the tax system could logically tax utility from some nonmarket sources while letting utility from other nonmarket sources go untaxed. See supra note 100.

104. For the view that there should be a tax on both donors and donees, see H. Simons, Personal Income Taxation 134-40 (1938).

105. For a similar conclusion, see Brennan & Nellor, Wealth, Consumption and Tax Neutrality, 35 Nat'l Tax J. 427, 435 (1982).

106. It will be assumed that utility is received only from consumption, not also from the holding of wealth.
Horizontal equity requires that the equally situated saver and nonsaver bear equal tax burdens, where tax burdens are measured in foregone utility. However, neither a consumption tax nor a wage tax will achieve horizontal equity. For example, a 20% wage or consumption tax will cause the saver’s income to fall by $20 to $80, and the saver will receive utility from his entire $80 of aftertax income. The same tax will cause the nonsaver’s income to fall by $40 to $160. The disutility of work is the same as before, so $100 of the nonsaver’s aftertax income still compensates him for that disutility. Thus, he is receiving utility from only $60 of his income. Because the saver and the nonsaver receive equal utilities from a given amount of consumption, the wage or consumption tax has caused the foregone utility (the tax burden) of the nonsaver to be twice that of the saver. Accordingly, the wage and consumption taxes are horizontally inequitable.\textsuperscript{107}

The equally situated saver and nonsaver will bear equal tax burdens only if the effective tax rate on interest income is twice the tax rate on wage income. An income tax comes close to imposing such a tax rate. At a 20% nominal tax rate, for example, an income tax imposes a 20% tax on the nonsaver and a 36% effective tax rate on the saver’s interest income. Such rates correspond to a $40 tax on the nonsaver’s $200 of income, and to a $36 tax on the saver’s $100 of income. Consequently, the double tax imposed by the income tax nearly achieves horizontal equity, since the saver and the nonsaver face essentially equal reductions in their consumption. The double taxation of savings thus is fair.

This analysis assumes, however, that utility from wage income is half of the utility from interest income. Assume, instead, that utility from wage income is three-fourths of that from interest income.\textsuperscript{108} In that case,

\textsuperscript{107} It should be noted that savers have a form of disutility similar to the disutility of work. Savers are able to earn interest income only because they are willing to postpone their consumption until the future. However, present consumption generally gives more utility than the same amount of future consumption. Thus, it is likely that a portion of the saver’s interest income merely compensates him for the utility he loses when he postpones his consumption. For this reason, a saver may receive no more utility from a given amount of interest income than a nonsaver receives from the same amount of wage income.

The saver’s loss of utility (or disutility) is significantly different, however, from the disutility of work. An example will illustrate this. Consider a saver and a nonsaver, each with a first year wage income of $1,000. The saver has a second year interest income of $200, but half of that merely compensates him for the disutility caused by the postponement of $1,000 of consumption until the second year. The nonsaver has a second year wage income of $200, but half of that merely compensates him for the disutility of work. A 20% wage or consumption tax will cause the second year incomes of both the saver and the nonsaver to fall to $160. One hundred dollars of the saver’s aftertax income will compensate him for the disutility of work, so he will receive utility from only $60 of his income. In contrast, the saver still receives disutility from the postponement of consumption, but now only $800 of consumption is postponed. Thus, his disutility has decreased, and so has the portion of his interest income that compensates him for his disutility. For example, if now only $90 of interest income is needed to compensate him for his disutility, he will receive utility from $70 of income. The nonsaver receives utility from only $60 of income, so the saver still has a greater utility than the nonsaver. Consequently, the disutility from the postponement of consumption does not affect the conclusion that the saver should face a higher effective tax rate than the nonsaver.

\textsuperscript{108} In other words, disutility from work is somewhat less than in the above example.
the nonsaver receives the same net utility from his $200 of wage income as the saver receives from $150 of interest income. A 20% wage, consumption, or income tax still will reduce the nonsaver’s consumption by $40. Now, however, the wage or consumption tax will reduce the saver’s consumption by $30, which is $10 short of the $40 reduction in the nonsaver’s consumption. The income tax (at its 36% effective tax rate) will reduce the saver’s consumption by $54, which is $14 more than the $40 reduction in the nonsaver’s consumption. The income tax now is even more horizontally inequitable than the wage or consumption tax. It may be concluded that the fairness of double taxation will depend upon the extent of the disutility received from working. The greater that disutility, the greater the chance that double taxation is fair.

