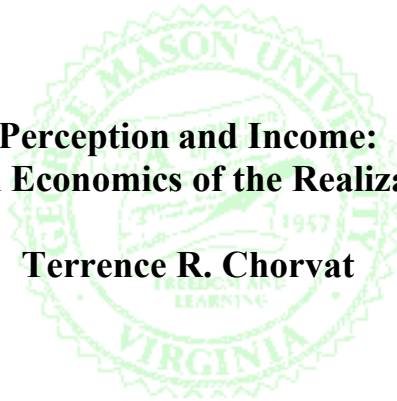


# **George Mason University**

## **SCHOOL of LAW**

**Perception and Income:  
The Behavioral Economics of the Realization Doctrine**

**Terrence R. Chorvat**



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***Perception and Income:  
The Behavioral Economics of the Realization Doctrine***

*Terrence R. Chorvat\**

*The requirement that gains be “realized” before they are subject to income tax is one of the most fundamental doctrines in tax law as well as being one of the most controversial. The common assumption in the academic literature is that this requirement leads to significant inefficiencies and inequities. This article argues that requiring a realization event is generally the best way to measure taxable income because it is consistent with how individuals actually perceive income. This perspective helps us to understand the development of the realization doctrine as well as suggest ways in which the current tax system can be improved, such as exempting some of the amounts reinvested in mutual funds from income taxation.*

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The stock market bubble of the late 1990's and the subsequent crash showed the folly of thinking of increases in value as necessarily being permanent. The common intuition is that gains and losses in shares of stock are merely “paper gains” and “paper losses” until the shares are sold.<sup>1</sup> Consistent with this insight, the income tax rules of the United States and almost every other country<sup>2</sup> generally do not tax gains and losses on investments until the property is sold; mere increases in value do not result in tax.<sup>3</sup> This requirement is known as the realization doctrine.<sup>4</sup>

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<sup>1</sup> Edward Zelinsky, *For Realization: Income Taxation, Sectoral Accretion and the Virtue of Attainable Virtues*, 19 CARDOZO L. REV. 861 (1997); see also David Schizer, *Realization as Subsidy*, 73 N.Y.U. L. REV. 1549 (1998). For a discussion of court cases on this issue see Joseph Sneed, *A Defense of the Tax Court's Result in Prunier and Casale*, 43 CORNELL L.Q. 339, 350-353 (1958). For analysis of how this perception arises, see Richard Thaler, *Mental Accounting Matters*, 12 J. BEHAV. DEC. MAKING 183 (1999).

<sup>2</sup> James M. Poterba, *Taxation and Portfolio Structure*, in HOUSEHOLD PORTFOLIOS 103, 122-4 (Luigi Guiso ed., 2002). The only country to have experimented with accrual taxation is Italy. This experiment has so far led to a repeal of the retrospective tax elements (see Part II, *infra*) and will likely lead to the repeal of the entire mark-to-market system, see Julian Alworth, et al. *Adjusting Capital Income Taxation: Some Lessons from the Italian Experience*, Università Luigi Bocconi Working Paper (2002)(on file with the author).

<sup>3</sup> See BORIS BITTKER AND LAWRENCE LOKKEN, FEDERAL TAXATION OF INCOME, ESTATES AND GIFTS ¶ 5.2, p.5-17(1999).

<sup>4</sup> Interestingly, the term “realization” itself literally means to make real, implying that gains accruing prior to a realization event are somehow not fully real. The early court opinions addressing the issue simply stated, as a matter of law, gains were not income until realized. See e.g., *Eisner v. Macomber*, 252 U.S. 189 (1920). In addition, the federal Bureau of Economic Affairs does not include increases in the value of capital assets held by investors in the calculations of the savings rate because “[W]e don’t feel they’re a real source of income over the long haul.” [Statement of Larry Moran, Bureau of Economic Affairs spokesman] quoted in Russ Wiles, *Put It Away for a Rainy Day, Americans Have Begun to Save More*, ARIZONA REPUBLIC (Jan. 20, 2003) at 5.

While this might be the common intuition, this view has essentially never been taken seriously in the academic literature.<sup>5</sup> It is the almost universal view that in a perfect world the correct time for assessment of tax on gains is as the value of the asset increases, rather than at the time of sale. Some authors may concede that such a system will not work in the real world, but it is still considered the ideal system.<sup>6</sup> While it is generally thought that the realization doctrine is both inefficient<sup>7</sup> and inequitable,<sup>8</sup> the realization doctrine is sometimes accepted as an accommodation to practical considerations,<sup>9</sup> but it is still at best a compromise.

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<sup>5</sup> David Weisbach, *A Partial Mark-to-Market System* 53 TAX L. REV. 95 (1999); see also Zelinsky, *supra* note 1.

<sup>6</sup> As discussed in part II, *infra*, David Schizer has argued that if we want to subsidize savings, realization may be the a good idea. However, this assumes a market failure (i.e., that people are not saving enough), so it is too is a second best argument. See Schizer, *supra* note 1.

<sup>7</sup> “Nothing in the nature of things makes separation from capital one of the requisites of income from capital. From a practical common-sense point of view there is something strange in the idea that a man may indefinitely grow richer without ever being subject to an income tax.” Thomas Reed Powell, *Income from Corporate Dividends*, 35 HARV. L. REV. 362, 372 (1922). The doctrine is thought to be inefficient because it provides an incentive to invest in assets for which gain can be deferred and a deferred tax is generally thought to be the equivalent to a lower level of tax. See MYRON SCHOLES, ET AL. TAXES AND BUSINESS STRATEGY : A PLANNING APPROACH (2000) pp. 42-7; See also Terrence R. Chorvat, *Taxing International Income Efficiently*, 53 TAX L. REV. 225 (2000). It is also thought to encourage investors to retain assets longer than they otherwise would. LEONARD E. BURMAN, THE LABYRINTH OF CAPITAL GAINS TAX POLICY: A GUIDE FOR PERPLEXED 25-8 (1999).

<sup>8</sup> JOSEPH SNEED, THE CONFIGURATIONS OF GROSS INCOME 71 (1967). For a more recent discussion see Weisbach, *supra* note 5; also see the discussion in Part II, *infra*. It is considered to be inequitable because the benefits of the deferral of taxation generally accrue to wealthy individuals.

<sup>9</sup> Bittker and Lokken, *supra* note 3 at 5-20; see also Weisbach, *supra* note 5, at 98. These practical considerations include that it would be very costly to try to determine a value for all unsold assets, it might force some taxpayers to sell their assets to pay the

This article argues that the common intuition provides a superior basis for the assessment of income tax in large part because it is the common intuition. Because individuals generally do not perceive unrealized gains as income, such gains should not be taxed as income. The article shows how understanding that unrealized income is not viewed the same as realized income helps us to understand the behavior of most taxpayers and also helps to explain the manner in which the rules have developed. In addition, this insight provides clear suggestions on how to improve the tax system.

Part I of the article discusses what it means for a gain or loss to be “realized” under current law as well as the most prominent exceptions to the application of this rule. Part II addresses the traditional arguments for and against the realization doctrine. Part II also discusses the recent literature in which new systems of taxation were developed which are argued to have both the benefits of a mark-to-market system and the benefits of a realization system.<sup>10</sup> It also discusses recent defenses of the realization doctrine made in light of these new systems. Part III discusses the behavioral evidence that indicates individuals do not perceive gains in the way described by the models on which the traditional analysis, both for and against the realization requirement, is based. Behavioral evidence shows that people perceive unrealized gains as less valuable than realized gains,

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income taxes due as a result of owning them, and it is politically impossible to repeal it. Zelinsky, *supra*, note 1.

<sup>10</sup> For the most prominent of these systems see Alan J. Auerbach, *Retrospective Capital Gains Taxation*, 81 AM. ECON. REV. 167 (1991); see also David Bradford, *Fixing Realization Accounting: Symmetry, Consistency, and Correctness in the Taxation of Finance Instruments*, 50 TAX L. REV. 731 (1995); for similar systems see Noel Cunningham and Deborah Schenk, *Taxation Without Realization: A “Revolutionary” Approach to Ownership*, 47 TAX L. REV. 725 (1992); see also Fred B. Brown “Complete” Accrual Taxation, 33 SAN DIEGO L. REV. 1559 (1996); For a proposal for a partial mark-to-market system, see Weisbach, *supra* note 5 at 98.

because they are somehow not yet “real” and therefore the equation of the two in traditional tax analysis is incorrect. Part IV analyzes how the understanding that individuals perceive income on a realization basis impacts our analysis of tax policy. It argues in favor of exempting returns from mutual funds until the shares of the fund are sold, and deferring the taxation of stock received in dividend re-investment plans until the stock is sold.<sup>11</sup> Part IV also discusses how behavioral models can be used to argue in favor of proposals under which corporations and other sophisticated investors would be subject to mark-to-market accounting, while still retaining the realization system for most taxpayers, similar to the systems proposed by Joseph Bankman<sup>12</sup> and Michael Knoll.<sup>13</sup>

## I. THE DEFINITION OF INCOME AND THE REALIZATION DOCTRINE

### A. *Economic Definition of Income*

The most widely accepted definition of income in the academic literature is the “Haig-Simons”<sup>14</sup> definition of income, so-called because it derives from the writings of

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<sup>11</sup> These proposals are similar to legislation proposed by the Chairman of the Joint Economic Committee, Rep. James Saxton in the last Congress. H.R. 168 (107<sup>th</sup> Congress)(2001) (proposed to exempt up to \$3,000 for single filers and \$6,000 for joint filers of capital gains distributions from mutual funds which are re-invested in the mutual funds.)

<sup>12</sup> *A Market-Value Based Corporate Income Tax*, 68 TAX NOTES 1347 (September 11, 1995).

<sup>13</sup> *An Accretion Corporate Income Tax*, 49 STAN. L. REV 1, (1996)

<sup>14</sup> It is sometimes referred to as the Schanz-Haig-Simons after Gregor Schanz from whose work, Simons based much of his own work. *see* discussion in STEPHEN UTZ, TAX POLICY: AN INTRODUCTION AND SURVEY OF THE PRINCIPAL DEBATES 96-9(1993); *see also* Gregor von Schanz, *Der Einkommensbegriff und Die Einkommenssteuergesetze* 13 FINANZ-ARCHIV 1, 23 (1986) (ability to pay is the same as consumption plus additions to saving).

Robert Haig<sup>15</sup> and Henry Simons<sup>16</sup> in the early part of the twentieth century.<sup>17</sup> The most commonly used form is Simons's, which states that income is the sum of amounts spent on consumption plus net accretions to wealth during the taxable period.<sup>18</sup> Robert Haig's formulation was slightly more abstract: "Modern economic analysis recognizes that fundamentally income is a flow of satisfactions, of intangible psychological experiences."<sup>19</sup> It is generally thought that the two definitions are equivalent.<sup>20</sup> Both Haig and Simons were trying to argue that all income should be included in the tax base and subject to the same tax rate in order to avoid distorting investment decisions.<sup>21</sup> The Haig-Simons definition certainly has some immediate appeal; it is the amount by which individuals are better off at the end of the taxable period than they were at the beginning of the period. However, as discussed in Parts II and III, there are significant problems in applying this definition to real world situations.

#### *B. The Definition of Income Under the Tax Law*

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<sup>15</sup> THE FEDERAL INCOME TAX 25 (1921).

<sup>16</sup> PERSONAL INCOME TAXATION 32 (1938).

<sup>17</sup> This definition is almost universally accepted among academics. Weisbach, *supra*, note 5 at 95-6.

<sup>18</sup> Simons, *supra* note 16. The taxable period for purposes of the United States and almost all other income taxes is one year. The taxable period is an essential part of any system of taxation of a flow such as income. For example, if you spent \$40,000 on food and housing and your assets went up in value by \$30,000, your income for the year was \$70,000. JOSEPH DODGE, THE LOGIC OF TAX 13 (1990).

<sup>19</sup> Haig, *supra* note 15.

<sup>20</sup> Utz, *supra* note 14 at 96-9 That is, psychological satisfactions are equal to the amount of consumption plus net increases to wealth. For an argument that Haig's definition can actually accommodate a realization definition of income see discussion *infra* Part III.

<sup>21</sup> Utz, *supra*, note 14 at 91-8.

