Contingent Payments and the
Time Value of Money

In the 1980s, the tax law "discovered" the time value of money. Timing issues had always been important, even in the early days of the income tax, although the stakes more often depended on changing tax rates, when taxpayers sought to avoid reporting income in wartime years in which tax rates spiked. But even when tax rates are stable, there is an economic benefit to deferring payment of tax, which is worth as much as a complete exemption of the return on the tax deferred.

The high inflation of the 1970s and early 1980s, accompanied by high interest rates, magnified this economic benefit, and motivated much planning for tax deferral. Rapid depreciation rules adopted in 1981[1] added fuel to the fire. This was the golden age of individual tax shelters, brought to an end only by the passage of the passive activity loss restrictions in 1986.[2]

This period also saw a refinement in the accrual of income on debt instruments. The rules that since 1969 had required straight-line amortization of original discount[3] were modified in 1982 to require amortization on a constant-yield basis.[4] While those rules worked reasonably well for fixed-yield instruments, it was unclear at the time

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[1] I.R.C. § 168, *as added by* Economic Recovery Tax Act of 1981, Pub. L. No. 97-34 § 201(a), 97 Stat. 172, 203.

[2] I.R.C. § 469, *as added by* Tax Reform Act of 1986, Pub. L. No. 99-514 § 501(a), 99 Stat. 2085, 2233

[3] I.R.C. § 1232(a)(3), *as added by* Tax Reform Act of 1969, Pub. L. No. 91-172 § 413(a), 91 Stat. 487, 609

[4] I.R.C. § 1232A, *as added by* Tax Equity and Fiscal Responsibility Act of 1982, Pub. L. No. 97-248 § 231(a), 97 Stat. 324, 496

what should be done about debt instruments that provided for contingent payments. At the time this paper was written, an initial set of proposed regulations on contingent payment debt instruments had been issued;[5] later, further revisions were necessary before a set of final regulations could be published.[6]

This paper takes a broad look at the challenge posed by contingent payments as the tax rules sought to prevent unwarranted tax deferral at a time when the benefits of deferral were high. In particular, the paper looks not just to contingent payment debt instruments but also to other forms of contingent payments that arise whenever an item of income is earned before or after it is paid for. In this broad view, any capital asset can be seen as a contingent payment instrument by virtue of the cash flows that it generates. A common theme is the implicit "null hypothesis" that is implicit in each of the tax rules that deal with these payments, which makes a default assumption regarding the amount of an uncertain payment until the uncertainty is resolved.

The final regulations on contingent payment debt instruments, while not without problems, effectively ended the controversy in this area. But broader questions persist. For example, open questions remain about the treatment of deferred contingent payments in notional principal contracts.[7]

The paper suggests that a broader solution to the treatment of contingent payments could be found in the use of a "yield-based" method, where the tax rate applicable to a transaction was adjusted to compensate for the effects of deferral. I felt, however, that the implications of the yield-based method had not been fully explored, and

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[5]   Notice of Proposed Rulemaking, 51 Fed. Reg. 12,022 (Apr. 8, 1986).

[6]   *See* Notice of Proposed Rulemaking, 56 Fed. Reg. 8308 (Feb. 28, 1991); Notice of Proposed Rulemaking, 59 Fed. Reg. 64,884 (Dec. 16, 1994); T.D. 8674 (June 11, 1996) (finalizing Treas. Reg. § 1.1275-4).

[7]   *See* Notice 2001-44, 2001-2 C.B. 77 (seeking comments on the appropriate treatment of these payments); Prop. Treas. Reg. § 1.446-3(g)(6) (2004).

years later I returned to the topic for a much more comprehensive treatment in *Defeating Deferral: A Proposal for Retrospective Taxation*, also reproduced in these volumes. In a sense, this paper can be seen as a prequel to that paper.

When the paper was written, tax rates as high as 70 percent and interest rates as high as 20 percent were within recent memory. The concluding section of the paper points out that the scale of the problems posed by contingent payments can be much reduced with lower tax rates and interest rates. Much progress has been made on both fronts since that time, as the current maximum federal income tax rate is 35 percent, and interest rates are near zero.

Contents

I.   INTRODUCTION

"All fixed payments are alike but each contingent payment is con-
tingent in its own way."[8]

Like Tolstoy's unhappy families, contingent payment obligations
display infinite variety. Indeed, because a payment can be contingent
upon anything, a contingent payment obligation can replicate the eco-
nomic character of any business arrangement. In this respect, a
contingent payment obligation resembles Turing's universal compu-
ting machine, which can be programmed to imitate any other
machine.[9]

Present value concepts invaded the federal income tax law in the
early 1980s, when both practitioners and policymakers recognized the
importance of the time value of money in determining tax burdens.
Yet these developments have focused mainly on fixed rather than
contingent payments, as evidenced by the treatment of contingent
payments in the proposed regulations recently issued under the origi-
nal issue discount rules. This article reviews the treatment of both
fixed and contingent payments under current tax law, and explores
new methods of accounting for contingent payments that reflect the
time value of money.

The unlimited variety of contingent payment arrangements posed
a difficult challenge for the drafters of the proposed regulations[10]
recently issued under section 1275 of the Code[11] prescribing the tax
treatment of contingent payment debt obligations. It is testimony to

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[8]   *Cf.* Leo Tolstoy, Anna Karenina (1878).

[9]   *See* Alan Turing, *On Computable Numbers, with an Application to the Entscheidungsprob-
lem*, 42 Proc. of the London Mathematical Soc'y 230 (1937).

[10]   51 Fed. Reg. 12,022 (Apr. 8, 1986).

[11]   This section, which provides original issue discount rules, was enacted by the
Tax Reform Act of 1984, Pub. L. No. 98-369, §§ 41, 42, 44, 98 Stat. 494, 531
(1984) [hereinafter cited as the 1984 Act].

the intractable nature of the problem that this generally well-conceived effort nevertheless has serious deficiencies.

For example, under the proposed regulations, the treatment of debt obligations with indexed principal is inconsistent with a common sense understanding of the nature of those obligations. An indexed-principal obligation pays interest at a fixed rate, but the amount of principal payable at maturity is contingent upon the value of an asset such as silver[12] or Treasury securities[13] or it is linked to an index such as the Standard and Poor's 500 stock market index.[14]

It is not entirely clear that an indexed-principal obligation would always be treated as debt rather than equity. Although the proposed regulations do not purport to address the distinction between debt and equity,[15] by providing treatment for debt obligations with contingent principal payments,[16] they seem to legitimize these obligations, at least when the contingency does not relate to the financial performance of the issuer or its stock. Perhaps indexing the principal amount to a foreign currency is the clearest case for treating an indexed-principal obligation as debt, but the proposed regulations reserve the question of the proper treatment of foreign currency transactions.[17]

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[12] Publicly offered commodity-indexed obligations have typically provided for a minimum fixed principal payment, unlike the indexed-principal obligation discussed in the text. *See, e.g.*, THE STANDARD OIL CO., PROSPECTUS SUPPLEMENT (June 19, 1986) (oil indexed notes); SUNSHINE MINING CO., PRELIMINARY PROSPECTUS (Feb. 1, 1980) (silver indexed notes).

[13] General Motors Acceptance Corporation (GMAC) had intended to issue obligations with principal indexed to the value of thirty-year Treasury bonds, but GMAC withdrew the proposed issue following the issuance of the proposed regulations. N.Y. Times, Apr. 24, 1986, at D13, col. 1.

[14] Salomon Inc. has offered notes indexed to a stock market index with a minimum principal payment. SALOMON INC., PRELIMINARY PROSPECTUS SUPPLEMENT (July 28, 1986).

[15] *See* Prop. Treas. Reg. § 1.1275-4(a), 51 Fed. Reg. 12,022, 12,087 (Apr. 8, 1986).

[16] Prop. Treas. Reg. § 1.1275-4(f), 51 Fed. Reg. 12,022, 12,092 (Apr. 8, 1986).

[17] Notice of Proposed Rulemaking, 51 Fed. Reg. 12,022, 12,028 (Apr. 8, 1986).

Assuming that the indexed-principal obligation is treated as a debt instrument, the proposed regulations provide rules for treating payments as principal or interest regardless of how these payments are characterized by the terms of the obligation itself. If the total of the noncontingent payments does not exceed the issue price, all of the noncontingent payments are recast as principal and the contingent payments are treated as interest except to the extent of the unrecovered issue price.[18] If the aggregated noncontingent payments exceed the issue price, however, the excess is treated as original issue discount and all of the contingent payments are treated as interest.

The proposed regulations in effect reverse the characterization of the principal and interest on an indexed-principal obligation because the interest payments are noncontingent and the principal payments are contingent.[19] Thus, if the interest on an indexed-principal obligation is paid currently and the principal is not paid until maturity, the holder would have no interest income and the issuer would not be entitled to any interest deductions until maturity.[20] Moreover, these effects would not offset each other if either the holder or the issuer were not subject to federal income taxation. Indeed, the issuance of the proposed regulations prompted the withdrawal of a proposed Eurodollar issue of obligations with a principal amount indexed to the value of Treasury securities because the proposed regulations would have denied the issuer deductions for its periodic fixed-interest payments.[21]

The treatment of these instruments under the proposed regulations conflicts with the common sense approach that was generally

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[18]   Prop. Treas. Reg. § 1.1275-4(f), 51 Fed. Reg. 12,022, 12,092 (Apr. 8, 1986).

[19]   Prop. Treas. Reg. § 1.1275-4(e), 51 Fed. Reg. 12,022, 12,090 (Apr. 8, 1986).

[20]   In general, the issuer's interest deductions under the original issue discount rules are determined in the same manner as the holder's interest income. Prop. Treas. Reg. § 1.163-7(b), 51 Fed. Reg. 12,022, 12,030 (Apr. 8, 1986).

[21]   *See supra* note 13.

envisaged by practitioners before the proposed regulations were is-
sued. Under this approach, the periodic stated interest payments
would be treated as interest and the issuer would have an additional
deduction (or discharge of indebtedness income) to the extent that
the principal payment exceeded (or was less than) the issue price.
Conversely, the holder of such an instrument would realize a corre-
sponding gain or loss, which might be taxed as interest income rather
than capital gain.

A more sophisticated view would recognize that the interest rate
on an indexed-principal obligation represents the difference between
the issuer's straight-debt borrowing cost and the carrying cost of the
asset to which the principal is indexed. For example, if gold has a
current carrying cost of 5%[22] and the issuer's straight-debt borrowing
cost is 9%, the issuer's debt with the principal payment indexed to
gold would be priced at about par if the stated interest rate were 4%.
Under this view, the 4% stated-interest rate understates the total yield
on the obligation that is expected by the market. Yet until subsequent
events prove otherwise, the proposed regulations assume that all con-
tingent payments will be zero despite expectations reflected in the
market.

The problem is one of "mere" timing, as indicated by the uncon-
troversial treatment of an indexed-interest obligation, in which the
principal is fixed but interest depends upon the value of an asset or
formula. Apart from the special case of a floating-rate obligation
based upon an "objective interest index" (*e.g.*, a money market rate or
prime rate), the proposed regulations treat each interest payment as
interest and the principal payment as principal. Any excess of the

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[22] For example, this current carrying cost might be measured by the "contango" or
spread between spot and futures gold prices. Thus, on August 18, 1986, the New
York Comex spot price for gold was $376 per ounce; the one-year futures price
was $396. N.Y. Times, Aug. 19, 1986, at D20, col. 6. The 5% premium in the fu-
tures price reflects the carrying cost of gold.

principal amount over the issue price is accrued over the life of the obligation as original issue discount.[23] This treatment is unobjectionable because, even though the same rules give problematic results for an indexed-principal obligation, (1) the principal is payable only at maturity in these examples while interest is paid currently, and (2) the principal, but not the aggregate interest, is at least equal to the issue price. Thus, although in both the indexed-interest and the indexed-principal cases the contingent payments are primarily treated as principal, the contingency in the indexed-principal obligation is not fully resolved until maturity, and recognition of the interest element is accordingly deferred until that time.[24]

Concern about "mere" timing, however, motivates most of the rules in the proposed regulations and the expansion of the original issue discount accrual requirements by the Tax Reform Act of 1984. The statutory changes made in 1982[25] and 1984[26] focused upon fixed rather than contingent payments. These provisions are designed to tax currently the accretion in value of an obligation attributable to locked-in future payments. The 1984 Act simply authorized regulations providing for the proper tax treatment of contingent payment obligations.[27]

It is necessary to understand the concerns based upon the time value of money that have shaped the development of the tax treatment of fixed-payment obligations in order to deal with similar concerns about contingent payment obligations. Accordingly, the next section will briefly review recent developments in the tax treatment of

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[23] *See* Prop. Treas. Reg. § 1.1275-4(f), 51 Fed. Reg. 12,022, 12,092 (Apr. 8, 1986).

[24] *Id.*

[25] Tax Equity and Fiscal Responsibility Act of 1982, Pub. L. No. 97-248, § 231, 96 Stat. 324, 496–99 [hereinafter cited as the 1982 Act].

[26] *See* the 1984 Act, *supra note* 11.

[27] I.R.C. § 1275(d).

fixed-payment obligations, and the following section will return to their contingent kin.

II. FIXED-PAYMENT OBLIGATIONS

In the early decades of the federal income tax, the distinction be-
tween income and return of capital was more pronounced. An
interest coupon was the "fruit"; the underlying bond was the "tree";
hence, a transfer of the coupon was seen as an anticipatory assign-
ment of income.[28] Today, this distinction has largely disappeared. A
transfer of an interest coupon under current law is seen as a "strip-
ping" transaction, and a portion of the underlying basis in the bond is
allocated to the coupon, which is treated as a newly issued zero-
coupon obligation.[29] Indeed, the zero-coupon obligation, which has
become more popular since Congress clarified and tightened the ap-
plicable tax rules in 1982,[30] is now the tax accounting paradigm.

A zero-coupon obligation, of course, has no "fruit": it is simply
deemed to accrue its original issue discount as interest over its term at
a rate equal to the implicit yield.[31] This interest income is required to
be accrued regardless of the holder's method of accounting and in the
absence of any payment or other realization event. The disappearance
of the realization requirement in this context is perhaps unsurprising
because it is rooted in the concept of income being "severed" from
capital.[32] This treatment produces an odd result when it is combined

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[28] *See* Helvering v. Horst, 311 U.S. 112, 120 (1940).

[29] *See* I.R.C. § 1286.

[30] This popularity is primarily due to a nontax advantage: a holder of a zero-
coupon obligation has no need for (or risk of) the reinvestment of payments re-
ceived before maturity.

[31] *See* I.R.C. § 1272(a). The amount of original issue discount included in the hold-
er's income (and deducted by the issuer) during each semiannual or other accrual
period equals the yield to maturity of the obligation, multiplied by its adjusted
issue price, which is the issue price increased by previously accrued original issue
discount.

[32] *See generally* Eisner v. Macomber, 252 U.S. 189, 207 (1920).

with the installment sales rules: the interest element of a zero-coupon purchase money obligation is taxed before the gain on the property sold, even though the gain on the property was earned first.

Computing accrued original issue discount on a zero-coupon obligation issued for cash is purely a matter of applying formulas, once conventions such as compounding periods and thirty-day months are established. No hard judgments are required to quantify the time value of money in this context, because the parties have performed this valuation in setting the yield to maturity on the obligation.

A. *Debt Instruments Issued for Property*

In contrast to an obligation issued for cash, the tax treatment of a zero-coupon or other discount obligation that is not publicly traded and that is issued for property that is not publicly traded cannot be determined without valuation judgments. This valuation is necessary to determine the issue price of the obligation, which in turn determines the amount of the original issue discount.[33]

One approach to this valuation problem would address it directly: the issue price of a nontraded obligation issued for nontraded property would be its fair market value as determined by usual evidentiary methods. The original issue discount rules, however, generally avoid this approach. Instead they adopt a more mechanical method based upon present values. Thus, the issue price of a nontraded obligation issued for nontraded property is the present value as of the issuance date of all of the payments to be made on the obligation (or the stated principal amount, if lower).[34] The discount rate used in determining this present value is the "applicable federal rate" published by the Service for the month in which the terms of issuance are

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[33] *See* I.R.C. § 1273(a)(1) (defining original issue discount as the excess of the stated redemption price of an obligation at maturity over its issue price).

[34] I.R.C. § 1274(a), (b).

set (or either of the two preceding months, if lower); these rates are based upon prevailing yields for United States Treasury obligations with a comparable maturity and compounding period.[35]

Present values are used to determine the issue price because the use of money is thought to be essentially a commodity that can be readily valued by reference to prevailing interest rates. While it is unlikely that the drafters of these rules were blind to their shortcomings, it is worth noting some of the ways in which the present value formulas, as applied under the proposed regulations, lead to distorted results.

1.   *Credit of the Issuer*

All obligations of issuers other than the United States government[36] are subject to some risk of default. Consequently, the interest rate paid by a private issuer normally exceeds the rate that would be paid by the United States government on a loan with comparable terms. The amount of this excess depends upon the issuer's financial condition, the priority of the obligation in relation to the issuer's other indebtedness, and the nature of any assets securing the obligation. The present value formulas originally mandated by the 1984 Act recognized that this ubiquitous "risk premium" was included in interest rates. They therefore required the issue price of an obligation issued for nontraded property to be the present value of all payments discounted at 120% of the applicable federal rate (or the stated principal amount, if that amount was lower than the present value of all pay-

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[35] I.R.C. § 1274(d). *See*, *e.g.*, Rev. Rul. 86-143, 1986-2 C.B. 149 (applicable federal rates for Dec. 1986).

[36] Notwithstanding the theoretical possibility of a default by the United States government, obligations backed by the full faith and credit of the United States, such as Treasury securities, are regarded by participants in the financial markets as essentially free of default risk and will be so regarded here.

ments discounted at 110% of the applicable federal rate).[37] Thus, an obligation issued for nontraded property was assumed to be issued at a yield of 120% of the applicable federal rate, unless it provided for stated interest at a rate at least equal to 110% of the applicable federal rate.[38]

This use of premiums over the applicable federal rates quickly ran into political opposition because in some circumstances the rates required by the 1984 Act were too high. Stopgap legislation was hastily enacted to provide relief for smaller transactions.[39] A year later the required discount rate was reduced to 100% of the applicable federal rate.[40] These changes have eliminated the risk premium as an element in valuing obligations issued for property. Thus, under current law, obligations issued for property tend to be overvalued in the case of less creditworthy issuers.

In other contexts involving the valuation of debt instruments, the creditworthiness of the issuer is taken into account. For example, in determining whether more than half of the value of a hybrid instrument was attributable to its fixed payments, the section 385 regulations required those payments to be discounted at the issuer's borrowing rate for a comparable fixed-payment obligation.[41] Similarly, the proposed regulations require debt instruments to be valued in a non-mechanical way when issued as part of an investment unit with nonpublicly traded components. In such a case, the issue price is allocated between the debt instrument and the other property included in the debt instrument in proportion to their relative fair market values.

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[37]   Deficit Reduction Act of 1984, Pub. L. No. 98-369, 98 Stat. 494, 538–39 (codified with some differences in language at I.R.C. § 1274(b)).

[38]   I.R.C. § 1274(c)(3).

[39]   Act of Oct. 31, 1984, Pub. L. No. 98-612, 98 Stat. 3180.

[40]   Act of Oct. 11, 1985, Pub. L. No. 99-121, § 101, 99 Stat. 505 (amendments of § 1274).

[41]   *See* Treas. Reg. § 1.385-5, *withdrawn by* T.D. 7920, 1983-2 C.B. 69.

Although the fair market value of the debt instrument is determined by discounting its payments, the discount rate must be based upon the yield of similar debt securities offered by that issuer or similarly situated issuers.[42] The proposed regulations require that this discount rate be no less than the applicable federal rate, presumably on the theory that the risk premium is always nonnegative. Unfortunately, this requirement disregards other factors that may affect yield and that in some circumstances may cause the market-determined yield to be below the applicable federal rate.

2.   *The Yield Curve*

The "yield curve" is obtained by plotting prevailing interest rates on low-risk securities as a function of their maturity. Under most conditions, the yield curve slopes upward, so that long-term obligations have higher yields than short-term obligations. During periods in which the money supply is tight, such as in 1980 and 1981, this pattern may reverse, with short-term obligations having higher yields. The original issue discount rules purport to reflect the yield curve by providing for three categories of applicable federal rates: (1) short-term, for obligations with a term of not more than three years; (2) mid-term, for obligations with a term of more than three years but not more than nine years; and (3) long-term, for obligations with a term of more than nine years.[43] The applicable federal rates published by the Service for each of these categories are based upon yields on Treasury obligations with comparable maturities.[44] This approach immediately encounters complications. Perhaps the most common complication is an installment obligation with differing maturity categories for principal repayments. Rather than use the applicable federal

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[42]   Prop. Treas. Reg. § 1.1273-2(d)(2)(iv), 51 Fed. Reg. 12,022, 12,062 (Apr. 8, 1986).

[43]   I.R.C. § 1274(d)(1)(A).

[44]   Prop. Treas. Reg. § 1.1274-6(b), 51 Fed. Reg. 12,022, 12,077 (Apr. 9, 1986).

rate for the category in which the weighted-average maturity of the obligation falls, the proposed regulations provide tables for typical level-principal and mortgage-pay types of installment obligations.[45] These tables set forth weighting factors that are to be used with the three categories of applicable federal rates to obtain a blended rate. This rate is then used to discount payments on the obligation. For other installment obligations, the proposed regulations generally determine the category of applicable federal rate by referring to the final principal payment.[46]

Selecting the applicable federal rate on the basis of the final principal payment is clearly improper when the final maturity differs significantly from the weighted average maturity of the obligation. The proposed regulations address this shortcoming in two ways. First, the Service is authorized to disregard nominal payments of principal,[47] presumably to prevent the parties from adding a small but remote payment to the terms of an obligation in order to enjoy a lower applicable federal rate during periods of "downward-sloping" yield curves. Second, to test whether the present value of the payments on an obligation exceeds its stated principal amount, the proposed regulations permit a disaggregated approach. (This is evidently not done to determine the issue price if the principal amount exceeds this testing amount.) Under this approach, each principal payment, and the interest attributable to it, is discounted using the applicable federal rate that would have been used had that principal and interest constituted a separate obligation.[48] This approach deviates from the general notion that an obligation, whether it is paid in a lump sum or in installments, has a single constant yield.

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[45] Prop. Treas. Reg. § 1.1274-6(d)(2)(ii), (iii), 51 Fed. Reg. 12,022, 12,078 (Apr. 8, 1986).

[46] Prop. Treas. Reg. § 1.1274-6(d)(1)(i), 51 Fed. Reg. 12,022, 12,078 (Apr. 8, 1986).

[47] *Id.*

[48] Prop. Treas. Reg. § 1.1274-6(d)(3), 51 Fed. Reg. 12,022, 12,079 (Apr. 8, 1986).

Even an obligation with a single principal payment may not fit the standard mold. The proposed regulations recognize that in the financial markets a floating-rate obligation is priced with a yield comparable to yields on fixed-rate obligations with a maturity equal to the interval between adjustments. Thus, a twenty-five-year obligation that bears interest at a rate which is adjusted monthly would be expected to be priced at a yield reflecting prevailing short-term rates. Accordingly, the proposed regulations generally permit the applicable federal rate for a floating rate obligation based on a prime rate or money market index to be determined with respect to the adjustment interval.[49] No allowance is made, however, for the effects that other types of contingencies might have on an obligation's position along the yield curve.

The partitioning of all obligations into three maturity categories is clearly only a rudimentary attempt to reflect the yield curve. While this partitioning cannot account for all of the nuances of the yield curve, its shortcomings are most pronounced at the short-term end. Obligations with a term of three years differ too much from obligations with a term of one week or one day (or on which the interest rate is adjusted with that frequency) to expect a single applicable federal rate to work for both. Because this difference can exceed the risk premium included in the interest rate of high quality borrowers, interest rates on short-term commercial paper of such borrowers may fall below the three-year borrowing cost of the federal government.[50] In recogni-

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[49]   Prop. Treas. Reg. § 1.1274-6(a)(2), 51 Fed. Reg. 12,022, 12,077 (Apr. 8, 1986). This rule only applies if the interest rate adjustments are not unduly constrained; in particular, the number of percentage points by which the rate can annually increase for any period may not be constrained to less than one-twelfth of the number of months in the preceding adjustment period. Prop. Treas. Reg. § 1.1274-3(d)(1)(iii), 51 Fed. Reg. 12,022, 12,068 (Apr. 8, 1986).