Of course, this conclusion is based on the assumption that the disutility incurred from working is relevant to the fairness issue. It was argued above that utility from wealth might not be relevant to the tax system because such utility is from a nonmarket source. Disutility from work, however, is inseparable from market consumption. Market consumption can be viewed as a two step process, with the first step involving the receipt of income and the second step involving its expenditure. Disutility from the first step is the counterpart to utility from the second step. The two steps taken together determine the utility from consumption, so it could be argued that both steps have equal relevance to the fairness issue.

To summarize, we have considered the fairness of double taxation under three different assumptions. The first assumption was that utility is received solely from consumption. Under this assumption, the wage and consumption taxes are horizontally equitable, and the income tax is horizontally inequitable. This is so even if savers receive a greater utility from a given wage income than do nonsavers. The second assumption was that utility is received both from consumption and from the holding of wealth, and that both types of utility are relevant to tax liability. Under this assumption, the wage tax will be horizontally equitable, while both the income and consumption taxes will be horizontally inequitable. The consumption tax will be less inequitable than the income tax unless a substantial amount of utility is received from the holding of wealth. The third assumption was that disutility is received from work, and that this disutility is relevant to tax liability. Under this assumption, an income tax can be more horizontally equitable than either a wage or consumption tax. Thus, the double taxation of savings can be fair.

109. See supra text accompanying notes 102-04 for the argument that utility from the holding of wealth may not be relevant to tax liability.

110. It can be argued that no distinction should be drawn between different sources of income. See Andrews, Personal Deductions in an Ideal Income Tax, 86 Harv. L. Rev. 309, 375-80 (1972) (hereinafter cited as Andrews, Deductions). If such an argument is valid, disutility would be irrelevant since disutility necessarily depends on the source of income.
IV. THE ROLE OF UTILITY AND OTHER ISSUES

All of the theories of double taxation presented thus far have focused on the utilities of savers and nonsavers. Underlying those theories was the implicit assumption that utility is the correct measure of fairness. This part of the article questions that assumption. Section A presents the argument that utility is irrelevant to the fairness issue. Section B shows that double taxation is unfair when money rather than utility is used as the measure of horizontal equity. Section C discusses the idea that tax liability should be based on ability to pay. Section D considers the fairness of the wage and consumption taxes when tax rates are graduated rather than flat.

A. Is Utility Relevant to the Fairness Issue?

It is often taken for granted that utility is the correct measure of the fairness of double taxation.\(^{111}\) It can be plausibly argued, however, that utility is irrelevant to the fairness issue. After all, utility is seldom thought relevant to the fairness of taxes on noninterest income, so it is not clear why it should be relevant to the fairness of a tax on interest income.

The view that utility has little relevance to the fairness of taxes on noninterest income is illustrated by a debate between William Andrews and Mark Kelman. Andrews and Kelman were concerned with whether income that is spent on medical care should escape tax. Andrews argued that such income should escape tax because a person who incurs medical expenses is no better off than a person who incurs no medical expenses but has a correspondingly lower income.\(^{112}\) Kelman disagreed, and argued that income spent on medical care should be taxed the same as any other income.\(^{113}\)

A full exposition of the Andrews and Kelman positions is unnecessary here. It need only be noted that Andrews and Kelman disagree over whether utility is relevant to tax liability when income is spent in an essentially involuntary manner. There is nothing in their articles to suggest that either believes that utility is relevant to tax liability when taxpayers' own preferences determine their consumption patterns.\(^{114}\) Thus, in the case of voluntary consumption, both would apparently let tax liability be determined solely by the level of monetary income.

In the absence of a plausible argument that utility is relevant to the fairness of a tax on interest income, none of the various theories described above have much relevance to the fairness of double taxation. Instead, only monetary income would be relevant to the fairness issue.

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\(^{111}\) See, e.g., Warren, *Fairness*, supra note 4, at 1081, 1097-98; Kelman, *Fairness*, supra note 5.

\(^{112}\) Andrews, *Deductions*, supra note 110, at 335-37.


\(^{114}\) For the argument that generalized judgments about the utility derived from market consumption are relevant to tax liability, see Kelman, *Fairness*, supra note 5, at 667-69.
B. The Appropriate Tax Treatment of Interest

When money rather than utility is used as the measure of horizontal equity, horizontal equity will be achieved when taxpayers with equal monetary incomes face equal monetary tax burdens.\textsuperscript{115} Such equal monetary tax burdens will be achieved by either a wage tax or a consumption tax, because either tax will cause the same proportionate reduction in wage income as in interest income. A consumption tax does this by directly taxing the amount of income available to be spent on consumption.\textsuperscript{116} A wage tax does this by directly taxing wage income and by indirectly taxing interest income. In contrast, an income tax does not achieve equal monetary tax burdens, because it combines a tax on interest with a wage tax, causing savers to be taxed more heavily than under the wage tax. Accordingly, when money is the measure of horizontal equity, the income tax is horizontally inequitable and double taxation is unfair.\textsuperscript{117}

