

The Contemporary Tax Journal

Volume 9
Issue 1 *The Contemporary Tax Journal* Volume
9, No. 1 – Winter 2020

Article 6

3-23-2020

Finance Theory Meets Tax Law: How a Risk-Based Rule Can Rationalize the Debt Versus Equity Distinction

Ted Gkoo

Follow this and additional works at: <https://scholarworks.sjsu.edu/sjsumstjournal>



Part of the [Taxation Commons](#)

Recommended Citation

Gkoo, Ted (2020) "Finance Theory Meets Tax Law: How a Risk-Based Rule Can Rationalize the Debt Versus Equity Distinction," *The Contemporary Tax Journal*: Vol. 9 : Iss. 1 , Article 6.
<https://doi.org/10.31979/2381-3679.2020.090106> <https://scholarworks.sjsu.edu/sjsumstjournal/vol9/iss1/6>

This Article is brought to you for free and open access by the Lucas Graduate School of Business at SJSU ScholarWorks. It has been accepted for inclusion in *The Contemporary Tax Journal* by an authorized editor of SJSU ScholarWorks. For more information, please contact scholarworks@sjsu.edu.

Finance Theory Meets Tax Law: How a Risk-Based Rule Can Rationalize the Debt Versus Equity Distinction

*Ted Gkoo**

I. Introduction

Shortly after the enactment of the Tax Cuts and Jobs Act (TCJA) of 2017, leading tax scholars and practitioners commented that the tax legislation left open a loophole through which taxpayers can game around the new Section 163(j) interest limitation.¹ One of the most important revenue-raising provisions of the tax legislation, the new cap on business interest deductions limits deductions to 30 percent of a measure of profits. However, commentators found that corporations could establish a partnership subsidiary that would issue preferred equity to pay off the capped portion of prior debt financing. This workaround would render the limitation virtually ineffective because corporations could continue to deduct their full interest expense by allocating to preferred equity an amount of partnership income similar to the amount of the capped interest expense.²

Without the loophole, the new interest limitation had the potential to lessen the tax distinction between debt and equity, which presents one of the most controversial and intractable issues in the corporate tax law. In general, interest payments on debt are deductible by corporations while dividend payouts on equity are not deductible. Without clear guidance on how to distinguish between debt and equity, the courts and the IRS have to decide whether a financial instrument with features of both more closely resembles one or the other. This subject “has no doubt been written to death” by academics and practitioners over the years, but the case law and administrative guidance on the debt-equity distinction remains extremely complex and uncertain.³ In the wake of a failed attempt at mitigating the issue, I propose a novel rule based on modern finance theory that can replace the current multi-factor approach in classifying publicly traded hybrid securities.

The tax treatment of an instrument as debt or equity greatly affects the financial position of taxpayers who may depend on the interest deduction to reduce their income tax liability. Dell Technologies, for instance, pays roughly \$2 billion a year in interest on its debt.⁴ With the corporate tax rate at 21 percent, the \$2 billion in corporate income deduction represents a \$420 million reduction in tax liability. Despite the new Section 163(j) limitation, the corporation could use the preferred equity scheme described above to continue to deduct

* J.D. Candidate, 2020, Yale Law School; B.A., 2015, Pomona College. I am grateful to Professors Anne Alstott and Ian Ayres for their valuable comments and suggestions.

¹ David Kamin et al., *The Games They Will Play: Tax Games, Roadblocks, and Glitches Under the 2017 Tax Legislation*, 103 MINN. L. REV. 1439, 1515 (2019).

² *Id.* at 1517.

³ William T. Plumb, *The Federal Income Tax Significance of Corporate Debt: A Critical Analysis and a Proposal*, 26 TAX L. REV. 369, 371 (1971).

⁴ Michael Rapoport & Rachael King, *For Heavily Indebted Firms Like Dell, Tax Bill Delivers a Downside*, WALL STREET JOURNAL (Dec. 21, 2017); <https://www.wsj.com/articles/downside-of-tax-bill-hits-dell-other-heavily-indebted-companies-1513852200>.

its full interest expenses. Moreover, the new deduction for pass-through income under Section 199A applies to payments on equity interest in a partnership but does not apply to interest income on a debt investment.⁵ Therefore, the tax treatment of financial transactions as debt or equity will continue to matter greatly for many taxpayers. Section II discusses this continuing importance of the debt-equity distinction in the tax law and introduces some of the latest debt-equity cases.

In Section III, I elaborate on the drawbacks of the multi-factor approach currently used by the IRS and the courts. The fundamental difficulty in using the multi-factor standard to distinguish between debt and equity is that the distinction is not based on economic realities. Traditionally, debt financing involves borrowing a fixed sum of money from the lender with an obligation to repay it with interest, and equity financing involves the sale of an ownership interest in the business which comes with the risk associated with the business. However, archetypal factors such as presence of voting rights or fixed payments provide little guidance as taxpayers can engineer instruments that combine features of both traditional debt and equity. Convertible debt, for example, provides fixed interest payments until the debtholder exercises the option to convert into common stock. The value of the convertible debt not only depends on the present value of the fixed payments but also the value of the underlying stock. In classifying these hybrid transactions, the multi-factor approach often yields inconsistent and unpredictable results, which lead to significant administrative costs and behavioral distortions.

In Section IV, I step back and consider the line-drawing problem that underlies the debt-equity distinction: the tax law forces a binary classification of debt and equity among financial instruments that exist on a continuous spectrum of economic profiles. More often than not, courts and the IRS have drawn the distinguishing line inconsistently and without clear explanation. After examining alternative methods of solving this line-drawing problem, I conclude that crafting a general rule based on economic efficiency is most suitable to the debt-equity conundrum.

In Section V, I draw on finance theory to use beta — a measure of systematic risk — to craft a general rule according to the efficient line-drawing model. Modern finance theory posits that diversified investors make investment decisions based on systematic risk, the type of risk inherent to the entire market, not just a particular stock or company. The beta rule would minimize inefficient behavioral distortions because it classifies a hybrid instrument based on whether it is a closer economic substitute for debt or equity. Also, replacing the multi-factor standard with a general and objective rule reduces administrative costs related to tax planning and litigation. In Section VI, I evaluate previous risk-based proposals, explain the advantages and limitations of the proposed beta rule, and demonstrate its real world application on two types of hybrid securities. Finally, Section VII concludes.

II. The Continuing Importance of the Debt-Equity Distinction

The best solution to the debt-equity problem would be to neutralize the tax treatment of debt and equity. Without the distinct tax treatment, courts would no longer need to classify

⁵ I.R.C. § 199A(c)(3) (2018).

instruments as one or the other. Moreover, scholars have observed that the tax law's bias towards debt encouraged excessive leveraging and other financial market problems that contributed to the 2008 financial crisis.⁶ In fact, leading tax scholars over the years have proposed reforms aimed at achieving debt-equity neutrality. One idea is to allow shareholders to exclude dividends from income because they have already been taxed at the corporate level. This would mean that the equity investments pay a one-level tax at the corporate rate, while debt investments pay a one-level tax at the ordinary individual rate. Reuven Avi-Yonah proposes to allow the deduction of dividends at the corporate level, such that the corporate tax will only apply to retained earnings.⁷ Professor Avi-Yonah argues that dividend deduction does a superior job than other proposals in addressing the current bias in favor of earnings retention because it would create a powerful incentive for management to distribute earnings.⁸

A more comprehensive reform is the CBIT (Comprehensive Business Income Tax), in which shareholders and bondholders both exclude dividends and interest received from corporations, but neither type of payment is deductible by the corporation.⁹ The CBIT would neutralize the tax treatment of debt and equity by imposing one level of tax on both at the enterprise level. Building on the CBIT, Edward Kleinbard proposes a business enterprise income tax (BEIT), which provides an annual cost of capital allowance for every business enterprise.¹⁰ The issuer would be able to deduct a fixed risk-adjusted percentage of the financial capital invested in its business, regardless of the legal form of the investments. The investor includes in taxable income every year an amount equal to the investor's aggregate tax basis in the investment multiplied by the fixed percentage. Thus, under the BEIT, firms pay tax on profits above a reasonably expected risk-adjusted investment return, while individual investors include in income every year the same "normal" return on investment.¹¹ Both the CBIT and the BEIT would neutralize the tax treatment of debt and equity.

Nonetheless, the above proposals to neutralize the tax treatment of debt and equity have yet to pass muster in Congress. The GOP-led tax reform in 2017 presented an opportunity to enact any of the above proposals and lessen the debt-equity distinction problem. Instead, the Tax Cuts and Jobs Act adopted a much narrower change by adopting an interest deduction limitation in Section 163(j). The Joint Committee estimates that the limitation will add over \$253 billion in federal revenue over the next ten years but the Committee does not take into account the impact of taxpayer gaming such as the preferred equity scheme described in the Introduction.¹² Under Section 163(j), the deduction for business interest of a taxpayer with average annual gross receipts of \$25 million or more over the past three years is limited to an amount equal to the sum of: (1) the taxpayer's "business interest income;" plus (2) 30 percent

⁶ International Monetary Fund, *Debt Bias and Other Distortions: Crisis-Related Issues in Tax Policy* (June 12, 2009), <https://www.imf.org/external/np/pp/eng/2009/061209.pdf>.

⁷ Reuven S. Avi-Yonah & Amir C. Chenchinski, *The Case for Dividend Deduction*, 65 *TAX LAW.* 3, 6 (2011).

⁸ *Id.* at 13.

⁹ U.S. Department of the Treasury, Report of the Department of the Treasury on Integration of the Individual and Corporate Tax Systems: Taxing Business Income Once (Jan. 1992).

¹⁰ Edward D. Kleinbard, *Business Taxes Reinvented: A Term Sheet*, 156 *TAX NOTES* 999 (2017).

¹¹ *Id.*

¹² Joint Committee on Taxation, Estimated Budget Effects of the Conference Agreement for H.R. 1, the "Tax Cuts and Jobs Act" (Dec. 2017).

of the taxpayer's "adjusted taxable income," plus (3) where applicable, the taxpayer's "floor plan financing interest."¹³ For most taxpayers, the most relevant item among the three amounts that sums to the interest deduction limitation would be the adjusted taxable income.¹⁴ For tax years 2018 through 2021, this term closely resembles earnings before interest, tax, depreciation and amortization (EBITDA), while it will resemble earnings before interest and tax (EBIT) starting in 2022.¹⁵

Even without the possibility of taxpayer gaming, the interest deduction limitation is at best a partial solution to the debt-equity line-drawing problem. Section 163 still provides a substantial tax shield for corporations with relatively high earnings and low leverage because their interest deductions are not affected by the new limitation. It is crucial for these corporations to receive debt treatment on their supposed debt instruments in order to deduct interest expenses. Moreover, the new 20 percent deduction for pass-through income under Section 199A applies to payments on equity interest in a partnership but does not apply to interest income on a debt investment.¹⁶ Thus, the TCJA has arguably increased the pressure on the courts and the IRS to distinguish between debt and equity. Unless Congress enacts one of the reform proposals to eliminate the distinction, the debt-equity line-drawing problem will persist in the foreseeable future.

In fact, the last few years has seen increased scrutiny and litigation on the use of related-party debt by multinational corporations to achieve base erosion and profit shifting.¹⁷ Global corporations with affiliates in multiple jurisdictions can use hybrid mismatch arrangements between related companies to exploit how different countries characterize a transaction or an instrument for tax purposes. In 2016, the Treasury announced plans to address the related-party debt issue by allowing the IRS on audit to divide debt instruments into part debt and part equity.¹⁸ Section 385 of the Code provides that the Secretary of the Treasury is "authorized to prescribe such regulations as may be necessary or appropriate to determine whether an interest in a corporation is to be treated for purposes of this title as stock or indebtedness."¹⁹ However, the proposed regulations was received with "an avalanche of industry and practitioner comments," and the final regulations adopted six months later did not include a general bifurcation rule.²⁰ As such, Section 385 remains a weak tool for the IRS, which has frequently failed in recent litigation in its attempt to recast taxpayer's classification of debt and equity.

¹³ I.R.C. § 163(j).

¹⁴ Samuel A. Donaldson, *Understanding the Tax Cuts and Jobs Act*, Georgia State University College of Law, Legal Studies Research Paper No. 2018-07, at 1, 32.

¹⁵ Diana S. Doyle et al., *Part I: The Graphic Guide to Section 163(j)*, 71 TAX EXECUTIVE 22, 24 (2019).

¹⁶ I.R.C. § 199A(c)(3).

¹⁷ Stafford Smiley & Victor Jaramillo, *Me, Myself, and My Subsidiary: A Shift in the Intent Standard in Related-Party Hybrid Debt Cases*, 40 J. CORP. TAX'N 16 (2013).

¹⁸ Press Release, U.S. Department of the Treasury, Treasury Announces Additional Action to Curb Inversions, Address Earnings Stripping (Apr. 4, 2016).

¹⁹ I.R.C. § 385.

²⁰ Casey S. August, *The New Section 385 Debt-Equity Regulations-Who's Impacted and What Does It Mean for the Rest of Us?*, PRAC. TAX LAW., Summer 2017, at 31, 34.

Recently, *NA General Partnership et al. (Scottish Power)* involved \$4.9 billion in intercompany financing incurred by a U.S. affiliate of Scottish Power plc that was related to the acquisition of a U.S. electric power company in 1999.²¹ While the intercompany financing instruments were treated as debt for U.S. purposes, they were treated as equity contributions under the U.K. tax law.²² The IRS objected to this hybrid financing arrangement and sought under Section 385 to have this financing treated as equity for purposes of U.S. tax. The Tax Court applied the Ninth Circuit's eleven factor standard to find that the financing was more akin to debt than equity.²³ The court reasoned that only one factor out of the eleven, the identity of interest between the creditor and the sole shareholder, supports characterizing the advance as equity.

