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I. INTRODUCTION

Periodic stories in the financial and tax press reporting profitable new tax-saving securities and transactions create the impression that Wall Street is feasting on the carcass of the U.S. tax system. Just in the last year or so you may have read about TRUPS,¹ a security designed for banks and insurance companies in the hope that it would be treated as debt for tax purposes but equity for regulatory purposes, a massive exchange by General Motors of outstanding preferred stock for TOPR$,² which is another form of "tax deductible preferred stock," the use of PEPS, a security with a payoff pegged to the value of Netscape, by Times-Mirror to cash in on its investment in Netscape without recognizing a huge tax gain,³ and "step-down preferred stock," which was designed to allow a borrower to deduct principal as well as interest repaid on a loan.⁴

There is an element of truth in the bleak picture painted by these stories. Back in 1986, Merton Miller described tax law as one of two

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³ Robert Clow, Tailor-Made, Institutional Inv., June 1997, at 69; Lee A. Sheppard, Adding “PEP” to the Constructive Sale Debate, 70 Tax Notes 1592 (Mar. 18, 1996) [hereinafter PEP].

major forces driving financial innovation (the other was regulatory change)\(^5\) and both senior Treasury officials\(^6\) and Wall Street lawyers\(^7\) have warned about the threat financial innovation poses to the income tax. Advances in the field of finance are dissolving distinctions upon which the tax law is built, such as those between debt and equity, capital gains and ordinary income, and sources of income, as well as blurring concepts that are integral to tax law, such as ownership, realization, and risk.\(^8\) From the perspective of finance, the tax law is riddled with opportunities for “pure tax arbitrage,” meaning opportunities to take risk-free and costless financial positions that have a positive yield in taxes saved.\(^9\) Financial theorists attribute the survival of the tax to the existence of “frictions” in the financial system, meaning such factors as the cost of writing and enforcing contracts, public and private regulatory barriers, and, to a not very significant degree, tax law barriers to tax arbitrage. Those committed to preserving the status quo in tax should find this view chilling because financial innovation gradually is reducing these frictions.\(^10\)

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8 The basic point that tax law is built around “cubby-holes” that finance makes untenable was made by Edward Kleinbard and Randall Kau in critiques of the attempt to tax new securities and transactions by deconstructing them into familiar elements. Id. at 947-52; Randall K.C. Kau, Carving Up Assets and Liabilities—Integration or Bifurcation of Financial Products, 68 Taxes 1003, 1005-07 (1990). As for the argument that risk is a key criterion in tax law and that innovation undermines the ability to ascertain who bears risk, see Daniel Shaviro, Risk-Based Rules and the Taxation of Capital Income, 50 Tax L. Rev. 643, 643, 645 (1995) (describing “crisis in the taxation of financial assets” and arguing that this crisis “raise[s] serious questions about the entire enterprise of taxing income from capital”).


In this Article, we tell the story of many of the securities innovations in the last two decades that are perceived as having been tax-driven. Our goal is to better understand how tax law influences securities innovation and to investigate some important questions regarding how tax policymakers ought to respond to securities innovation in the absence of fundamental tax reform. Section II explains the important role of investment banks and exchanges in securities innovation. Section III explains how tax law adds value to some securities and the crucial role of different tax clienteles in creating this value. Section IV makes the descriptive claim that investment banks and exchanges have found it surprisingly difficult to market new forms of securities that exploit these potentially profitable features of tax law. Section V provides a theoretical explanation for this difficulty. Our explanation draws on a feature of tax law—its uncertainty—that is largely ignored in theoretical finance. We argue that tax law uncertainty dampens securities innovation because of the organization of securities markets around tax clienteles. There is irony in this argument, if it is right, for the same feature that makes it profitable to engineer securities in ways that alter the timing or character of income makes it difficult to market innovative securities that have uncertain tax treatment. We hasten to add that there are other plausible explanations for the difficulty in marketing new tax-advantaged securities, including what broadly may be defined as psychological factors, as well as a glut of alternative tax-minimizing strategies.

The second half of the Article draws on the points made in the first half to explore two important policy questions that have received little attention to date. Section VI lays the groundwork for the policy analysis that follows by explaining the sources of social value in securities innovation and our normative perspective. Section VII analyzes whether a change in tax law that eliminates profitable anomalies (some would say that “closes tax loopholes”) should be made retroactive by applying the change to securities issued prior to the change. While we do not object to the current practice of Treasury and Congress of usually grandfathering securities issued prior to a change or clarification in the law, we argue that lawmakers should be more willing to use the threat of retroactive rulemaking to regulate harmful tax-driven innovations. We propose a test for recognizing such innovations.

Section VIII addresses the provocative question whether tax-driven financial innovation may have socially beneficial effects because it

No finite and feasible system of business taxation can collect positive revenues.” Stephen A. Ross, Comment on the Modigliani-Miller Propositions, J. Econ. Persp., Fall 1988, at 127, 132.
reduces tax-based financial distortions. Focusing on two cases that raise somewhat different issues—tax straddles and recent securities that fall under the label “tax-deductible preferred stock”—we argue that these innovations are likely to exacerbate, rather than alleviate, tax law distortions once their full effects are taken into account. One upshot of this conclusion is our recommendation that Treasury revisit its 1994 rulings that have been interpreted as implicitly blessing some forms of tax-deductible preferred stock. We close in Section IX with a brief discussion of the history of tax straddles as a cautionary note. This history shows how an ill-advised Treasury ruling that blesses pure tax arbitrage can open floodgates.

There are some important limits on the scope of this Article. Most importantly, we focus on publicly traded securities, futures contracts, and options, putting to the side “private” financial innovation in the form of non-publicly traded contracts (such as most swaps). This might seem odd, for the street wisdom is that the most aggressive financial transactions from a tax perspective are done privately, and, as we shall show, almost every innovative publicly traded security had a private precursor. We focus on innovations in publicly traded instruments partly out of necessity—it is difficult to obtain reliable information on private transactions—bringing to mind the story of the drunk man who searched under a street light for keys he lost elsewhere because he was able to see under the light.

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11 This is the general tenor of the remarks of several leading practitioners in the area at a conference in November, 1996 sponsored by the Tax Section of the Federal Bar Association. The transcript of the conference can be found at The Condition of the Tax Legislative Process, 97 TNT 27-72, Feb. 10, 1997, available in LEXIS, Fedtax Library, TNT File. Two sessions of the conference were devoted to the questions: “Can the Tax Laws Catch Up With the Financial Markets,” and “Are Corporate Tax Shelters Driving Tax Policy, or Vice Versa?”

12 What we know about private transactions is consistent with some of our observations, in particular the difficulty of peddling tax gimmicks. The story of one transaction is told in ACM Partnership v. Commissioner, 73 T.C.M. (CCH) 2189 (1997), which involves one of a series of deals done by Merrill Lynch that used a partnership between a domestic corporation, a foreign corporation, and a “straw” partner that invested in hedged positions in securities to generate artificial losses for the domestic corporation. The Tax Court denied the losses, invoking the doctrine of substance over form. These deals were one of the targets of the anti-abuse rules in § 1.701-2(d) of the regulations, as well as the “anti-stripping” ruling and regulations. Notice 95-53, 1995-2 C.B. 334; Prop. Reg. § 1.7701(l)-2. Merrill Lynch devised the transaction and had great difficulty marketing it despite its impressive tax benefits. Merrill Lynch was able to sell the deal to Colgate only once it could show that the transaction could help Colgate accomplish other nontax financial objectives in addition to yielding impressive tax benefits.

The story of step-down preferred stock, a transaction that surfaced in the Spring of 1997, is similar. The transaction was designed to enable a corporation that raises funds through a REIT, in effect, to deduct payments of principal on a loan as well as interest. The government challenged the transaction in Notice 97-21, 1997-11 I.R.B. 2, taking the position that the notice and implementing regulations would apply to securities issued before the date of
Nevertheless, there are plausible reasons to focus on innovations in publicly traded instruments. First, tax-saving strategies are cheaper and less risky to implement when they can be done using publicly traded instruments rather than private contracts, and so the threat publicly traded instruments pose to the public fisc is greater than that posed by private contracts. For example, only the very wealthy can engage in an equity swap (a contract that permits a taxpayer to eliminate risk on a position in appreciated stock without formally selling the stock and so recognizing the gain) because of transaction costs and creditworthiness concerns. With the introduction of long-term options, the same thing can be done cheaply by buying a long-term put and selling a call (the stock could be posted as collateral on the call to protect the counterparty on the call from credit risk). Second, as the last example illustrates, many private tax-saving strategies use publicly traded instruments. In designing rules for a new publicly traded instrument, tax policymakers could try to take into account such potential uses. Third, public and private financial innovation raises somewhat different policy concerns and probably are best dealt with through different regulatory tools. Much can be accomplished towards deterring undesirable private innovation by adopting rules that require disclosure. A small step in this direction was taken in the Taxpayer Relief Act of 1997, which requires the registration of corporate tax shelters offered under conditions of confidentiality. Disclosure also should be required of private transactions with terms that allow the transaction to be unwound on certain tax events, or that make the notice. This is one of the rare instances of retroactive rulemaking. The Wall Street Journal reports that the transaction was the brainchild of an American lawyer working in Europe who pitched the idea to several American investment banks. J.P. Morgan did the first deal in late 1996 but it took off in early 1997 when Bear Stearns heavily marketed the structure in order to increase its share of fixed-income underwritings. Morgan Stanley jumped in by February, 1997 and other investment banks were poised to follow at that time. In three months, before Treasury announced on February 27 that it would challenge the tax benefits, new issues of over $10 billion of step-down preferred were announced by 13 companies and the three investment banks peddling the deal. While this is a staggering number, it represents only a handful of the companies to which the idea was pitched. See Raghavan & Schlesinger, note 4, at 11; Monroe, Crackdown, note 4, at 77; Sheppard, Step-Down Preferred, note 4, at 1102.

13 Daniel Shefter, Tax Proposals on "Short Against the Box" and Other Hedging Transactions, 70 Tax Notes 581, 588 (Jan. 29, 1996) (stating that "swap counterparties require taxpayers to possess substantial assets (e.g., $5 to 10 million) other than their hedged securities to enter into an equity swap.")

14 Similarly, the ability to cheaply construct a synthetic zero coupon bond by combining an investment in nondividend paying stock with a long put and a short call with matching strike prices and exercise dates depends on being able to purchase a sufficiently long-term put and sell a matching call through an exchange.

15 Pub. L. No. 105-34, § 1028. 111 Stat. 788, 926, adding IRC § 6111. The provision is weak because the promoter and potential investors have a natural incentive to keep such deals secret and so a confidentiality agreement may be dispensed with.
promoter’s fee contingent upon certain tax events. No disclosure rule is needed for publicly issued securities. While, in theory, the government could require that issuers of novel securities seek rulings on their tax treatment prior to issuing a security, such a rule is unnecessary because very few innovative securities pose a significant immediate threat to the tax system and unwise because the government cannot act with sufficient speed.

We have little to say in this Article about some important questions, including the appropriate substantive rules for taxing different types of securities, the form the law should take (detailed rules or general principles implemented through case-specific rulings), and the appropriate process for changing the law (legislation, regulation, or ruling). A fair amount has been written on the first question.16 In the long

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For a well-worked out proposal to abolish the corporate income tax and substitute for it an accretion tax on corporate securities, see Joseph M. Dodge, A Combined Mark-to-Market and Pass-Through Corporate Shareholder Integration Proposal, 50 Tax L. Rev. 265 (1995). There are also proposals to preserve the corporate income tax but assess that tax on the aggregate increase in value of the firm. See Michael S. Knoll, An Accretion Corporate Income Tax, 49 Stan. L. Rev. 1 (1996). For an argument for abolition of the distinction between debt and equity and a form of corporate integration that is grounded on the problems posed by financial innovation, see Kleinbard, note 7, at 947-55.

Alvin C. Warren, Jr., Financial Contract Innovation and Income Tax Policy, 107 Harv. L. Rev. 460 (1993), is a good starting point for reading about possible responses to financial innovation. We draw heavily on Jeff Strnad, Taxing New Financial Products: A Conceptual Framework, 46 Stan. L. Rev. 569 (1995) [hereinafter Conceptual Framework]. One proposed approach is to tax financial instruments on an expected yield basis. This is the approach taken in taxing contingent payment debt instruments. Reg. § 1.1275-4. For an explanation and justification of the method, see Reed Shuldiner, A General Approach to the Taxation of Financial Instruments, 71 Tex. L. Rev. 243 (1992). A problem with this method is that it exacerbates the problem of strategic trading. For discussions of this point, see Mark P. Gergen, The Effects of Price Volatility and Strategic Trading Under Realization, Expected Return and Retrospective Taxation, 49 Tax L. Rev. 209 (1994); Jeff Strnad, The Taxation of Bonds: The Tax Trading Dimension, 81 Va. L. Rev. 47 (1995). In addition to the obvious alternative of taxing securities on a mark-to-market basis, various forms of retrospective taxation have been proposed to overcome the problem of strategic trading. An intriguing proposal is Alan J. Auerbach, Retrospective Capital Gains Taxation, 81 Am. Econ. Rev. 167 (1991), which recommends taxing gains only upon realization by imputing a taxable return back from the final proceeds, with any additional gain escaping tax, which has been generalized in Bradford, note 9. Stephen B. Land, Defeating Deferral: A Proposal for Retrospective Taxation, 52 Tax L. Rev. 45 (1996), proposes a different approach to retrospective taxation that, like Professor Auerbach’s approach, is immune to strategic trading, but unlike his approach, imposes a tax that bears a relation to an investment’s actual gain or loss. For an argument that financial innovation may compel a move to a consumption tax, see Shaviro, note 8. For the views of one of the authors on some of these
run, we feel, like others,\footnote{See Daniel Halperin, Saving the Income Tax: An Agenda for Research, 77 Tax Notes 967 (Nov. 24, 1997).} that the best solution to the problem of taxing securities and other investment assets lies in eliminating the corporate income tax and moving to a system under which all liquid assets with monitorable prices are taxed on a mark-to-market basis and other investment assets are taxed using an expected yield or retrospective method. When we began this project, we hoped to address the second and third questions about the form the law should take and the process by which it would be changed pending more radical reform. We had in mind a proposal under which Treasury would extend and change the law, and make tax policy, incrementally through rulings on specific securities, rather than through massive regulatory projects or by seeking legislation from Congress.\footnote{A more developed version of this argument appears in Gergen, Apocalypse, note 16, at 855-59.} The general idea of moving to a less rule-based approach is not new,\footnote{See David P. Hariton, The Tax Treatment of Hedged Positions in Stock: What Hath Technical Analysis Wrought?, 50 Tax L. Rev. 803 (1995).} and many of the arguments in favor of such an approach are fairly obvious. Law and policy already are made in this area in reaction to developments in the market. Plainly, Treasury can react to a new development more quickly through a case-specific ruling than it can react through regulation or than Congress can react through legislation. Probably, law and policy will be made more intelligently in this fashion because fewer demands are placed on lawmakers and policymakers to predict future developments. We still believe that such an approach would be an improvement over the status quo. But we do not defend this proposal in this Article because it raises difficult legal questions regarding the lawmaking power of Treasury under existing statutes and the degree of discretion taxpayers have in interpreting the law under the existing system and under a less rule-based system.

II. AN OVERVIEW OF HOW SECURITIES INNOVATION OCCURS IN THE UNITED STATES

A history of financial innovation over the last generation has yet to be written.\footnote{Finance theorists disagree about the future pace of innovation. One view is that the revolution is playing out; until there is some new technological breakthrough on the scale of the Black-Scholes option model or market shock, there will be only variations on existing securities and futures contracts. Merton H. Miller, Financial Innovation: Achievements and Prospects, J. Applied Corp. Fin., Winter 1992, at 4, 10-11 [hereinafter Achievements]; Miller, Twenty Years, note 5, at 470-71. A competing view is that the cur-}
of finance on the process of financial innovation, case studies of specific instruments, and reports from the financial and tax press. What is often described as a "revolution" in finance began in the 1970's. During that decade, the commodity exchanges began to compete in offering new forms of options and futures, mortgage securitization began, and the first money market mutual funds were formed. The innovative debt and equity instruments and debt hybrids that are the centerpieces of this Article begin to appear in the 1980's, starting with zero coupon bonds in 1981, though, looking back to the 1920's and earlier, similar securities can be found. The innovations seem to have been stimulated by the turmoil in financial and commodity markets in the 1970's and 1980's, technological breakthroughs (such as the publication of the Black-Scholes option model in 1973 and continual advances in computerization), and perhaps changes in government policy and law (such as the advent of floating exchange rates in 1973, the creation of the CFTC in 1974, and the creation of shelf-registration in 1982).

Investment banks are the primary innovators of securities, though the government has played a significant role in creating or stimulating markets for certain securities, and accounting firms and commercial

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22 We could have begun our story earlier. Several themes of this Article are echoed in the stories of state and local arbitrage bonds and industrial development bonds in the years leading up to 1969. Arbitrage bonds were issued by state and local governments to fund investments in taxable bonds. The Treasury tried to squelch marketing of arbitrage bonds by denying requests for rulings that their interest was tax-exempt. Industrial development bonds ("IDBs") were bonds issued to finance private investments. Treasury acknowledged that these bonds were tax-exempt in the early 1960's. The trajectory of IDBs is similar to that of other tax-advantaged securities, slow at first with acceleration over several years (Treasury estimated less than $100 million of IDBs were issued in 1962, $500 million in 1965, $1.5 billion in 1967, and it projected $2 billion in 1968). Stanley S. Surrey, Tax Trends and Bond Financing, 22 Tax Law. 123 (1968).


26 Treasury facilitated trading in zero coupon bonds when it instituted the STRIPS program in February 1985. See Donald J. Smith & Robert A. Taggart, Jr., Bond Market Inno-
banks sometimes offer services or products that compete with investment banks. Exchanges are the primary innovators of futures contracts and options. Robert Merton has proposed a model of innovation by investment banks and exchanges that is roughly consistent with what we found. Innovators derive ideas for new securities from observing investment strategies in the marketplace. New securities are designed to replicate more costly “synthetic” investment strategies.

The story of Liquid Yield Option Notes ("LYONs"), a security that first appeared in 1985, is consistent with and illustrates Merton’s point. A LYON is a zero coupon corporate bond coupled with a conversion or call option on the stock of the issuer, a right to put the bond for cash prior to maturity, and a right of the issuer to redeem or call the bond for cash or its stock (at the bondholder’s option). There is a gradually narrowing positive spread between the bondholder’s cash put price and the issuer’s cash call price, both of which rise and converge to equal the face amount of the bond at maturity. The number of shares of stock to which the bond can be converted is constant. The genesis of LYONs was the observation by Lee Cole, who was then at Merrill Lynch, that many retail customers pursued a strategy of investing in low risk money market funds while using a part of the interest income from those accounts to purchase highly volatile equity options. Cole came up with LYONs as a lower cost means to pursue that strategy by coupling interest income from the issuer’s high-grade debt with a call option on the issuer’s stock. The option embedded in a LYON cannot be cheaply replicated by other means because of its extended maturity. The holder of the bond had two

27 Commercial banks competed with investment banks in offering stripped bonds to individual investors. Andrea R. Priest, Treasury Dealers Offer a Zoo Full of New Zeroes, The Bond Buyer, Sept. 15, 1982, at 23. A commercial bank led the way in offering inflation-indexed bonds (Franklin Savings in 1988), Smithson & Chew, note 23, at 80, and a commercial bank was among the first to offer bonds publicly with a payout contingent on the performance of equity indexes (Chase Manhattan), Ronit Addis, Fixed Income With a Hedge, Forbes, June 26, 1989, at 246, 246, though this offering was backed up by a private issue of such bonds put together by Salomon Brothers, Scholes & Wolfson, note 9, at 428. 28 Merton, note 20, at 15-19. 29 John J. McConnell & Eduardo S. Schwartz, The Origin of LYONs: A Case Study in Financial Innovation, J. Applied Corp. Fin., Winter 1992, at 40; Tom Pratt, King of the Jungle; A Decade After Inventing Lyons, Merrill Still Has the Product to Itself, Inv. Dealers’ Dig., Aug. 21, 1995, at 14 [hereinafter Decade]. Since 1985 there has been a steady stream of issues of LYONs, totalling 84 issues raising $20.2 billion through 1995. Pratt, Decade, supra, at 14. 30 Pratt, Decade, note 29, at 15.
years of fairly hard call protection in the first issue of LYONs, while publicly traded stock options at that time had a much shorter term. Robert Merton’s model of securities innovation suggests that the immediate value of a new security will lie in the reduction of transaction costs from the substitution of publicly traded contracts for more complex and costly synthetic hedging strategies. Merton comments that transaction costs can be reduced in this manner by a factor of 10, though he does not explain how he came up with that figure. Zero coupon bonds, which appeared in 1981 and 1982, illustrate the general point that innovative securities are low-cost substitutes for more costly synthetic strategies. Institutional investors were one source of demand for high-grade zeros—ideally strips of U.S. Treasury securities. High-grade zeros offered them a means to lock in an effective rate of return by eliminating the interest rate risk created by receiving a stream of coupon payments to reinvest. Other dynamic strategies existed to hedge reinvestment risk, but zeros were cheaper and foolproof. The growth of the zero market also had secondary value because of the price information it provided. The yield curve can be determined best through the price of zero coupon government securities. Thus, many financial strategies that exploit changes in the yield curve can be said to owe their existence indirectly to the development of zeros.

Reliable data is difficult to come by on the cost to an investment bank or an exchange to design, market, and maintain a market in an innovative contract. William Silber estimated that during the 1970’s, the cost to an exchange of developing an entirely new futures contract was around $70,000. This was the direct cost of professional staff devoted to product development; it did not include marketing costs or 

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31 The stock price of Waste Management was $52 on the issue date of April 12, 1985, and Waste Management could exercise the call option on the bond prior to June 30, 1987, only if the stock price rose above $86.01. McConnell & Schwartz, note 29, at 41.

32 A brief scare arose in December, 1991 when it was reported that the Chicago District Office of the IRS had taken the position that interest on a LYON was not deductible. The threat was quickly squashed. Before the Chicago audit was reported in the press, Merrill Lynch was able to obtain a private letter ruling from the National Office of the IRS confirming that the interest was deductible. In February, 1992, the Chicago District Office abandoned the position it had taken in audit, reportedly at the urging of the National Office. See Lee A. Sheppard, Malloy Discusses Debt Questions At NYSBA Meeting, 92 TNT 26-9, Feb. 4, 1992, available in LEXIS, Fedtax Library, TNT File. For additional details, see the newspaper stories referenced in Press Watch, 91 TNT 264-63, Dec. 31, 1991, available in LEXIS, TAXANA Library, TNT File.

33 Merton, note 20, at 17.


indirect costs, such as management time.\textsuperscript{36} No doubt the cost to an investment bank to develop a truly innovative security is significantly higher, particularly if it raises difficult tax, accounting, or regulatory issues. Development costs have been reported in only one case that we know of, “SuperShares,” which were created by a small, highly innovative investment firm.\textsuperscript{37} Development costs initially were estimated at $600,000 for a six-month effort by the firm, but the cost eventually ballooned to $10 million in what turned out to be a five-year effort.\textsuperscript{38} No doubt these figures are high since SuperShares were notoriously costly to develop. Assuming a innovative security is likely to take around one year of intensive effort to develop,\textsuperscript{39} and extrapolating backwards from the expected and actual cost of developing SuperShares, we came up with a ballpark figure of $1 to $2 million to develop an innovative security.

A New York Times story describing the resources Shearson Lehman devoted to developing “Unbundled Stock Units”\textsuperscript{40} makes more concrete the effort needed to create and market a new security. The idea was to carve up common stock into three securities: a 30-year deep discount bond also paying a rate of interest equal to the current cash dividend on the common, a share of preferred stock paying a dividend equal to any increase in the dividend on common, and a warrant to purchase a share of common in 30 years at a price equal to the value of the bond at maturity. The project was dubbed “The Manhattan Project” within Shearson, which gives a sense of the perception of its scale within the firm. A team of at least five Shearson employees—all of whom were highly skilled and, presumably, highly compen-


\textsuperscript{37} The firm, Leland O’Brien Rubenstein Associates, has been described as “a boutique for state-of-the-art investment strategies and products.” Hal Lux, The Derivatives Lab, Inv. Dealers’ Dig., Mar. 16, 1992, at 20. Two of the name partners are finance professors at University of California at Berkeley. The firm is most famous for developing portfolio insurance. SuperShares, which were first traded in 1992, are three-year options traded on the Chicago Board Options Exchange—denominated Protection, Income and Residual, Priority, and Appreciation—on underlying securities traded on the American Stock Exchange that are claims on trusts that hold baskets of securities designed to track the S&P 500 or money markets. The concept behind SuperShares originally was set forth in Nils H. Hakansson, Welfare Aspects of Options and SuperShares, 33 J. of Fin. 759 (1978).

