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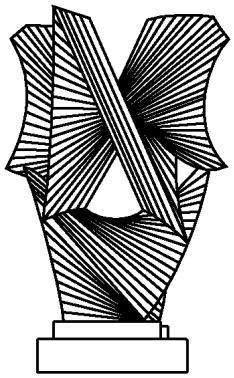

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Should the Tax Law Require Current Accrual of Interest on Derivative Financial Instruments?

David A. Weisbach[*]

December 7, 1999

One of the biggest questions on the table for the taxation of financial instruments is whether to expand the original issue discount, or OID, rules to financial instruments other than debt. Most financial instruments are taxed under the realization rule, while the OID rules for debt are designed to identify and tax interest on a current basis regardless of whether it is paid. Using modern financial theory, however, one can identify interest in any transaction in which one party gives money or something of value to another in return for some obligation to be performed in the future, not just debt. Arguably, the tax system should not let the tax on this interest be deferred until realization.

For example, options are currently taxed on a realization basis yet they have a clearly identifiable interest element because the option premium is paid in advance of performance. The question is whether the Treasury Department should require taxpayers to accrue interest on options under a method similar to the method provided in the OID rules. The government has a project to address this issue, and my understanding is that the contemplated answer that the OID rules should be expanded to some derivative instruments.[1]

The purpose of this paper is to call into question the potential expansion of the OID rules to derivative financial instruments. Expansion of the OID rules is not inevitable and probably not right. There are three basic steps to the argument.

First, the OID rules are fundamentally inconsistent with the realization rule. Suppose a taxpayer borrows $100 today and agrees to repay the lender $121 in two years. Under current

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[1]Many commentators have called for expansion of the OID rules in exactly this manner. See, for example, Reed Shuldiner, A General Approach to the Taxation of Financial Instruments, 71 Tex. L. Rev. 243 (1992); and Robert Scarborough, Payments in Advance of Performance, 69 Taxes 798 (1991). See also, David Hariton, The Accrual of Interest On Derivative Investments: Where Do We Go From Here?, 74 Taxes 1011 (1996) (considering the same question, but concluding that the OID rules should not be expanded).

law, the lender must include interest in the first year notwithstanding that nothing happens, there is no payment, and there is no right to a payment, in the first year. Under the realization doctrine, this appreciation would only be taxed when there is a payment, sale, or exchange. While one can attempt to reconcile the two, a quick glance at financial theory shows that the attempts fail.

Second, the realization doctrine is not going away. Equity investments such as stock are likely to remain on realization for the indefinite future. Or more narrowly, the interest element in stock will not be taxed under an OID-like regime anytime soon. Any policy decision regarding expansion of the OID rules must face this fact. Expansion of the OID rules merely moves the inconsistency with the realization rule from one place to another. Expanding the OID rules cannot solve the underlying problem of inconsistency in the treatment of financial instruments. Moreover, the realization doctrine measures interest income, just in a different way than the OID rules do. In fact, the OID rules often collect less tax on interest income than would the realization rules. Expanding the OID rules is a question of changing the boundary between two different methods of taxing interest income, not of taxing interest income or not.

Third, the boundary of the OID regime must be drawn with explicit reference to and understanding of this basic inconsistency. The usual tools, horizontal equity, Haig-Simons income, clear reflection, and the logic internal to the OID rules, do not apply in this context. Instead, we need a theory for drawing lines between inconsistent tax rules. On a rough basis, the goal should be to minimize the economic distortions caused by the inconsistency and this paper discusses how this can be done.[2] Applying this theory to financial instruments, there is a good case to be made that expanding the OID rules will exacerbate rather than reduce the distortions caused by the inconsistency.

The question addressed here is important not only because the taxation of a wide variety of

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[2]This theory is developed at length in David A. Weisbach, Line Drawing, Doctrine, and Efficiency in the Tax Law, 84 Cornell Law Rev. 1627 (1999), and David A. Weisbach, An Efficiency Analysis of Line Drawing in the Tax Law, forthcoming, 29 J. Legal Studies (2000).

financial instruments is at stake. The question is important because the basic pattern examined here, drawing a line between inconsistent rules, is the daily fare of tax policymaking. The government, whether Congress, the Treasury, or the courts, must grapple daily with the distinctions between debt and equity, corporations and partnership, independent contracts and employees, tax avoidance and tax evasion, dividend and return of capital, and thousands of other distinctions. The basic approach to the OID rules taken here applies in all of these contexts. The study of the OID rules is a microcosm of tax policy.

Part I gives background on the interest accrual requirement. While most readers are generally familiar with this, it is important to remember exactly what is at stake. For example, the interest accrual requirement is only one of many ways to capture the interest element of investments. Part II shows that the current accrual requirement is not "right" in any important sense. The rationales for the requirement are not convincing. Moreover, the current accrual requirement costs the government considerable revenue and implementation is extremely complex. Instead of viewing the OID rules as "right," which implies that they should be extended to other financial instruments, we should view the OID rules as one choice among many for taxing interest income. The question is where this method should be applied, if at all, and if it is, how should we resolve the inconsistency between the various methods of taxing interest income. Part III gives a general theory for drawing lines between inconsistent tax rules. Part IV considers the possibility of completely repealing the OID rules and concludes that the OID rules are appropriate for fixed payment debt instruments. Part V considers appropriate places to draw the line between the OID world and the realization world. Part VI provides a conclusion.

I. Background – What is at Stake?

Consider a debt instrument that issues for $1,000, pays current interest of 10 percent, and returns the $1,000 at maturity five years from the issue date. The $100 of interest that accrues each year is paid in cash. Said another way, a borrower borrows $1,000 from a lender and agrees to pay 10 percent interest ($100) each year and return the $1,000 principal in five years. The tax

system generally allows the issuer (the borrower) to deduct and requires the holder (the lender) to include the $100 of interest income as paid.

Suppose the issuer does not pay any interest during the term of the debt instrument. Instead, the issuer keeps the coupons and makes a lump sum payment at maturity. (This bond is known as a zero coupon bond.) The payment at maturity includes a return of the principal, the interest coupons that were not paid earlier, and compensation to the holder for the use of the coupons during the term of the instrument. If the yield on the instrument is 10 percent, the same as the yield on the coupon bond, the payment at maturity will be $1610.51 (calculated assuming a one year accrual period). This is the same amount the investor would have if interest were paid each year and reinvested at a 10 percent yield.