The Tax Court in *Scottish Power* devoted the most attention to the parties' intent, noting that Scottish Power and the U.S. affiliate recorded the loan notes as debt on their books and records at all relevant times, consistently recognized the loan notes as debt in their correspondence, and represented to the SEC that the loan notes were debt.²⁴ The IRS argued that certain instances of failing to timely pay interest and incurring arrears, in addition to an additional advance of \$186 million by Scottish Power to cover interest on the original advance, shows that the parties did not intend a debtor-creditor relationship.²⁵ However, the Tax Court cited precedent that supports overlooking such deviations from a traditional debtor-creditor relationship: "[w]e are also mindful, however, that strict insistence on payment when due is not expected and consistent with business realities in the related-party context."²⁶ Thus, the *Scottish Power* decision shows the IRS's inability to use Section 385 to reclassify taxpayer's treatment of a financial instrument.

While the taxpayer in *Scottish Power* sought debt treatment to deduct interests, it is not always the case that the taxpayer wants debt treatment.²⁷ In *PepsiCo v. Commissioner*, the taxpayer PepsiCo wanted to create instruments that would be classified as debt in the Netherlands and equity in the United States.²⁸ During international restructuring in the late 1990s, PepsiCo created two Netherlands subsidiaries which issued advance agreements to

²¹ *NA General Partnership et al. v. Commissioner (Scottish Power)*, 103 T.C.M. (CCH) 1916 (T.C. 2012).

²² J. Harold McClure, *Intercompany Interest: BEPS and the Kraft Foods Litigation*, 43 J. CORP. TAX'N 3, 5 (2016).

²³ The eleven factors are: (1) the name given to the documents evidencing the indebtedness; (2) the presence of a fixed maturity date; (3) the source of the payments; (4) the right to enforce payments of principal and interest; (5) participation in management; (6) a status equal to or inferior to that of regular corporate creditors; (7) the intent of the parties; (8) "thin" or adequate capitalization; (9) identity of interest between creditor and stockholder; (10) payment of interest only out of "dividend" money and (11) the corporation's ability to obtain loans from outside lending institutions. *Hardman v. United States*, 827 F.2d 1409, 1411 (9th Cir.1987).

²⁴ *Scottish Power*, *supra* note 21, at 9.

²⁵ *Id.* at 10.

²⁶ *Id.*

²⁷ With the reduction of the corporate tax rate to 21% in 2017, more taxpayers may now favor equity treatment than before. Assuming individual marginal tax rate of 37% and capital gains marginal tax rate of 20%, it is more profitable for an investor to be subject to the corporate tax and the capital gains tax than the single-level individual income tax. The after-tax return ratio on one-year corporate equity investment with distributed dividend is $(1 - 0.21) * (1 - 0.20) = 0.632$, which is higher than the return ratio on corporate debt of $1 - 0.37 = 0.63$.

²⁸ *PepsiCo Puerto Rico, Inc. v. Commissioner (PepsiCo)*, 104 T.C.M. (CCH) 322 (T.C. 2012).

domestic subsidiaries in exchange for promissory notes issued by PepsiCo and Frito-Lay.²⁹ The earnings and profits of the Dutch subsidiaries were projected to be drastically reduced by the foreign partnerships' losses in the foreseeable future, so it appeared unlikely that PepsiCo would be subject to subpart F income or dividend treatment on distributions.³⁰ Therefore, the taxpayer treated the advance agreement as equity investment by PepsiCo, and the payments on the advance agreements as nontaxable return of capital.

However, the IRS imposed a large tax deficiency for the relevant years, arguing that the payments to the parent company should be considered debt interest payments. In resolving the question of whether PepsiCo's advance of capital is debt or equity, the Tax Court goes through a thirteen factor test promulgated by the court in 1980.³¹ The court suggests that the intent of the parties to treat the advance as debt or equity is the most crucial factor, but still goes through all thirteen factors.³² Finding that only two of the factors favor debt treatment, it holds that the advance agreements are more appropriately characterized as equity for federal income tax purposes.

A different set of debt-equity cases involves publicly traded securities with features of both debt and equity. The Treasury considered a particular type of hybrid instrument known as adjustable rate convertible notes (ARCN's) in a revenue ruling issued in 1983.³³ The ruling analyzes a model ARCN issued by X Corporation that matures in 20 years, at which point the holder will be entitled to receive either \$600 cash or 50 shares of X common stock. Each ARCN is also convertible at any time into 50 shares of X common stock. The annual amount of interest payable with respect to an ARCN will be equal to the dividends paid on 50 shares of X common stock, plus an amount (\$20) equal to 2 percent of the issue price (\$1,000) of the note.³⁴

Adopting the multi-factor approach, the Treasury ruling highlights two factors in determining whether an instrument represents indebtedness: whether there is a written unconditional promise to pay on demand or on a specific date a sum certain in money and the intent of the parties in creating the instrument.³⁵ The ruling notes that redemption for cash at maturity will only happen if the X stock drops in price by more than 40 percent. Due to the high probability that the ARCN's will be eventually converted to stock, the Treasury determines that they "do not in reality represent a promise to pay a sum certain."³⁶ Therefore, the Treasury concludes that the ARCN's constitute an equity interest in X and will be treated as stock for federal income tax purposes. The next section illustrates problems with the multi-factor

²⁹ *Id.* at *5.

³⁰ *Id.* at *13.

³¹ The thirteen factors mostly overlap with the eleven factors used in the Scottish Power case, with the exception of the last three factors: the use to which advances were put, failure of debtor to repay, and risk involved in making advances. *Id.* at *57.

³² *Id.* at *54 ("[T]he focus of a debt-versus-equity inquiry generally narrows to whether there was an intent to create a debt with a reasonable expectation of repayment and, if so, whether that intent comports with the economic reality of creating a debtor-creditor relationship.").

³³ Rev. Rul. 83-98, 1983-2 C.B. 40.

³⁴ *Id.*

³⁵ *Id.*

³⁶ *Id.*

approach as adopted in *Scottish Power*, *PepsiCo*, and the ARCN ruling. Overall, this paper proposes a rule that can replace the multi-factor approach in classifying public hybrid securities like the ARCN.

III. The Multi-Factor Approach and Deadweight Loss

The Tax Court's analyses in *Scottish Power* and *PepsiCo*, and the Treasury's reasoning in the ARCN ruling are emblematic of the current multi-factor approach in debt-equity litigation. Congress enacted the full deduction on corporate interest in 1918 to compensate for the imposition of the "excess profits tax" during WWI.³⁷ Since then, courts have developed a litany of factors to answer the question of whether the financing at issue should be treated as debt or equity. In 1972, the United States Court of Appeals for the Fifth Circuit selected thirteen factors to consider in deciding whether a shareholder advance to a bank was bona fide debt.³⁸ As seen in the *Scottish Power* and *PepsiCo* cases, different circuits have applied different variations of the *Mixon* thirteen-factor test, without any established guidance on how much weight to assign to any given factor. In applying the multi-factor standard, courts often caution that no single factor is dispositive, and that "the determination of debt or equity is no mere counting of factors."³⁹ However, it is hard to find a debt-equity case where the court does not follow the numerical counting of factors favoring debt or equity treatment.

Many of the debt-equity factors can be easily manipulated by the taxpayer to support the tax treatment that they desire. For instance, the taxpayer can control the name given to the instrument, the presence of a fixed maturity date, or the right to enforce payments of principal and interest. Such manipulation is especially likely in a closely held setting where the transacting parties have a common interest in achieving the desired tax treatment. Therefore, the multi-factor approach creates tax planning opportunities for the well-advised. When courts focus on the legal formalities of the financial instruments rather than the economic realities, taxpayers with sufficient resources can carefully craft their instruments intended to be debt or equity.

For example, the *PepsiCo* court found that the advance agreements at issue had no fixed maturity of reasonable duration, which is characteristic of equity.⁴⁰ The advance agreements had terms of 40 years which can be unilaterally extended by the holders for another 15 years.⁴¹ *PepsiCo*'s attorneys likely arranged the 55-year term to provide a duration possibly 10 percent longer than a frequently cited decision that found 50-year railroad bonds to be debt, and added a term that would render the instrument perpetual in the event of default on any related-party debt to make it further distinguishable.⁴² Therefore, the multi-factor approach in debt-equity favors taxpayers who can afford the legal costs associated with crafting their terms according to a sophisticated understanding of the case law. At the same time, taxpayers with no intention of

³⁷ Steven A. Bank, *Historical Perspective on the Corporate Interest Deduction*, 18 CHAP. L. REV. 29, 31 (2014).

³⁸ *Estate of Mixon v. United States*, 464 F.2d 394, 402 (5th Cir. 1972).

³⁹ *PepsiCo*, *supra* note 28, at *99.

⁴⁰ *PepsiCo*, *supra* note 28, at *61.

⁴¹ *Id.*

⁴² Jasper L. Cummings, Jr., *PepsiCo and Debt Equity*, 138 TAX NOTES 267, 272 (2013).

tax avoidance may be penalized because they lacked the resources to decipher the complex formalities of the multi-factor approach.

Another problem with the multi-factor approach is that it is difficult to predict which aspects of the transaction the court will focus on in applying the test, as ample case law exists to support contrary findings in almost any situation.⁴³ For example, in analyzing the parties' intent in the *Scottish Power* case, the Tax Court discredits the IRS's argument that the instances of the U.S. subsidiary failing to timely pay interest favors equity treatment by citing a Ninth Circuit case that states that no adverse inference should be drawn from a failure to pay interest when the loan is from a related party.⁴⁴ However, the court fails to recognize that the case it mentions just before noting the Ninth Circuit case — from the tribunal itself no less — also involved an advance of capital from a related party and yet concluded that the inability to pay interest favors equity treatment.⁴⁵ Thus, taxpayers cannot know *ex ante* whether the courts will interpret features of their transaction as favoring debt or equity treatment. One commentator observed after the *PepsiCo* decision, "In practice the result of the debt-equity factors is not to provide a solution to the problem but rather to foster uncertainty."⁴⁶ In fact, a common criticism of the multi-factor test for debt-equity is that the test's flexibility allows the courts to decide a case upon an initial reaction to the transaction and then later assemble the factors to support that initial reaction.⁴⁷

The ARCN ruling also demonstrates the malleability and unpredictability of the multi-factor approach. The Treasury rules that the instrument does not represent a promise to pay a sum certain due to the high probability that it will be converted into equity.⁴⁸ The revenue ruling, however, lacks guidance on how to evaluate the probability of conversion into equity. In the stylized example provided in the ruling, it seems straightforward to accept that the investor would accept the 50 shares rather than \$600 cash upon maturity because 50 shares are worth \$1000 at the time of issue. However, it remains unclear where the Treasury will draw the line in finding that a redemption amount is high enough to justify a debt classification.

In 1997, Congress adopted Section 163(l) which disallows interest deduction for indebtedness for which the principal or interest is required to be paid in equity or there is "substantial certainty" that the holder will exercise the option to convert into the issuer's equity.⁴⁹ The Conference Report notes that the provision will not affect convertible debt "where the conversion price is significantly higher than the market price of the stock on the issue date of the debt."⁵⁰ Yet, there is still no guidance regarding when there is substantial

⁴³ Thomas D. Greenaway & Michelle L. Marion, *A Simpler Debt-Equity Test*, 66 TAX LAW. 73 (2012).

⁴⁴ *Scottish Power*, *supra* note 21, at 10; *Wilshire & W. Sandwiches, Inc. v. Commissioner*, 175 F.2d 718, 720–721 (9th Cir. 1949).

⁴⁵ *CMA Consol., Inc. & Subsidiaries, Inc. v. Commissioner*, T.C.M. (RIA) 2005-016 (T.C. 2005).

⁴⁶ *Cummings*, *supra* note 42, at 267.

⁴⁷ *Plumb*, *supra* note 3, at 408.

⁴⁸ Rev. Rul. 83-98, *supra* note 33.

⁴⁹ I.R.C. § 163(l).

⁵⁰ H.R. REP. NO. 105-220, at 524 (1997) (Conf. Rep.).

certainty that an option will be exercised.⁵¹ If the taxpayer had adjusted the ARCN to be redeemable at maturity for \$800 or \$900, would the Treasury find a substantial likelihood that the instrument represents a promise to pay a sum certain? What if the interest payments did not depend at all on corporate earnings? These questions reveal the shortcomings of the multi-factor standard, which is difficult to predict because no particular factor is conclusive in making the tax determination.

This unpredictability of the multi-factor approach significantly deteriorates tax law's function as a system of law. An essential component of the rule of law is that those subject to the law must have the means of knowing what it prescribes.⁵² When the tax law confers opposite results on almost identical facts, taxpayers lose confidence in the system, possibly fostering noncompliance. Also, taxpayers may be discouraged by the lack of clear guidance and refrain from entering into their desired transactions in the first place. All in all, the multi-factor approach currently employed by courts in debt-equity litigation is both malleable and unpredictable.

The current multi-factor approach results in at least two kinds of deadweight loss. The goal of this paper is to improve efficiency in enforcing the debt-equity distinction by reducing both types of deadweight loss. The first kind flows from the distortions in corporate behavior following the uneconomic tax treatment of a transaction. For instance, if the economic profile of a hybrid security X closely resembles that of common stock yet the tax law treats it as debt, the corporation would be incentivized to repackage some of its equity as X to take advantage of the interest deduction. The hybrid security carries stronger creditors' remedies than equity, so this distortion in behavior increases the default risk and cost of financial distress of the corporation, reducing overall utility. The second type of deadweight loss comes from the administration of an uncertain and malleable standard. Taxpayers and the government spend enormous amounts of resources on tax planning and litigation. Some taxpayers are unduly punished or are discouraged from engaging in transactions because they cannot afford the legal costs associated with navigating the unclear standard. The following sections explain how the proposed beta rule seeks to reduce both types of deadweight loss.