### 1. *The Fundamentals of the Realization Doctrine*

Under Internal Revenue Code § 61, income for purposes of the income tax includes gains and losses from the sale or exchange of property, and other similar receipts. Gain from the sale or exchange of property is defined as the amount realized from the disposition of the asset minus the basis<sup>22</sup> in the property sold.<sup>23</sup> The language of the section includes only gains and losses from “dealings in property”, it does not include increases and decreases in the value of property while it is held. Therefore, in order for a gain from property to be included in income, the gain must result from a sale, exchange or abandonment of the property. This distinction has been a part of the U.S. income tax rules since their inception.<sup>24</sup>

The realization doctrine is in conflict with the Haig-Simons definition of income. As discussed above, the cornerstone of the Haig-Simons definition is that all income should be taxed at the same rate. However, all assets are not taxed at the same rate under a realization tax system, because the longer the asset is held, the longer the tax on it is deferred, and consequently the lower the effective rate of tax.<sup>25</sup>

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<sup>22</sup> The basis in a piece of property is generally the amount paid for it. I.R.C. § 1012, (2002) (c.f. I.R.C. § 1016, under which the basis is reduced by the amount of any depreciation deductions taken with respect to the asset at issue).

<sup>23</sup> I.R.C. § 1001 (2002). If you buy an asset for \$150 and sell it for \$200, you have \$50 of gain.

<sup>24</sup> *Towne v. Eisner*, 245 U.S. 418 (1918) (holding that under the 1913 Act, a gain must realized before it is included in income.) In addition, the first regulations under the 1913 act stated gross included “appreciation in the value of assets, if taken upon the books of account as gain. Treas. Reg. 33, pt. 3, art. 107 (1913). Under the 1918 treasury regulations, “gain realized. . . [on] the sale or disposition of capital assets shall be returned as gross income.” Treas. Reg. 33, pt. II art 106 (1918)

<sup>25</sup> See discussion note 75, *supra*. Essentially the taxpayer is allowed to collect after-tax rate of return on the taxes that would otherwise be paid. Note how the timing of



The net effect of the difference between a realization system and a Haig-Simons or mark-to-market system can be illustrated by an example. If A purchases 100 shares of IBM stock for \$100 per share on January 1, 2001, and at the end of 2001 it was worth \$120 per share, under a Haig-Simons definition of income, A would have \$2,000 of income for 2001.<sup>26</sup> Under a tax system which requires a realization event, there is no income tax because there has been no realization event. If at the end of the 2002, A sells the shares for \$150, then under a realization system, there will be \$5,000 of gain in that year, while under a mark-to-market system there would only be \$3,000 that year. Notice that the total amount of income (\$5,000) is the same under both systems, but the timing is different. The mark-to-market system would cause the taxpayer to pay tax earlier than a realization system. Because of the time value of money, the tax paid under a realization system is effectively a lower amount. If we assume that A can earn interest at a rate of 10% and is subject to a tax rate of 30%, then because A was able to defer paying taxes until year two, A was better off in a realization system by an amount of \$42.<sup>27</sup>

## *2. Development of the Doctrine*

### *a. From Constitutional Requirement to Administrative Convenience*

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the income is crucial. If the income actually occurred later then this would not be an issue. Simons himself acquiesced to the realization doctrine because interest rates were so low at the time he was writing that he thought the this deferral had little practical effect and he acknowledged the realities of trying to value all unsold assets. Simons, *supra* note 12, at 43.

<sup>26</sup> 1,000 X 20.

<sup>27</sup> The value of deferral is equal to the tax that would have been due in 2001 (\$2,000 x .3 or \$600) multiplied by the after-tax rate of return (.07) or \$42. If the value of the asset has been dropping in value, exactly the opposite is the case: the mark-to-market system would yield a better result for the taxpayer. Scholes, et al., *supra* note 7 at 33-7.

While the realization doctrine has always been a part of the income tax rules, its importance has been subject to dispute. One of the earliest cases, *Eisner v. Macomber*,<sup>28</sup> held that the realization doctrine was part of the definition of income under the Sixteenth Amendment. Under this decision, if a tax was enacted which did not include the realization doctrine, it was not an “income tax”, but a different sort of direct tax which would then have to be apportioned among the states according to population.<sup>29</sup> In later cases, such as *Bruun v. Helvering*,<sup>30</sup> *Glenshaw Glass v. Commissioner*<sup>31</sup> etc., the Supreme Court has appeared to view the realization doctrine as no longer intrinsic to the constitutional definition of income.<sup>32</sup> Under the current view, Congress is free to limit the application of the realization doctrine, or even do away with it entirely. As described

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<sup>28</sup> 252 U.S. 189 (1920).

<sup>29</sup> The court held that if the growth or increment of value in a taxpayer’s investment were taxed before the gain was “severed from capital”, the levy would be a direct tax that had to be apportioned among the states according to population.

<sup>30</sup> 309 U.S. 461 , 469 (1940). In *Bruun*, the taxpayer had leased land to a another person, who built a building on it. Under the terms of the lease, when the lease expired, the building became the property of the lessor. The court held that the value of the building was income to the taxpayer even though the gains had not been “separated” from the land. Interestingly, five years before the decision in *Bruun*, Judge Learned Hand held that the in an directly similar situation, the taxpayer did not have income based on *Eisner v. Macomber*. *Hewitt Realty Co. v. CIR*, 76 F.2d 880 (2d Cir. 1935).

<sup>31</sup> 348 U.S. 426 (1955). This case held that punitive damages are taxable income even though they did not derive from labor or capital.

<sup>32</sup> The court in *Bruun* held it was “founded on administrative convenience”. Some Commentators have argued that it should still be considered a constitutional requirement, see Edward T. Roehner and Shelia M. Roehner, *Realization: Administrative Convenience or Constitutional Requirement*, 8 TAX L. REV. 173 ( 1953).

below, Congress has acted to limit the application of the realization doctrine in many ways.<sup>33</sup>

b. *Narrowing of the Doctrine*

The interpretation of the doctrine through cases and administrative practice has sometimes led to significant ambiguity in the precise meaning of the doctrine.<sup>34</sup> The core notion is that gain or loss from an asset should not be included in taxable income until an event has occurred which is judged to be an appropriate time to close the accounts and determine the amount of gain or loss on the asset.<sup>35</sup> Over the years, the courts and the Treasury<sup>36</sup> have permitted more and more events to result in a realization of income.<sup>37</sup> In the *Macomber*<sup>38</sup> opinion, the Supreme Court held that in order for income from capital to be subject to tax, the income somehow had to be “separated” from the asset that

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<sup>33</sup> See discussion Part I.B.3, *infra*.

<sup>34</sup> Asked during the debate on the 1913 Act if a decline in the value of a stock could offset dividends and other income, Sen. Williams who was a member of the Finance Committee responded “I never thought of that”. 50 CONG. REC. 3849 (1913). The first regulations implied that they would simply follow accounting conventions for this. See note 24, *supra*.

<sup>35</sup> The concept in part derives from the accounting practice for when to include an increase in value on the balance sheet. Bittker and Lokken, *supra* note 3 at 5-20.

<sup>36</sup> I.R.C. § 7805 (2002) permits the Secretary of the Treasury to issue regulations which interpret the Internal Revenue Code. The Secretary has issued regulations under § 1001, giving guidance as to when a realization event has occurred. See Treas. Reg. § 1.1001-3 et seq.

<sup>37</sup> See discussion Part I.B.3 *infra* and associated text.

<sup>38</sup> The opinion is referred as *Macomber* because Eisner was the commissioner of Internal revenue and so there are a fairly a large number of cases in which commissioner Eisner was involved.

generated it.<sup>39</sup> A little less than twenty years later, the court in *Bruun* found that this separation was not necessarily required.<sup>40</sup> In one of the most recent cases, *Cottage Savings v. Commissioner*,<sup>41</sup> the Supreme Court held that a realization event occurs if the taxpayer enters into a transaction and holds a different asset or group of assets afterwards.<sup>42</sup> So under the current rules, if there was any sort of exchange, or if the asset has sufficiently changed in character to be considered a new asset, this is viewed as being a realization event.<sup>43</sup>

### 3. *Exceptions to Realization*

While there are a number of exceptions to the realization doctrine, as shown below, the realization doctrine still carries most all of its original force. This section is not intended to exhaustively discuss every exception to the realization doctrine, only the

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<sup>39</sup> Even under *Macomber* and other the early realization doctrine cases, the taxpayer did not have to receive cash in exchange for the property, rather receipt of other property was sufficient. *Insurance and Title Guar. v. Commissioner*, 36 F.2d 842 (2d cir. 1929), *cert. denied* 281 US 748 (1930).

<sup>40</sup> This case involved a landlord who at the termination of a lease received back the leased property and a building, which under the terms of the lease became the property of the landlord. If realization had applied, the income would have been taxed as the higher rents on the building were collected.

<sup>41</sup> 499 U.S. 554 (1991)

<sup>42</sup> Thomas L. Evans, *The Realization Doctrine After Cottage Savings*, 70 TAXES 897 (1992). In *Cottage Savings*, two savings and loans swapped mortgage pools that were designed to have exactly the same risks and returns. The court held that because the underlying mortgages were on different properties with different debtors, a realization event had occurred.

<sup>43</sup> Under the rules, if the interest rate is changed on a debt instrument this is viewed as a realization event. Treas. Regs. §§ 1.1001-3, et seq..

most significant.<sup>44</sup> As discussed more fully in Part III, all of the exceptions to the doctrine can be understood from the perspective of a behavioral model. The exceptions discussed below are the application of mark-to-market taxation to securities dealers, short-against the box transactions, original issue discount notes, and exchange traded futures contracts.

*a. Securities Dealers*

Any securities or similar assets which a securities dealer holds as inventory at the end of the year are “marked up” to their current value and to the extent there is an increase in value of the assets, this results in current income, or if there is a decrease, a reduction in income.<sup>45</sup> Further, a security held by a securities dealer for investment is treated as having been sold at the end of the year for its fair market value.<sup>46</sup> The effect of these rules is to eliminate the realization requirement for securities dealers as to securities they own.<sup>47</sup> For this purpose, a securities dealer is someone who regularly purchases and

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<sup>44</sup>There are others, some such as the requirement of accrual accounting for corporations and the depreciation rules which generally accelerate including income and deductions, and the many provisions which prevent a realization event from immediately affecting income, such as the wash sale rules as well as the non-recognition provisions.

<sup>45</sup> I.R.C. § 475(a)(1) (2002). I.R.C. § 475 (a)(2) (2002). Fair market value is defined for this purpose under FSA 199944007 as the price at which the property would change hands between a willing buyer and a willing seller, both having reasonable knowledge of the relevant fact. Treas. Reg. § 20.2031-2; see also, Treas. Reg. § 25.2512-2

<sup>46</sup> I.R.C. § 475(a)(2) (2002).

<sup>47</sup> Under inventory accounting rules, income includes gross revenues minus the cost of goods sold. The cost of goods sold during the year is the opening inventory plus goods acquired during the year minus the value of the closing inventory. If the value of the closing inventory goes up, the cost of goods sold decreases and so the income for the year increases. These rules do not apply to other assets held by securities dealers such as real property etc., but only securities or other similar assets. I.R.C. § 475(b)(4) (2002).

sells securities to and from customers in the ordinary course of a trade or business.<sup>48</sup>

Dealers in commodities<sup>49</sup> and traders<sup>50</sup> in securities or commodities can elect to be taxed on a mark-to-market system if they wish.<sup>51</sup>

b. *Short Against the Box*

Taxpayers would generally prefer to defer gains and accelerate losses.<sup>52</sup> In the 1980's and 1990's some sophisticated taxpayers began to engage in transactions in which the taxpayer transferred the risk of gain and loss of an asset without actually selling the asset.<sup>53</sup> This is known as “shorting against the box” because it involved “shorting”, or effectively transferring the value of a stock already owned by the taxpayer, without actually selling the stock itself.<sup>54</sup> Because the taxpayer had not actually sold the stock,

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<sup>48</sup> In order to be treated as a dealer, the taxpayer must have customers, while someone who trades for their own account is a trader rather than as dealer of securities and so is not necessarily subject to these rules. I.R.C. § 475 (f) (2002).

<sup>49</sup> I.R.C. § 475(e) (2002) defines commodities by cross-reference to the definition in I.R.C. § 1092 (2002).

<sup>50</sup> A trader is one who trades exclusively for their own accounts. I.R.C. § 475(f) (2002).

<sup>51</sup> I.R.C. § 475(e) & (f) (2002). Such persons may wish to elect this treatment in order to avoid mismatches of income. See Schizer, *supra* note 1 at 1560-5.

<sup>52</sup> See discussion *supra* note 7.

<sup>53</sup> The transaction which really resulted in this legislation was a transaction involving the stock of Estee Lauder corporation by the family that owned the company. The transaction involved a short-against the box technique to defer an enormous amount of gain. It is described in detail in Schizer, *supra* note 1 at 1570-5.