Current law requires the issuer and holder to treat the zero coupon bond as if interest were paid currently and relent by the holder to the issuer at the original yield. The issuer may claim deductions and the holder must include in income the unpaid interest income. The underlying logic is that the issuer has had use of the holder's money for a time period and, therefore, has incurred an obligation to repay the lender for the use of the money during that time period.

The mechanism for these inclusions and deductions is both sophisticated and complex. Stated interest that is paid at least annually is generally included and deducted when paid. Unstated interest or "discount" is subject to the "as if paid and reinvested rule." Discount is defined, roughly, as any difference between (i) the total amount ultimately repaid on the instrument (other than stated interest that is paid at least annually) and (ii) the amount borrowed (the issue price of the instrument). Thus, the zero coupon bond described above has $610.51 of discount ($1,610.51, the amount repaid, less $1,000, the amount borrowed and no currently paid stated interest) and the coupon bond described above has zero discount ($1,500, the amount paid, less $500, the stated interest, less $1,000, the amount borrowed).

Discount must be accrued based on the yield of the instrument calculated assuming the compounding of interest on the accrued but unpaid interest. This produces uneven dollar amounts

of accruals because the amount invested by the lender changes in each accrual period due to reinvestment. For example, in the zero coupon bond described above, the initial one year accrual period produces $100 of interest calculated based the yield of 10 percent and the issue price of $1,000. The $100 is treated as paid and reinvested, so the new issue price (called the adjusted issue price) or amount borrowed is $1,100. In the next accrual period, a 10 percent return on the amount borrowed is $110, which is, once again, treated as paid and reinvested (creating an adjusted issue price or amount borrowed of $1210). This continues, producing a pattern of increasing interest income and deductions over the term of the debt instrument.

The rules apply only to discount on original issuance and not to discount created by secondary market purchases (for example because of credit or interest rate changes). Thus, the rules are known as the original issue discount or OID rules.

The OID rules have wide acceptance. They were developed over a twenty year period with a broad consensus of academics, the tax bar, and taxpayers. The general view is that they are complex but, unfortunately, necessary.

Nevertheless, the interest income captured by the OID rules can be reflected in the tax base through other mechanisms. The OID rules provide the issuer with a deduction and the holder with an equal and offsetting inclusion of interest that is not yet paid. Denying the deduction by the issuer and not requiring the inclusion by the holder leaves the Treasury neutral because the deduction and inclusion are exactly offsetting. For example, in the zero coupon bond described above, the issuer was allowed a deduction of $100, reducing the issuer's tax by $100 multiplied by the issuer's marginal tax rate. Assuming a 40 percent rate, the issuer's tax is reduced by $40. The holder was required to include $100, increasing the holder's tax by $100 multiplied by the holder's marginal tax rate. Assuming a 40 percent rate, the holder's tax is increased by $40. If the issuer and holder have the same marginal tax rate, the Treasury is indifferent between the OID rules and denying the deduction and inclusion until cash is paid (the cash method or realization method).

Of course, the holder and the issuer will have the same marginal rate only by happenstance.

Current law has a system of progressive rates for individuals, corporate rates are different than individual rates, and many foreigners, institutional investors (such as pension funds) or retirement accounts have a zero marginal tax rate.

If the holder and issuer are in different tax brackets, the Treasury will not be indifferent between the cash method and the OID rules. Consider the case where the issuer is tax-exempt and the holder is subject to tax. In the zero coupon bond example, the cash method, as compared to the OID rules, reduces the holder's income by $100 in the first year. In the fifth year, when the interest is paid, the cash method increases the holder's income by both the $100 and any interest earned on the $100. Thus, the cash method for the holder is like a method of tax that allows a deduction for an investment (the $100 of interest earned and reinvested in the instrument) and a subsequent inclusion when the investment is ultimately withdrawn.

As is well known, the effect of allowing an immediate deduction for an investment is to exclude from tax the yield on the investment.[3] The investment, in this case, is the interest that is reinvested with the borrower and the yield on the investment is the interest on the interest. In the zero coupon bond example, the total interest on the interest is $110.51. (If the interest were paid currently and not reinvested in the instrument the interest would be $500. Instead, the interest is $610.51. The difference is $110.51) Thus, if the issuer is not subject to tax and the holder is, the effect of the cash method is to exclude $110.51 from the tax base (which causes the Treasury to lose that amount multiplied by the holder's marginal rate).

The opposite is true if the holder is tax-exempt and the issuer is taxable. The cash method, as opposed to OID, includes an extra $110.51 in the tax base. If the holder and issuer are both taxable but have different marginal rates, the effect is somewhere in between. A simple way to state this is that the difference between the cash method and the OID rules is the interest on the interest is taxed at the holder's marginal rate under the OID rules and at the issuer's marginal rate

[3]See Daniel I. Halperin, interest in Disguise: Taxing the "Time Value of Money," 95 Yale, L.J. 506 (1986) for an explanation of this phenomenon.

under the cash method. The location of the tax is shifted.

If the issuer and holder have the same marginal rate, the tax paid is the same under the cash and OID methods. Gross (pre-tax) interest rates, however, may be different under the two methods. Under OID, the holder writes a check to the government and the issuer, effectively, receives a check from the government for the same amount. The interest rate may reflect these transfers (for example, completing the circle by transferring the money back to the holder through a higher rate). Under the cash method, with respect to the interest on the interest, the holder keeps the money and the issuer does not receive it from the government. The interest rate may reflect the lack of transfers (for example, it may be lower than under an OID regime). The issuer and holder generally will be indifferent between the methods of taxation because they can arrange their affairs so that the same amount of money ends up in the same pockets. Depending on market conditions, they may not do so (i.e., the tax is not fully capitalized into the price of the asset).

If the issuer and holder have different marginal rates, the tax collected is not the same so the issuer and holder cannot adjust the interest rate to be indifferent between the methods. Nevertheless, a shift from OID to cash may cause some adjustments in the interest rate to take into account the difference in tax regimes.

If rates are determined by the market (rather than individually negotiated and dependent on the tax brackets of the borrower and lender), the marginal tax rates of the marginal buyer and supplier of debt will determine how much rates adjust. The average tax rates of the market participants and the adjustments to interest rates caused by the rules will determine whether the Treasury and individuals are indifferent to cash as compared to OID.