IV. The Line-Drawing Problem and Methods

The debt-equity distinction problem is one of drawing the line among a continuous spectrum of financial instruments. This line-drawing problem is not unique to the debt-equity distinction. The tax law often treats similar activities differently.⁵³ For instance, the realization requirement dictates different tax consequences on selling and holding an asset, even though the amount of economic value in either case is the same. The different tax treatment of payments to independent contractors and employees is another example. In these examples,

⁵¹ Jeff Borghino, *Sec. 163(l)'s "Substantial Certainty" Test and Related-Party Convertible Debt*, THE TAX ADVISER (Feb. 1, 2016), <https://www.thetaxadviser.com/issues/2016/feb/sec-163i-substantial-certainty-test.html>.

⁵² Antonin Scalia, *The Rule of Law as A Law of Rules*, 56 U. CHI. L. REV. 1175, 1179 (1989) ("It is said that one of emperor Nero's nasty practices was to post his edicts high on the columns so that they would be harder to read and easier to transgress.").

⁵³ David A. Weisbach, *Line Drawing, Doctrine, and Efficiency in the Tax Law*, 84 CORNELL L. REV. 1627, 1637 (1999).

the tax law has to promulgate a boundary that will result in discontinuous tax treatment for transactions on a continuous spectrum.

Several scholars have proposed general approaches to line-drawing problems in the tax law. One approach is to focus on the underlying policy goal behind a tax distinction. Subsection A demonstrates that it is impossible to employ the policy-driven approach for the debt-equity distinction. Another general approach, one that is used in this paper, is to draw the line in a way that maximizes social welfare. In particular, David Weisbach proposes a welfare-maximizing approach based on a commodity tax model which concludes that a commodity should be taxed like its closest substitutes.⁵⁴ Daniel Shaviro used a similar efficiency-based approach to examine the welfare effects of the realization doctrine.⁵⁵ This paper draws on the Weisbach line-drawing approach to design a debt-equity rule based on beta. Drawing the line correctly — classifying a hybrid instrument as debt or equity based on its substitutability — minimizes inefficient behavioral distortions which produce the first kind of deadweight loss mentioned in the previous section.

A. The Impossibility of a Policy-Driven Approach

A more traditional approach to line-drawing in tax law — and in law generally — is to craft distinctions based on the policy objectives of the law. However, this subsection shows that the approach is not well-suited to the debt-equity distinction because it is difficult to agree upon a policy rationale for the tax distinction. As an example of the policy-driven approach, assume that a government decides to impose a lump sum Pigouvian tax on passenger vehicles that have a particularly harmful impact on climate change. Knowing that the purpose of the tax is to mitigate the transportation sector's effect on the environment, policy makers could propose to distinguish between “clean” and “dirty” cars by measuring greenhouse gas (GHG) emissions per mile. Other features of the vehicles, such as the color, the number of doors, or the top speed should not influence the classification, insofar as they do not affect the level of emissions. Therefore, the government could investigate the maximum level of GHG emissions which would have negligible impact on the environment and impose the tax on all vehicles that produce a higher amount of GHG. Reasonable parties may disagree on the proper GHG emission cutoff level, but they would at least agree that using the emission measure as the determining factor is appropriate given the purpose of the tax.

However, in the case of the corporate interest deduction, there is no identifiable policy rationale or legislative purpose behind Section 163. The corporate interest deduction arose out of political expedience rather than a policy rationale. The earliest corporate interest deductions were capped, and reflected an effort to strike a balance between the inefficiencies of the debt-equity distinction and concerns about overburdening certain industries in which debt financing was a necessity.⁵⁶ Unlimited corporate interest deduction arose in 1918 only to make up for

⁵⁴ *Id.* at 1637.

⁵⁵ Daniel N. Shaviro, *An Efficiency Analysis of Realization and Recognition Rules Under the Federal Income Tax*, 48 TAX L. REV. 1, 24 (1992).

⁵⁶ Bank, *supra* note 37, at 31.

the effect of wartime “excess profits” tax.⁵⁷ The legislative history since then has lacked discussion of a clear policy mandate for the deduction.

Nor is there a conceptual mandate for the interest deduction. A common justification is that the shareholder is the owner of the corporation, much like the sole proprietor of a business whose interest payments would be deductible against the owner’s income. However, in the modern corporation, the complexity of the division of ownership rights rejects a simplistic notion of shareholder ownership.⁵⁸ Unlike a sole proprietor of a business who can exercise full control over her assets, an individual shareholder in a large public corporation has very little dominion over the corporation’s assets. Shareholders usually have the right to elect the board of directors, but this may not give them effective control over the daily operation of management. In some instances, shareholders may actually possess fewer ownership rights than do secured debtholders.⁵⁹

Another line of argument for the corporate interest deduction relies on the foundational tax concept of Haig-Simons income: “personal income may be defined as the algebraic sum of (1) the market value of rights exercised in consumption and (2) the change in the value of the store of property rights between the beginning and end of the period in question.”⁶⁰ One can try to apply the same definition to corporate income by focusing on the second term, the accumulation of wealth. According to the argument, the interest payments of a corporation reduce the value of corporate savings because they are costs of producing income like rent and wages. On the other hand, dividends are seen as division of the profits of the business, and not an expense of doing business.⁶¹ However, Alvin Warren shows that this reasoning presupposes that the appropriate taxable entity for corporations is shareholders’ equity.⁶² Corporate income could very well be defined as the increment in value of the investors’ — not just shareholders’ — interest, in which case interest payments should not be deductible as a cost of doing business.

The last line of argument for interest deductibility states that if interest is income, then interest payment is negative income that should be deducted.⁶³ However, this argument fails to consider that the tax law also treats the receipt of dividends as income but provides no deduction for payment of dividends. Overall, theories of corporate and tax laws fail to explain why corporate interest — but not dividend — should be deductible. Thus, it is difficult to identify a policy rationale or a conceptual justification behind the corporate interest deduction. As such, the Weisbach model’s focus on efficiency is especially appropriate in the debt-equity context, where the underlying policy goal behind the distinction cannot guide the line-drawing process.

⁵⁷ *Id.*

⁵⁸ Alvin C. Warren, Jr., *The Corporate Interest Deduction: A Policy Evaluation*, 83 YALE L.J. 1585, 1588 (1974).

⁵⁹ *Id.*

⁶⁰ Henry C. Simons, PERSONAL INCOME TAXATION: THE DEFINITION OF INCOME AS A PROBLEM OF FISCAL POLICY 50 (1938).

⁶¹ Warren, *supra* note 58, at 1593.

⁶² *Id.*

⁶³ Alan Cole, *Interest Deductibility — Issues and Reforms*, Tax Foundation Fiscal Fact No. 548 (2017).

B. The Weisbach Substitution Model

Professor Weisbach argues that line drawing in the tax law can and should be based on the efficiency of competing rules rather than on doctrinal or policy concerns.⁶⁴ Focusing on efficiency, the goal is to draw the line that causes the lowest overall deadweight loss. He models the line-drawing problem using a commodity tax scenario and concludes that the most efficient line-drawing solution is to tax a commodity like its closest substitutes.⁶⁵ The Weisbach model assumes that there is a single consumer and n commodities.⁶⁶ One commodity, x_1 , has a fixed tax of t per unit, and some other commodity, x_n , is not taxed. All other commodities have a zero tax, but they can potentially be taxed with the limitation that if they are taxed, they must be taxed at rate t . The question is whether any of the other commodities, such as x_2 , should also be taxed like x_1 at a rate of t or remain untaxed.

Using the standard formula for deadweight loss, Professor Weisbach compares the deadweight losses between the case where only x_1 is taxed and for the case where x_1 and x_2 are taxed.⁶⁷ Solving the inequality leads to the conclusion that we should tax both x_1 and x_2 if and only if the cross-price elasticity between x_1 and x_2 is larger than x_2 's elasticity of demand multiplied by $-1/2$.⁶⁸ A commodity's elasticity of demand is always negative because demand decreases as price increases. This means that the cross-price elasticity between x_1 and x_2 must be positive to satisfy the inequality. The cross-price elasticity measures the responsiveness of demand for Commodity 1 given a price change in Commodity 2. A negative cross elasticity denotes that two products are complements, while a positive cross elasticity denotes the products are substitutes. Therefore, the Weisbach model concludes that we should tax x_2 like x_1 if and only if it is a sufficiently good substitute for x_1 .⁶⁹

Applying this model to the debt-equity context, a firm's prototypical equity is the taxed commodity x_1 and prototypical debt is the non-taxed commodity x_n . Hybrid securities x_2, x_3, \dots, x_{n-1} all display features of both debt and equity, and the government has to decide to treat it like either. The Weisbach model concludes that a hybrid security should be treated like debt only when it is a closer substitute for debt than equity, and vice versa. A successful application of this conclusion would minimize the first kind of deadweight loss mentioned in Section III: the inefficiency that stems from the uneconomic classification of a financial instrument. Section V elaborates how we can use systematic risk to determine whether an instrument is a closer substitute for debt or equity.

C. Rules vs. Standards

The Weisbach model can guide us in determining where to draw the line between debt and equity, but it does not dictate whether the line should be drawn as a rule or a standard.

⁶⁴ *Id.*

⁶⁵ David A. Weisbach, *An Efficiency Analysis of Line Drawing in the Tax Law*, 29 J. LEGAL STUD. 71, 79 (2000).

⁶⁶ *Id.* at 75.

⁶⁷ *Id.* at 76.

⁶⁸ *Id.* at 77.

⁶⁹ *Id.*

The multi-factor test currently used by federal courts is a standard that considers “the context of the overall transaction.”⁷⁰ Legal philosophers have written extensively about the costs and benefits of promulgating legal commands as rules versus standards. Duncan Kennedy uses the term “formal realizability” to refer to “the degree to which a legal directive has the quality of ‘ruleness.’”⁷¹ Compared with standards, formally realizable rules restrain official arbitrariness and provide more certainty in guiding behavior. However, the value of rules comes with the sacrifice of precision, as the enforcement of a strict rule likely leads to results that are both over- and under-inclusive with respect to the purpose underlying the rule.

Louis Kaplow posits that one can think of the choice between rules and standards as involving the extent to which a given aspect of a legal command should be resolved in advance or left to an enforcement authority to consider.⁷² Rules are more costly to promulgate than standards because rules involve advance determinations of the law's content, while standards are more costly for legal advisors to predict or enforcement authorities to apply because they require later determinations of the law's content.⁷³ As discussed in Section III, the multi-factor test in debt-equity litigation incurs significant ex post costs. The government and taxpayers spend a tremendous amount of resources on litigating debt-equity cases. Due to the standard's uncertainty, some private parties are discouraged from entering into transactions, while others are penalized for not investing enough resources into navigating the formal complexities that courts have adopted over the years. Overall, the unpredictable and malleable standard harms the rule of law and likely breeds tax noncompliance.

When the government promulgates a legal command as a rule, it gathers information before individuals act and announces its findings. Professor Kaplow argues that whether the ideal time to acquire and disseminate information is ex ante or ex post depends on the frequency with which the information will be used.⁷⁴ The savings from a single ex ante investigation will be great when the use of the results will be frequent, but will be negligible when the use of the results will be unlikely. Given the high frequency of debt-equity litigation, the adoption of clearly-defined and administrable rules in lieu of the multi-factor standard will probably benefit society as a whole. The advance determination of a rule requires the government to investigate into distinguishing characteristics of debt and equity, and to analyze the efficiency of different line-drawing methods. However, this one-time promulgation cost is likely much smaller than the ex post costs associated with enforcing the multi-factor standard. Therefore, considering the frequency with which the debt-equity distinction will apply, rules are more desirable than standards in solving the line-drawing problem.

Another advantage of rules over standards lies in the costs incurred by the taxpayer to become informed about the content of the law. The value of advice — the value of getting the law right — is the same under both formulations, but the cost of advice is greater under a

⁷⁰ *Illinois Tool Works Inc. v. Commissioner*, 116 T.C.M. (CCH) 124 (T.C. 2018).

⁷¹ Duncan Kennedy, *Form and Substance in Private Law Adjudication*, 89 HARV. L. REV. 1685, 1687 (1976).

⁷² Louis Kaplow, *Rules Versus Standards: An Economic Analysis*, 42 DUKE L.J. 557, 561 (1992).

⁷³ *Id.*

⁷⁴ *Id.*

standard.⁷⁵ As seen in debt-equity litigation, the taxpayer under a standard often has to pay high legal fees to employ sophisticated lawyers who can structure the transaction in a way that exploits the nuances of the existing case law and administrative guidance. If the government promulgated a rule in lieu of the current multi-factor approach, taxpayers would only need to seek advice on how to apply the rule to their case. The more general the rule, the greater the cost savings to the taxpayer.⁷⁶ General rules can lead people to invest in formal proficiency, as the one-time investment would be able to guide behavior for a broad array of circumstances. An example of the benefit of a general rule is that people miss fewer trains because they know that the conductor would leave without them at the departure time. A general debt-equity rule that applies to a broad array of financial instruments could incentivize taxpayers to follow the rule to achieve their desired tax treatment.

In general, some individuals may choose not to acquire legal advice and act based on their best guess about how the law will apply to their contemplated conduct.⁷⁷ In the debt-equity context, however, most taxpayers engaged in uncertain debt-equity transactions are sophisticated parties with deep pockets, so they presumably choose to pay the cost of legal advice and act based on actual knowledge of the law. Moreover, the consequence of getting the law wrong can be quite dramatic, as the tax treatment of interest or dividend payments can affect corporations financially. Thus, the taxpayers would incur the cost of legal advice under a rule or standard, but the cost is much smaller under a rule. Moreover, the lower cost of advice under a rule means that more parties would be able to afford the legal cost and enter into their desired transactions. Therefore, it appears that adopting a general debt-equity rule would increase utility for taxpayers by lowering the cost of acquiring legal advice.