<sup>54</sup> Being “short” a stock means being obligated to transfer to another person the stock at some point in the future. If one already owns the stock that is shorted, it is a covered short, if one does not then it is uncovered. Schizer, *supra* note 1, at 1570-5.

the realization doctrine would allow gains from the investment to be deferred until the asset was actually sold.<sup>55</sup>

In response to these transactions, in 1996, Congress added § 1259 to the Internal Revenue Code.<sup>56</sup> Under § 1259, appreciated financial positions are treated as having been constructively sold at the time the owner enters into particular kinds of financial arrangements. The assets subject to § 1259 include stock of a corporation, debt instruments, partnership interests and futures or forward contracts on such interests.<sup>57</sup> The kinds of transactions that result in such recharacterization are short-sales of the same or substantially similar property as that owned by the taxpayer, or similar arrangements.<sup>58</sup>

*c. Original Issue Discount Rules*

A debtor can issue a debt instrument which does not pay periodic interest, but rather only makes a single payment at the end of the term of the debt. Such debt is referred to as zero-coupon debt, or original issue discount debt, because the original issue price is discounted compared to the amount that will be paid at redemption, in order to account for the time value of money.<sup>59</sup> Prior to 1969, because of the differences of

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<sup>55</sup> This technique both deferred the tax, as well as possibly extend the holding period that the gain might be converted into long-term capital gain.

<sup>56</sup> See discussion in Schizer, *supra* note 1 at 1575.

<sup>57</sup> Any position which is marked to market under I.R.C. §§ 475 and 1256 (2002) or other code provisions is not subject to I.R.C. § 1259 (2002).

<sup>58</sup> An example of a similar arrangement would include entering into an offsetting notional principal contract on the same or substantially similar property. I.R.C. § 1259(f)(2002).

<sup>59</sup> For example, if the debt instrument will pay \$50,000 in 5 years at an interest rate of 7%, it would be issued for an initial price of \$35,649.31. The difference would be the interest that accrues over the term of the note.  $[50,000 / (1 + .07)^5 = 35,649.31]$

accounting rules that apply to corporations and to individuals,<sup>60</sup> corporations which issued zero-coupon notes were permitted to deduct interest as it accrued<sup>61</sup> and the individual holders of the notes did not have include interest until they sold the note or it was retired.<sup>62</sup> This was viewed as an abuse.<sup>63</sup> Under the Original Issue Discount rules,<sup>64</sup> even if a debt instrument accrues interest that is not paid currently, this interest is treated as having been paid currently and is added to the amount of the outstanding debt (which

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<sup>60</sup> Under I.R.C. § 448 (2002), corporate taxpayers must use the accrual method of accounting, which is much closer to a mark-to market system than the cash method. Individuals are generally able to use the cash method of accounting.

<sup>61</sup> An accrual basis taxpayer is generally permitted to take deductions as they “accrue”. So if an accrual taxpayer will be making a payment for the time value of time (i.e. interest), the accrual taxpayer can deduct the payments as it become reasonably certain they will be owed (i.e., as time passes). See I.R.C. § 461(h)(2002).

<sup>62</sup> Bittker and Lokken, *supra* note 3 at 5-11.

<sup>63</sup> The Senate Finance Committee stated it is report:

The treatment of original issue discount results in a non-parallel treatment of the corporation issuing the bond and the person acquiring the bond. The corporation is allowed a deduction each year with respect to the discount. On the other hand, the holder is not required to report any income with respect to the original issued discount until he disposes of the bond. While it is quite likely that the discount always will be deducted by the corporation it is probable that much of the ordinary income is not being reported by the owner of the bonds. Not only is the fact that this discount is taxable at the time of the disposition likely to be forgotten, but also the fact that it is ordinary income rather than capital gain is likely to be overvalued.

S.Rep. No 552, 91<sup>st</sup> Cong. 2d. Sess. (1969) p. 243

<sup>64</sup> I.R.C. §§ 1271-5 (2002).



then accrues interest until the next period and so on in an iterative fashion).<sup>65</sup> This conflicts with the realization doctrine because this interest has not yet been “separated” from the debt instrument. In fact, the only way for the taxpayer to actually benefit from the gain immediately is to sell the debt instrument.

*d. Exchange Traded Futures Contracts*

Futures contracts and other related financial positions are viewed as being highly manipulable.<sup>66</sup> Therefore, under I.R.C. § 1256 such contracts are treated as being sold at the end of the year for their fair market value.<sup>67</sup> The gain or loss taken into account at the later period of actual sale or other disposition will reflect the earlier gains and losses included in income.<sup>68</sup> This provision applies to all exchange traded futures contracts.<sup>69</sup>

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<sup>65</sup> Complicated rules address such questions as contingent interest and the interest inherent in notional principal contracts. The current rules adopted in 1984 have a different method for accruing interest than the 1969 rules, but most of the same principles apply. For a fuller discussion, see Lawrence Lokken, *The Time Value of Money Rules*, 42 TAX L. REV. 1 (1986)

<sup>66</sup> The manipulability of these instruments is related to the notion of put-call parity and the distinction in the taxation between debt and equity and other similar items. Michael Knoll, *Put-Call Parity*, 24 CARDOZO L. REV.— (2003) (forthcoming)

<sup>67</sup> I.R.C. § 1256(a)(1)(2002).

<sup>68</sup> I.R.C. § 1256(a)(2)(2002). The gain is treated as being 40% short-term capital gain and 60% long-term capital gain. I.R.C. § 1256 (a)(3) (2002). The wash sale rules do not apply to these contracts. It also does not generally apply to hedging transactions (which are considered to part of inventory). I.R.C. § 1256(c)(2002).

<sup>69</sup> The contracts covered by this regime are (1) any regulated futures contract, which generally means an exchange traded futures contract, (2) any foreign currency contract, (3) any non-equity option, (4) any deal equity option, and (5) any dealer security futures contract. Notice that if one trades in these contracts but is not a securities dealer, this portion of your income will be marked to market, but not other income (sale gain or loss on shares of stock held for investment). I.R.C. § 1256(f) (2002).

These rules tax all of the income from these futures contracts on a mark-to market basis for all taxpayers who hold them.<sup>70</sup>

## II. ARGUMENTS FOR AND AGAINST THE REALIZATION DOCTRINE

The academic debate over the realization doctrine has been one of the most productive in the literature. This section discusses the current state of the debate. It begins by setting forth the traditional arguments against the realization doctrine and the traditional defenses. Then it discusses some recent innovative proposals which are designed to obtain the benefits of both the realization and mark-to-market systems. The section ends by discussing how some have tried to argue in favor of the realization doctrine in spite of these alternative systems.

### *A. Traditional Arguments Against the Realization Requirement*

The traditional arguments against the realization requirement are fairly simple to make. There are four major distortions commonly thought to be caused by the realization doctrine: first, it distorts investment by taxing some assets more lightly than others; second, it creates a “lock-in” effect; third, it allows taxpayers to engage in strategic behavior, and fourth, it has regressive effects. Many of these criticisms of the realization doctrine are entangled with other provisions of the law such as the step-up in basis at death<sup>71</sup> and the capital gains rate differential.<sup>72</sup> This article will not try to justify the realization doctrine in conjunction with these other rules. Such rules are analytically

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<sup>70</sup> The § 1256 rules do not apply to hedging transactions. I.R.C. § 1256(e)(2002).

<sup>71</sup> I.R.C. § 1014 (2002).

<sup>72</sup> I.R.C. § 1(h)(2002), the maximum rate on net capital gains is 20%, but the highest rate on ordinary income is 38.6%. I.R.C. § 1(i)(2002).

separable from the realization doctrine.<sup>73</sup> This article is merely attempting to show how the realization doctrine makes sense on its own terms.

### *1. Investment Distortions*

The first argument against the realization doctrine is that it distorts investment incentives because it causes some assets to be taxed at a lower tax rate. Because the taxation of the gains from certain assets can be deferred indefinitely, the gains can be subject to a lower rate of tax, even if they are subject to the same nominal rate.<sup>74</sup> This creates an incentive to invest in such assets.<sup>75</sup>

Interestingly, these investment distortions can to some extent be turned into an argument for the realization doctrine. One of the most commonly discussed

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<sup>73</sup> In fact, Canada uses the realization doctrine, but does not have a step-up in basis at death. HUGH AULT, *COMPARITIVE INCOME TAXATION: A STRUCTURAL ANALYSIS* 27-9 (1996). Other countries have corporate integration systems and a realization taxation as well.

<sup>74</sup> See discussion at note 7, *supra*.

<sup>75</sup> See discussion in Reed Shuldiner, *Indexing the Federal Income Tax*, 48 TAX L. REV. 537 (1993). The calculation of exact effect of this distortion is complicated by the effects of inflation. Under the U.S. tax rules, the basis of an asset is generally not increased for inflation. One can easily imagine that if the asset has increased in value but that some of this increase is as a result of inflation, there will be a tax on what are in effect “phantom gains”. The importance of the tax on inflationary gains has on distorting investment depends on the what types of investments are being compared. If the choice is between earning wage income or income from shares of stock, the effects of inflation decreased the value of the realization doctrine by increasing the amount of tax on the asset (and may possibly eliminate the benefit in some circumstances). If the rate of return is not sufficiently higher than the inflation rate, the tax on phantom gains is larger than the benefit of deferral. However, if the alternative asset is a debt instrument which pays periodic interest, its returns are also subject to inflation and so the relative value of realization deferral is undiminished. If the debt instrument is a thirty year note, then the value of principal paid in 30 years will diminish by inflation, therefore the interest rate will have to higher to account for this. This higher rate is subject to tax, and so the inflation gains on debt instruments are also taxed.

inefficiencies of the current tax system is the double taxation of corporate income.<sup>76</sup> It is normally thought that the U.S. corporate double tax encourages investment in corporate debt as opposed to equity.<sup>77</sup> However, the realization doctrine might encourage individuals to invest in corporate equity, because much of the returns on this type of investment can be deferred,<sup>78</sup> whereas the income from corporate debt is not generally eligible for deferral due to the realization doctrine and its income is included immediately in gain.<sup>79</sup> Therefore, this particular “distortion” may actually be efficient because it might compensate for another distortion in the income tax rules, although it does seem unlikely that these two effects precisely offset each other.<sup>80</sup>

## 2. The “Lock-in” Effect

The second argument against the realization doctrine is that it encourages people to keep their assets too long.<sup>81</sup> This is commonly known as the “lock-in” effect. If an

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<sup>76</sup> See Terrence R. Chorvat, *Apologia for the Double Taxation of Corporate Income*, 38 WAKE FOREST L. REV. 239 (2003).

<sup>77</sup> Id.

<sup>78</sup> Martin Feldstein, *Personal Income Taxation and Portfolio Composition: An Econometric Analysis*, 44 ECONOMETRICA 631 (1976). This is unlikely to overcome the inefficiency caused by the corporate tax. See Scholes et al., *supra* note 7 at 68-79.

<sup>79</sup> I.R.C. §§ 61, 1271-1275(2002). Income here is either actual interest paid or original issue discount. Gain that result from market interest rates is deferred until income is collected or the debt instrument is sold.

<sup>80</sup> For further discussion of the effects of the double taxation of corporate income, see Chorvat, *supra* note 76. This requires an analysis of the inefficiency of the corporate tax and incentive to invest from realization.

<sup>81</sup> Patricia D. White, *Realization, Recognition, Reconciliation, Rationality and the Structure of the Federal Income Tax System*, 88 MICH. L. REV. 2034 (1990); see also David J. Shakow, *Taxation Without Realization: A Proposal for Accrual Taxation*, 134 U. PA. L. REV. 1111 (1986).

investor sells an asset, he or she will have to pay tax on the inherent gain, but will not if the asset is retained.<sup>82</sup> By accelerating the tax on the gain from the asset, the sale effectively increases the rate of tax. In order for a sale to occur, the higher earning asset must have a sufficiently high enough return to compensate for the increased taxes that will result from the sale.<sup>83</sup> Many commentators have argued that this causes inefficient investment by making investors less responsive to changes in the prospects of their investments which reduces the ability of capital to shift to its most efficient use. There has been very little empirical work on the effects of this issue, although there is reason to believe the effect on efficiency is rather minor.<sup>84</sup>

### *3. Strategic Behavior of Taxpayers*

A further distortion created by the realization requirement results from the ability of taxpayers to strategically time their realizations so as to minimize taxes due.<sup>85</sup> Under the efficient market hypothesis, any particular investment is no more or less likely to earn

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<sup>82</sup> For example, if the taxpayer paid \$100 for an asset and it has increased in value \$200, if the tax rate is 20%, there would be \$20 in tax. Of course as long as the asset is retained, the tax is zero.

<sup>83</sup> Continuing on with the example in note x, if the pre-tax rate of return on the currently held asset is 10% a year and the alternative asset has a return of 11%, then on pre-tax basis, the investor should sell the currently held asset. However, because the taxpayer would have to pay tax, he or she could only invest \$180 in the new asset. The pre-tax return on the \$180 invested in the new asset would only be \$19.80, whereas if the old asset is retained the return on it is \$20. Therefore, the tax system has created an incentive to retain assets.