Current law uses both the realization method and the OID method to tax interest income. Debt instruments, including debt instruments that contain contingent payments, are taxed under the OID method. Most stock is taxed under the realization method. Options are taxed under the realization. And derivative instruments that fall between ordinary options and debt are taxed under the realization method. If stock is to remain on the realization method and debt under the OID

method, the question is the appropriate treatment of the instruments in the middle.

II. The OID Rules are not "Right"

If, as noted above, there is more than one way to tax interest income, we need a justification for picking one. The usual understanding is that OID is the "right" way to capture interest income. The implication is that where possible, the OID approach should be extended. This section shows that the usual arguments for the OID rules are incorrect. The current accrual approach of the OID rules should be viewed as a controversial, or at least contestable, policy judgment that should not be expanded to other financial instruments without considerable study.

There are three related rationales for the OID rules. First, as noted above, the borrower (issuer) has had use of the lender's (holder's) money for a time period and, therefore, has incurred an obligation to repay the lender for the use of the money during that time period. Thus, in an economic sense, the holder is better off each period and the issuer is worse off each period by the amount of the accrued but unpaid interest. The OID rules provide a reasonably accurate measure of this change in each taxpayer's income. Thus, the OID rules are based on an appeal to Haig-Simons notions of income.[4]

Second, the accrual of discount is equivalent to the issuer paying interest and the holder relending the money to the borrower at the original yield. Horizontal equity is generally defined as treating equals equally. A taxpayer with a $1,000 discount bond with a yield of 10 percent and a taxpayer with a $1,000 coupon paying bond with a yield of 10 percent and who reinvests the coupons are economically similar. With respect to a zero coupon bond, "[a]part from taxes, the parties are in the same position they would be in if market interest were charged each year and there were an additional loan . . . from the lender to the borrower. . ."[5] Thus, horizontal equity

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[4]See Reed Shuldiner, A General Approach to the Taxation of Financial Instruments, 71 Tex. L. Rev. 243 (1992) for a statement of this position and an expansion of this logic to most derivative financial instruments.

[5]See Daniel Halperin, Interest in Disguise, supra, note 3.

demands that they be treated similarly because their economic position is similar.

Third, the OID rules arguably are the most effective method of limiting tax motivated behavior. Tax motivated behavior causes inefficiencies, revenue loss, tax planning costs, and unfairness. For example, under- or over-taxation of a transaction may cause capital to flow differently than it would under a more accurate tax. The argument that OID limits tax motivated behavior is similar to the appeals to the ideal tax base and to horizontal equity: by measuring income accurately and treating equivalent transactions the similarly, the OID rules prevent taxpayers from restructuring the transactions to get different treatment. Mismeasurements of income are the targets of tax motivated behavior and the OID rules, by measuring income accurately reduce this behavior.

This section examines these justifications in order. In addition, this section argues that the OID rules are immensely complex and lose revenue. The complexity and revenue loss impose significant costs on the tax system.

A. Horizontal equity

The horizontal equity argument for OID is that we must equalize the case where interest is paid currently and reinvested and the case where it is relent as part of the terms of the instrument. The two cases are economically equivalent and, therefore, should be taxed equivalently.

Other transactions, however, are also equivalent to a zero coupon bond. Under horizontal equity, the zero coupon bond must be taxed the same as these assets. But these assets are not taxed like coupon debt. Therefore, horizontal equity demands that zero coupon debt be taxed the same as two different transactions. Horizontal equity cannot choose between the two.

Consider for example, stock of a corporation. A holder of appreciated stock is in a similar situation to a holder of a zero coupon bond. Both have built-in appreciation. Both could realize their appreciation by a payment from the issuer and a reinvestment. For the bond, the payment is a payment of interest. For the stock, the payment is a dividend. Alternatively, both taxpayers could sell their appreciated assets and repurchase them immediately thereafter.

Moreover, during the term of a zero coupon bond, the holder has no more right to payment from the issuer than the holder of stock has a right to payment from the issuer of the stock. The holder of the bond cannot sue the issuer any more than the holder of the stock can sue the issuer. (Debt holder rights may vary from stock holder rights when a payment is due but the OID rules govern when the payment is not due.) And a zero coupon bond may be riskier to the holder than many stocks because the value of a zero coupon bond can fluctuate wildly with interest rates.

If zero coupon bonds are just like stock, under horizontal equity, they must be taxed like stock. Therefore, appreciation in a zero coupon bond should not be taxed until it is realized, which is when cash is received or the instrument is sold. But zero coupon bonds are also just like coupon bonds with reinvestment, so they must be taxed like those. Horizontal equity cannot choose between the two inconsistent treatments. Either way, it is violated and there is no principle for ranking violations. The horizontal equity argument is incoherent.

Those making the horizontal equity argument recognize this problem and distinguish stock and other risky assets from debt on the basis that debt has a fixed return and other assets do not. One may calculate on the OID accruals the day the debt instrument issued. The realization principle itself can be read as allowing current accrual of fixed future returns. This is not possible with stock. Thus, debt and other assets are not equivalent and the horizontal equity argument is saved.

Of course, this distinction fails completely when one is considering apply the OID rules to financial instruments that have contingent payments, which is what is on the table. Moreover, financial theory teaches us that there is no relevant difference between fixed and contingent returns, so even the base case fails.[6] The intuition is that one may combine positions with contingent returns in such a way that contingencies offset one another.

Although there are many examples, put-call parity is the simplest. If a taxpayer holds stock, purchases a put option on the stock, and writes a call option (with the same exercise date

[6]See, Alvin Warren, Financial Contract Innovation and Income Tax Policy, 107 Harv. L. Rev. 460 (1993) for a good explanation of these financial equivalences.

and strike price as the put option), regardless of the value of the stock on the exercise date (or the value of the options), one of the options will always be exercised and the stock will always be sold for the strike price. The return on the combination of the stock and options, all with contingent returns, is fixed, and, therefore, debt-like. In formulaic terms:

$$S + P - C = D$$

where S is stock, P is a put option, C is a call option, and D is debt. The minus sign indicates a sale. Thus, with basic financial instruments, one may create a fixed return but not be subject to the OID rules because the separate components are all contingent.

The terms may be rearranged so that:

$$S = D + C - P$$

Thus, taxpayers can create synthetic shares of stock by holding the right hand side of the equation. The synthetic stock, however, will have current inclusion of interest income because of the debt component while the actual share will not because of the current law distinction between fixed and contingent returns.