In sum, replacing the multi-factor standard with a general rule would reduce the second kind of deadweight loss mentioned in Section III: the inefficiency that flows from the administration of an unpredictable and malleable standard. Taxpayers would spend less resources on tax planning and litigation, while the government would spend less on administering the tax distinction. A general rule would lower the cost of acquiring advice and reduce the likelihood that taxpayers are punished for being uninformed about the content of the law. Thus, adopting a general rule that follows the Weisbach model would not only reduce the inefficient distortions of uneconomic law, but also minimize the deadweight loss associated with the administration of an unreliable standard.

V. A Risk-Based Approach to the Debt-Equity Distinction

Generally, the best solution to the debt-equity line-drawing problem is to eliminate the tax distinction, which lacks any policy or conceptual justification as stated in Section IV.A. Both the CBIT and the BEIT, discussed in the Introduction, would comprehensively reform the taxation of business income, and in the process, do away with the debt-equity distinction. But the premise of this paper — borne out of the piecemeal reforms enacted in 2017 — is that we

⁷⁵ *Id.* at 571.

⁷⁶ Kennedy, *supra* note 71, at 1697.

⁷⁷ Kaplow, *supra* note 72, at 571.

should devise incremental changes that can improve the administration of the tax distinction without a sweeping reform.

To that end, this paper examines and proposes a risk-based approach to distinguish between debt and equity. This section first explains that the existing law already uses risk as a proxy for the distinction and shows that we can improve the law by using a more reliable proxy for risk in beta, the measurement of systematic risk. Replacing the multi-factor standard that focuses on different aspects of different transactions, we can use beta to craft a general rule that applies to any financial instrument with relevant valuation information. Also, this section demonstrates that using beta to administer the tax distinction follows the Weisbach model's intuition that a security should be taxed like its closest substitute to achieve the efficient tax result.

Historically, the different tax treatment of debt and equity reflected a conceptual distinction between prototypical debt and equity. Classic equity investment involves contributing capital that is at risk of loss in exchange for rights to participate in the control and residual gain of an undertaking.⁷⁸ Classic debt, on the other hand, is "an unqualified obligation to pay a sum certain at a reasonably close fixed maturity date along with a fixed percentage in interest payable *regardless of the debtor's income or lack thereof*."⁷⁹ Therefore, the key difference between these prototypes is that only equity investment depends on the performance of the business once past the point of insolvency.

In fact, much of debt-equity case law has devoted attention to the differing degree of risk participation. A frequently cited case from the 1940s describes as follows:

The essential difference between a stockholder and a creditor is that the stockholder's intention is to embark upon the corporate adventure, taking the risks of loss attendant upon it, so that he may enjoy the chances of profit. The creditor, on the other hand, does not intend to take such risks so far as they may be avoided, but merely to lend his capital to others who do intend to take them.⁸⁰

This conceptual distinction between the shareholder and the creditor underlies many of the factors used by courts in the multi-factor approach. For example, ten of the eleven factors used in the *Scottish Power* case all point towards the degree of exposure to risk. The presence of a fixed maturity date likely denotes that the investment is fixed-return capital that takes priority in payment, which means that the investment carries less risk than residual claims. Similarly, the source of the payments suggests the extent to which the repayment depends on earnings of the company. The right to enforce payments, subordination to regular creditors, the

⁷⁸ Robert Flannigan, *The Debt-Equity Distinction*, 26 B.F.L.R. 451 (2011).

⁷⁹ *Gilbert v. Commissioner*, 248 F.2d 399, 402 (2d Cir. 1957) (emphasis added).

⁸⁰ *United States v. Title Guarantee & Trust Co.*, 133 F.2d 990, 993 (6th Cir. 1943). *See also* *Gilbert*, *supra* note 79, at 406 ("These are proper subjects of consideration, for the Congress evidently meant the significant factor to be whether the funds were advanced with reasonable expectations of repayment regardless of the success of the venture or were placed at the risk of the business, and, as we shall show, each of the enumerated items does or may bear on the degree of the risk involved.").

capitalization of the company, and the ability to obtain loans from outside lenders all demonstrate the level of risk involved in the investment.

Participation in management is another factor in *Scottish Power* that serves as a proxy for the degree of risk. Shareholders retain the authority to guide the fate of the corporate enterprise because “[t]he gains and losses from abnormally good or bad performance are the lot of the shareholders, whose claims stand last in line.”⁸¹ It has been argued that equity holders, as residual claimants, are necessarily entitled to control the firm because they are the group that values the right to control the firm most highly due to their risk exposure.⁸² The next factor, the intent of the parties, also expresses the degree to which the investor was subject to the risk of the enterprise because it analyzes whether the parties shared a reasonable and unconditional expectation at the time of the transaction that the funds will be repaid within a certain time.⁸³ Lastly, the identity of interest between creditor and stockholder is crucial because “a sole shareholder's advance is more likely committed to the risk of the business than an advance from a creditor who is not a shareholder.”⁸⁴ Hence, the conceptual distinction between debt and equity lies in the degree of risk involved, and the multi-factor test can be understood as an effort to track this distinction.

A key insight of this paper is that we can use modern finance literature to find a more reliable proxy for risk of a financial instrument. The risk of any security can be broken down into two parts: specific risk that is peculiar to that security and market or systematic risk that is associated with market-wide variations. Modern portfolio theory posits that investors care about their portfolio's sensitivity to market changes because they can eliminate specific risk by holding a well-diversified portfolio.⁸⁵ In contrast, systematic risk refers to risk common to a large number of securities such that it cannot be diversified away.⁸⁶ Uncertainty about general economic conditions such as market downturns is an example of systematic risk. A diversified investor must only worry about the systematic risk of each security in a portfolio, regardless of whether the security is debt or equity. Therefore, from a diversified investor's perspective, the type of risk that permeates equity investments more than debt instruments is systematic risk.

Systematic risk of a security can be measured by beta, which represents the sensitivity of a security to movements in the market portfolio.⁸⁷ A security with a beta of 1.47 means that for every 1 percent movement in the market, the security is expected to move 1.47 percent in the same direction. A beta of -0.69 means that the security moves 0.69 percent in the opposite direction for every 1 percent movement in the market. The difference in risk participation

⁸¹ Frank H. Easterbrook & Daniel R. Fischel, *Voting in Corporate Law*, 26 J.L. & ECON. 395, 403 (1983).

⁸² Jonathan R. Macey, *Corporate Social Responsibility: A Law & Economics Perspective*, 17 CHAP. L. REV. 331, 336 (2014).

⁸³ Greenway & Marion, *supra* note 43, at 87.

⁸⁴ *Scottish Power*, *supra* note 21, at 20.

⁸⁵ Richard Brealey, *PRINCIPLES OF CORPORATE FINANCE* 190 (11th ed. 2014).

⁸⁶ Stephen A. Ross, Randolph W. Westerfield, Jeffrey F. Jaffe, Bradford D. Jordan, *CORPORATE FINANCE* 350 (11th ed. 2016).

⁸⁷ *Id.* at 358.

between debt and equity can be quantified by beta. In fact, studies have shown that the beta of typical debt instruments average around 0.3, while the average beta of a stock market is close to 1 if we use the market index as the benchmark.⁸⁸ Therefore, the difference in the level of systematic risk between debt and equity can be quantified by beta measurements. The next section shows that beta estimates can be used to craft a general debt-equity rule because beta can be calculated for any security as long as valuation information is available.

There even exists a mathematical relationship between beta and the probability of default on a loan, which is another way of measuring the level of risk involved in a supposed debt instrument. The present value of a bond equals the discounted value of the sum of the future cash flows multiplied by $(1-d)$ where d is the probability of default, and the recovered portion of future cash flows multiplied by d . The discount rate on the future cash flows is the expected rate of return on the asset, which depends on the beta as defined by the Capital Asset Pricing Model (CAPM). Given the bond beta, yield to maturity, recovery rate, and the present market value of the bond, it is possible to derive d , the probability of default.⁸⁹ The higher the beta, the higher the probability of default. Therefore, answering the question of whether the parties reasonably expected to create an unqualified obligation to pay a sum certain turns on the value of beta. A higher beta means a higher probability of default, which makes it more difficult to believe that the parties reasonably expected full repayment. Overall, beta provides a promising tool to objectively distinguish between financial instruments and replace the problematic multi-factor approach.

Incidentally, identifying beta as the distinguishing criterion between debt and equity does not mean that there exists a sound policy justification for the tax distinction. Debt may carry significantly lower levels of systematic risk, but it does not necessarily follow that the tax law should only make the cost of debt financing deductible. As many scholars have proposed, the best solution to the debt-equity problem would be to eliminate the disparate tax treatment. However, as discussed in Section II, the TCJA failed to implement such a solution, and the disparate tax treatment of debt and equity is likely to persist for the foreseeable future. In this second-best scenario of a forced binary between debt and equity, this paper proposes to use systematic risk to classify financial instruments.

The beta approach achieves the efficient tax result implied by the Weisbach model. As discussed in Section IV, the model concludes that a commodity should be taxed like its closest substitutes.⁹⁰ The intuition behind the conclusion is that taxing something like its close substitutes minimizes the inefficient distortion of consumer behavior.⁹¹ In a three-commodity scenario, there are two offsetting effects of treating x_2 , the hybrid commodity, like x_n , the non-taxed commodity, rather than like x_1 , the taxed commodity: the consumer's preference will shift from x_1 to x_2 , and also shift from x_n to x_2 . As a debt-equity example, the debt treatment of

⁸⁸ Alex Groh & Oliver Gottschlag, *The Effect of Leverage on the Cost of Capital of US Buyouts*, 35 J. BANKING & FIN. 2099, 2109 (2011).

⁸⁹ See Roland Clere & Stephane Marande, *Default Risk and Equity Value: Forgotten Factor or Cultural Revolution?*, MPRA Paper No. 85659 (Apr. 2, 2018), <https://mpra.ub.uni-muenchen.de/85659/>.

⁹⁰ Weisbach, *supra* note 65, at 77.

⁹¹ *Id.*

Monthly Income Preferred Securities (MIPS), a hybrid instrument that combines features of preferred stock and corporate bonds, has two offsetting effects. Some investments that would have been structured as plain debt can now be restructured as MIPS with less creditor rights. The tax shield remains constant, but the issuer reduces the cost of financial distress — the expected cost of bankruptcy reorganization — by limiting creditor rights, so the shift increases utility.⁹²

At the same time, the debt treatment of MIPS induces some previous equity investments to be restructured as MIPS which has stronger creditor rights, resulting in higher cost of financial distress and less tax revenue. Thus, this second shift reduces utility. The net effect of these offsetting shifts depends on whether MIPS is a close substitute of debt or equity. If the hybrid instrument is a close substitute of debt, the shift from previous debt investments would eclipse the shift from previous equity investments because investors and issuers would find it relatively desirable to restructure their debt securities as MIPS. In that case, the debt treatment of MIPS would be the efficient solution. Therefore, the efficient tax solution to a line-drawing problem depends on the preferences of the consumer or investor in substituting the taxable item for another.

In the securities market, systematic risk should drive investors' preference on substituting a financial instrument for another. The CAPM posits that there is a linear relationship between the expected return and the beta of a security as diversified investors expect to be compensated for taking on more systematic risk.⁹³ The only variable in the CAPM formula for calculating the expected return of a security is beta.⁹⁴ Investors can tailor a portfolio to their specific risk-return requirements, aiming to hold securities with higher betas when the market is rising, and securities with lower betas when the market is falling. In substituting a security for another, beta should be the primary consideration for the investor.

⁹² *Id.*

⁹³ Ross, *supra* note 86, at 359.

⁹⁴ Critics of the CAPM point out that the relationship between beta and actual average return has been weaker since the mid-1960s. Stocks with the highest betas have provided lower returns than predicted by the security market line. Brealey, *supra* note 85, at 202. Moreover, scholars have found that return has been related to other factors such as the difference between small-firm and large-firm stocks and the difference between value stocks and growth stocks. See E.F. Fama and K.R. French, *Size and Book-to-Market Factors in Earnings and Returns*, 50 JOURNAL OF FINANCE 131, 155 (1995). This suggests that investors saw risks in small-firm stocks and value stocks that were not captured by beta, the sensitivity to market returns. The Arbitrage Pricing Theory (APT), an alternative to CAPM, assumes that each security's return depends on macroeconomic factors, but does not say what the factors are. Brealey, *supra* note 85, at 205. Some securities will be more sensitive to a particular factor than other securities. A further study could use the APT model to measure non-beta factors that could be used to distinguish between debt and equity. For example, debt instruments are less liquid than equity (liquidity premium), and they are more sensitive to swings in interest rate as their terms are longer (maturity premium). Using multiple macroeconomic factors rather than a single market risk factor may yield an even more efficient tax outcome but would also require more data and calculations. The additional factors would all capture systematic risk rather than risk arising from possible events that are specific to the company. For the sake of demonstrability, this paper assumes that beta is the only proxy for systematic risk of a security.

Therefore, in drawing the efficient line between debt and equity, we can use beta to ensure that a security is taxed like its close substitutes.⁹⁵ In practice, this means that we should compare the beta of a new security to the betas of some benchmark debt and equity instruments. The new security should be classified as the thing to which its beta is closer, as the investor will be more likely to substitute the new security for that instrument with the closer beta. The approach would only apply to publicly traded securities — not related party debt — because valuation information is necessary to calculate the instrument’s sensitivity to changes in market returns. Overall, using this beta approach would minimize the level of deadweight loss that stems from the behavioral distortions caused by uneconomic tax classifications. It would also minimize the deadweight loss associated with administering an unpredictable standard, as the next section shows that beta can be used to craft a general rule that applies consistently to any financial transaction with valuation data.

VI. The Beta Rule and Methodology

A. Previous Risk-Based Proposals

At least two papers have put forth proposals to use insights from finance theory to help distinguish between debt and equity. Similar to the approach taken by this paper, Anthony Polito proposes to use the degree of investor risk to determine the tax classification of an instrument.⁹⁶ Observing that a corporation’s paradigmatic debt will always bear less risk, and therefore have a lower expected rate of return, than its paradigmatic equity, Professor Polito proposes to identify a corporation’s lowest debt return, R , and multiply it by a fixed multiplier W , which would be “set according to the desired allocation of the corporate income tax burden.”⁹⁷ Any security with an expected return greater than WR would be treated as equity, as it would bear too much risk to receive debt treatment.