\textsuperscript{38} Hal Lux, LOR’s Big Gamble on Supershares, Inv. Dealers’ Dig., Nov. 30, 1992, at 12.

\textsuperscript{39} This is the reported development time for LYONs. McConnell & Schwartz, note 29, at 40; Leslie Wayne, Fathers of Invention, N.Y. Times, Dec. 18, 1988, § 3, at 5. This is also how long Professor Silber estimated it took to develop an innovative futures contract. Silber, note 36, at 130.

\textsuperscript{40} Wayne, note 39, at 5. The tax advantage of unbundling stock lay in the ability of the issuer to deduct interest paid and accrued on the bond. For an explanation of this point, see William D. Samson & Benton E. Gup, The Hidden Side of Corporate Restructuring, 45 Tax Notes 877, 880-82 (Nov. 13, 1989).
sated—devoted a significant part of their time for almost a year to developing the idea. No doubt, the idea was reviewed by Shearson's legal department and its outside counsel before it was marketed. After the idea was developed, it was presented to 40 corporations, and once four corporations willing to convert a portion of their outstanding stock into unbundled units were found, there was further intensive negotiations and tinkering with the units to satisfy the user's particular needs. Bringing the idea to fruition eventually required that Shearson work with the corporate legal departments for each of these corporations, their outside counsel, their accounting firms, the rating agencies, the New York Stock Exchange, and the SEC. This effort was for naught. The plug was pulled on Unbundled Stock Units in the spring of 1989, reportedly in response to an adverse SEC ruling on their accounting treatment, although there are other explanations.

Had Unbundled Stock Units gone forward, Shearson would have incurred additional costs, for it was committed to hold substantial inventories in the units to maintain a secondary market. The substantial cost of creating and maintaining a secondary market in the security is probably the reason why Merrill Lynch maintained a "near monopoly" over LYONs through the mid-1990's. Since the security's introduction in 1985, there has been a steady stream of issues of LYONs. The cost to Merrill in maintaining a secondary market in LYONs is substantial. Merrill's trading desk on average maintains an inventory of $1 billion in LYONs, and from the introduction of the contract, the firm has been publicly committed to maintaining a narrow bid-ask spread, reducing investors' trading costs, insuring liquidity, and creating additional value in holding the contract. The huge investment in capital necessary to support trading poses a high barrier

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41 See, e.g., Dow Announces Decision To Withdraw Registration Filing For USUs, PR Newswire, Mar. 29, 1989, available in LEXIS, NEWS Library, PRN File (announcing Dow's decision to withdraw offering because of SEC ruling that unbundled shares would be counted as outstanding equity for purposes of determining earnings per share).

42 Scholes & Wolfson, note 9, at 426, gives several other reasons, including the unwillingness of pension funds to give up voting rights on appreciation shares, unwillingness of investors to recognize gain on the conversion of their stock into USUs, and an unwillingness of corporations to hold the dividend units because of fears relating to the uncertainty of the dividends and their illiquidity.

43 This might have been a sensitive issue at Shearson for it was reported in 1988 to be holding $117 million in Dutch Auction Rate Preferred Stock issued by MCorp that it purchased as underwriter when supply exceeded demand. Wayne, note 39, at 5. Lehman Brothers' unpublicized commitment to maintain the market in American Express's Auction Rate Preferred Stock led to its paying an $850,000 fine to the SEC. In a number of instances, Lehman had bid for shares in the auction—which resulted in American Express paying a lower dividend rate—and then quickly resold the shares. Tom Pratt, SEC/Lehman Censure Renews Auction Preferred Debate, Inv. Dealers' Dig., Sept. 4, 1995, at 11.

44 See note 29.

45 Pratt, Decade, note 29, at 19.
to entry for other investment banks attempting to create similar securities. Entry into the market also is deterred by the specter of potentially significant trading losses. Merrill reportedly lost $150 million on its inventory of convertible bonds in 1994, much of it on LYONs, which like zero coupon bonds, have much greater price volatility than coupon paying bonds.46

How do investment banks recoup these development costs? Studies by William Silber47 and Peter Tufano48 of innovations in securities and futures by investment banks and exchanges in the 1970's and 1980's suggest that the reward to an investment bank for a successful innovation (many innovations fail49) is early market dominance in the successful contract by the "first mover." Professor Tufano examined 58 financial innovations (securities as well as futures contracts) from 1974-1986.50 Thirty-five of the innovative securities were imitated by rival investment banks within one year of their introduction to the market by the pioneer investment bank. Twenty-three of the innovative securities were either not imitated at all or imitated more than one year after their first introduction to the market.51 Professor Tufano concluded that investment banks tend to pursue two different strategies to reap the first-mover advantage. Sometimes investment banks underpriced their successful innovative securities (typically by maintaining a low spread between the offer and asking price), ostensibly to induce issuers and investors to commit to the first transaction.52 Professor Tufano found that pioneers were able to recover the costs of innovation by capturing market share by being the first mover. The pioneers' market shares in imitated securities were almost 2.5 times greater than the market shares for the rival imitating investment banks.53 Professor Tufano found nonimitated securities traded with higher spreads than the imitated securities. This led him to theorize that the higher spreads enabled the innovating firm to recover the costs of specially designing securities for narrowly defined clienteles.54

46 Id. at 14, 19-20.
47 Silber, note 36.
49 Hal Lux, Product Envy, Inv. Dealers' Dig., May 13, 1991, at 22 (reporting that review of The Chicago Board Options Exchange found that "only about one in 10 new products become major hits. Another two become moderate successes . . . ")
50 Tufano, First-Mover, note 48, at 215.
51 Id. at 227.
52 This is what Shearson had planned to do with Unbundled Stock Units by discounting its fees. Wayne, note 39, at 5.
53 Tufano, First-Mover, note 48, at 231.
54 Id. at 229.
Many ultimately successful innovations do not catch on quickly. Goldman Sach's Monthly Income Preferred Shares ("MIPS") is the first in a new line of securities that we define generically as tax-deductible preferred stock. In its original form, MIPS were very long maturity, small denomination securities paying a monthly dividend that the issuer could suspend for 18 months without defaulting. Much of the attraction of the security lies in the fact that it is treated as debt for tax purposes but equity for rating and accounting purposes. It

55 Morgan Stanley's experience with Preferred Equity Redemption Cumulative Stock ("PERCS") underscores this point. PERCS pay a high dividend yield coupled with a payoff on redemption that is pegged to the value of the issuer's common stock, subject to a cap that declines over time but is always significantly above the price of the issuer's common on the date of issuance. In return for the high dividend yield, the investor gives up the right to any appreciation in the value of the common stock above the cap. It is as if the investor purchased the common stock and then sold an out-of-the-money call option at the cap price in return for the higher dividend yield. Morgan Stanley did the first issue of PERCS for Avon in 1988. For a detailed analysis of how the deal fared, see Douglas R. Emery & John D. Finnerty, Using a PERCS-for-Common Exchange Offer to Reduce the Costs of a Dividend Cut, J. Applied Corp. Fin., Winter 1995, at 77. For an analysis of some of the tax issues raised by PERCS, see Douglas H. Walter & Stephanie E. Balcerzak, Avon Products Inc.: Preferred Equity-Redemption Cumulative Stock, 67 Taxes 467 (1989). The second issue of PERCS was in 1991, in a year in which there were five issues totalling almost $4.5 billion. Tom Pratt, How Percs Became the Year's Hottest Product, Inv. Dealers' Dig., Dec. 2, 1991, at 20. Pratt attributes the hiatus to several factors: the general move to debt from equity by corporations during that period, the bad taste left by the failure of Unbundled Stock Units, the fact that Avon had issued PERCS to make a dividend cut more palatable, which created a negative association, and "the inevitable inertia on the part of issuers." Id. at 22.

There is a fairly large literature that attempts to model the diffusion of financial innovations, much of it focusing on the adoption of innovations by commercial banks. Early work focuses on exogenous factors (for example, changes in the regulatory environment and technological innovations) that might influence banks to adopt innovations. This work tends to focus on whether variations in the adoption of innovations can be explained by the characteristics of individual banks that make them respond differently to the same exogenous stimuli. For an extensive review of the literature, see Allen N. Berger & Gregory F. Udell, Securitization, Risk, and the Liquidity Problem in Banking, in Structural Change in Banking (Michael Klausner & Lawrence J. White, eds., 1993), which finds little correlation. A more recent study, Phil Molyneux & Nidal Shamroukh, Diffusion of Financial Innovations: The Case of Junk Bonds and Note Issuance Facilities, 28 J. Money, Credit & Banking 502 (1996), tests two hypotheses. One is that the pace of diffusion of innovations is a function of changes in rational expectations of banks that result from the penetration of an innovation. Penetration improves information transfers, reduces fixed costs as innovations become commonplace, and has positive externalities (the most significant of which is enhanced liquidity). The alternative hypothesis is that diffusion of innovations is influenced by the bandwagon effect. They find some support for both hypotheses in banks' decisions to participate in the junk bond market and to participate in the Euromarket.

56 The rating agencies rank hybrid securities on a continuum, giving partial equity credit the closer the security is to equity. MIPS and other forms of tax deductible preferred are near the equity end of the continuum although as they mature they move towards the debt end. See Solomon B. Samson, A Hierarchy of Hybrid Securities, Standard & Poor's Creditweek, Mar. 25, 1996, at 43. Less equity credit is given for QUIDS and QICS, which has sparked some excited commentary. Tom Pratt, S&P Muddies "MIPS" Waters With a Few Choice Words, Inv. Dealers' Dig., May 29, 1995, at 12 [hereinafter Choice Words].
took two years from the first issue of MIPS for the security to catch on, as Chart I shows.\footnote{57}

The flow built gradually after the first issue of MIPS in October 1993. Goldman Sachs had the market to itself for only about nine months, until July and August 1994, when competing securities offered by other investment banks began to appear.\footnote{58} There was a flood of

Ellen Engel, Merle Erickson & Edward Maydew, Debt-Equity Hybrid Securities 18-22 (Aug. 1997) (unpublished manuscript on file with Tax Law Review), estimate the value of the financial reporting benefits by examining the costs firms incur to substitute tax-deductible preferred stock for straight debt. The cost to issuers (consisting of underwriting fees and additional premiums paid) ranged from $10 to $43 million. Paul Irvine & James Rosenfeld, Raising Capital Using Monthly Income Preferred Stock: Market Reaction and Implications for Capital Structure Theory (Jan. 1998)(unpublished manuscript on file with Tax Law Review), try to estimate the value of the financial reporting benefits by measuring the effect on share price of converting debt into tax-deductible preferred. They found a negative effect on share price, id. at 14-15, and even a slight negative effect on the price of senior bonds issued by the firm, id. at 15-16. Two of the initial issuers of MIPS publicly stated that they used the security because of accounting concerns. On the other hand, the first issuer, Texaco, said these concerns did not influence its decision. See note 184.


\footnote{57} Chart 1 is compiled from data provided by Engle, Erickson & Maydew, note 56.

new issues of MIPS and securities that provide similar benefits (which are generically described as tax-deductible preferred) by the latter half of 1995 and the first half of 1996. Indeed, by August 1995, 70% of new issues of preferred were of this type.\(^{59}\)

Strips, zero coupon bonds created by stripping the interest coupons off interest-bearing bonds, have an unusually steep trajectory.\(^{60}\) Merrill Lynch led the way in issuing trademark zero coupon Treasury securities in August, 1982. Merrill stripped the interest coupons from U.S. Treasury securities, placed them in separate trusts, and sold interests in those trusts as TIGRs (Treasury Investment Growth Receipts).

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\(^{60}\) For a story that the idea behind strips took several years to develop, see Pamela Sherrid, Kittens, Anyone? Forbes, Feb. 13, 1984 at 123 (telling how Joseph Wilson developed the idea at Merrill).
Over the next few months, other investment banks rushed to market strips of many stripes (some investment banks issued strips in large denominations targeting institutional investors; others issued strips in small denominations targeting the retail market), and the volume boomed. We believe that the explanation for the extraordinarily steep trajectory of strips lies in the enormous demand for the security in 1982. The high and volatile interest rates of the period made zeros attractive to institutional investors, particularly pension funds, who wanted to eliminate reinvestment risk. Furthermore, there was a flood of money into individual tax-exempt retirement accounts stimu-

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61 Professors Marshall and Bansal list “CATS, LIONs, COUGARs, DOGs, and EA-

62 First Boston estimated that during the summer of 1982, over $14 billion strips were
sold, about 15% to individuals. Peter D. Petre, Why Zero Coupon Treasury Securities Are

63 For an argument that most of the institutional demand was from pension funds and
that this demand was stoked by changes in pension law in the late 1970’s, see Zvi Bodie,
lated by tax law changes in 1981. These accounts constitute the domestic retail market for zeros.

The flood of zero coupon bonds trademarked by the investment banks under different names and essentially traded as different securities had troubling short-term effects, which illustrates one of the potential downsides of excessive innovation. The plethora of similar but nonfungible securities created a more confusing, costly, and less liquid market for investors, slowed the market penetration of the security for issuers, and increased market making costs for the issuing investment banks. Some investment banks were sued by individual investors who complained they had been cheated because the strips they bought were expensive and illiquid. Other investment banks responded by marketing fungible strips, and eventually in 1985, Treasury allowed separate registration and trading of strips of Treasury bonds.

Contributions to the individual retirement accounts (IRAs) jumped from $5 billion in 1982 to $28 billion in 1983 and continued to increase through 1986, by which point in time, one-quarter of individual savings were held in IRAs. See Jonathan Skinner, Individual Retirement Accounts: A Review of the Evidence, 54 Tax Notes 201, 202 (Jan. 13, 1992); Steven F. Venti & David A. Wise, The Evidence on IRAs, 38 Tax Notes 411 (Jan. 25, 1988). This increase has been attributed to tax law changes enacted in 1981 that went into effect in 1982. These changes expanded IRA eligibility to individuals who were participants in other qualified pension plans and increased the maximum contribution from $1,500 to $2,000 for individuals and from $2,000 to $4,000 for joint filers. Economic Recovery Tax Act of 1981, Public Law 97-34, § 311, 95 Stat. 170. The 1981 changes in the IRA rules were not expected to have such a dramatic effect; estimates of the revenue cost were off by a factor of four. See Charles L. Vehorn, Thomas J. McCool, and Milka Casanegra de Jantscher, Revenue Estimating: A More Prominent Part of Tax Policy, GAO J. 64 (Summer 1988). This under-estimation of the effect of the 1981 changes has been attributed to a failure to anticipate that universal IRAs would be mass-marketed by banks. Emil M. Sunley & Randall D. Weiss, The Revenue Estimating Process, 51 Tax Notes 1299, 1307-08 (June 10, 1991).

Priest, note 27, at 23.


Ettinger v. Merrill Lynch, Pierce, Fenner & Smith, 835 F.2d 1031 (3d Cir. 1987) (holding that alleged failure of broker to disclose excessive markups is actionable as securities fraud).

Questions and Answers on STRIPS, Treas. Dep’t News Release R-2986 (Jan. 15, 1985), available in abbreviated form at 85 TNT 12-4, in LEXIS, TAXANA Library, TNT file (Jan. 16, 1985). Issuers, however, learned from their mistakes, and in the case of LEAPs, the Chicago Board of Trade made their trademarked name LEAPs available costlessly to all potential issuers of the securities in hopes of establishing a product name for long-term equity options that would be recognized more easily by investors. CBOE Wants to License “LEAPS,” Wall Street Letter, May 13, 1991, at 2.
III. HOW TAX LAW ANOMALIES ADD VALUE TO SOME SECURITIES AND WHO REAPS THAT VALUE

In this Section, we examine the features of tax law that can add value to some securities. Generally, tax distorts the relative value of securities because of “discontinuities” and “inconsistencies” in tax law. We take both concepts, which we generically describe as tax law “anomalies,” from Jeff Strnad. The concepts can be grasped by picturing financial positions—a position can consist either of a single security or of a combination of securities—as located within a space based on their fundamental economic characteristics. Professor Strnad defines the location of a position in this space by the combination of “pure securities” needed to express the position. One moves through the space by adding, or subtracting, pure securities. A tax law inconsistency exists when a single financial position, that is, a unique set of pure securities, is taxed in multiple ways depending upon the real world securities and contracts composing the position. In other

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69 It bears noting that some securities that are perceived to be tax-advantaged do not really exploit tax law anomalies. LYONs bring this point to mind. The chief financial officer of the first issuer of LYONs, Waste Management, Inc., said that tax considerations were paramount when he accepted Merrill Lynch’s proposal to underwrite an offering. He liked the fact the instrument had a positive after-tax cash flow for his corporation because of the deduction of the imputed interest, and saw another potential advantage since this tax benefit would not be recaptured if the bond was converted into stock. Pratt, Decade, note 29, at 14.

But it is not accurate to say that LYONs exploit a tax law anomaly, for the tax benefit results from the ability of a corporation to raise cash tax-free or pay expenses out of untaxed income by issuing stock. Allowing a corporation to satisfy an obligation to pay accrued interest by issuing stock without recapture of the tax benefit preserves consistency with the most nearly equivalent transaction, issuing stock to raise cash that is used to pay off the accrued interest. As explained in the text, a tax law anomaly exists when equivalent (or similar) positions or transactions bear different tax consequences, and a tax law anomaly is exploited either by arbitrage (taking offsetting positions that have a positive after-tax yield because of their different tax treatment) or by shifting to a more tax-favored position.

Arguably, the real attraction of LYONs from the issuer’s perspective lies in their accounting treatment. The benefit of LYONs is that the interest deduction produces a short-term improvement in cash flow while the interest cash outlay is deferred, and if the bonds are converted into stock, that outlay takes the form of the issue of additional common stock potentially diluting the issuer’s earnings per share.

70 We define continuity in precisely the same terms as Strnad. Strnad, Conceptual Framework, note 16, at 598 (“Continuity adds the requirement that the difference in tax treatment for any two positions must approach zero as the two positions converge.”) Our definition of consistency follows from Professor Strnad’s definition, which is that “[a] tax system is consistent if and only if every cash flow pattern has a unique treatment.” Id. at 573. The property of non-uniqueness means that a cash flow pattern—or, in our terminology, a financial position—is taxed in multiple ways depending upon how the position is expressed.

71 See id. at 574-75. Pure securities are theoretical securities that have a payoff of $1 if a given state occurs and a payoff of zero otherwise. For example, a riskless pure security has a payoff of $1 in every state; thus, for the riskless pure security there is no uncertainty regarding the future cash flow.
words, a tax law inconsistency exists when a purely formal difference in a position can alter the tax it bears. A tax law discontinuity exists when a small economic change in a position has a disproportionate tax consequence.

An opportunity for pure tax arbitrage, which involves the taking of perfectly offsetting long and short positions that, in the aggregate, have a positive after-tax yield, may exist when there is a tax law inconsistency. 72 “Impure” tax arbitrage—that is, the taking of positions that do not perfectly offset because of the positive after-tax yield—is possible when there is a tax discontinuity, but impure tax arbitrage comes at a real cost since the long and short positions do not perfectly offset. 73

Inconsistencies and discontinuities may be troubling for reasons other than the potential for tax arbitrage. A discontinuity between the taxation of two positions distorts choices between those positions, which can be socially harmful because of the real sacrifices taxpayers make in taking the tax-favored position. That corporations may deduct interest paid on debt but not dividends paid on equity is a familiar example of a distortionary tax rule that is thought to have harmful social consequences. Tax law inconsistencies need not entail privately or socially harmful consequences for, by definition, the two positions are equivalent in all respects save tax. Financial innovations that reveal latent inconsistencies in tax law are problematic because of the revenue loss as taxpayers shift to the tax-favored position. Relatively few of the tax-saving strategies we examine in this Article involve tax arbitrage, that is, the taking of offsetting positions for their positive tax yield. Instead, the effect of inconsistencies and discontinuities in tax law often is to distort a taxpayer’s choices between positions with similar financial characteristics. For example, in 1981 and 1982, the discontinuity between the taxation of discount bonds and ordinary

72 We adopt the terminology of “pure” and “impure” tax arbitrage from C. Eugene Steuerle, Taxes, Loans, and Inflation 59-61 (1985).

73 For an example of impure tax arbitrage, consider a transaction done by a corporation owned by the Bass Brothers, described in William Baldwin, Does It Work for Mere Mortals, Too?, Forbes, Sept. 12, 1983, at 103. The corporation buys convertible preferred stock and takes a short position (in effect, selling borrowed shares) in the common stock of the same issuer. There is a strong correlation between the price of the common and the price of the convertible preferred so the corporation is protected from price fluctuations. The convertible preferred trades at a premium, which is the cost of the transaction. The dividends received on the preferred are mostly shielded from tax by the dividends received deduction. The corporation must pay the dividends on the common to whomever lent the shares it sold, and it deducts this amount. In addition, if the value of the stock goes up, the corporation has a long-term capital gain on the position in the preferred and a short-term capital loss on the common (gains and losses on this particular short position will always be treated as short-term), IRC § 1233(b), which if the corporation has short-term capital gains to shelter (which the Basses did at the time) converts ordinary income into capital gain.
bonds induced corporations to substitute discount bonds for ordinary bonds; we know of no case where a corporation issued discount bonds to invest in ordinary bonds.

The history of zero coupon bonds can be used to illustrate these basic concepts and to illustrate the importance of the existence of different tax clienteles to the value that securities derive from tax law anomalies. In the years immediately prior to 1969, there was a mismatch in the taxation of interest on discounted bonds—an issuer that used the accrual method could deduct interest on a straight line basis while a cash method investor did not have to include the interest in income until maturity.\(^4\) This mismatch created a discontinuity in the taxation of bonds paying current interest and discounted bonds in the hands of cash method taxpayers. In theory, a taxpayer who used the cash method of accounting could take advantage of this discontinuity by borrowing to invest in discounted debt since it would have a net interest deduction while the two positions would offset economically. This is a form of tax arbitrage, though it would not be pure tax arbitrage because this strategy was open mostly to individuals, and the interest rate on individual borrowing exceeds the interest rate on high-grade corporate debt. The paucity of discount bonds also made it difficult or impossible to create positions with precisely offsetting cash flows.

In 1969, legislation required imputation of interest on a straight line basis by cash method holders.\(^5\) A tax law anomaly remained between discounted bonds and bonds paying current interest since straight line imputation of interest on discounted bonds resulted in interest being front-loaded. This is the tax reason why issuers found zeros very attractive in the high-interest environment of the early 1980’s. The 1969 change putting all holders of discounted bonds on the accrual method meant that the holder’s interest income would be front-loaded as well, but zeros were sold to tax clienteles who were indifferent to this fact. The market for zeros and discounted debt was composed of Japanese investors,\(^6\) who were not subject to U.S. tax on the interest income and so were indifferent to front-loading of interest income, and who

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also obtained a benefit under Japanese tax law, along with U.S. pension funds and individuals purchasing for tax-exempt accounts,\textsuperscript{77} who also were indifferent to front-loading of interest income.

Congress changed the law again in 1982 to require imputation of interest on a discounted bond on a compound or economic basis.\textsuperscript{78} This change reduced, but did not completely eliminate, the anomaly between the taxation of bonds paying current interest and discounted bonds. An anomaly remains so long as the yield curve is not flat since the aggregate interest imputed on zeros held in a portfolio will change over time as the shorter maturity zeros are retired, while the interest on a bond paying current interest will be constant over time.\textsuperscript{79} This anomaly may be an instance of tax inconsistency, and so may be an opportunity for tax arbitrage, because the development of markets for zero coupon bonds might make it possible for a corporation with a gilded bond rating to issue an ordinary bond and invest in a portfolio of Treasury strips with precisely offsetting cash flows. If the yield curve rises, these offsetting positions produce a small tax arbitrage profit. The tax profit is slight per dollar invested so the transaction requires enormous leverage and the transaction costs would have to be very small to make this profitable.\textsuperscript{80}

\textsuperscript{77} See Priest, note 27, at 23.