Financial engineers can create much more complicated arrangements with more complicated mathematics but with similar effects. The point remains the same. Any distinction between fixed and contingent returns on assets is undermined by modern financial theory.

Another way to understand this problem is as a slippery slope. Under current law, OID accrues on debt with fixed payments. Absent special rules OID does not accrue on debt instruments with contingent payments because of the perceived difference between fixed and contingent payments. For example, a debt instrument that issues for $1,000 and promises at maturity to return the $1,000 and an additional payment based on the increase if any in a stock index has a contingent payment at maturity. OID will not accrue on this instrument absent special rules. Taxpayers were quick to take advantage of this disparity. Such an instrument is marketed to investors who want a debt-like return and an investment in the stock index. If the holder or issuer does not want the contingency, it can easily be hedged, creating perfect equivalence with fixed

debt.

The ability to avoid the OID rules by structuring debt instruments with contingent payments made the rules effectively elective. Treasury noticed this and now we have regulations requiring accrual on debt instruments with contingent payments. Inconsistency remains, however, because debt instruments with contingent payments look much like options or prepaid purchase agreements, but the OID rules do not apply to options or similar contracts. For example, an instrument that sells for the current price of the stock of a corporation, say $100, and promises to return in five years, the then price of stock of the corporation (plus dividends, if any, and appropriate interest on the dividends) is probably not a debt instrument for tax purposes and, therefore, is not subject to the contingent payment debt regulations.

Treasury now has a regulation project to consider these instruments. But options and prepaid purchases look much like stock, or any other underlying investment. Consistency requires accrual of interest on all investments. Short of this, expanding the OID rules cannot create consistency. The OID rules are simply inconsistent with the realization rule.

To summarize, under current law, debt is taxed under the accrual method, stock under realization and there is a continuous line of instruments between them. Anywhere the line is drawn, we have a discontinuity. If we cannot distinguish between fixed and contingent returns (which we cannot), horizontal equity cannot be sustained as an argument for the OID rules. Horizontal equity cannot require equal treatment of only some equal assets. While the holder of a zero coupon bond is in the same position as the holder of a coupon bond who reinvests the coupon and should be taxed the same, the holder of the zero coupon bond is also in the same position as the holder of any appreciated asset. Horizontal equity cannot decide between the two.

B. Haig-Simons income

The second argument for the OID rules is that they reflect the Haig-Simons definition of income. There are three problems. First, as detailed in this section, the OID rules do not reflect Haig-Simons income. Second, other methods, such as the cash method, fully reflect interest in the

tax base, so there is a serious question whether Haig-Simons is a necessary piece of the puzzle. Finally, if other investments are not taxed on a Haig-Simons basis, taxing debt on that basis may be a mistake.

1. The OID Rules Do Not Reflect Haig-Simons Income

The Haig-Simons rationale for the OID rules is that each day a loan is outstanding creates an obligation to pay interest and, therefore, an increase in the wealth of the holder and a corresponding decrease in the wealth of the issuer. The OID rules, however, do not accurately reflect Haig-Simons income because they do not take into account changes in interest rates or credit quality during the life of the instrument. The income or deductions based on OID calculations may vary significantly from Haig-Simons income.

If interest rates change after a debt instrument with fixed payments is issued, the value of the debt instrument will vary inversely with the change in interest rates. For example, consider the zero coupon bond discussed in Section I above. The holder bought the bond for $1,000 and will receive $1610.51 in five years. The yield on the bond is 10 percent. If, in one year, market yields change to 6 percent, then the bond will be worth $1,275.67. The holder will have accrued $100 of interest income and have a basis in the bond of $1,100. The holder will have $175.67 of unrealized appreciation. If market yields changed to 16 percent instead of 6 percent, the bond would be worth only $889.47. The holder would have lost money but would be required to accrue $110 of interest, creating $210.53 of unrealized loss. No accrual at all would be closer to Haig-Simons income in this case. Longer term bonds will be even more volatile.

One may argue that the OID rules are a valiant attempt to get close to Haig-Simons income without requiring periodic valuation of debt instruments. The flaws given above are just nitpicking. But without further analysis, it is unclear whether the income tax, like horseshoes, has a prize for closest. Moving halfway to an ideal may not make the system better off because it may introduce additional distortions in the system that ultimately put us further away from the ideal.

For example, Professors Strnad and Gergen have shown that because of interest rate and

credit quality changes, holders of debt instruments may be able to trade their instruments to eliminate much of their OID inclusions.[7] In the above example, the holder would sell the bond when interest rates have gone up to realize the loss but hold the bond when interest rates have gone down to defer the unrealized gain. While holders reduce their OID inclusions through trading, issuers continue to deduct OID. Thus, the OID system may not reflect income--it may simply be a method of generating deductions for issuers.

Without the OID rules, the potential for tax trading by holders of debt instruments is substantially reduced. For example, the cash method might have fewer problems with trading. In the case of a zero coupon bond, basis would stay low, so holders could not often create losses by trading. If the cash method pushes taxpayers to shift to debt instruments with current interest payments, the instruments will be less volatile (because the reinvestment of the coupons is at current rates) reducing, but not eliminating trading opportunities. Issuers, however, may have trading opportunities under the cash method not available under the OID rules.

Only close factual analysis can determine whether this distortion is made better or worse by the OID rules. In any event, the potential for tax trading created by the OID rules may cause the OID rules to reflect income worse than other methods that are not as close to Haig-Simons income. Getting closer but not all the way to Haig-Simons may get us further from measuring income.

2. Haig-Simons may not be an Important Ideal for Interest Income Taxation

As noted above, the cash method fully captures interest income in the tax base but, as compared to accrual, moves the location of the taxation to the borrower from the lender. If the goal of the OID rules is to capture interest income in the tax base, they are not necessary. Many other methods of taxation achieve this. Therefore, a statement that the OID rules come close to Haig-Simons income is not an argument for the OID rules. It is only an argument for one of many

[7]See, Jeff Strnad, The Taxation of Bonds: The Tax Trading Dimension, 81 Virg. L. Rev. 47 (1995); Mark Gergen, The Effects of Price Volatility and Strategic Trading under Realization, Expected Return, and Retrospective Taxation, 49 Tax L. Rev. 209 (1994).

methods of taxing interest income.