<sup>84</sup> Alan J. Auerbach, *Capital Gains Taxation and Tax Reform* 52 NAT. TAX. J. 391 (1989) New capital will flow to the more productive uses, so if there is sufficient capital movement, this should not cause a problem. For further analysis, see the discussion in Part I.B.2, *infra*.

<sup>85</sup> James Strnad, *Periodicity and Accretion Taxation: Norms and Implementation*, 99 YALE L.J. 1817, 1879 (1990)

a higher than normal return than any other investment.<sup>86</sup> However, as even a casual observer of the stock market knows, some assets increase in value and some decrease in value. If the investor has a diversified portfolio of investments, at the end of the taxable period some investments will have gone up in value and other will have decreased. Taxpayers can effectively reduce their taxes by selling those investments that have decreased in value in order to realize the loss for tax purposes,<sup>87</sup> while the investments that have gained value should be retained as long as possible to defer the taxes on them. In addition, if the tax rates are either progressive, or change over time, then taxpayers can decide when to realize gain or loss when it provides the maximum tax advantage.<sup>88</sup>

The reduction in tax which results from strategic behavior is greater than that for mere deferral, because it can actually create a negative tax rate. If a taxpayer realizes his or her losses, and holds the assets which have increased in value, he or she can, at least in the short-term, have a negative tax rate on capital income (because the gains are not yet taxed, and the losses have reduced tax on other income), if the losses are permitted to offset non-investment income.<sup>89</sup> If the taxpayer can defer recognition of the gain long enough, there will have been effectively a negative rate of tax.<sup>90</sup> This is particularly true

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<sup>86</sup>RICHARD BREALEY AND STEWART MYERS, PRINCIPLES OF CORPORATE FINANCE 368-76 (6<sup>TH</sup> ed. 2001) (this is, of course, on a risk-adjusted basis).

<sup>87</sup> Capital losses are subject to “quarantine” rules so they are generally not permitted to offset ordinary income, I.R.C. § 1211(2002).

<sup>88</sup> Schizer, *supra* note 1 at 1580-3.

<sup>89</sup>For individuals the ability to offset capital losses against ordinary income is limited to \$3,000. In addition, taxpayers may attempt to convert capital losses into ordinary losses, although this is generally difficult, see Auerbach, *supra* note 84.

<sup>90</sup>There may be an implicit tax equal to the secured rate of borrowing, if the taxpayer has to borrow against the asset for liquidity. Scholes *et al.*, *supra* note 7 at 90-5.

if the gain can be deferred until the taxpayer dies, in which case the basis in the assets that have gains will be “stepped-up” basis to their fair market value, so that the gain will never be taxed.<sup>91</sup>

The ability to engage in such transactions has effects other than merely reducing the tax rate on the asset (possibly below zero).<sup>92</sup> Because these strategies provide significant advantages to taxpayers, traditional neo-classical models predict investors will engage in tax planning until the marginal value of the planning is equal to its cost.<sup>93</sup> Hence, the cost of the realization doctrine is not merely foregone revenue, but also a distortion in resource allocation because of the resulting increase in tax planning and the resulting waste of resources. There may be many features of the system which prevent the worst elements of these dire predictions (e.g., enormous distortions and very little tax collected) from occurring.<sup>94</sup> For example, taxpayers may be risk averse as to the potential liability that results from tax planning, they might view it as wrong to engage in aggressive tax planning, etc.<sup>95</sup>

#### *4. Regressivity*

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<sup>91</sup> I.R.C. § 1014 (2002). This section allows for the basis of assets held at the time of death to be “stepped-up” to their fair market value. This eliminates the income taxation of gains that occurred before the time of death.

<sup>92</sup>David Weisbach, *An Efficiency Analysis of Line Drawing in Tax Law*, 29 J. LEG. STUD. 71 (2000)

<sup>93</sup> Scholes et al., *supra* note 7 at 90.

<sup>94</sup> David Schizer, *Frictions as a Constraint on Tax Planning*, 101 COLUM. L. REV. 1312 (2001).

<sup>95</sup> Id.

A final argument against the realization doctrine is that it essentially regressive.<sup>96</sup> Those with higher incomes are more likely to have income which is eligible for the deferral benefit of the realization doctrine.<sup>97</sup> Consequently, the realization requirement reduces the tax on rich individuals more than it reduces tax on middle income and poor individuals.<sup>98</sup> By reducing the tax rate on items that are predominantly earned by wealthier or higher income individuals,<sup>99</sup> the effect of it is regressive. It is generally agreed that a regressive tax, *ceteris paribus*, is undesirable.<sup>100</sup>

Furthermore, the realization doctrine is generally thought to violate the principle of horizontal equity. A tax system exhibits horizontal equity to the extent that similarly situated taxpayers are taxed in a similar manner.<sup>101</sup> Because the realization doctrine permits those who invest in certain types of assets to defer their taxes, and thereby effectively reduce them, the realization doctrine violates horizontal equity.

## *B. Arguments in Favor of the Realization Doctrine*

### *1. Traditional Arguments*

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<sup>96</sup> A regressive tax is one in which the rate of tax decreases as income increases. This does not necessarily mean that the amount of tax decreases as income increases. See Utz, *supra*, note 14 at 56-70.

<sup>97</sup> Joel Slemrod, *The Economics of Taxing the Rich* in DOES ATLAS SHRUG? THE ECONOMIC CONSEQUENCES OF TAXING THE RICH 1, 6-9 (Joel Slemrod., 2000).

<sup>98</sup> Utz, *supra* note 14 at 56-70.

<sup>99</sup> While wealth and income are not necessarily the same thing, they are highly correlated. Slemrod, *supra* note 97 at 3-5.

<sup>100</sup> The undesirability is in part based on the notion that marginal utility of wealth is lower to those with higher income than those with lower incomes. Utz, *supra* note 14 at 56-9.

<sup>101</sup> Utz, *supra* note 14 at 45-50.



Just as there have been arguments against the realization doctrine, there have been arguments in favor of it. However, even those commentators who attempt to defend the realization doctrine generally agree that if we could have perfect information, as well as perfect securities and credit markets, we would want to have a mark-to-market system, but since we cannot, realization is the best alternative. While the realization doctrine may be a good compromise, it is a compromise nonetheless. The two most commonly advanced reasons for the realization doctrine are the difficulty of valuation and lack of liquidity of the taxpayers.<sup>102</sup>

It is easy to see how valuation problems with a mark-to-market system would arise. It would be quite difficult to value paintings, watches, jewelry and many other items owned by taxpayers until they are sold. Therefore, the compliance costs associated with the tax would be quite large.<sup>103</sup> Furthermore, the actual values derived by the tax system for the unsold property might very likely be arbitrary or at the very least be subject to dispute.<sup>104</sup>

Furthermore, because the income tax is collected in cash, whereas the assets are often not in liquid form, it could cause a hardship to force taxpayers to liquidate assets to pay the taxes due.<sup>105</sup> This results in part from the lack of perfect information and perfect

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<sup>102</sup> The two arguments are clearly related. If an asset were highly liquid, we would be able to find a price for it, and if we could find an exact price for an asset, it is likely to be highly liquid.

<sup>103</sup> Zelinsky, *supra* note 1 at 870-2.

<sup>104</sup> For a discussion of problems that arise under property taxes which are assessed on the the value of unsold assets, *see* Lawrence Zelenak, *Taxing Gains at Death*, 46 VAND. L. REV. 361 (1993).

<sup>105</sup> Herwig Shlunk, *Cashless Corporate Tax*, 55 TAX L. REV. 1 (2001)

lending markets. If all parties could know the value of an asset, banks and others with liquid assets would be willing to lend to the owners of the asset a sufficient amount to pay the taxes assessed due to the increased value, thus reducing the liquidity problem.<sup>106</sup> However, because such lending generally does not occur, this form of tax could cause substantial hardship.<sup>107</sup>

Based on these problems one could argue that the inefficiency caused by trying to tax income from assets on a mark-to-market basis would be greater than the inefficiency created by the realization rule.<sup>108</sup> In fact, the general conclusion is that many if not most assets owned by individuals could not be subject to accrual based taxation.<sup>109</sup>

## *2. Arguments Based on Financial Theory*

The arguments discussed above do not apply to portfolio investment in stock.<sup>110</sup> Publicly traded stock is easily valued, and is liquid because it can be sold in a very short period of time.<sup>111</sup> Hence, the arguments in favor of applying the realization doctrine are weaker for stocks and bonds than for other forms of investment.<sup>112</sup>

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<sup>106</sup> Schizer, *supra* note 1 at 1560 ; see also Zelinsky, *supra* note 1 at 875.

<sup>107</sup> Utz, *supra* note 14, at 54-7.

<sup>108</sup> Zelinsky, *supra* note 1; see also Utz *supra* note 14. This argument is also commonly used for a lower value of the estate tax on transfer of family businesses. see Bittker and Lokken, *supra* note 3 at 3-25.

<sup>109</sup> Zelinsky, *supra* note 1.

<sup>110</sup> David Slawson, *Taxing as Ordinary Income the Appreciation of Publicly-Held Stock*, 76 YALE L. J. 623 (1967)

<sup>111</sup> The value of the publicly traded stock can be readily determined and it can be sold within a short period of time.

<sup>112</sup> If the effective tax rate is reduced on investment in some assets such as painting, diamond etc. but not others, the tax system might distort investment.

Financial theories such as the efficient markets hypothesis create an argument in favor of the realization doctrine. Under this view, the realization doctrine might not affect the allocation of capital, if there are other economic actors who are not affected by the realization deferral, (e.g., tax-exempt investors such as pension-plans, charitable organizations etc.) and these investors have sufficient resources to adjust for the distortions of the fully taxable investors.<sup>113</sup> The argument is fairly straight forward. If the tax system creates incentives to invest in these assets, the price of the tax favored asset will be driven up.<sup>114</sup> This increase in price will drive away many investors who do not receive a tax benefit from the favored asset. The effect of the realization doctrine may be to change the mix of investors who invest in particular assets, but if the market can adjust, the allocation of capital should still be efficient.<sup>115</sup>

This argument assumes that the markets are able correct for the inefficiency or irrationality of a significant number of participants.<sup>116</sup> However, the behavioral finance literature shows us that it is not always true that market is able to correct for these inefficiencies.<sup>117</sup> The other investors may not have sufficient capital to correct for the misallocations due to the realization doctrine.<sup>118</sup> Furthermore, it is also clear that many

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<sup>113</sup> Chorvat, *supra* note 76.

<sup>114</sup> Scholes et al., *supra* note 7 at 95.

<sup>115</sup> See Chorvat, *supra* note 76.

<sup>116</sup> Nicholas Barberis and Richard Thaler, *A Survey of Behavioral Finance* in THE HANDBOOK OF THE ECONOMICS OF FINANCE 110, 111-7 (G. Constantinidies et al., eds., 2003).

<sup>117</sup> There may be other reasons why the markets do not equilibrate, see Scholes et al. *supra* note 7.

<sup>118</sup> Scholes et al., *supra* note 7.

of the assets which are eligible for the realization deferral can create distortions which are not easily corrected even by an efficient securities market.<sup>119</sup>

### *3. Limitations of These Defenses*

These defenses of the realization doctrine do not actually defend it. They do not argue that realization is the ideal system. They merely show how realization might be better than a mark-to-market system. Some alternative system might be superior to both.

In addition, all of these arguments really only address the inefficiency of the realization doctrine. They do not address any inequities caused by the realization doctrine. In fact, if anything they increase the salience of the equity arguments, because the prices of the assets might not adjust to the tax benefits,<sup>120</sup> which means those who benefit from the realization doctrine would continue to receive these benefits.<sup>121</sup>

### *C. Synthesis: Systems Which Attempt to Combine Realization and Mark-to-Market*

In response to the defenses of the realization requirement, a number of proposals have been developed to attempt to prevent the perceived misallocations of capital or inequities that result from the realization doctrine, without resulting in the problems of a mark-to-market system. The most prominent were proposed by Alan Auerbach<sup>122</sup> and

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<sup>119</sup> For example, distortions introduced between the labor and housing markets might be difficult to equilibrate.

<sup>120</sup> Barberis and Thaler, *supra* note 116. Boris Bittker, *Equity, Efficiency, And Income Tax Theory: Do Misallocations Drive Out Inequities*, 16 SAN DIEGO L. REV. 735 (1979)

<sup>121</sup> An implicit tax is the reduction in earnings that a tax favored investment will earn because of its tax-favored status. Scholes et al., *supra* note 7 at 90.

<sup>122</sup> *Supra* note 10.