C. Ability to Pay

The doctrine of ability to pay is normally used to justify progressive taxation, or tax rates that increase with income.\textsuperscript{118} However, that doctrine also could be applied to horizontal equity. If so, horizontal equity would be achieved when taxpayers with equal abilities to pay face equal tax burdens. However, taxpayers with equal abilities to pay are just those who would have equal incomes in a taxfree world,\textsuperscript{119} so the doctrine of ability to pay does not cause any change in the definition of horizontal equity. Thus, under the doctrine of ability to pay, horizontal equity will be achieved by both the wage and the consumption taxes but not by an income tax.\textsuperscript{120}

\textsuperscript{115} Equal monetary tax burdens will be achieved when equally situated taxpayers face equal effective tax rates.

\textsuperscript{116} The consumption tax is imposed at a later time than the wage tax. This has potential implications for fairness, because the consumption tax gives the saver access to funds which would not be available under a wage tax. If utility is the measure of fairness, those funds will be relevant to the extent that they increase the saver's utility. Such increased utility, however, would be due to utility received from wealth, which already has been considered above. See supra text accompanying notes 89-104. In contrast, if money is the measure of fairness, the additional funds held by the saver would appear to be irrelevant, because any benefit that they represent would not affect fairness.

\textsuperscript{117} In other words, an income tax is not the appropriate tax if income is the appropriate tax base. A consumption tax or wage tax will be the appropriate tax on income. This is not the traditional view of tax theorists. See, e.g., Musgrave, In Defense of an Income Concept, 81 Harv. L. Rev. 44, 46 (1967); Klein, supra note 15, at 476.


\textsuperscript{119} The taxfree world must be used as the standard for determining which taxpayers are equally situated; otherwise, ability to pay would be determined by reference to a world in which a tax already was imposed. For a general discussion of this issue, see supra text accompanying notes 15-18.

\textsuperscript{120} "By avoiding double taxation, [a consumption tax] squares with ability to pay." Fisher, Double Taxation of Savings, 29 Am. Econ. Rev. 16 (1939).
D. Progressive Tax Rates

The discussion in both this and the other parts of the article has assumed that the tax rate will vary neither over time nor with the level of income. When this assumption is relaxed, the fairness of the wage tax will decrease. As we have seen, a wage tax imposes an indirect tax on wage income because it reduces the income that is saved in one year and thus the interest that is received in another year. The wage tax's effective tax rate on interest income therefore is determined in the year in which the wage income is saved, rather than in the year in which the interest was received. This presents two possible sources of unfairness. First, tax rates may have changed by the year the interest is received. Second, even if tax rates are constant over time, the saver may have moved into a different tax bracket due to progressive tax rates. In either case, the effective tax rate on the saver's interest income will differ from the correct tax rate. Accordingly, the wage tax would lack horizontal equity.

In general, a wage tax's effective tax rate on interest income will be unfairly low because people tend to be pushed into higher marginal tax brackets as their incomes increase over time. A wage tax's effective tax rate could be so low that the wage tax would be even more unfair than an income tax. A wage tax will, however, be fairer than an income tax when tax rates vary randomly over time. In that case, the wage tax will be just as likely to tax savers too heavily (because the tax rate would have been higher in previous years) as to tax them too lightly. On average, the wage tax would impose just about the right effective tax rate on savers. In contrast, in some years the income tax might be fairer than the wage tax, but on average it would impose an unfairly high effective tax rate on savers.

The fairness of a consumption tax will not be affected by tax rates which change over time or which are progressive. Since a consumption tax is imposed only at the time of consumption, it always will impose the same effective tax rate upon interest income as upon wage income.

V. DISCRIMINATION AGAINST BORROWERS

Thus far, the article has assumed that the burden of double taxation falls entirely on savers. This assumption is unrealistic, because a direct tax on interest will cause the interest rate to be higher than it would be in a taxfree world. It is that higher interest rate, not the interest rate...
in a taxfree world, on which the tax on interest is imposed. Consequently, savers will face a higher aftertax interest rate, and a lower effective tax rate, than the article has suggested to this point. Accordingly, the income tax will be less unfair to savers than suggested to this point. However, any benefit to savers would be offset by a detriment to borrowers, because borrowers will face a higher interest rate than in a taxfree world. The burden of double taxation thus will be shared by borrowers and savers.