Although Polito’s intuition of using a measure of risk to classify debt and equity resonates with this paper’s thesis, his proposal of using the rate of return — rather than beta — as the benchmark carries significant drawbacks. First, using the rate of return as the proxy opens much possibility for taxpayers to manipulate their financial instruments in order to achieve the desired tax treatment. The yield to maturity, which Polito uses as the rate of return, is the discount rate at which the sum of all future cash flows from the security equals its issue price.⁹⁸ Assuming coupon and principal payments are fixed, a higher issue price leads to a lower yield to maturity. Therefore, firms would have an incentive to artificially increase their issue price such that the calculated yield would be lower than the debt-equity cutoff. This incentive

⁹⁵ Another way of applying the Weisbach model in the debt-equity context would be to use the cross-price elasticity between the subject financial instrument and the issuing firm’s debt and equity instruments. The elasticity measures would show whether the instrument is a closer substitute for debt or equity. However, estimating the cross-price elasticity would require modeling the demand curves for the subject securities and likely call for even more valuation data than the beta estimations.

⁹⁶ Anthony P. Polito, *Useful Fictions: Debt and Equity Classification in Corporate Tax Law*, 30 ARIZ. ST. L.J. 761, 790 (1998).

⁹⁷ *Id.* at 796.

⁹⁸ *Id.* at 801.

would be especially strong if the projected yield is close to the cutoff, as firms would find it beneficial to slightly increase their issue price to claim the interest deductions.

Such manipulation is also likely in the calculation of yield for contingent payment instruments, where the government would have to rely upon the yield of a comparable fixed payment instrument. The issuing firm of the contingent instrument may be able to mix and match terms such as prepayments, options, and conversion rights to lower the comparable yield. Polito suggests a bifurcation approach to counteract the incentive to lower the yield over the threshold return. The bifurcation regime would set two multipliers Y and Z of the corporation's lowest debt return R .⁹⁹ Instruments with expected return greater than ZR would be treated as wholly equity instruments, and those with expected return less than YR would be treated as wholly debt.¹⁰⁰ Those instruments with return in the middle of the two thresholds would be treated as equity only to the extent of the return in excess of YR , such that the interest deduction would be limited to the deemed debt yield of YR .¹⁰¹

Even under this bifurcation regime, firms still have an incentive to lower the yield to be less than ZR to be able to deduct the deemed debt yield of YR . The incentive is smaller than in the bimodal approach, but marginal manipulations at the upper threshold still produce undue tax benefits. One could predict that there are countervailing market forces that would lessen this tax-driven incentive to lower the yield, but the point remains that using the return as the benchmark would introduce tax-driven distortions in the financial market. On the other hand, using beta as the benchmark makes it much harder for taxpayers to manipulate, as the beta measures are based upon the relationship between an instrument's returns and the market returns over a period of time.

Moreover, Polito's proposal defers to policymakers the most difficult question of setting the multiplier. The higher the multiplier is set, the more deeply securities must share in the risks and rewards of the enterprise in order to be included in the taxable base of corporate income.¹⁰² For Polito's proposal to be useful in practice, it seems necessary to provide some guidance on how to set the appropriate multiplier. He is correct to observe that finance theory can "convert an infinite-dimensional erratic examination of limitless factors into a two-dimensional relationship of risk and return," but the proposal needs to specify some guidelines on where to draw the demarcation between debt and equity within the risk and return spectrum.

Another risk-based proposal is David Ceryak's idea to grant debt treatment to securities that return less than three percent above the one-month Treasury bill return (the "federal rate").¹⁰³ Ceryak also uses the degree of systematic risk to determine how to classify an

⁹⁹ *Id.* at 807.

¹⁰⁰ *Id.*

¹⁰¹ *Id.*

¹⁰² *Id.*

¹⁰³ David V. Ceryak, *Using Risk Analysis to Classify Junk Bonds as Equity for Federal Income Tax Purposes*, 66 *IND. L.J.* 273, 274 (1990).

instrument.¹⁰⁴ He observes that it is possible to draw a line between debt-like betas and equity-like betas, and confirms that investors demand a risk premium in compensation for a higher beta.¹⁰⁵ Noting that the return demanded for the low-grade bonds averaged three percent above the federal rate, Ceryak posits that investors are receiving an equity premium and should not be allowed deductions when they demand a return equal to or greater than the federal rate plus three percent.¹⁰⁶ Like Polito's idea, Ceryak's proposal uses the actual returns rather than the beta estimates, which opens opportunities for taxpayers to manipulate transactions to their tax advantage. Under the proposal, it will be unmistakable to taxpayers that the yields on any of their financial instruments need to be just shy of the federal rate plus three percent to receive debt treatment.

Also, using the same benchmark across all firms and industries does not lead to the efficient outcome. The asset beta of a firm, which is the beta of a company without the impact of debt, depends upon the volatility of the firm's industry and business. For example, a debt instrument at a high-tech company may hold a higher beta than equity of a utility company because the underlying assets are riskier. In light of the Weisbach model's mandate that we should tax a security like its close substitute, the debt-equity question is whether Instrument X issued by Firm A is a closer substitute for the prototypical debt or equity of Firm A. In other words, when the government treats X as debt, it is treating it like debt at Firm A, not at any other firm. Therefore, X should be treated as debt if its risk level is similar to the risk level of a debt instrument at Firm A, although it may also be similar to that of equity at some other firm. The Weisbach model entails that the debt-equity benchmark should be specific to each firm.

B. Proposed Rule and Its Scope

For reasons outlined in the previous subsection, it would be more efficient to adopt a rule that uses actual beta measurements rather than rates of return in classifying financial instruments according to their level of systematic risk. The beta benchmarks should be specific to each firm. Therefore, this paper proposes a firm-specific beta rule that would classify instruments into debt and equity.

The linchpin of the beta approach is the observation that the beta of a typical debt instrument of any given firm is significantly lower than that of its typical equity instrument. Intuitively, the beta of debt instruments will be very low because the returns on a typical debt instrument with fixed interest payments should not vary substantially over time. One study derived average debt betas of 0.296 and 0.410 for low-grade and high-grade bonds respectively.¹⁰⁷ On the other hand, the average beta of all publicly traded stock should be close to 1, if we use a market index like the S&P 500 as the market benchmark.¹⁰⁸ Therefore, we can

¹⁰⁴ *Id.*

¹⁰⁵ *Id.* at 286.

¹⁰⁶ *Id.* at 288.

¹⁰⁷ Groh & Gottschlag, *supra* note 88, at 2109.

¹⁰⁸ A critique of the CAPM points out that the market in the model should include all investable assets rather than an equity benchmark like the S&P 500. See Richard Roll, *A Critique of the Asset Pricing Theory's Tests Part I: On Past and Potential Testability of the Theory*, 4 J. FIN. ECON. 129, 130 (1977). Unfortunately, this includes many

craft a rule that classifies a financial instrument according to whether its beta is closer to that of its benchmark debt beta or benchmark equity beta. For instance, assume that the common stock of a publicly traded corporation shows a beta of 1.65, while its corporate bonds carry a beta of 0.35. If a new hybrid instrument issued by the firm turns out to have beta of 0.60, it would be classified as debt because its beta is closer to that of the firm's benchmark debt. The Weisbach model introduced in Section IV posits that a commodity should be taxed like its closest substitute in order for the tax to minimize deadweight loss, and modern portfolio theory and CAPM predict that diversified investors would substitute a financial instrument based on its risk profile. Therefore, taxing a security like its closer beta benchmark should yield the most efficient outcome.

The debt-equity classification under the beta approach would depend significantly on the beta benchmarks for each firm. We can use the beta of the firm's common stock as the equity benchmark. The debt benchmark, on the other hand, should be the beta of "an unqualified obligation to pay a sum certain at a reasonably close fixed maturity date along with a fixed percentage in interest payable regardless of the debtor's income or lack thereof."¹⁰⁹ A corporation may issue many kinds of debt, such as senior or subordinated, secured or unsecured, and long-term or short-term. The likelihood of default on most corporate bonds can be judged from bond ratings provided by Moody's, Standard & Poor's (S&P), and Fitch.¹¹⁰ For example, the bonds that receive the highest S&P rating are known as AAA ("triple A") bonds. Then come AA, A, and BBB bonds, and so on. Bonds rated BBB and above by S&P and Fitch and Baa and above by Moody's are called investment grade bonds, and it is rare for them to default.¹¹¹ Therefore, in applying the beta approach to real world firms in the following subsection, I choose the subject corporation's investment grade bond as the debt benchmark, to the extent that its valuation information is available.¹¹²

Given relevant valuation information, beta estimates can be calculated for any publicly traded financial instrument. Therefore, the beta rule can be applied generally across all industries, which would allow greater cost savings for taxpayers as explained in Section IV.C. This paper relies on two commonly used methods described in Pratt and Grabowski's *Cost of Capital* to estimate beta: (1) regressing returns for the security against the returns of benchmark market index over the same periods (also known as ordinary least squares or OLS beta estimates) and (2) regressing returns for the subject security against the returns of benchmark market index over the same period (t) and lagged returns of benchmark market index ($t-1$) (also known as sum beta estimates).¹¹³

instruments for which returns may be hard to measure. For the sake of demonstrability, this paper assumes that using an equity index as the market benchmark in estimating betas still yields statistically significant results.

¹⁰⁹ Gilbert v. Commissioner, *supra* note 79, at 402.

¹¹⁰ Brealey, *supra* note 85, at 65.

¹¹¹ *Id.*

¹¹² If a firm does not carry any investment grade bonds, the government should determine the beta of an investment grade bond at a comparable firm as the debt beta benchmark.

¹¹³ Shannon P. Pratt & Roger J. Grabowski, *COST OF CAPITAL: APPLICATIONS AND EXAMPLES* 225 (4th ed. 2014).

Estimating the OLS and sum beta estimates can be performed on Microsoft Excel using market data obtained from various industry data sources such as Bloomberg, Thomson Reuters Datastream, and Yahoo Finance. For example, to estimate the beta of a publicly traded stock, I obtain monthly observations of the stock's historic month-end adjusted closing prices and the S&P 500 Index over a "look-back" period. Pratt and Grabowski suggest that estimating betas using five years of monthly return data provides the most accurate beta estimates.¹¹⁴ They note that the five year look-back period balances the use of a long history with the likelihood that betas estimated with older data may not be representative of future betas, but recommends a shorter sampling period if business characteristics changed significantly during the period.¹¹⁵ After obtaining the prices, I calculate the total monthly returns by taking the current month's adjusted closing price divided by previous month's adjusted closing price minus 1.¹¹⁶ Thus, two additional columns show monthly returns over the look-back period for the relevant stock and the S&P 500. For the sum beta estimate, I calculate the lagged returns of the S&P 500 Index by simply taking current monthly returns and lagging it by one month. For example, the lagged return for July 2015 is the monthly return for June 2015.

After calculating all relevant returns, OLS beta can be computed using the single regression SLOPE function in Excel.¹¹⁷ I select the array of stock's monthly returns for the "known y's" parameter and select the array of the S&P 500 Index's monthly returns for the "known x's" parameter. The SLOPE function estimates the slope of the regression line of the entered data points with the market returns on the x-axis and instrument returns on the y-axis. This slope represents how the instrument behaves as the market changes, which is what beta measures. The OLS regression using total return is

$$R_i = a + \beta * R_m + e \quad (\text{Formula 1})$$

where β is the estimated beta based on historical data over the look-back period, and R_i and R_m are the historical returns for the publicly traded stock, i , and the market portfolio, m . The regression also includes a as the regression constant and e as the regression error term. Therefore, I use the SLOPE function to derive the slope of the OLS regression of the subject security returns on the market returns.

¹¹⁴ *Id.* at 210.

¹¹⁵ *Id.* at 208. Pratt suggests avoiding beta estimates from periods of significant business change because they would not yield reliable forward-looking betas. However, this suggestion is not applicable here because this paper classifies instruments based on their ex post measures of risk, which means that the estimation is valid as long as it measures the security's sensitivity to the market over the look-back period.

¹¹⁶ *Id.* Pratt and Grabowski note that academicians prefer to estimate beta by using the excess returns rather than the total returns. Excess return is the amount of total return (which includes both dividends and capital gains and losses) above the return available on a risk-free investment like a Treasury bill. Use of excess returns allows for normalizing changes in returns for changes in inflation during the look-back period, but the authors imply that using excess returns or total returns makes little difference in the aggregate. Thus, this paper uses total returns for the sake of convenience.

¹¹⁷ *Id.* at 228. Another formula to calculate beta is the covariance of the instrument returns to the market returns divided by the variance of the market returns. For the beta estimates in this paper, I confirmed that using the covariance formula yields the same number as the SLOPE function.

Pratt and Grabowski point out that the OLS beta estimates for the securities of smaller companies without an active market tend to be underestimated because of the lag in the securities' sensitivity to movements in the overall market.¹¹⁸ The sum beta method captures more fully the lagged effect of co-movement in the security's returns with returns on the market. A sum beta consists of a multiple regression of a security's current month's returns on the market's current month's returns and on the market's previous month's returns, and then a summing of the coefficients.¹¹⁹ The sum beta can be computed by using a multiple regression Excel function "LINEST." For the "known y's" parameter, I select the array of the security's returns over the look-back period. For the "known x's" parameter, I select the array of S&P 500's returns and the lagged returns over the look-back period. The LINEST function yields the coefficients of the market lagged and the market terms in the multivariate regression, and their sum is the sum beta estimate. In fact, using the sum beta method in this paper yields beta estimates that generally show a stronger relationship between the subject security and the market than the OLS beta method. Thus, I use both the OLS and the sum beta methods for the examples discussed in this paper. As the lag effect is stronger with smaller firms, the government could use the sum beta method for those firms whose securities are not frequently traded.