David Bradford,<sup>123</sup> each of whom proposed retrospective tax systems and David Weisbach<sup>124</sup> who proposed a partial mark-to-market system. Under the Auerbach and Bradford proposals, gains and losses are not taxed until the assets are sold, thus overcoming the liquidity and valuation problems. However, the gain is treated as occurring at an particular point<sup>125</sup> over the holding period of the asset and then an interest rate is imputed on the taxes that would have been paid.<sup>126</sup> Unlike many traditional partial mark-to-market plans, these can apply in principle to all assets for which a holding period can be determined.<sup>127</sup>

David Weisbach has proposed a system under which some assets are subject to a mark-to-market system (primarily financial assets), while other assets, (such as homes, jewelry, etc.) are subject to a realization system.<sup>128</sup> Weisbach would impose a lower rate of tax on those assets which are marked-to-market than on those which are eligible for a deferral under the realization system.<sup>129</sup> The difference in rates would attempt to

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<sup>123</sup> *Supra* note 10.

<sup>124</sup> *Supra* note 5.

<sup>125</sup> In the Bradford system, all gain is viewed occurring immediately after the asset was acquired. In the Auerbach system it is viewed as occurring ratably over the period.

<sup>126</sup> Michael Knoll pointed out that if the interest rate does not reflect the riskiness of the borrower, inefficiencies, this would benefit those who borrow at higher rates of interest. *Financial Innovation, Tax Arbitrage and Retrospective Taxation: The Problem with Passive Government Lending*, 52 TAX L. REV. 199, (1997).

<sup>127</sup> Bradford's plan is only applied to financial instruments, but in principle it could apply to almost any asset. Auerbach's system explicitly can apply to all assets. Auerbach, *supra*, note 10.

<sup>128</sup> Weisbach, *supra* note 5 at 105.

<sup>129</sup> Weisbach, *supra* note 5 at 105.

compensate for the average difference in effective rates due to deferral.<sup>130</sup> Of course, the imposition of an average rate would in many situations cause inefficiencies and inequities, but if we accept the premise that accrual taxation is optimal, this should be an improvement over the current system.<sup>131</sup> While, this would be a modification of the current system, it is still less radical than Auerbach and Bradford's proposals. In light of these proposals, it is clear that one could adopt a tax system that would mimic accrual taxation while still preventing the dual problems of liquidity and valuation. The Italian government has attempted to do this already.<sup>132</sup> Therefore, because the defenses of the realization doctrine have only shown how it is better than pure mark-to-market, realization is need of a new justification, if we are to retain it.

#### *D. Recent Defenses of Realization*

In reaction to the attempts to create systems which overcome the valuation and liquidity problems, David Schizer, Dan Shaviro and Edward Zelinsky have each developed arguments in favor of the realization doctrine which are more sophisticated than the traditional defenses. David Schizer makes the argument that realization should be viewed as a investment subsidy. Dan Shaviro argues that the realization doctrine's inefficiencies may be greatly overstated. Finally, Edward Zelinsky has argued that imposing any of these systems would create inefficiencies of their own, which are likely greater than that of realization.

##### *1. Realization as Subsidy*

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<sup>130</sup> Weisbach, *supra* note 5 at 106.

<sup>131</sup> Weisbach, *supra* note 5 at 107.

<sup>132</sup> Alworth et al., *supra* note 2.

David Schizer argues that the realization requirement may have beneficial consequences precisely because it taxes income from investment less than other income. While he demurs as to whether savings incentives are good policy, he argues that if such a policy is optimal, the realization doctrine would perhaps be the most rational way to accomplish it, because the realization doctrine is a credible tax incentive for investment. His analysis begins with the reasonable premise that investors will discount investment incentives for the probability that a later Congress or other governmental authority will remove the incentive.<sup>133</sup> If a particular incentive is significantly discounted, this incentive will be a more costly way of encouraging investment than one which would be more credible, and discounted at a lower rate. Therefore, because investors can rely on the realization doctrine, it is an efficient way to encourage investment. This argument is an innovative one because it admits that the effect of realization is distortive, but argues that distorting investment may be good rather than bad.

The key concern under Schizer's analysis is the credibility of the subsidy. He argues that the realization requirement is stable because it is based on administrative convenience and voter preference for lack of taxation of "paper gains". As he acknowledges, when events occur such as the adoption by Italy of versions of these systems, and the narrowing of the application of the realization doctrine, the benefits of

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<sup>133</sup> Schizer, *supra* note 1.

the subsidy might diminish.<sup>134</sup> However, as Schizer points out, while the realization doctrine is becoming less credible around the edges, it still has almost all of its force.<sup>135</sup>

One issue with Schizer's argument is that many lower and middle income taxpayers hold much of their wealth in the form of mutual funds, which as discussed in Part IV have a much lower ability to benefit from the realization doctrine (if not invested in a IRA or other pension account).<sup>136</sup> For these investors, their primary method of investing in stock and other securities<sup>137</sup> does not benefit from the realization doctrine as much as methods used by wealthier individuals.<sup>138</sup> Yet to the extent that case can be made for an investment subsidy, it is generally these taxpayers who need it the most.<sup>139</sup> Therefore, realization may be a less than ideal subsidy.

Another argument with the realization as subsidy argument is that the actual subsidy provided by the realization doctrine might be rather small. Once a tax incentive, such as realization, is in place, the price of the tax-favored investments should increase to adjust for the tax incentive. One can think of these price increases as implicit taxes.<sup>140</sup>

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<sup>134</sup>Poterba, *supra* note 2. In addition, because systems that mimic mark-to-market have been adopted by Italy, then at least for Italy, this justification no longer entirely holds. Alworth et al, *supra* note 2.

<sup>135</sup> Schizer, *supra* note 1 at 1560.

<sup>136</sup> See discussion note x, *infra*.

<sup>137</sup> THE INVESTMENT COMPANY INSTITUTE, MUTUAL FUND FACT BOOK 10 (2000).

<sup>138</sup> See discussion in Part IV; *see also* JOINT ECONOMIC COMMITTEE, THE TAXATION OF MUTUAL FUND INVESTORS: PERFORMANCE, SAVINGS AND INVESTMENT (April 2001).

<sup>139</sup> Thaler, *supra* note 1.

<sup>140</sup> Scholes et al., *supra* note 7.



Because those who purchase the asset later pay more for the asset, their net return from it is lower. To the extent the price of the investment increases, this reduces the value of the subsidy.<sup>141</sup> To put it another way, the value of the tax subsidy is ‘priced-in’ to the assets, and so new purchasers do not effectively get the benefit of the tax advantage. Therefore, the realization doctrine primarily provides a benefit to those who hold assets at the time of its adoption, because the value of their property increased.

However, for the subsidy to be completely offset by implicit taxes, markets would have to operate perfectly. While these implicit taxes may offset some of the value of the subsidy, they probably do not entirely eliminate it.<sup>142</sup>

Perhaps most importantly, he does not persuasively argue that there may not be more efficient alternatives subsidies. While he contrasts the realization doctrine with capital gains rates, he does not compare it with a more logical tax incentive, namely expanding the pension<sup>143</sup> and individual retirement account (IRA)<sup>144</sup> rules. These rules have been around long enough to be viewed as fairly stable and the value of these

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<sup>141</sup> The amount of the price increase depends on the identity of the marginal purchaser. It also depends on the competitiveness of the market. If the tax-advantaged investor is the marginal investor, the tax-advantaged should be completely reflected in the price, and there becomes no incentive to invest. If the marginal investor is not tax advantaged the price will not adjust and there will be an incentive to invest. Therefore the value of the subsidy will depend very much on the degree of implicit taxes that will be incorporated into the price of the assets. This will depend on the relative elasticity of demand for each asset which is eligible for deferral due to the realization doctrine. Scholes et al., *supra* note 7 at 15-9.

<sup>142</sup> Scholes et al., *supra* note 7 at 32-6.

<sup>143</sup> I.R.C. §§ 401(k), 403(b) (2002).

<sup>144</sup> I.R.C. § 213 (2002).

benefits should not be significantly discounted.<sup>145</sup> As Schizer admits, the realization doctrine would distort incentives between types of investment because not all forms of investment are equally able to take advantage of the realization doctrine.<sup>146</sup> On the other hand, pensions and IRA allow for virtually any asset to derive the same tax benefit, eliminating this type of distortion.

## 2. *The Inefficiencies Offset Each Other*

Dan Shaviro<sup>147</sup> analyzed the inefficiency caused by the realization doctrine that arises because it operates as a transfer tax. That is, because the income tax only occurs when an asset is transferred, it in effect operates as a tax on the transfer of assets. He analyses the efficiency of this “tax” by looking at what he refers to as “time one analysis” or the decisions made before the investment (or ex-ante bias in favor of certain assets) and “time two analysis” which refers to decisions about whether to sell an asset (related to the lock-in effect). He shows that the two inefficiencies discussed above (i.e., the lock-in effect and the lower tax rate on certain assets) to some extent offset each other.<sup>148</sup> While this does mean that the realization requirement maybe less inefficient than is commonly thought, it is highly unlikely that they perfectly offset each other,<sup>149</sup> and so

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<sup>145</sup> There is a fair argument that they do not encourage much additional saving. William Bassett et al., *How Workers Use 401(k) Plans: The Participation, Contribution, and Withdrawal Decisions*, 51 NAT. TAX J. 263 (1998).

<sup>146</sup> Schizer, *supra* note 1 at 1568.

<sup>147</sup> Daniel Shaviro, *An Efficiency Analysis of Realization and Recognition Rules Under the Federal Income Tax*, 48 TAX L. REV.1 (1992)

<sup>148</sup> Shaviro, *supra* note 147.

<sup>149</sup> Shaviro, *supra* note 147.

some inefficiency still remains. Furthermore, the strategic use of the doctrine can still cause significant misallocations.

### *3. Line Drawing Problems*

Edward Zelinsky, following a more traditional path, argues that in reality even these new systems could not be imposed on all assets.<sup>150</sup> Based on an analysis similar to that given above, he argues that it is not realistic to tax many assets on a mark-to-market basis. Because of this, there must be a trade-off between one inefficiency (e.g., under-taxing stocks as compared to labor income) versus another (e.g., over-taxing stocks as compared to collectibles). Clearly the relative size of the two inefficiencies is an empirical question. While Zelinsky gives some fairly good reasons for why the inefficiency of over-taxing stock as opposed to collectibles and similar assets is likely greater than inefficiency of comparing stock investment to labor income, he does not marshal convincing empirical evidence for this proposition, which such a proposition really requires. Hence, while one may feel that Prof. Zelinsky is likely right, the case is not air-tight.

## III. BEHAVIORAL ECONOMICS AND HOW IT DIFFERS FROM NEO-CLASSICAL ECONOMICS

### *A. Basic Neo-Classical Assumptions of Traditional Efficiency Analysis*

One key element of the Haig-Simons definition of income is that all income should be taxed at the same rate. This conclusion is a result of the notion that all income of any given source is fungible with income of the same amount from any other source.

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<sup>150</sup> Zelinsky, *supra* note 1.

This principal is perhaps the most fundamental notion in the theoretical analysis of tax law.<sup>151</sup> It is derived from particular kinds of neo-classical economic models of consumer behavior in which one assumes that utility is essentially a function of wealth.<sup>152</sup> Everyone knows this description is not a complete description of human behavior, or else why do people go on vacation or go to the movies. But when it comes to valuing dollars, it does seem reasonable that money from different sources should be fungible.<sup>153</sup>

A further key element of all of the previous analysis (both for and against the realization doctrine) is that the income in fact occurs at a time other than when the asset is sold. If, in a very real sense, the gains do not occur until the sale, then the criticisms of the realization doctrine are in error. The next section analyzes how one can argue that the gain or loss does not occur until the realization event occurs.

#### *B. Behavioral Critique of These Assumptions*

##### *1. Realization Model vs. Neo-Classical Models*

##### *a. “Rationality” vs. Mental Accounting*

For a number of decades, there have been many who have argued that the assumptions of the neo-classical models are flawed.<sup>154</sup> These commentators have argued

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<sup>151</sup> Utz, *supra* note 14.

<sup>152</sup> This is represented mathematically as  $U(W)$ , where  $U( )$  is utility and  $W$  is wealth. Fischer’s definition of income is explicitly based on this, see *supra* note x. In fact, not all neo-classical models assume wealth maximization, the concept of utility maximization is much broader than wealth maximization. Many models include leisure and other kinds of activities or assets can result in utility.

<sup>153</sup> For a discussion of this point, see George Frankfurter and Elton McGoun, *Resistance Is Futile: The Assimilation of Behavioral Finance*, Bucknell University Working Paper (2002) pp. 13-5.(on file with the author)

<sup>154</sup> Thaler, *supra* note 1.

that individuals do not view income and consumption in such “rational” terms.<sup>155</sup> Rather, they have more complicated methods of thinking about these issues, which actually makes thinking about decisions easier.<sup>156</sup> In particular, there is a fair amount of empirical evidence that individuals do not treat income from different sources as equivalent. This phenomena is often referred to as mental accounting.<sup>157</sup> This notion holds that income and expenditures which are related to different items are not combined in some simple metric like total dollars earned or spent. Rather items are separated and compared within particular groups of related items and amounts of income and amounts between groups have a complicated relationship, rather than a simple linear relationship.<sup>158</sup> This is clearly a very different kind of model than those derived from neo-classical reasoning.