[50]   For example, on May 28, 1986, the prevailing yield on thirty-day commercial paper was approximately 6.7%, while the yield on three-year Treasury obligations was approximately 7.5%. N.Y. Times, May 29, 1986, at D16, col. 4.

tion of this shortcoming, the proposed regulations permit the parties in limited circumstances to agree to use an applicable federal rate based upon published yields on Treasury securities with more precisely comparable maturities.[51]

3. *Features of the Debt*

Rights provided to the issuer or the holder to cause the obligation to be prepaid before its stated maturity or to have its maturity date extended may affect the yield on debt obligations. The proposed regulations deal with these types of rights in determining the period over which original issue discount must be accrued,[52] but they ignore these types of rights in determining the applicable federal rate. Options that may change the maturity date will affect the position of the obligation on the yield curve. Moreover, the value inherent in the option itself will depress or increase the yield, depending upon whether the option is held by the holder or the issuer. For example, when the yield curve slopes upward, a twenty-year obligation will have a higher yield than a five-year obligation, but a twenty-five year obligation that is puttable at par after five years will have a yield that is lower than both, and a twenty-five year obligation that is callable at par after five years will have a yield that is higher than both.

Obligations with these options are not, strictly speaking, fixed payment obligations because the total payments on these obligations are contingent as to timing and amount even when the interest rate is fixed. Yet such mundane features of debt obligations as call rights routinely affect investors' valuation of debt instruments.

Obligations that are convertible into stock of the issuer can also have a markedly lower yield than similar obligations without a convertibility feature. Consequently, the present value of the principal and

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51   Prop. Treas. Reg. § 1.1274-6(a)(3), 51 Fed. Reg. 12,022, 12,077–78 (Apr. 8, 1986).

52   Prop. Treas. Reg. § 1.1272-1(f)(4), 51 Fed. Reg. 12,022, 12,052 (Apr. 8, 1986).

interest payments, which are determined using applicable federal rates, will typically understate the value of the obligation. These conversion rights are treated like other "equity kickers" under the proposed regulations pursuant to general rules for contingent payments that are discussed in more detail below.[53] Applicable federal rates have little to do with the returns demanded by investors on obligations that provide a significant portion of those returns in a speculative form.

Payments that are fixed in a foreign currency are contingent only as to foreign exchange risk, and the proposed regulations provide that applicable federal rates for foreign currency denominated obligations are to be determined with reference to prevailing risk-free rates for obligations of comparable maturity in that currency.[54] The proposed regulations produce results comparable to nondiscount obligations that are denominated in that currency and pay interest currently.

Finally, exempting the interest from federal income taxation can affect yields even on an obligation with completely fixed payments. Because prevailing yields on tax-exempt municipal obligations are below federal borrowing rates, the use of applicable federal rates to value these obligations understates the issue price. This understatement can create a potential problem in which property financed by a municipal authority with industrial development bonds is acquired by a private corporation in exchange for a purchase money obligation. To avoid the creation of impermissible arbitrage,[55] the interest rate on this purchase money obligation is required to be no greater than the interest rate on the underlying bonds. In this situation, it is inappro-

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[53] *See infra* notes 150–153, 178–184 and accompanying text.

[54] Prop. Treas. Reg. § 1.1274-6(c), 51 Fed. Reg. 12,022, 12,078 (Apr. 8, 1986). This rule is provided even though the treatment of foreign-currency denominated obligations is reserved by the proposed regulations. *See supra* text accompanying note 17.

[55] *See* I.R.C. § 103(c) (generally preventing issuers of tax-exempt bonds from re-lending the proceeds of the issue at a higher interest rate).

priate to use applicable federal rates to determine the issue price of the obligation, and hence the purchaser's basis in the property.

The foregoing discussion shows that, while money is fungible, credit is not, and a proper valuation of debt instruments requires more than a mechanical discounting of principal and interest payments. Oddly, this discounting approach seems to be required even when the property for which the debt instrument is issued is actively traded and has a readily ascertainable fair market value. The statutory rules look to the fair market value of the property for which a nontraded debt instrument is issued only if the property is publicly traded stock or securities,[56] yet other types of property such as commodities are actively traded. Moreover, to the extent that the value of the debt instrument using applicable federal rates differs from the actual value of the publicly traded property acquired, opportunities for increasing the seller's capital gain or the buyer's interest deductions arise. This is precisely what the original issue discount rules were intended to foreclose. Perhaps the *reductio ad absurdum* is determining the issue price of an obligation issued for foreign currency by discounting the payments on the obligation, as the literal terms of the statute appear to require,[57] rather than by translating the foreign currency issue price into dollars on the issue date.

Section 1274 authorizes regulations under which the issue price of a nontraded debt instrument in a potentially abusive situation would be determined with reference to the fair market value of the property acquired by the issuer rather than by discounting the payments on the instrument. For these purposes, a "potentially abusive situation" is defined as a tax shelter or other situation having potential for tax avoidance, including those involving recent sales transactions.[58] Unfor-

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[56] I.R.C. § 1273(b)(3). *See also* Prop. Treas. Reg. § 1.1273-2(c), 51 Fed. Reg. 12,022, 12,062 (Apr. 8, 1986).

[57] *See* S. REP. NO. 99-313, at 437–39 (1986).

[58] I.R.C. § 1274(b)(3)(B).

tunately, the proposed regulations do little more than parrot the Code on this point.[59] They do not expressly consider whether the issuance of nontraded debt instruments for publicly traded property other than stock or securities is automatically a situation having potential for tax avoidance. These instruments could have this potential because of recent sales transactions, which might justify determining the issue price with reference to the fair market value of the traded property.[60]

B. *Implicit Zero-Coupon Obligations*

An implicit loan arises whenever an item of income or expense is paid in a period other than the period in which the income can fairly be said to have been earned, or the expense incurred, in an economic sense. For example, a fixed deferred compensation obligation of an employer, which is generally reported by both parties on the cash basis,[61] is in substance a zero-coupon obligation of the employer acquired by the employee when the services are rendered and the employer's obligation becomes fixed.

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[59] Prop. Treas. Reg. § 1.1274-4(g), 51 Fed. Reg. 12,022, 12,073 (Apr. 8, 1986).

[60] Technical corrections in the Tax Reform Act of 1986, Pub. L. No. 99-514, § 1803(a)(10), 100 Stat. 2794 [hereinafter cited as the 1986 Act], amended Section 1273(b)(3) to authorize regulations designating types of publicly traded property other than stock or securities for which the issue price of a nontraded obligation would be determined with reference to fair market value rather than by discounting. *Id.*

[61] I.R.C. § 83(a). While Section 83(a) generally treats a transfer of property for services as taxable at the time of the transfer, the regulations exclude from the definition of "property" for this purpose an employer's unfunded and unsecured promise to make a future payment, even if the promise is unconditional. Treas. Reg. § 1.83-3(e). Under Section 83(h), the taxable year in which the employer takes a deduction for deferred compensation (other than pursuant to a qualified employee benefit plan) must include the end of the taxable year in which the employee has to include the deferred income in his gross income. The effect of these rules is to put both employers and employees on the cash method of accounting with respect to deferred compensation.

The timing of items of income and deduction is generally deter-mined by the taxpayer's method of accounting for tax purposes. The regulations generally permit a taxpayer to choose any permissible method of accounting, provided that all items are treated consistently from year to year.[62] Although no accounting method may be used that does not "clearly reflect income,"[63] the regulations provide that, if used consistently from year to year, "[a] method of accounting which reflects the consistent application of generally accepted accounting principles in a particular trade or business in accordance with accepted conditions or practices in that trade or business will ordinarily be re-garded as clearly reflecting income ..."[64] Yet neither the cash method nor the accrual method clearly reflects income when they are applied to prepayments and deferred payments because neither method takes into account the time value of money.

1.   *Deferred Income and Expenses*

If a payment for services or for the use of property is deferred beyond the time when the services or the property are provided and if no portion of the deferred payment is stated as interest by the parties, in effect the payment constitutes the redemption of a zero-coupon obligation issued at the start of the deferral period. For example, if a recipient of services agrees to pay $1,000 to the service provider ten years after the services are provided, the service recipient has in effect delivered to the service provider a $1,000 zero-coupon obligation with a term of ten years. Under a method of accounting that recognizes the presence of this implicit zero-coupon obligation, the service pro-vider would accrue as compensation income, and the service recipient would deduct, the issue price of this obligation when the services are

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[62]   Treas. Reg. § 1.446-1(c)(1), (c)(2)(ii), (e)(1).

[63]   I.R.C. § 446(b).

[64]   Treas. Reg. § 1.446-1(a)(2).

provided. The difference between this issue price and the amount paid at maturity would be accrued as original issue discount on a constant-yield basis over the term of the obligation. This method of accounting will be referred to as the "present value accrual method."[65] The issue price of the implicit zero-coupon obligation would be its fair market value, as determined by the value of the services provided or by discounting its payments in the manner provided for obligations issued for non-traded property.[66]

The present value accrual method produces results that are between the traditional cash and accrual methods. Under the cash method,[67] the full amount of the payment is accrued when paid, providing a tax-deferral benefit for the person receiving the payment and a corresponding burden for the payor. Both benefit and burden, however, will be offsetting from the government's point of view only if both parties use the cash method and are fully taxable at the same marginal rate.

Under the traditional accrual method, the full amount of the payment is accrued when fixed, which, in the case of the provision of services or the use of property, generally occurs as the services or the use of the property are provided. Because the full accrued amount includes the interest element of the deferred payment, which is actually earned over the deferral period, the traditional accrual method provides a tax-deferral benefit for the maker of a deferred payment and a corresponding burden for the recipient. This deferral benefit and burden apply only to the interest element. Therefore, the tradi-

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[65] The application of present value accrual accounting to deferred and prepaid income and expenses is described with attention to each "side" of the transaction in Kiefer, *The Tax Treatment of a "Reverse Investment": An Analysis of the Time Value of Money and the Appropriate Tax Treatment of Future Costs*, 26 TAX NOTES 925 (1985).

[66] I.R.C. § 1273(b)(3). *See also* Prop. Treas. Reg. § 1.1273-2(c), 51 Fed. Reg. 12,022, 12,062 (Apr. 8, 1986).

[67] *See* I.R.C. § 461(a). *See also* Treas. Reg. § 1.461-1(a).

tional accrual method introduces only modest distortions if the deferral period is short, and more closely approximates economic reality than does the cash method.

Present value accrual accounting became part of the Code as a result of the 1982 Act, which changed the accrual of original issue discount on obligations issued for cash from a straight-line method to a constant-yield method.[68] Because interest not paid currently is treated as additional original issue discount,[69] the present value of the deferred interest payment is the amount that is accrued under the constant yield method in the period when a deferred interest payment is earned, the balance being accrued over the deferral period on a constant-yield basis. This is the simplest application of present value accrual accounting because the yield on the obligation itself provides the discount rate for the present value computations.

The 1984 Act expanded the scope of present value accrual accounting to encompass deferred interest on obligations issued for nontraded property and certain deferred payments for services or the use of property. Thus, the amount realized by the seller on a deferred-payment sale of property is the issue price of the buyer's obligation,[70] which, under the rules described above, is the lesser of the stated principal amount or the present value of the payments on the obligation.[71] Deferred interest payments on these obligations are accounted

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[68] *See supra* note 25 and accompanying text.

[69] I.R.C. § 1273(a)(2). Section 1273(a)(2) treats stated interest as part of the stated redemption price at maturity unless it is payable unconditionally at a fixed rate at fixed periodic intervals of one year or less during the entire term of the obligation. *See also* Prop. Treas. Reg. § 1.1273-1(b)(1), 51 Fed. Reg. 12,0222, 12,060 (Apr. 8, 1986).

[70] Prop. Treas. Reg. § 1.1274-2(a), 51 Fed. Reg. 12,022, 12,061 (Apr. 8, 1986). The situation is not quite this simple. For an elucidation of the complexities inherent even in a fixed-payment installment sale, *see* Michael L. Schler, *The Sale of Property for a Fixed Payment Note: Remaining Uncertainties*, 41 TAX. L. REV. 209 (1986) [hereinafter cited as Schler].

[71] I.R.C. § 1274(a), (b). *See also supra* note 34 and accompanying text.

for by accruing the present value of the payments when the interest is earned, using the applicable federal rate.

The 1984 Act also curtailed the use of long-term leases to achieve timing benefits by front-loading or back-loading payments or by exploiting differences in the parties' methods of accounting. This was accomplished by adding the following restrictions:

> 1.   the parties may not report rent using the cash method of accounting unless the lease provides for level rent payments[72] (or for rent that is wholly contingent but is paid currently),[73] and rent is paid before the end of the calendar year following the year in which it accrued;

> 2.   if for tax reasons the parties provide for increasing rents over the term of the lease, the parties must accrue rent on a level-rent basis;[74] and

> 3.   any rent that accrues before the period in which it is paid must be reported using the present value accrual method of accounting.[75]

The 1984 Act also authorized regulations to provide similar rules on a prospective basis for leases with decreasing rent and for service contracts.[76]

The present value accrual method is applied to a long-term lease by treating a deferred rental payment as the maturity of a zero-coupon

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[72]   I.R.C. § 467(a), (d)(1).

[73]   *See* 130 CONG. REC. S8884 (daily ed. June 29, 1984) (remarks of Sen. Dole); JOINT COMM. ON TAXATION, 98TH CONG., 2D SESS., THE GENERAL EXPLANATION OF THE REVENUE PROVISIONS OF THE DEFICIT REDUCTION ACT OF 1984 (Comm. Print 1984) [hereinafter cited as 1984 GENERAL EXPLANATION].

[74]   I.R.C. § 467(b)(2). Regulations are authorized to provide "safe harbor" increases that will be deemed not to be tax motivated, including increases based upon price indices, gross receipts of the lessee, reasonable rent holidays, and the lessor's costs. I.R.C. § 467(b)(5).

[75]   I.R.C. § 467(a), (b)(1).

[76]   I.R.C. § 467(f), (g). *See also* H.R. REP. NO. 98-861, at 895 [hereinafter cited as 1984 Conference Report].

obligation that was issued during the period to which the rent pay-
ment relates (or is deemed to relate under (2) above). The issue price
of this implicit zero-coupon obligation is determined by discounting
the deferred payment at the applicable federal rate rather than by ref-
erence to what the rent would have been if paid currently.

Under the present value accrual method, the leveling of rent on a
lease that contains tax-motivated rent increases is performed by de-
termining the level rent stream that has the same present value
(discounted at the applicable federal rate) as the rent stream provided
under the lease[77] rather than by allocating the total rent over the rent
periods on a pro rata basis. Interest is then deemed to accrue at the
applicable federal rate on the accrued but unpaid rent balance.

For example, if a ten-year lease calls for five annual rent payments
of $50 followed by five annual rent payments of $150, and the step-
up is tax-motivated, the leveling requirement will not cause $100 of
rent to be accrued in each year. Instead, the annual rent accrued is the
amount that, when received annually for ten years, has the same ag-
gregate present value as the actual rent payments when discounted at
the applicable federal rate. If a 10% applicable federal rate is assumed,
the present value of the rent payments is $542.61, and the level annual
rent payment that would have the same aggregate present value is
$88.31. The total stated amount of rent is $1,000, and $116.93, which
represents the excess of the total stated rent payments over the total
amount of level rent required to be accrued, is reported as interest
income. The interest for any period is determined by multiplying the
applicable federal rate for any period by the amount of accrued but
unpaid rent. Details are shown in the table below:

77   *See* SENATE COMM. ON FINANCE, 98TH CONG., 2D SESS., DEFICIT REDUCTION
ACT OF 1984: EXPLANATION OF PROVISIONS APPROVED BY THE COMMITTEE
ON MARCH 12, 1984 at 262 (Comm. Print 1984) [hereinafter cited as 1984 SEN-
ATE PRINT].

Year	Actual Rent	Present Value	Level Rent	Deferred Rent	Interest	Total Accrued
1	50.00	45.45	88.31	38.31	0.00	88.31
2	50.00	41.32	88.31	80.44	3.83	92.14
3	50.00	37.57	88.31	126.80	8.04	96.35
4	50.00	34.15	88.31	177.78	12.68	100.99
5	50.00	31.05	88.31	233.87	17.78	106.08
6	150.00	84.67	88.31	195.56	23.39	111.69
7	150.00	76.97	88.31	153.42	19.56	107.86
8	150.00	69.98	88.31	107.07	15.34	103.65
9	150.00	63.61	88.31	56.08	10.70	99.01
10	150.00	57.83	88.31	0.00	5.61	93.92
Total	1,000.00	542.60	883.07		116.93	1,000.00

Although the average stated rent is $100, the total amount accrued during each year using present value accrual accounting increases during the first five years and then declines, reflecting changes in the amount of interest accrued on the deferred rent.

The rules requiring present value accrual accounting for deferred rent on long-term leases were developed principally to prevent unwarranted deferral of income, whether by the lessor's use of the cash method or by an unrealistic allocation of aggregate rent among rental periods. Yet the traditional accrual method overstates the amount of expense deducted at the time of accrual, which has led to substantial tax-deferral benefits for accrual basis taxpayers that incur expenses with long deferral periods.

Under the traditional accrual method, the full amount of an expense is deductible when all events have occurred to fix the fact of liability and the amount thereof can be estimated with reasonable accuracy.[78] Under this "all events" test, if an expense can be accrued

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[78] *See* Treas. Reg. §§ 1.446-1(c)(1)(ii), 1.461-1(a)(2).

before it is required to be paid, the present value of the obligation to pay will be less than the amount of the tax deduction. If the deferral period is long enough, the present value of the obligation to pay could even be less than the taxes saved as a result of the deduction. In such a circumstance, the taxpayer could invest the taxes saved and accumulate sufficient funds to pay the expense, effectively shifting the full burden of the expense to the federal government.

For example, consider the treatment of strip mining restoration expenses before the 1984 Act. When a strip miner disturbs the vegetation and removes the overburden, federal or state statutes may impose an unconditional obligation upon the strip miner to restore the landscape after the mining is completed. Under the pre-1984 rules, if the strip miner could estimate the cost of the restoration with reasonable accuracy, the cost accrued when mining commenced.[79] If, as was apparently true in at least one reported case,[80] the restoration was performed twelve years after the expense accrued for tax purposes, the accrued amount was $100, the strip miner saved $46 in the year of accrual, and he reinvested the $46 at 7% interest, the tax savings would grow to $104 in twelve years. This amount would be more than enough to pay the estimated expense.

This tax-deferral benefit would be obviated by present value accrual accounting. Under that method, the taxpayer would initially accrue only the present value of the estimated expense and would accrue original issue discount deductions over the deferral period. This treatment would match the treatment of a taxpayer that dis-

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[79] Denise Coal Co. v. Comm'r, 271 F.2d 930 (3d Cir. 1959); Harrold v. Comm'r, 192 F.2d 1002 (4th Cir. 1951); Ohio River Colleries Co. v. Comm'r, 77 T.C. 1369 (1981). *See* M. Bernard Aidinoff & Benjamin B. Lopata, *Section 461 and Accrual-Method Taxpayers: The Treatment of Liabilities Arising from Obligations to be Performed in the Future*, 33 TAX LAW. 789 (1980) (analysis of accrual accounting for deferred expenses prior to the 1984 Act).

[80] *See* Denise Coal Co. v. Comm'r, 29 T.C. 528, 549 (1957), *aff'd in part and rev'd in part*, 271 F.2d 930 (3d Cir. 1959).

charged its liability for the expense by inducing a third party to assume the expense in return for payment of its present value, having financed that purchase by borrowing at the applicable discount rate.

Congress recognized all of this when it rewrote the rules in 1984 for accrual accounting of deferred expenses. Although Congress acknowledged that the use of present value accrual accounting was theoretically proper, Congress rejected the present value approach because of its complexity.[81] Instead, Congress decided to defer the entire deduction for an accrued expense until "economic performance" occurs.[82] Because "economic performance" tends to occur roughly contemporaneously with the cash payment, this rule effectively places all tax-payers on the cash method for these deferred expenses.

The "economic performance" requirement defers the deduction for accrued expenses beyond the point indicated by the implicit loan analysis that underlies present value accrual accounting. This creates a serious potential for hardship in the case of large expenses that are deferred for a long period. These burdens can be aggravated because the limitations on loss carrybacks may preclude the use of the deduction to offset income earned in prior years from the activity that gave rise to the deduction. While the 1984 Act provided some relief with detailed rules permitting the establishment of reserves to cover strip mining, landfill restoration, and nuclear decommissioning costs,[83] tax-payers with other deferred expenses bear the brunt of the new rule.

Several aspects of the application of present value accrual accounting in these areas merit special mention. Because present value accrual accounting purports to unbundle the zero-coupon obligation

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[81]   *See* H.R. REP. NO. 98-432 (Part 2), at 1254–55 (1984) [hereinafter cited as 1984 HOUSE REPORT]; 1984 SENATE PRINT, *supra* note 77, at 262; 1984 GENERAL EXPLANATION, *supra* note 73, at 258–59.

[82]   I.R.C. § 461(h)(1).

[83]   *See* I.R.C. §§ 468, 468A.

that is implicit in a deferred payment, the application of this method requires a valuation judgment. In the case of deferred-payment sales of property, or deferred payments on long-term leases, this valuation is performed by discounting the deferred payments at the applicable federal rate. This rate is used as a surrogate (with its general downward bias) for the arm's-length borrowing rate of the obligor on the implicit obligation. In the case of obligations with an indefinite maturity, however, the lack of a fixed time period over which to discount payments complicates the determination of the present value and therefore the amount to be accrued. The proposed regulations acknowledge the contingent nature of such a liability by indicating that the amount of original issue discount on a loan with an indefinite maturity is "indeterminate" but prescribing rules for dealing with this indeterminacy only in special cases.[84]

For other types of deferred expenses in which no creditor exists on the implicit obligation,[85] a measure of the economic cost to the taxpayer is the cost to the taxpayer to purchase a risk-free zero-coupon obligation with a principal amount equal to the amount of the deferred expense. So viewed, it is sensible to use applicable federal rates to determine the present value of a deferred expense. Indeed, the use of federal rates in this instance raises fewer problems than in many of the instances discussed above in connection with installment

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[84] Prop. Treas. Reg. § 1.1272-1(f)(4), 51 Fed. Reg. 12,022, 12,052 (Apr. 8, 1986), provides that the yield to maturity on an obligation with a maturity date that can be extended or shortened at the option of the holder or the issuer shall be determined assuming that the option will be exercised if that will increase the yield (if the option is held by the holder) or will reduce the yield (if the option is held by the issuer). Prop. Treas. Reg. § 1.1275-4(d), 51 Fed. Reg. 12,022, 12,089 (Apr. 8, 1986), provides that the interest on certain obligations providing for fixed or minimum payments within a specified time period shall be determined as if all payments are made at the latest possible date in the smallest possible amount, with adjustments made based upon the facts at the end of each accrual period.

[85] *See supra* notes 79–80 and accompanying text for a discussion of the strip miner who is obligated by statute to restore the land that was mined.

sales of nontraded property.[86] In view of the trend towards tax rules that recognize the time value of money, in the future one can expect to see a broader application of present value accrual accounting to deferred expenses.

2. *Prepaid Income and Expenses*

The current tax rules for prepaid income and expenses largely collapse the distinction between the cash and accrual methods, and provide asymmetric treatment of the parties, which favors the government. In the case of prepaid income, the Supreme Court has established the general rule that prepaid income is taxable when received, even if it is earned in a subsequent year and is required to be refunded if not earned.[87] This result applies regardless of whether the recipient of the prepaid income uses the cash or the accrual method of accounting.[88]

The immediate recognition of prepaid income is much harsher to the taxpayer than the result under present value accrual accounting, which would treat the prepayment as the issuance of a zero-coupon obligation by the recipient that matures when the income is earned. The issue price of the implicit obligation is established by the amount of the payment, while a valuation judgment is required to determine the redemption price at maturity. This valuation would be the amount that the income would have been if paid when earned rather than in

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[86]   *See supra* notes 36–38 and accompanying text; textual example after note 77. This discussion deals only with the simplest case, involving a fixed expense. The appropriate discount rate for a contingent expense is less clear. *See, e.g., infra* note 324.