For the real world examples in the next subsection, I use both the OLS and sum beta methods to estimate the beta of the subject instruments. I also estimate the betas of the prototypical debt and equity instruments of the firm over the same look-back period of five years. Under the proposed rule, the government would calculate the betas for the debt and equity benchmarks and the relevant hybrid security at the end of every tax year. The hybrid security would be treated as debt or equity based on the beta estimates calculated from the last five years of monthly pricing data.

The beta of a company may have changed over time, so it is crucial that the benchmark betas are calculated over the same time period. For example, in times of financial distress or restructuring of a company, the company's returns will generally decrease even if the market is on an upward trend. A beta estimate derived from returns in that period may underestimate the true forward-looking beta of the firm. For the purposes of the debt-equity distinction, the important task is to determine the relative position of the subject instrument's beta in relation to the benchmark betas of debt and equity. Even if a hybrid instrument's beta is underestimated due to a period of corporate restructuring, the beta estimates of the firm's prototypical debt and equity would also have been biased down. Therefore, events that affect a firm's beta should not affect the relationship between the debt and equity betas within the same look-back period.

The proposed rule can only reliably apply to transactions with at least five years of valuation information. Thus, the beta approach would be more effective in solving the line-drawing problem for publicly traded hybrid instruments than for transactions in closely held settings. The *Scottish Power* and *PepsiCo* cases discussed in Section II both involved shareholder

¹¹⁸ *Id.* at 212.

¹¹⁹ *Id.*

advances made to the taxpayer's closely held subsidiary, and it is unlikely that the advances at issue were traded or valued by a third party. In general, debt-equity cases involving related parties are unlikely to have publicly available valuation information. On the other hand, for publicly traded securities, the betas can be calculated based on historical returns compared to movements in the market. Technological breakthroughs and changes in government policy and law have stimulated financial innovation since the 1970s, allowing taxpayers to mix and match characteristics of both prototypical debt and equity. The proper tax treatment on these hybrid instruments, such as the adjustable rate convertible notes (ARCN's) discussed in Section III, often generates much debate and controversy. As long as valuation data is publicly available, the beta methodology would be practically applicable in determining the tax treatment of the hybrid instruments.

The beta estimates in this paper are ex post measures of systematic risk derived from historical valuation data of the relevant instruments. In the original CAPM formulation, beta is an ex ante measure of risk, meaning that the measure is used to forecast the expected return of a security. On the other hand, the beta rule in the debt-equity context is interested in determining the relationship among the beta estimates of prototypical debt, prototypical equity, and the uncertain instrument at a particular juncture. For example, for the tax year 2015, the IRS should estimate betas using pricing data from 2010 to 2014.¹²⁰ If the data from the relevant years is unavailable, it is impossible to estimate beta using the ex post method described above.

In such instances, the government could allow ex ante estimations based on reasonable projections on various factors such as earnings and dividends growth. For example, for a new type of publicly traded hybrid instrument, the government may have to wait for some time to obtain reliable historical pricing data. For such new types of securities, the IRS should require taxpayers to keep the valuation information available for the first five years and issue advance rulings based on good faith estimations of the beta using comparable transactions. If the actual beta of the security turns out to be significantly different after five years, the taxpayer would not only lose the desired tax treatment but also would be liable for any taxes owed over the first five years under the opposite tax treatment of the transaction. In sum, the proposed methodology assumes ex post estimation using historical data, but the government can rely on ex ante estimations when such data is unavailable.

C. Real World Applications

In lieu of the unpredictable multi-factor standard, the beta rule would be able to point to a quantitative measure in making the tax determination. The operative task is to measure the level of systematic risk that holders of the hybrid instrument participate in. The borrower corporation likely has publicly traded common stock which carries a relatively high level of systematic risk, and also has issued debt instruments which carries a relatively low level of risk.

¹²⁰ As stated above, the beta estimate may have changed from the previous year's estimate derived from pricing data from 2009 to 2013. However, the relationship between the debt and equity betas would stay the same because an event that affects a firm's beta generally affects the firm's debt and equity instruments in a similar way.

The task of the beta approach is to measure the beta of the hybrid instrument and compare it to those of the common stock and investment grade debt. By focusing on the risk participation level of the security, the beta approach allows taxpayers to reliably predict the tax treatment of a particular security. This section shows the application of the beta approach to two kinds of hybrid securities.

1. Liquid Yield Option Note (LYON)

The Liquid Yield Option Note (LYON) is a highly successful financial product introduced by Merrill Lynch in 1985.¹²¹ It is a zero coupon, convertible, callable, and puttable bond.¹²² The typical LYON can be converted into common stock of the issuer at a fixed conversion rate.¹²³ Also, the issuer can “call” the debt obligation at any time after one year from the original issue date, provided that the price of the underlying common stock has risen above a fixed amount.¹²⁴ In turn, the investor can “put” the debt obligations to the issuer beginning several years after the original issue date, with the put price varying year to year. None of the LYON’s four features were new at the time of introduction, but it was the combination of all of the features that made the LYON an innovation.¹²⁵ The instrument was developed to target individual retail customers who were purchasing short-term call options on common stocks with the interest accrued on their CMA accounts. The LYON allows retail investors to take advantage of long-term, low-transaction-cost call options, while providing them strong downside protection with the put option.¹²⁶

A real world example may illustrate the relevance of LYON’s to the proposed debt-equity rule. In 2005, the biotech giant Amgen Inc. offered zero coupon bonds with a principal amount of \$1,000 and maturity in March 2032.¹²⁷ The prospectus specifies an initial principal amount of \$740.18 per Note, but the Notes accrue original issue discount (OID) while they remain outstanding, such that the holder will be paid \$1,000 upon maturity.¹²⁸ The Notes are convertible into common stock of Amgen at the conversion rate of 8.86 shares per Note, with the conversion rate continually adjusted for dividend distributions and stock subdivision or combination. Beginning in March 2007, Amgen has had the option to redeem the Notes at a redemption price set to reflect the original issue discount accrued to the redemption date. Lastly, the Note holder had the option to require Amgen to purchase for cash any outstanding Note on certain purchase dates in 2006, 2007, 2012 and 2017 at purchase prices predetermined

¹²¹ John J. McConnell, *The Origin of LYONs: A Case Study in Financial Innovation*, 4 J. APPL. CORP. FIN. 40 (1992).

¹²² *Id.*

¹²³ Alan S. Gutterman, *West Business Transactions Solutions* § 155:88 (2019).

¹²⁴ *Id.*

¹²⁵ McConnell, *supra* note 121, at 40.

¹²⁶ *Id.* at 44.

¹²⁷ Amgen Inc., Offer to Exchange Our Zero Coupon Convertible Notes due 2032 and an Exchange Fee for any and all of our outstanding Liquid Yield Option Notes due 2032 (Form 424B3) (Apr. 6, 2005), available at <https://www.sec.gov/Archives/edgar/data/318154/000095014905000205/f06660b3e424b3.htm#109>. The CUSIP number for the LYON is 031162AL4.

¹²⁸ The original issue discount is the difference between the initial principal amount and the principal amount at maturity. In this example, the OID amount is \$1,000 – \$740.18 = \$259.82.

in the prospectus. Therefore, the Amgen instrument is a zero coupon, convertible, callable, and puttable bond, also known as a LYON.

The tax issue is whether the OID on LYONs should be deductible by the issuer as it accrues. In an early case involving LYONs, the issuer argued that the OID was deductible as it accrued, even though the OID might never be required to be paid in cash if the holder converted the debt instrument prior to maturity.¹²⁹ The deductibility of OID in general is governed by a rather complex system of regulations and calculation methods under Section 163. For purposes of this discussion, it suffices to state that OID accretions generally are deductible by the issuer and includible in the holder's income.¹³⁰ The IRS initially took the position that the OID on LYONs are not deductible, but later issued a private letter ruling confirming that it is deductible as long as the accrued OID would not be cancelled, extinguished or forfeited.¹³¹ The private ruling is rather brief and does not delve into the debt-equity consideration of LYONs.

Applying the existing Section 163(l) approach to convertible debt, the IRS would have had to ask whether the features of the LYON provide substantial certainty that the holder will exercise the option to convert into the issuer's equity. As discussed in the ARCN example in Section III, the likelihood of conversion would depend on the share price at the time of issue. In the Amgen LYON case, the common stock at the time of issue was worth around \$50.¹³² Assuming that the holder would receive the conversion rate of 8.86 shares upon the Note's maturity in 2032, the holder would be converting at a price of \$112.87 per share. Therefore, the Amgen stock would have had to appreciate over twofold over that period for the investor to choose to convert into stock rather than receive \$1,000 in cash. A salient feature of LYONs is the fixed conversion rate, with only minor adjustments. Therefore, the effective conversion price rises as the OID accrues over the term, which means that the underlying stock would have to appreciate substantially for the Note to be converted.

However, LYONs usually have long terms to maturity like 15 to 30 years. It is likely that the underlying stock price would rise enough to justify conversion at some point during the long term. For example, on March 1, 2017, the Amgen LYON holder would have had the option to sell the Note back to the company at \$845.12 or convert into 8.86 shares at the conversion price of \$95.39.¹³³ As the adjusted closing price on that day was above \$164, it would have been wise for the holder to convert rather than take the cash. Therefore, given the typical terms of LYONs, it seems unlikely that investors will hold to maturity without converting. The IRS could have focused on the long terms to maturity to argue that the hybrid instrument should be treated as equity.

¹²⁹ Lee Sheppard, *IRS Stance in Staley Underscores Roaring Issues Raised by LYONs*, 53 TAX NOTES 1453 (Dec. 30, 1991).

¹³⁰ I.R.C. § 163(e).

¹³¹ I.R.S. Priv. Ltr. Rul. 92-11-047 (Dec. 18, 1991).

¹³² The adjusted closing price for AMGN on May 31, 2005 was \$51.27 according to Yahoo Finance.

¹³³ $\$845.12 / 8.86 = \95.39 .

Moreover, the fixed conversion rate also makes it difficult to argue that the OID accretion should be treated like interest paid on indebtedness. Interest has been defined by the Supreme Court as a charge for “the use or forbearance of money.”¹³⁴ Converted LYONs do not compensate the holder for the time value of money because the holder receives the same number of shares no matter when during the instrument’s term the conversion takes place.¹³⁵ Thus, the IRS could have argued that stock tendered on conversion of a LYON does not include deductible interest because it does not compensate the holder for the time value of money. Overall, although the IRS decided to allow deduction for OID accrued on LYONs, the agency could very well have focused on a different feature of the hybrid instrument to classify it as equity. The beta approach serves to reduce this kind of unpredictability.

Using the beta approach, I first calculate the monthly returns of the Amgen LYON using monthly historical prices from its issue in 2005 to March 2011. I also calculate the monthly returns of the S&P 500 Index over the same period. The historical prices used in this example were pulled from a Bloomberg Terminal. Then, the monthly returns are entered on Excel into the formula for beta, which is calculated using the SLOPE and LINEST functions on Excel with the x-axis as market returns and y-axis as the instrument’s returns. The Excel calculations reveal an OLS beta of -0.08 for the LYON. Using the sum beta method reveals a slightly more negative beta of -0.11 . Figure 1 charts the OLS regression, where the dotted line represents the regression line with a slightly negative slope. The R square value measures the proportion of variation in the dependent variable explained by the independent variable or how well the regression model fits the data. The R square value for this regression was 0.03, which means that the regression model can only explain three percent of the variation in LYON returns.

In addition to the weak regression, it seems unusual to find a negative beta in the biotech industry which is generally procyclical. There are two factors that could have affected the estimated beta’s accuracy. First, the Bloomberg data missed a few months’ observations for the LYON during the look-back period. Namely, it is missing the data for April and May 2007, August to December 2007, and April 2008 to April 2009. For the regression, I also exclude the historical S&P data for the corresponding periods, so the beta estimate may not reflect the true relationship between the returns on the security and the returns on the market during the entire look-back period. Second, this period — May 2005 to March 2011 — included the period of the most severe economic decline since the Great Depression. The market generally places greater weight on downside risk than on upside gains, so some economists suggest that securities with high downside exposure require a premium that is different from the premium on regular market beta.¹³⁶ Therefore, the LYON returns during the market crashes may reflect a premium other than the market beta premium. In fact, in Figure 1, it is apparent that the data point for June 2009 reflecting a 30 percent drop in the S&P is an outlier that skews the regression line.¹³⁷ Excluding the June 2009 observation from the regression yields a slightly positive beta of 0.09. Therefore, I cautiously conclude that the LYON beta is close to zero. As

¹³⁴ Deputy v. DuPont, 308 U.S. 488, 498 (1940).

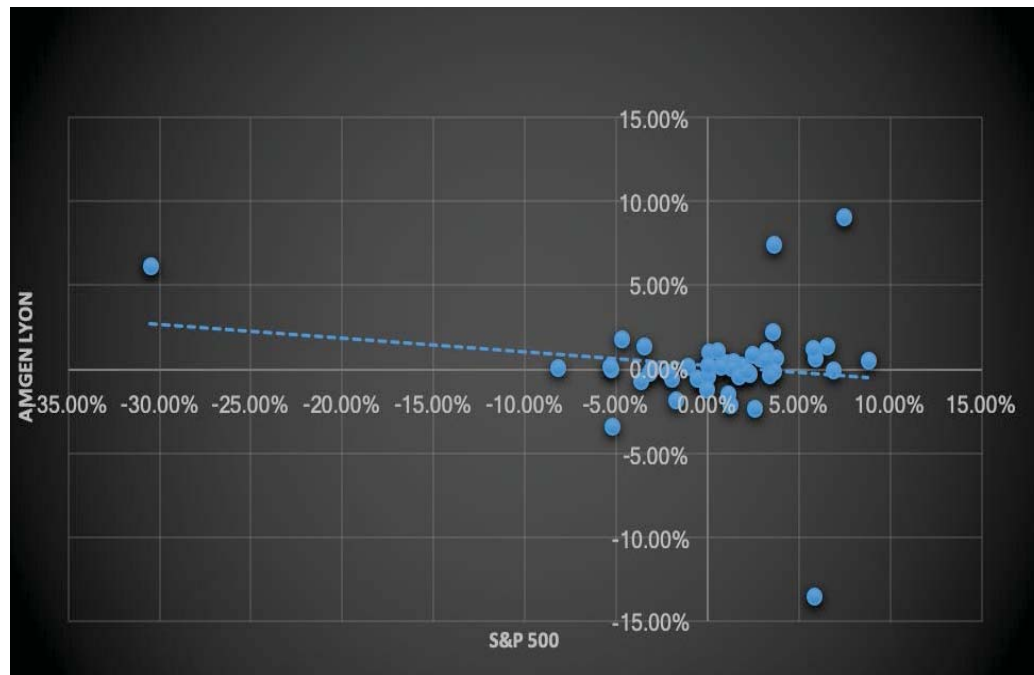
¹³⁵ Sheppard, *supra* note 129.