There are a number of reasons why the way in which wealth is held can influence the perception of it. First, if wealth is held in a form which is viewed by individuals as

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<sup>155</sup> The rationality I am discussing here is not merely rationality in the traditional used by economists (acyclicity etc., for discussion of this see Douglas Blair, *Acyclicity* in UTILITY AND PROBABILITY 1, 5-9 (John Eatwell et al. eds. 1990). Rather, it merely means that the utility function would be significantly more complicated than simply  $U(W)$ , or  $U(W, L)$  where  $L$  is leisure. The domain of the function may include such variables as  $U(W, L, R)$  where  $R$  is the number of times the individual guessed right about a stock, etc. These kinds of variables are not normally thought of as “rational”.

<sup>156</sup> See Gerd Gigerenzer, *The Adaptive Toolbox*, in BOUNDED RATIONALITY: THE ADAPTIVE TOOLBOX 37, 39-43 (G. Gigerenzer and R. Selten, eds, 2000); see also Herbert Simon, *Theories of Decision Making in Economics and Behavioral Science*, 49 AM. ECON. REV. 253 (1959)

<sup>157</sup> Richard Thaler, *Mental Accounting and Consumer Choice*, 4 MARKETING SCI. 199 (1985)

<sup>158</sup> Id.

temporary or uncertain, it may be given a lower value.<sup>159</sup> Second, individuals may view the accumulation of some kinds of wealth as an end in and of itself.<sup>160</sup> Furthermore, individuals may not find it easy to measure the value of some kinds of assets, and may not even know what the value is from time to time. Therefore, people may segregate different kinds of wealth into separate “mental accounts” which are framed quite differently. The psychology of these mental accounts may dictate that certain assets are more appropriate to use for current expenditures, while others are earmarked for long-term savings.<sup>161</sup> If investors believe that gains are not fully real until they are “realized”, then these unrealized gains would need to be into a separate mental account from realized gains.

#### *b. The Realization Model*

A realization model of behavior would hold that while individuals maximize utility which is related to wealth, the measure of wealth is realized income rather than income as measured on a mark-to-market basis. Unrealized wealth is placed in a separate mental account. The key difference between neo-classical models and behavioral models

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<sup>159</sup> But then why hold it? Individuals should invest in assets until the marginal utility of income from one asset ( $a_1$ ) is equal to the marginal utility from the alternative assets ( $a_2$ ) (or  $MU_1 = MU_2$ ). However, we do not tax  $MU_1$  or  $MU_2$ . Rather we tax the total value of all the income from each asset and equal marginal utilities does not mean the total utility derived from one source of wealth is equal to the total utility from another source (i.e., if  $MU_1 = MU_2 \mid_{x=y}$ , this does not necessarily mean  $\int MU_1 = \int MU_2$ ). Hence, an asset can be overtaxed under a mental accounting framework with rational behavior, if the utility function for different types of wealth are different.

<sup>160</sup> For example, earning a higher wage may increase self-esteem because they feel they are worth more as a person, whereas they might not get that feeling from increases in stock or housing value.

<sup>161</sup> See Hersh Shefrin and Richard Thaler, *The Behavioral Life-Cycle Hypotheses*, 26 ECON. INQUIRY 609-643 (1988). Often permanent income hypothesis studies use a realization base for the timing of income.

is the proper timing of the income.<sup>162</sup> If it was always the case that the increase in value in the asset occurred in the final year of the holding period, then there would be no distortion to income and the realization doctrine would not be a subsidy. Rather the realization doctrine would accurately reflect the income of the taxpayer, because this is when the income actually occurred. One can make an argument that a realization model is consistent with Robert Haig's definition of income as psychological satisfactions.<sup>163</sup> If individuals do not perceive unrealized income as income, they do not derive psychological satisfaction from it.

## *2. Empirical Evidence for Mental Accounting*

In the previous section, we saw the contrast between the neo-classical economic models and those of realization-behavioral models based on mental accounting. This section discusses the empirical evidence. As described in this section, neo-classical theory yields predictions that are falsified by actual behavior.<sup>164</sup> On the other hand, these behaviors are consistent with a mental accounting model viewed from a realization perspective.<sup>165</sup> This section shows how a model which views income as occurring at the

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<sup>162</sup>The Bradford and the Auerbach methods do not accurately measure when this occurs. They are not concerned so much with getting the tax amount right, but rather in preventing the realization doctrine from causing a distortion in the allocation of capital. *Supra* note 10.

<sup>163</sup> See discussion in note 12, *supra*.

<sup>164</sup> For a discussion of these problems see Daniel Kahneman and Amos Tversky, *Prospect Theory: An Analysis of Decision of Risk* in CHOICES, VALUES AND FRAMES 1, 1-12 (D. Kahneman and A. Tversky eds., 2000).

<sup>165</sup> Richard Thaler, *Introduction* in ADVANCES IN BEHAVIORAL FINANCE 1, 1-5 (1996). Before we viewed the utility function of the investor as  $U(W)$ , where  $W$  is the sum of all the assets owned. Under a mental accounting view, we can still view utility as a function of wealth, but now wealth is not simply unrealized and realized gains added together, rather different weights are added to different kinds of wealth. Mathematically,

time of sale rather than throughout the period of ownership more accurately predicts the behavior of individual investors. The evidence is found in studies of investment behavior, consumption behavior and also neurological evidence of how we perceive gains and losses

*a. Consumption Behavior.*

*i) Lifetime Consumption Studies*

Perhaps the most important empirical evidence for a realization model derives from the lifetime consumption of income studies. The standard model of the permanent income hypothesis (developed by Milton Friedman<sup>166</sup>) is that the marginal propensity to consume out of all expected lifetime wealth, whether in the form of stocks, real estate, or any other source, should be the same relatively small number.<sup>167</sup> That is, (ignoring the time value of money and uncertainty) if an individual expects to live  $N$  periods and will have a total lifetime wealth of  $W$ , the individual will want to consume  $W/N$  each period. An increase in wealth in one period will only increase lifetime wealth by only a small percentage and so should increase current consumption by only a small amount. In order to apply this model to behavior, the amount of lifetime wealth ( $W$ ) needs to be discounted for when the wealth arises, as well as the uncertainty surrounding it.<sup>168</sup> Interestingly, the

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$U(W)$  is still the utility function however now  $W = w_1(a_1) + w_2(a_2) + \dots + w_n(a_n)$ , where each function  $w_n$  is unique to each kind of asset, where  $a_i$  is the value of the  $i$ th asset.

<sup>166</sup>A THEORY OF THE CONSUMPTION FUNCTION (1957). See also Robert Hall, *Stochastic Implications of the Life Cycle Permanent Income Hypothesis: Theory and Evidence*, 86 J. POL. ECON. 971 (1978)

<sup>167</sup> Friedman, *supra*, note 166

<sup>168</sup> The model gets quite complicated if we start to introduce uncertainty and other factors. To illustrate, assume the individual will earn a stream of income equal to  $a_1 + a_2 + \dots + a_n$ , where the subscript denominates the period in which the income will occur. If



studies tend to find that while there is a fair amount of smoothing of consumption over a lifetime, there is also an excessive relation between consumption and the actual realization of income.<sup>169</sup> Hence, a short-term increase in income received increases the amount of consumption more than the permanent income hypothesis predicts.<sup>170</sup> However, if realized income is viewed as more valuable than unrealized income, this significantly helps in explaining consumption patterns.<sup>171</sup>

In general, stock market wealth and other forms of unrealized income have marginal propensities to consume that are at least an order of magnitude smaller than

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the discount factor  $1/(1+r)$ , where  $r$  is the interest rate, is denominated  $\delta$ , then the value of the stream of income will be  $a_1 + \delta a_2 + \delta^2 a_3 + \dots + \delta^{n-1} a_n$ . In order to account for uncertainty of collecting the income in the future the  $r$  and the resultant  $\delta$  can be adjusted for this risk. This can be used to calculate expected utility consistent with Von Neuman Morgenstern expected utility. See HAL VARIAN, MICROECONOMIC ANALYSIS 150-5 (3<sup>RD</sup> ed., 1991)

<sup>169</sup>There are still problems in the predictions for retired persons saving too much, but they may be savings for their heirs etc. at that time. See Tullio Japelli and Franco Modigliani, *The Age-Saving Profile and Life Cycle Hypothesis*. Centro Studi in Economia e Finanza Working Paper no.9 (Nov. 1998) (on file with the author). Japelli and Modigliani also discuss how much of the data on the permanent income hypothesis does not include retirement savings, largely due to the fact that this income data is much easier to come by than the value of the increase in pension savings).

<sup>170</sup> Marjorie Flavin, *The Adjustment of Consumption to Changing Expectations about Future Income* 89 J. POL. ECON. 974 (1981). Current income, rather than permanent income, has significant explanatory power. See also John Y. Campbell and N. Gregory Mankiw, *Consumption, Income and Interest Rates: Reinterpreting the Time Series Evidence* in NBER MACROECONOMIC ANNUAL 1989 185 (O. Blanchard and S. Fisch eds., 1989); For a further discussion see John Y. Campbell and N. Gregory Mankiw, *Permanent Income, Current Income, and Consumption*, 8 J. BUS. AND ECON. STAT. 265-279 (July 1990). John Y. Campbell and N. Gregory Mankiw, *The Response of Consumption to Income: A Cross-Country Investigation* 35 EURO. ECON. REV. 723-767 (1991); For a more recent analysis, see Marianne Baxter and J. Jermann *Household Production and the Excess Sensitivity of Consumption to Current Income*, 89 AM. ECON. REV. 902 (1999).

<sup>171</sup>Baxter and Jermann, *supra* note 170.

labor income. Case *et al.* looked at the effect of stock ownership and other forms of wealth on the marginal propensity to consume.<sup>172</sup> They found the marginal propensity to consume earnings from stock was very small (below 1% or an marginal propensity to consume of .01) and while the marginal propensity to consume income out of housing wealth was higher (about .09). This was contrasted with the marginal propensity to consume for labor income which is estimated to be between .6-.8.<sup>173</sup> The authors of this study argue that this occurs because such wealth is viewed as being more stable.<sup>174</sup>

This finding applies not only to consumption patterns at the level of year-by-year consumption, but also to day-by-day consumption patterns. One interesting finding, though seemingly obvious, is that people spend more on payday than on other days.<sup>175</sup> In

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<sup>172</sup>Karl Case et al., *Comparing Wealth Effects: The Stock Market versus The Housing Market*, University of California, at Berkeley Department of Economics Working Paper no. E01-308 (October 2001)(on file with the author). See also Ing Haw-Cheng and Eric French, *The Effect of the Run-up in the Stock Market on Labor Supply*, 4 ECON. PERSP. 48 (2000). These authors found that the marginal propensity to consume out of stock market wealth was too small for life cycle hypotheses, and that the expected decrease in labor participation from this wealth was too low. See also Thaler, *supra* note 1.

<sup>173</sup> Robert Solow, *Cowles and the Tradition of Macroeconomics*. COWLES FIFTIETH ANNIVERSARY VOLUME (1983). Interestingly, these numbers are entirely consistent with the results found in game shows. (See notes 191-3 *infra*)

<sup>174</sup> Case et al., *supra* note 172. Robert Shiller, *IRRATIONAL EXUBERANCE* (2001). In fact a more recent study which included income earned in the year found that stock market wealth alone is not statistically significantly correlated with current consumption. George Korniotis, *Differentiated Propensity to Consume: Evidence from the U.S. States*, Yale Department of Economics Working Paper 2002. (on file with the author) See also George Korniotis, *Where Does it Come From? A Simple Model of Differentiating Propensities to Consume*, Yale Department of Economics Working Paper (2000) (on file with the author).

<sup>175</sup>Melvin Stephens, Jr. *Paycheck Receipt and the Timing of Consumption*, NBER Working Paper 9356 (2002). See also Melvin Stephens Jr. “3<sup>rd</sup> of the Month”: *Do Social Security recipients Smooth Consumption Between Checks*, NBER Working Paper 9138 (2002).

earlier times, this could have been explained because of possible liquidity constraints. However, in recent times with the advent of such things as credit cards and other credit devices, this seems less likely.<sup>176</sup> In fact, the studies have found little correlation between credit cards and increased spending on payday (although wealth and other socioeconomic factors did play a key role).