\textsuperscript{79} See Joseph Bankman & William A Klein, Accurate Taxation of Long-Term Debt: Taking Into Account the Term Structure of Interest, 44 Tax L. Rev. 335 (1989); Theodore S. Sims, Long-Term Debt, the Term Structure of Interest and the Case for Accrual Taxation, 47 Tax L. Rev. 313 (1992). Cf. Shuldiner, note 16, at 318-19 (making the related point that fixed-rate, long-term debt can be decomposed into a series of cash-settlement forward contracts for short-term debt).

\textsuperscript{80} The need for leverage is not always a bar to tax arbitrage. Promoters of strategies that required taking offsetting positions in securities have overcome the problem of having to acquire sufficient securities by reporting transactions that were never made. E.g., United States v. Manko, 979 F.2d 900, 902 (2d Cir. 1992) (describing taxpayer scheme of generating deductions by reporting transactions which never occurred). Prior to the enactment of § 1258, corporations with net operating loss carryforwards used debit positions in box spreads to produce risk-free, interest-like returns that were taxed as capital gains. This required enormous leverage. A box spread is composed of a long (purchased) call and a short (sold) put at one strike price and a long call and a long put at another strike price. In a debit position, the leg with the long put has a higher strike price and the spread will produce a positive return at the end (equal to the difference between the two strike prices). To illustrate, assume the long call/short put leg has a strike price of $105 while the long put/short call leg is at $110. If the price of the underlying on the exercise date is $103, the investor will be forced to buy the underlying for $105 on the short put but will sell it for $110 on the long put. If the price is $107, it will exercise the long call at $105 and the long put at $110. If the price is $112, it will exercise the long call at $105 and be forced to sell on the short call at $110. The net cash cost of writing the four contracts in a debit position will be positive, and the return will move with risk-free interest rates. See Box Spreads, Derivatives Wk., Mar. 29, 1993, at 9.
Zeros are an example of a genuine financial innovation. The pattern of cash flows offered by a zero coupon bond was new and unique among the universe of then existing securities. Sometimes innovation, however, takes the form of tinkering with the elements of an existing security to push the security closer to a tax law boundary in a way that gains some economic or other nontax benefit of a security that is on the other side of the boundary. The blurred boundary between debt and preferred stock is the locus of much such innovation. In the mid-1980's, there were a lot of new instruments in the form of adjustable rate and auction rate preferred stock that were designed to be as similar as possible to money market accounts but that would be taxed as preferred stock, enabling corporate investors to shield interest income earned on cash holdings with the dividends received deduction.81 Goldman Sach's MIPS and other forms of tax deductible preferred stock are designed to do the opposite, being taxed as debt though it is treated like preferred stock for ratings purposes.

Adjustable rate and auction rate preferred stock provide a striking illustration of the importance of tax clienteles to the value securities derive from tax law anomalies. Adjustable rate and auction rate preferred stock tends to be priced at a fraction of the short-term commercial paper rate, although such stock is at least as risky as short-term commercial paper.82 The explanation is that Adjustable Rate and

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81 Approximately $40 billion worth of such securities were issued in the mid-1980's. John D. Finnerty, An Overview of Corporate Securities Innovation, 4 J. Applied Corp. Fin., Winter 1992, at 23, 24 tbl. 2 [hereinafter Overview]. Since then there have been few new issues. A new issue of auction rate preferred stock by a Ford subsidiary in December, 1994 was reported to be the first in over a year. Tom Pratt, Bear Sterns Leads Auction Preferred Deal for Ford Sub, Inv. Dealers' Dig., Dec. 19, 1994, at 12; Tom Pratt, “Arps” Market Heats Up as Chase Jumps in With Big Deal, Inv. Dealers' Dig., May 2, 1994, at 11 (“Although Arps have been around for about 12 years, new issues have been relatively rare in recent years. No Arps deals were completed in 1991 or '92, one source said, and only five were priced all last year—all by utilities and none larger than $100 million. But this year, including Chase, there have already been four Arps offerings, with two in the last month alone.”)

One explanation for this decline in popularity of adjustable and auction rate preferred stock is the reduction in the dividends received deduction from 85% to 70% in 1988, Omnibus Budget Reconciliation Act of 1987, Pub. L. No. 100-203 § 10221(a)(1), 101 Stat. 1330, 1330-408, although this hardly seems sufficient since the tax savings remained substantial. Lower short-term interest rates also reduced the potential tax savings. Another factor may have been the development of means to produce riskless dividend income through portfolios of preferred stock. Prominent among these was the emergence in the late 1980's of funds called “preferred stock rollover programs,” which the Service lashed out at in 1991. T.A.M. 9128050 (Apr. 4, 1991); see Lee A. Sheppard, Economic Substance and the Dividends-Received Deduction, 52 Tax Notes 17 (July 1, 1991).

82 There was a series of refinements in these securities in the mid-1980's, which reduced their risk to make them more like short-term debt. Adjustable Rate Preferred Stock, the first generation of these instruments, appeared in 1982. It simply pegged the dividend rate to the short-term interest rate. Adjustable Rate Preferred Stock eliminated interest rate risk but left the holder exposed to credit risk. A decline in the credit position of the issuer...
Auction Rate Preferred Stock is priced to sell to corporations, which can shield the dividends from tax with the dividends received deduction. Typically, such securities are issued by corporations with low marginal rates (some versions give the issuer the option to convert into debt, at a higher interest rate, should it ever profit from the interest deduction), who lose less by forgoing the interest deduction on debt than the purchasing corporation gains from the dividends received deduction. To say that the market for Adjustable Rate and Auction Rate Preferred Stock is organized around these two tax clienteles is not to say that market is composed entirely or even mostly of high-tax-rate corporate buyers and low-tax-rate issuers—in fact, this was not the case for preferred stock in the 1980's—it is to say instead would decrease the value of the security. Auction Rate Preferred Stock, which appeared in 1984 from Shearson Lehman, sought to protect the holder from this credit risk through an auction mechanism which, if it worked correctly, ensured that the instrument would retain its value and liquidity even though the credit position of the issuer declined. This was done by resetting the dividend rate periodically through an auction at the "market clearing" rate where every holder who demanded a higher rate could find a buyer at a price equal to the face amount of the instrument. This design was not entirely successful for dividend rates set at auctions sometimes spiked up to a rate near or even above the short-term interest rate because of thin participation at an auction. A third generation of this security appeared in 1985. It sought to improve on the cumbersome auction mechanism by having a third party set the market-clearing interest rate. For a chronology and description of these securities, see Finnerty, Overview, note 81, at 23; Finnerty, Financial Engineering, note 5, at 25-27. The final barrier was a line drawn by the Service, ruling that where the holder was given an option to put the instrument for cash, it was debt. Rev. Rul. 90-27, 1990-1 C.B. 50.

83 See Michael J. Alderson & Donald R. Fraser, Financial Innovations and Excesses Revisited: The Case of Auction Rate Preferred Stock, Fin. Mgmt, Summer 1993, at 61. The Dutch Auction Rate mechanism reset the preferred dividend to equal prevailing interest rates. The dividend was set at 58% of the AA commercial paper rate. If the auction failed—that is, shares tendered at auction exceeded shares for which there were buyers—the rate jumped to a preset maximum rate. The authors note that issue of ARPs declined after 1987 due in part to the reduction in the dividend received deduction and the reduction in "nondebt tax shields" to the issuer class. They suggest that a reduction in interest rates and regulatory changes (it became uncertain whether spinning off low-risk assets to securitize the stock in a separate subsidiary would be respected) also may have played a part. Id. at 74.

84 This was a feature of Convertible Exchangeable Preferred Stock (issued 1982) and Exchangeable Auction Rate or Remarketable Preferred Stock (issued 1986). See Finnerty, Overview, note 81, at 28.

85 The security often was issued by finance subsidiaries set up by savings and loans with substantial NOLs. E.g., Daniel E. Page & Charles O. Kroncke, Finance Subsidiaries in the Thrift Industry, 28 Mid-Atlantic J. Bus. 235 (1992).

86 Arthur L. Houston, Jr. & Carol Olson Houston, Financing With Preferred Stock, Fin. Mgmt., Autumn 1990, at 42, 49-53 (1990), found that, on average, issuers of all types of preferred stock had a tax rate lower than the average industry rate, though 27% had a higher than average rate, and that, on average, corporate buyers of all types of preferred stock had a tax rate higher than the industry average. Individuals and tax-exempt investors also had significant holdings of preferred stock. They do not give separate statistics for adjustable rate preferred.
that these are the marginal participants in the market who determine price. Nor is price invariably set by the firms or individuals who are most sensitive to a change in a tax attribute of a security. For example, corporations that have offered tax-deductible preferred in exchange for traditional preferred stock have achieved success rates of around 50% although they increase the coupon rate by an amount that represents a small fraction of what would be necessary to compensate a corporate holder for loss of the dividends received deduction. These offers presumably succeed because a significant number of the holders of the preferred are individuals who are indifferent to the loss of the deduction.

Tax clienteles are important to understanding how securities derive value from tax law anomalies because often (but not always, as the example of discount bonds prior to 1969 illustrates) the parties to a security are taxed symmetrically so that a positive effect on the timing or character of income or expense to one party because of a security’s tax attributes will be offset by a negative effect to the other party. This is most plainly the case when the anomaly in tax law goes to the timing of income and expense, as it does with zero coupon bonds, for

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87 One of the more successful exchanges is RJR Nabisco’s offer to exchange up to $1.2 billion of TOPrS paying 10% for preferred paying 9.25% in September, 1995, which 78% accepted. Tom Pratt, Merrill Wraps Up RJR Offer and Lands New Ford Mandate, Inv. Dealers’ Dig., Sept. 25, 1995, at 11. The offer was made more attractive by the fact that RJR Nabisco had the right to call the preferred in three years in any event. A success rate of around 50% is more common. General Motor’s mammoth offer in the Summer of 1997 to exchange TOPrS for two series of preferred had a success rate of 50.23% on one series and 50.25% on the other. GM Concludes Offer to Exchange Outstanding Series D and G Preference Stocks for New Securities, PR Newswire, July 3, 1997, available in LEXIS, News Library, PRNEWS File. The acceptance rate was 55% for Ford’s offer in the Fall of 1995 to exchange over $1 billion of TOPrS paying 9% for preferred paying 8.25%. Ford Motor Company Exchange Offer Closes, PR Newswire, Dec. 18, 1995, available in LEXIS, News Library, PRNEWS File. Peco Energy had a similar success rate (55.8%) in its offer of TOPrS paying 8.72% for preferred paying 7.96%, Peco Energy Company Announces the Results of Its Offer to Exchange Trust Receipts (TOPrS), PR Newswire, Dec. 14, 1995, available in LEXIS, News Library, PRNEWS File, as did Source One Mortgage (with a success rate of 55.9%) in an offer of QUICs paying 9.375% for preferred paying 8.42%. Source One Completes Exchange of QUICs for 8.42 Percent Cumulative Preferred Stock, Series A, PR Newswire, Dec. 8, 1995, available in LEXIS, News Library, PRNEWS File. United Airlines had a success rate of 47.9% in an offer to exchange TOPrS paying 13.25% for preferred paying 12.25%. UAL Corporation Announces Results of Exchange Offer, PR Newswire, Dec. 23, 1996, available in LEXIS, News Library, PRNEWS File. Some early exchange offers fared worse. Tom Pratt, McDonald’s “Quids” Exchange Bombs as Only 26% Accept, Inv. Dealers’ Dig., July 10, 1995, at 11 [hereinafter Accept] (reporting McDonald’s offer to exchange QUIDs paying 8.35% for preferred paying 7.72% (26%) and SunAmerica’s offer to exchange TOPrS paying 9.95% for preferred paying 9.25% (38.5%) (both in June, 1995), and Detroit Edison offer several months later (32%)).

88 See note 74 and accompanying text.
if the interest expense is front-loaded, so too is the interest income.\textsuperscript{89} Thus, if in 1981, all issuers and investors in bonds had faced the same marginal tax rate, the aggregate tax paid by them would have been the same (subject to one caveat)\textsuperscript{90} whatever the mixture of zeros and bonds paying current interest. In such circumstances, an issuer should be indifferent between the two forms of bonds because it would expect the issue price of zeros to be lower so that its after-tax cost of funds would be no better than on an issue of bonds paying current interest. The value to the issuer of the tax law anomaly derived from the fact that zeros were sold to tax-exempt investors (in particular, Japanese investors and U.S. investors buying for tax-exempt accounts), who were indifferent to the front-loading of interest income.

The tax value of innovative securities does not always lie in altering the timing or character of income and expense, and a tax benefit to one party does not always impose a detriment on the counterparty. For example, in 1989, Ford had some of its U.S. subsidiaries issue voting, adjustable rate preferred stock in order to deconsolidate those subsidiaries, a move that provided a substantial tax benefit to Ford because the interest expense incurred by those U.S. subsidiaries was not allocated against the income of its foreign subsidiaries for purposes of determining foreign taxes paid on which a U.S. credit could be taken.\textsuperscript{91} There was no offsetting detriment to investors in the substitution of preferred for debt; indeed preferred is more valuable to a significant class of investors because of the dividends received deduction.

Who reaps the tax value of an innovative security? Those who may stand to gain include the issuer, the buyer of the security, or the innovator (for example, an investment bank or an exchange). The answer to the question is important because the division of the gains from innovative tax-advantaged securities affects the incentives to produce such securities. Innovators have an incentive to produce tax-advantaged securities only to the extent they directly or indirectly capture some of the gains. Similarly, potential issuers can be sold on the tax advantages of a new security only to the extent that they directly or indirectly capture the gains.

\textsuperscript{89} A 1979 article "proved" that OID bonds could never be sold because of the disadvantage to a taxable investor. Miles Livingston, A Note on the Issuance of Long-Term Pure Discount Bonds, 34 J. Fin. 241, 244 (1979).

\textsuperscript{90} The caveat has to do with the timing option. Gains and losses on bonds sold prior to maturity are not taxed symmetrically.

Experience suggests that issuers usually capture most of the tax value of an innovative security. When outstanding preferred stock is converted into tax-deductible preferred, it tends to be priced at yield only 3/4 points higher than the dividend rate on preferred stock, which implies that the issuer captures most of the value from converting nondeductible dividends into deductible interest. This conclusion needs to be taken with a grain of salt, however, for tax-deductible preferred stock is not strictly comparable to preferred stock. Holders have greater rights on tax-deductible preferred than on preferred stock—in particular, dividends may not be deferred for a period longer than five years, and some issues limit deferral to two years. To the extent their rights are strengthened without a corresponding sacrifice in yield, holders implicitly capture some of the value of the replacement of preferred stock with tax-deductible preferred.

It seems that investment banks—who are the actual innovators—capture only a small fraction of the security's tax value. While this fact might seem odd, it is consistent with Tufano's hypothesis that investment banks innovate to capture market share. We found under-

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92 Prices on some exchange offers are collected in note 87. Tom Pratt, Accept, note 87, at 15, reports on the potential tax savings to the issuer (McDonald's) in one of these exchanges had all the shares offered been converted, up to $8 million annually. Some earlier offerings of MIPS seem not to have gone out at a higher coupon rate than preferred. Lyn Perlmutth, Mips Mania, Institutional Inv., Oct. 1994, at 234 (reporting that Capital Re would have paid the same dividend rate on straight preferred or MIPS); Tom Pratt, Wall Street's Tough New-Product Puzzle, Inv. Dealers' Dig., Nov. 22, 1993, at 17 [hereinafter Puzzle] (reporting that Texaco's MIPS were priced competitively with preferred). That holders of preferred are capturing some of the value from its conversion to tax-deductible preferred can be induced from the rise in the value of preferred in anticipation of conversion. Andrew Bary, Electric Utilities Keep Shocking Investors; Preferred Stock, Growing Scarce, Retains Its Allure, Barron's, Sept. 9, 1996 at MW12 [hereinafter Utilities]; Bary, Preferred Vehicle, note 59, at 13. It is also possible that corporations seeking the shield of the dividends received deduction may be bidding up the price of the remaining preferred stock as the pool shrinks.

93 Becker & Long, note 95, at 41; see also Tufano, First-Mover, note 48, at 213. A recent study of pricing of convertible debt (such as LYONs) and straight debt finds that there is a difference in the underwriting spread associated with the complexity of the instrument. Michael Becker & Michael Long, An Explanation of Underwriting Spread Differentials on Complex Securities, Fin. Mgmt., Summer, 1997, at 35, 38-41. The authors try to control for features of a security other than tax or other forms of complexity that affect pricing (primarily the size of the issue and magnitude of underwriting risk). They find that underwriting spreads do increase with the complexity of the security and attribute this increase to the higher cost of documenting and explaining more complex securities. They do not consider whether the premium might be a reward for innovation, although they suggest that the higher premium on LYONs might be partly attributable to Merrill Lynch's "monopoly" over the security.

There are occasional reports of investment banks charging significantly higher fees on innovative securities. Investment banks, in particular Morgan Stanley and Goldman Sachs, reaped higher fees on trust preferred securities, which first appeared in late 1996 after the Federal Reserve ruled that the securities could be classified as tier 1 capital. Michael Bender, Gregg Wirth, Mark Killer, Mahua Dutta, Amy Stickel & Mark S. Porter, A Magic
writing fees on MIPS and their variants through 1996 to be comparable to fees on straight preferred (in the range of 3% to 4% of issue price) but significantly higher than the fees on debt (around .5% of issue price for high-grade debt). The most obvious way in which investment banks reap additional profits on tax-deductible preferred is from doing conversions of outstanding preferred or outstanding debt into the new security, of which there have been a fair number. A study finds that underwriting fees paid in conversions of straight preferred into tax-deductible preferred were less than one-tenth of the present value of the estimated tax savings.

Issuers seem to have captured most of the tax value of other instruments. John Finnerty has done a detailed study of Stock Index Growth Notes ("SIGNs"), an early issue of debt that paid interest contingent on the performance of an equity index, and concluded that the issuer (the Austrian government) captured almost all of the "tax arbitrage gain." There is also evidence that would allow one to infer that issuer's captured the value of the tax benefit on discounted debt prior to July 1, 1982. Similarly, issuers captured most of the value of

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94 We obtained this information from new issue announcements in Investment Dealers' Digest.

95 Engle, Erickson & Maydew, note 56, at 18. The authors estimated average tax savings in conversions of straight preferred to tax-deductible preferred of $52 million and average underwriting fees of $3.9 million. Investment banks also reap additional profits when firms that otherwise would issue lower-cost debt choose to issue tax-deductible preferred to raise capital.

96 Step-down preferred was sold at only 100 basis points above ordinary debt. Monroe, Crackdown, note 4, at 79.

97 John D. Finnerty, Interpreting SIGNs, Fin. Mgmt., Summer, 1993, at 34, 34 [hereinafter SIGNs]. SIGNs were issued by the Republic of Austria on January 28, 1991. They were $10, 5.5-year nonredeemable notes with a contingent interest payment pegged to the S&P 500 index. Professor Finnerty considers the notes to be equivalent to a Treasury strip (Austria is AAA) coupled with a call option on the S&P 500. He believes that the principal value of SIGNs was tax arbitrage—the holder was undertaxed on interest while the sovereign issuer was indifferent to a deduction. He also concludes they had some value in enabling an investor to acquire the embedded long-term option (which had a $3,500 exercise price) and stripped bond (Treasury strips came in $10,000 units). Professor Finnerty attempts to reconstruct the arbitrage gain from the SIGN (the issue price minus the cost of perfectly hedging). He finds that the tax arbitrage was worth approximately $.20 per SIGN and that Austria earned approximately $.17 per SIGN. Id. at 44-46.

98 One may infer from Andrew Kalotay's analysis of the comparative yields of zeros and bonds paying current interest that the issuers of zeros captured the value of the tax benefit. Zeros had lower yields than straight bonds in 1981 and 1982 (100 basis points in 1981 and 75 basis points in 1982). Andrew J. Kalotay, An Analysis of Original Issue Discount Bonds,
the investor's tax shield on dividends on Dutch Auction Preferred Stock, although they do not capture it all, and there are contrary instances involving issuers whose creditworthiness came into question where the rate rose above the commercial paper rate as well as occasional instances of auctions where the interest rate was bid up with no explanation other than thin participation.

From a theoretical perspective, the question of who captures the tax value of a security in the short run is primarily a function of the

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99 How the value of the tax shield is shared often is expressed by stating the percentage of the commercial paper rate at which the dividend is set. In 1984, the issuer would have fully captured the value of the tax shield if the preferred was priced at 58% of the commercial paper rate (the corporate tax rate was 46% and the dividend exclusion was 85%); in 1985 through 1987, this ratio would have been 71% (the corporate tax rate was 30% and the exclusion was 80%), and after 1987, the issuer fully captured the value of a tax shield if the ratio was 74% (the dividend exclusion dropped to 70%). Alderson & Fraser, note 83, at 68, finds an average initial ratio on new issues of 86.36% in 1984, 78.60% in 1985, 74.13% in 1986, 73.75% in 1987, 82.48% in 1988, 81.88% in 1989, and 81.86% in 1990. For a study of earlier years, see Michael J. Alderson, Keith C. Brown & Scott L. Lummer, Dutch Auction Rate Preferred Stock, Fin. Mgmt., Summer, 1987, at 68-73. Page & Kroncke, note 85, at 240-46, tracked the price of one issue, by Pathway Financial, over several years. The ratio hovered in the high 60's and low 70's until the tax law changes went into effect in 1987, when it hovered in the low 80's. Id. at 243.

100 Tom Pratt, GTE Preferred Sale Fuels “Inflexibility” Controversy, Inv. Dealers’ Dig., Sept. 24, 1990, at 11, reports on one instance of an unexplained rate spike. Citicorp's travails in the auction process, which followed a deterioration in its credit rating, received much press attention in 1990. Alderson & Fraser, note 83, at 64 & n.9. Professors Alderson and Fraser collect data on a number of redemptions that followed a rise in the dividend rate. Id. at 68-69. An auction also can fail, requiring the issuer to pay a penalty rate.

101 The long-run effects are simple and striking: complete elimination of the tax. The general contours of the problem are explained in Steuerle, note 72, at 57. Steuerle distinguishes between tax arbitrage and financial arbitrage. He defines tax arbitrage as we have; he defines financial arbitrage as taking costless and riskless positions with a positive pretax yield. In a world without tax, financial arbitrage should bring the price of securities into equilibrium so that equivalent positions constructed out of different combinations of securities have equivalent value. Introduce tax and a tax arbitrage opportunity to this world, and one would expect the price of the affected securities to change until equivalent positions have equivalent after-tax values. But this price adjustment creates an opportunity for financial arbitrage for tax-exempt investors since now equivalent positions do not have equivalent pretax value. Steuerle concludes: “[T]here is no marginal tax rate (other than zero) at which the incentives of tax arbitrage and financial arbitrage are brought into stable long-term equilibrium.” Id. at 92.

The following example illustrates Steuerle's point and shows how the point ties into the role of tax clienteles. Assume the pre-1982 tax rules on OID and a perfect securities market (securities are infinitely divisible, they can be bought and sold at zero transaction cost, and there is no default risk.) Also assume there are no barriers to tax arbitrage, such as the limitation on the deduction of interest expense to investment income. Under these assumptions, tax-paying U.S. corporations could zero out taxes by issuing zeros and buying straight bonds. One would think this would drive down the price of zeros and drive up the price of straight bonds. But these effects create an opportunity for financial arbitrage by
position of the marginal purchaser of a security (that is, the purchaser who sets the market clearing price), and in particular the tax position of the marginal purchaser. Generally, if the marginal purchaser is in the optimal tax position to hold a security, the issuer should capture its tax value. The pricing of tax-exempt bonds often is used to illustrate this basic point. If the market-clearing price for tax-exempt bonds is set by investors who face the top marginal tax rate (that is, the investors who reap the greatest value from the exemption), issuers should capture the entire value of the exemption. As the supply of tax-exempt bond increases, yields rise as the bonds are priced to sell to investors who face decreasing marginal tax rates and therefore value the exemption less. As the yield rises, inframarginal investors capture an increasing share of the value of the tax exemption. This rise in yield often is expressed as a decline in the implicit tax borne by the bondholder. An implication of this simple analysis is that when only a small number of investors are in a position to take tax advantage of a high-volume security, they will capture the security's tax value. Thus, we would predict the potential tax value of LEAPs (long-term options) in constructing synthetic zeros will be captured by investors—and not issuers—so long as relatively few investors use LEAPs for that purpose.