[87]   *See* Schlude v. Comm'r, 372 U.S. 128, 137 (1963); American Automobile Ass'n v. United States, 367 U.S. 687, 696–97 (1961); Automobile Club v. Comm'r, 353 U.S. 180, 188–89 (1957).

[88]   This rule does not apply, however, to progress payments received on a long-term contract under the completed contract method of accounting. *See* Treas. Reg. § 1.451-3(d)(1).

advance. In lieu of this valuation, applicable federal rates might be used to calculate the future value of the prepayment as of the date it is earned. This rate would also be used to determine original issue discount on the implicit zero-coupon obligation, which would be deducted by the recipient of the prepayment and included in the income of the payor.

This approach embodies some odd features that may explain why none of the recent rounds of tax legislation have attempted to apply present value accrual accounting to prepayments. First, the amount of income ultimately recognized by the recipient of the prepayment exceeds the amount initially received. Second, the excess is deducted by the recipient and included in the income of the payor over the prepayment period. While it is unusual to see an inflow of funds generating a tax deduction or an outflow creating taxable income, the present value accrual method would require this. On close examination, however, these features properly represent economic reality because a prepayment is an extension of credit by the payor to the recipient, and it is appropriate to impute an arm's-length rate of interest on the implicit loan.

This approach can be illustrated by a prepayment of a five-year magazine subscription sold for $100. Assume for simplicity that the revenue is earned once each year by delivery of a single annual issue and that the prepayment is made one year before delivery of the first issue. Using a 10% applicable federal rate, an annual subscription price of $26.38 paid upon delivery of each issue would have the same present value as the $100 prepayment. Under present value accrual accounting, the publisher would accrue $26.38 of sales revenue in each year, and would deduct interest equal to 10% of the unearned balance of the prepayment. Over the five-year period, the total interest is $31.90, which is equal to the excess of the $131.90 of aggregate sales revenue over the amount of the prepayment. Details are shown in the table below:

Year	Annual Revenue	Present Value	Net Prepayment	Interest	Net Accrual
1	26.38	23.98	83.62	10.00	16.38
2	26.38	21.80	65.60	8.36	18.02
3	26.38	19.82	45.78	6.56	19.82
4	26.38	18.02	23.98	4.58	21.80
5	26.38	16.38	0.00	2.40	23.98
Total	131.90	100.00		31.90	100.00

The annual net accrual increases from year to year, not because the value of the magazine is assumed to increase, but because the assumed constant $26.38 price is offset by progressively smaller interest deductions.

This result can be compared with the treatment under a statutory election allowed to publishers of periodicals and membership organizations to accrue prepaid subscriptions or dues over the periods during which they discharge the associated liability to provide goods or services.[89] The regulations provide that prepaid dues income accrues ratably over the term of the membership contract,[90] and they permit the taxpayer to allocate prepaid subscription income over the subscription term on any reasonable basis.[91] This would presumably involve a straight-line allocation. In the example described above,[92] a straight-line allocation would result in an accrual of $20 in each year, yet the calculations under the present value accrual method show that even a straight-line allocation requires income to be reported more rapidly than it is earned.

[89]   I.R.C. §§ 455, 456.

[90]   *See* Treas. Reg. § 1.456-3(a).

[91]   Treas. Reg. § 1.455-3(b).

[92]   *See supra* text before previous chart.

Although the schedule of increasing income resembles the treatment that might result from indexing revenues for inflation, present value accrual accounting will produce such an increasing schedule, even in the absence of any inflation, provided that the time value of money, and hence the applicable discount rate, is positive. Indeed, in periods during the mid 1980s of low inflation but high real interest rates, distortions caused by accounting methods that fail to reflect the time value of money may have exceeded the distortions caused by the absence of inflation indexing.

Unlike prepaid income, which in the absence of a special election is reported when received, prepaid expenses are rarely deductible when paid. Although under the cash method expenditures are purportedly deductible when made,[93] an immediate deduction for all prepaid expenses would permit cash basis taxpayers to accelerate tax deductions arbitrarily by making advance payments. This possibility is largely foreclosed by requiring the capitalization of expenditures that create an asset lasting substantially beyond the close of the taxable year in which the expenditure is made.[94] Moreover, the 1984 Act added special rules that in effect put "tax shelters" on the accrual basis for most other prepaid expenses.[95]

Under the accrual method, an expense is deductible when the two prongs of the "all events" test have been satisfied.[96] While the "all events" test will normally be satisfied when a prepaid expense is paid, the capitalization rules also apply to accrual basis taxpayers. In addi-

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[93] Treas. Reg. § 1.446-1(c)(1)(i), 1.461-1(a)(1).

[94] *See* I.R.C. § 263; Treas. Reg. § 1.461-1(a)(1). In particular, inventory accounting is required whenever the production, purchase, or sale of merchandise is an income producing factor. Treas. Reg. § 1.471-1. The 1986 Act expanded the scope of indirect costs that must be included in inventory rather than deducted. I.R.C. § 263A.

[95] I.R.C. § 461(i).

[96] *See* Treas. Reg. § 1.461-1(a)(2). *See supra* note 78 and accompanying text for a discussion of the two prongs of the "all events" test.

tion, the rules for amortizing, depreciating, or depleting previously capitalized expenditures operate independently of the taxpayer's method of accounting.

In the case of a prepaid business expense for an item such as a magazine subscription or a prepaid insurance contract, the cost is amortizable on a straight-line basis over the term of the item to which the expenditure relates.[97] Under present value accrual accounting, the payor would also recognize interest income of the lending side of the same implicit loan borrowed by the recipient of prepaid income. Indeed, the present value accrual method produces the same net deductions for the prepaid magazine subscription described above[98] as the amounts included in the publisher's income.[99]

The stakes increase as the prepayment period lengthens. In these cases, the prepayment is typically viewed as the acquisition of an intangible asset, and the cost of the asset is amortized on a straight-line basis over its life, provided that the life is limited and can be estimated with reasonable accuracy.[100] Thus, a purchaser of rights under a patent or copyright with a limited statutory life may amortize the cost of these rights over this remaining life.

Because the purchase price of these patent rights represents a discounted value of the cost of paying for the patent rights on a year-to-year basis under a license, the initial payment for the patent rights may be thought of as an implicit loan to the seller, to be "repaid" by the seller's grant of patent rights in each subsequent year at no additional cost. This suggests that the true cost of the patent rights must be increased by the interest on the implicit loan, and each year's deduc-

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[97] Rev. Rul. 70-413, 1970-2 C.B. 104.

[98] *See supra* text before previous chart.

[99] This assumes that the magazine is a business rather than a personal expense. *See infra* notes 115–116 and accompanying text for a discussion of prepaid personal expenses.

[100] Treas. Reg. § 1.167(a)-3.

tion should be a pro rata portion of its increased cost less the interest deemed to accrue in that year. As with a prepaid subscription or insurance contract, each year's interest component declines as the implicit loan is repaid, so the net deduction increases from year to year.

Year	Annual Expense	Present Value	Net Prepayment	Interest	Net Accrual
1	100.00	90.91	836.49	85.14	14.86
2	100.00	82.64	820.14	83.65	16.36
3	100.00	75.13	802.16	82.01	17.99
4	100.00	68.30	782.37	80.22	19.79
5	100.00	62.09	760.61	78.24	21.76
6	100.00	56.45	736.67	76.06	23.94
7	100.00	51.32	710.34	73.67	26.33
8	100.00	46.65	681.37	71.03	28.97
9	100.00	42.41	649.51	68.14	31.86
10	100.00	38.55	614.46	64.95	35.05
11	100.00	35.05	575.90	61.45	38.55
12	100.00	31.86	533.49	57.59	42.41
13	100.00	28.97	486.84	53.35	46.65
14	100.00	26.33	435.53	48.68	51.32
15	100.00	23.94	379.08	43.55	56.45
16	100.00	21.76	316.99	37.91	62.09
17	100.00	19.79	248.69	31.70	68.30
18	100.00	17.99	173.55	24.87	75.13
19	100.00	16.36	90.99	17.36	82.64
20	100.00	14.86	0.00	9.09	90.91
Total	2,000.00	851.36		1,148.64	851.36

The table above shows the resulting deductions for a twenty-year patent, in which the initial purchase price of $851.36 is based upon a license fee of $100 annually and a 10% discount rate. Because of the longer period, the effects are more dramatic than in the case of a pre-paid subscription,[101] but the principles are the same. The resulting deductions are tax-neutral in the following sense: a taxpayer who pur-chases patent rights is treated identically to a second taxpayer who invests in debt securities and applies the debt service towards annual license payments.The increasing net accruals should be contrasted with the current-law writeoff of the $851.36 cost of the license through twenty equal annual deductions of $41.28 each. Under the present value accrual method, the deductions increase even though the annual license expense if paid currently is assumed to be a con-stant $100.

Two difficult valuation questions are raised by the assumption of a $100 annual license expense. The first is estimating the extent of the discount caused by the prepayment. This is essentially the same issue raised in the context of deferred income and expenses,[102] and this issue might be resolved, more or less, through the use of federal rates. The second is allocating the total "true" cost (that is, the prepayment as inflated by the discount rate) among the periods in which it is in-curred. The tables above assume that it is appropriate to allocate this cost ratably among the periods to which it relates. One can readily imagine circumstances in which other assumptions might be appropri-ate. For example, in the case of a prepaid patent license to produce a particular product, if increasing amounts of the product are expected to be produced over the life of the patent, an allocation of a greater portion of the "true" current cost to the later years would be appro-priate; the opposite would be true if, because of evolving technology,

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[101] *See* previous chart *supra.*

[102] *See supra* note 65–86 and accompanying text.

the benefits of the patent were expected to diminish over time. Given these uncertainties, a level allocation of the "true" current cost seems appealing. This should be contrasted with the straight-line amortization of the prepayment allowed under current law, which, when the implicit interest is taken into account, corresponds to an allocation of the "true" current cost that declines over time.

Patents are singled out for special treatment under the tax law in many respects, including an exemption for contingent payment sales of patent rights from the imputed interest and original issue discount rules,[103] yet the distortion of income that might be tolerable in the case of a purchase of patent rights applies equally to intangible assets acquired by prepayment under other long-term contracts, such as covenants not to compete,[104] easements,[105] and franchises.[106] Moreover, apart from simplicity (which should not be lightly dismissed) it is difficult to see why the tax law should favor prepayments under long-term contracts over current payments as the benefits under the contract are provided.

The analysis used for long-term contracts and other intangibles also applies to tangible income-producing property. Indeed, purchases of such property may be the most pervasive form of prepaid expenses. Like many other prepaid expenses, the cost must be capitalized and subsequently deducted in a manner independent of the taxpayer's method of accounting. The traditional term for these deductions—depreciation—shows an intent to reflect for tax purposes the decline in value of a tangible asset over its useful life. Given the current prevalence of accelerated methods and recovery periods that are far shorter than actual useful lives, it is noteworthy that even straight-line deductions are themselves accelerated with respect to the actually

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[103] I.R.C. §§ 483(d)(4), 1274(c)(4)(E).

[104] Rev. Rul. 68-636, 1968-2 C.B. 92.

[105] Rev. Rul. 71-120, 1971-1 C.B. 79.

[106] Super Food Services, Inc. v. United States, 416 F.2d 1236 (7th Cir. 1969).

sustained depreciation in value of the property in a static world with no inflation in which the property generates benefits of equal dollar value during each year of its useful life. In such a world, the economic depreciation would increase from year to year in a pattern identical to that set forth for intangibles in the preceding table.

The idea that economic depreciation deductions should be computed on an increasing basis is a familiar one,[107] but it has had little impact upon accounting or tax policy partly because of its lack of conservatism. Moreover, the assumptions behind the economic method of depreciation are doubtful, particularly its assumption that an asset generates equal annual benefits during each year of its useful life. Wear and tear and obsolescence can cause the benefits of a tangible asset to decline in the final years before it is scrapped, causing the present value of the remaining benefits to drop most sharply during the initial years.

The declining productivity over time of a typical tangible asset by itself cannot explain the dramatic acceleration and shortened lives under the accelerated cost recovery system.[108] These rapid writeoffs, and to a lesser extent those under the asset depreciation range system in effect before 1981, are intended to implement a macroeconomic policy of encouraging capital formation through investment in equipment, rather than to track economic depreciation. Indeed, the use of the term "cost recovery" instead of "depreciation" indicates a departure from the goal of providing writeoffs for tangible property that bear more than a passing relationship to economic reality.

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[107] *See, e.g.*, John P. Steines, *Income Tax Allowances for Cost Recovery*, 40 TAX L. REV. 483, 491–92 (1985). The notes to that article summarize a debate concerning whether the income on the implicit zero-coupon obligation is a proper component of a comprehensive tax base. Although my position on this issue is affirmative, my purpose here is not to participate in that debate but rather to explore how the tax law might deal with the implicit obligation's being contingent. *See also* Alvin Warren, *Accelerated Capital Recovery, Debt, and Tax Arbitrage*, 38 TAX LAW. 549 (1985).

[108] I.R.C. § 168.

Cost recovery deductions are also intended to compensate for inflation,[109] because deductions based upon historical cost cause gains generated by inflation to be included in the tax base. The use of accelerated methods for that purpose, however, is more a matter of rough justice than fine tuning. A proper adjustment for inflation would increase each year's deduction by the amount of inflation accrued since the asset was purchased. This was the approach taken by the House version of the Tax Reform Act of 1986[110] as well as the Administration proposals on which it was based,[111] although the underlying deductions that are made subject to the inflation adjustment are computed on a declining balance method that yields decreasing deductions over time before applying the inflation adjustment. This method tracks the actual decline in value of an asset in real terms only if the asset's productivity in real terms declines even more rapidly.

The valuation problems discussed above in connection with intangible assets[112] are also raised by tangible assets, with the added complication that the useful life of a tangible asset is almost always uncertain. Consequently, the implicit zero-coupon obligation created by an investment in a tangible asset has "payoffs" in terms of the current rental cost[113] of the asset that are contingent as to both time

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[109] *See* S. Rep. No. 97-144, at 47 (1981).

[110] H.R. 3838, 99th Cong., 2d Sess. § 201 (a), at 1–39 (1985). An alternative method of offsetting the effects of inflation was debated during the genesis of the 1981 Act. This method would have allowed present values of economic depreciation deductions during the first year. *See* Alan J. Auerbach & David Raboy, *10-5-3 Versus First-Year Recovery; A Depreciation Debate*, 12 Tax Notes 899 (1981); Alan J. Auerbach & Dale Jorgenson, *The First Year Capital Recovery System*, 10 Tax Notes 515 (1980).

[111] Summary of the President's Tax Proposals to the Congress for Fairness, Growth, and Simplicity 138–47 (May 29, 1985) [hereinafter cited as 1985 President's Proposals].

[112] *See supra* notes 100–102 and accompanying text.

[113] It should be remembered that this rental cost is not the projected or actual rental *value* of the asset, but rather the rental cost that would have the same aggregate present value as the purchase price of the asset.

and amount. Hence, the tax treatment of depreciation is closely related to the treatment of other contingent payment obligations that are discussed below.[114]

When a prepaid expense is incurred or an asset purchased for business purposes, the interest income on the implicit zero-coupon obligation is offset by the "gross" depreciation expense. This leaves a net depreciation deduction that represents the difference between the two items. If the expense or asset is for personal purposes, with no deduction for the gross depreciation, it follows that the implicit interest should be taxable. Current tax law fails to reach this income, thereby providing a tax benefit for prepayments and purchases of consumer durables. For owner-occupied homes, the implicit interest can be a substantial portion of the taxpayer's gross income, and excluding this income from the tax base is largely responsible for the tax law's discrimination against those who rent.

Some prepayments have been deliberately marketed as a form of tax-free investment vehicle. For example, a number of colleges will accept a small payment upon the birth of a child in full payment of tuition when the child reaches college age.[115] If the parents had invested to cover these college costs, the income from the investments would clearly have been taxable. Because of the substantial nontax detriments of these prepaid tuition arrangements (in particular, their

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[114] *See infra* notes 323–326 and accompanying text.

[115] *See* Schwartz, *Pay Now, Learn Later*, NEWSWEEK, Apr. 7, 1986, at 76; Leslie Laurence, *The Surprises in Aid Packages*, MONEY, Sept. 1986, at 143 [hereinafter cited as Laurence]. The pioneer in this area is Duquesne University. U.S. NEWS & WORLD REPORT, Feb. 3, 1986, at 56. The University of Pennsylvania offers an option to prepay four years' tuition upon matriculation, and arranges bank loans for the prepayment. Laurence, at 143. Presumably the students (or parents) deduct the interest payments on these loans, even though the interest on the implicit loan to the university is untaxed.

limited transferability among colleges) it is unlikely that they would be worthwhile absent the tax benefit.[116]

When a consumer prepayment or durable asset purchase is directly financed by borrowing, the interest element on the implicit zero-coupon obligation can be brought into the tax base by disallowing the deduction for the loan. This is the approach taken by the restrictions on deductions for consumer interest. This approach is not well-targeted, however, because of tracing problems and its failure to reach the implicit income of wealthy taxpayers who can make these purchases without borrowing.

Prepaid interest raises few difficult questions. Other prepaid expenses have a time value component and a current expense component that must be valued separately. In the case of prepaid interest, however, the current expense itself is compensation for the use of money, and the terms of the loan define the appropriate discount rate. Thus, annual interest deductions that are based upon applying the yield on the loan to the unpaid balance will reflect the same time value of money that was used in pricing the loan. If this pricing is between unrelated parties, it should be respected for tax purposes.

This is the approach now required by the Service,[117] subject to a limited exception.[118] The ruling appears to have won widespread ac-

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[116] One commentator has proposed that deferring deductions for future costs is appropriate as an indirect way of bringing into the tax base the implicit interest income of the person benefiting from those costs. *See* Noël Cunningham, *A Theoretical Analysis of the Tax Treatment of Future Costs*, 40 TAX L. REV. 577, 600–05 (1985). That approach would not work, however, for prepaid tuition offered by a tax-exempt college.

[117] Rev. Rul. 83-84, 1983-1 C.B. 97.

[118] Rev. Proc. 83-40, 1983-1 C.B. 774. The exception relates to self-amortizing level-payment consumer loans with a term of no more than five years. Section 461(g) also permits homeowners to deduct the full amount of "points" on a home mortgage if charging points in that amount is consistent with established business practice in the area.

ceptance even though it overturned longstanding practices of allocating principal and interest by other means such as the "Rule of 78's."[119]

3. *Shortcomings of Present Value Accrual Accounting*

The most apparent shortcoming of present value accrual accounting is its complexity. For most of the fifty-year period following the introduction of the income tax, interest rates were low and the distortions of the traditional methods tended to be modest. In this environment, the benefits of administering a tax system under the simpler traditional methods outweighed the costs of the distortions. Situations involving unwarranted tax deferral or acceleration could be treated on a case-by-case basis.

Three developments over the past twenty years have tipped this balance. First, higher interest rates have increased the distortions caused by ignoring the time value of money. Even though interest rates have declined substantially in recent years with diminishing inflation, the real rate of interest (that is, the nominal rate less the rate of inflation) has remained high by historical standards. Second, this period of high interest rates has increased the awareness among taxpayers and policy makers of the importance of the time value of money, resulting in more sophisticated tax planning techniques and more elaborate restrictions imposed in response to those techniques.[120]

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[119] Under "the Rule of 78's," the portion of total interest allocated to the ith period of a loan covering n periods is $(n+1-i)/([n \text{ x } (n+1)]/2)$. The denominator of this fraction represents the sum of the integers from 1 to n. Having originally been used to allocate total interest among the twelve months in a year, the rule derives its name from the sum of the integers from 1 to 12.

[120] A case in point is the 1982 issuance of debt obligations by Caterpillar Tractor. By skipping the first year's interest payment, Caterpillar caused the entire debt service on the obligations to be recast as principal. Under the straight-line accrual of original issue discount then in effect, the issuer was able to substantially front-load its interest deductions. *See* Caterpillar Tractor Co., Preliminary Prospectus Supplement (July 14, 1982). The Treasury promptly proposed that the original issue discount be deducted under the present value accrual method for

Third, modern computing methods permit taxpayers to make more detailed calculations than they could when they had to determine present values with reference to printed tables.[121] It is probably no coincidence that the considerable expansion of present value accrual accounting mandated by the 1984 Act coincided with the personal computer explosion.

Yet these developments have had the most impact only on a sophisticated subset of taxpayers. With respect to the smaller transactions engaged in by most taxpayers, the benefits of the traditional rule's simplicity will continue to dominate. Thus, smaller loans can avoid some of the more refined determinations of applicable federal rates,[122] and some accrued expenses with short deferral periods are still allowable notwithstanding the "economic performance" requirement.[123]

An additional shortcoming of present value accrual accounting is that it requires a valuation of the implicit zero-coupon obligation. The cash method sidesteps this question because there is no interval between the payment and the reporting of the item giving rise to the payment. The accrual method simply assumes that the interest rate on the implicit obligation is zero, so that the face amount itself is accrued. Although unrealistic assumptions behind the traditional methods can lead to serious timing distortions, the quest for realism requires valuation judgments that will present difficult evidentiary

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all obligations issued after May 3, 1982, unless the obligations were issued pursuant to a binding contract in effect on that date. Treasury Department News Release (May 3, 1982). This proposal was included in the 1982 Act with an effective date of July 1, 1982. 1982 Act, *supra* note 25, § 231.

[121] *See, e.g.*, the present value tables set forth in Treas. Reg. § 1.483-1(g)(2). By contrast, the recently issued proposed regulations set forth the underlying formulas and require the taxpayer to calculate the present values. *E.g.*, Prop. Treas. Reg. § 1.1274-5(d), 51 Fed. Reg. 12,022, 12,075 (Apr. 8, 1986).

[122] *See* I.R.C. § 1274A.

[123] I.R.C. § 461(h)(2), (3).

problems or will be the subject of simplifying rules that introduce their own distortions. These problems are avoided only in the case of obligations issued for cash or for property with a readily ascertainable fair market value.

Apart from these administrative difficulties, present value accrual accounting takes only a limited step towards the ideal of measuring true economic income in the Haig-Simons sense: consumption plus increases in net worth.[124] Neither consumption nor increases in net worth are completely susceptible to practical valuation. The tax law has always been forced to rely upon accounting concepts of what income is and when it is earned. While present value accrual accounting corrects for the failure of traditional methods to reflect changes in value caused by the time value of money, it does not correct other distortions.

Consider, for example, a prepaid insurance contract with a fixed initial premium. The insured has not only made an implicit loan to the insurer but the insured has also locked in the insurance rate for the term of the contract. The analysis above of a prepaid contract[125] assumes a fixed cost of insurance coverage on a current-payment basis, but when this coverage is provided, its actual value may differ from this fixed amount because of changes in the insurance market. An example of this discrepancy occurred in 1984 and 1985 following a series of failed communications satellite launches.[126] Insurance rates

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[124] *See generally* HENRY C. SIMONS, PERSONAL INCOME TAXATION (1938). Oddly, Simons himself had little interest in the timing of income, possibly because the time value of money was lower in his time. *See id.* at 49–50, 162, 168, 208. Today, however, any quest for a comprehensive tax base must take into account the time value of money. *See* Boris I. Bittker, A "*Comprehensive Tax Base*" *as a Goal of Income Tax Reform*, 80 HARV. L. REV. 925, 958–73 (1967).

[125] *See supra* note 97 and accompanying text.

[126] The failed satellites included the 1984 launches of the Indonesian Palapa B2 and the American Westar VI satellites (which were later recovered by the space shuttle Discovery) and the 1985 launch of the Hughes Communications Syncom

thereafter increased greatly,[127] but those people who had already procured fixed-rate insurance for subsequent launches retained the benefit of lower premiums. A prepaid expense, therefore, is not only an implicit loan but also an implicit forward contract. Present value accrual accounting does not attempt to "mark to market" this implicit forward contract during the prepayment period.

The time value of money itself presents an additional source of changes in value ignored by present value accrual accounting. This can affect even the paradigmatic case of a zero-coupon obligation issued for cash: the holder will accrue original issue discount each year based on the obligation's yield to maturity, although the actual value of the obligation may differ from its accreted value depending upon changes in prevailing market yields. While present value accrual accounting should not be rejected merely for its failure to reflect all possible sources of changes in value, it should be remembered that the complexities of this method do not achieve complete economic realism.