3. The OID Rules Must be Considered in a Second Best Context.

Even if the OID rules could be justified as meeting Haig-Simons norms, they are implemented in a tax system in which other assets are not taxed under Haig-Simons notions. Taxing a single type of asset under Haig-Simons (or its close approximate) while leaving others under realization may not improve the tax system overall.

Realization defers the taxation of appreciation. The deferral reduces the effective tax rate on an asset because the tax is due in the future. Taxpayers could put less money in a bank account today to pay for the future tax and pocket the difference. Thus, if debt were taxed under a Haig-Simons system while similar non-debt assets are taxed under a realization system, nondebt assets will bear a lower marginal tax rate than debt. This may cause a shift to nondebt assets that would not occur absent taxation. Moreover, as detailed below, it means that simply borrowing and purchasing an asset creates an arbitrage. To eliminate this arbitrage, we end up with a host of unbelievably complicated rules.

Efficiency demands that tax interfere as little as possible with people's economic behavior. The benchmark is typically the allocation of goods and services that would occur in the absence of taxes and taxing all transactions at the same rate is thought to be the best method of achieving this. But taxing only one type of asset under Haig-Simons notion creates different tax rates on different assets. Therefore, taxing that asset under a Haig-Simons system and others under realization may be inefficient. It may be better for everything to be "wrong" equally than to have only one or two things "right."

C. Tax motivated transactions

The third justification for the OID rules is that they reduce tax motivated transactions. Tax motivated transactions cause a variety of problems for the tax system. To the extent transactions with tax planning are different than without, the tax planning produces economic distortions. Tax planning can also produce revenue loss and create unfairness between those who plan and those

who do not. And significant tax planning can cause demoralization because the rich and well-advised do not pay their fair share of the tax burden if they engage in significant tax planning.

Evaluating this argument is difficult in the abstract. The argument requires a competing system to be compared to the OID system. Competing systems will be considered below. This section merely notes that there are significant planning opportunities under the OID system.

The planning opportunities arise out of the inconsistencies and failures to reflect Haig-Simons income noted above. For example, holders may strategically trade debt instruments to reduce inclusions. Or taxpayers may plan into or out of the OID rules depending on whether OID produces a higher or lower tax than realization. The illustration above of the difficulty of distinguishing between fixed and contingent returns shows how easy this planning is. For example, prior to the issuance of the regulations requiring OID accruals on debt instruments with contingent payments, taxpayers could elect out of OID by structuring contingencies into debt instruments. With the regulations, taxpayers can structure nondebt instruments with similar cash flows. This was illustrated above.

Alternatively, taxpayers can buy or sell the sides of the put/call parity equation to create tax arbitrages. Thus, for example, a taxpayer may issue debt and use the proceeds to buy stock, write a put on the stock and sell a call on the stock. If the exercise price, dates and credit risks are appropriately set, the taxpayer will have no risk but, absent anti-arbitrage rules, be able to deduct interest on the debt issued but not have to include interest on the synthetic debt (the stock and options) held. As long as the OID regime creates inconsistencies with the taxation of other assets, planning will remain. The OID rules have not caused the tax bar to go impoverished.

These planning opportunities may not be worse than the planning opportunities available under other methods of taxing debt instruments. To make this determination, we need to explicitly compare the costs of alternative regimes to the costs of the OID regime.

D. Complexity

The OID rules are immensely complex. The basic concepts applied to a simple instrument

are difficult but not beyond most taxpayers that own OID instruments. The complexity comes because of the wide variety of instruments that the regime applies to. A partial list of problems includes callable or puttable bonds, stepped interest rates, interest holidays or teaser rates, payment-in-kind bonds, floating rate notes, demand loans, loans with issuer options to change payment schedules, market discount and premium, sinking funds, short accrual periods, de minimis rules, and determination of the issue price for debt instruments issued for property. And this does not count the overwhelming complexity of the contingent payment debt rules, which are almost equal in length to the fixed payment debt rules.

The regulations dealing with these and other problems are several hundred pages long. A specialized tax bar has developed over the arcana. The intricate definitions and calculations required by the rules are well beyond the capacity of most taxpayers. Even tax lawyers outside the specialized bar consult experts for most transactions.

I know of no estimate of compliance time (although such an estimate would not fully measure the cost of the complexity because some taxpayers may avoid discount bonds altogether because of the complexity) but my guess is it is considerable. For example, the bar that specializes in the OID rules is able to extract significant premiums. We had better be sure that the OID rule are really the best possible solution to the problem before we impose this sort of complexity on the system.

E. Revenue loss

So far, it has been established that none of the rationales for the OID rules make sense, and that the OID rules are enormously complex. The final nail in the coffin is that may they lose money relative to other methods of taxing interest income.

The revenue loss of the OID rules comes from two sources. First, investors in zero coupon bonds (or other discount bonds) are generally subject to lower marginal tax rates than issuers because of the substantial presence of pension funds and foreign investors. Second, to the extent investors are taxable, they can trade debt instruments to eliminate much of their OID (by

selling them when their value goes down and holding them when their value goes up). Given trading, the OID rules become a mechanism for creating issuer deductions without corresponding holder inclusions. Trading was discussed above. The marginal tax rates of issuers and holders are discussed below.

I used Federal Reserve Flow of Funds data for 1995 to measure the extent that interest is deducted and the extent that it is included.[8] The data is included in the Appendix. The bottom line is that $1.119 trillion of interest was paid in 1995. Of this, $692.5 billion was deducted. Most nondeductible payments were made by the federal government ($226 billion) and individuals ($128.5 billion). Only $485 billion was taxed. That is, for every dollar deducted, only seventy cents is included. Or said another way, the difference between interest included and deducted in 1995 was $207.5 billion. At a 35 percent tax rate, the revenue loss was $72.6 billion. In a single year! In the usual five year budget numbers, the revenue loss is $363 billion.[9]

The Federal Reserve data does not break out OID instruments from other debt, so we cannot be sure from this data of the size of the revenue loss from the OID rules. But OID instruments are probably worse than the average portrayed in the data. The reason is that there will be a clientele effect. OID creates tax without cash, which is burdensome to many taxpayers. Tax-exempts, however, can hold OID instruments at no cost, so it is cheaper for tax-exempts to hold OID instruments. One can expect OID instruments to be concentrated in tax-exempts and the revenue loss to worse than that portrayed above.

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[8]The study was based on a similar study by Gene Steuerle done for other purposes using 1985 data. See, C. Eugene Steuerle, Taxes, Loans, and Inflation: How the Nation's Wealth Becomes Misallocated 70 (Brookings, 1985). Steuerle's data is included in the Appendix as a comparison.