The reason that a direct tax on interest drives up the interest rate is that such a tax reduces the attractiveness of saving and thus the amount that people are willing to save. The less that people save, the less money that is available to be borrowed. The demand for borrowed funds is like the demand for anything else—the less that is available, the greater the price. In the case of borrowed funds, the price is the interest rate. Thus, the reduced supply of savings will drive up the interest rate.  

A numerical example will illustrate how the higher interest rate will shift the burden of double taxation from savers to borrowers. Imagine that a 50% direct tax on interest would cause the pretax interest rate facing borrowers and savers to rise from 10% to 14%. The 50% tax rate would cause the aftertax interest rate of the savers to be half of 14%, or 7%. Since the aftertax interest rate would be 5% if the pretax interest rate still were 10%, the double taxation of savings is not as unfair to savers as it might otherwise appear to be.

However, a portion of the burden of double taxation has been shifted to borrowers because borrowers now face a 14% rather than a 10% interest rate. Although borrowers do not directly pay a tax, they bear a portion of the burden of the double tax, in this case an additional interest cost of 4%. The total burden of double taxation is even greater than if only savers bore the burden, because the 4% cost to borrowers is greater than the 2% benefit to savers (the increase in their aftertax interest rate from 5% to 7%).

The shift of the burden of the double tax from savers to borrowers will not improve the overall fairness of double taxation. While double taxation might not be unfair to savers, there is little doubt that it is unfair to borrowers. We have seen that there are two circumstances under which double taxation could be fair to savers. First, it could be fair if borrowers would not face a higher interest rate under either a consumption tax or a wage tax, because neither of those taxes reduces the aftertax interest rate facing savers. Thus, neither of those taxes will cause a reduction in the level of savings, and neither will drive up the interest rate facing borrowers.

The assumption that borrowers and savers face the same interest rate ignores the cost of financial intermediaries such as banks. However, a more realistic assumption would not change the analysis.

123. Cook, supra note 17, at 100.
124. The assumption that borrowers and savers face the same interest rate ignores the cost of financial intermediaries such as banks. However, a more realistic assumption would not change the analysis.
126. See Andrews, Reply, supra note 19, at 948-49 n.3.
127. It is conceivable that the tax on interest could cause the interest rate facing borrowers to rise all the way to 20%, with the aftertax interest rate facing savers remaining at 10%. If so, the tax on interest would have been shifted entirely to borrowers. In addition, borrowers may be able to deduct their interest payments. If so, their burden will be reduced somewhat.
Disutility from the earning of income is thought to be relevant to fairness. Disutility from the earning of income will have no application in the case of borrowers, however, since the act of borrowing does not involve the earning of any income. Second, double taxation might be less unfair than a consumption tax if utility is received from wealth. Borrowers as well as savers could receive utility from wealth if the money received from borrowing is viewed as wealth, and if such "wealth" is not consumed (and thus is not taxed by the consumption tax). Assuming that borrowers receive substantial utility from this "wealth," it could be fairer to tax this utility with an income tax than to let it escape tax altogether under a consumption tax. It seems very unlikely, however, that people receive the same utility from borrowed money as from actual wealth.

It may be concluded that an income tax will be a fair tax only if its fairness to savers (if any) outweighs its clear unfairness to borrowers.

VI. CONCLUSION

This article has considered a number of approaches to the fairness issue. The first approach unsuccessfully attempted to compare the utilities of savers and nonsavers. The implicit assumption underlying this approach is that double taxation is fair if the utility of the saver exceeds that of the nonsaver, but is unfair if the utility of the saver equals that of the nonsaver.

In Part III we saw that this assumption is wrong. Instead, the fairness of double taxation is determined by the source of utility and by the relevance of disutility. If consumption is the only source of utility, double taxation will be unfair even if savers receive more utility than nonsavers from a given wage income. If wealth also is a source of utility, double taxation again will be unfair, but might not be as unfair as a consumption tax. Finally, if the disutility received from working is thought relevant to fairness, double taxation might be fair.

The analysis in Parts II and III is based on the implicit assumption that utility is relevant to the double taxation issue. It can be argued, however, that utility is irrelevant to the double taxation issue. If so, double taxation will be unfair.

Finally, a direct tax on interest will drive up the interest rate, shifting some of the burden of double taxation from savers to borrowers. This is unfair to borrowers. Thus, the overall fairness or unfairness of double taxation depends on whether its possible fairness to savers outweighs its clear unfairness to borrowers.

128. It would cease to be "wealth" if it were consumed.