Finally, present value accrual accounting is ill-equipped to deal with contingent payments. The method was first developed to deal with the locked-in return on a fixed debt obligation with original issue discount issued for cash. The method also works, subject to some valuation problems, with fixed obligations issued for property or services. But contingent obligations have no locked-in return, and it is therefore difficult to determine what to accrue pending resolution of the contingency. The remainder of this article surveys the approaches to this problem taken by current tax law in various contexts, and explores possible new methods of accounting for contingent obligations that properly reflect the time value of money.

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satellite. *See* Thomas O'Toole, *Shake, Rattle and Shuttle*, WASH. POST, May 24, 1985, at El, col. 1.

[127] Launch insurance premiums rose from five to seventeen percent of policy coverage during this period. *See* Daniel F. Cuff, *Insurers Wary on Satellites*, N.Y. TIMES, Sept. 24, 1985, at D4, col. 1.

III. Contingent Payments Under Current Law

Because most economic activity entails some assumption of risk, it is not surprising that the treatment of contingencies permeates the tax law. Frequently, however, contingent payments present few time value of money problems because the contingency is resolved when the payment is earned. An example is floating-rate interest based on current values of an index such as the London interbank rate that is paid currently. The amount of interest accrued during any period relates to the value of the use of money during that period.[128] Hence, there is no distortion introduced by reporting the interest as it is determined for each period, even though the amount cannot be determined when the obligation is issued. Similar considerations apply to other contingent payments, such as rent based upon a tenant's gross revenues, that are determined on a current basis as the property is used.

Moreover, if the contingency is resolved as the payment is earned, a deferral of the payment itself raises no new issues because the deferred item is a fixed-payment obligation. For example, if an obligation provides for contingent interest based upon the borrower's annual gross revenues but the payment of each year's contingent interest is deferred until maturity, the item that is accrued each year under the proposed regulations is the present value (using federal rates) of the amount determined based on that year's gross revenues. The excess of the payment over its present value would be accrued as original issue discount over the remaining term of the obligation.[129] In

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[128] Some problems remain: for example, a floating-rate obligation cannot be valued, nor its yield measured, by discounting its principal and interest payments without some assumption as to what those payments will be. *See infra* notes 218–219 and accompanying text.

[129] Prop. Treas. Reg. § 1.1275-4(e)(3)(ii), 51 Fed. Reg. 12,022, 12,091 (Apr. 8, 1986). Similar considerations apply to a deferred payment that is contingent only with

effect, the issuer is treated as issuing an additional "baby" zero-coupon obligation due at maturity with a redemption price equal to the deferred payment.

The difficult case arises when the contingency is not resolved until after the payment has been earned. The indexed principal obligation described at the beginning of this article[130] is an example: the payment represents compensation for the use of money over the term of the obligation, but the contingency is not resolved until maturity. Prepaid income can also be contingent: for example, amounts received under a "claim of right" may be subject to forfeiture. Even a fixed prepaid expense raises similar problems if the periods during which the pre-payment is earned cannot be determined until a later period. For example, the amount of depreciation sustained in the first year after an asset is placed in service cannot be determined without some assumption about its useful life, the correctness of which will not be determined until the asset is retired.

The tax law has developed a number of mechanisms to cope with these difficult cases. By far the most prevalent is a sort of "null hypothesis": assume nothing has happened until events prove otherwise. This approach was articulated in the early years of the federal income tax with the development of the open transaction doctrine and the "all events" test.[131] In other cases, the tax treatment of contingent arrangements is based not on a null hypothesis but on more definite assumptions about the future. These mechanisms are analyzed below.

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respect to time of payment, if the payment bears adequate stated interest. In such a case, the payment itself can be accrued when earned, and the stated interest accrues over the deferral period. *See* Prop. Treas. Reg. § 1.1274-4(b)(2), 51 Fed. Reg. 12,022, 12,073 (Apr. 8, 1986).

[130] *See supra* note 22 and accompanying text.

[131] *See supra* note 78 and accompanying text for a discussion of the "all events" test.

A. *The Null Hypothesis Under the Open Transaction Doctrine*

The term "null hypothesis" is used in this article to describe what in computer parlance is called a "default parameter": the assumed but unspecified outcome of a contingency. For a contingent payment sale of property, the null hypothesis is embodied in the recovery of basis rule, which provides that no gain or loss has occurred until the contrary is established by the actual stream of payments received. For contingent deferred items of income and expense, the null hypothesis under the accrual method is embodied in the "all events" test, which assumes that the amount of the item is zero until the item is no longer contingent and its amount can be estimated with reasonable accuracy.

1. *The Recovery of Basis Rule*

Under the installment method, gain on the sale of property is reported by the seller as the payments are received by allocating the seller's basis in the property sold among the payments in proportion to the ratio of each payment (apart from stated or imputed interest) to the total amount of payments.[132] Because this ratio cannot be computed for a contingent payment sale until all of the contingent payments have been determined, installment reporting was traditionally not available for these sales.[133] The Installment Sales Revision Act of 1980,[134] however, authorized regulations, since issued in temporary

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[132] I.R.C. § 453(c). This method is available for casual sales of property regardless of whether the taxpayer otherwise uses the cash or accrual method of accounting. I.R.C. § 453(a)

[133] *See* Steen V. United States, 509 F.2d 1398, 1404 (9th Cir. 1975); Gralapp v. United States, 458 F.2d 1158, 1160 (10th Cir. 1972).

[134] Pub. L. No. 96-471, § 2, 94 Stat. 2247, 2251 (1980) (codified at I.R.C. § 453(j)(1)).

and proposed form,[135] permitting the use of installment reporting for contingent-payment sales and setting forth rules for allocating basis among the contingent payments. In the absence of an election to use installment reporting, the traditional rule applies.[136]

The traditional rule could result in more favorable treatment for the taxpayer than installment reporting provides. In *Burnet v. Logan*,[137] the Supreme Court held that payments received in a contingent-payment sale could be treated in full as recovery of basis until the total payments received exceeded basis, the excess being taxable gain in the years received.[138] The taxpayer had sold stock in exchange for cash and deferred payments contingent on the amount of iron ore recovered from a particular mine.[139] Finding the deferred payment promise to have had no ascertainable value, the Court declared the transaction to be "open" until the amount of the deferred payments could be determined.[140]

This recovery of basis rule has diminished vitality today[141] because the legislative history of the Installment Sales Revision Act of 1980[142] contemplates that it will continue to be available only in "rare and

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[135] Temp. Treas. Reg. § 15A.453-l(c), T.D. 7768, 46 Fed. Reg, 10,708, 10,712 (Jan. 30, 1981). *See infra* notes 204–217 and accompanying text for a detailed discussion of these rules.

[136] Temp. Treas. Reg. § 15A.453-l(d)(2)(i), T.D. 7768, 46 Fed. Reg. 10,708, 10,717 (Jan. 30, 1981).

[137] 283 U.S. 404 (1931).

[138] *Id.* at 414.

[139] *Id.* at 405.

[140] *Id.* at 412–13.

[141] *But see* Daniel S. Goldberg, *Open Transaction Treatment for Deferred Payment Sales After the Installment Sales Act of 1980*, 34 TAX LAW. 605 (1981), which argues that the recovery of basis rule continues to be available not only when the contingent payment obligation lacks an ascertainable value, but also whenever a cash basis taxpayer elects not to use installment reporting for a deferred payment obligation that is not equivalent to cash.

[142] *See supra* note 134.

extraordinary cases" in which the value of the contingent payment obligation cannot be reasonably ascertained.[143] The temporary regulations provide that, when the value of a contingent payment obligation can be ascertained, that value must be treated as the amount realized in the year of sale by a cash basis taxpayer who elects not to use installment reporting.[144] For an accrual basis taxpayer, the temporary regulations cryptically provide that the amount realized in the year of sale is to be determined "in accordance with that method of accounting, but in no event less than the fair market value of the contingent payment obligation."[145] This presumably means that the amount realized by an accrual basis taxpayer can be no less than the face amount of any fixed payments.[146]

It is unclear what effect, if any, the proposed regulations for original issue discount have on these rules. The proposed regulations provide that the issue price of an obligation issued for nontraded property will be taken into account in determining the amount realized by the seller.[147] The proposed regulations also preclude issuers of certain contingent-payment obligations from including a contingent payment in the basis of the acquired property until the amount of the payment becomes fixed, but this rule is expressly inapplicable in determining the amount of the seller's gain.[148]

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[143] *See* H.R. REP. NO. 96-1042, at 21 (1980); S. REP. NO. 96-1000, at 24 (1980).

[144] Temp. Treas. Reg. § 15A.453-1(d)(2)(iii), T.D. 7768, 46 Fed. Reg. 10,708, 10,718 (Jan. 30, 1981).

[145] *Id.*

[146] This face amount rule is criticized in Schler, *supra* note 70, at 212–16.

[147] Prop. Treas. Reg. § 1.1274-2(a), 51 Fed. Reg. 12,022, 12,066 (Apr. 8, 1986).

[148] Prop. Treas. Reg. § 1.1275-4(d), 51 Fed. Reg. 12,022, 12,089 (Apr. 8, 1986). This rule applies only to obligations that call for fixed or minimum payments within a specified time period and either do not provide adequate stated interest or characterize a portion of each payment as stated interest to the extent sufficient to constitute adequate stated interest. *Id.*

Curiously, the null hypothesis under the recovery of basis rule assumes not that contingent payments will be zero but rather that they will be equal to the difference between the seller's basis and the total fixed payments. Generally, there is no factual plausibility to this assumption, and the rule may be justified instead as a cautious avoidance of recognizing any gain or loss until there is a clear justification for doing so.

The recovery of basis rule has always been limited to circumstances in which the purchaser's contingent obligation cannot be valued. The temporary regulations provide that the value of the property sold may provide an indication, or in any event a minimum amount, of the value of that obligation.[149] Yet the circumstances of the issuance of contingent-payment obligations often indicate that the parties had just the opposite in mind: the obligation is contingent precisely because the parties were uncertain as to the value of the property sold, and the resolution of the contingency determines the value of the property. The most common example is an "earn-out" on a sale of an ongoing closely-held business, in which the amount received by the seller is contingent upon the post-sale earnings of the business. The purpose of the "earn-out" is not so much to give the seller a continuing interest in the business, although it has that effect, but rather to use these post-sale earnings to refine what the value of the business was on the sale date.

Whether a contingency "looks back" to the valuation of the property sold can have a bearing on the character of the payment as well as its timing. The proposed regulations generally treat all contingent payments in excess of the issue price as payments for the use or for-

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[149] Temp. Treas. Reg. § 15A.453-1(d)(2)(iii), T.D. 7768, 46 Fed. Reg. 10,708, 10,718 (Apr. 8, 1981). *See also* United States v. Davis, 370 U.S. 65 (1962); Philadelphia Park Amusement Co. v. United States, 126 F. Supp. 184 (Ct. Cl. 1954); Schler, *supra* note 70, at 212.

bearance of money and therefore as interest.[150] For nontraded property, however, the proposed regulations generally treat contingent payments as an increase in the issue price to the extent of their value, discounted to the issue date at the applicable federal rate. Only the amount accrued at the federal rate is treated as interest.[151] The proposed regulations apply this "look-back" rule to all contingent payment sales of nontraded property, regardless of whether the contingency has anything to do with the value of the property sold.[152] The parties can restrict the application of the "look-back" rule by designating a maximum principal amount, with all payments in excess of such stated maximum being treated as interest.[153]

Thus the null hypothesis under the recovery of basis rule not only postpones the determination of whether a gain or loss has occurred, but also treats any gain or loss that does occur as derived from the property sold rather than from the contingent obligation itself. Moreover, the proposed regulations apply this "look-back" approach even when the seller's basis is recovered other than through the recovery of basis rule.[154]

2. *Contingent Deferred Income and Expense*

Under the cash method, there are no deferred contingent items because the taxpayer accrues all items when he pays them and the amount of payment dictates the amount accrued.[155] By contrast, the accrual method permits the taxpayer to accrue some income and ex-

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[150] Prop. Treas. Reg. § 1.1275-4(e)(3), 51 Fed. Reg. 12,022, 12,091 (Apr. 8, 1986).

[151] Prop. Treas. Reg. § 1.1275-4(c)(3)(ii), 51 Fed. Reg. 12,022, 12,087 (Apr. 8, 1986).

[152] *See infra* text accompanying notes 218–219 for a discussion of an exception to this rate for floating-rate interest.

[153] Prop. Treas. Reg. § 1.1275-4(c)(3)(ii)(B), 51 Fed. Reg. 12,022, 12,087 (Apr. 8, 1986).

[154] Prop. Treas. Reg. § 1.1275-4(c)(3)(ii), 51 Fed. Reg. 12,022, 12,087 (Apr. 8, 1986).

[155] *See* Treas. Reg. § 1.461-1(a)(1).

pense items before there are paid.[156] The possibility thus exists that the payment will differ from the amount accrued. These discrepancies are generally addressed by an adjustment in the year of payment (or an earlier year in which the discrepancy becomes evident), but the accrual method minimizes the need for these adjustments through the use of the "all events" test.[157] The null hypothesis is that the amount of any contingent payment is zero until events prove otherwise. Because of the time value of money,[158] the tax burden on a contingent deferred item of income or the tax benefit of a contingent deferred item of expense depends heavily on when the contingency is resolved.

The requirements of the "all events" test are generally consistent with comparable financial accounting rules that are intended to ensure that a taxpayer prepares financial statements in an objective manner without speculating about the future resolution of contingencies. For contingent deferred items of income, this principle of objectivity harmonizes with the principle of conservatism because the null hypothesis for contingent deferred income is a "worst case" scenario. By contrast, the principles of objectivity and conservatism conflict for contingent deferred expenses, which is evident in the history of reserve accounting. Evolving financial accounting standards have tended to restrict the traditional latitude towards establishing reserves as a matter of conservatism, opting instead for a more objective approach, with contingent liabilities relegated to the footnotes.[159] In tax accounting, conservatism translates into tax avoidance potential. Consequently, the tax law has traditionally been suspicious of reserves

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[156] *See* Treas. Reg. § 1.461-1(a)(2).

[157] *See supra* note 78 and accompanying text for a discussion of the "all events" test.

[158] *See supra* Part II.B (p. 68) for discussion of the time value of money.

[159] FINANCIAL ACCOUNTING STANDARDS BOARD, STATEMENT OF FINANCIAL ACCOUNTING STANDARDS NO. 5, ACCOUNTING FOR CONTINGENCIES (1975).

that do not satisfy the "all events" test, with limited exceptions for banks and insurance companies.[160]

Because the amount of a contingent item is typically determined at the time of payment, applying the "all events" test to these items tends to cause the accrual method to converge with the cash method. The intrusion of the cash method is even more striking in the case of contested liabilities. The Code permits an accrual basis taxpayer to accrue contested liabilities that are paid to the claimant or a third party pending the outcome of the contest.[161] This rule turns the standard null hypothesis on its head: once the taxpayer makes the payment, the Code presumes that the taxpayer will lose the contest. At this point, however, the item is no longer a contingent *deferred* item, and the time value of money benefits that arise from accruing the full face amount of a deferred expense are no longer present.

The requirement that the taxpayer be able to estimate the amount of a liability with reasonable accuracy puts pressure on taxpayers to demonstrate their forecasting acumen. In *Kaiser Steel Corp. v. United States*,[162] a recent Ninth Circuit decision dealing with liability for worker's compensation claims, the taxpayer developed statistical techniques to show that the aggregated amount of these claims could be estimated with reasonable accuracy.[163] Although the *Kaiser Steel* court accepted the taxpayer's statistical samples,[164] Congress, in enacting the "economic performance" requirement[165] of the 1984 Act, expressly precluded the accrual of worker's compensation and tort liabilities

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[160] *See infra* note 237.

[161] I.R.C. § 461(f).

[162] 717 F.2d 1304 (9th Cir. 1983).

[163] *Id. See also* General Dynamics Corp. v. United States, 773 F.2d 1224 (Fed. Cir. 1985) (medical claims), *cert. granted*, 106 S. Ct. 2913 (1986).

[164] 717 F.2d at 1308–09.

[165] I.R.C. § 461(h). In general, the "economic performance" test requires the taxpayer who has satisfied the "all events" test to perform his obligation before deducting the accrued expense. I.R.C. § 461(h)(2).

before payments are made to the claimants, regardless of whether the claim is contested or the amount can be estimated with reasonable accuracy.[166]

Apart from the "economic performance" requirement, the ability of taxpayers to escape the burdens of deferring deductions for contingent liabilities is restricted by general rules prohibiting deductions for self-insurance. Cash method concepts are of no help here: deductions for reserves are generally disallowed even if the taxpayer sets aside cash with a third party.[167]

One way to deduct contingent liabilities is to buy insurance covering those liabilities and deduct the premium. This shifts the contingent liability to the insurance company, which must include the premium in its income.[168] The purchase of insurance, however, is an imperfect solution. First, some liabilities are difficult or expensive to insure, particularly in the current "insurance crisis" climate.[169] Second, financially sound taxpayers may be as capable of bearing certain risks

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[166] I.R.C. § 461(h)(2)(C). This restriction overrides Section 461(f)(4) in that no deduction is allowed for contested amounts that are paid to a person other than the claimant. *See* 1984 Conference Report, *supra* note 76, at 876; 1984 GENERAL EXPLANATION, *supra* note 73, at 266. *See also supra* note 89 and accompanying text for a discussion of the "economic performance" test and the time value of accrued deductions.

[167] Steere Tank Lines, Inc. v. United States, 577 F.2d 279, 280, 282 (5th Cir. 1978), *cert. denied*, 440 U.S. 946 (1979); Spring Canyon Coal Co. v. Comm'r, 43 F.2d 78, 80 (10th Cir. 1930), *cert denied*, 284 U.S. 654 (1931). Section 461(f) is applicable only when an asserted claim is contested by the taxpayer. As originally enacted, the Code included Section 462, which allowed accrual basis taxpayers to deduct additions to reserves for estimated business expenses. Congress retroactively repealed this provision in 1955. Pub. L. No. 84-74, 69 Stat. 134 (1955).

[168] Special tax rules, however, permit insurance companies to defer a portion of their premium income and to deduct reserves for future losses. I.R.C. §§ 824, 832(b)(4).

[169] *See* Church, *Sorry, Your Policy is Cancelled*, TIME, Mar. 24, 1986, at 16.

as an insurance company is.[170] Finally, tax-motivated insurance pur-chases may discourage loss-containment activities by taxpayers to the detriment of society as a whole.[171]

Taxpayers have developed a variety of arrangements to avoid the restrictions on deductions for self-insurance. Indeed, this tax issue is so pervasive that much current insurance planning can more properly be characterized as tax planning. The Service has carefully scrutinized these arrangements for the indicia of risk shifting and distribution necessary before the Code treats these arrangements as insurance for tax purposes.[172]

For more than a decade, the Service has challenged attempts to in-sure risks with a "captive" insurer, usually an affiliated corporation established as an insurance company. Depending upon the variant adopted, the "captive" might (1) be domestic or foreign, (2) insure related-party risks either directly or through contracts of reinsurance with unrelated insurance companies, or (3) insure a greater or lesser degree of unrelated parties' risks as well as risks of affiliates. In a 1976 Revenue Ruling,[173] the Service took the position that arrangements with "captive" insurers do not constitute insurance for tax purposes because a "single economic family" bears the ultimate burden of the risk of loss, and thus there is no risk shifting.[174] Although the "single economic family" theory has questionable technical support and tax-

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[170] Indeed, financially sound tax-exempt institutions, having no tax motive, may elect to self-insure for most losses. Practices differ, however: Harvard University generally self-insures; Yale University does not.

[171] It can be argued, however, that insurers police the loss containment efforts of their customers, thereby reducing total losses.

[172] *See, e.g.*, Helvering v. LeGierse, 312 U.S. 531, 540 (1941) (Court did not find insurance risk in certain contracts); Comm'r v. Treganowan, 183 F.2d 288 (2d Cir.) (risk of loss from premature death shifted from individual to group), *cert. denied*, 340 U.S. 853 (1950).

[173] Rev. Rul. 77-316, 1977-2 C.B. 53.

[174] *Id.* at 54.

payers have bitterly resisted it, the Service has successfully defended its position in the courts.[175]

In the wake of these challenges, taxpayers have developed more sophisticated techniques that incorporate a degree of risk-shifting and distribution among unrelated parties. Some of these are true pooling arrangements that recall the historic origins of insurance when merchants agreed to share with each other the risk of loss of cargo at sea.[176] These arrangements should constitute insurance even though the taxpayer assumes a portion of his own risks along with those of the other pool members. Another technique of partial risk-shifting involves premiums that are retroactively adjusted to reflect the taxpayer's actual loss experience.[177] Although a full retroactive adjustment would preclude the presence of risk-shifting, lesser adjustments may not differ greatly in effect from the standard insurance technique of

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[175] *See, e.g.*, Beech Aircraft Corp. v. United States, 797 F.2d 920, 922 (10th Cir. 1986) (although corporations were separate entities, risk not shifted); Carnation Co. v. Comm'r, 640 F.2d 1010 (9th Cir.) (no risk shifting when risk borne by wholly owned subsidiary), *cert. denied*, 454 U.S. 965 (1981); Stearns-Roger Corp. v. United States, 577 F. Supp. 833, 837–38 (D. Colo. 1984) (deduction disallowed when there was "no shifting of risk outside the economic family"); Mobil Oil Corp. v. United States, 85-2 USTC ¶ 9585, at 89,498, 56 AFTR 2d 5636, 5645 (Cl. Ct. 1985) ("by merely qualifying a subsidiary as an insurance company a parent cannot deduct sums equivalent to insurance premiums which it pays to its subsidiary"). *But cf.* Crawford Fitting Co. v. United States, 606 F. Supp. 136, 148 (N.D. Ohio 1985) (captive insurance company was outside economic family of taxpayer).

[176] Rev. Rul. 55-189, 1955-1 C.B. 265. A primitive form of pooling is embodied in the principle of the "general average," under which the loss of cargo jettisoned overboard to protect the remaining cargo was shared by all cargo owners. A notorious example of such "cargo" was slaves with smallpox. FRANK WORSLEY & GLYN GRIFFITH, THE ROMANCE OF LLOYDS, 28–29 (1926).

[177] The possibility of a refund resulting from a retroactive adjustment did not preclude a deduction for the full premium initially paid when the refund was based upon the overall loss experience of the insurance company. Rev. Rul. 83-66, 1983-1 C.B. 43. *See also* Midwest Motor Express, Inc. v. Comm'r, 27 T.C. 167 (1956). The Service, however, disallowed deductions for premiums subject to retroactive adjustment based upon the taxpayer's own loss experience. *See* I.R.S. Priv. Ltr. Ruls. 86-38-003 (June 11, 1986); 86-37-003 (May 23, 1986).

prospective premium adjustments that relate premium payments to the insured's loss experience in prior periods.

The Service has arguably been too quick to view some of these arrangements as unwarranted tax avoidance schemes. Taxpayers often are seeking simply to replace the unrealistic null hypothesis of zero contingent losses with a premium amount based upon insurance industry rating practices for comparable risks that are insured with unrelated parties. Indeed, for risks that have a "market price" in the insurance market, the amount of an insurance premium, which represents the amount required to induce an unrelated party to assume a contingent loss, is a measure of the present value of that loss.

The deferral of contingent income items benefits the taxpayer. The proposed regulations for original issue discount,[178] which rigorously apply present value accrual accounting for fixed payments, liberally defer the reporting of contingent payments in a manner that may permit taxpayers to circumvent the requirements of annual accounting. For example, consider a five-year debt obligation with a fixed principal and interest payable at maturity and equal to a percentage of the issuer's total net profits over the five-year period.[179] Because losses in later years may offset profits in earlier years, no amount is fixed until maturity, yet permitting the holder to defer recognizing any income until maturity contrasts sharply with the treatment of a person earning these profits directly, who would be taxed on each year's income despite the possibility of losses in later years. Indeed, the issuer of such a debt obligation is in the odd position of having to report the full amount of its profit or loss for tax purposes in each year during the term of the obligation even though a portion of that profit or loss is for the account of the holder.