[9]The actual numbers should be worse than that portrayed in the text because the largest tax-exempt issuer (by far) is the United States. Interest paid on U.S. obligations often shows up as included in income but is never deducted. But there is little advantage to collecting taxes on obligations of the United States because the government will pay higher interest rates to fund the taxes. That is, some portion of the interest paid on U.S. obligations should not be counted as producing net revenues for the government.

The baseline used for these numbers is full taxation of interest income. But alternative systems of taxing interest income are likely to allow some interest income to escape taxation as well. Although comparison to full taxation is interesting, for policymaking purposes, one should compare the choices being considered. The cash method, for example, may have clientele effects that may cause revenue loss similar to the pattern we see under current law. But, at a minimum, the analysis shows that creating (or accelerating) interest income through expansion of the OID rules should not be expected to raise money and a good case can be made that it can be expected to cost money even in comparison to relevant alternatives.

F. Summary

The OID rules are not, in any important sense, right. The horizontal equity and Haig-Simons arguments fail on their own terms. The predominance of tax-exempt holders and taxable issuers ensures that the OID rules are costly. And few sets of rules in the tax system rival the OID rules in complexity. The current accrual approach may be the best approach to taxing debt instruments, but it should at a minimum, be controversial. Expanding the OID rules should only be done with extreme caution.

III. How to Think about the OID Rules

If none of the traditional tools for evaluating the OID rules work, the question is how are we to think about the problem. This section suggests an answer.

Begin with a rhetorical question. Why do we normally look to notions such as horizontal equity and the Haig-Simons definition? These are not "goods" in the sense of creating things we care about such as justice, welfare, or, to be crass, GDP. They are heuristics for the underlying goods. A tax that is close to the Haig-Simons definition is probably a good tax not because it meets the definition but because meeting the definition enhances some underlying values. Even horizontal equity, which seems like a fairness criteria, is merely derivative of some underlying value because we must use that underlying value to determine what things are supposed to be equal. We don't equalize tax payments by the height of the taxpayer even though doing so would

be an entirely consistent application of horizontal equity. There is some underlying value which horizontal equity merely implements.

We have, in the case of the OID rules (and I believe many, many areas of tax policy) a situation where the heuristics don't help. The reason is that there is an underlying inconsistency between the OID rules and the realization requirement and there are no heuristics for devising policy around inconsistencies.

We could throw up our hands in the face of an inconsistency. But that would be foolish. After all, there are better and worse answers, even given an inconsistency. Different approaches will have different affects on behavior (for example, they will distort capital structures of businesses differently) and they will have different revenue effects. They may also have different distributive effects. We want to pick the rules that have the best combination of these effects.

How do we do this? Consider a very simplified world that has many of the features of the OID problem. Suppose we are considering the treatment of some exotic new financial instrument that falls somewhere between fixed debt and common stock. Or, more generally, suppose we are deciding where to draw the line between the OID rules and the realization rules. We can think of the OID rules and the realization rules as fixed points that are inconsistent but will not change. Think of these as points A and C. All the stuff in the middle we can label B (or, if we want to divide it up more finely, B_1, B_2, etc.). The B's are similar to A and similar to C. The question is whether B (or which B's) should be taxed like A or like C.

The goal is to determine the consequences of taxing B like A and the consequences of taxing B like C. We want to know the revenue effects, the effects on behavior, and the distributive effects. Leaving aside distributive effects for the moment, it is easy to see how to combine the revenue effects and the behavioral effects into a single measure (this can be done with distributive effects but it is more complicated). We want our tax system to raise revenue without distorting behavior. So what we want to know is the distortion for a dollar of revenue raised, or to use the

economic term, the marginal efficiency loss of a tax.[10] If this distortion is lower than other sources of revenue, we should use that source of revenue. If it is higher, we should not.

Consider distortion first. Because A and C are taxed inconsistently, whichever choice we make there will be distortion. Suppose C is the high taxed item and begin with the case where B is taxed like C. Then taxpayers will switch from B to A. This tax induced change in behavior is inefficient. If, alternatively, B is taxed like A, taxpayers will switch from C to B. Again this is inefficient. We want to make the choice that minimizes the switching.

We minimize the switching by taxing substitutes alike. That is, to minimize the switching, we just ask whether B is a better substitute for A or for C. B should be taxed like its closest substitute. Essentially, policymaker is acting like a diamond cutter, trying to find the seam. Economically, we are concerned about the cross-elasticities – the percentage change in demand for one item given a percentage change in price of another. Note that this can be and has been modeled formally.[11]

The distortion needs to be combined with the revenue effect. Taxing B like C will raise more revenue because C is the higher taxed item. If taxing B like C causes fewer distortions than taxing B like A, we are done. Taxing B like C is the obvious choice as it raises more revenue and has fewer distortions. If taxing B like C causes more distortions, we need to compare the added distortions to other possible sources of revenue. If the extra distortion per dollar of revenue is low, we should tax B like C.

Note, however, that we should not necessarily minimize distortion or distortion per dollar of revenue. Raising revenue distorts economic activity. Choosing the line that minimizes

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[10]Technically, we want to know the change distortion for the last dollar raised – the marginal cost – not the total distortion divided by the total dollars raised – the average cost. There are a number of other simplifications in the text created by my attempt to avoid economic jargon. For those interested in the technical detail, see Weisbach, Efficiency Analysis, note __, supra.

[11]See Weisbach, Efficiency Analysis, note __, supra.

distortion or distortion per dollar in the financial instruments context will probably lead to less revenue than choosing some other line. But the revenue shortfall will have to be made up somewhere else and the distortions there might be very high. What we want to do is to draw the line so that the distortion caused by raising another dollar of revenue is about the same as it is elsewhere in the tax system. If this distortion is lower here than elsewhere, we can raise taxes here and lower them somewhere also with an overall reduction in economic distortion, and visa versa if the distortion per dollar revenue is higher here than elsewhere.

Finally, we should add in compliance costs. Extremely complex rules impose additional compliance costs so in deciding how to tax B, additional complexity should be a factor. That is, all things equal, B should be taxed like the simpler of A and C.