¹³⁶ Andrew Ang, Joseph Chen & Yuhang Xing, *Downside Risk*, 19.4 REV. FIN. STUD. 1191, 1236 (2006).

¹³⁷ Graphs created by author by running OLS regressions on Excel using pricing data obtained from various sources including Bloomberg.

shown below, either the slightly negative or slightly positive beta estimate of the LYON supports its debt treatment.

Figure 1. OLS Regression of Amgen LYON and S&P 500 Monthly Returns, $\beta = -0.08$, $R^2 = 0.03$



Assuming that the LYON beta estimate is statistically significant, the next step in the beta approach would be to compare the LYON beta to the betas of Amgen's prototypical debt and equity. The Amgen common stock, traded on the NASDAQ under the ticker AMGN, can serve as the equity benchmark. I use monthly returns of AMGN and S&P to calculate the beta of AMGN over the same look-back period as the LYON data, May 2005 to March 2011. The common stock shows OLS beta of 0.45 and sum beta of 0.30.¹³⁸ I also identify two senior unsecured notes issued by Amgen to provide the debt benchmark beta.¹³⁹ They are both investment grade bonds: one was issued in 2005 with a coupon rate of 4.00% and matured in 2009, and the other was issued in 2005 with a coupon rate of 4.85% and matured in 2014.

¹³⁸ One might expect that Amgen stock would show a relatively high beta because the biotechnology industry is generally sensitive to market swings. However, Amgen is one of the world's largest biopharmaceutical companies which sells many popular and established drugs. As such, the company's revenue and profits may be less prone to macroeconomic changes. The Bloomberg estimate of the stock's raw beta for the look-back period is 0.433, which is close to the OLS estimate of 0.45.

¹³⁹ The CUSIP numbers for these benchmark debt instruments are 031162AG5 and 031162AJ9.

Bloomberg provides the monthly pricing data for both, although the look-back period for the first bond stops in 2009 rather than 2011. Again, using the S&P 500 as representing the market returns, I estimate OLS betas of -0.01 and -0.02 respectively. The sum beta estimates are -0.005 and -0.03 . These results confirm the general observation that the debt beta of a firm is lower than its equity beta. Considering the low beta of the Amgen common stock over the look-back period, perhaps it is not usual that the LYON and the debt instruments show slightly negative betas.

Proceeding with the beta approach, the results would conclude that the efficient tax result is to treat the LYON like debt. The LYON OLS beta estimate, -0.08 , is closer to the betas of the two senior notes, -0.01 and -0.02 , than to that of the Amgen common stock, 0.45 . In other words, the holder of the hybrid instrument carries a similar level of systematic risk as the holder of the company's senior notes. The calculations show that betas are close to zero for both the hybrid instrument and the senior notes, which means that diversified investors do not really participate in market risk when they hold LYONs or the senior notes. Therefore, using the risk-based approach, the debt treatment of LYONs is the efficient classification.

After concluding that LYONs should be treated like debt, a separate question is how much of the OID should be deductible. For LYONs that are redeemed by the issuer for cash, it is straightforward to calculate the interest because the holder receives the original principal plus any accrued OID in cash. For converted LYONs, however, the issuer actually never pays accrued OID to the holder. Perhaps a more economically accurate solution would be to allow deductions for the excess of the fair market value of the shares received by the holder over the original issue price of the LYON. If the underlying stock has appreciated in value since the original issue date, the excess of the fair market value over the original issue price could be deemed as interest paid to compensate the holder for the time value of money.

2. Monthly Income Preferred Stock (MIPS)

Another type of hybrid security that we can apply the beta rule to is MIPS, briefly discussed in Section V. Invented in the early 1990s, the hybrid instrument is treated as debt for tax purposes, but treated as preferred stock for essentially all other purposes.¹⁴⁰ Because of its tax advantages, MIPS effectively replaced preferred stock in the marketplace.¹⁴¹ In a typical MIPS transaction, the borrower corporation sets up a special purpose entity that is designed to be treated as a partnership for federal income tax purposes.¹⁴² The borrower contributes some capital to the partnership, and the public investors contribute additional capital to the partnership in exchange for preferred interests promising monthly distributions of income (the MIPS).¹⁴³ The partnership then lends all of its capital to the borrower on arm's length terms.¹⁴⁴ Until maturity of the loan, the borrower pays interest to the partnership, which distributes it to

¹⁴⁰ Weisbach, *Line Drawing*, *supra* note 53, at 1639.

¹⁴¹ *Id.*

¹⁴² David P. Hariton, *Distinguishing Between Equity and Debt in the New Financial Environment*, 49 TAX L. REV. 499, 517–18 (1994).

¹⁴³ *Id.*

¹⁴⁴ *Id.*

the investors on a monthly basis. If the borrower defaults on the loan, the investors take control of the loan and enforce creditor's rights such as accelerating principal and forcing the borrower into bankruptcy.¹⁴⁵ All proceeds must be distributed to the investors at the maturity of the loan.

The economic keys to the MIPS structure are the long maturity — at least 30 years — and the right of the corporate parent to defer payment of interest in the event of financial distress, typically for five years.¹⁴⁶ The borrower receives more favorable treatment from the rating agencies when it issues MIPS than it would for an issuance of senior debt due to the relatively long term of the loan and the borrower's right to defer interest for a period of time.¹⁴⁷ These features also give the issuer the same financial cushion as preferred stock. Therefore, MIPS can be seen as a form of preferred stock that has been restructured to give deductibility to the borrower. Instead of directly paying dividends to preferred shareholders, the borrower corporation pays deductible interest on the loan to the partnership, which passes on the proceeds to the MIPS holders.

Applying the multi-factor approach to MIPS, some factors would favor equity treatment of the hybrid instrument. The long term to maturity of the security favors equity treatment. In *PepsiCo*, the Tax Court ruled that the 50-year term of the advance agreements in that case weighs heavily in favor of treating them as capital investments because it “effectively subjected the principal amounts of the instruments to an uncertain international economic climate for an inordinate period.”¹⁴⁸ It is likely that the court will similarly find the long term of MIPS securities — sometimes perpetual — as characteristic of equity investments. Moreover, the right of the borrower to defer payment of interest deviates from a typical debtor-creditor relationship, where interest is paid according to a fixed schedule regardless of the borrower's financial performance. Therefore, some factors would favor the classification of MIPS as equity. In fact, the Treasury Department wanted to treat MIPS as stock rather than as debt and proposed legislation to this effect, but Congress rejected the proposal.¹⁴⁹ Eventually, Treasury issued a set of rulings and notices implying that it would not challenge the debt treatment of the security so long as its maturity was not overlong.¹⁵⁰ As with the ARCN ruling, it is difficult to predict how long the maturity can be for the Treasury to accept the debt treatment.

Instead, applying the beta approach to MIPS would create more predictability and transparency for taxpayers. This paper applies the risk-based approach to a set of MIPS issued by Popular Inc., a financial services conglomerate that operates in Puerto Rico and the mainland United States. Popular's common stock trades on the NASDAQ under the ticker “BPOP.” In 2003, the company offered to the public 6,500,000 shares of its 6.375% Noncumulative

¹⁴⁵ *Id.*

¹⁴⁶ Mark P. Gergen & Paula Schmitz, *The Influence of Tax Law on Securities Innovation in the United States: 1981-1997*, 52 TAX L. REV. 119, 153 (1997).

¹⁴⁷ *Id.*

¹⁴⁸ *PepsiCo*, *supra* note 28, at *65.

¹⁴⁹ Weisbach, *Line Drawing*, *supra* note 53, at 1673.

¹⁵⁰ Gergen, *supra* note 146, at 168 (referring to Rev. Rul. 94-28, 1994-1 C.B. 86; Notice 94-47, 1994-1 C.B. 357).

Monthly Income Preferred Stock, 2003 Series A.¹⁵¹ Offered at a price of \$25 per share, the instrument currently trades on the NASDAQ under the symbol “BROPO.” The preferred stock pays annual dividends of \$1.59375 per share, payable monthly, if declared by the board of directors. Missed dividends never have to be paid.¹⁵² The prospectus supplement explains that the board of directors is not “obligated [n]or required to declare monthly dividends,” and that banking regulations may restrict the company’s ability to pay dividends. The instrument was redeemable at Popular’s option beginning on March 31, 2008, but it has no mandatory redemption or stated maturity.¹⁵³ Popular offered another instrument with essentially the same features but with a higher coupon rate of 8.25% in 2008, and the instrument currently trades on the NASDAQ under the symbol “BROPP.”¹⁵⁴ The perpetual maturity and the right of the borrower to not pay dividends makes BROPO and BROPP similar to the typical MIPS instrument.

After identifying the hybrid instruments, I estimate their betas. I use publicly available pricing data on BROPO and BROPP to calculate the beta estimate for each instrument. As both are traded on the NASDAQ, I was able to find their monthly adjusted closing prices on Yahoo Finance for the look-back period of 5 years from January 2014 to December 2018 (60 observations). I then calculate the monthly return rates for both, as well as the monthly returns for the S&P 500 Index in the same period. As I used the adjusted closing prices to derive the return rates, they should reflect changes in transaction prices and any corporate actions like the monthly dividend payments. Then, the monthly returns are entered into the SLOPE and LINEST functions on Excel with the x-axis as market returns (S&P) and y-axis as the instrument’s returns (BROPO and BROPP).

As shown in Figures 2 and 3, the regressions revealed OLS betas of 0.42 and 0.21 for BROPO and BROPP respectively. The R squared values are 0.11 and 0.06, which means that the regression line explains more of the variation in the MIPS returns than in the Amgen LYON regression, which showed an R squared value of 0.03. Sum beta estimates are 0.74 and 0.30. The next step is to compare the betas to the betas of the firm’s benchmark equity and debt instruments. The OLS and sum beta estimation for Popular common stock, BPOP, calculated over the same look-back period, showed betas of 1.16 and 1.13. To estimate the beta of the company’s prototypical debt, I considered a senior unsecured note issued by Popular in in 2014 with a coupon rate of 7.00%.¹⁵⁵ The security was due to mature in July 2019, but was called by the issuer in October 2018, so the historical data on Bloomberg stops in September 2018. I regressed the returns of the senior note and S&P returns from July 2014 to September 2018, and estimated OLS beta of 0.15 and sum beta of 0.18. As in the Amgen LYON example, the

¹⁵¹ Popular Inc., Prospectus Supplement (Form 424B5) (Feb. 21, 2003), at S-3, available at <https://www.sec.gov/Archives/edgar/data/763901/000095014403002296/g80501b5e424b5.htm>.

¹⁵² *Id.* at S-6.

¹⁵³ *Id.* at S-20.

¹⁵⁴ Popular Inc., Prospectus Supplement (Form 424B2) (May 22, 2008), at S-4, available at https://www.sec.gov/Archives/edgar/data/763901/000119312508120693/d424b2.htm#supp99345_1.

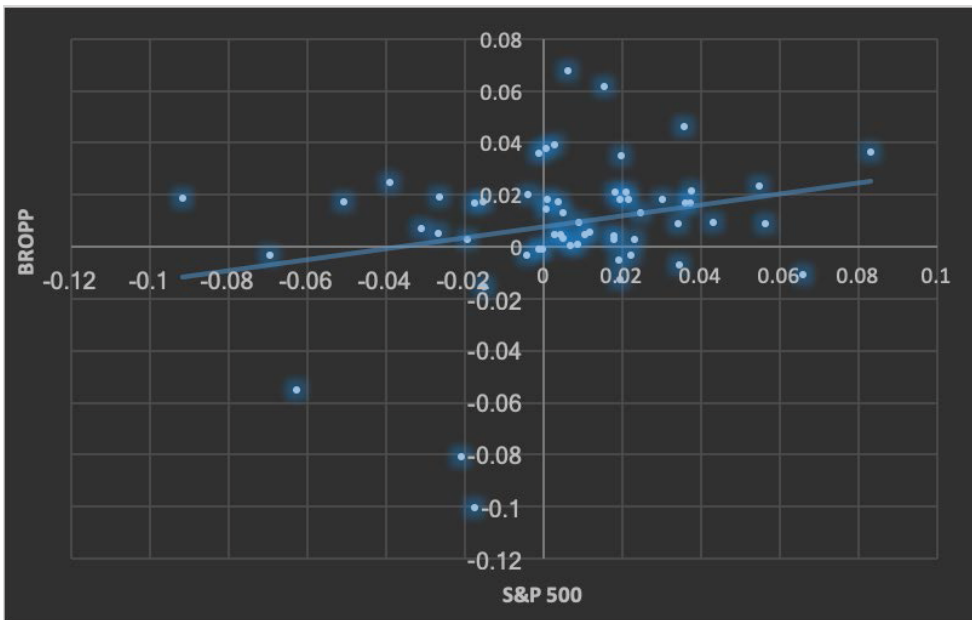
¹⁵⁵ The CUSIP number for the benchmark debt is 733174AJ5. The last S&P rating of the debt before maturity was BB-, which is just below investment grade. Ideally, I would use an investment grade bond as the debt benchmark over the look-back period, but I was unable to obtain appropriate historical data.

benchmark results are consistent with the general observation in finance literature that the debt beta is significantly smaller than the equity beta of the same firm.