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[178] Prop. Treas. Reg. § 1.1275-4, 51 Fed. Reg. 12,022, 12,087 (Apr. 8, 1986).

[179] *See* Prop. Treas. Reg. § 1.1275-4(c)(4), Ex. 4, 51 Fed. Reg. 12,022, 12,089 (Apr. 8, 1986).

The proposed regulations also recognize the potential for using contingent payments to front-load or back-load interest, by giving the Commissioner the authority to reallocate interest if the front-loading or back-loading is tax motivated.[180] For example, an obligation issued by a foreign entity with contingent interest equal to increasing percentages of the issuer's profits would produce a back-loading of the holder's interest income with no offsetting United States tax liability for the foreign issuer.[181] To counteract such back-loading, the proposed regulations authorize the Commissioner to accelerate the holder's interest income by making reasonable assumptions concerning the amount of contingent interest that will accrue during the term of the obligation.[182] The examples suggest, however, that this authority is limited to obligations in which the contingent payments are artificially weighted to achieve tax avoidance.[183] Consequently, the potential still exists for deferral of contingent interest for the obligation described above with interest paid at maturity based upon cumulative net profits.[184]

Perhaps the most pervasive contingent deferred gains and losses are unrealized gains and losses on property. The requirement that gain or loss be realized before it can be recognized for tax purposes effectively treats unrealized gains or losses as contingent items with a null hypothesis that the value of the property is the owner's basis, like that of the recovery of basis rule. Indeed, in the absence of a disposition,

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[180] Prop. Treas. Reg. § 1.1275-4(g)(1), 51 Fed. Reg. 12,022, 12,094 (Apr. 8, 1986).

[181] *Cf.* Prop. Treas. Reg. § 1.1275-4(g)(2), Ex. 2, 51 Fed. Reg. 12,022, 12,094 (Apr. 8, 1986).

[182] Prop. Treas. Reg. §1.1275-4(g)(1), 51 Fed. Reg. 12,022, 12,094 (Apr. 8, 1986).

[183] Prop. Treas. Reg. §1.1275-4(g)(2), 51 Fed. Reg. 12,022, 12,094 (Apr. 8, 1986).

[184] A comparable potential for deferral is offered by the indexed principal obligations described at the beginning of this article. *See supra* notes 12–24 and accompanying text.

the tax law requires that an asset become completely worthless[185] or be permanently abandoned[186] before the taxpayer will be allowed a loss deduction, even though the taxpayer may have sustained a serious economic loss before that point.

However reasonable the null hypothesis may be when applied to individual assets, this application makes no sense in many circumstances involving groups of assets with related values. For example, the deduction claimed when the loss position of a straddle is sold undercuts the null hypothesis that no appreciation has taken place in the offsetting position.[187] Moreover, for growing categories of exchange-traded options and futures, the traditional null hypothesis has been abandoned in favor of a "mark to market" system that does away with the realization requirement entirely.[188]

3.   *The Claim of Right Doctrine*

A payment of income actually received may nonetheless be contingent if the recipient's right to keep the payment is uncertain. The null hypothesis in this instance was established by the Supreme Court in *North American Oil Consolidated v. Burnet*:[189] the recipient is assumed

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[185]   *Compare* Treas. Reg. § 1.165-5(c) (permits deduction for completely worthless stock) *with* Treas. Reg. § 1.165-5(f) (no deduction for mere decline in market value of stock).

[186]   *See* Treas. Reg. § 1.167(a)-8(a)(4) (1956) (loss allowed on a physical abandonment of a depreciable asset only if asset is irrevocably discarded).

[187]   I.R.C. § 1092(a). The Code has curtailed the tax avoidance potential of these straddles in recent years through rules requiring deferral of losses until the taxpayer recognizes offsetting gains. An offsetting position can have the effect of neutralizing a contingency, which might in some circumstances justify accruing a "locked-in" return. *See infra* notes 254–256 and accompanying text.

[188]   I.R.C. § 1256(a). *See also infra* notes 247–251 and accompanying text.

[189]   286 U.S. 417 (1932).

to be entitled to keep any amounts received under a "claim of right"[190] until subsequent events prove otherwise.[191] In *North American Oil*, the taxpayer received income from a tract of oil land in 1917 following a district court judgment in the taxpayer's litigation with the United States government over the ownership of the land.[192] The taxpayer's right to keep this income, however, did not become completely fixed until the government's appeals were exhausted in 1922.[193] As in many of the early cases concerning the timing of income or deductions, the taxpayer was less concerned with the time value of money than with a desire to avoid the relatively high tax rates enacted during World War I.[194] The Supreme Court held that the income was taxable when received in 1917, notwithstanding the possibility that it might have to be repaid; any repayment would be deductible when made.[195]

Although this principle has become known as the claim of right doctrine, the term is something of a misnomer because the Supreme Court has held that the doctrine also applies to embezzled income to which the taxpayer lacks any legitimate claim of right.[196] The doctrine now applies generally to receipts other than amounts that clearly are not income, such as loans that create a fixed liability or amounts held by a custodian or agent.[197]

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[190] *See generally* Harold Dubroff, *The Claim of Right Doctrine*, 40 TAX L. REV. 729 (1985) [hereinafter cited as Dubroff]; Robert R. Wootton, *The Claim of Right Doctrine and Section 1341*, 34 TAX LAW. 297 (1981).

[191] North Am. Oil Consol. v. Burnet, 286 U.S. 417, 424 (1932).

[192] *Id.* at 421.

[193] *Id.* at 422.

[194] In 1917, corporations were subject to an excess profits tax with rates up to 60%. War Revenue Act of 1917, Pub. L. No. 65-50, § 201, 40 Stat. 300, 303.

[195] North Am. Oil Consol. v. Burnet, 286 U.S. 417, 424 (1932).

[196] James v. United States, 366 U.S. 213, 221 (1961). The *James* Court overruled Comm'r v. Wilcox, 327 U.S. 404 (1946).

[197] The issue whether a payment constitutes a security deposit, which would not constitute income, or a prepayment for services or the use of property can pose a difficult question of intent. *See* City Gas Co. v. Comm'r, 689 F.2d 943 (11th Cir.

The claim of right doctrine should be distinguished from the treatment of fixed prepayments in the examples discussed above regarding prepaid subscriptions and dues.[198] In those examples, the recipient's obligation to provide goods and services to the payor was not contingent.[199] Consistent with the null hypothesis described above for contingent deferred expenses,[200] these expenses are assumed to be zero until a fixed amount can be established. This treatment of fixed payments can overlap the claim of right doctrine, however, when the prepaid income is required to be returned if not earned.

An exception to the claim of right doctrine is the treatment of premiums received by writers of put and call options to acquire property. Traditionally, the law has regarded these options as "open transactions" until the option lapses or is exercised.[201] Under the "open transaction" treatment, the option writer reports no income when the premium is received. Instead, the option writer recognizes this premium as income when the option lapses, adds the premium to the amount realized upon the exercise of a call, or subtracts the premium from the basis of property acquired upon the exercise of a put.[202] This treatment embodies the curious null hypothesis that the option will be exercised with a spread between the option's strike price and the value of optioned property equal to the premium, causing the option writer to break even. This treatment applies regardless of whether the option is "in the money" when written. The scope of the

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1982) (utility deposits); Van Wagoner v. United States, 368 F.2d 95 (5th Cir. 1966) (insurance premium deposits); Hirsch Improvement Co. v. Comm'r, 143 F.2d 912 (2d Cir.) (lease deposit), *cert. denied*, 323 U.S. 750 (1944); Rev. Rul. 72-519, 1972-2 C.B. 32 (deposit distinguished from advance payment for goods).

[198] *See supra* notes 96–103 and accompanying text.

[199] *See* Dubroff, *supra* note 190, at 770–771.

[200] *See supra* text after note 157.

[201] The traditional rules for options listed on the Chicago Board Options Exchange are summarized in Rev. Rul. 78-182, 1978-1 C.B. 265.

[202] *Id.* at 266–68.

traditional rule has recently been limited, however, by extending the mark to market rules to most exchange-traded options other than stock options.[203]

B.   *Stacking the Deck for the Government*

An alternate treatment of contingencies pending their resolution would assume the worst from the point of view of the taxpayer's tax position. Because taxpayers are generally in a position to arrange the nature of contingent payments that they are entitled to receive or obligated to make, a rule that always operates to the taxpayer's detriment would forestall any tax-motivated use of contingent payments. This approach presents tremendous difficulties, however, and consequently is seldom used.

One limited application is the allocation of the seller's basis against payments on a contingent obligation issued in an installment sale. The temporary regulations provide that, when the terms of the obligation provide a maximum possible amount to be paid, that maximum amount will be used in determining the portion of any payments made over the term of the obligation that constitute gain rather than recovery of basis.[204] Moreover, for this purpose the maximum amount is assumed to be paid at the earliest possible time, so that as little of the amount as possible is recharacterized as interest.[205] Later adjustments are made if less than the maximum amount is paid

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[203] I.R.C. § 1256(b). Under this provision, the term "Section 1256 contract" means any (1) regulated futures contract, (2) foreign currency contract, (3) nonequity option, or (4) dealer equity option.

[204] Temp. Treas. Reg. § 15A.453-1(c)(2)(i)(A), T.D. 7781, 46 Fed. Reg. 10,708, 10,712 (Jan. 30, 1981).

[205] Temp. Treas. Reg. § 15A.453-1(c)(2)(ii), T.D. 7781, 46 Fed. Reg. 10,708, 10,712 (Jan. 30, 1981).

or a greater portion of the amount paid constitutes imputed inter-est.[206]

This rule applies only if there is a maximum stated price. If there is no maximum, the worst result for the taxpayer would presumably be to treat all of each payment as gain until later events indicated the maximum payment that the taxpayer might receive. The temporary regulations, however, reject this gain-first approach in favor of other conventions described below that fall between this approach and the basis-first approach of the open transaction doctrine.[207]

In determining the buyer's interest deductions on a contingent-payment installment sale, the proposed regulations assume that the taxpayer will make contingent payments in the smallest possible amount at the latest possible time.[208] If there is no minimum amount or no latest possible time, interest does not accrue until the taxpayer makes the contingent payment or the payment becomes fixed. Similar assumptions apply in determining the buyer's basis, which effectively assumes that the buyer's basis is as low as possible until later events prove otherwise.[209] These assumptions contrast with the installment sale temporary regulations, which compute gain as if the maximum possible amount would be paid at the earliest possible time.[210] Never-theless, the assumptions of the proposed regulations concerning contingent interest and the buyer's basis are consistent with the gen-eral null hypothesis.

For items such as interest payments that are deductible by the payor and taxable to the recipient, the Service does not enjoy a tax advantage if the parties are subject to comparable tax rates and are treated consistently: any deferral of income for one party represents a

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[206] *Id.*

[207] *See infra* notes 211–217 and accompanying text.

[208] Prop. Treas. Reg. § 1.1275-4(d)(2)(i), 51 Fed. Reg. 12,022, 12,089 (Apr. 8, 1986).

[209] Prop. Treas. Reg. § 1.1275-4(d)(2)(ii), 51 Fed. Reg. 32,022, 12,089 (Apr. 8, 1986).

[210] *Compare supra* notes 204–205 *with* notes 208–209.

deferral of a deduction for the other. Consequently, any assumptions regarding contingencies that treat the parties consistently create the potential for tax avoidance (as well as hardship) unless the assumptions are free of bias. A null hypothesis assuming that all contingent payments are zero until established to be otherwise is plainly biased, as is a rule assuming that all contingent payments are as large as possible. The current law and proposed approaches discussed in the remainder of this article represent attempts to minimize or neutralize this bias.

C. *Use of Estimates*

In circumstances in which no maximum selling price is provided, the temporary regulations for contingent payment installment sales provide a set of conventions for determining the portion of a payment that represents gain to the seller rather than recovery of basis. If payments are to be made over a fixed period, the seller recovers his basis ratably over this period.[211] If the installment sale arrangement does not provide for a maximum selling price and fixed period, however, the seller recovers his basis ratably over a fifteen-year period.[212]

These rules are fairly arbitrary and have little to do with the terms of a particular contingent payment obligation. The temporary regulations therefore provide several "escape hatches." First, if the payments over a fixed period are subject to weighting, the seller's recovery of basis will reflect that weighting. For example, if the installment obligation provides for payments equal to 2% of the buyer's revenues for the first three years, followed by 1% of the buyer's revenues for the following three years, the seller will be entitled to apply two-thirds of the basis to the payments received during the first

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[211] Temp. Treas. Reg. § 15A.453-1(c)(3)(i), T.D. 7781, 46 Fed. Reg. 10,708, 10,715 (Jan. 30, 1981).

[212] Temp. Treas. Reg. § 15A.453-1(c)(4), T.D. 7781, 46 Fed. Reg. 10,708, 10,714 (Jan. 30, 1981).

three years.[213] Second, when payments are to be made in a fixed
amount of fungible units such as foreign currency, the seller may re-
cover basis in proportion to the amount of units received.[214] Third, in
the case of certain types of property such as mineral rights or motion
picture films, if the payments are based upon the productivity of the
property sold, basis may be recovered under an income forecast
method. Under this method, the fraction of basis applicable to each
payment is the fraction of total estimated income represented by that
payment.[215] Finally, if the taxpayer (or the Commissioner) can show
that, in the particular circumstances of a transaction, the appropriate
rate of basis recovery is at least twice as fast (or slow) as that provided
under these conventions, the Service may issue a ruling providing for
an alternate method of basis recovery.[216] In earn-outs with payments
contingent on net profits, the Service has issued rulings under this last
rule permitting basis to be recovered based on profit projections set
forth in pro forma financial statements.[217]

The amount of original issue discount accruing during each ac-
crual period is determined by multiplying the adjusted issue price of
the obligation by its yield. If the obligation bears interest at a floating
rate, however, the actual yield is not ascertainable until the obligation's
maturity. The proposed regulations deal with this problem by deter-
mining yield based on the assumption that the initially determined

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[213] *See* Temp. Treas. Reg. § 15A.453-1(c)(3)(ii), Ex. 3, T.D. 7781, 46 Fed. Reg. 10,708,
10,715 (Jan. 30, 1981).

[214] Temp. Treas. Reg. § 15A.453-1(c)(5), T.D. 7781, 46 Fed. Reg. 10,708, 10,715
(Jan. 30, 1981).

[215] Temp. Treas. Reg. § 15A.453-1(c)(6), T.D. 7781, 46 Fed. Reg. 10,708, 10,715 (Jan.
30, 1981).

[216] Temp. Treas. Reg. § 15A.453-1(c)(7)(ii), T.D. 7781, 46 Fed. Reg. 10,708, 10,716
(Jan. 30, 1981).

[217] *See, e.g.*, I.R.S. Priv. Ltr. Ruls. 86-21-023 (Feb. 19, 1986); 85-37-049 (June 17,
1985).

interest rate will continue over the life of the obligation.[218] If a float-ing-rate obligation is issued for nonpublicly traded property, the issue price is determined by discounting the payments at the applicable federal rate, again assuming that the initial rate of interest will contin-ue.[219] Any variations in the actual payments are reflected in the actual interest reported for each period, with no "look-back" revaluation of the issue price.[220] Although these rules may be arbitrary, the assump-tion that the initial rate of interest will be maintained is both objective and relatively free of bias.

The proposed regulations contain an implicit assumption about the amount of contingent payments that will be received on an obliga-tion issued for cash or publicly traded stock or securities with fixed payments that are less than the issue price. A null hypothesis like that used in the recovery of basis rule would assume that all contingent payments are principal until the aggregated contingent payments ex-ceed the shortfall of the total fixed payments from the issue price. Instead, the proposed regulations treat each fixed payment as princi-pal, but they treat each contingent payment as interest to the extent of the interest that is deemed to be accrued and has not been allocated to prior payments.[221] The amount of interest that is deemed to be ac-crued is determined by applying the appropriate federal rate[222] to the adjusted issue price of the obligation. The adjusted issue price will equal the original price plus accrued interest, less payments already made.[223] After the aggregate of the portion of contingent payments that is treated as principal equals the shortfall of the total fixed pay-

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[218] Prop. Treas. Reg. § 1.1275-5(d), 51 Fed. Reg. 12,022, 12,095 (Apr. 8, 1986).

[219] Prop. Treas. Reg. § 1.1274-3(d), 51 Fed. Reg. 12,022, 12,068 (Apr. 8, 1986).

[220] *Id.*

[221] Prop. Treas. Reg. § 1.1275-4(f)(2)(i), 51 Fed. Reg. 12,022, 12,092 (Apr. 8, 1986).

[222] Prop. Treas. Reg. § 1.1275-4(f)(2)(iii)(B), 51 Fed. Reg. 12,022, 12,092 (Apr. 8, 1986).

[223] Prop. Treas. Reg. § 1.1275-4(f)(2)(iii), 51 Fed. Reg. 12,022, 12,092 (Apr. 8, 1986).

ments from the issue price, any further contingent payments are treat-ed as interest.[224] This method assumes that the parties have structured the contingent payments so that the obligation will ultimately have a yield that at least equals the applicable federal rate. Presumably this assumption generally is in accordance with the expectations of the parties (otherwise the holder would buy treasury securities instead of the contingent payment obligation), but the actual yield may not meet their expectations in a particular instance. In that case, the holder will have a loss deduction on retirement of the obligation at maturity.[225]

Although the proposed regulations assume a minimum return equal to the applicable federal rate with respect to contingent pay-ments, the more traditional null hypothesis applies to fixed payments on the same obligation. These payments are treated in full as princi-pal.[226] Indeed, it is this null hypothesis that accounts for the holder's substantial tax deferral on the indexed principal obligation discussed at the beginning of this article.[227] A more complete application of an assumed return equal to the applicable federal rate would treat all payments as accrued interest to the extent of the applicable federal rate, with the balance treated as principal until the issue price has been recovered.[228]

Perhaps the most common application of specific estimates to the tax treatment of contingent payments are the assumptions used to determine the cost recovery of depreciable and other wasting assets. For fixed assets, the depreciation period embodies an assumption about the useful life of the asset, and the depreciation method em-bodies an assumption about how its benefits will be distributed over

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[224] Prop. Treas. Reg. § 1.1275-4(f)(2)(ii)(B), 51 Fed. Reg. 12,022, 12,092 (Apr. 8, 1986).

[225] *Cf.* Prop. Treas. Reg. § 1,1275-4(f)(4), 51 Fed. Reg. 12,022, 12,092 (Apr. 8, 1986).

[226] Prop. Treas. Reg. § 1.1275-4(f)(1), 51 Fed, Reg. 12,022, 12,092 (Apr. 8, 1986).

[227] *See supra* notes 12–21 and accompanying text.

[228] *See infra* notes 307–308 and accompanying text.

its useful life. As noted above,[229] however, current rules for depreciating fixed assets are determined more by macroeconomic objectives of capital formation and industrial policy than by realistic estimates.

More neutral estimates apply to mineral assets subject to cost depletion. The cost depletion allowance for any year is the fraction of total unrecovered cost equal to the fraction of total remaining reserves removed in that year; this fraction can be determined only after making an estimate of total reserves.[230] A comparable formula applies to the depreciation of fixed assets such as movies that may be depreciated using an income forecast method.[231] Congress has authorized depletion deductions based upon biased estimates of rents or royalties from minerals and oil and gas eligible for percentage depletion, which itself is based upon a statutory percentage of the taxpayer's gross income from the property.[232] The amounts determined under percentage depletion have no direct relationship to the total reserves or even to the taxpayer's cost, and these amounts typically produce greater deductions than would be available under cost depletion. Percentage

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[229] *See supra* notes 109–114 and accompanying text.

[230] Treas. Reg. § 1.611-2(a)(1). Even if the assumed total reserves are completely accurate, cost depletion will not reflect the actual decline in value of the property because this method does not take into account the time value of money. *Cf.* notes 108–113 *supra* and accompanying text for a discussion of amortization. A method that reflected the time value of money would require assumptions not only about the applicable discount rate but also about the rate of recovery of the remaining reserves: each year's deduction would equal the difference between the present values of the remaining reserves at the end and beginning of the year. The remaining reserves are treated as having a per-unit value that yields a present value at the beginning of the year equal to the then unrecovered basis.

[231] Prop. Treas. Reg. § 1.168-4(b)(1), 49 Fed. Reg. 5,940, 5,958 (Feb. 16, 1984). The Service has approved depreciation of oil well equipment on a usage-based method, Rev. Rul. 56-652, 1956-2 C.B. 125, and has declared that the income forecast method is generally appropriate for amortizing intangible movie and videotape rights. Rev. Rul. 60-358, 1960-2 C.B. 68, *amplified by* Rev. Rul. 64-273, 1964-2 C.B. 62.

[232] I.R.C. § 613.

depletion has become a politically visible item, and recent tax legislation has restricted its scope.[233]

Specific estimates are also used in determining the additions to bad debt reserves of some financial institutions. A commercial bank with $500 million or less of total assets may deduct additions to bad debt reserves based on the bank's own experience: under this method, the bank's reserves are based upon the proportion of outstanding loans over an earlier base period that were written off as bad debts.[234] Alternatively, such a bank may elect to determine its reserves based on a statutory percentage (currently 0.6%) of outstanding loans.[235] In addition, thrift institutions are permitted a bad debt deduction equal to a statutory percentage (currently 8%) of taxable income.[236]

Of these methods, only the experience method purports to be objective. Because of the inherent bias in the other methods and the allowance of a write-off of the full amount (rather than the present value) of projected losses, these reserve methods were restricted by the Tax Reform Act of 1986.[237] Insurance companies make extensive use of specific estimates in computing reserves for underwriting losses. While more than a passing reference to the tax treatment of insurance companies is beyond the scope of this article, the allowance of reserves based upon these estimates, which involves assessing the

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[233] *E.g.*, Tax Reduction Act of 1975, Pub. L. No. 94-12, § 501(a), 89 Stat. 26, 47 (added Section 613A, which restricts percentage depletion for oil and gas deposits to limited production from independent producers, limits the portion of taxable income that maybe offset by percentage depletion from oil and gas deposits, and phases down the applicable depletion rate from 22% to 15%); Tax Reform Act of 1969, Pub. L. No. 91-172, § 301(a), 83 Suit. 487, 582 (enacted Section 57(a)(8) to include percentage depletion in excess of basis as a tax preference for minimum tax purposes).

[234] I.R.C. § 585(b)(3).

[235] I.R.C. § 585(b)(2).

[236] I.R.C. § 593(b)(2).

[237] Tax Reform of 1986, *supra* note 60, § 901(a)(1), (b)(2), 100 Stat. 2375.

present value of contingent future losses, may be justified by the business and expertise of these companies and their regulators.

A straightforward evaluation of the present value of a stream of contingent payments is required when a taxpayer sells property for a contingent payment obligation that does not qualify for installment reporting. This can happen if the obligation is issued by a person other than the purchaser,[238] a portion of the gain is attributable to depreciation recapture,[239] or the sale is subject to an election not to use installment reporting.[240] The temporary regulations require the contingent payment obligation to be valued except in the "rare and extraordinary case" in which its fair market value cannot reasonably be ascertained; in this case the recovery of basis method may be used.[241] The general presumption of the temporary regulations that contingent payments have values that can be ascertained reasonably conflicts with the Service's position in the "all events" test that estimating the amount of a deferred expense with reasonable accuracy cannot be done by speculative or statistical estimates.[242] While courts have accepted a more liberal interpretation of the "all events" test,[243] they still tend to regard accrual of estimated contingent expenses as a form of impermissible reserve accounting.[244]

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[238] I.R.C. § 453(f)(3). *See also* Caldwell v. United States, 114 F.2d 995, 997 (3d Cir. 1940) (because initial payment exceeded 40% of selling price, transaction not installment sale).

[239] I.R.C. § 453(i).

[240] I.R.C. § 453(d).

[241] Temp. Treas. Reg. § 15A.453-1(d)(2)(iii), T.D. 7781, 46 Fed. Reg. 10,708, 10,719 (Jan. 30, 1981). *See also supra* notes 144–154 and accompanying text.

[242] I.R.S. Priv. Ltr. Rul. 78-31-003 (Apr. 13, 1978) (discusses whether taxpayer's estimate of accrued expense satisfies "all events" test).