All of this may seem pretty theoretical. It is a long way from the traditional Haig-Simons and horizontal equity heuristics. But the underlying goals are familiar. There is an underlying inconsistency and we want to draw the line to reduce the bad effects of the inconsistency. Talking about it in terms of the effects – the distortions and revenue effects – is unfamiliar. Usually we talk about policy in terms of measuring income. But measuring income is not the underlying issue. Instead, the issue is making policy around an underlying inconsistency. The issue is choosing a tax treatment for various financial instruments that raises revenue while minimizing distortions in capital structures.

Moreover, Congress and the Treasury have the data to make these judgments. Whenever they consider legislative changes, they must determine the revenue effects. In determining the revenue effects, they determine how taxpayers will alter their behavior in response to the change. That means they determine the amount of distortion caused by the change and the revenue. They have all the information needed to make the determination.[12] Of course, their data may be

[12]Technically, the marginal efficiency cost of a tax can be measured by dividing the revenue estimate assuming no behavioral changes by the estimate assuming taxpayers adjust their behavior. This data is routinely generated for legislative changes. For those interested in the formal details of why this measures marginal efficiency, see, Joel Slemrod and Shlomo Yitzhaki, The Cost of Taxation and the Marginal Efficiency Cost of Funds, IMF Staff Papers, Vol. 43, No.

extremely poor, but this is not an excuse to go back to failed heuristics like Haig-Simons income or horizontal equity any more than it is an excuse to use astrology. We should get the best data available and do the best we can with it.

And the reason we might consider expanding the OID rules is because of the line drawing logic. Twenty years ago we were not worried about accruing interest on options because options were not good substitutes for debt. As financial markets have evolved, the cross elasticities have changed and options and other financial instruments have become better substitutes for debt. This is the reason for the Treasury proposal, a concern about substitution and behavioral effects. That is, the very reason the topic is on the table confirms the utility of the line drawing logic.

Turning from our A's and C's to the OID rules, we should think of zero coupon bonds as A. Think of equity as C. C is taxed inconsistently with A. The question is how the B's should be taxed. There are a variety of B's, ranging from contingent debt to so-called prepaid forwards, to deep-in-the-money options, to everyday options. We must pick which ones go on which side of the line.

Before engaging in this analysis, consider the intriguing possibility of eliminating the inconsistency by eliminating the OID rules. Eliminating inconsistencies will usually be better than the line drawing exercise described here, so eliminating the OID rules is worth serious consideration.

IV. Is the Cash Method a Viable Alternative for Debt Instruments?

This sections considers whether it is possible to eliminate the inconsistency between the taxation of debt and the realization requirement by putting debt instruments on the cash method. This, to someone steeped in the tradition of the OID rules, seems like a radical proposal. It is worth exploring, however, if only as a thought exercise to better understand the rationale for the OID rules. The conclusion is that the cash method is unlikely to work well. In the language used

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1 (March 1996).

above, the distortion per dollar of revenue raised would be high.

On initial impression, the cash method may seem to raise more revenue than the OID rules (because of the large number of tax-exempt holders) and may be simpler. Moreover, by eliminating the inconsistency between the treatment of debt and the treatment of other assets, the OID rules may be efficient. Closer inspection reveals these claims to be false. Consider the claims in order: simplicity, revenue loss, and efficiency.

The cash method might be simpler than the OID rules because interest is measured automatically. Conceivably, no rules would be needed other than a requirement that all parties wait until realization to include or deduct interest. Some rules might be needed regarding the character of gain or loss on the sale of a debt instrument, but these could be relatively simple.

There are a number of problems with this logic, however. For example, payments may not be properly labeled as interest. In particular, there may be uneven interest payments. "Interest" could be front loaded, thereby accelerating deductions. (Indeed, prepaid interest was common in tax shelters years ago.) The OID rules prevent this by carefully identifying interest. The cash method might need similar rules to identify interest and these rules, as evidenced by the rules for uneven rental payments in section 467, might be very complex. The only advantage the cash method rules would have over the OID rules is that fewer taxpayers would be confronted with the rules as most debt instruments do not have front-loading of interest. On reflection, then, the cash method would likely end up being close to as complicated as the OID rules, although maybe somewhat less so.

The cash method might raise more revenue than the OID rules because it defers interest. Given that only 70 cents is included for every dollar of interest deducted, deferring interest should raise revenue.

How much revenue would be raised? There is a lot on the table given the large difference between interest deductions and inclusions. But much of that may disappear because of taxpayer reactions. If the cash method rules did not adequately control front-loading, obvious opportunities

would arise. Even assuming that the rules did control front loading, the cash method effectively gives taxpayers an election to have current accrual through the payment of cash coupons or deferral by using zero coupon bonds. While this choice will be somewhat constrained by transactions costs, the distinction between current accrual and deferral would be far easier to manipulate than it is under the current OID rules (including their contingent payment component). Moreover, the clientele effect seen under the OID rules, where tax-exempts hold OID instruments and taxpayers hold current pay instruments will be reversed. Under the cash method, taxpayers will hold deferred payment instruments and tax-exempts will hold current pay instruments. The cash method for debt instruments, therefore, may not raise very much more revenue than current law.

Finally, the cash method would eliminate the distinction between the tax treatment of debt and of many other financial instruments which may increase efficiency. But the cash method would create an incentive to accelerate interest payments. Deferred payment debt will be relatively more expensive than current pay debt. This may be inefficient as businesses will use less deferred payment debt than is otherwise optimal.

More can be said about the cash method, but if it does not raise significant revenue, is not much simpler than current law, and introduces new inefficiencies, it is probably not worth further discussion. The lesson however, is valuable. The problem with the cash method is that it is based on behavior. Taxpayers can manipulate it, choosing the best treatment. This creates the revenue problem and the complexity problem. The virtue of the OID rules is that they are relatively less manipulable. Regardless of how the transaction is set up, it will be taxed the same (if it has the same economics).

This suggests that any method of taxing interest that is indifferent to form is promising, or said more accurately, is like to have a low distortion per dollar of revenue. Perhaps the most promising is to simply deny all interest deductions (and not require interest inclusions). Interest income would then be taxed entirely at the source, at the business level. If the additional revenue raised through this method (because of the 70 cents inclusion per dollar of deduction problem) is

used to reduce dividend taxation, the system would begin to resemble the Comprehensive Business Income Tax, which is viewed by many as an ideal form of integration. While a proposal of this sort is worth further exploration, more immediate issues are of concern here. Therefore, turn to the analysis of the appropriate scope of the OID rules assuming they are to be retained.