Figure 2. OLS Regression of BROPO and S&P 500 Monthly Returns, $\beta = 0.42$, $R^2 = 0.11$



Figure 3. OLS Regression of BROPP and S&P 500 Monthly Returns, $\beta = 0.21$, $R^2 = 0.06$



For BROPP, both the OLS and the sum beta estimates are significantly closer to the debt benchmarks of 0.15 and 0.18 than the equity benchmarks. Thus, the debt treatment of the hybrid security is the efficient tax result. For BROPO, however, the tax treatment depends on whether we use the OLS or sum beta estimate. The OLS beta estimate of 0.42 is closer to the debt benchmark. The sum beta estimate of 0.74 is actually closer to the equity benchmark beta of 1.13 than the debt benchmark of 0.18.¹⁵⁶ Therefore, if the government were to apply the sum beta estimation method on the same benchmarks, the Popular MIPS issued in 2003 would have to be treated as equity. The government should determine the appropriate method to use on each firm depending on its size and trading volume and inform the relevant parties of the method to be used *ex ante*. The parties may object that the chosen method yields an undesirable tax result, but the approach would still be much more predictable and consistent than the multi-factor approach.

D. Advantages and Limitations of the Proposed Rule

As discussed above in Section V, the main advantage of the beta rule over current law is the reduction of two types of deadweight loss. The adoption of a general rule in lieu of a flexible and vague standard would save taxpayers and the government significant resources in planning and administering debt-equity transactions. The use of economic substitutes in determining the tax treatment of a hybrid security would minimize the inefficient distortions that result from uneconomic tax treatments.

In addition, the proposed rule offers advantages over other risk-based proposals. First, the beta rule is immune from changes in a firm's risk profile because the debt and equity benchmarks are firm-specific. The beta estimates of a firm may change due to changes in the firm's assets and liabilities. For example, a company in the utilities industry, a traditionally low beta industry, may take on a high-tech project that increases the firm's exposure to market risk. Thus, the beta of the firm's common stock increases, but the increased risk exposure affects the firm's other securities as well. In other words, the debt benchmark and the hybrid security should see a commensurate increase in beta, as the increased risk would affect the returns on any security issued by the firm. Another example is that a company's levered beta, which considers the company's capital structure, increases as the firm takes on more debt.¹⁵⁷ However, as the debt-to-equity ratio increases, the company's debt beta increases as well.¹⁵⁸ Overall, a change in the beta of one type of security is likely to be accompanied by commensurate changes in other securities of the firm, such that the tax treatment of a hybrid security will not change due to a change in firm conditions. As long as the benchmarks are

¹⁵⁶ The greater difference between the OLS and sum beta estimates in BROPO than BROPP is likely explained by a difference in trading volumes. The prospectus supplements show that the 2008 offering issued 16 million shares at a price of \$25 per share, while the 2003 offering issued only 6.5 million shares at the same price. Thus, it is plausible that the lagged effect of comovement in the security's returns with market returns is greater in BROPO than BROPP because the 2003 series is traded less frequently.

¹⁵⁷ Unlevering a beta removes the financial effects of leverage thus isolating the risk due solely to company assets, but the proposed approach uses levered beta because the goal is to understand the volatility of a specific company rather than compare betas of different companies.

¹⁵⁸ Mihir Desai, *HOW FINANCE WORKS: THE HBR GUIDE TO THINKING SMART ABOUT THE NUMBERS*, 140 (2019).

estimated over the same look-back period, the beta estimates can reveal whether the hybrid instrument is a closer substitute for debt or equity.

Second, the beta rule is less susceptible to taxpayer manipulation than proposals that use rates of return as the risk proxy. Table 1 summarizes the estimation results of the betas of the LYON and MIPS instruments and their appropriate tax treatment according to the proposed beta rule of classifying a security based on the numerical proximity of its beta to the benchmark betas. An objection to this rule could be that a mechanical application of such rule fails to distinguish between instruments that bear differing degrees of systematic risk and creates an abrupt change in tax treatment at the dividing line. For example, as seen in Table 1, BROPP, a Monthly Income Preferred Stock for Popular Inc., should be treated as debt as its OLS and sum beta estimates are closer to the debt benchmarks. However, one could devise another MIPS whose beta estimates are 0.654, which is just shy of the mid-point between the benchmark betas.¹⁵⁹ A mechanical application of the beta rule would grant the same tax treatment to this hypothetical instrument and BROPP, although the hypothetical security would bear a much higher level of systematic risk.

Table 1. Beta Estimates of Hybrid and Benchmark Instruments and the Tax Treatment under the Beta Rule

Instrument	OLS Beta	Tax Treatment	Sum Beta	Tax Treatment
Amgen Stock (AMGN)	0.45	Benchmark Equity (BE)	0.30	BE
Amgen LYON	-0.08	<i>Should Be Debt</i>	-0.11	<i>Should Be Debt</i>
Amgen Senior Note 1	-0.01	Benchmark Debt (BD)	-0.005	BD
Amgen Senior Note 2	-0.02	BD	-0.03	BD
Popular Stock (BPOP)	1.16	BE	1.13	BE
Popular MIPS (BROPO)	0.42	<i>Should Be Debt</i>	0.74	<i>Should Be Equity</i>

¹⁵⁹ $(1.16 + 0.15)/2 = 0.655$; $(1.13 + 0.18)/2 = 0.655$.

Popular MIPS (BROPP)	0.21	<i>Should Be Debt</i>	0.30	<i>Should Be Debt</i>
Popular Senior Note	0.15	BD	0.18	BD

By specifying a sharp line between conducts, rules allow Holmes's proverbial bad man to take conscious advantage of under-inclusion.¹⁶⁰ When the taxpayer knows ex ante where the break point is, he or she can design instruments that maximize or minimize the level of risk while still receiving the desired tax treatment. On the contrary, under a standard, the enterprising taxpayer would be much less likely to engage in the borderline behavior because changes in behavior create a continuous change in probability from an ex ante perspective.¹⁶¹ In other words, there would be substantial likelihood that the standard would impose the undesired tax treatment on the borderline transaction.¹⁶²

However, the beta estimation methodology illustrated in this paper is an ex post measure of risk that is hard to determine ex ante. The issuer can change the instrument's exposure to systematic risk by contractually changing attributes like the term to maturity, subordination, or right to defer payments, but it is difficult to predict how much each feature would change the beta. One could construct financial models based on historical data of instruments with similar features, but the ex ante projections from the models would only be probabilistic with respect to the ex post estimations that the tax authorities would perform. Therefore, it would be extremely risky for the proverbial bad man to issue a security with the purpose of staying very close to the debt-equity cliff, as he would incur substantial chance that the estimated beta would push him over to the opposite tax treatment. In fact, most taxpayers who want a certain tax treatment on their instrument would err on the side of caution and add features to ensure that the projected beta is reasonably close to the beta estimates of the firm's benchmark debt or equity. In contrast, if the instrument's return is used as the proxy, taxpayers can manipulate the issue price which would translate directly into a change in the yield.

Moreover, the beta approach could further mitigate the discontinuity problem by adopting a bifurcation regime. Instead of an all-or-nothing approach, the bifurcation rule would provide the Commissioner with discretion to treat certain instruments as in part debt and in part stock. Treasury recently proposed to adopt a bifurcation rule on debt instruments between

¹⁶⁰ Pierre J. Schlag, *Rules and Standards*, 33 UCLA L. REV. 379, 384–85 (1985).

¹⁶¹ David A. Weisbach, *Formalism in the Tax Law*, 66 U. CHI. L. REV. 860, 873 (1999).

¹⁶² Weisbach also points out that a discontinuous law can allow taxpayers to achieve tax arbitrage by matching a long position very close to the break point with a short position also very close to that point. *Id.* at 874. He mentions the Knetsch case as an example, where the taxpayer purchased deferred-interest annuity with money borrowed from the same company that sold the annuity. Taxpayers could theoretically devise a similar plan around the proposed beta rule by issuing debt that is just shy of the beta cutoff and investing the funds in tax-preferred instruments like growth stock. Yet, the taxpayers would have to incur substantial risk that the actual beta estimation may push them over to the undesirable tax treatment because the beta estimates are difficult to predict ex ante. Moreover, this subsection discusses the bifurcation approach as another way to further lessen the discontinuity effect.

two members of the same modified expanded group, although the final Section 385 regulations removed the rule.¹⁶³ Treasury had proposed the bifurcation regime to apply to contingent debt instruments in 1991, but also withdrew it in the final Section 1275 regulations adopted in 1994.¹⁶⁴ Under the proposal, the interest on a contingent debt instrument would have been bifurcated into deductible interest and non-deductible payment on equity.

In applying the beta rule, a bifurcation regime should apply to instruments whose beta is substantially close to the debt-equity break, the midpoint between the debt and equity benchmarks, to ensure that a minor change in beta does not lead to a dramatic change in tax treatment. The subject security could be bifurcated according to its relative distance to the debt and equity benchmarks. For example, going back to the Popular Inc. example, the hypothetical MIPS with beta of 0.654 could be treated as 49.9% debt and 50.1% equity based on the beta's distance to the benchmarks of 0.15 and 1.16.¹⁶⁵ Therefore, only 49.9% of the monthly payments would be treated as interest payments by the issuer, while the rest are treated as dividend payments on equity. This bifurcation method would still suffer from the discontinuity problem in Polito's bifurcation regime discussed above in subsection A. If some instruments are treated as entirely debt and others as partially debt, a marginal change in an instrument's beta that renders it entirely debt would have a disproportionate tax effect.

Another method of allocating the bifurcation would be to follow the Treasury's proposed method on bifurcating a contingent debt instrument into two components, a noncontingent component and a contingent component.¹⁶⁶ If the contingent component is economically equivalent to publicly traded property, the portion of the issue price allocable to this property will be based on its fair market value, and the remainder of the issue price is allocated to the noncontingent component.¹⁶⁷ Otherwise, the issue price of the noncontingent instrument will be the present value of the payments to be made on that instrument, and the remainder of the issue price will be allocated to the contingent component.¹⁶⁸ The discount rate on the present value of the noncontingent debt component must be based on the yields of comparable debt instruments of the issuer or comparable issuers.¹⁶⁹ Applying the Treasury's proposed approach to the Amgen LYON, we could determine the value of the noncontingent component by summing the present value of the OID accrual and the principal amount set to mature in 2032. Out of the \$740.18 issue price, the Treasury could classify the value of the noncontingent component as debt, and the remainder as equity. Then, the Treasury would allow deductions for the portion of the OID accrual that is attributable to the noncontingent component of the issue price.

¹⁶³ *New Section 385 Regulations Significantly Limit Scope*, PWC TAX INSIGHTS. (Oct. 14, 2016), <https://www.pwc.com/us/en/services/tax/library/insights/new-section-385-regulations-significantly-limit-scope.html>.

¹⁶⁴ Kenneth H. Heitner & Jonathan M. Kushner, *To Bifurcate or Not to Bifurcate: The Answer Becomes Less Clear*, 46 TAX LAW. 43, 81 (1992).

¹⁶⁵ $(0.654 - 0.15) / (1.16 - 0.15) = 0.499$; $(1.16 - 0.654) / (1.16 - 0.15) = 0.501$.

¹⁶⁶ Prop. Regs. § 1.1275-4(g)(3), 56 Fed. Reg. 8308 (1991).

¹⁶⁷ Heitner & Kushner, *supra* note 164, at 82.

¹⁶⁸ *Id.*

¹⁶⁹ *Id.*

The biggest downside of the beta rule lies in its limited scope of applicability. Due to the nature of its methodology, the rule can reliably apply to publicly traded securities with at least five years of valuation data. This leaves out most debt-equity cases involving related party financings, which has recently risen in popularity among multinational corporations.¹⁷⁰ In addition, the proposed beta rule also bears significant administrative costs. As the approach is firm-specific, the government would have to expend resources in calculating the beta estimates of the hybrid security and in determining the appropriate debt and equity benchmarks for each company. Moreover, the accuracy of the best estimates depends on the availability of years of relevant valuation data. If the data is unavailable, the government would have to rely on reasonable projections and comparable transactions, which would lessen the certainty of the efficient tax outcome. Taxpayers would also likely dispute the appropriate beta calculation method, as the tax treatment of an instrument — like BROPO in Table 1 — can differ depending on the method used.

VII. Conclusion

This paper devises a partial solution to the debt-equity line-drawing problem that minimizes two kinds of deadweight loss produced by current law. Observing that prototypical debt and equity carry different levels of risk, it proposes a rule that uses beta estimates — a measure of systematic risk — in distinguishing between debt and equity for federal income tax purposes. The multi-factor standard currently used by the courts and the government is unpredictable and allows gaming by well-advised taxpayers. In lieu of the unpredictable and malleable standard, the beta rule would classify an instrument based on its beta's numerical proximity to the benchmark debt and equity betas of the same firm. The beta approach reduces deadweight loss by taxing an instrument like its closest substitutes, and its formulation as a rule rather than a standard curtails enforcement costs for the government and information costs for the taxpayer. On the other hand, reliable beta estimation requires years of publicly available valuation information, so the approach can apply to instruments of publicly traded companies with a wealth of historical data. Also, the government would have to expend resources in determining the appropriate debt and equity benchmark betas for each firm. At a minimum, the approach should be able to provide clear guidance on innovative hybrid transactions — like the MIPS and the LYON — that become widespread among public companies. Thus, the beta rule proves to be a promising tool that can help the government efficiently draw the line between debt and equity for certain transactions.

¹⁷⁰ See *supra* Section II.