#### *ii. Tithing Behavior*

Another piece of evidence in favor of the realization model involves studies of the ways in which people claim to perceive income. An indirect way of studying this is to examine tithing behavior, which is generally based on the notion that ten percent of one's income should go to the church, synagogue or other religious organization. In a study of tithing behavior of members of the Mormon church, in which the individuals are voluntarily giving their money to the church, the subjects almost universally use a realization basis for determining income.<sup>177</sup> One might initially think that this is a result of the individuals simply using the definition of income for tax purposes, which is perhaps the easiest and most available definition of income. However, the study showed that the individuals had many departures from the definition of taxable income, such as including gifts and bequests in income.<sup>178</sup> This is fairly direct evidence that individuals commonly use a realization basis for perceiving income.

#### *b. Investment Behavior*

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<sup>176</sup>The research has found this phenomena in those with credit cards and those without, Stephens, *supra* note 175.

<sup>177</sup> Gordon Dahl and Michael Ransom, *10% Flat Tax: Tithing and the Definition of Income*, 40 ECON. INQUIRY 120, (2002).

<sup>178</sup> Dahl and Ransom, *supra* note 177. Gifts and Bequests are excluded from income for tax purposes under I.R.C. § 102 (2002).

*i. Selling Gainers, Retaining Losers*

As discussed earlier, traditional theory predicts that under a realization tax system, investors will sell their investments that have lost money and retain those which have increased in value.<sup>179</sup> This is the most rational thing to do if you assume that the current price is the “correct” value of the asset, and you can defer the tax on the gain by retaining an asset.<sup>180</sup> However, empirical evidence indicates that, in fact, individuals sell the stocks that have increased in value and tend to retain those which have lost value longer than they would if they were behaving “rationally”, even ignoring tax incentives.<sup>181</sup> This phenomenon extends beyond common stocks<sup>182</sup> to include company stock options,<sup>183</sup> mutual funds,<sup>184</sup> and residential housing.<sup>185</sup>

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<sup>179</sup>See earlier discussion in part II, *infra*

<sup>180</sup> Terrance Odean, *Are Investors Reluctant to Realize Losses*, 53 J. FIN. 1775 (1993),

<sup>181</sup> Hersh Sheffrin and Meir Statman, *The Disposition to Sell Winners Too Early and Ride Losers Too Long* 40 J. FIN. 777 (1985) If one were to ignore tax incentive, winners and losers should be sold at random. However, individuals retain losers longer than winners, which is opposite to the optimal strategy given the tax incentives. Brad M. Barber et al. *The Behavior of Mutual Fund Investors*, UC Davis Working Paper (2000)(on file with the author). For a description of the Gambler’s fallacy, and the opposite, the hot-hand fallacy, see Rachel Crosson, et al. *The Gambler’s Fallacy Versus the Hot-Hand: Empirical Data From Casinos*, 92 AM. ECON. REV.- (2003)(forthcoming).

<sup>182</sup>For additional evidence as to common stocks, see Odean, *supra* note 180; see also Mark Grinblatt and Matti Keloharju, *What Makes Investors Trade*, 56 J. FIN. 589 (2000)

<sup>183</sup> Chip Heath et al. *Psychological Factors and Stock Option Exercise*, 114 QUAR. J. ECON. 601 (1999).

<sup>184</sup>Barber et al., *supra* note 181.

A reasonable explanation of these phenomena derives from behavior related to what is known as the Gambler's Fallacy.<sup>186</sup> Under this fallacy, if numbers are chosen by some random process in which the selection involves replacement, such as a roulette wheel, gamblers will often believe a number is "due", (i.e., that is it is more likely to occur than other elements of the sample set).<sup>187</sup> Of course, any number on a fair roulette wheel has an equal likelihood to occur each time, regardless of the history of the numbers that have occurred recently. As applied to investment, if a stock has been very successful, an investor might think that it is "due" to drop, whereas if it has been dropping, it is "due" to go up. This is certainly incorrect with regards to random processes, but many people intuitively feel it is correct.

A related explanation for this behavior is that individuals are reluctant to take actions that create an "irreversible loss", whereas they want to "lock in" gains.<sup>188</sup> By selling an asset that has lost value, there becomes no chance that the investment will ever produce a gain. On the other hand, if the investor wants the stock to someday be

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<sup>185</sup> David Genesove and Chris Mayer, *Nominal Loss Aversion and Seller Behavior: Evidence from the Housing Market*, Hebrew University Working Paper (1999)(on file with the author).

<sup>186</sup> Odean, *supra* note 180.

<sup>187</sup> Colin Camerer and Martin Weber, *Recent Developments in Modeling Preferences: Uncertainty and Ambiguity*, 5 J. RISK AND UNCERTAINTY 325 (1992). This is a common fallacy. That this behavior is not necessarily irrational, see Sandra Blakeslee, *Paradox in Game Theory: Losing Strategy that Wins*, NEW YORK TIMES (Jan. 25, 2000) at F.5.

<sup>188</sup> Ferris, et al., *Predicting Contemporary Volume with Historic Volume at Different Price Levels: Evidence Supporting the Disposition Effect*, 42 J. FIN. 677 (1988) and Camerer and Weber, *supra*, note 187 at 327-30. For examples of this from experimental markets see Vernon Smith, et al., *Bubbles and Endogenous Expectations in Experimental Spot Asset Markets*, 56 ECONOMETRICA 1119 (1988).

successful, it is necessary to continue to own it. The desire to avoid having made a bad decision and consequently the willingness to take on risk to avoid having made a bad decision is known as regret aversion.<sup>189</sup>

In either case, the investor does not believe that the current price is necessarily the most “correct” price, at least at an intuitive level. For these investors, gain and loss can only be determined at the time of sale. While a higher value today may be correlated with a higher value when the asset is liquidated, the relationship between current price and actual gains is viewed as being indeterminant.

While irrational in some ways, one can certainly feel the intuitive pull of these explanations. They are consistent with a “realization” view of gains because they all treat the current price as not necessarily reflecting true gains. True gains can only be determined when the asset is sold.

There is actually some evidence that investors who view the market in this fashion are not necessarily irrational. Asset prices may indeed follow these rules to some degree.<sup>190</sup>

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<sup>189</sup> As discussed in note x, *infra*, this might be “rational” in the most inclusive use of the term, but it is not what is commonly used. Here the utility function may include terms in its argument such as self-esteem from guessing right etc.  $U(W, G, V, \dots)$ . One needs to be careful about adding terms to the utility function *ad hoc*, because then utility theory becomes unfalsifiable. Thaler, *supra* note 1.

<sup>190</sup> Martin Gruber, *Another Puzzle: The Growth in Actively Managed Funds*, 57 J. FIN. 753 (1996); *see also* Lu Zheng *Is Money Smart? A Study of Mutual Fund Investors' Fund Selection Ability* 54 J. FIN. 901 (1998). These two studies found that investors actually improved their performance by chasing winning funds, but doing so frequently. One therefore needs to be careful in calling such behavior irrational. For additional studies on the persistence of “Hot” mutual funds see Darryl Hendricks et al., *Hot-Hands in Mutual Funds: Short-Run Persistence of Relative Performance, 1979-1988*, 48 J. FIN. 93 (1993); *see also* Mark Grinblatt and Sheridan Titman, *The Persistence of Mutual Fund Performance*, 47 J. FIN. 1977 (1992). However, this effect may be short-lived. See Mark Carhart, *On Persistence in Mutual Funds Performance*, 52 J. FIN. 57 (1997). These

### *ii. Gambling Studies*

Among the most interesting studies showing that people do not perceive realized and unrealized gains in the same way are those of bets from game shows.<sup>191</sup> In one study, actual bets on a game show studied averaged \$3,200. When the cash stake available from betting increased by \$1, bets increased by about \$.60<sup>192</sup> But when the amount of earnings that could not be bet increased (e.g., when a contestant won a car) by \$1, bets increased by only a penny. While the contestant may not have valued the prize as much as the stated value, it seems highly unlikely that they would value it at only 1% of stated value (they could almost certainly sell it for substantially more than that). Similar results have been found by others.<sup>193</sup> These studies are inconsistent with the prediction from neo-classical economics that contestants should integrate all assets (bettable cash and unbettable prizes) then bet based on their integrated assets. In particular, non-liquid assets appear to be valued at substantially less than liquid assets.

### *iii. The Dividend Paradox*

Another piece of evidence which is consistent with the realization model of income is the significant preference individuals have for dividends over and above what

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studies show that good performing mutual funds are more likely to out perform the market in the succeeding year than a randomly selected fund, but that this performance tends to last only one year. Therefore, to capitalize on the winning fund phenomena, you have to switch funds approximately annually.

<sup>191</sup> Robert Gertner, *Game Shows and Economic Behavior: Risk-Taking on "Card Sharks"* 108 QUAR. J. ECON. 507 (1993).

<sup>192</sup> This is similar to the house money effect in Richard Thaler and E. Johnson *Gambling with the House Money and Trying to Break Even: The Effect of Poor Outcomes on Risky Choice* 38 MGMT. SCI. 643 (1990).

<sup>193</sup> Thaler, *supra* note 1. See also H. Biswanger, *Attitudes Toward Risk: Theoretical Implications of an Experiment in Rural India*, 91 ECON. J. 867 (1981).

would be rational. Dividends seem to be significantly overvalued, particularly when the shareholders could receive cash from their stock investments by selling their shares either back to the company or on the open market, and this sale would be taxed at a much favorable rate than dividends.<sup>194</sup> Shares of publicly traded corporations are clearly tradeable and highly liquid. Therefore, the investors desire for dividends is particularly puzzling.<sup>195</sup> This phenomenon has been discussed for decades,<sup>196</sup> and is the subject of a large literature, but no theory has emerged as the generally agreed upon solution. Some have attempted to explain dividends based on signaling theory.<sup>197</sup> However, this seems unlikely to be a complete explanation, given that such “signals” should not matter much for institutional investors and others who are often the key for setting the prices of securities.<sup>198</sup> Other explanations, which are likely to be at least partially true, are that dividends involve lower transactions costs than selling stock, and so shareholders prefer

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<sup>194</sup> Hersh Sheffrin and Meir Statman, *Explaining Investor Preference for Cash Dividends*, 13 J. FIN. ECON. 253 (1984). They also explore an alternative explanation of dividends that relates to prospect theory and the ways in which individuals can choose to aggregate or segregate gains and losses. However, there are problems with the realism of their explanation, such as if individuals can what to segregate and aggregate why not look at all losses as one aggregate and all gains as separate so that each dollar of gain is always viewed as a separate event.

<sup>195</sup> Signaling theory holds that dividends signal to investors the profitability of the corporation. If the corporation is doing well, it can afford to pay dividends. Investors value this signal and are willing to pay more for a corporation that pays dividends. However, signaling theory has problems with how expensive the signal is, compared with alternative ways of conveying information. Chorvat, *supra* note 76.

<sup>196</sup> For an early discussion, see John Long, *The Market Valuation of Cash Dividends*, 6 J. FIN. ECON. 235 (1978)

<sup>197</sup> Douglas Bernheim, *Tax Policy and the Dividend Puzzle*, 22 RAND J. ECON. 455 (1991)

<sup>198</sup> See Fischer Black, *Noise*, 51 J. FIN. 529, 539 (1986), see also Mitchell Engler, *A Missing Piece to The Dividend Puzzle: Agency Costs of Mutual Funds*, Cardozo Law School Working Paper (2003).



dividends as a way to receive cash from the corporations. However, given that there is a significant tax difference, it is unlikely that the transactions costs of selling the stock will overcome the tax costs of dividends, so this cannot be a complete explanation.<sup>199</sup>

Many companies have discovered that if they attempt to adopt a plan to decrease shareholder taxes in line with this analysis, shareholders generally have violent negative reactions.<sup>200</sup> Although share buybacks became more frequent in the 1990's, they tended to be one-time events (or at best infrequent events), which are generally related to management viewing the price of their shares as undervalued.<sup>201</sup>

The currently popular explanations for this phenomena generally involve some type of ad hoc explanation such as “investors like dividends”.<sup>202</sup> A clue to a possible solution more accordance with general behavioral theories comes from the anecdotal evidence that individual investors plan to consume all or almost all of the dividends they

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<sup>199</sup> Sheffrin and Statman, *supra* note 181.

<sup>200</sup> The following story was related more than 3 decades ago about the General Public Utilities Corp. (G.P.U.) corporation that tried to improve its shareholders tax positions, by trying to reduce dividends and increase share buy-backs. When G.P.U. proposed to substitute stock dividends for cash dividends and offered to buy the shares from those shareholders who wished cash, there was a violent reaction. Under the current tax rules (I.R.C. § 305(b)), this would not have resulted in favorable tax treatment to the shareholders. All of the shareholders would have been treated as having received cash dividends even though they received stock dividends. Carol Loomis, *A Case for Dropped Dividends*, FORTUNE (June 15, 1968) at 15.