IV. The Appropriate Scope of the OID Rules

The basic set up at this point is that there are at least two fixed points, the taxation of fixed payment debt instruments (under the OID rules) and the taxation of equity investments (under realization). There is a continuum of instruments between these two fixed points and we must divide the instruments between the two treatments. The instruments in the middle act as substitutes for debt and for equity, and any place we draw the line will create an inconsistency. The question is where to make the cut.

We want to make the cut in a place where the economic distortions caused by raising an additional dollar or revenue are low. Generally, the narrower the OID rules the more revenue, although we are not sure without further study of exactly how much revenue is raised by narrowing the OID rules. Nevertheless, I will assume that in the relevant range, expanding the OID rules loses revenue. The economic distortion from the line we must draw is that taxpayers will shift their behavior to the side of the line that minimizes taxes. This shifting is wasteful. The amount of shifting is measured by how substitutable instruments on one side of the line are for instruments on the other side, or, in economic terms, the cross-elasticity. The minimum distortion will be where the cross-elasticity is lowest (in absolute value).

What are the likely lines? Here we need empirical information about how instruments substitute for one another. Those familiar with financial theory might say that all these instruments are made of the same underlying components and therefore should be perfect substitutes for one another, but capital markets do not work that well. There is friction in the system. Instruments will be less than perfect substitutes for each other and we need to know the cross elasticities.

An economist or a practitioner might be better suited to this task than I am, as a legal

academic, but I will venture some guesses. First, much of what is known in the tax world as contingent debt is highly substitutable for fixed rate debt. Taxpayers would substitute fixed rate debt for contingent debt so that issuers would get current deductions. Therefore, raising revenue by repealing the OID rules for contingent debt would be an inefficient method of raising revenue.

Second, every day, at-the-money options are very good substitutes for stock. They should be taxed the same as stock, under the realization method. That is, these options are a better substitute for stock than for debt-like financial instruments. We should not impose the OID rules on options. Doing so would lose revenue and be inefficient.

The hard case is deep-in-the-money options or so-called prepaid forwards (which are just options with zero strike price). Are they better substitutes for contingent debt or for regular options? Are the distortions caused by not taxing them under the OID rules so high that it is worth giving up that source of revenue and taxing them under the OID rules? My intuition is that the answer is no. While we see many taxpayers altering their behavior to take advantage of the current rules, the distortions are not sufficient to give up and expand OID.

As noted above, the cross elasticities may change as financial markets evolve, and policy makers should regularly revisit the problem, as Treasury is doing now. If markets evolve like they have in the last decade, the cross elasticities are likely to get higher, making the line less efficient and the problem more difficult. But I don't see any choice short of major reforms except to continue with the line drawing exercise.

VI. Conclusion

The conclusions given above are merely my intuitions about the relevant cross-elasticities and may be completely wrong. But while we await better data, or more informed intuitions, there are some things we can say.

First, Treasury should not be shy about drawing a line. No matter where the OID rules end and realization begins, the tax regime is going to look stupid. Clever panelists will be able to show in front of large audiences how Treasury must have not known what it was doing because of such

and such obvious inconsistency.[13] But these inconsistencies are built into the system and a line must be drawn. The question is minimizing the costs of the inconsistency. Along the same line, the Treasury should not make policy with the hope of eliminating the inconsistency. Any attempt to show that expansion of the OID rules eliminates the inconsistency is likely to be wrong.

Second, we know what data we need. We need to understand how instruments substitute for one another. Revenue estimators should be good at gathering this information – they would need it for any proposed legislative change anyway.

Third, we should not think about most tax policy problems from the failed perspectives of horizontal equity and Haig-Simons income. These heuristics are often helpful for getting first intuitions, but they are only heuristics. When we bump up against a hard problem, like the OID problem or any other line drawing problem, we need to analyze the underlying issues directly. We need to measure the fairness, efficiency, and complexity of the regimes directly rather than arguing about how to meet a mere heuristic for these goals. And measuring the effects of various tax rules directly is not too difficult for policymakers. Haig-Simons and horizontal equity may be conceptually more familiar, but the data for direct analysis is gathered on a routine basis and is more relevant. Even if my intuitions are completely wrong about the relative cross elasticities, the line drawing method would proposed here is the right method of thinking about the problem.

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[13]See, e.g., David Hariton, The Accrual of Interest On Derivative Investments, supra note 1.

APPENDIX

Flow of Interest Payments and Receipts: 1981 and 1995

	1981	1995
Total Taxable Interest Paid (in billions)	**491.0**	**1,119.0**
less Payments Non-Deductible by Payor	**105.6**	**426.5**
Federal Government (net)	72.3	226.0
State & Local (net)	23.7	64.1
Net Foreigners Payments (net)	9.6	(64.4)
Consumer Payments	0.0	128.5
Non-Deducted Interest Payments	0.0	72.3
Total Deductible Payments	**385.4**	**692.5**
Non-Financial Corps	161.1	338.3
Sole Proprietorships	60.4	122.1
Personal Payments		
Real Estate & Co-Ops	108.8	0.0
Consumer Payments	55.1	0.0
Home Mortgage Interest	0.0	203.1
Other Deductible Interest	0.0	12.0
Non-Profits & Proprietors Interest	0.0	17.0
Total Taxable Interest Receipts	**271.0**	**485.5**
Taxable as Business Interest	**86.3**	**226.2**
Non-Financial Corporations	79.0	201.9
Other Private Business	0.4	0.0
Financial Non-Corporate Business	6.9	24.3
Taxable Interest of Individuals (Interest Income of Individuals less Other)	**154.7**	**191.8**
Interest Income of Individuals	**165.3**	**243.7**
Reported As:		
Interest in AGI	139.9	154.8
Other	25.4	88.9
Mutual Fund Divs.	12.6	74.6
Proprietors Income	3.5	0.0
Other Income	3.3	6.7
Trust Income	6.0	7.6
Other Non-Taxable	**10.6**	**51.9**
Reported as Interest	9.0	48.5
Reported as Other	1.6	3.4
Total Individual Reported Taxable Income	154.7	191.8
Taxable Business Interest	86.3	226.2
Service To Business (Taxable)	30.0	67.5
Total Taxed Interest Receipts	**271.0**	**485.5**

Summary for 1995	
Interest deducted from Income	692
Interest Included in Income	486
For every dollar deducted, interest included is	$0.70

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