Nontax factors may also limit the clientele for a security. For example, the clientele for MIPS is primarily individual investors because tax-exempt investors, who could make a riskless profit were there any price discrepancy by issuing straight bonds and buying zeros with offsetting cash flows. As Steuerle observes, the market would reach equilibrium only once U.S. corporations had no other taxable income to shield, and the price for zeros and straight bonds would be the same as in a tax-free world. Id. at 92.

Futures contracts require a different analysis because there is no issuer. An exchange will offer long and short positions in a contract and strive to keep those matched in the aggregate. In the situation where the tax benefit lies in taking offsetting positions in a contract—as was the case in tax straddles, because a straddle consisted of offsetting long and short positions in commodity futures—the effect of tax activity on the price of the contract will be limited because tax-motivated buy and sell orders will be matched. There may be some price effect. For example, to reap the tax benefit in a straddle, the losing leg had to be sold while the winning leg was retained for a short period. But that effect is limited in time and scope. See IRC §§ 1092, 1256; Staff of Joint Comm. on Tax'n, 98th Cong., General Explanation of Revenue Provisions of the Deficit Reduction Act of 1984, at 301-24 (Comm. Print 1985).


If the clientele for a security is sufficiently small, investors in that group may engage in strategic behavior that enables them to capture some of the tax value. A concern for the potential of such behavior has been said to lie behind a feature added to LYONs in a 1995 issue. The feature enabled Merrill Lynch to borrow shares of the issuer, United States Cellular Corp., from its corporate parent, Telephone and Data Systems, to exchange for LYONs held by investors who wanted to exercise the conversion option. Tom Pratt explains "there have been cases in which a majority owned sub sold a large LYONs deal, only
institutional investors prefer quarterly rather than monthly payments. Both large dollar denomination and small dollar denomination strips were created in the early 1980's because they had different clienteles (institutional investors and individual investors respectively).\textsuperscript{105} LIONs are sold mostly retail to individual investors purchasing for tax-exempt accounts,\textsuperscript{106} and the packaging of a bond and an option on the issuer's stock is most valuable if the issuer has an investment grade bond rating and a volatile stock price. These nontax clientele restrictions can be significant in the case of exotic securities that have a limited clientele either because of their unusual economic characteristics or because of the manner in which they are marketed. Nontax factors that limit the optimal clientele for a security increase the chance that the marginal purchaser will pay less than the theoretically maximum price,\textsuperscript{107} allowing inframarginal purchasers to capture some of the tax value.

IV. INVESTMENT BANKS HAVE FOUND IT DIFFICULT TO MARKET NEW SECURITIES DESIGNED TO EXPLOIT TAX ANOMALIES

Tax law is riddled with anomalies, leading some to predict the imminent collapse of the income tax as financial innovation creates new or cheaper means to exploit opportunities for tax arbitrage.\textsuperscript{108} In this Section, we argue that, at least to date, investment banks have found it difficult to market to potential issuers new securities that exploit tax law anomalies in the initial issues. To make this point, we delve a little more deeply into the stories of three securities—zero coupon bonds, strips, and MIPS (tax-deductible preferred stock). We also suggest some possible explanations for this difficulty. We think that tax law uncertainty is a key reason for the belated appearance of strips and tax-deductible preferred stock; why tax law uncertainty might have such an effect is explained in the next Section. The belated appear-

\textsuperscript{105} Salomon Brothers’ CATS and Lehman Brothers’ LIONs were in large denominations and sold to institutional investors. Merrill Lynch’s TIGRs were in small denominations and sold to the general public for tax-exempt accounts. Priest, note 27, at 23.

\textsuperscript{106} Pratt, Decade, note 29, at 14; Jinny St. Goar, Hybrid Security Comes to Life: O-Coupon Convertibles; Soar, Corporate Cashflow Mag., Sept. 1991, at 49.

\textsuperscript{107} At the margin, there is likely to be a loss because the investor may accept an economic sacrifice (for example, the risk or timing of cash flows on the security is not what the investor would prefer optimally) because favorable tax treatment of the security makes it incrementally more attractive than the preferred investment.

\textsuperscript{108} See notes 6 and 7.
ance of zeros cannot be explained by tax law uncertainty; in that case, we argue that the answer probably lies instead in what might be called the tactical nature of tax planning: Tax considerations seem to come into play in financial planning only once fundamental choices are made.\textsuperscript{109}

Zero coupon bonds are one of two financial innovations singled out by Merton Miller as tax-driven.\textsuperscript{110} Discounted bonds historically had very attractive tax attributes. Prior to 1969, a cash method holder could defer interest income while an accrual method issuer could deduct imputed interest.\textsuperscript{111} Notwithstanding this highly favorable tax treatment, we could find no evidence of corporations issuing zero coupon bonds during this period.\textsuperscript{112} From 1969 to 1982, the issuer's interest deduction was front-loaded, but corporations issuing high-grade debt did not exploit the tax benefit in discounted debt for over a decade until 1980, when some deeply discounted bonds were privately placed.\textsuperscript{113} The first public issues of discounted bonds followed in February and March of 1981. In the following 18 months, until the tax law changed, over $7 billion was raised through the issue of zeros.\textsuperscript{114}

The intriguing question is why did taxpaying corporations wait so long to issue zeros and discounted bonds given the tax advantage prior to July 1, 1982? An answer from a vice-president of Salmon Brothers is that corporate treasurers tend to be conservative and chary of inno-

\textsuperscript{109} The same basic point has been made to explain why tax incentives for savings do not stimulate savings significantly (a point that is itself controversial). See Eric M. Engen, William G. Gale & John Karl Scholz, The Illusory Effects of Savings Incentives on Saving, 10 J. Econ. Persp. 113, 135 (1996). Professors Auerbach and Slemrod have suggested that people tend to respond differently to tax law depending on the nature of the decision they are making, being most responsive in timing transactions, less responsive in making financial and accounting choices, and least responsive in making "real decisions" about matters such as the level of savings. Alan J. Auerbach & Joel Slemrod, The Economic Effects of the Tax Reform Act of 1986, 35 J. Econ. Lit. 589, 626-28 (1997).

\textsuperscript{110} Miller, Twenty Years, note 5, at 462-63. Professor Miller's other example is the Eurobond market, which he attributes to the institution of the 30% withholding tax on interest paid to overseas investors. Id. at 462.

\textsuperscript{111} See note 70.

\textsuperscript{112} Frank Fabozzi, who is the author of the leading text in the area, states that zeros were issued in the 1960's only by municipalities, and that this ceased in the late 1960's when questions were raised by bond counsel (presumably on the issue of how a zero coupon bond counted against statutory debt limits). Fabozzi, note 35, at 330.

\textsuperscript{113} Kalotay, note 98, at 29-30. Peerless Industries, Inc. v. United States, 94-1 USTC & 50,043 (E.D. Pa. 1994), involves one private placement. Peerless issued a zero with a face value of $20 million and a 50-year term to a college in 1981. Money to pay the $23,066 price of the bond was contributed by the president of Peerless. The court held the transaction was a sham but also held that penalties could not be levied because there was substantial authority. Kalotay notes that the tax advantages of zeros were identified in a 1976 article, George A. Racette & Wilbur G. Lewellen, Corporate Debt Coupon Rate Strategies, 29 Nat'l Tax J. 165, 166 (1976).

\textsuperscript{114} Kalotay, note 98, at 29.
and that it took the extraordinarily high interest rates of the early 1980's, along with the unusual inverse shape of the yield curve (short-term rates exceeded long-term rates) to make the tax benefits of discounted debt sufficiently attractive to overcome this resistance. Because of the odd shape of the yield curve, there was a general shift by corporations from short-term financing to long-term financing in the early 1980's. The tax treatment of the accrued interest expense amplified the value of long-term debt by accelerating the interest deductions.

It appears that even in this favorable environment, discounted debt was hard to sell to issuers. The reluctance of CFOs to be the first issuer need not be ascribed to their being irrational. There are costs to innovation—from the issuer's perspective, not so much the cost of designing a new contract, which the innovating investment bank is likely to bear, but rather, in this case, the fear of sending a falsely negative signal that one's corporation had cash flow problems, for until the early 1980's, only distressed corporations used discounted debt. Nor does the first corporate issuer capture the offsetting benefits of a successful innovation, for the first benefits inure to the innovating investment bank and later to all users of the instrument.

Thus, psychological factors seem to explain best why publicly issued zeros were not marketed until 1981. These factors may have included discomfort with novelty or with a security with negative connotations. At least as significant, we believe, was the shift in preferences regard-

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115 Id. at 33. Kalotay also notes that lack of demand for zeros was not a plausible explanation because the value of zeros in eliminating reinvestment risk was identified in the early 1970's. Indeed, there were proposals that Treasury issue zeros because of the unmet need. Id. at 30. An anecdote from Merton Miller offers a more colorful story. According to Professor Miller, the impetus for the first issue of a zero coupon bond was a reply by an IRS official to an employee of an underwriting firm in response to a question at a seminar that interest should be accounted for on a zero coupon bond in the same fashion as it was accounted for on any discount bond. Sankar De & Jayant R. Kale, Contingent Payments and Debt Contracts, Fin. Mgmt., Summer 1993, at 106, 108 n.9. The story is implausible for Kalotay implies there was little doubt about the tax treatment of discount bonds including zeros and had there been such doubt, an informal statement by an IRS official would not allay it.

116 Kalotay, note 98, at 33 (observing that the benefits are "barely observable in a 6% environment" while "in a double-digit environment the savings begin to appear significant, as they increase essentially exponentially.")

117 Smith & Taggart, note 26, at 28, observe that in the 1970's, portfolio managers were disinterested in hedging against reinvestment risk because their interest was "shortening, not lengthening, the average maturity of their portfolios." The authors attribute this to persistently high inflation keeping upward pressures on interest rates. Bodic, note 63, at 12, argues that changes in federal law and accounting standards in the mid-1970's stimulated a demand for long-term fixed income securities by pension funds.

ing long-term debt that resulted from the changing interest environment. It was only once that shift made long-term debt attractive that the tax gimmick came to the fore as a planning consideration. What this suggests is that investors and issuers make fundamental choices about the risk, cash flows, and term structure of their assets and liabilities without regard to the tax tradeoffs. If this hypothesis is correct, tax considerations come into play mostly in choosing among different devices to implement these fundamental choices.

The belated public appearance of strips—the first issue of TIGRs by Merrill Lynch was in August, 1982—might seem even more difficult to explain than the belated appearance of zeros. In the early 1980's, stripping coupons from a bond was thought to offer impressive tax benefits to both the purchaser and the stripper. The purchaser of the stripped coupon or principal payments (which is equivalent to a zero coupon bond) was not taxed on the implicit interest until maturity or sale of the instrument. If the stripper sold the principal payment and kept the coupon payments, he could claim an artificial tax loss since all basis was allocated to the principal. These tax benefits were eliminated as of July 1, 1982, before the first issue of TIGRs.

While it is clear that stripped U.S. Treasury securities were sold privately at least as early 1981 (and presumably even earlier), we could find no evidence that such private activity was widespread. Zeros (mostly created by stripping) thrived after the 1982 tax law changes. At the end of 1994, more than $200 billion of Treasury securities were held as strips.

The delay in public stripping of U.S. Treasury securities can be attributed partly to resistance from the Federal Reserve Bank of New York, which warned the primary government bond dealers that it viewed trading of stripped securities as an undesirable market practice. This policy changed when the tax treatment changed in 1982. But it still is not clear why some adventurous firm did not strip high-grade corporate bonds and issue publicly traded receipts using trusts. The trust structure was not novel. We think that the answer may lie in

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120 See note 79.
121 Ben Weberman, Capital Markets, Generic Zeros, Forbes, Jan. 30, 1984 at 135 (“At first the Treasury Department frowned on coupon-stripping, which it considered defacing government property. That was back in 1981 and early 1982, when the biggest and best-known dealers would not acknowledge they stripped bonds. Only with great difficulty did I round up a list of reputable firms, mostly in Chicago, that were doing it and would admit it.”); Ben Weberman, Capital Markets, Where’s the Corpus, Forbes, July 19, 1982, at 111 (describing a transaction involving the purchase of strips put together by Paine, Webber for Pacific Power & Light); Ben Weberman, Capital Markets, “Get Set for a Striptease,” Forbes, Jan. 18, 1982, at 109.
122 Fabozzi, note 35, at 331.
uncertainty over whether the tax benefits of stripping would withstand legal challenge.\textsuperscript{123} The argument that a holder of a coupon or principal strip did not have to impute interest relied on a statutory lacuna, which seemed too good to be true given the imputation of interest on a zero interest bond.\textsuperscript{124}

We think the late appearance of MIPS, or tax-deductible preferred, also can be attributed to tax law uncertainty. The first issue of MIPS was in 1993, and in the last several years, tax-deductible preferred has dominated new issues of preferred stock. The original MIPS structure used an offshore entity taxed as a partnership\textsuperscript{125} created and owned by Texaco, which issued preferred interests and then lent the proceeds to Texaco on a 50-year note that could be extended by Texaco for another 50 years. Texaco deducts the interest paid on the note, which equals the dividends paid by the offshore entity on the preferred stock. The investors include that interest in income as an item of partnership income. The economic keys to the MIPS structure are the long maturity and the right of the corporate parent to defer payment of interest, in the case of Texaco’s MIPS, 18 months. Later forms of tax-deductible preferred tend to have shorter maturities, ranging from 20 to 50 years, and longer periods in which interest can be deferred, now typically five years. Ratings agencies do not treat the security as debt because of these features,\textsuperscript{126} and these features give the issuer much the same financial cushion as preferred stock.\textsuperscript{127}

\textsuperscript{123} There is a more cynical explanation—no one wanted to kill the goose that lay golden eggs by exposing it in public. This seems implausible because of the collective action problem; a firm might reap an individual profit by being the first to retail the transaction. Straddles, which were another tax goose that was much beloved by the financial community, were done in a few years earlier by being taken public.


\textsuperscript{125} It has been reported that Goldman wrote the Limited Liability Company law for the Turks and Caicos Islands to ensure the intermediary would be taxed as a partnership under U.S. law. Pratt, Puzzle, note 92, at 16.

\textsuperscript{126} Standard & Poor gave some equity credit on the first issue of MIPS by Texaco. Moody’s treated the issue as perpetual preferred stock but took the position that since Texaco was an investment grade company, and so could not lightly suspend dividend payments, it should get no equity credit. It seems, however, that Moody’s did not treat it as debt. Pratt, Puzzle, note 92, at 16-17; Tom Pratt, Goldman and Texaco Tackle Old Banking Puzzle With Mips, Inv. Dealers’ Dig., Dec. 20, 1993, at 20.

\textsuperscript{127} Leland E. Crabbe, Estimating the Credit-Risk Yield Premium for Preferred Stock, Fin. Anal. J., Sept.-Oct. 1996, at 45, 45, estimates the likely cost to issuers of this cushion by trying to derive the tax-adjusted premium a risk-neutral investor would demand based on historical data on “dividend impairment” (that is, temporary nonpayment of dividends).
The basic idea behind MIPS was not new in 1993.\textsuperscript{128} Dean Witter Reynolds had tried to accomplish something similar using a partnership in 1985 in a private deal done for Continental Illinois Bank, which involved Continental Illinois issuing preferred stock to a wholly-owned subsidiary that used the stock to finance a bank loan. That deal foundered when the SEC refused to allow the issue to be reported as equity so long as the FASB was undecided on the issue.\textsuperscript{129} Goldman Sachs succeeded where Merrill Lynch had failed because the ratings agencies agreed to look through the offshore entity and treat the loan as preferred stock on Texaco's balance sheet.\textsuperscript{130} Looking back even farther, MIPS are similar in a key feature to an old security known as an income bond, which gives the issuer the right to defer and accumulate interest payments for several years without defaulting.

MIPS suggest two interesting afterthoughts to a point Merton Miller made in 1977 address.\textsuperscript{131} In explaining how corporations choose between issuing debt and equity, Professor Miller began by assailing the then conventional wisdom that corporations bear the greater tax cost of equity because of the bankruptcy protection it affords. Were this the reason corporations issued equity, he argued, corporations would turn to securities like the income bond, which also cushion against bankruptcy, since the income bond permits the issuer

\textsuperscript{128} Another predecessor was a deal Merrill Lynch did for Banco Santander in September, 1991. Banco Santander established a limited liability company in the Cayman Islands, which sold preferred stock in the United States and lent the proceeds to Banco Santander. Pratt, Puzzle, note 92, at 16.

\textsuperscript{129} Continental Illinois sold preferred shares to a trust set up by a wholly-owned subsidiary. The trust paid for those securities with the proceeds of a bank loan. The preferred stock was structured so that the dividends covered the interest on the bank loan and the preferred was redeemed serially to pay principal on the loan. For tax purposes, the dividends paid on the preferred shares to the trust were not taxed to the subsidiary and the interest paid by the trust to the bank was deductible. The interest deduction passed through to the parent. The FASB's Emerging Issues Task Force seems to have decided that the preferred stock could be treated as preferred to the extent it was purchased with the debt proceeds, but it never officially sanctioned this reporting position. The SEC ruled that the entire transaction had to be treated as debt unless the FASB formally sanctioned reporting it as equity. Ann Monroe, Regulators Squelch Firms' New Method for Issuing Preferred, Wall St. J., Feb. 21, 1985, at A12.

\textsuperscript{130} Unlike the ratings agencies, the agencies that regulate banks and utilities generally refused to look through the sub entity to treat "regular" MIPS as equity and not debt, which prompted Bear Stearns to employ a structure like that in the Continental Illinois Bank deal, where the parent issues preferred to the sub, which raised funds through a public debt issue, a structure now tagged as "reverse MIPS." See note 53. A 1994 IRS ruling scotched reverse MIPS before they got off the drawing board. Notice 94-48, 1994-1 C.B. 357.

\textsuperscript{131} Merton H. Miller, Debt and Taxes, 32 J. Fin. 261 (1977) [hereinafter Debt and Taxes] (presidential address to Am. Fin. Ass'n).
to defer interest for several years without default, while providing an interest deduction. But there was a scarcity of income bonds, suggesting that bankruptcy protection was not the reason for using equity. Professor Miller’s wry comment on the conventional wisdom explaining the dearth of income bonds bears repeating:

The conventional wisdom attributes this dearth to unsavory connotations that surround such bonds. They were developed originally in the course of the railroad bankruptcies in the 19th century and they are presumed to be still associated with that dismal process in the minds of potential buyers. As an investment banker once put it to me: “They have the smell of death about them.” Perhaps so. But the obvious retort is that bit of ancient Roman wisdom: pecunia non olet (money has no odor). If the stakes were as high as the conventional analysis of the tax subsidy to debt seems to suggest, then ingenious security salesmen, investment bankers or tax advisers would surely have long since have found ways to overcome investor repugnance to income bonds.132

Fifteen years after Professor Miller gave this speech, a way was found to market debt that gave the issuer the right to defer interest for several years without default—MIPS. Indeed, several offspring of MIPS—such as Goldman’s Quarterly Income Debt Securities (QUIDs)133—are no more than long-term bonds with a five-year interest deferral option, an income bond plain and simple without the bells and whistles of a partnership or trust found in the original MIPS structure.134

The success of tax-deductible preferred stock suggests that Professor Miller was wrong: There is demand for a security that provides some of the financial flexibility of preferred stock but that also provides an interest deduction. But why did it take so long to develop such a security? Perhaps the explanation is the one Professor Miller rejected—perhaps income bonds had a “bad smell” from the experience with them decades earlier. There are, however, two other plausible explanations that he ignored. One factor is the difference in the accounting treatment of the two securities.135 A key attraction of tax-

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132 Id. at 263-64.
133 On QUIDs, QICS and their ilk, see notes 56-58 supra.
134 See note 56.
135 The Scholes & Wolfson study of commercial banks also suggests the prevalence of accounting concerns. They found that while banks altered their financial and investing strategies in response to changes in their tax status (the authors trace a shift to holding tax-exempt bonds and leases as the effective tax rate of banks rises), banks fell far short of optimizing their tax position (in particular, they failed to realize useable losses) because of
A second factor is uncertainty about the tax treatment of income bonds, for there was case law on both sides of the question whether income bonds were truly debt. Indeed, the leading treatise on corporate tax attributed the "disuse" of such "hybrid securities" to their "uncertain tax consequences." The initial issues of MIPS were under a cloud as much for their long maturity as for the ability to defer interest. Much of the uncertainty regarding the tax characterization of MIPS was dispelled in the Spring of 1994 when the government issued a ruling and two notices that were widely interpreted as a blessing of the basic structure. New uncertainty was created in December 1985 when Treasury proposed legislation that would have treated long-maturity debt instruments as

regulatory and accounting concerns. Scholes & Wolfson, note 9, at 335-55. Their conclusion: "[B]anks are more inclined to take actions that reduce taxes when the costs of doing so, in terms of the effects on income reported to shareholders and regulators, are relatively small and the magnitude of potential tax benefits is large." Id. at 353.

See note 56.


Boris I. Bittker & James S. Eustice, Federal Income Taxation of Corporations and Their Shareholders, ¶ 4.03, at 4-9 (4th ed. 1979). The authors go on to observe that there was renewed interest in convertible debt as a form of consideration in takeovers. Professors Scholes and Wolfson mention the possible effect of tax law uncertainty in suppressing demand for income bonds along with the availability of substitute means for a corporation to pay returns on capital that are contingent upon earnings but deductible. Scholes and Wolfson, note 9, at 313-14 & n.5.

Rev. Rul. 94-28, 1994-1 C.B. 86; Notice 94-47, 1994-1 C.B. 357; Notice 94-48, note 58. The ruling and the notice might seem to give issuers of MIPS, see notes 56-58 and accompanying text, little comfort on the surface. Revenue Ruling 94-28 says that the holder may not take the dividends received deduction on MIPS under § 246(c)(1) because repayment of the face amount is guaranteed. Notice 94-48 rejects debt treatment on a transaction, dubbed in the press as "reverse MIPS," that gave the issuer the right to convert debt into preferred. Notice 94-47 simply restates the law on the factors distinguishing debt and equity, adding one new factor "whether the instruments are intended to be treated as debt or equity for non-tax purposes, including regulatory, rating agency, or financial accounting purposes," which calls into question the characterization of MIPS as debt. At the time the rulings were issued, however, there was widespread concern that the government would take the position that straight MIPS were equity. In this context, the Ruling and Notices were interpreted as implicitly blessing the characterization of straight MIPS as debt. For Wall Street's interpretation of the rulings, see Perlmut, note 92, at 234; Tom Pratt, IRS Notices on Mips Leave Basic Structure Unscathed; But Some Variations Clearly Won't Work, Inv. Dealers' Dig., Apr. 25, 1994, at 12.
equity that was to be effective from the date of the proposal, but this was dispelled a few months later when the Chairmen of the Ways and Means and Finance Committees announced that if such legislation were enacted, it would be effective from the date of enactment. Perhaps this tax law uncertainty slowed the penetration of the new security. We think so, for a reason we explain next.

V. Why Tax Law Uncertainty Can Impede Securities Innovation: The Clientele Effect

Representatives of the investment banks and the financial press often complain that tax law uncertainty impedes securities innovation. In this Section, we suggest this may be so because financial markets are structured around different tax clienteles. Typically, tax law uncertainty exists because a new security does not plainly fit within a particular legal category or "cubby-hole" (for example, debt, equity, or option). Tax law uncertainty may also exist because changes in existing law are proposed, perhaps in response to innovation. While Congress and Treasury usually have bent over backwards to minimize the effects of tax law uncertainty by applying most rule changes prospectively, occasionally Treasury acts in ways that seem calculated to create uncertainty by proposing controversial legislation and regulations that would take effect from the date of the proposal if ever enacted.