[243] *See generally* General Dynamics Corp. v. United States, 773 F.2d 1224 (Fed. Cir. 1985), *cert. granted*, 106 S. Ct. 2913 (1986); Kaiser Steel Corp. v. United States, 717 F.2d 1034 (9th Cir. 1983).

[244] *See supra* note 167.

When property is exchanged for property other than an install-ment obligation, the amount realized by the seller is the sum of any money plus the fair market value of any other property received.[245] If none of the property involved in the exchange is publicly traded, this value must be determined by appraisal. In the absence of information concerning recent cash sales of comparable property, the income forecast method is a common technique for valuing income-producing property. Under this method, the expected income stream from the property is projected into the future and the present value of this stream is calculated. In more sophisticated applications, the tax-payer may project income under various optimistic and pessimistic scenarios and the valuation estimate is a weighted average of the pre-sent values of the income streams under the various scenarios.

To the extent that the value of property depends on the stream of contingent payments that it may generate in the future, the valuation process collapses the future possibilities into a single present value estimate. Conversely, regarding a deferred payment as contingent rep-resents a decision not to attempt to place a present value on the possible outcomes. Thus, if payments on a contingent obligation are made with property, the amount of the payment is determined at that time by valuation; the taxpayer does not wait to see what income the delivered property will generate.

In the absence of a realization event, the value of property is re-garded as contingent, and the null hypothesis is that the value remains equal to basis.[246] The realization requirement avoids the need to re-solve this contingency before a realization event exists, yet if the property is publicly traded, no contingency exists to resolve. Indeed, certain futures contracts are "marked to market" on a daily basis. Each party to such a contract receives or pays the increase or decrease in

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[245] I.R.C. § 1001(b); *see also* Treas. Reg. § 1.1001-1(a).

[246] *Cf.* the discussion of the recovery of basis rule in notes 144–154 *supra* and accompanying text.

the value of that party's position since the preceding day.[247] For these contracts, it is difficult to say what the realization requirement mandates, other than perhaps continued exposure to market risk. The Economic Recovery Tax Act of 1981[248] abandoned the realization requirement for exchange-traded futures contracts; now these contracts are "marked to market" for tax purposes at the end of each taxable year, and the taxpayer recognizes gain or loss as if the position had been closed on that date.[249] Significantly, the 1984 Act extended the "mark to market" requirement to foreign currency contracts and certain exchange-traded options that are not "marked to market" by daily payments between the parties.[250] It is difficult to distinguish these listed options from other exchange-traded property such as common stocks; the general reluctance to repeal the realization requirement for publicly-traded property may stem from Congress' awareness that the repeal would impose a more significant tax burden on publicly-traded property than on other property.[251]

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[247] *See* Mary Greenebaum, *A New Way to Play the Market*, FORTUNE, Oct. 4, 1982, at 157.

[248] Pub. L. No. 97-34, 95 Stat. 172 (1981).

[249] Pub. L. No. 97-34, § 503(a), 95 Stat. 172, 327 (1981) (enacted I.R.C. § 1256(a)).

[250] 1984 Act, *supra* note 11, § 102(a)(2), 98 Stat. at 620 (amending I.R.C. § 1256(b)).

[251] The perceived burdens of "marking to market" for tax purposes have been thought to be offset by the "blended" treatment of gains and losses on contracts subject to the "mark to market" rules. Under this "blending," 40% of the gain is treated as short-term capital gain and the remainder is long-term capital gain. I.R.C. § 1256(a)(3). Because these contracts typically have a short duration, this "blended" treatment applies to gains and losses that otherwise would usually be short-term gains or losses. The benefits of the "blended" rate, however, were eliminated by the 1986 Act's repeal of the preferential treatment of long-term capital gains. 1986 Act, *supra* note 60, § 301, 100 Stat. 2216.

D. *Line-Drawing Problems*

The disparate treatment of fixed and contingent payments re-quires a determination of when a payment is contingent. Generally, the parties to a contingent payment obligation cannot introduce re-mote contingencies in order to obtain preferential tax treatment.[252] Also, a payment should not be regarded as contingent if the only con-tingency relates to factors that do not affect its value. For example, certain instruments issued as "primary capital" by banks provide for payment at maturity of a contingent number of shares of the issuer's stock, the number of shares being equal to a notional principal amount divided by the trading price of the issuer's stock at maturity.[253] The value of stock delivered on maturity of such a security should not be regarded as contingent.

Moreover, as noted above in connection with straddles,[254] two off-setting payments may produce neutralizing contingencies, and any locked-in net payment should arguably be regarded as fixed. For ex-ample, if an issuer issued two obligations with indexed principal, one varying with a stock-market index and the other varying inversely with the same index, the issuer should be entitled to treat the minimum total principal amount that is payable on the two obligations as a fixed payment, even if this amount exceeds the sum of the fixed principal payments payable on either obligation.[255] To create a locked-in net

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[252] *See, e.g.*, Prop. Treas. Reg. § 1.1275-4(b)(1), 51 Fed. Reg. 12,022, 12,087 (Apr. 8, 1986); Temp. Treas. Reg. § 15A.453-1(c), T.D. 7781, 46 Fed. Reg. 10,708, 10,714 (Jan. 30, 1981) (maximum selling price for contingent payment sales). *Cf.* Treas. Reg. § 1.385-5(d)(6), *withdrawn by* T.D. 7920, 1983-2 C.B. 69 (in defining "fixed payment" for the purpose of distinguishing debt from equity, the Commissioner may disregard contingency if likelihood of payment is small).

[253] Rev. Rul. 85-119, 1985-2 C.B. 60.

[254] *See supra* notes 187–188 and accompanying text.

[255] Lest this seem farfetched, Daiwa recently announced an issuer's series of "bull and bear bonds": the bull series paid a redemption premium if the stock market went up and the bear series paid a redemption premium if the stock market

payment, however, the contingent payments would have to be offsetting in a strong sense, stronger than may be contemplated by the "substantial reduction in risk of loss" standard of the straddle rules.[256] Another example of neutralizing contingencies is fully-hedged foreign currency borrowing, which creates a net fixed-dollar obligation. The recently revised rules for accounting of foreign currency trans-actions authorize regulations that would simply treat the taxpayer as having incurred this net obligation.[257]

Other offsetting interests strain the coherence of the standard null hypothesis. A curious example is the tax treatment of an estate for years in land. Land itself is not depreciable because it has an indefinite useful life;[258] the null hypothesis is that its value will remain fixed. A taxpayer who either acquires an estate for years in land or retains this interest following a transfer of a remainder interest may not depreciate that interest in some circumstances, even though the taxpayer plainly owns a wasting asset.[259] There is an air of tax avoidance in making an interest in land depreciable by creating an estate for years, yet it is hard to see why tax depreciation of an asset that in fact has declining value constitutes tax avoidance.

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went down. These premium payments are not offsetting in the sense discussed in the text, however, because no premium would be paid on either series if the stock market did not move at all. INVESTMENT DEALERS' DIGEST, June 16, 1986, at 16.

[256] I.R.C. § 1092(c)(2)(A) (straddle provisions for offsetting positions).

[257] 1986 Act, *supra* note 60, § 1261, 100 Stat. 2585 (adding I.R.C. § 988(d)).

[258] *See* Treas. Reg. § 1.167(a)-2. Improvements to the land, however, are depreciable.

[259] Whether an estate for years is depreciable generally depends on whether it is acquired directly or retained following a conveyance of the remainder interest. *Compare* 1220 Realty Co. v. Comm'r, 322 F.2d 495, 498 (6th Cir. 1963) (if useful life of buildings was less than unexpired terms of leases, taxpayer could depreciate portion of lease cost attributable to buildings over useful life of buildings) *with* Lomas Santa Fe, Inc. v. Comm'r, 693 F.2d 71, 72 (9th Cir. 1982) (taxpayer cannot convert fee simple in real property into depreciable asset by conveying portion of fee simple as estate for years), *cert. denied*, 460 U.S. 1083 (1983).

The source of this tension lies in the treatment of the holder of the remainder interest. The null hypothesis applicable to this interest, like any other property interest, is that the interest will not change in value from the taxpayer's basis, yet this is inconsistent with the null hypothesis applicable to the holder of a fee simple interest, which is that the land itself will retain its value. If the land is assumed to retain its value, the holder of the remainder interest has an asset that should be assumed to appreciate from its current value as a remainder interest to the current value of the fee at the time the estate for years expires. Thus, the depreciation deductions taken by the holder of the estate for years should be offset by corresponding recognitions of income by the holder of the remainder interest. Because the tax law currently does not provide for this recognition of income, allowing depreciation deductions for the estate for years appears to be tax avoidance.

Other line-drawing problems arise because certain assets can be made to mimic other types of assets that qualify for different tax treatment. The disparate treatment of regulated futures contracts and their underlying physical commodities is an example. Also, debt obligations with principal amounts indexed to an asset such as gold may give the issuer a position similar to a short position in the reference asset. Any premium paid upon redemption may constitute an ordinary deduction rather than the short-term capital loss that the taxpayer would incur on the closing of a short sale.[260]

Further tax-planning opportunities are created by linking options to debt securities. Compare a debt obligation having a redemption premium if the value of specified property exceeds a given strike price with a straight debt obligation issued as part of an investment unit

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[260] *Compare* Prop. Treas. Reg. § 1.1275-4(e)(3)(i), 51 Fed. Reg. 12,022, 12,091 (Apr. 8, 1986) (treating the contingent redemption premium as deductible in the year in which amount of premium was fixed) *with* I.R.C. § 1233(a) (treating loss on the closing of a short sale as a short term capital loss).

with an option to acquire the specified property at that strike price. The holder of the investment unit must allocate the issue price between the debt obligation and the option.[261] Thus, if the unit was issued at a price equal to the principal amount of the debt obligation, the debt will have original issue discount equal to the amount allocated to the option, which the holder will be required to recognize as income even though the amount allocated to the option is nondeductible while the option remains unexercised. By contrast, the Code will not require the holder of the obligation with the contingent redemption premium to allocate the issue price, because the redemption premium is not regarded as a separate item of property.[262]

The line is arguably even harder to draw in the case of debt obligations that are exchangeable for stock of the issuer's parent corporation. If the issuing subsidiary acquires parent stock in order to satisfy the holder's exchange privilege, this privilege is simply another term of the debt obligation, and no portion of the issue price must be allocated to it.[263] By contrast, consider the situation in which the parent corporation undertakes to issue its own stock directly to holders in return for the surrender of the subsidiary's debt obligation. If the subsidiary pays the parent an appropriate portion of the issuance proceeds to compensate the parent for incurring that obligation, the exchange privilege may be considered to be a separate property interest. Accordingly, the issuing subsidiary may be entitled to original issue discount deductions with respect to the portion of the issue price paid

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[261] I.R.C. § 1273(c)(2). *See also* Prop. Treas. Reg. § 1.1273-2(d), 51 Fed. Reg. 12,022, 12,062 (Apr. 8, 1986).

[262] I.R.C. § 1273(c)(2). *See also* Prop. Treas. Reg. § 1.1273-2(d), 51 Fed. Reg. 12,022, 12,062 (Apr. 8, 1986).

[263] *Cf.* Rev. Rul. 69-265, 1969-1 C.B. 109 (transaction whereby $S2$ acquired assets of X, an unrelated corporation, in exchange for voting preferred stock of $S1$ that was convertible into common stock of P was valid reorganization under Section 368(a)(1)(C) and no gain or loss recognized).

to its parent.[264] Although at least one public offering of debt securities has been structured in this manner,[265] no direct authority exists regarding the issuer's entitlement to original issue discount deductions based on this allocation of the issue price.

Novel financial arrangements may blur the distinction between prepaid income and the proceeds of a loan. For example, in a traditional interest rate swap, one party agrees to pay to or receive from the other the difference between (1) the amount of interest computed on a notional principal amount that is based on a floating rate, and (2) the computed interest that is based on a specified fixed rate. This arrangement does not create indebtedness between the parties; it only creates a stream of contingent payments that in any year could benefit either party. The tax treatment is typically straightforward: the recipient has ordinary income and the payor has an ordinary deduction. Consider the consequences, however, if one party receives upon execution of the agreement a payment equal to the present value of all the fixed interest payments, and it agrees to pay to the other party the floating-rate amount during each period of the agreement. In one sense, the bunched receipt of the fixed payments looks like a taxable prepayment of all income that party would be entitled to receive over the term of the agreement, but the receipt might also be viewed as the nontaxable proceeds from issuing a debt obligation with contingent principal. Although a similar problem in distinguishing rent prepayments from security deposits has been held to turn upon the "intent" of the parties,[266] this hardly seems to be a satisfactory solution.

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[264] *Cf. id.* (obligation of parent in an asset reorganization to issue its common stock upon the exercise of a conversion of preferred stock issued by its subsidiary constitutes disqualifying boot).

[265] *See* Tenax Corp., Prospectus (Aug. 22, 1985) (describing debentures convertible into common stock of its parent, The Timken Company).

[266] *See supra* note 197.

Finally, positions in personal property can be incorporated into the issuance of debt securities in a way that diminishes the distinction between gain or loss from the position and the proceeds of issuance. For reasons unrelated to tax planning, an issuer of debt securities may wish to determine its yield cost at a time other than when the securities are issued. For example, an issuer may wish to lock in the benefit of present-day interest rates for an offering of debt securities that will occur six months in the future. To achieve this lock-in, the issuer might acquire a short position on an interest rate future so that, if interest rates rise, any reduction in the proceeds of the issue would be offset by a gain on the futures position. Under this approach, the issuer would recognize gain or loss upon the closing of the futures position or earlier under the "mark to market" rule. Alternatively, the underwriter of the debt securities could commit in advance, based on interest rates at the time of the commitment, to determine the pricing of the debt securities to be issued six months later.[267] Under this alternative, the difference between the proceeds of the issue and what the proceeds would have been absent this arrangement would be reflected in the issuer's cost over the life of the debt issue. The deferral of gain or loss under this alternative may be justified because the issuance of debt securities in effect constitutes a short position on interest rates. Thus, the issuer has merely achieved a tax-free rollover of one short position into another.

Many of these line-drawing problems are perhaps unavoidable in a tax system based upon annual accounting, yet the inherent bias in the treatment of many types of contingent payments often raises the stakes over how these payments are classified for tax purposes. Possibilities for less biased treatment are explored in the proposals discussed below.

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[267] Although the underwriter would presumably hedge its own commitment by acquiring a short interest rate futures position, it would not be required to do so.

IV. TOWARDS A YIELD-BASED APPROACH

Ideally,[268] the tax treatment of contingent payments would track their effect upon the taxpayer's net worth; the taxpayer's income or deduction for any year would be the difference between the discounted "expected value" of the payment at the end and the beginning of the year, with the "expected value" being statistically estimated as the average of all the possibilities, appropriately weighted. Taxing contingent payments by direct risk assessment, however, poses problems due to the required guesswork. No approach to contingent payments should require taxpayers to argue with the Service about how likely it is that a contingency will come to pass. Current law, with all its biases, at least avoids these arguments in cases in which the null hypothesis assumes that all contingent payments will be zero. The formulas in the proposed regulations may be complex, but they generally are based on items that are ascertainable without valuation or risk assessment.

Taxing contingent payments based on objective rules eliminates the guesswork, but the lack of economic realism may encourage tax-motivated behavior. Such behavior is not only uneconomic *ex hypothesi* but may also pose a threat to revenue. Moreover, the need for rules that are both objective and neutral is particularly acute for contingent debt obligations. Unlike many other contingent obligations that taxpayers assume as a natural component of business risk, contingent debt obligations can be designed to meet both the tax planning objectives of the parties and their business needs. Publicly offered instruments provide a vehicle for packaging and delivering to large numbers of taxpayers investments that can be sold on the basis of a tax advantage for the investor or on the basis of an increased yield if

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[268] Ideal, in the sense of conforming to the Haig-Simons theory of measuring income as consumption plus changes in net worth. *See supra* note 124.

the issuer's cost is offset by a tax advantage. For example, a debt instrument that back-loads interest, like an indexed principal obligation under the proposed regulations,[269] might be issued by a foreign issuer as a "Yankee bond" to taxable United States investors.

Moreover, the capacity of contingent debt obligations to simulate other types of investments can be combined with the self-selection of issuers and purchasers of these instruments so that each party deals with either the simulating instrument or the simulated investment, depending on the tax consequences. For example, a debt instrument might bear nominal interest with its principal indexed to gold prices. If the amount paid at maturity exceeds the issue price, the excess would be an ordinary interest deduction. In contrast, a short-term capital loss would have been sustained on a short sale of gold itself, while a "blended" capital loss would have been sustained upon a short gold futures position.[270]

With these opportunities, the clear rules that the proposed regulations seek to provide may prove to be more of a curse to the government than a blessing. Indeed, it was partly the curse of clarity that doomed the regulations distinguishing debt from equity, because the rules invited taxpayers to the brink of debt classification without the risk created by the vagueness of case law.[271] The proposed regulations would permit tax avoidance strategies for contingent debt obligations that previously may have been impractical, at least in the

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[269] *E.g.*, the obligations discussed in notes 12–15 *supra* and accompanying text.

[270] *See also infra* note 292. *See supra* note 251 for a discussion of the repeal of "blended" treatments of gains and losses under "mark to market" rules.

[271] Thus, the debt-equity regulations would have clearly treated as debt an "adjustable rate convertible note" bearing interest that varied with the issuer's dividends on its common stock (subject to a floor) and convertible into the issuer's common stock. In connection with the withdrawal of these regulations, the Service issued a ruling treating these notes as equity. Rev. Rul. 83-98, 1983-2 C.B. 40. Although this ruling is arguably an incorrect interpretation of case law, the vagueness of case law and the Services' published adverse position have deterred taxpayers from issuing these notes.

context of a public offering, precisely because of the tax uncertainty. Any system of clear rules for contingent payment obligations must address the potential for tax avoidance caused by public marketing of debt instruments that exploit the differing tax positions of the purchaser and the investor or the disparate tax treatment of economically similar investments.

A. *A Yield-Based Approach: The Fundamentals*

The conflict between objectivity and neutrality is seemingly irresolvable because the tax treatment of contingent payments can be made objective only by making arbitrary assumptions about the resolution of future contingencies. Unfortunately, the inherent biases in these assumptions prevent the treatment from being neutral, yet the tax effects of these biases can be measured and corrected when the contingency is resolved. This is the essence of the "yield-based approach."

1. *Contingent Debt Obligations*

The yield-based approach can be illustrated with the example of a debt obligation that matures in five years with wholly contingent interest determined and paid at maturity. The proposed regulations, consistent with pre-existing law, treat the contingent interest as both deductible by the issuer and includible in the income of the holder only when paid at maturity,[272] even though this interest represents compensation for the use of money over the full five-year term.[273] Suppose that this obligation, with a principal amount of $1,000, was retired at maturity with $800 of contingent interest. The holder's pretax yield on the obligation, using semi-annual compounding, is 12.11%.

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[272] Prop. Treas. Reg. § 1.1275-4(e), 51 Fed. Reg. 12,022, 12,090 (Apr. 8, 1986).

[273] *See supra* note 179 and accompanying text for a discussion of this example.

Using a 40% tax rate, the appropriate after-tax yield would be 7.27%. Applying this yield to the original $1,000 investment results in a return of $1,428 after five years. Thus, this after-tax yield will be realized if the tax on the payment at maturity is $1,800 less $1,428, or $372, and this is the amount of tax determined by the yield-based approach.

This tax of $372 differs from the $320 of tax determined under current tax law by applying the 40% assumed nominal tax rate to the interest payment at maturity. The additional $52 of tax imposed under the yield-based approach is a "deferral premium" that compensates for the benefits of tax deferral to the precise extent necessary to reconcile the effective tax rate on the investment with the nominal tax rate.[274] Consistent with the treatment of the holder, the issuer would be entitled to an additional $52 tax saving, assuming that the same marginal rate applied to the issuer.

The yield-based approach illustrated above can be summarized in the following steps:

1. Measure the pretax yield after the contingency is resolved.

2. Apply the nominal tax rate to determine the appropriate after-tax yield.

3. Determine the amount that would have been received (or paid) on an after-tax basis by applying the after-tax yield to the amount of the investment.

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[274] This additional $52 of tax on the holder can be viewed as the subsidy inherent in the current law treatment of a contingent obligation. Although this subsidy might be termed a tax expenditure, it appears to be more a side effect of current rules for measuring income rather than a tax break designed to further a nontax objective. Indeed, it is difficult to articulate a nontax objective for treating the receipt of deferred contingent payments more favorably than fixed payment obligations or current payment contingent obligations. If the goal were to provide an incentive to assume risks, why should only *deferred* contingent payments benefit? Also, should not the nature of the contingency—gambling or entrepreneurship, speculation or hedging—be of consequence? Finally, why punish the issuer of a contingent payment obligation, who suffers a deferral of tax deductions?

4.   Impose a surtax on the recipient (and allow a credit to the payor) to achieve the appropriate after-tax amount.

While the yield-based approach is straightforward in the simple case described above, complexities arise in more realistic cases involving variables such as interim payments and fluctuating tax rates. Some of these difficulties are discussed further below. Regardless of these difficulties, the yield-based approach is a useful analytical tool because it quantifies the distortions caused by the current law treatment of contingent payments.

2.   *Contingent Deferred Payments*

The stakes are even greater when the contingent payment obligation is implicit in a deferred item of taxable income or expense. For example, suppose that a contingent deferred payment of $1,000 for services was made five years after the services were provided.[275] In this case, the "issue price" of the implicit obligation required under present value accrual accounting must be determined by discounting or some other valuation method. Using a 10% rate with semiannual compounding, the discounted value of the deferred payment would be $614. If a 40% tax were imposed at that time, the service provider would have had only $368 to invest at a 6% after-tax yield over the five-year deferral period, which would produce an accumulated sum of $495. Thus, the tax on the deferred payment should be $1,000 less $495, or $505. This compares with $400, determined by applying the

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[275] The implicit zero-coupon obligation in this example has both contingent principal and contingent interest. The tax treatment of the contingent-interest obligation discussed earlier in the text under the proposed regulations would not be affected by also making the principal contingent because the proposed regulations contain a null hypothesis that the contingent principal will exactly equal the issue price. *See supra* note 226 and accompanying text. This assumes, of course, that this obligation will be treated as a debt instrument despite the contingencies.

nominal 40% tax rate to the $1,000 contingent payment. The additional $105 is necessary to offset the deferral benefit.

For contingent deferred payments, the yield-based approach is applied as follows:

1. Determine the present value of the contingent payment as of the date it is earned by applying a discount rate to the actual payment.

2. Apply the nominal tax rate to determine the after-tax amount that would have been available for investment if the present value of the contingent payment had been taxed when earned.

3. Determine the amount that would have been received (or paid) on an after- tax basis by applying an after-tax yield (the discount rate used in Step 1 reduced by the nominal tax rate) to the investment determined in Step 2.

4. Impose a surtax on the recipient (and allow a credit to the payor) to achieve the appropriate after-tax amount.

Note that the yield-based approach, when applied in this manner, uses the "look-back" method of valuation: any variations in the amount of the payment affect the determination of the amount earned rather than the yield on the implicit zero-coupon obligation.

3. *Comparison With Interest on the Tax Deferred*

The yield-based approach is similar to, and in some cases coincides with, another method of taxing contingent payments that, like the yield-based approach, uses hindsight to measure and correct for the benefits of tax deferral. Under this method, which will be termed the "interest charge approach," a direct interest charge is imposed upon the taxes deferred because of the contingent payment. This approach requires a determination of the taxes that would have been imposed in each year upon the contingent payment obligation if the

obligation had provided for fixed payments in the amounts actually paid.