There is a fair amount of anecdotal evidence that tax law uncertainty inhibits the sale of securities. A striking example of this effect can be found in the market's reaction to a Treasury proposal in December, 1995 of legislation that would deny the interest deduction on debt that had too many equity features, including debt with a maxi-

140 White House Statutory Language; Title IX, Revenue Reconciliation Act of 1996—Subtitle E: Corporate Reforms and Other Revenue Provision, 96 TNT 56-6, Mar. 20, 1996, available in LEXIS, Fedtax Library, TNT File.
143 See notes 205-07 and accompanying text.
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mum “weighted average maturity” of 40 years or more. Treasury said it wanted the legislation to be effective from the date of the announcement. The announcement was reported to have a stunning effect on Wall Street, putting most new issues by domestic corporations of zeros with a maturity of more than 40 years on hold; only tax-exempt issuers (foreigners and tax-exempt entities) proceeded with such offerings until the cloud was removed. Tax-exempt issuers are indifferent to the risk that a long-term bond will be classified as equity. The market for such long-term bonds is reported to be pension funds, which are also indifferent on the issue of classification.

If one believes the financial press, tax law uncertainty suppressed the U.S. market for contingent payment debt instruments in the period from 1992 to 1996, and in particular, debt instruments that paid interest contingent on the performance of an equity index or portfolio of equity stocks. Merrill Lynch’s Market Index Target Term Securities (“MITTS”), which were first issued in August 1992, are an ex-

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145 White House Statutory Language; Title IX, Revenue Reconciliation Act of 1996—Subtitle E: Corporate Reforms and Other Revenue Provision, 96 TNT 56-6, Mar. 20, 1996, available in LEXIS, Fedtax Library, TNT File.

146 An example is a high-grade corporate security, which has a one-time cash payment in 100 years, sometimes called a “century.” Press reports suggest that issuers like long-term zeros because they pay low interest rates, while some institutional investors see them as a useful instrument for hedging prepayment risk on mortgage-backed securities. See Schwimmer, note 142, at 12 (reporting issues of 100-year bonds by Tenaga Nasional, a foreign issuer, and 40-years with no coupons for 20 years by Time Warner); New Issues-Debt, Inv. Dealers’ Dig., Apr. 8, 1996, at 38, 42 (reporting issue of 100-year bond that is callable after 30 years by Yale University).

147 Schwimmer, note 142, at 12.

148 See Pratt, Derivatives, note 142, at 12. The article combines index-linked debt and equity-linked debt (a debt instrument that pays contingent interest based on the increase, if any, in the price of the issuer’s common stock). Id. The tax risk on index-linked debt that was perceived under the 1991 proposed regulations, Prop. Reg. § 1.1275-4(g), 56 Fed. Reg. 8310 (1991), did not exist on equity-linked debt because even if the embedded option was disaggregated from the instrument and deemed to be publicly traded, it would not be taxed on a mark-to-market basis. The article observes that equity-linked debt fared better during 1993-1994 than did index-linked debt. It lists 11 issues of index-linked debt that raised $548.5 million during this period as compared to 13 issues of equity-linked debt that raised $901 million. Id. at 13-14. Merrill Lynch did several issues of MITTS in 1993, none in 1994 (two issues were planned in 1994, one based on REITs and the other pharmaceutical stocks, but neither went forward), and 1995, and several in 1996, starting in May. See notes 158-63 and accompanying text.

149 MITTS were not the first publicly traded instrument with an embedded option on an equity index. The most immediate predecessor was SIGNs, or Stock Index Growth Notes, which were issued by the Republic of Austria in a deal put together by Goldman Sachs in January, 1991. Finnerty, SIGNs, note 97, at 34-35. Finnerty believes that the principal value of SIGNs was tax arbitrage—the holder was undertaxed on interest while the sovereign issuer was indifferent to the deduction. Id. at 36. Smithson & Chew, note 23, at 79, describe more remote predecessors including a variety of notes with interest indexed on commodity prices (starting with Silver Indexed Bonds issued by Sunshine Mining in 1980, id. at 82), and several exchange indexed notes, including S&P 500 Indexed Notes issued by

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ample of such a security. The first issue of MITTS had a five-year term and guaranteed the repayment of principal plus 115% of any gains in the S&P 500 over the period. It was traded on the New York Stock Exchange. The tax treatment of contingent payment debt instruments was uncertain prior to June, 1996. Treasury had proposed regulations on contingent payment debt instruments in 1986 that would have deferred recognition of interest until the contingency was resolved.\textsuperscript{150} In 1991, Treasury proposed new regulations, which were to have taken effect from the date they were proposed, that would have required bifurcation of a contingent payment debt instrument into a debt instrument and an option with the purchase price allocated between the two portions based on their respective value.\textsuperscript{151} Interest would have been imputed on the debt portion and there was a concern that the embedded option on an equity index in MITTS would be taxed on a mark-to-market basis. In 1993, Treasury released yet another set of regulations that would have imputed interest on the entire instrument based on its expected yield.\textsuperscript{152} These regulations were withdrawn and were never formally issued. Certainty did not come to this area until 1996 when the regulations along the lines of those published in 1993 were finalized.\textsuperscript{153}

Tax law uncertainty does seem to have affected the market for MITTS. When Merrill Lynch announced the first issue of MITTS in 1992, a number of commentators said that the issue would be difficult to sell because of the uncertainty about its tax treatment.\textsuperscript{154} In fact, the first issue of the security sold quite well, but Merrill Lynch limited

\begin{footnotes}
\item Salmon Brothers in 1986, Nikkei Indexed Notes issued by SEK in 1986, NYSE Indexed Notes issued by Merrill Lynch in 1987, and Notes Indexed to the S&P 500 Pharmaceutical Index issued by United Technologies in 1991. Id. at 80, 88. Other investment banks offered securities similar to MITTS and SIGNs after 1992 under different trademarks, including Lehman Brothers' SUNS (Stock Upside Note Securities) and Paine Webber's SIRS (Stock Index Return Securities). Barry Rehfeld, Playing the Stock Market, Without Risk, N.Y. Times, Nov. 5, 1994, § 1, at 38.
\item Prop. Reg. § 1.1275-4 (filed with the Federal Register Jan. 21, 1993 in proposed form, but withdrawn before official publication by the Office of Management and Budget). These regulations were issued in proposed form on December 16, 1994, and were issued in final form on June 11, 1996. T.D. 8674, 1996-2 C.B. 84.
\item Tom Pratt, Merrill Plans Mitts Deal Despite Fuzzy Tax Status, Inv. Dealers' Dig., July 20, 1992, at 13. The concern was whether the embedded option might be taxed on a mark-to-market basis. This prospect was raised by a gap in the then-proposed regulations on contingent interest debt instruments. The proposed regulations had been issued in 1991 (some say prematurely in response to SIGNs) and required bifurcation of a contingent interest debt instrument into a debt and option component but did not provide any guidance on how the option component would be taxed. Id. at 13-14. It was not clear if the Service would argue that the option component was a "listed nonequity option" because it was embedded in a listed security, making that option component taxable under the mark-to-market method under § 1256. See id. at 13.
\end{footnotes}
its sales efforts to tax-exempt accounts.\textsuperscript{155} While the prospectus for this and later issues of MITTS included a lengthy tax opinion from Brown & Wood taking the position that the holder could defer interest until maturity,\textsuperscript{156} the financial press reports that Merrill Lynch made no effort to sell the security on the basis of this tax advantage.\textsuperscript{157} Merrill Lynch did four additional issues of MITTS in 1993 while designing the security in order to try to avoid potential application of the 1991 proposed regulations, though it continued to focus its sales efforts on tax-exempt accounts.\textsuperscript{158} Merrill Lynch also introduced an alternative security, SMARTS, that guaranteed a return of principal and paid a contingent yield based on the performance of an index but that was engineered to eliminate the tax law uncertainty and the possible tax advantage of deferral by paying an annual return based on the performance of the index each year.\textsuperscript{159} No other issues of MITTS were done until 1996, although Merrill Lynch planned an issue in 1994 with a payout pegged to a portfolio of REITS that was designed to enable investors to take a position in REITS without accruing income. The plans for this issue were scotched reportedly because market conditions turned against it.\textsuperscript{160} During this period, trading in MITTS was often reported as sluggish,\textsuperscript{161} which is consistent with reports that selling was limited to private tax-exempt accounts, and in 1995, it was

\textsuperscript{155} Tom Pratt, Merrill Triples Mitts Deal as Over 6,000 Accounts Buy, Inv. Dealers' Dig., Aug. 3, 1992, at 19 [hereinafter Mitts Deal].

\textsuperscript{156} Brown & Wood took the position that the contingent interest was income only when it became determined, relying on "general principles of current . . . tax law" and explaining that the result was substantially the same under the 1986 regulations. See Prospectus Supplement, Merrill Lynch & Co., Global Telecommunications MITTS, filed Aug. 2, 1993. A similar opinion by Brown & Wood accompanied later issues of MITTS until the new contingent interest regulations went into effect on August 12, 1996. See, e.g., Prospectus Supplement, Merrill, Lynch & Co., S&P 500 Market Index Target-Term Securities SM Due May 10, 2001 "MITTS(R)," filed May 10, 1996.

\textsuperscript{157} Pratt, Mitts Deal, note 155, at 19. We do not know why Merrill Lynch, which used the security to raise capital for itself (Merrill Lynch purchased options to cover itself should the index rise, so the security was in effect straight debt to it), was willing to live with the deferral of the interest deduction. A possibility is that it accounted for the securities on a mark-to-market basis.

\textsuperscript{158} Pratt, Derivatives, note 142, at 14.

\textsuperscript{159} The first issue of SMARTS on the S&P 500 was on October 22, 1992. Later issues were on the S&P Midcap 400 (issued April 22, 1993) and the AMEX Oil Index (March 24, 1994). Id. at 13.


\textsuperscript{161} See Santoli, Hybrids, note 160, at A9C; Santoli, REIT Tax, note 160, at A5A.
reported that institutional investors still preferred to make such contracts privately because private markets were cheaper and as liquid as public markets.\textsuperscript{162} When the contingent payment debt instrument regulations were finalized in June, 1996, Merrill Lynch took advantage of a 60-day gap between the publication of final regulations and their effective date to do two issues of MITTS, on which it took the position no income accrued until maturity.\textsuperscript{163}

The story of the brief and unhappy life of the § 385 regulations that clarified the distinction between debt and equity, which were proposed by Treasury in 1983 and withdrawn in 1983,\textsuperscript{164} also supports the claim that tax law uncertainty impedes innovation. The regulations prompted investment banks to craft securities that pushed out to the newly clarified boundary between debt and equity.\textsuperscript{165} The security that got Treasury's dander up, Adjustable Rate Convertible Notes ("ARCNs"), when boiled down to its essentials, was a combination of a debt instrument that paid variable interest at a rate that was expected to be well below the market rate of interest coupled with a deep-in-the-money option on the issuer's common stock that the holder could be expected to exercise on maturity of the debt instrument. Treasury learned that ARCNs were on the drawing board from a concerned practitioner,\textsuperscript{166} and it rushed out a revenue ruling declaring the instrument to be equity because of the strong likelihood that the option would be exercised.\textsuperscript{167} Treasury also withdrew the § 385 regulations. The clarity of the § 385 regulations made ARCNs possible; the withdrawal of the regulations and the warning shot of the revenue ruling stopped developments along the line of ARCNs for almost a decade. Not until the early 1990's did practitioners begin to push gently at the edge of the envelope in designing convertible securities by creating debt instruments that paid a market rate of interest.


\textsuperscript{165} Roger B. Madison, Jr., The Deductibility of "Interest" on Hybrid Securities, 39 Tax Law. 465, 484 (1986) (stating that "investment bankers moved quickly" in "devising securities that were structured to take maximum advantage of the section 385 regulations").

\textsuperscript{166} Lee A. Sheppard, The IRS on the Fast Track, 22 Tax Notes 1282 (Mar. 26, 1984).

\textsuperscript{167} Rev. Rul. 83-98, 1983-2 C.B. 40. This is also one of the rare instances where a ruling was made retroactive, the stated justification being that taxpayers could not rely on regulations that were not yet formally in effect. Letter from John E. Chapoton, Ass't Treas. Sec. (Tax Policy) to Dan Rostenkowski, Chairman, House Ways and Means Comm. (Apr. 7, 1996), available in Tax Notes Microfiche Database, Doc. 83-6307 (July 14, 1983).
and that also gave the issuer the power to convert its obligation into preferred stock.\textsuperscript{168}

It is not self-evident why tax law uncertainty should inhibit the sale of securities. Difficult problems in the valuation of new securities that are a product of uncertainty are dealt with every day on securities exchanges, most prominently in initial public offerings ("IPOs") by closely held firms and in the issuance of bonds, subjects on which a great deal has been written.\textsuperscript{169} The problem of tax law uncertainty is different in structure from the informational problems usually confronted in pricing IPOs, which are thought to be difficult to value because issuers know better than investors their circumstances and issuers can alter their behavior in ways that harm investors (or, more generally, IPOs are subject to asymmetric information and moral hazard). But these structural differences suggest that market mechanisms should be better equipped to deal with tax law uncertainty, not worse, since the information bearing on the evaluation of that risk is public and the risk is not within the control of either party. Further, the structures that have evolved to overcome the valuation problems with IPOs—investment banks and rating agencies are thought to have an incentive to carefully monitor relevant information to maintain their credibility\textsuperscript{170}—in theory, should work as well to assure issuers and investors that a tax opinion is measured carefully.

We think that one explanation for why tax law uncertainty impedes securities innovation derives from the fact that financial markets are organized around tax clienteles. That tax law uncertainty can reduce the value of a security because of the organization of markets around tax clienteles is clear within the contrived model that was used by Merton Miller in Debt and Taxes to make the provocative point that

\textsuperscript{168} Banker's Trust Convertible Capital Securities, which were first issued in 1993, bore interest at the market rate of 7.5%. The issuer had the right to reset the rate to 6%, but in that event, the holder had the option to convert the instrument into preferred stock paying 7.5%. Banker's Trust Preferred Purchase Units, first issued in 1992, coupled a straight debt instrument with an obligation that was assumed by the holder (the right and the obligation were severable) to purchase preferred stock of the issuer upon the maturity of the debt instrument at the debt instrument's face amount. A description of both instruments and a legal argument why they do not run afoul of the ARCN ruling can be found in Thomas A. Humphreys & Nicholas R. Brown, Deductible Preferred Stock (World Trade Institute 1993).


\textsuperscript{170} For a formal model of an investment bank's incentives, see Thomas J. Chemmanur & Paolo Fulghieri, Investment Bank Reputation, Information Production, and Financial Intermediation, 49 J. Fin. 57, 74-75 (1994). The incentive of investment banks to maintain their credibility is the key, and not the fear of legal liability, for there is little risk of liability if an opinion on an uncertain issue turns out to be wrong.
the value of a firm in theory could be independent of its capital structure even in a world where debt and equity are taxed differently.\footnote{Miller, Debt and Taxes, note 131, at 269. It is helpful to place the article in its historical context. Two decades earlier, Professors Miller and Modigliani had explained that alteration of the debt-equity ratio of a firm, in theory, need not alter the value of the firm because, in a frictionless market, arbitrage would bring the price of debt and equity to the firm into line. Franco Modigliani & Merton H. Miller, The Cost of Capital, Corporation Finance and the Theory of Investment, 48 Am. Econ. Rev. 261, 265-88 (1958). They left open the possibility that the different tax treatment of debt and equity could alter this conclusion. Five years later, they revisited the issue and concluded that once tax effects were taken into account, the capital structure did affect value and that corporations seemed to be grossly underleveraged. Franco Modigliani & Merton H. Miller, Corporate Income Taxes and the Cost of Capital: A Correction, 53 Am. Econ. Rev. 433, 438-43 (1963). As Professor Miller told the story in a retrospective in 1988:

[Either corporate managers did not know (or perhaps care) that they were paying too much in taxes; or something major was being left out of the model. Either they were wrong or we were. Much of the research effort in finance over the next 25 years has been spent, in effect, in settling which it was. Merton H. Miller, The Modigliani-Miller Propositions After Thirty Years, 2 J. Econ. Persp. 99, 112 (1988).} They assumed progressive individual rates ranging from zero to a rate above the corporate rate, a flat corporate rate, and two types of securities, bonds and equity, with equity bearing zero individual taxes. Figure 1 depicts the equilibrium in the market for bonds under these assumptions.
The quantity of bonds outstanding in the market as a whole is \( B^* \), which is the point where the rising demand curve for bonds intersects with the market-clearing, risk-adjusted rate of return for bonds. Under Miller’s analysis, this price turns out to be the tax-exempt rate of return grossed up by the corporate tax rate.\(^{172}\) Different tax clienteles appear in the rising demand curve for bonds. The flat part of the curve is the demand by tax-exempt investors who are indifferent between equity (which is assumed to be tax-free) and debt. The rising demand curve depicts tax clienteles with increasingly high marginal tax rates who demand an increasingly high risk-adjusted rate of return on bonds to make them indifferent after tax between holding tax-free equity or debt. In effect, the equilibrium corporate bond rate is set at the price where the value to the corporation of the interest deduction, which is a function of the corporate tax rate, equals the additional tax paid by the marginal investor by forgoing the tax exemption of equity. A single firm is indifferent between issuing higher-cost debt and lower-cost equity because the after-tax cost of capital is equal.

Introduce to this world a hybrid security that has financial value, which we denominate as \( v \) but uncertain tax classification. Under Professor Miller’s model, there is a loss of value in this hybrid security as a result of tax law uncertainty unless the security is sold to an investor.

\(^{172}\) If the tax-exempt rate is 6% and the corporate tax rate is 35%, then the equilibrium price for bonds would be 9.2% \( (0.06 \times 1/(1 - 0.35)) \).
located at point $B^*$ on the demand curve. It is only at this point on the demand curve, where the marginal tax rate of the investor equals the corporate tax rate, that the investor and the corporation are jointly indifferent as to whether the corporation gets the interest deduction or the investor gets the tax shield on equity.\footnote{In theory, the hybrid security should be priced at a return between the tax-free rate of return ($r_e$) and the rate of return on debt ($r_d (1/(1 - T_c))$, where $T_c$ is the corporate tax rate), depending on the probability of its being classified as equity or debt. One party will gain and the other will lose when the tax treatment is determined, but in the aggregate, the parties are no worse off. We know of no evidence of hybrid securities being priced in this manner.} There is a joint loss because of the tax law uncertainty for any investor not at point $B^*$. To the left of point $B^*$, it is in the joint interest of the issuer and investor to characterize the security as debt because the investor's marginal tax rate is lower than the corporate rate. Should the security be classified as equity, the parties will be jointly worse off, for the issuer's loss from losing the interest deduction will exceed the investor's gain from being shielded from tax.\footnote{Call of the security upon an adverse tax ruling will minimize this loss to periods prior to the call. Transfer of the security can reduce the amount of the loss subsequent to the transfer that results from the security being held by the wrong clientele but usually it will not eliminate it. Consider first a sale of a hybrid security that the parties treat as debt but which is ruled to be equity. Prior to the ruling, the security ought to be held by investors to the left of point $B^*$ and it ought (in theory, see note 173) to bear a yield between $r$ and the corporate rate. Upon a ruling that the security is equity, its price ought to rise so its yield is reduced to $r$, and investors to the left of point $B^*$ ought to sell it to those to the right of point $B^*$ who value the tax shield most highly. This moves the security to the optimal tax client but at the expense of gain recognized by the initial holders of the security. The consequences are less bleak on a sale of a hybrid security that the parties treat as equity but which is ruled to be debt. Prior to the ruling, the security ought to be held by investors to the right of point $B^*$ and it ought (in theory) to bear a yield between $r$ and the corporate rate. Upon a ruling that the security is debt, its price ought to drop so its yield is increased to the corporate rate and investors to the right of point $B^*$ ought to sell it to those to the left of point $B^*$. The seller will realize a capital loss upon this sale and the buyer, who ought to face a low tax rate, will recognize a corresponding but larger amount of ordinary income upon maturity of the security under the market discount rules. IRC § 1276.} The opposite is true to the right of point $B^*$. It is in the joint interest of the parties to characterize the security as equity because the investor's marginal rate is higher than the corporate rate. Should the security be reclassified as debt, the investor's loss from losing the tax shield will exceed the issuer's gain from obtaining the interest deduction. A hybrid security of uncertain classification might succeed even if the market clearing buyer is not at point $B^*$, but only if $v$ is sufficient to compensate whichever party bears the loss from the tax risk for that loss. There is little solace in the fact that the equilibrium investor in Miller's analysis stands at point $B^*$, where the issuer and investor are jointly indifferent to how the security is classified for tax purposes, for unlike in the usual equilibrium analysis, such an investor is the only person to whom the
security could be sold without there being a premium value \( v \) to compensate for tax risk; in the usual equilibrium analysis, those at the margin stand after all those to one side of the curve as price takers. Further, even an investor at the margin may be risk averse and therefore disinclined to “bet” on the tax issue, or may be deterred by the prospect of the transaction costs of adjusting his tax liability.

While many faults have been found in Miller’s model and its implications\(^{175}\) most of these faults do not undermine the simple point for which we are using the model. The effect we describe will exist for a new security that is a hybrid of two securities with different tax characteristics that have different value-maximizing tax clienteles so long as the prices of these alternative securities adjust somewhat to reflect their favorable or unfavorable tax characteristics—that is, it is necessary that tax-favored securities bear some implicit tax, although it is not necessary that a tax benefit be fully capitalized in the price.\(^{176}\) This will be true so long as the securities markets are loosely organized around tax clienteles. By this we mean that, all other factors being equal, firms choose to raise capital by issuing securities for which their tax profile gives them a comparative advantage (for example, firms that face a zero or low marginal rate prefer equity over debt), and the issuer and underwriter expect that for a security offering to be successful, it must appeal to buyers who also are looking for a security for which their tax profile gives them a comparative advantage (for example, investors who face a high marginal rate are inclined to buy tax-exempt securities or long-term securities that bear deferred income). When these conditions are present, a new hybrid security that is of uncertain classification will be difficult to market because the

175 Miller's model is not meant to depict the real world. Its assumptions obviously are unrealistic. There exist a variety of securities with tax characteristics that shade into each other—adjustable rate debt, adjustable rate stock, short-term fixed rate debt, long-term fixed rate debt, fixed rate preferred stock, dividend paying equity, nontaxable paying equity, and genuinely tax-exempt securities—that may not be substitutable in other respects. Some of the model's implications have been described as "patently false." Alan J. Auerbach, Leverage, in 2 New Palgrave Dictionary, note 163, at 574, 575. Thus, assets are not perfectly sorted among the optimal tax clienteles (we will come back to this point for it is relevant to the success of tax-deductible preferred), equity persistently pays a premium over debt, and, as a consequence, taxpaying corporations can enhance their value by substituting debt for equity.

176 Scholes & Wolfson, note 9, at 357-71, collect and analyze the evidence on implicit taxes and clientele effects. They observe that short-term, tax-exempt bonds bear fairly high implicit tax rates (near the top marginal rate) while long-term tax exempt bonds bear a much lower but still significant implicit tax rate. Id. at 368-69. They conclude that it is an "open question" whether any implicit tax is borne by stock, explaining that it is unclear whether differences in dividend policies are reflected in the yields on stock, id. at 366-68, and that efforts to interpolate the clientele for stock from price movements on "ex-dividend days" (the day when purchase of a share no longer carries the right to a declared dividend) have proven inconclusive. Id. at 361-67.
value-maximizing clienteles for the security at one classification (for example, the issuer and investors whose tax profiles give them the greatest comparative advantage) will also be those who stand to lose the most under the alternative classification.

This effect holds only for new securities that are a hybrid of two securities that appeal to different tax clienteles. Step-down preferred stock presents a different case because it is not such a hybrid. Instead, it is a new strain of an existing security that tries to magnify the desirable tax characteristics of that security (one might think of it as "super-debt" from a tax perspective). The security was designed to magnify interest deductions available to an issuer of debt. While the tax benefit to the issuer involves a corresponding detriment to the holder, this feature of the security increases the joint expected return (ignoring the cost of adjusting the tax liability and risk aversion) at all points on Diagram 1 except for point $B^*$, and the further the distance from point $B^*$, the larger the increase in the joint expected return. In the actual case, the security was sold to tax-exempt institutional investors, that is, investors in the lowest region of the demand curve. In this region, the security's feature of possibly magnifying interest expense and income had positive value to the issuer and no negative value to the investor.

There is a simpler explanation for why some new securities that offer uncertain tax benefits derive little or no value from this feature. It is that there is such a glut of investments that offer the same benefits that investors looking for those benefits can obtain them with only a small sacrifice in yield (for example, there is trivial capitalization of the tax benefits in price) and without any uncertainty. The prospect of the transaction costs of adjusting tax liability and risk aversion could easily explain why investors might accept a small sacrifice in yield to avoid tax law uncertainty. Merrill Lynch's experience with MITTS is consistent with this theory. Recall that while Merrill Lynch obtained a legal opinion that MITTS yielded deferred income, it did not market the security on that basis, instead selling the security to tax-exempt accounts. The intuitive explanation for why Merrill Lynch undersold the security by not seeking out investors who could benefit from deferral is that MITTS could not compete on this basis with other securities that yielded deferred income with no tax law uncer-

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177 For a description of the security, see note 13.

178 For an argument that tax benefits sell cheaply, see Calvin H. Johnson, Inefficiency Does Not Drive Out Inequity: Market Equilibrium & Tax Shelters, 71 Tax Notes 377, 381-84 (Apr. 15, 1996) (arguing that easily replicated supply of tax-favored transactions prevents market from fully capitalizing tax benefits).
This answer only makes sense if investors did not have to make a significant sacrifice in yield to pursue these other deferral strategies. Our theory cannot explain Merrill Lynch's behavior.

We close this Section by looking at the experience of MIPS because it casts light on how the forces our theory identifies as crucial may play out in the real world. There was some degree of uncertainty regarding the characterization of MIPS as debt prior to June, 1994 when Treasury issued a set of rulings and notices implying that it would look with forbearance on the security so long as its maturity was not overlong. While these pronouncements reduced the apparent risk on MIPS, a fair amount of risk remains regarding the characterization of some MIPS variants, in particular TRUPS. Why would a firm looking to raise capital choose MIPS over preferred stock, which, in theory, should command a higher price because of the shield of the dividends received deduction, or over debt, which provides an interest deduction with no uncertainty? The first part of this question is easier to answer. The price advantage of preferred stock over debt (or MIPS) is slight for securities with long maturities and fixed yields, which implies that the value of the dividends received deduction to investors is capitalized in the price of preferred stock only to a small degree. Relatedly, and even more to the point, MIPS were targeted at individual investors, and offers to convert outstanding preferred to tax-deductible preferred stock, which tend to be accepted by around one-half of the preferred shareholders, presumably have been accepted by investors who were indifferent to the dividends received deduction. The upshot is that tax-deductible preferred responds to a financial anomaly, the fact that taxpaying corporations finance with preferred stock that is held (or was held) in substantial percentage by individual investors.

179 Under IRC § 1286, market discount is taxed as ordinary income on maturity (or sale) of a bond that was purchased with market discount. It might seem that a tax clientele that values deferred income would not be attracted to market discount bonds because they yield income that is currently taxable as well as deferred income. A solution is arbitrage. By funding part of the acquisition cost of bonds that bear market discount through borrowing, a buyer may generate interest deductions to shield the interest income. We know of no studies bearing on the question of whether market discount bonds bear implicit taxes. In this regard, it is worth noting that short-term, tax-exempt obligations bear a hefty implicit tax.

180 See note 139.

181 For an explanation of the legal issue, see note 58.

182 We can only speculate about why this is so. Possibilities include nontax factors that limit the demand of corporations for long-term securities that pay fixed yields, economic differences between straight preferred and tax-deductible preferred, and the availability of strategies that enable corporations to shield nondividend income with the dividends received deduction.
While this explains why tax-deductible preferred might be appealing when compared to traditional preferred, it does not explain the attraction of MIPS over traditional debt so long as the tax classification of MIPS is uncertain. The value of the interest deduction was so great that the financial value of MIPS over straight debt (an 18-month interest deferral option in the first issues and a long maturity) would seem to be swamped at any significant tax uncertainty. Nevertheless, in a substantial number of cases where firms have issued tax-deductible preferred, one stated use of the funds was to retire debt.\footnote{Engel, Erickson & Maydew, note 56, at tbl. 1 (reporting that in 63 of 158 new issues of trust preferred, one of the stated uses of the funds was to retire debt). Irvine & Rosenfeld, note 56, at 15-16, found that when the stated use of the funds on an issue of tax-deductible preferred was to retire debt, there was a negative effect on the share price of the issuer.}

The substitution of MIPS for debt is least understandable early on when the tax law uncertainty regarding the security was the greatest. What were the objectives of the first issuers? Enron Corp. and Capital Re Corp. both cited rating concerns. Enron was trying to raise its bond rating by reducing its debt-equity ratio while Capital Re wanted to preserve a single-A rating by keeping its debt-equity ratio below 20%.\footnote{Perlmut, note 92, at 234.} The impression is that these firms had settled on a financial strategy that precluded them from issuing additional debt and that made them amenable to a proposal that offered a chance to lower the cost of pursuing that strategy. From the perspective of an issuer comparing MIPS to preferred stock, MIPS dominate over preferred so long as the price differential is not too large, and it was in fact small, since even a low chance of an interest deduction will compensate for the sacrifice in price. We have seen behavior like this in other contexts: Accounting concerns often induce managers to forgo optimal tax strategies, and tax considerations often come into play only once basic financial decisions are made.

Texaco’s public statements indicate that the ratings advantages of MIPS were not dominant in its mind. Rather, Texaco was pursuing a strategy, of issuing very long-term debt (earlier in 1993 it had issued 50-year bonds)\footnote{Pratt, Puzzle, note 92, at 17.} and it saw MIPS (which potentially had a 100-year maturity) as a natural extension of that strategy, with the additional benefits of being able to sell the security to the retail market and of the financial flexibility of being able to defer coupon payments for a short period and to call the security after five years.\footnote{Id. at 17-18.} The clincher may have been the fact that MIPS were sold at a coupon rate below the yield on Texaco’s outstanding 50-year bonds and what was de-
scribed as an historic low yield even for preferred stock. There was strong tax-exempt institutional demand for long-maturity bonds at the time (at about the same time Disney and Coke's issues of 100-year bonds were well-received), as well as strong retail demand for preferred. The MIPS structure may not have seemed any riskier to Texaco on the debt-equity issue than a 100-year bond. While Treasury has strenuously objected to characterizing long-maturity obligations as debt, it has never objected to the interest deferral feature. The structure had the additional attraction of providing entree to the retail market.

Texaco's explanation is reminiscent of the story behind zero coupon bonds with two new twists. Conditions in financial markets made very long-term debt attractive to Texaco. An issue of 100-year debt came at some legal risk already, so Texaco may not have perceived MIPS as involving much greater tax risk. And MIPS had the advantage of allowing Texaco to tap new markets. Ironically, the story Texaco tells suggests that it was attracted to the security because it had genuine financial value reflected in the demand for extremely long-term debt.

VI. THE SOCIAL COSTS AND BENEFITS OF "TAX-INFLUENCED" SECURITIES INNOVATION

What are the social costs and benefits of "tax-influenced" securities innovation? What do those costs and benefits suggest about how tax policymakers should respond to financial innovation? It sometimes is said that the social value of financial innovation lies in "completing the market." The theoretical concept of a complete market is not helpful as a policy tool. Complete markets exist in financial theory only because financial economists must assume they exist in order to derive an equilibrium price for securities, notwithstanding the fact that humans have different risk preferences. Thus, it is odd to say

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187 Id. at 17.
189 Long maturity is thought to be a characteristic of equity, particularly if the borrower is involved in a risky enterprise. See William T. Plumb, Jr., The Federal Income Tax Significance of Corporate Debt: A Critical Analysis and a Proposal, 26 Tax L. Rev. 369, 415-16 (1971).
191 In a theoretically complete market, there exists a unique security with a known payoff for each possible state of the world that can occur. The investor can construct a portfolio where he knows with certainty what the future value of the portfolio will be for each of the possible future states that can occur. In the theoretically complete market, each of these securities is unique. (If two securities had identical payoffs in identical states of the
that a new security "completes the market," for finance theory assumes that the market is already complete. Indeed, new securities almost always replicate positions that can be taken with existing securities. This is true even of the innovation that is most like the theoretical "pure security"—zero coupon bonds. The pattern of cash flows offered by a zero coupon bond was new and unique among the universe of then existing securities. But even without zeros, it was possible to construct bond portfolios with the same duration or interest rate sensitivity as a zero coupon bond. In the real world, there is this paradox that innovative securities that seemingly make the financial market more complete by creating new ways to hedge risks may themselves be replicated by a combination of existing securities and therefore are at least theoretically redundant.

One way to get around this paradox is to look beyond the theoretical concepts of finance to the uses to which the theory is put. Two common goals in the development of new instruments are to enable individuals or firms to hedge risks or price assets more cheaply or accurately; indeed, under the CFTC's "economic purpose" test, these are the only recognized goals in contract innovation, for a new futures world, the cheaper of the two securities would be preferred by wealth-maximizing investors and the more expensive security simply would cease to be traded.) The paired assumptions of completeness and uniqueness are necessary to obtain so-called spanning conditions. When spanning conditions hold, each investor's portfolio, can be constructed as a portfolio of pure securities. As long as spanning conditions hold, we need not incorporate the investor's individual preference for risk into the process of valuing risky securities. With pure securities available to hedge all risky payoffs, each investor becomes risk neutral—his preference (or aversion) for risk does not affect what he is willing to pay for a risky security. Because each pure security is unique and individual risk preferences no longer affect how much an investor would be willing to pay for a security, investors who have the same expectations as to the nature and probability of the potential future states will agree on the value of each pure security. Thus, complex securities with more complicated payoff patterns such as stocks, bonds, and options can be constructed as a unique portfolio of pure securities and all investors will agree on the value of the portfolio. This consensus creates an equilibrium price. Thomas E. Copeland & J. Fred Weston, Financial Theory and Corporate Policy 108–28 (2d ed. 1983).

192 See note 71.

193 The success of zero coupon bonds led to other attempts to change the patterns of payoffs of existing securities by either disaggregating the security's payoffs into separately traded contracts, a process referred to as unbundling, or by aggregating securities into portfolios, often referred to as pooling, so that the payoff from holding a position in the portfolio became very different from the payoff from holding the individual securities that comprised the portfolio. One of the most successful instances of disaggregation and pooling is Collateralized Mortgage Obligations ("CMOs"), which were introduced in 1983. Anand K. Bhattacharya & Howard W. Chin, Synthetic Mortgage-Back Securities, 18 Portfolio Mgmt. 44 (1992); Mel Jameson, S. Dewan & C.F. Sirmans, Measuring Welfare Effects of Unbundling Financial Innovations: The Case of Collateralized Mortgage Obligations, 31 J. Urb. Econ. 1 (1992); Smith & Taggart, note 26, at 24. CMOs are the antecedent to a slew of asset-backed securities; see Steven L. Schwarz, The Alchemy of Asset Securitization, 1 Stan. J.L. Bus. & Fin. 133 (1994).
contract will be approved for trading only if it can be shown that the contract will be used "more than occasionally" by producers, merchants or consumers to hedge against the risk of loss or to determine prices.\textsuperscript{194}

New instruments may have value for other reasons. Much of finance theory, and in particular corporate finance, is concerned with devising contracts to minimize what broadly may be called agency problems, typically by altering managerial incentives.\textsuperscript{195} There also may be value in creating a security that lowers the transaction cost of satisfying odd but widely held individual investment preferences. For example, the perceived demand for LYONs by investors was due to a preference of individuals for a strategy of betting income while preserving principal.\textsuperscript{196} A difficult question is how a regulator should respond to financial innovations that derive their value from reducing differences in prices that result from regulatory or tax "friction."\textsuperscript{197}

The question of what is the proper role of government in regulating financial innovation adds another layer of issues, for it is necessary to take account of such risks as regulatory error and capture.\textsuperscript{198}

\textsuperscript{194} Commodities Futures Trading Commission, 17 C.F.R. § 5.3 (1997).
\textsuperscript{195} Michael J. Brennan, Corporate Finance Over the Past 25 Years, Fin. Mgmt., Summer 1995, at 9.
\textsuperscript{196} See text accompanying notes 29-32.
\textsuperscript{197} We address an aspect of this question in Section VIII.
\textsuperscript{198} The story behind a 1990 revenue ruling on Auction Rate Preferred Stock, Rev. Rul. 90-27, 1990-1 C.B. 50, raises the issue of capture with regards to Treasury. We know something of the history behind this revenue ruling because of a GAO report investigating charges that several senior Service officials who had a hand in the ruling had a conflict of interest. Field agents, who were unhappy about being overridden, complained that several senior officials who had a hand in the ruling worked for law and accounting firms that represented Shearson Lehman or worked for Shearson Lehman directly. The IRS Commissioner, Fred Goldberg, had been a partner at Skadden Arps, which had represented Shearson Lehman. The Acting Chief Counsel during much of the time the issue was pending, Peter Scott, talked with Coopers & Lybrand about a position during the latter part of this period and decided to take a job there about the time the final decision was made. The person who became Chief Counsel in February, 1990, Kenneth Gideon, had been a partner at Jones, Day, where he had done a slight amount of work for Shearson Lehman. The GAO found that the officials had worked on unrelated matters so there was no ethical violation in the officials' failure to recuse themselves. It would not be surprising if the officials were more sympathetic to the position of the securities industry than they otherwise would have been because they once worked for the industry and planned to return to it when they left government service.

The GAO report also attests to how long it can take to get a ruling on an instrument. Action on Auction Rate Preferred Stock was initiated in the field in 1987 when an agent questioned a return taking the dividends received deduction. It took over two years, until the Fall of 1989, for Shearson's attorney to persuade the National Office to take action on the issue. The National Office initially decided to let the issue develop in the field. Once a preliminary decision was made to issue a ruling that would classify some Auction Rate Preferred Stock as equity, it took over six months to clear that ruling internally. The report also attests to the unsystematic way the Service goes about collecting information once it decides to address an issue. The field examiners were stymied in their efforts to collect
regulatory agencies have by and large adopted a laissez-faire policy in regulating new forms of securities or futures contracts, imposing some informational and qualitative requirements to protect against fraud and market manipulation, but otherwise allowing the market to establish the value of a new security or futures contract. Even the CFTC has adopted this policy, notwithstanding its rule requiring that a futures contract be shown to serve an "economic purpose" before it can be listed, because the CFTC looks primarily to commercial utilization of a contract in applying this rule.\textsuperscript{199}

Criticisms of this laissez-faire policy range from broad assaults on the assumptions underlying the policy (the assumptions are that investors are generally rational and markets are generally efficient)\textsuperscript{200} to arguments for specific forms of intervention to respond to identifiable instances of market failure.\textsuperscript{201} In the analysis that follows, we assume a laissez faire policy, at least in the absence of identifiable instances of market failure, which is grounded on welfarist values. These are not remarkable assumptions for most tax and financial policy analysis usually is done from this stance.

Our ultimate goal is to determine what rules and procedures for changing tax law least distort financial markets and the path of financial innovation while preserving the revenue base. We put to the side what are probably the best options for eliminating tax distortions—a quick move to a purer income or consumption tax coupled with some form of corporate integration—as being politically unfeasible. We also put to side cases where tax law negatively distorts the value of an innovative security or contract independent of the effect of tax uncer-
In such cases, innovators and users bring great pressure to bear on Treasury and Congress to change tax law to eliminate the distortion. Political power armored in truth seems invincible on these matters.

More troubling are cases where tax law causes a positive distortion in the value of an innovative security—zeros and MIPS are good examples. Typically, there is no natural dynamic bringing such cases to Treasury's attention, though the financial and tax press play a helpful role as watchdogs. Such innovations often are described pejoratively as "tax-driven" or "tax-motivated." Described this way, the innovations seem socially harmful because the private effort in creating them and the public effort in responding to them is wasteful. This would suggest adopting a policy of suppressing such innovations, which might include changing the law to close whatever "loophole," "gap," or "ambiguity" the innovation exploits (taking care of the future) and a policy of applying that ruling retroactively (the threat of a retroactive rule change reduces the incentive to pursue such paths of innovation). Section VII explores the question of retroactivity. Section VIII asks whether it is also desirable to close loopholes.

VII. SHOULD RULE CHANGES BE APPLIED RETROACTIVELY?

This Section considers when changes in tax law that are made in response to innovative securities or transactions should be applied retroactively to securities issued or transactions occurring prior to the change. Tax rule changes usually apply to transactions from the date of the change while changes in tax rules regarding securities usually

202 An example is the imbroglio over the threatened mistaxation of hedges after Arkansas Best Corp. v. Commissioner, 485 U.S. 212 (1988), which held that gain or loss on a contract hedging an ordinary income position would be taxed as capital gain or loss. It took five years to issue proposed regulations that put this issue to rest in most cases. Proposed regulations were issued on October 20, 1993. 58 Fed. Reg. 54077. The regulations were finalized on July 13, 1994, and appear at Reg. § 1.446-4 and Reg. § 1.1221-2.

203 Pressure has been brought to bear successfully to change the law even when an issue is not as globally significant as the hedging regulations. For example, Treasury has been receptive to appeals from the insurance industry for changes in the hedging rules to address that industry's particular needs. See Treasury May Look at Excluding Certain Hedges from Section 1092, Official Says, Daily Tax Rep. (BNA), June 5, 1995, at G-4.

204 In theory, some distortions will harm other individuals or firms who may bring pressure to bear to eliminate the distortion. For example, competitors of an investment bank that is capturing market share with a tax-advantaged structure might tip off the government to protect their turf. The government received an anonymous tip about step-down preferred stock and "friends" told Treasury officials of ARCNs. Raghavan & Schlesinger, note 4, at 41; Sheppard, Fast Track, note 166.

205 This was true of the recently enacted constructive sale rules, IRC § 1259. Constructive sales entered into prior to June 9, 1997, which is the date the Chairman of the House Ways and Means Committee released his markup of the bill, are disregarded so long as taxpayers identified such positions within 30 days of enactment of the statute. Taxpayer
apply to securities issued from the date of the change. When a

proposed rules to tax constructive sales, they were to be effective from the date of the
proposal, January 12, 1996. The following regulations in the financial area were applied
25,502 (1997) (the proposed regulations had said they would be effective from shortly after
their date of issue, 59 Fed. Reg. 24,039 (1994)); the proposed regulations on obligation-
shifting transactions (which were made effective from the date of Notice 95-53, 1995-44
40,997 (1995); the proposed OID regulations on annuity contracts not issued by insurance
companies, 60 Fed. Reg. 17,731, 17,733 (1995); the final anti-abuse regulations under sub-
chapter K (which were made effective from the date of the proposed regulations), 60 Fed.
Reg. 23, 24 (1995); the final regulations on hedging transactions, 59 Fed. Reg. 36,356,
36,560 (1994) (while the proposed regulations stated the rules would be effective only upon
issuance of the final regulations, the final regulations protected positions reasonably taken
under the proposed regulations, 58 Fed. Reg. 54,075, 54,077 (1993); 58 Fed. Reg. 54,077,
54,081); and the final regulations on notional principal contracts, 58 Fed. Reg. 53,125
(1993).

A rare exception can be found in the regulations on the effect of a hedged position in
preferred stock on the holding period requirement for the dividends received deduction.
While the regulations generally were to apply prospectively, an exception was made for
specific transactions identified in the 1984 legislation as abusive. The regulations apply
Another exception is the regulation under § 337 on the use of partnerships to evade the
General Utilities doctrine, which was made effective back to the date of Notice 89-37, 1989-1

Section 7805(b) was amended in 1996 by the second Taxpayer Bill of Rights to require
that regulations apply prospectively subject to a few exceptions, the most important being
for regulations that implement recently enacted statutes and regulations that prevent
abuse. Prior to this change, former § 7805(b) authorized Treasury to apply regulations and
rulings prospectively. A 1989 bar report examined eight regulations issued between 1945
and 1981 that replaced prior regulations. Of these, six were made nonretroactive (one at
the taxpayer's election) and two were made partially or fully retroactive. The report sug-
jects that the retroactivity of one of these two—on transactions between related taxpayers—may have been in name only, for the Service continued to close cases under its earlier
guidelines. Planning Comm., Sec. of Tax'n, Am. Bar Ass'n, Report on Exercise by the
Treasury Department and the Internal Revenue Service of the Authority Granted by
§ 7805(b) to Prescribe the Extent to Which Tax Rulings or Regulations Shall Be Applied
Without Retroactive Effect, 89 TNT 116-33, June 2, 1989, available in LEXIS, Fedtax Li-
brary, TNT File.

A recent example is the revenue ruling on index options, Rev. Rul. 94-63, 1994-2 C.B.
188. Sometimes the government responds to abusive transactions by issuing notices that
announce that it will challenge the transactions under existing law while issuing regulations
that will apply prospectively to solidify its position. Notice 96-39, 1996-2 C.B. 209 (re-
sponding to the Eighth Circuit's decision in Brown Group v. Commissioner, 77 F.3d 217
(8th Cir. 1996); Notice 95-53, 1995-2 C.B. 334 (responding to lease strips and other strip-
ing transactions).

206 When Treasury first proposed changes in the rules for discounted and stripped bonds
in 1982, the changes were to be effective to securities issued from the date of the proposals.
Treasury Proposes Modifying “Original Issue Discount” Bond Computation, 15 Tax Notes
516 (May 10, 1982); “Coupon Stripping” Legislation Recommended, 15 Tax Notes 983, 984
(June 21, 1982). Those dates were moved back by Congress after much kvetching about
98-369, § 41(a), 98 Stat. 494, 533, 551; see 15 Tax Notes 799, 803-04 (June 7, 1982) (letter of
Sen. William V. Roth, Jr. to Treasury); 15 Tax Notes 957, 960 (June 21, 1982) (letter of
change clarifies the law, the government tends to acquiesce to any reason-
able position taken on transactions that occur prior to the clarifica-
tion, in effect giving taxpayers a right to choose among plausible positions under prior law. The unusual instances of retroactive rulemaking take on legal positions that are perceived as weak under existing law. We argue that if efficiency is the goal, the government should be more aggressive in applying rule changes retroactively.

To begin, it is useful to separate the immediate effects of a decision whether to apply a rule change retroactively to transactions or securities that are the subject of the rule from the broader effects of adopting a policy on retroactivity for all transactions where taxpayers anticipate that the law regarding their transactions might be changed. If a retroactivity decision had only immediate effects (imagine that people see no portent in a decision for future retroactivity decisions), then from an economic perspective, the better policy is to apply changes retroactively. One reason is general. Unanticipated taxes are


Other examples of changes grandfathering securities issued prior to the change include the rule denying the interest deduction for debt that is convertible into equity at the option of the issuer, IRC § 163(i), applying only to instruments issued after June 8, 1997. Taxpayer Relief Act of 1997, Pub. L. No. 105-34, § 1005(b), 111 Stat. 788, 912. The final regulations on contingent payment debt instruments apply to instruments issued after the charge (except for the anti-abuse rule, which was made effective from the date it was proposed), 61 Fed. Reg. 30,133 (1996), 59 Fed. Reg. 64, 884, 64,892 (1994).

This was done in the final regulations on contingent payment debt instruments, 61 Fed. Reg. 30,133, 30,137 (1996) (stating “For a contingent payment debt instrument issued before August 13, 1996, a taxpayer may use any reasonable method to account for the debt instrument, including a method that would have been required under the proposed regulations when the debt instrument was issued.”), and the final regulations on notional principal contracts, 58 Fed. Reg. 53,125, 53,127 (1993) (this position had been announced in Notice 89-21, 1989-1 C.B. 651).

A rule change can be given retroactive effect in several different ways. The most Draconian is to require issuers and investors to apply the new rule to tax years prior to the change. We know of no statutory change in the financial area given such effect. There have been a few rulings targeted at transactions that Treasury perceives as abusive. Examples include the rulings on straddles, Rev. Rul. 77-185, 1977-1 C.B. 49, the ruling on ACRNs, Rev. Rul. 83-98, 1983-2 C.B. 40, and a private ruling on preferred stock rollovers, T.A.M. 9128050 (Apr. 4, 1991).