For example, the contingent-interest obligation described above,[276] which was retired at the end of its five-year term for its original issue price of $1,000 plus $800 of contingent interest, would be treated as if it were a fixed-payment obligation issued with original issue discount of $800. Assuming a 40% nominal tax rate, the taxes that would be imposed for each semiannual accrual period upon this fixed-payment obligation would be as follows:

Year	Adjusted Issue Price	Original Issue Discount	Current Tax Payment	Future Value of Tax
1	1000.00	60.91	24.36	31.79
	1060.91	64.19	25.67	32.52
2	1125.10	68.07	27.23	33.49
	1193.16	72.19	28.87	34.48
3	1265.35	76.55	30.62	35.50
	1341.90	81.19	32.47	36.55
4	1423.09	86.10	34.44	37.63
	1509.19	91.30	36.52	38.75
5	1600.49	96.82	38.73	39.89
	1697.32	102.68	41.09	41.08
Total	1800.00	800.00	320.00	361.68

In this table, the "future value" of each tax payment is the amount that would have been realized at maturity if the holder of the contingent payment had invested each year's tax payment in a zero coupon obligation at an assumed after-tax risk-free rate (6% in this example). The total tax of $361.68 is slightly less than the total of $372 deter-

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[276] *See supra* note 273and accompanying text.

mined under the yield-based approach.[277] The difference is caused by the assumption of the interest-charge approach that the deferred taxes are reinvested at an after-tax risk-free rate, rather than the yield that was in fact realized on the contingent payment obligation, as assumed by the yield-based approach. Thus, the yield-based approach produces a higher tax than the interest-charge approach does on contingent obligations with a return higher than the risk-free rate.

The yield-based approach is more realistic than the interest-charge approach because the holder of a contingent payment obligation does in fact reinvest the deferred taxes at the rate earned on the contingent-payment obligation. Indeed, the application of the yield-based approach to fixed-payment obligations even achieves a more appropriate result than present value accrual accounting does. Present value accrual accounting requires the recipient of a deferred fixed payment to pay tax on the earnings before these earnings are received, even though the cost of the funds used to pay the tax may not be offset by the earnings on the fixed-payment obligation. To the extent that this cost of borrowing funds to pay the tax (or forgoing earnings that could be earned on these funds) differs from the yield on the fixed-payment obligation, the overall after-tax yield on the fixed-payment obligation will differ from its pretax yield times the nominal tax rate.

Despite the greater economic accuracy of the yield-based approach, there are good reasons for continuing to use present value accrual accounting for fixed payments. First, the relative simplicity of the yield-based approach, when applied to the basic examples discussed above, disappears rapidly as realistic complications are introduced. Second, present value accrual accounting has the virtue of taxing income in the year that it is earned rather than in the year of payment. Thus, present value accrual accounting more closely approximates the Haig-Simons ideal on an annual basis, even though the

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[277] *See supra* note 274 and accompanying text.

yield-based approach may produce a more refined result on a transactional basis. Yet both the yield-based approach and the interest-charge approach, which might be called examples of "future value cash accounting," are alternatives to present value accrual accounting for both fixed and contingent payments.

The yield-based approach is not a feature of current tax law, but variants of the interest-charge approach exist. For example, distributions from a foreign trust of income accumulated in previous years are, like accumulation distributions generally, subject to tax under a "throwback rule" that is intended to approximate the tax that the beneficiary would have paid if the trust had distributed its income currently.[278] For distributions from a foreign trust, this tax is increased by a nondeductible interest charge equal to 6% of the tax computed under the "throwback rule," multiplied by the average number of years of deferral.[279] The Tax Reform Act of 1986 extends this concept by imposing an interest charge on the taxes deferred on certain foreign investment company income that is accumulated offshore.[280]

B.   *Problems and Refinements*

1.   *Perceptual Problems*

There are genuine problems in applying the yield-based approach to actual situations rather than to simplified examples, but first it may be useful to point out and dismiss two possible perceived stumbling blocks that are actually illusory. Even as illusions, these perceived problems could make public acceptance of the yield-based approach difficult. Nevertheless, the widespread adoption of present value con-

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[278] *See* I.R.C. § 667(a).

[279] I.R.C. §§ 667(b), 668(a).

[280] 1986 Act, *supra* note 60, § 1235, 100 Stat. 2566 (amending I.R.C. § 1291). *See also* H.R. REP. NO. 99-841, at 611–41 (1986).

cepts during the past half-decade suggests that the tax system is receptive to new ideas.

First, it might initially seem that a timing problem should be addressed solely by a timing solution. For all its novelty, present value accrual accounting, like accounting methods generally, simply determines the period in which income is recognized. Present value ac-accounting does not affect the total amount of income or the tax rate applied to that income. The yield-based approach, however, does adjust the rate. These tax rate adjustments might seem to be beyond the authorized scope of the proposed regulations, and indeed the proposed regulations limit their treatment of contingent payments to rules related to the timing and character (that is, ordinary or capital) of income rather than to the amount of income or the tax rate. The above analysis shows, however, that the yield-based approach does not improperly conflate timing issues with tax rate issues because tax deferral can be as much an economic benefit as a reduction in the tax rate.

Second, there might be a fear that the yield-based approach is potentially confiscatory. Under certain assumptions, it is true that, as the deferral period lengthens, the tax rate imposed on the contingent payment approaches 100%. Imagine an investment that yields a 10% pretax return compounded semiannually with the entire return realized at maturity. The yield-based approach would impose a tax on the payment at maturity just large enough to bring the yield down to the corresponding after-tax rate (a 6% yield if there is a 40% marginal tax rate). As a mathematical matter, the ratio of this tax payment to the excess of the total amount received at maturity over the original investment approaches 100% as the deferral period lengthens.

On the other hand, as the deferral period lengthens, the after-tax proceeds grow infinitely large based on the positive after-tax yield, even though this amount is a progressively smaller fraction of the

pretax profit.[281] Consequently, even though the *apparent* tax rate, expressed as the ratio of the tax payment to the total pretax profit, may approach 100%, the after-tax amount retained by the taxpayer is sufficient to provide the appropriate after-tax yield, which is all that the taxpayer should be entitled to keep.

2. *Installment Payments*

The examples discussed above all presuppose a single payment at maturity and a resolution of any contingencies at that time. More generally, however, contingent payment obligations may provide payments over a period of time with the contingencies resolved as payments are made. Thus, imagine an obligation providing solely for

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[281] The mathematical computations are as follows: Let INV be the amount of the initial investment, YIELD be the pretax yield to maturity, and NPER be the number of accrual periods before maturity. Pursuant to the standard compound interest formula, the payment at maturity (PMT) is given by:

$$PMT = INV * (1 + YIELD)^{NPER}$$

Assuming a nominal tax rate of NTR, the after-tax yield is YIELD * (1 − NTR), and the after-tax proceeds of the investment under the yield-based approach are:

$$AFTAX = INV * (1 + [YIELD * (1 - NTR)])^{NPER}$$

The apparent tax rate (ATR) is the tax divided by the pretax profit, or:

$$ATR = \frac{PMT - AFTAX}{PMT - INV}$$

$$= \frac{1 - \left(\dfrac{1 + [YIELD * (1 - NTR)]}{1 + YIELD}\right)^{NPER}}{1 - \left(\dfrac{1}{1 + YIELD}\right)^{NPER}}$$

The amount subtracted from 1 in the numerator of this fraction is always less than the amount subtracted from 1 in the denominator; hence this fraction is always less than 100%. Both of these subtracted amounts, however, are subject to exponential decay as the number of accrual periods (NPER) increases, and consequently both the numerator and denominator approach 1, making the fraction approach 100%. In the simple case with only a single accrual period, this fraction collapses to NTR, the nominal tax rate.

contingent payments over a ten-year period with an issue price of $1,000. Assume that the actual payments are equal to $100 semiannually, although the actual amount of each payment is not determined until just before the payment is made.

If the yield-based approach were applied by imposing a tax solely at maturity, when the actual yield on the overall obligation becomes fixed, it might be applied as follows:

    1. Compute the pretax yield on the obligation, which is 15.51% in this case.

    2. Applying the marginal tax rate (again, assumed to be 40%) to the pretax yield, compute the appropriate after-tax yield, which is 9.31% in this case.

    3. Determine what payment would have to be made in the last year to reduce the overall yield from 15.51% to 9.31%. (One way to calculate this amount would be to determine the payment that has a present value as of the issue date, discounted at 9.31% compounded semiannually, equal to the present value of all the cash flows on the obligation (including the initial investment), also discounted at this 9.31% rate.) In this case the amount is $704, which would be the amount of the tax.

Imposing a $704 tax at maturity presents collection problems. The tax exceeds the amount of payments received in the last year, and the payments received in earlier years may have been dissipated beyond the reach of a tax lien. While under both traditional and present value accrual accounting a tax often is imposed upon income before the taxpayer receives it, the tax law currently abhors allowing income to be received before it is taxed.[282] Even the proposed regulations, which may permit substantial tax deferral for certain types of contingent obligations, never cause the tax in any year to exceed the amount of

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[282] *See supra* notes 96–103 and accompanying text for a discussion of prepaid income. *See also supra* notes 189–203 and accompanying text for a discussion of the "claim of right" doctrine.

current or future payments, because the only amounts included in gross income under the proposed regulations are portions of current payments and the present values of future fixed payments.

An even more fundamental problem arises from applying the yield-based approach in this manner. Because a tax is imposed at maturity based on the rate that would produce an after-tax yield to maturity equal to the pretax yield times the tax rate, an implicit assumption exists that the taxpayer can reinvest the interim payments at the same yield as that earned on the obligation. This assumption could lead to serious overtaxation, particularly in the case of a contingent payment obligation that achieves a very high yield over a fairly short initial period, followed by a few modest payments made some time thereafter. No assurance could be given that the high yield realized primarily through these early payments would be achieved on a reinvestment of those payments during the remaining term of the obligation, yet imposing a tax solely at maturity in an amount intended to scale down the yield by the nominal tax rate requires precisely this assumption.

The yield-based approach could be applied with a tax payment solely at maturity, based on an assumption that payments could be reinvested not at the yield on the obligation but rather at the prevailing risk-free rate. This variant requires a further assumption about what the distribution and the amount of the payments would have been if the yield on the obligation had been the after-tax rather than the pretax rate. (This further assumption is not required for single payment obligations because for these obligations all of the yield reduction is affected by applying a tax against just one payment.) A reasonable, although not logically compelled, approach would scale down each payment proportionately to reduce the yield on the obligation from the pretax rate to the after-tax rate.

Thus, in the example above with a sequence of twenty semiannual payments of $100 that produce a 15.51% pretax yield, a sequence of twenty semiannual payments of $77.92 would achieve the correspond-

ing after-tax yield of 9.31%. If the taxpayer had received these smaller payments and reinvested them at a risk-free after-tax rate of 6%, the payments would have accumulated to $2,094 at maturity. The actual payments received, reinvested at this risk-free rate, would accumulate to $2,687; hence an appropriate tax at maturity would be the difference between these figures, or $594. This approach produces a lower tax than the $704 determined under the preceding variant. The difference between the two methods arises because under the second variant the taxpayer is not taxed on an assumed reinvestment of interim payments at a yield in excess of the risk-free rate.

This second variant has features of the interest-charge approach, but it does not replicate the interest-charge approach because no interest charge begins to accrue until the taxpayer makes payments on the obligation. Yet the elements of the interest-charge approach that are present in this application achieve greater realism than the "pure" yield-based approach of the first variant does, because interim payments received before all contingencies are resolved at maturity cannot be assumed to have been reinvested at the yield otherwise earned on the obligation.

Even with the refinements of the second variant, it hardly seems optimal to tax an installment obligation solely at its maturity. In the ten-year obligation discussed in the examples above,[283] the null hypothesis of a zero yield is contradicted by the sixth year, when payments begin to exceed the issue price. More generally, there are advantages to imposing a tax before maturity on the basis of tentative null hypotheses that may be revised as events unfold and later payments are determined. First, to be consistent with a tax system based upon annual accounting, it is best, to the extent possible, to collect tax on income as it is earned. Second, concerns about rates of reinvestment of deferred taxes do not arise to the extent that taxes are paid

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[283] *See* text *supra* preceding note 282.

rather than deferred. Third, collecting the tax over the term of the obligation avoids the collection problems of trying to collect all of the tax at maturity.[284] Finally, an interim null hypothesis can be devised in many instances that produces a tax burden sufficiently close to the ideal that further adjustments under the yield-based approach may be unnecessary. Consequently, the yield-based approach should be re-garded not as a complete solution in itself but rather as a supplement to more realistic null hypotheses that are applied in computing tax on contingent payment obligations before all contingencies are resolved. The form that these null hypotheses might take is discussed in more detail below.

3. *Tax Rate Fluctuations*

The discussion so far has assumed a uniform marginal rate of tax over the term of a contingent-payment obligation. This assumption is generally disproved in actual practice, not only by changes in statutory tax rates but also by taxpayers changing rate brackets from year to year or incurring net operating losses. The yield-based approach may in-corporate these changes in marginal rates if the benefits of this refinement are thought to be worth the trouble.

To illustrate how changes in rates can affect the tax computed un-der the yield-based approach, consider an obligation issued for $100 which is repaid ten years later with $200 of contingent interest. The pretax yield is 11.61% and, assuming a constant 46% tax rate, the after-tax yield is 6.27%. Applying this after-tax yield to the initial in-vestment would produce a $185 amount payable at maturity. The amount actually received is $300; hence the tax would be $115.

Now suppose that the rate is changed after the fifth year from 46% to 33%. The rate change would cause the after-tax yield to in-

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[284] *See* text *supra* following note 282.

crease after the fifth year from 6.27% to 7.78%. Applying these yields to the initial investment results in an amount at maturity equal to $197; hence the tax is $103. The overall after-tax yield is 7.02%, which is the geometric mean of the after-tax yields for each year during the term of the obligation.[285]

In principle, the yield-based and interest-charge methods could incorporate this refinement by using distinct after-tax yields in each year to reflect the appropriate marginal tax rate, yet the enhanced accuracy must be weighed against the greater complexity of these calculations. It is unquestionably simpler to apply the rates for the year in which the tax is imposed to the yield on the overall obligation. Although this simplification would cause income to be taxed at rates different from the rates applicable to the taxpayer in the years in which the income was earned, that type of rate differential is routinely tolerated under current tax treatment of contingent payments that create income that is taxed when the contingency is resolved rather than when the income is earned. Indeed, the rate differential also arises for fixed payments under the cash method or under installment reporting.[286]

The effects of changing rates are not trivial. Indeed, the principal early cases involving the timing of income were apparently motivated not by the time value of money but by the rise and fall of tax rates

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[285] Unlike the arithmetic mean of n numbers, which is their sum divided by n, the geometric mean is the nth root of their product. Before multiplying yields, each year's yield should be expressed as a decimal and added to 1. Thus, in the example in the text:

$$1.0702 = [(1.0627)^5 * (1.0778)^5]^{0.1}.$$

After factoring exponents, this expression reduces to the square root of (1.0627 * 1.0778).

[286] The applicable tax rate for gains reported under the installment method is the rate in effect for the year in which the payment is received rather than the year in which the sale occurs. *See* Picchione v. Comm'r, 440 F.2d 170, 172–73 (1st Cir.), *cert. denied*, 404 U.S. 828 (1971), Snell v. Comm'r, 97 F.2d 891, 893 (5th Cir. 1938); Klein v. Comm'r, 42 T.C. 1000, 1004 (1964).

during and after World War I.[287] Except in the very short term, how-
ever, the prediction of future tax rates is difficult, and the timing of
the resolution of contingencies is typically influenced strongly by
nontax considerations. Consequently, the distortions introduced by
applying a uniform rate to the yield-based taxation of contingent
payments may not generate much tax-motivated behavior. Moreover,
if the yield-based approach is combined with less biased null hypothe-
ses that cause taxes to be imposed during the term of the obligation
(at the rates in effect for those years), the degree of distortion will be
reduced.

4. *Prolonged Contingencies*

A drawback of waiting for all contingencies to be resolved before
imposing a tax is that contingencies may linger. In the starkest case,
imagine a contingent obligation that is issued for $1,000, returns
$1,100 after the first year, and provides for a further contingent pay-
ment at an uncertain date. It would be pointless to wait indefinitely for
that contingency to be resolved before taxing the $100 profit clearly
realized on the first payment.

A more difficult situation arises if the contingency might require
the possible refund of all or part of the payment received in the first
year and any further payments received. In this case, no profit has
been "clearly realized" on the first payment because this profit, or
more, may later have to be disgorged. For example, assume that of the
$100 profit realized at the end of the first year, $25 had to be returned
at the end of the tenth year. The sequence of cash flows is then an
outflow of $1,000 in year zero, an inflow of $1,100 in year one, and
an outflow of $25 in year ten. This sequence of cash flows has a pret-
ax yield of 8.64%, which reflects the benefits of the use of the $25

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[287] *See supra* note 194.

refunded from years two through ten as well as the $75 retained. If no tax were imposed when the $1,100 was received, the yield-based approach would provide (assuming a 40% tax rate) for a tax payment in year ten of $54.05, which is the future value of a tax (at an assumed after-tax reinvestment rate of 6%) of $31.75. If the taxpayer paid this tax in year one, the yield would be reduced from 8.64% to 5.18%. If a tax of $40 was imposed on the $1,100 received (presumably using a null hypothesis that no subsequent payments would be received or made), the yield-based approach would provide for a tax credit of $14.05 in year ten.[288] This $14.05 credit exceeds the tax benefit of $10 that would follow from simply allowing a deduction for the repayment of $25; the difference of $4.05 essentially compensates for the lost earnings caused by previous overtaxation.

5. *Reversing Cash Flows*

The immediately preceding example is a case of reversing cash flows, in which the direction of payments changes more than once over the course of a transaction. In the simpler ease in which one or more inflows is followed by one or more outflows, the transaction is easily recognizable as a loan and the pretax yield is the cost of funds. Conversely, when one or more outflows is followed by one or more inflows, the transaction is an investment and the pretax yield is the internal rate of return. Although the characterization of a transaction as a loan or an investment may still be recognizable notwithstanding some reversing cash flows, in some cases the transaction lacks any clear character of a loan or an investment. When applied to these cash

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[288] This credit represents the future value (at an assumed after-tax reinvestment rate of 6%) of the excess of the tax paid ($40) over the amount of tax ($31.75) that would have been sufficient to scale down the pre-tax yield by the nominal tax rate.

flows, the concept of yield is ill-defined and the formulas for compu-
ting yield may lack a unique mathematical solution.

An example of cash flows that may frequently change direction is
a conventional interest-rate swap. Viewed in isolation (that is, apart
from any external borrowings of the parties), an interest swap is nei-
ther a loan nor an investment; it is simply a means of shifting the risk
of interest rate changes. A typical interest-rate swap raises no time
value of money questions, however, because there are no *deferred* con-
tingent payments and hence no implicit zero-coupon obligations. In
contrast, in the variant interest-rate swap discussed above,[289] the party
assuming the fixed-rate obligation pays the present value of that obli-
gation in an initial lump sum. In this case, an implicit zero-coupon
obligation can be identified, no reversing cash flows are present, and
the yield-based approach can be applied in the manner described
above for contingent-payment obligations generally.[290]

Thus, although the yield-based approach does not work for all ar-
bitrary streams of cash flows, it is generally available for contingent
deferred payments. In these cases, the contingency is resolved after
the payment is earned and the circumstances that determine when the
payment is considered to have been earned will define the implicit
zero-coupon obligation that is amenable to taxation under the yield-
based approach.

6. *Valuing the Implicit Loan*

When a contingent payment obligation is issued for cash or readily
valued property, the issue price is clear and the yield can be readily
computed after the contingencies are resolved. In other cases, includ-
ing most implicit zero-coupon obligations included in contingent
deferred payments, the issue price can be determined only by making

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[289] *See* text *supra* following note 265.

[290] *See* notes 272–274 *supra* and accompanying text.

a valuation judgment about the issue price. For fixed-payment obliga-tions, this judgment is hard enough and the troublesome prospect of subjective valuation judgments is generally avoided by discounting the payments on the implicit obligation at an assumed yield based upon prevailing risk-free rates. Even for fixed-payment obligations, this use of discounting is somewhat problematic because of the factors that can cause yields on actual fixed-payment obligations to vary from risk-free rates.[291] For contingent payment obligations, it is pertinent wheth-er the contingency relates to the yield or the issue price. The answer to this question affects the timing of when income is considered to be earned.

For example, suppose that stock of a closely held corporation is sold for an installment obligation that includes contingent interest. If this contingent interest is determined largely by the profits of the purchased corporation, the contingency is reasonably viewed as a "look-back" method of valuing the purchased stock. Variations in the amount of contingent interest will thus affect the amount realized on the sale of the stock. In contrast, if the contingent interest were de-termined by the overall profits of the purchasing corporation, which are affected to only a small degree by the profits of the purchased corporation, the "look-back" approach is less plausible and the con-tingency appears to relate more to the yield on the installment obligation. In this latter case, variations in the amount of the contin-gent interest should be viewed as affecting the amount earned over the term of the installment obligation.[292]

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[291] *See* text accompanying notes 41–64 *supra*.

[292] A series of letters to the Treasury Department commenting on the proposed regulations have vigorously debated whether the "look-back" rule should be ap-plied to a sale of publicly traded stock in exchange for a note with principal indexed to the market price of that stock. Letters from Robert E. Frisch (June 6, 1986 and July 30, 1986); Letter from Martin D. Ginsburg (June 19, 1986). Be-cause the stock sold has a readily ascertainable fair market value, Ginsburg is correct that the "look-back" rule is inappropriate; Frisch's arguments are based largely on technical interpretations of current law. Even if this obligation is

There is no mechanical resolution to this question, which is an instance of the more general question, discussed in the next section, of when income is deemed to be earned. For a wide range of deferred contingent obligations, particularly those implicit in deferred payment sales, the contingency is plausibly related to events creating the obligation to make the payment. In these circumstances, the use of the "look-back" method is justified and the deemed issue price can be determined by discounting in the same manner as for fixed payment obligations. The yield-based approach may then be applied to the contingent payment obligation with a yield that is *ex hypothesi* equal to the discount rate.

7.   *Defining When Income is Earned*

By definition, a deferred payment is made after it is in some sense "earned." The foregoing discussion assumes that it can be determined, after the contingencies are resolved, not only how much income there is but also when it was earned. Yet the question of when income is earned, far from being mechanical, is one of the great issues of income tax law. Indeed, accounting methods largely exist to address this question.

References in this article to when income is "earned" are based on a notion that is somewhat different from traditional accounting concepts regarding the timing of income. The accounting concept of accrual is determined in part by the economic activity producing the income and in part by considerations of conservatism and objectivity, which focus upon when the amount of an item of income becomes fixed. Yet the very notion of a contingent deferred payment rests

bought for cash, however, it generates income that mimics the appreciation in a capital asset. Such an obligation calls into question whether the distinction between interest and capital gains is meaningful.

upon the possibility of a payment being in some sense "earned" be-fore its amount is conclusively determined.

The yield-based approach disassociates the period in which in-come is deemed to be earned from the period in which the tax is imposed. Therefore, this approach invites the development of stand-ards for determining when income is earned that are unencumbered by the need under current law to be able to compute a tax when in-come accrues. Thus, the income on a contingent payment debt obligation is treated as having been earned over the life of the obliga-tion as the borrower enjoys the use of the money, rather than in the periods when the contingencies happen to be resolved. As applied in the examples above,[293] the yield-based approach has assumed that this income is earned on a constant-yield basis over the life of the obliga-tion, although the specific circumstances of particular contingent payment obligations might warrant variations from this assumption.

In the case of contingent deferred payments, the determination of when the payment is earned governs the issue date of the implicit zero-coupon obligation. This date may long precede the date on which the payment accrues under current tax law. For example, a tort liability arises at the time of the tort, although the amount of the lia-bility (or even the fact of liability) may not become evident until much later. If the victim's right to the payment is treated as having been earned at the time of the tort, the tax benefits of the payment under the yield-based approach would exceed those of a deduction at the time of "economic performance" permitted under current law.[294] Consequently, much tax-motivated insurance planning would become unnecessary.

A comprehensive answer to the question of when income is earned is beyond the scope of this article, yet some general observa-

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[293] *See supra* Parts IV.A.1–IV.B.6 (pp. 130–146).

[294] *See supra* note 165 and accompanying text for a discussion of the "economic performance" test.

tions are possible. First, the earning of income is the accountant's surrogate for the accretion in wealth that constitutes the economist's definition of income. Contingent income can be earned in the sense of adding to the value of the taxpayer's wealth well before it is practical for the tax system to undertake its valuation. Consequently, the objective benchmarks for determining when income is earned will not be the resolution of contingencies but rather the economic activities producing the income: for compensation income, when the services are provided; for rent, when the leased property is used; for interest, when the borrowed funds are used.