A rule change can be given partial retroactive effect by requiring those who issued or purchased the security prior to the change to apply the new rule from the date of the change or some later date. Treasury took this position on the effective date of the rules announced on “step-down preferred stock.” Notice 97-21, 1997-11 I.R.B. 9. Another way to give a rule change partial retroactive effect is to apply it to securities issued prior to the change if the security changes hands. An example is § 1.1274A of the regulations, issued in 1986, which applies to sales or exchanges occurring after June 30, 1985. 51 Fed. Reg. 12,022 (1986).
efficient because they are a nondistortionary source of revenue. The other reason is specific to tax law changes affecting publicly traded securities. Grandfathering securities issued prior to the date of a change in the law fragments the market in the relevant security when the difference in tax treatment affects the price of the security. Market fragmentation can decrease liquidity and increase the cost of buying and selling securities.

The economic argument against a policy of making changes in the law retroactive is grounded in the view that such a policy would increase tax law uncertainty and that this has the undesirable effect of inhibiting securities innovation. We accept that tax law uncertainty can inhibit securities innovation. The issue is whether this effect is undesirable. The welfare effect of inhibiting financial innovation can be either positive or negative depending upon the social value of the inhibited innovations. At this point, the arguments in defense of a policy of not using the threat of retroactive rulemaking to suppress undesirable innovation are the general arguments for pursuing a laissez-faire policy in regulating financial innovation: We (or, more to the point, the regulators who will administer the policy) are not competent to assess the social value of an innovation, and, at least to date, unregulated innovation seems to have had beneficial social consequences. The competence argument is somewhat stronger in the tax context for tax policymakers are likely to be weaker in evaluating innovations than regulators at the Federal Reserve, the SEC, or the CFTC. But the historical argument is somewhat weaker, for there are

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210 Section V argued that tax law uncertainty has such an effect and proposes one theoretical explanation. Understanding precisely why tax law uncertainty inhibits securities innovation is important for retroactivity policy because if we understood the particular mechanisms at work, we might tailor retroactivity decisions accordingly. We do not pursue this line of reasoning because we are not confident that our explanation for why tax law uncertainty inhibits innovation is the exclusive factor at work.
211 Presumably, some innovations have sufficiently large nontax value that they would prosper even in an environment where tax law uncertainty suppressed their value. We see two reasons to protect high-value innovations from tax law uncertainty nevertheless. First, no matter how valuable a security is, tax law uncertainty can affect its use at the margin. Consider Figure 1. The joint loss to the issuer and investor as a result of uncertainty as to whether the security will be classified as debt or equity for tax purposes increases as one moves to the left or right of point \( B^* \). The greater the nontax value (or \( r \)) of a security, the larger the band to the left and right of point \( B^* \) in which the security can be sold, but investors at the margin of the band still will be affected by the tax law uncertainty. Second, as a practical matter, a retroactivity policy targeting costly, low-value securities achieves much of its benefit by instilling in innovators and users of innovative securities a psychology of distrust of securities that are produced and used at high transaction costs and have little or no nontax value. This state of mind is reinforced by a simple rule that blesses any security of significant nontax value.
a fair number of cases of securities or transactions that seem tax-
driven that have doubtful value independent of their tax features
(straddles and step-down preferred stock are extreme cases; adjustable rate preferred stock is a less extreme case).

The competence argument can be overstated. While there is disagreeement within the finance community about the actual social value of much financial innovation, there is a fair amount of consensus about where, in theory, the potential social value in financial innovation lies. Professor Merton has identified three general ways financial innovation can improve economic performance: (1) offering “expanded opportunities for risk-sharing, risk-pooling, hedging, and intertemporal or spatial transfers of resources”, (2) lowering transaction costs, and (3) reducing agency problems.212 Professor Merton’s list omits one potential source of value—the possibility that opportunities for regulatory or tax arbitrage created by innovation improves economic performance by diminishing the welfare losses imposed by regulatory or tax systems. We address an aspect of this issue in the next Section, where we conclude that once revenue losses and transaction costs are taken into account, tax arbitrage through financial innovation probably diminishes social welfare. The potential negative social consequences of innovation include resources expended in producing innovations (comprising both the cost to the innovator of designing and marketing the innovation and the cost to potential users of evaluating the innovation), the confusion of choices by users, market fragmentation that reduces liquidity and increases transaction costs,213 and whatever negative consequences flow from arbitrage impairing meritorious tax or regulatory goals.

Restricting the tax policy objective to minimization of tax-based distortions of financial innovation (or distortions of financial decisions generally) ameliorates the competence problem. This restriction focuses the attention of tax policymakers on a source of market failure that they are competent to judge: When an innovation derives a significant part of its value from its tax benefits, there is a potential discrepancy between the private return from the innovation and the public return because much of the private return represents a transfer of wealth through the tax system. Not all such innovations will be inefficient. From an economic perspective, the wealth transfer itself may have a neutral impact; the social harm lies in the resources expended in procuring the transfer; that is, it lies in the cost of producing and using the new security. Moreover, the idea for a new security being in the nature of a public good, there may be public benefits

212 Merton, note 20, at 17.
213 Strips had these effects. See note 64.
from the production of a new security that are not captured by the producer and the initial users. This possibility exists when a security has positive economic value in addition to its tax value and it passes into general use. In other words, one potential source of market failure (the wealth transfer through the tax system) may offset another (the public goods nature of the idea for a new security).

At this point, it seems to us that there is little strength left to the competence objection, at least as a general matter. We know that tax law creates incentives for inefficient innovation so we suspect that doing nothing is costly. And we can identify some of the more obvious characteristics of inefficient innovation (high transaction costs yielding none of the benefits identified by Professor Merton) so we can craft a policy that targets innovations that are likely to be inefficient. The problem of competence becomes a matter of line drawing that can be dealt with by resolving doubts against retroactivity in cases where we are not confident about our judgments.

We would apply rule changes retroactively to securities that derive significant value from their tax characteristics if the security is produced and used at high transaction costs and it yields none of the benefits associated with financial innovation. This policy is a change from the status quo, but not a radical one so long as it is applied with discretion. Many securities that now are grandfathered would continue to be under this policy. Zero coupon bonds are an easy case for grandfathering because they have significant positive economic value (they made it cheaper and easier to eliminate reinvestment risk and provided valuable price information) and quickly passed into general use. MITTS and other equity-indexed debt instruments are an easy case for similar reasons. Step-down preferred stock is an easy case where retroactivity would be appropriate. It has no real financial value for, tax considerations aside, it is equivalent to debt except for its high issue cost.

Some securities pose close cases even resolving doubts against retroactivity. Exchangeable debt is a somewhat harder case, but we do not think it passes muster. This security is debt issued by a corporation that is coupled with a call option on a large block of stock of a

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214 For an explanation of the tax benefits of step-down preferred stock, see note 12.
215 Tania Padgett, IRS' Scuttling of Security Could Affect Some Banks, Am. Banker, Mar. 5, 1997, at 26, reports rumors that Bear Stearns charged fees in the range of 1.5% to 2%, which is more than double the usual fee for underwriting a debt issue.
216 Finnerty, SIGNS, note 97, at 34, is another harder case. As explained in note 97, while Professor Finnerty finds that the principal value of the security lay in tax arbitrage, he also finds that it had some value in enabling investors to acquire longer term options and smaller denomination stripped bonds than they otherwise could. Id. at 43. Professor Finnerty puts a dollar value on these features. The security was also a precursor of equity-indexed debt, which has passed into general use.
second company that is held by the issuing corporation.\textsuperscript{217} The conventional wisdom is that tax considerations drive exchangeable debt: Corporations issue exchangeable debt to "monetize" (translation: sell) their position in another company while deferring tax on the gain.\textsuperscript{218} The argument that the security has value for other reasons—it is substantially cheaper for a corporation to underwrite a debt issue than to underwrite a secondary offering of stock it owns\textsuperscript{219}—is not persuasive. The cost of issuing exchangeable debt should be compared not to the cost of a secondary offering of the stock but rather to the cost of issuing straight debt plus the cost of selling options on the underlying stock, for that is the more comparable position. If the alternative to exchangeable debt is really a sale, the security entails an additional cost in the distortion of the taxpayer's choice. The upshot is that were the tax rules regarding exchangeable debt changed to tax the transaction as a constructive sale of the underlying security, we would apply that change retroactively.

MIPS and other forms of tax-deductible preferred stock pose an even closer case. The security raises a problem we ducked earlier; some of its value lay in regulatory arbitrage (making debt appear as equity for financial reporting purposes). Opinions differ as to the value of MIPS for financial reporting purposes,\textsuperscript{220} but it is clear that issuers think there is some value for they have incurred substantial expense to convert debt into tax-deductible preferred. We need a better understanding of the economic role accounting plays to determine whether these financial reporting gains are delusional or come at the

\textsuperscript{217} Brad M. Barber, Exchangeable Debt, Fin. Mgmt., Summer 1993, at 48. Mandatorily convertible securities raise similar issues. Morgan Stanley's product PEPS ("Premium Equity Participation Security") gained notoriety in the Spring of 1996 when Times Mirror used the security to lock in a large gain on a recently acquired position in Netscape. Clow, note 3, at 69. The transaction raises the problem addressed by the new constructive sale provision, IRC § 1259, and, in addition, it raises a question whether the security is a contingent payment debt instrument on which interest should be imputed to the holder. For a bracing discussion of these issues, see Sheppard, PEP, note 3.

\textsuperscript{218} As contrasted to a sale of the underlying stock (though this is not truly equivalent unless the option is deeply in the money), the issuer defers tax on appreciation on that stock, and if the underlying stock pays dividends, there is tax arbitrage because the dividends are sheltered from tax by the dividends received deduction while the interest paid on the debt is deductible.

\textsuperscript{219} Barber, note 217, at 48-49, argues that there are other ways to achieve the same tax benefits—he mentions issuing debt to purchase stock or simply holding the stock for later sale—without discussing the significant economic differences in these transactions. His argument that the purported tax benefits of issuing exchangeable debt do not exist in a large percentage of the cases in which such debt was issued (the corporation has no gain on the underlying stock or the underlying stock did not pay dividends) seems more persuasive, until one realizes that the author never tells us in how many cases both of the purported tax benefits were absent.

\textsuperscript{220} See note 56.
expense of those who rely on financial reports. There is genuine financial value in long maturity, fixed income securities, which is the attribute of MIPS that most bothered Treasury. These possible nontax values would be sufficient in our mind to protect issuers and investors from the threat of a retroactive ruling classifying MIPS as equity were it not for the analysis in the next Section, where we conclude that pushing out the boundary between debt and equity by allowing debt instruments to take on more characteristics of equity probably worsened the harmful distortionary effects of the corporate income tax. Taking this loss into account and the significant transaction cost of converting preferred stock into tax-deductible preferred, we think a case can be made for applying retroactively a ruling clarifying that securities with the equity-like characteristics of MIPS are taxed as equity. The real payoff is not in the effect on the market for MIPS but rather in the tacit threat to investment banks and issuers regarding future securities.

The inquiry we advocate in making retroactivity decisions differs in several respects from the inquiry now made though, not surprisingly, these different inquiries converge in easy cases. Current law allows Treasury to issue retroactive regulations to deal with "abusive" transactions, but most of the factors that are thought to be indicative of an abusive transaction are of only weak inferential value. That tax savings were at the forefront of the mind of the issuer or buyer of a security (we discuss the expectations of the innovator momentarily) is relevant but not determinative, for this will be true in the case of many securities that have significant value independent of tax considerations. Zero coupon bonds come to mind. That tax benefits were trumpeted in the marketing of a security ought not be determinative for the same reason. That the security was marketed to special tax clienteles is unhelpful for that phenomenon is pervasive. The strength of the legal authority for the position taken is irrelevant. When the law is uncertain (as it was regarding contingent payment debt instruments prior to 1996), it may be appropriate to grandfather a choice among competing positions because the uncertainty can make it difficult to sell a security in a market structured around different tax clienteles. When the law seems clear on its face but flawed (as seemed the REIT rules that were exploited by the creators of step-down preferred stock), only the risk of a retroactive change in the law can discourage innovators from exploiting those flaws.

221 See note 188.
222 IRC § 7805(b)(3).
223 This is the trigger for the "catch-all" provision of the anti-conversion transaction rule. IRC § 1258(e)(2)(C).
224 This is a factor in the partnership anti-abuse regulations. Reg. § 1.701-2(c)(5).
The key to solving the problem of identifying securities with no nontax value might seem to lie in getting into the minds of the innovators for they should know best the potential value of their creations. A security that the creator thinks has no strong selling points apart from its tax benefits probably has none.\textsuperscript{225} There is, however, no good way to get into the mind of an innovator. The answer of an investment banker to a direct inquiry about the uses for a security is likely to be self-serving. When Treasury officials met with representatives of the investment banks in the spring of 1994 to discuss MIPS, they were told that the security would not be used as a substitute for preferred stock.\textsuperscript{226} This representation proved wrong, and, it seems to us, was predictably so. The paper entrails of a security are a more reliable indicator of the expectations of its creator. Such evidence was very helpful to the Tax Court in untangling a complex corporate tax shelter in ACM Partnership v. Commissioner\textsuperscript{227} because it was clear from records produced by the investment bank that put together the transaction, Merrill Lynch, that while the taxpayer had ancillary financial objectives for engaging in the transaction,\textsuperscript{228} what drove the transaction from the date the plan was first conceived at Merrill Lynch through its marketing and implementation was the goal of creating an artificial tax loss to shelter capital gains. Under current rules, this sort of evidence is discoverable by the government only through litigation, and it can take years to amass and interpret, so it will not be available

\textsuperscript{225} While this conclusion does not logically follow (a security conceived for tax purposes could turn out to have other unanticipated uses), it seems perverse to reward purely tax-driven innovation on the off chance that something of value will be produced.

\textsuperscript{226} Tom Pratt, AMR Wraps Up Exchange Offer, Will Issue $1 Billion of “Quics,” Inv. Dealers’ Dig., Nov. 21, 1994, at 11.

\textsuperscript{227} 73 T.C.M.(CCH) 2189 (1997).

\textsuperscript{228} The case involved one of 11 private deals set up by Merrill Lynch that exploited a flaw in the partnership rules and a flaw in the 1985 rules on contingent interest debt instruments to generate artificial losses. The court primarily focused on a key step in the transaction, an exchange of floating rate notes for cash and an installment note that paid contingent interest, and found that it lacked economic substance because the high transaction cost of making the exchange meant that the taxpayer could profit from it only if interest rates moved in extraordinary ways. Id. at 2217-21. Colgate tried to argue that the transaction had a business purpose by putting the exchange in the larger context. Colgate did have other objectives in the transaction, which were to restructure its outstanding debt to shorten the average term without repurchasing the debt directly. This was accomplished by having the partnership use the cash proceeds from the sale of the floating rate notes to buy Colgate debt. Colgate argued that the contingent interest note enabled the partnership to hedge its position on the Colgate debt. The Court found this justification implausible on the facts, noting that the other partner with a significant interest was hedged against this risk outside the partnership, that Colgate’s professed financial objective (reacquiring its long-term debt because of what it thought was a favorable interest environment) was inconsistent with the hedge, and that the exchange was a costly way to take such a position. Id. at 2221-27.
to a policymaker who is faced with the need to make a quick ruling on
a security.

A loose idea of the expectations of an innovator for a security may
be obtained from the way in which the innovator extracts its reward
for innovation. If the innovator charges a premium for underwriting a
security offering, one can infer that it expected the security would
have a short life, from which one can infer further when the selling
point of a security was its tax benefits that the innovator perceived the
security had no other selling point. This is the strategy Bear Stearns
pursued in selling step-down preferred stock. Not only did Bear
Stearns charge a higher than normal fee, but also it has been reported
that, in some instances, the fees were made payable in installments
that were conditioned on the deal not being unwound because of a
change in tax law, a concession by Bear Stearns that would seem
necessary to attract issuers and acceptable to Bear Stearns only if the
fee was set at a premium. Conversely, if no premium is charged in an
underwriting and the innovator seems to be pursuing a strategy of
building market share through innovation, as seems to have been the
case with MIPS and other forms of tax-deductible preferred stock, one
might infer that the innovator thought the security had selling points
other than its tax benefits so long as there was a reasonable prospect
of those benefits being denied within a year or two.

A problem with this line of inquiry is the weakness of the infer-
ences. An innovator might pursue a strategy of building market share
for a security that has only tax benefits as a selling point because it is
confident that the tax law will not change, or it might find ways other
than charging a premium fee to reap rewards for offerings that are
expected to be short-lived. Conversely, a specially tailored security

229 Sheppard, Step-Down Preferred, note 4, at 1102.
230 That the investment bank is committed to maintaining a secondary market in a secur-
ity is also evidence that the investment bank thought the security had long-term potential,
for it would be concerned with the possibility that a drying up of new issues of a security
would have adverse effects on trading in the secondary market, exposing the investment
bank to increased risk as market maker.

Amex's experience with Americus Trust units runs contrary to this hypothesis and sug-
gests a contrary hypothesis, that a ruling barring new issues might create a monopoly in a
security. The units traded for almost a decade after the Treasury ruled that investment
trusts with multiple classes of interests would be taxed as corporations, while grandfather-
ing the Americus Trust, which was already created. Trading in shares of the trust was 10%
of Amex's volume in their last year. Tom Pratt, Last of Americus Trusts Expires With Odd

231 An investment bank also could protect itself by delaying announcement of the secur-
ity until multiple issuers are enlisted. Shearson Lehman tried this strategy with Unbundled
Stock Units by enlisting four firms to announce their plans simultaneously to exchange
outstanding stock for the units in deals worth $5.6 billion. Wayne, note 39, at 5. Had the
deal gone forward (it did not, reportedly because of an adverse SEC ruling), Shearson
Lehman would have earned $100 million in fees just on the initial transactions. Id. One
that is underwritten at a premium might offer unique nontax benefits as well as unique tax benefits. Further, whether a premium is charged by an underwriter for a security offering may be difficult to ascertain for a number of variables affect underwriting fees, including the size of the offering, the risk to the underwriter, the legal complexity, and the correlation of these variables to pricing is not well understood.

VIII. HOW SHOULD TAX POLICYMAKERS RESPOND TO REDUNDANT SECURITIES THAT EXPLOIT TAX LAW ANOMALIES?

The question of how tax policymakers should respond to securities that derive their value entirely (or almost entirely) from exploiting anomalies in tax law is not as simple as it might seem, if the goal is reducing tax distortions, because, in theory, a security that is redundant from a financial perspective can reduce tax distortions. We will use tax-deductible preferred stock (the most famous security in this class being MIPS) as an example, now proceeding on the assumption that the security has no value independent of its tax characteristics. A plausible case can be made that tax-deductible preferred stock has social value even if it is purely tax-driven. The case is grounded on the premise that the tax law debt-equity distinction distorts corporate capital structure in ways that diminish general social welfare. Of particular relevance to the analysis of tax-deductible preferred stock is the view that the advantageous tax treatment of debt causes corporations to be over-leveraged, increasing the likelihood, and so the expected cost of, financial distress, which is generally thought to have

would think that this one payday would have amply rewarded Shearson Lehman for its efforts in developing unbundled stock, though Shearson Lehman still would bear a substantial downside risk as innovator because of its commitment to maintain a secondary market in the units.


One of the authors (Schmitz) believes that the basic point can be extracted from Zhiwu Chen, Financial Innovation and Arbitrage Pricing in Frictional Economies, 65 J. Econ. Theory 117 (1995). A similar point is made in Jeff Strnad, Commentary: Taxing New Financial Products in a Second-Best World: Bifurcation and Integration, 50 Tax L. Rev. 545, 555-60 (1995).
negative social implications as well as negative private implications.\textsuperscript{234} When one gets down to the nub of the matter, the effect of the Treasury pronouncements that were interpreted as blessing MIPS as debt so long as the maturity was not overlong was to make it possible for a corporation to provide for limited deferral of interest payments in a security without imperiling classification of the security as debt for tax purposes. To the extent these pronouncements induced corporations to loosen the terms of the debt they issue to permit interest deferral, it would lessen the likelihood that a corporation would default on its debt and so the pronouncements would seem to have a positive welfare effect.

The possible social value of tax-deductible preferred stock in this regard is based on a more general point, which is that tax law, and in particular discontinuities in tax law, are themselves a source of "friction" that interferes with the functioning of markets. Financial innovation can have social value because it reduces these tax frictions, just as it can have social value because it reduces such "natural" sources of friction as transaction costs or the indivisibility of securities.\textsuperscript{235} Indeed, in finance, the term "regulatory arbitrage"—which refers to behavior that is similar to tax arbitrage but that is aimed at the regulatory apparatus of the state rather than the tax apparatus—is not a term of opprobrium. Securities innovations that derive value from reducing tax distortions in the economy can be thought of as "self-help" tax reform. A Treasury policy of enabling such self-help tax reform through rulings is palliative in nature for it lessens the severity of the symptoms of tax law distortions without curing the underlying ills.

We argue in this part, however, that palliative measures are unlikely to have positive welfare effects. We come back to tax-deductible preferred stock shortly, but first we take up an easier case—tax straddles—to illustrate how the negative effects of revenue losses from a palliative measure can overwhelm the measure's positive effects in reducing tax law distortions when the costs of engaging in the relevant transaction and the distributive consequences once investors have responded to the measure are taken into account. We realize that our analysis of straddles will seem beside the point to those who believe

\textsuperscript{234} Treasury Integration Study, note 16, at 5-11. The debt-equity distinction may cause other financial distortions as well—it may induce corporations to retain surpluses that otherwise could be distributed as dividends and it probably discourages the structure of some firms in a manner that would expose them to the corporate income tax—but it seems unlikely that the availability of an instrument that fudges the distinction between debt and preferred stock influences behavior in these respects.

that tax straddles were objectionable for legal reasons or ethical reasons other than inefficiency. We do not mean to dismiss such objections. We put them to the side because it is not clear how such concerns play out when it comes to securities such as tax-deductible preferred stock, which are not thought as objectionable on these other grounds.

Under the law prior to 1981, in a very simple tax straddle, the taxpayer took offsetting long and short positions in commodity futures or options. Immediately prior to the end of the taxable year, the taxpayer closed his position in the losing leg and realized an ordinary loss or a short-term capital loss. The next year, after six months had elapsed, the taxpayer would close out the other leg and realize a long-term capital gain, taxed at preferential rates. From a limited perspective, the mass marketing of tax straddles in the late 1960's and 70's can be said to have lessened tax distortions. Tax straddles enabled individuals to reduce the tax rate on interest income, and perhaps even wage income, to the capital gains rate, which would have the positive effect of reducing tax distortions of the choices between consumption or investment and between labor or leisure.

The flaw in the claim that tax straddles were welfare enhancing is that it disregards the revenue loss from tax straddles. The revenue loss will require a fiscal response—raising other taxes, borrowing, or spending reductions—which itself may have distortionary effects or may have distasteful distributive consequences.

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237 When a straddle generated a short-term capital loss, the advantages were several. First, if the taxpayer was an individual, a small amount of loss ($3,000 for individuals filing joint returns) could be deducted against ordinary income. IRC § 1211(b). Second, a short-term capital loss could be deducted in full against a short-term capital gain, which was taxed at ordinary rates. Id. The effect in both cases is to shield income taxed at ordinary rates, by substituting income taxed at the preferential long-term capital gains rate when the straddle was closed out. Third, the straddle deferred income one year.

238 The analysis of the welfare effects of tax law changes is quite difficult to do even if the analyst knows what the fiscal response will be, because the welfare and revenue effects of tax law changes are difficult to predict. For example, in Treasury's 1992 study of corporate integration, its estimate of the percentage increase in national consumption from the adoption of its favored proposal ranged from a low of .17% under one set of assumptions, Treasury Integration Study, note 16, at 131 (assuming that tax law caused no financial distortions and that production was not interchangeable between the corporate and noncorporate sectors), to a high of .73% under another, id. at 134 (assuming that tax law caused financial distortions and that production was interchangeable between the two sectors), when it assumed that the revenue loss would be made up by an across-the-board rate increase. Altering the fiscal response significantly changed the findings. For example, Treasury found that assuming that lost revenues would be replaced with a lump sum tax such as a head tax, which is nondistortionary because it cannot be avoided, biased the outcome in favor of proposals that lost the most revenue. Id. at 119. Obviously, this sort
It is fairly clear that whatever positive welfare effects allowing taxpayers to obtain a tax rate reduction by engaging in straddles had, because it diminished distortions in investment or labor decisions, was overwhelmed in the short term and mid term by the negative welfare effects of the revenue loss. The net welfare loss is a consequence of the high transaction cost of converting ordinary income into capital gain through straddles (the evidence we could collect indicates that brokers fees ranged from around 10% to 40% of taxes saved).\textsuperscript{239}

The effects of a straddle can be modeled as a reduction from the individual tax rate to the capital gains rate, purchased at the additional expense of a transfer payment from the taxpayer to other individuals (the brokers). The rate reduction produces a revenue loss on the tax collected on the previous level of labor or investment (the rectangle with the right border $AF$ in Figure 2); the rate reduction stimulates an increase in labor or investment that produces a welfare gain in the form of a reduction in the excess burden of the tax along with some additional tax revenue, but the magnitude of these gains is decreased significantly by the transfer payment that appears on top of the rate reduction.\textsuperscript{240} The net effect is a larger revenue loss for a smaller welfare gain.

The transfer payment creates an additional distortion for it will attract labor and capital to the brokerage industry and capital to the commodities market.\textsuperscript{241} In the long run, the costless nature of stra-

\textsuperscript{239} A sense of the cost can be had from the promotional materials for a London Metal Exchange straddle. In the promotional materials from one London broker, a taxpayer in a 50% bracket who obtained $50,400 in tax savings incurred $21,600 in broker's fees and commissions. Glass v. Commissioner, 87 T.C. at 1087, 1110-11 (1986). The Glass case was universally affirmed on direct appeal. See, e.g., Herrington v. Commissioner, 854 F.2d 755 (5th Cir. 1988); Yosha v. Commissioner, 861 F.2d 494 (6th Cir. 1983). But see Horn v. Commissioner, 968 F.2d 1229, 1234 (D.C. Cir. 1992) (applying contrary rule to commodities dealers). Horn is discussed at note 260.

\textsuperscript{240} $W$ is the wage rate. $LI$ is the labor rate in a tax-free world. Tax at the ordinary rate $t$ reduces the wage rate to $w - t$ and the labor rate to $F$. Tax collected is the rectangle with the right border $AF$. The deadweight loss of the tax is the triangle $AFLI$. A reduction in the tax rate to $cg$, the capital gains rate, increases the labor rate to $D$ and shrinks the deadweight loss to $GDLI$. Tax collected may increase or decrease depending on whether the rectangle with the right border $CD$ is larger than the rectangle with the right border $AF$. In a straddle, a tax rate of $cg$ is purchased at the cost $f$, the broker's fee, moving the labor rate to $E$. Tax collected is the rectangle with the right border $BH$. The slice of revenue carried away by the broker's fee increases the deadweight loss. There is likely to be a net revenue loss. The lost revenue is the rectangle with the right border $AF$. The new revenue at the capital gains rate is the rectangle with the right border $BH$.

\textsuperscript{241} The latter effect was trumpeted in 1981 as a reason not to change tax law on straddles. Edward M. Lee, Washington Chemistry, Commodities, Aug. 1982, at 12 (arguing that the proposed straddle legislation "would kill the patient"). The argument was that the favorable tax rules that then applied to futures trading stimulated activity in the commodi-
Labor rate

W-age

W-(cg+f)

W+t

Wage rate

FIGURE 2

dles—they are purely paper transactions that need not even influence prices in futures markets—suggests that the fee charged by brokers ought to have declined over time to near zero, which would have brought the effect into line with a straightforward rate reduction. But this development would have heightened a second troubling effect of straddles, for the income tax would be made less progressive since the top marginal rate would tend down towards the capital gains rate. Indeed, the income tax might become regressive in the middle and up-

ties markets, which strengthened those markets and facilitated the use of futures and options for the laudable purpose of hedging risk.

Experience proved the concern that the proposed changes in tax law would destroy the commodities markets to be unfounded for those markets grew robustly after 1981. The argument was silly even if one assumes that all straddle trading was done on exchanges because a tax rule that permits close to pure tax arbitrage is in effect an open-ended subsidy for trading in the relevant contracts.

Much straddle trading occurred off organized exchanges in any event. Smith v. Commissioner, 78 T.C. 350, 358 (1982) (stating that trades were done entirely within Merrill Lynch's tax straddle department); Fox v. Commissioner, 82 T.C. 1001, 1007-14 (1984) (describing special over-the-counter market in T-bills conducted by arbitrage management and explaining how contracts were designed to generate predictable short-term capital losses). In Glass, the trades that did occur were done in house, 87 T.C. at 1157, and there is reason to be skeptical about whether some reported trades occurred at all, for the terms of some trades were unrealistic.
per brackets for the cost of engaging in straddles would likely lessen with income or wealth.

How does the MIPS ruling, which was widely perceived as countenancing a form of tax-deductible preferred stock, stand up when its total effects are considered? Not very well, but for a reason that is in addition to the reasons that tax straddles were objectionable. We assume away transaction costs (though these are positive at least insofar as firms did transactions they otherwise would not do to convert existing preferred). Tax-deductible preferred stock is not as objectionable as tax straddles on distributive grounds, although the security reduces corporate tax revenues, because it is not clear who bears the burden of the corporate income tax. A reason tax-deductible preferred stock is objectionable independent of transaction costs is that it may actually increase the distortionary effect of the distinction between debt and equity.

Generally, in choosing whether to issue debt or equity to raise capital, corporate managers in some way make a tradeoff between the expected value of the interest tax shield and the expected cost of financial distress if the corporation cannot meet its commitments. The effect of a Treasury ruling that clarifies that a reduction in the rights of holders will not alter the classification of an instrument as debt is that corporate managers can have it both ways—they can reduce the rights of holders and so diminish the expected cost of financial distress without forgoing the interest tax shield (though investors may demand a premium for the rights they forgo). Such a ruling

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242 See text accompanying note 94.

243 A rough sense of the magnitude of the revenue loss can be had from the estimate by Engel, Erickson & Maydew, note 56, at 17-18, of the tax-savings to the issuer of substituting tax-deductible preferred for ordinary preferred. They estimate this to be between 21 to 31% of the issue size, depending upon the discount rate applied. Over $36 billion of tax-deductible preferred was issued through 1996. Id. at tbl. 1.

244 How precisely this tradeoff is made depends on how managers behave. Under what is called the "static tradeoff theory," managers seek to maximize the market value of the firm by issuing debt in place of equity until the expected cost of financial distress exceeds the expected value of the tax shields. Under the "pecking order theory," managers prefer debt over equity because an issue of equity signals to the market that the managers believe the firm is overvalued. More generally, managers favor internal over external financing and less risky over more risky forms of external financing because of information asymmetries. They move to less-favored forms of financing as the cost of the more-favored forms increases. So, for example, managers might prefer to issue debt rather than preferred stock until an additional issue of debt threatens their bond rating. A downgraded bond rating reflects an increase in the expected cost of financial distress. Tax considerations come into play in the pecking order theory because the tax shield lowers the expected cost of funds. The organizational theory posits that managers make decisions to maximize the wealth over which they have control. For a discussion of these competing theories, see Stewart C. Myers, Still Searching for the Optimal Capital Structure, J. Applied Corp. Fin., Spring 1993, at 4.
could have a positive welfare effect if its predominant effect is to stimulate firms to weaken the rights of holders of instruments that otherwise would be issued as debt because of the reduction in the expected cost of financial distress; the ruling is likely to have negative welfare effects if a significant effect is to stimulate firms to strengthen the rights of holders of instruments that otherwise would be issued as equity in order to achieve debt classification.

Figure 3 illustrates this point. It assumes that the marginal value to a firm of the interest tax shield is constant as the firm's debt-equity ratio increases (this is to simplify matters) while the expected cost of financial distress rises. The firm's optimal debt-equity ratio is at point \( L_1 \). Area \( ABL_1 \) is the expected private loss the firm incurs in response to the interest deduction. There is also a social loss comprising such things as expected transaction costs in the event of financial distress, whatever loss in value might occur from the breakup of the firm, and expected losses to third parties (such as employees) from financial distress. This expected social loss bears some uncertain relation to the expected private cost of financial distress.

**Figure 3**

![Diagram](image)

Figure 3 compares two hypothetical rule changes that enable issuers to weaken the rights of holders of a security without sacrificing classification of the security as debt. Change \( X \) induces the firm to weaken the rights of holders on securities that would have been structured as debt in any event. It reduces the expected cost of financial distress by the banana shaped area between points \( C \) and \( B \). Change \( Y \) also in-
duces the firm to weaken the rights of holders on some debt issues (thus the reduction in the expected cost of financial distress shown in area $EBF$) but it has the additional effect of inducing the firm to strengthen the rights of holders of some securities that otherwise would have been issued as equity in order to obtain debt classification. The debt-equity ratio moves to point $L2$ and there is both a significant revenue loss (area $BDL_2L_1$) and a net increase in the expected cost of financial distress (area $FDL_2L_1$ minus area $EBF$).

This analysis suggests that the welfare effects of a ruling that blesses as debt a new security that weakens the rights of holders depends on whether the new security is used significantly as a substitute for equity that would confer even fewer rights on holders. Thus, it is worrisome that MIPs and other forms of tax-deductible preferred stock often are used in precisely this way.²⁴⁵ The most striking evidence is in the aggregate data on new and outstanding issues of preferred stock. Since 1993, the volume of new issues of traditional preferred stock has declined at a remarkable rate while the volume of new issues of tax-deductible preferred has increased.²⁴⁶ Indeed, the volume of outstanding preferred has shrunk because of redemptions. In the first half of 1996, for example, preferred was redeemed at more than double the rate of new issues.²⁴⁷

The potentially harmful distortionary effects of the MIPS ruling result from the fact that the ruling requires that an issuer sacrifice rights that it would possess on straight preferred in order to get a favorable

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²⁴⁵ Engel, Erickson & Maydey, note 56, at tbl. 1, report that in 46 of 158 issues through 1996 one of the stated uses of the proceeds was to retire preferred, while in 63 issues, the use was to retire debt, and in 107 the use was general corporate or other (the total is greater than 158 because of multiple uses). Presumably, some of the issues to raise new capital for general corporate or other purposes substituted for issues of new preferred.

²⁴⁶ Barron's reports the volume through August 1995:

<table>
<thead>
<tr>
<th>Year</th>
<th>Regular Preferred (Billions)</th>
<th>Tax-deductible preferred (Billions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993</td>
<td>$9.60</td>
<td>$ .55</td>
</tr>
<tr>
<td>1994</td>
<td>$2.30</td>
<td>$3.50</td>
</tr>
<tr>
<td>1995</td>
<td>$.67</td>
<td>$3.64</td>
</tr>
</tbody>
</table>

Even these dramatic numbers may overstate the future viability of traditional preferred stock given the availability of tax-deductible preferred. There are reports that by 1995 only commercial banks were doing new issues of preferred because the bank regulators had refused to give equity credit for MIPS. Andrew Bary, Clinton Tax Proposal Riles Wall Street, But the Attack on Some Instruments Makes Sense, Barron's, Dec. 11, 1995, at MW13. This hurdle was overcome in the Fall of 1996 when the Fed stated that MIPS, Toppers, and other forms of trust preferred could be treated as Tier I capital. See note 56. In the first three months after the Fed's ruling, banks issued $15 billion of tax-deductible preferred. Bender, note 58, at 9.

²⁴⁷ Bary, Utilities, note 92.
In theory, these effects could be eliminated if Treasury took an even more liberal approach by blessing as debt for tax purposes a security that was equivalent to common stock. Such a ruling would result in a significant revenue loss, but its long-run effect would be equivalent to abolishing the corporate income tax as corporations moved to replace common stock with the new security, an effect many studies predict would produce more than offsetting welfare gains. Such a radical move seems beyond the power of Treasury, and it might be ill-advised in any event because this path to tax reform makes it difficult for the government to capture the windfall gains from the abolition of the corporation income tax.

IX. A CAUTIONARY TALE: TAX STRADDLES

The story of tax straddles in the 1970’s is the most striking counter-example to our thesis that tax considerations are not a significant force driving publicly marketed financial innovations. While precise data is hard to come by, it is clear that there was an enormous amount of straddle activity in the mid-1970’s and early 1980’s. Treasury estimated in 1981 that the anti-straddle rules would increase revenues by

248 The sacrifices include some dividend flexibility and shorter maturity. Typically, the maximum period the payment of interest can be deferred on tax-deductible preferred is five years; dividends can be deferred on traditional preferred for any period. Typically, the maturity of tax-deductible preferred is 15 to 50 years (more recent issues tend to have shorter maturities); the maturity of traditional preferred is indefinite. Notice 94-47, 1994-1 C.B. 357, did not draw bright lines in this regard, though the warning not to rely on Monon Railroad v. Commissioner, 55 T.C. 345 (1970), which held an instrument with a 50-year term to be debt, if an instrument had other equity-like elements, was interpreted as an warning against overlong maturities.

249 It would not do the trick to recognize as debt a security that was equivalent to preferred stock for this would change the distortion to the choice between common and preferred.

250 See, e.g., Treasury Integration Study, note 16.

251 To the extent the burden of the corporate income tax is capitalized in share prices, elimination of that burden will provide a windfall to shareholders. From a social welfare perspective, there is no reason to object to the government capturing the gains from the rise in the price of existing stock for the social benefits in the change lie in its effects on future behavior. The value of capturing such gains is that the revenues may displace other more distortionary taxes.

A possible response to this problem is to treat new issues of the security as debt while ruling that existing common and preferred stock cannot be converted into the security. This approach is akin in spirit to William Andrews’ proposals in a report to the American Law Institute in 1989. The problem Professor Andrews confronted was that corporations were taking measures to reduce the corporate income tax burden through means such as leveraged buyouts. His proposed solution was to deny an interest deduction for debt that was issued in the place of outstanding equity. ALI, Federal Income Tax Project, Subchapter C 80-88 (Supplemental Study) (1989). This approach has obvious monitoring problems, and it creates other distortions for it favors firms that undertake projects through the infusion of new capital rather than the redeployment of existing capital.
$1.3 billion in 1982\textsuperscript{252}; there was a significant change in year end trading patterns and volume in futures markets after the tax law change\textsuperscript{253} (and this understates the extent of straddle trading because much straddle trading occurred off organized exchanges); and, in 1984, there were over 15,000 straddle cases on the Tax Court’s docket.\textsuperscript{254} creating a burden that impelled the Service to offer an across-the-board settlement. The leading U.S. investment banks were deeply involved. Merrill Lynch had a tax straddle department at least as early as the late 1960’s, which marketed straddles as a means to shelter short-term capital gains from tax.\textsuperscript{255} Other investment banks were involved as well. It was reported that in 1980, Paine Webber derived 15 to 20% of the revenues on its commodities desk from straddle trading.\textsuperscript{256}

It did take years for tax straddles to catch on, which might seem consistent with our thesis that investment banks are slow to publicly market risky tax-saving strategies. It is clear that the strategy was well-known by the late 1960’s,\textsuperscript{257} and it has been reported that the strategy was known and used in the investment community decades earlier.\textsuperscript{258} But the most plausible explanation for the delayed explosion in tax straddle trading is not lethargy or risk aversion in the financial industry. Rather the explosion of tax straddles in the mid-1970’s can be directly traced to an ill-conceived Treasury ruling in 1974 that significantly expanded the clientele for straddles. Prior to that ruling, straddles were sold to taxpayers who could use short-term capital losses. The ruling laid the basis for taxpayers to claim ordinary losses from straddles in options.\textsuperscript{259} This opportunity was grabbed quickly.

\begin{itemize}
\item \textsuperscript{253} Darrell Jobman, Tax Changes Affect Volume, Commodities, Mar. 1982, at 72.
\item \textsuperscript{254} Richard A. Westin, Tax Straddles, Politics, and the Tax Court Load, 31 Tax Notes 629 (May 12, 1986).
\item \textsuperscript{255} Smith v. Commissioner, 78 T.C. 350, 352 (1982). Merrill Lynch’s role in popularizing straddles was publicized during the 1981 confirmation hearings of Donald Regan, who had been Merrill Lynch’s chairman, as Secretary of Treasury. The discussion of the matter at the hearings is reprinted in 12 Tax Notes 209 (1981).
\item \textsuperscript{256} Tim Carrington & Roger Lowenstein, Futures Shock: Commodities Industry Is Irritated by Bills to End Tax Break on Straddles, Wall St. J., Mar. 25, 1981, § 1, at 1.
\item \textsuperscript{257} See Laurence Goldfein & Lester Hochberg, Use of Commodity Straddles Can Effect Impressive Tax Savings, 29 J. Tax’n 342 (1968).
\item \textsuperscript{258} See Staff of the Joint Comm. on Tax’n, 97th Cong., General Explanation of the Economic Recovery Tax Act of 1981, at 282-83 (Comm. Print 1982).
\item \textsuperscript{259} See Glass v. Commissioner, 87 T.C. 1087, 1153 (citing Ltr. Rul. 7404080200A (the “Zinn Ruling”). The Tax Court observed in Glass, that “Zinn” and its progeny reaffirmed two principles. First, a person who bought an option held the underlying commodity as a capital asset. Accordingly, any loss or gain on a bought option would be treated as capital. Second, one who sold or granted an option did not own the underlying commodity. Any gain or loss on a sold option would therefore be treated as ordinary.” Glass v. Commissioner, 87 T.C. 1087, 1153 (quoting petitioners’ argument). The law was changed in 1976.
\end{itemize}
The leading straddle case in the Tax Court,\textsuperscript{260} which involved trading in London options, at one time involved over 1,400 taxpayers and $61 million in tax deficiencies, mostly from trades done in 1975 and the first half of 1976,\textsuperscript{261} before the law was changed in mid-summer to eliminate the ordinary deduction on trading in commodity futures.\textsuperscript{262} The change in law in 1976 did not halt straddle tax trading (while most of the litigated cases involve pre-1976 transactions, there is evidence of substantial straddle activity in the early 1980's). But the extraordinary ability in the years 1974 to 1976 to convert unlimited amounts of wage or interest income into long-term capital gains, while also deferring tax, had created an industry and heightened the visibility of tax straddles. Once established, the industry spun on by finding a way around the 1976 ruling (such as by constructing straddles out of T-bill futures)\textsuperscript{263} or by converting short-term capital gain into long-term.

The story of tax straddles is a healthy reminder that investment bankers are not angels. They will market purely tax-driven strategies, sometimes even in the face of enormous legal risk.\textsuperscript{264} It would be a cop-out to say that tax straddles are outside the scope of this Article because they are transactions and not securities. The story of tax straddles shows that even the most socially laudable securities innovations—in 1986, Merton Miller ranked the development of commodity markets first in importance in recent financial innovations\textsuperscript{265}—can have baleful tax consequences because it creates opportunities for tax arbitrage.

\textsuperscript{260} Glass, 87 T.C. 1087. The holding in Glass that the straddles were a sham was almost universally affirmed on appeal. See, e.g., Herrington v. Commissioner, 854 F.2d 755 (5th Cir. 1988). The one exception is a decision allowing commodities dealer who made such trades to take the loss on authority of § 108 of the Deficit Reduction Act of 1984, Pub. L. No. 98-369, 98 Stat. 494, which provided that losses incurred by dealers were deemed incurred in a trade or business. Horn v. Commissioner, 968 F.2d 1229, 1234 (D.C. Cir. 1992).

\textsuperscript{261} Glass, 87 T.C. at 1153.

\textsuperscript{262} IRC § 1234, amended by Pub. L. No. 94-455, § 2136(a), 90 Stat. 1520, 1529.

\textsuperscript{263} The transaction exploited a rule that gains and losses on trading in T-bills (not T-bill futures) was ordinary. The taxpayer took delivery on the losing leg and then sold the T-bill. For an explanation of the transaction, see Stuart Strauss, An Analysis of the Tax Straddle Provisions of the Economic Recovery Tax Act of 1981, 60 Taxes 163, 166-67 (1982).

\textsuperscript{264} Treasury raised a red flag on straddles in Rev. Rul. 77-185, 1977-1 C.B. 49, in which it argued that a taxpayer who immediately closed out the loss leg on a straddle could not deduct the loss because it was a wash sale and that a loss could not be deducted because a straddle was not entered into for profit. Id. at 50. Promoters responded by building a little risk into the straddles they sold. Strauss, note 263, at 163, 168-69.

\textsuperscript{265} Miller, Twenty Years, note 5, at 463. In the same essay, Professor Miller attributes the success of GNMA futures to undefined tax benefits. Id. at 466.
Putting brakes on financial innovation is not the answer to this problem. Tax straddles got out of hand in part because the Treasury made an ill-advised ruling in 1974. As importantly, Treasury did not have the tools to combat tax straddles. It sought legislation, which takes time, and the changes in tax law were made prospectively. While the Service eventually won most of the tax straddle cases, it was on the unpredictable ground that the transactions were shams. Tax straddles might have been nipped in the bud if the Treasury had more and better-trained people, or if Treasury had the power to remake tax law governing financial instruments through rulings or regulations rather than by seeking legislation, or if taxpayers had expected that changes in the law that were done to nip tax-motivated transactions would be applied retrospectively.

X. Some Conclusions

We want to conclude by summarizing some of the immediate policy implications of our analysis. Our argument that tax law uncertainty can suppress financial innovation can justify the existing practice of Congress and Treasury of applying most rule changes prospectively. We argue, however, that the government has been too lenient in this regard and that it ought to use the threat of retroactive rulemaking to regulate what is probably inefficient tax-driven financial innovation. We propose a policy of applying rule changes retroactively to new securities that derive significant value from their tax characteristics if the cost of creating and using the security is high and the security serves none of the positive functions associated with financial innovation. Such a policy is not as radical as it may seem. The government has a higher success rate in challenging tax-motivated transactions such as tax straddles than the strength of the government's legal arguments in those cases would lead one to predict. The policy we advocate makes it clearer to innovators and taxpayers that however strong their technical legal arguments might be, there is some risk in devising new ways to exploit anomalies in tax law. Our analysis supports Treasury's decision to make the ruling on step-down preferred stock retroactive.

Our analysis is also relevant to the question of the appropriate tax policy for dealing with innovations in the area of asset-based financing or securitization. Since 1986, when Treasury determined that a trust

with multiple classes of interests would be taxed as a corporation, with tax law has presented an unfavorable environment for innovations in this area because securitization vehicles had to be structured, at some legal risk, as trusts with only one class of equity, and, failing that, so that they could pass as partnerships. Nevertheless, some innovations flourished in this unfavorable legal environment because of strong market demand, and after the fact, Congress stepped in to create special tax regimes—the REMIC rules in 1986 and the FASIT rules in 1996—that were closely tailored to existing securitization structures. A policy of maintaining an unfavorable legal environment for innovations in securitization is defensible only if one believes either that tax law uncertainty is not a significant deterrent to securities innovation when a new security has real value in the marketplace, or that in a world with less tax law uncertainty, the pockets of Treasury quickly would be picked. Our analysis indicates that the first point is not true. The second concern can be addressed in a more targeted manner through retroactive rulings. One possibility would be for Congress to enact legislation establishing broad principles to guide Treasury in ruling on particular securitization structures.

The emergence of long-term equity options in the form of LEAPS raises tax issues similar to those raised by the introduction of zero coupon bonds in the 1980’s and the improvements in the commodities markets in the 1970’s that facilitated tax straddles. Like zeros and commodities futures, LEAPS have genuine value because they offer a low-cost and foolproof means of hedging risk; just as market conditions in the early 1980’s stimulated demand for zeros and market conditions in the 1970’s stimulated demand for commodity futures, market conditions in the late 1990’s should stimulate demand for LEAPS. But also just as the flood of zeros in 1981 and 1982 required new rules on discounted bonds and the explosion in the use of tax straddles required the anti-straddle rules, the introduction of cheap, long-term publicly traded equity options will require new rules to prevent tax arbitrage. Our analysis supports what will undoubtedly be the policy of Treasury or Congress when they move in response: any changes made in the taxation of options should be made prospective only.

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Finally, our analysis suggests that Treasury was right in 1984 in withdrawing regulations that would have clarified the distinction between debt and equity for the uncertainty of that distinction is a major impediment to the creation of securities that push the envelope of the definition of equity. Our analysis also suggests that Treasury may have been wrong in 1994 in issuing a ruling that reduced uncertainty about the tax characterization of MIPS and other forms of what has come to be called tax-deductible preferred stock. If we are right, that ruling not only resulted in a significant revenue loss (which is undeniable), but also it perversely exacerbated the distortions caused by the distinction between debt and equity in tax law.