Second, the determination of net income also requires a timing judgment about expenses. A deferred expense could be regarded as "incurred" at the time when the implicit zero-coupon obligation is deemed to have been issued. For deferred contingent expenses, it may thus be possible for an expense to be incurred in this sense before its amount is fixed.[295]

Finally, an income tax will be fairly imposed upon each year's net income only if there is a proper matching of income and expenses.[296] Even if the collection of the tax is accelerated or deferred because of contingencies, a proper matching of income and expenses is possible if adjustments are made in the amount of tax collected. The yield-based method makes these adjustments. Thus, the determination of when an expense is incurred should be made if possible by reference to when related items of income are earned. For example, if currently paid labor costs are properly treated as a period expense, deferred costs such as worker's compensation or medical claims should be

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[295] This use of the term "incurred" differs from its traditional tax usage as a synonym for "accrued." *See* I.R.C. § 7701(a)(25).

[296] For a critique of the matching concept, *see* Gunn, *Matching of Costs and Revenues as a Goal of Tax Accounting*, 4 VA. TAX REV. 1 (1984). Professor Gunn makes his criticisms in the context of current tax accounting, which does not purport to reflect systematically the time value of money.

treated as incurred when the work is performed, regardless of whether the amount of the claims can be estimated with sufficient accuracy to justify accrual under current tax law.[297] Similarly, the cost of restoring the overburden of a strip mine should be treated as a mining cost that is incurred as the ore is removed, even though "economic performance" in the sense of actually performing the restoration work is not done until later.[298] Of course, no deduction will be allowable in the year in which these expenses are incurred if the amount of the expense (or even its existence) cannot be ascertained at that time,[299] but the yield-based approach allows a tax credit that compensates the taxpayer for having to defer the tax benefit beyond the year in which the expense was incurred.

8. *Prepayments*

The yield-based approach can also provide for the equitable taxation of prepaid income when the taxpayer's right to keep the payment is contingent. Under current law, the claim of right doctrine requires that the prepayment be included in income, with a deduction allowed in the year of repayment if any portion is repaid.[300] Instead of simply allowing a deduction, the yield-based approach would allow a return of the tax initially paid with an additional credit to compensate for the lost after-tax earnings on that tax. Because it would be impossible to know what the taxpayer might actually have earned on the excess tax that he initially paid, these after-tax earnings would have to be determined at an assumed rate.

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[297] *See supra* notes 161–166 and accompanying text for a discussion of worker's compensation claims under the "all events" test.

[298] *See supra* notes 79–80 and accompanying text for a discussion of the strip mining reclamation cases.

[299] *See supra* text accompanying note 162 for a discussion of "reasonable estimates" under the "all events" test.

[300] *See supra* notes 189–203 and accompanying text.

Similar considerations apply to later recoveries of expenses, such as bad debts. To include the recovery in income is not enough; an additional tax should be imposed to offset the after-tax earnings on the taxes initially saved. As under current law, complications arise if the taxpayer's marginal tax rate has changed in the interim[301] and analogues to the tax-benefit rule will no doubt continue.[302]

C.   *Better Null Hypotheses*

Much of the need for the yield-based approach stems from the biased null hypotheses for contingent payments under current tax law that produce a distorted picture of the taxpayer's income pending resolution of the contingency. The scope of possible contingencies is too great to allow any set of objective rules to apply generally to all contingencies without bias, yet unbiased null hypotheses are available for limited classes of contingent payment obligations. In these cases, an equitable tax result may be possible without resorting to the yield-based approach.

1.   *Comparable Bond Approach*

For certain floating rate obligations, the proposed regulations contain a null hypothesis that the initially determined interest rate will be maintained over the life of the obligation.[303] This hypothesis is fairly unbiased because the actual rate could increase or decrease. What makes this treatment of floating rate debt work so smoothly, however, is that discrepancies between the hypothesis and reality are reflected in

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[301] *See supra* Part IV.B.3 (p. 142) for a discussion of fluctuating tax rates and the yield-based approach.

[302] For an overview of current law, *see* Boris I. Bittker & Stephen B. Kanner, *The Tax Benefit Rule*, 26 UCLA L. REV. 265 (1978).

[303] *See supra* notes 218–220 and accompanying text.

each period's interest accrual as the discrepancy appears. Moreover, the absence of a look-back valuation of property sold for a floating-rate obligation is sensible because the contingency relates to the yield on the obligation rather than the value of the property purchased.

In its report on the proposed regulations (the NYSBA Report),[304] the New York State Bar Association Tax Section calls this treatment of floating-rate obligations the "comparable bond" approach because each period's interest is compared with the interest that would have been earned on a comparable bond that bore fixed interest at the initial rate. The NYSBA Report points out that this approach is potentially applicable to other types of obligations for which a comparable fixed-payment bond can be readily identified. For example, this approach might be applied to an obligation that provides for floating-rate interest for a portion of its term and zero interest for the remaining portion. The comparable fixed-payment bond would provide for fixed interest at the initial rate on the obligation during the portion of the term for which contingent interest is payable, and zero interest thereafter.[305] Income on the contingent obligation for any year would be equal to the income on the comparable fixed-payment bond for that year, determined under the usual rules for fixed-payment obligations and adjusted for any differences in that year between the assumed rate of interest on the comparable bond and the actual interest paid on the contingent obligation. The comparable bond approach becomes more problematic, but still potentially workable, for obligations with contingent principal. If the contingent principal is determined with reference to an index, the comparable fixed payment bond might provide for principal based on the value of that index on the issue date. Alternatively, the assumed principal on the comparable

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[304] N.Y. St. Ba. Ass'n Tax Sec., *Report of Ad Hoc Committee on Proposed Original Issue Discount Regulations* (Dec. 30, 1986), *reprinted in* 34 Tax Notes 363, 365 (Jan. 16, 1987) [hereinafter cited as NYSBA Report].

[305] *Id.* at 141.

bond might be an amount sufficient to provide an overall yield on the comparable bond at the applicable federal rate, although this alternative would work only for contingent obligations that were issued for cash or publicly-traded property that has an established issue price.

Picking the right comparable bond does not complete the treatment of an obligation, such as one with contingent principal, that provides for *deferred* contingent payments. One cannot simply compare each year's actual results with the comparable bond because the contingencies are not resolved until the principal is repaid. Thus, a null hypothesis is still needed pending resolution of the contingency, and this null hypothesis will be implicit in the selection of the principal amount on the comparable bond.[306]

There is, in general, no clear comparable bond for an obligation with contingent principal that is issued for nontraded property. Moreover, even if such a bond could be found, the use of the comparable bond approach would require an assumed price on the comparable bond, precluding the use of the "look back" method of valuation of the property for which the obligation was issued.

2.   *Assumed Accrual at a Risk-Free Rate*

In the indexed principal obligation discussed at the beginning of this article, the fixed interest payments were treated as a nontaxable return of principal, based on a null hypothesis that the contingent payments would be insufficient to cause the total payments on the obligation to exceed the issue price.[307] This null hypothesis is plainly inconsistent with the expectations of any reasonable purchaser. Indeed, the proposed regulations apply a different null hypothesis to any contingent payments that are received before the difference between

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[306] The NYSBA Report suggests that the comparable rate should provide a yield at least equal to the risk-free rate. *Id.* at 147.

[307] *See supra* notes 12–25 and 179–184 and accompanying text.

the issue price and the sum of the fixed payments is recovered. This different null hypothesis is that the overall return on the obligation will be at least equal to the applicable federal rate as applied to the adjusted issue price of the obligation over its term. Accordingly, these contingent payments are treated as interest to the extent that interest has accrued at the applicable federal rate and has not been previously reported.[308]

One might ask why a different null hypothesis should be applied to these first contingent payments received. If the initial null hypothesis is that the total payments on the obligation will exactly equal its issue price (as is assumed by the tax treatment of the fixed payments), this hypothesis is not contradicted by the receipt of contingent payments before the excess of the issue price over the sum of the fixed payments is recovered. Yet the treatment of the contingent interest is appealing precisely because the initial null hypothesis is so plainly biased.

A more neutral approach would treat all payments, fixed or contingent, as interest to the extent that interest has accrued at the applicable federal rate and has not been previously reported. Although this approach could produce an overstatement of interest, that possibility is already present in the treatment of contingent interest under the proposed regulations,[309] and it can be addressed by allowing an offsetting deduction when the degree of overstatement becomes fixed, presumably at maturity.

Indeed, waiting for a payment might not be needed. The holder of the contingent payment obligation could be required to accrue

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[308] Prop. Treas. Reg. § 1.1275-4(f)(2), 51 Fed. Reg. 12,022, 12,092 (Apr. 8, 1986).

[309] *See, e.g.* Prop. Treas. Reg. § 1.1274-6(a)(2), 51 Fed. Reg. 12,022, 12,077 (Apr. 8, 1986); Prop. Treas. Reg. § 1.1272-1(f)(4), 51 Fed. Reg. 12,022, 12,052 (Apr. 8, 1986); Prop. Treas. Reg. § 1.1275-4(d), 51 Fed. Reg. 12,022, 12,089 (Apr. 8, 1986); Prop. Treas. Reg. § 1.1275-4(f)(2), 51 Fed. Reg. 12,022, 12,092 (Apr. 8, 1986).

interest at the applicable federal rate on the adjusted issue price re-
gardless of whether payments are currently being received. This
approach assumes that the holder expects a return at least to that ex-
tent.[310] Such a requirement would raise the specter of a hapless holder
being required to continue to pay taxes on assumed earnings from an
obligation that has in fact soured. A similar problem, however, is faced
under current law by a creditor who must accrue fixed interest on a
dubious loan that has not yet been established as a bad debt. Ultimate-
ly, of course, an offsetting deduction will be allowed, but the holder
will have lost the investment proceeds on the overpaid tax.

The yield-based approach can ease this hardship. Just as the yield-
based approach includes a deferral premium when the tax is under-
paid during the term of a contingent obligation, it can also provide a
credit for lost earnings when the tax is overpaid. Thus, the yield-based
approach can work in tandem with a more neutral null hypothesis by
providing relief for taxpayers who fail to achieve the return presup-
posed by the null hypothesis.

Considerations operate in reverse for the issuer. A more neutral
null hypothesis would provide more rapid deductions for the issuer
than current law does. In those occasional instances in which the re-
turn assumed by the null hypothesis was not achieved, the tax benefit
of the issuer's excess deductions would be recaptured with a deferral
premium.

3. *Marking to an Index*

In some cases, a more refined treatment can be devised by exam-
ining the nature of the contingency. Consider an obligation with
principal indexed to the price of a commodity or an index such as the
Standard & Poor's 500 stock market index or the consumer-price in-

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[310] There are exceptions such as tax-exempt obligations. *See supra* note 59 and ac-
companying text.

dex. Many of these obligations bear interest at below-market rates because the market expects the relevant price or index to appreciate over the term of the obligation. Indeed, because of the risk inherent in these obligations, the market presumably expects this appreciation to cause the overall yield on the obligation to exceed the risk-free rate.

In view of these expectations, the holder's income from such an obligation in each year could include, in addition to stated interest, any increase in the amount of principal computed by reference to the values of the relevant price or index at the beginning and the end of the year. Similarly, any decrease would be allowable as a deduction. The null hypothesis each year would be that the obligation would be ultimately retired at an amount based upon the value of the price or index at the end of that year. This null hypothesis, although crude, surely is less biased than assuming no positive yield at all or a yield that is limited to the risk-free rate.[311]

The foregoing assumes that the obligation has enough stated interest so that its initial issue price is equal to the principal amount based upon initial values of the relevant price or index. If the issue price is less, the difference would be accounted for as original issue discount over the term of the obligation.

4. *Marking to Market*

The marking to an index described in the preceding section[312] assumes that the value of the relevant price or index can easily be

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[311] Even this refined tax treatment does not reflect the time value of money as fully as it might. If the indexed principal is not payable until maturity, a null hypothesis assuming that the amount of principal ultimately will be based on current values of the relevant price or index implies that the deemed principal amounts at the beginning and end of the year as discussed above should not be compared; rather, the present value of the remaining payments on the obligation should be compared, assuming those principal amounts.

[312] *See supra* Part IV.C.3 (p. 156).

determined from the newspaper, yet if the obligation is publicly trad-ed that same newspaper will have prices for the obligation itself. In these cases, why settle for less than the Haig-Simons ideal? There is no need for a null hypothesis; the mark to market method replaces the hypothesis with fact.

Indeed, the very existence of a contingency presupposes that val-uation is impractical. This is why the issue price of "earn-out" obligations is determined under the "look-back" method and why a zero null hypothesis is applied instead of self-insurance reserves for contingent losses. But there is something contradictory about a pub-licly traded contingent-payment obligation. The holder's overall return each year is not contingent; it is fixed by trading prices. To be sure, a portion of this return may not have been "realized" in the traditional sense, but the traditional realization requirement faded with the re-quired accrual of "locked-in" returns. Indeed, in the short-term, there is nothing locked-in about the yield on a zero-coupon fixed-payment obligation; rising interest rates can cause such an obligation to trade at a price well below its adjusted issue price. Under these circumstances, the realization requirement itself should not be a decisive obstacle.

A more serious objection might be raised that "marking to mar-ket" publicly-traded obligations would impose an unreasonable burden compared to the treatment of other obligations. Indeed, this has been a principal objection to marking to market capital assets generally.[313] Yet if nonpublicly traded contingent obligations were taxed under the yield-based approach, the benefits of deferring taxa-tion of contingent interest would not be available and therefore "marking to market" publicly-traded contingent obligations would not create a relative burden.

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[313] *See supra* note 251 and accompanying text.

D. *Extending the Yield-Based Approach*

1. *Sales of Capital Assets*

The proposed regulations treat all payments in excess of the issue price of a contingent obligation as compensation for the use of money and therefore as interest income.[314] Consequently, these payments are taxed as ordinary income even though the contingency might relate to the value of an asset that, if held directly, would generate capital gain. The treatment provided by the proposed regulations may be partially motivated by a recognition that these payments will generate ordinary deductions for the issuer regardless of whether they are characterized as interest or retirement of debt at a premium.

The proposed regulations, however, fail to say what happens when a contingent obligation is sold. Assume, for example, that a contingent obligation has increased in value in expectation of a large contingent payment. The payment is not yet fixed, but the market is anticipating the payment in valuing the obligation.

Prior to the proposed regulations, the gain realized on the sale would be attributable to the sale or exchange of a capital asset (unless sold by a dealer) and would therefore constitute capital gain, making it easy to avoid the ordinary income treatment of the contingent payment.[315]

Although the proposed regulations do not expressly provide for a different result, apparently the buyer would have interest income upon receipt of the contingent payment. Thus, because the buyer's basis would include the value of the anticipated payment, there would be a

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[314] Notwithstanding this rule, the Service regards a call premium paid on early redemption as capital gain rather than ordinary income. I.R.S. Gen. Couns. Mem. 39,543 (Aug. 8, 1986).

[315] Similarly, gain realized on the sale of stock is generally capital gain even if attributable to an anticipated dividend payment. *See* Treas. Reg. § 1.61-9(c).

potential for a built-in capital loss. While it is generally unattractive to accept interest income in exchange for a capital loss, one can imagine tax-exempt parties coming forward to make a market in anticipated contingent payments.

The final regulations may well foreclose this possibility by taxing the seller of a contingent payment obligation as if the obligation has been redeemed on the date of sale at a price equal to the amount realized. The market discount rules may provide some support for this result, although these rules appear to have been drafted with fixed payments in mind.[316] Taxing the holder in a manner that equates sales and redemptions is sensible because the holder's pretax income is unaffected by the identity of the purchaser,[317] yet this treatment would require virtually all income realized by the holder of a contingent obligation to be taxed as ordinary income rather than capital gain.[318]

If the holder is taxed under the yield-based approach when a contingent obligation matures, the considerations described above would also support applying the yield-based method to any gain realized on a sale of a contingent obligation. Thus, a holder would be taxed in a

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[316] Section 1276 causes any gain realized on the sale or redemption of a debt obligation to be treated as ordinary income to the extent of any accrued market discount. Market discount is the difference between the taxpayer's basis in the obligation and its stated redemption price at maturity. Market discount is deemed to accrue on a straight-line basis or, at the taxpayer's option, on a constant-yield basis. I.R.C. § 1276(b)(2).

[317] Section 302 draws a potentially greater distinction between sales and redemptions of corporate stock because the latter may generate dividend income. This distinction has also been criticized. *See* Marvin A. Chirelstein, *Optional Redemptions and Optional Dividends: Taxing the Repurchase of Common Shares*, 78 YALE L.J. 739 (1969).

[318] The NYSBA Report acknowledges that no general method exists to untangle the interest and capital gain elements of gain realized on the sale of an obligation providing for deferred contingent payments. *See supra* note 304, at 159. The Report, however, does outline and evaluate some alternative approaches. *Id.* at 159–61. Perhaps the best mode of attack is that begun by the Tax Reform Act of 1986, which eliminates the differences between the tax rates for interest and capital gain. 1986 Act, *supra* note 60, § 301, 100 Stat. 2216.

manner that results in the proper effective tax rate being applied to that holder's pretax yield, regardless of whether that yield is realized through fixed or contingent payments from the issuer or through a sale, and regardless of how the issuer is taxed.

Why single out contingent obligations for treatment under the yield-based approach? A contingent obligation can be a surrogate for *any* capital asset, depending on the contingency. If the yield-based approach is the proper way to correct for the tax deferral resulting from current law's application of a conservative null hypothesis to the holder of a contingent obligation, this approach should also generally work for capital assets. As noted earlier,[319] the typical null hypothesis for a capital asset is that its value will remain unchanged. When this null hypothesis is falsified because the holder realizes gain or loss upon a sale of the asset, the holder's yield can then be computed and a tax imposed (or credit allowed) that applies the proper effective tax rate to that yield.

Although the tax under the yield-based approach is computed after determining all the relevant facts, the computation is based on a generally nonverifiable assumption that the pretax yield was earned at a constant rate over the period in which the obligation or other asset was held. Although this assumption is arbitrary, at least it is more neutral than the corresponding assumption of current law, which is that the gain or loss is earned all at once at the time of sale.[320]

Annual valuations would be needed to refine further the assumption about how fast the pretax yield was earned. In fact, such valuations might render accounting rules obsolete. Although the impracticality of annual valuations as a general matter assures the continuing importance of accounting rules, valuations should be used

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[319] *See supra* notes 185–186 and accompanying text.

[320] *See* I.R.C. § 1001(c).

if the accounting rules would be so complex that it becomes more difficult to perform the accounting than the valuation.

It was noted earlier that it would be easier to "mark to market" certain publicly-traded contingent obligations than it would be to mark those same obligations to an index, or to subject them to the yield-based approach.[321] The same is true for publicly-traded assets generally. If the yield-based approach removes the benefit of gain deferral on nonpublicly traded assets, the principal objection to "marking to market" all publicly-traded assets is eliminated. Because assets that are "marked to market" for tax purposes have no need for the yield-based approach, in this way the yield-based approach can circumscribe its own scope.

2.   *Depreciation*

The purchase of depreciable equipment or real estate represents a prepaid expense that is virtually always contingent because the period over which economic depreciation should be computed is uncertain. Granted, the tax law now deliberately provides for depreciation that is more rapid than the back-loaded write-offs under economic depreciation,[322] yet any fixed schedule of depreciation, whether based on estimated economic depreciation or fixed by political compromise, allows the taxpayer to apply a lower effective tax rate to income earned from assets that last longer than average.[323]

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[321] *See supra* notes 308–310 and accompanying text.

[322] *See supra* notes 108–121 for a discussion of economic depreciation of prepaid expenses.

[323] This variation in effective tax rates increases the after-tax risk of investing in depreciable assets, which could lead to under-investment in depreciable assets by risk averse investors. One commentator has defended the use of faster than economic depreciation rates as a means of offsetting the effective tax rate risk. Michael C. Durst, *The Depreciation Debate: Have Bulow and Summers Suggested a Viable Compromise?*, 30 TAX NOTES 259 (1986). The yield-based approach would

It is possible to combine economic depreciation with the yield-based approach to provide an effective tax rate that is independent of the contingent useful life. Imagine, for example, that the tax benefit is computed only when the asset is sold or retired. At this point, its useful life *for the taxpayer* is known, as is its residual or salvage value. The taxpayer may compute a level rental cost equal to the amount that, when combined with the residual or salvage value, has a present value equal to the purchase price. The taxpayer may then generate a series of increasing depreciation deductions that represent the difference between this rental cost and the declining interest on the implicit zero-coupon obligation.[324] The tax rate is then applied to these deductions to generate a series of tax savings that, in hindsight, should have been realized. The future value of these savings, at an assumed risk-free reinvestment rate, is the reduction in tax allowed for the year of retirement or sale.

As discussed above in connection with installment payments,[325] no reason exists to wait until final disposition before allowing any tax effects. Tax savings can be allowed over the estimated useful life of the asset based on a reasonable null hypothesis. The difference between the actual series of tax savings and the series that, with hindsight, should have been realized would then form the basis for computing any further credit or additional tax when the taxpayer disposes of the asset.

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address this problem by eliminating the effective tax rate risk rather than providing an enhanced after-tax return.

[324] Arguably, the interest rate on the implicit zero-coupon obligation should be higher than the risk-free rate precisely because its return is contingent. This assumes that a risk-averse asset user facing a lease-or-buy decision would (absent tax considerations) pay less to buy the asset relative to its rental value because ownership requires bearing the useful life risk. Empirically this assumption may well be falsified by the perception that leasing entails the opposite risk because the lessee will lose the benefits of increased residual value at the end of the lease term.

[325] *See supra* notes 211–217 and accompanying text.

For example, suppose a piece of equipment was depreciated, based on its estimated useful life in accordance with the table set forth above for a patent with a twenty-year life.[326] If in fact the taxpayer scrapped the asset after fifteen years with no salvage value, hindsight indicates that he should have been entitled to more rapid deductions. The difference between the future value of these deductions ($477 assuming a 40% tax rate and a 6% reinvestment rate) and the future value of the actual deductions claimed in the first fifteen years ($265) is $212. This amount, which exceeds by $85 the tax benefit of $127 from writing off the $317 remaining basis, would then be allowed as a credit on retirement. The $85 excess offsets the time value of money cost of the previously inadequate deductions. Conversely, if the asset were not scrapped until after twenty-five years, an additional tax of $118 would be imposed, offsetting the time value of money benefit of the previously excessive deductions.

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[326] *See supra* chart before note 102.

V. Conclusion

The possibilities described above are remote from the familiar terrain of current tax law, and this article has provided only a few details of how these new rules might work, yet thinking about contingent payments invites speculation about these rules and frustrates any attempt to regard contingent payments as a sideshow of the original issue discount circus. Viewing contingent payments in this open-ended manner tends to produce broad observations rather than specific technical suggestions; a few of these broad observations follow.

First, it is impossible to tax contingent payments in a way that is both reasonably neutral and objective without some variant of the yield-based approach. Better null hypotheses can reduce some of the distortions of current law, but, without clairvoyance or a tolerance for subjective valuation, the tax treatment of contingent payments must use hindsight.

Second, the availability of a yield-based approach is not a reason to abandon the quest for better null hypotheses. Accurate measurement of annual income is a worthwhile goal, regardless of whether fine tuning is performed later. Moreover, the yield-based approach is complicated; it should therefore be restricted to transactions with a significant dollar size and deferral period and for which a reasonably good null hypotheses cannot be found.

Third, as with inflation indexing, attempts to cause effective tax burdens properly to reflect the time value of money create their own distortions if they are only partially implemented. The tax treatment of contingent-debt obligations cannot be developed without regard to the implicit contingent obligations that are inherent in prepayments and deferred payments. Indeed, contingent debt obligations dissolve the barriers that distinguish the tax treatment of different categories of income, such as interest and capital gain. It would be beneficial if

the effort to devise appropriate rules for taxing contingent-debt obligations leads to a rethinking of the general tax treatment of prepay-prepayments and deferred payments.

Finally, no accounting system can ever determine the timing of income with perfect precision. Distortions based on the time value of money will continue, yet the magnitude of these distortions will depend not only on the sophistication of the accounting rules but also on the level of tax rates and interest rates. Keeping these rates low hinges on the development and maintenance of a comprehensive tax base, control over federal spending, and relief from high inflation and tight money. These goals, worthwhile in themselves, also reduce the demands required of the tax rules for the timing of income.