<sup>201</sup> Asjeet S. Lambda, *Share Buybacks in a Highly Regulated and Less Regulated Market Environment* University Of Melbourne Working Paper, 2000-01, (2000)(on file with the author)(share buybacks are positively correlated with abnormally high returns after the buyback), see also Isaac Otchere and Matthew Ross, *Do Share Buyback Announcements Convey Firm Specific or Industry Wide-Information? A Test of the Under-Valuation Hypothesis*. University of Melbourne Working paper 2000-10 (2000)(on file with the author).

<sup>202</sup> Black, *supra* note 198. or the explanation that it allows investors to choose when to segregate or aggregate the dividends as Sheffrin and Statman advocate.

receive,<sup>203</sup> which would make the receipt of the dividend similar to the receipt of salary income.<sup>204</sup> This would imply that dividend preference is part of the more general phenomena that investors value currently realized income more than an increase in the value of their stock. Investors value dividends because they can be spent immediately, whereas the increases in value of shares will not.<sup>205</sup> This theory would predict that a stock which paid dividends would be more valuable (even though dividends are taxed at a higher rate than capital gains) than a stock which had the same total return but earned more in capital gains. The realization model may not fully explain the phenomena, but it likely plays a role in this valuation puzzle.<sup>206</sup>

*c. Physiological Evidence*

Another type of evidence for a realization model is derived from neurological studies which examine the ways in which humans actually perceive gains. The study of neurology has advanced to the point where one can observe what is occurring in human brains as the subjects engage in economic behavior. This path breaking area of research

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<sup>203</sup> Statman and Sheffrin, *supra* note 194.

<sup>204</sup> Statman and Sheffrin, *supra* note 194.

<sup>205</sup> This explanation is consistent with surveys of investors. Ming Dong, et al. *Why Individual Investors Want Dividends*, Tilburg Univ. Working Paper (Nov. 15, 2002)(on file with the author); *see also* Thaler, *supra* note 1.

<sup>206</sup> The realization model may also help to explain such things as the equity premium puzzle. The risk and variability of the returns to equity does not seem sufficient to explain the premium it has historically received in the market. Thaler, *supra* note 157. If one views income under a realization model this becomes easier to explain. The question is reframed by asking why are individuals willing to receive lower returns on debt instrument which generally pay interest currently as opposed to equity which earns a significant amount of its returns in deferred gains? Under the realization model, the answer is clear: individuals value having the cash now more than unrealized gains. Shlomo Benartzi And Richard Thaler, *Myopic Loss Aversion and the Equity Premium Puzzle*, 110 QUAR. J. ECON. 73 (1995).

is known as neuroeconomics.<sup>207</sup> The research in this area can help to illuminate the mechanisms that are used by the brain to perceive anticipated gains and “realized” gains. One study shows that different areas of the brain are activated when the subjects anticipate rewards from when those rewards are actually received. The difference in neural activity between merely knowing you will receive something and the actual receipt is a difference in kind, not merely a difference in degree. When the rewards were merely anticipated, the area of the brain that was activated was in the ventral striatum. When the actual reward was given, the area activated was in the ventromedial frontal cortex.<sup>208</sup> These two parts of the brain are significantly different. The first (the ventral striatum) is more involved in behavior designed to motivate and is tied to feelings such as appetite and hunger. The second (the ventromedial frontal cortex) is the central ‘clearinghouse’ of emotions and results in greater emotional responses as well as range.<sup>209</sup> The study also shows that actual rewards also result in higher dopamine release. Therefore, the receipt of gains and anticipation of gains activate different areas of the brain and are very likely perceived differently.

While these findings do not directly contradict neo-classical economics, it certainly paints a different picture of what is occurring. Under the neo-classical theory,

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<sup>207</sup> The term was coined by Kevin McCabe in 1996. See McCabe et al. *Law and Neuroeconomics*, 11 SUP. COURT ECON. REV. (2003) (Forthcoming ); see also Paul Glimcher, DECISIONS, UNCERTAINTY AND THE BRAIN: THE SCIENCE OF NEUROECONOMICS (2003)

<sup>208</sup> Brian Knutson, et al., *Dissociation of Reward Anticipation and Outcome with Event-Related fMRI*, 12 NEUROREPORT 368 (December 2001)

<sup>209</sup> The ventral striatum is involved in motivation and anxiety related to behaviors such as appetite. R. Schwarz, et al., *The Relationship Between Anxiety and Serotonin in the Ventral Striatum*, 9 NEUROREPORT 1025,1029, (1998).

the present value of the utility that will be derived in a later period is simply the discounted value of the amount that will be received. The neurological evidence indicates the brain does not simply discount the value of the later reward, even though, in this experiment, the anticipated gains were to happen within a very short time of when they were announced,<sup>210</sup> whereas the differences between an increase in value and a realization event can be separated by months or years. To the extent that anticipated gains are perceived significantly differently from current gains, this indicates that taxation currently of unrealized gains in the same way as realized gains may not be optimal.

One needs to be very careful of concluding too much from this type of evidence. There are very few studies in this area and the meaning of the evidence may develop over time. However, because it seems to be consistent with other evidence we have, this does seem to lend extra confirmation of the model.

### *3. The Realization Model*

All of the behavioral results discussed above are inconsistent with the traditional theory of fungibility of income. They are all consistent with the view that investors do not view a gain or loss as occurring until it is realized, or at the very minimum that unrealized gains are treated as significantly less valuable than if they were currently realized.<sup>211</sup> Gains or losses are only potential gains or losses until a realization event occurs.

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<sup>210</sup> The time varied, but the it was always less one minute between the the signal and the reward. Knutson et al., *supra* note 208.

<sup>211</sup> B. Kent Daniel, *et al.*, *Investor Psychology in Capital Markets: Evidence and Policy Implications*, 49 J. MONETARY ECON. 139 (2002)

From the previous analysis, when individuals receive cash or property other than that in which they have invested, they tend to view this receipt in a similar light.<sup>212</sup> However, they do not view unrealized gains as real. Therefore, if individuals have received cash or other property, they should be subject to tax. If they have not received such property, and their investment is still subject to the risks inherent in the original investment, then they should not yet be subject to tax. This is entirely consistent with the current understanding of the realization doctrine.<sup>213</sup>

Creating these separate mental accounts in which individuals view these gains as not being fully real, may in fact be boundedly rational. If individuals are likely to spend either all or close to all of their current income,<sup>214</sup> it is perhaps best to establish separate mental accounts in order to save for retirement or other large and costly events in life. This way of viewing wealth reduces the problems that might result from behavior such as hyperbolic discounting etc. This would allow somewhat irrational consumers to smooth their consumption overtime in accordance with the rational investor models.<sup>215</sup>

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<sup>212</sup> See discussion in Part III.B, *infra*.

<sup>213</sup> See discussion in notes 22-70 and surrounding text.

<sup>214</sup> David Laibson, *Golden Eggs and Hyperbolic Discounting*, 112 QUAR. J. ECON. 443 (1997). Further evidence that spending and wealth accumulation are not simply related in a linear fashion is found in studies of individuals who invest, but also carry credit card balances. Because the rates of return on investment assets are rarely as high as the interest payments on credit cards, it would not be rational to both invest and carry credit card balances, yet many people do. In order for this to occur, individuals must have savings and credit card balances in separate mental accounts. Consumers do behave in many rational ways in connection with credit cards. Paul S. Calem and Loretta J. Meser, *Consumer Behavior and the Stickiness of Credit Card Interest Rates*, 85 AM. ECON. REV. 1327(1995)

<sup>215</sup> George-Marios Angeletos et al. *The Hyperbolic Consumption Model: Calibration, Simulation and Empirical Evaluation*, 15 J. ECON. PERSP. 47 (2001). The

Realization accounting may therefore actually improve the ability of individuals to increase their welfare.<sup>216</sup>

Karl-Erik Wärneryd argues that there are additional reasons for why this behavior is may be rational. Individuals view stock market wealth differently because the short-term volatility of the stock market is too great for most investors to make short-term investments.<sup>217</sup> The result is that most individual investors invest in the stock market for the long-term and simply accumulate assets without trading much. They generally only consider the value of the investment in the future rather than the current value, because stocks are viewed only as a long-term investment. If, as many studies indicate, individuals significantly discount future events more than neo-classical exponential discounting models predict,<sup>218</sup> the value of these gains become small relative to income that is realized currently. This would explain the empirical data that large increases or decreases in stock wealth do not affect investors as changes in realized income.

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bounded rationality of this is further discussed in Carol C. Berant and Michael Haliassos, *Debt Revolvers for Self-Control*, University of Cyprus Working Paper (2001)(on file with the author).

<sup>216</sup> Gigerenzer, *supra* note 156 at 40.

<sup>217</sup> Those who make short-term investments to save up for not too distant purchases tend to lose or make lower gains, due to short-term variation in stock rates and bond interest rates. Those who speculate and buy and sell continuously end up with lower wealth than the less active first category. Those who really gamble on the stock market and freely buy and sell stocks and/or derivatives in a few cases end up very rich but, in many cases, lose everything. STOCK MARKET PSYCHOLOGY: HOW PEOPLE VALUE AND TRADE STOCKS 5 (2002).

<sup>218</sup> Laibson, *supra* note 214.

One might respond that some of the behaviors discussed above are predicted by prospect theory, hence one does not need to adopt any “realization” gloss in addition.<sup>219</sup> Prospect theory is the most well known of the theories in behavioral economics.<sup>220</sup> It states that while individuals are maximizing utility, utility is not a function of wealth, but rather a function of increases or decreases to wealth from a reference point. Furthermore, the theory predicts that individuals are risk averse<sup>221</sup> with respect to gains and risk preferring<sup>222</sup> as to losses. If investors view the value of their assets in a manner consistent with prospect theory, this would result in behavior such as loss aversion.<sup>223</sup> However, in order to apply prospect theory, one requires a reference point from which gains and losses are determined. The only reference point consistent with the evidence is the initial price of the asset rather than the current position of the asset.<sup>224</sup> If the reference point were continually moving with the price of the asset, then the observed behaviors would not occur. For example, there would be no loss of which to be averse. Therefore,

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<sup>219</sup> Prospect theory was first put forth by Daniel Kahneman and Amos Tversky. See Daniel Kahneman and Amos Tversky, *Prospect Theory: An Analysis of Decision Under Risk* in CHOICES, VALUES AND FRAMES 1, 1-15 (D. Kahneman and A Tversky, eds 2000)

<sup>220</sup> Id.

<sup>221</sup> Risk aversion is the situation where a person needs to be compensated for taking on risk. Varian, *supra* note 168 at 150.

<sup>222</sup> Risk preference is the situation where a person is willing to pay to take on risk. Varian, *supra* note 168 at 150.

<sup>223</sup> Kip Smith et al. *Neuronal Substrates for Choice under Ambiguity, Risk, Gains and Losses*, 48 MGMT. SCI. 711, (2002). Odean, *supra*, note 180.

<sup>224</sup> Odean, *supra* note 180. Interestingly, this violates the principle of the irrelevance of sunk costs. This is perhaps one of the most common investment fallacies. Camerer and Weber, *supra* note 187. If one accepts efficient market hypothesis, this would be the proper reference point.

even assuming prospect theory, one still needs a “realization” overlay in order to understand consumption and investment behavior.<sup>225</sup>

#### 4. *Realization As Optimal Rule*

##### a. *Efficiency*

##### i. *Meaning of Efficiency*

Optimal tax theory is based on the idea that the tax system should attempt to either promote productivity and efficiency or at least reduce it by as little as possible.<sup>226</sup> Under this analysis, the key to an efficient tax system is the effect of the rules on the behavior of taxpayers. One then has to examine the way people actually perceive income and behave in the presence of the tax rule in question. If a model predicts people should behave in a particular way, but they do not, then this model is not very useful for

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<sup>225</sup> Under Kahneman and Tversky’s formulation the utility function  $u(x)$  is replaced by a value function which has as its argument  $x-\omega$ , which gives the difference between the outcome and a standard reference point  $\omega$ . That is, individuals are not concerned so much with absolute value of their position, but with their position relative to some reference point that they think they deserve (this is consistent with a fair amount of psychological literature). Under prospect theory then the key to determine utility is to determine the reference point. The studies which indicate that people look to the original purchase price as the reference point. Utility is therefore based on the original purchase price. Sheffrin and Statman, *supra* note 194.

<sup>226</sup> This article uses the term efficiency in the sense used by economists, which is essentially the degree to which assets are utilized in the most rational way, i.e. to promote utility, maximize profit, etc. This is sometime referred to Kaldor-Hicks efficiency that is if by rearranging assets we could not increase production we have an efficient. DAVID FRIEDMAN, *PRICE THEORY* 444 (1996). The reason for taxes in the first place is to fund public goods which should result in higher utility than that same wealth spent by taxpayer would have. F.P. Ramsey, *A Contribution to the Theory of Taxation*, 37 *ECON. J.* 47, 58-9 (1927).



discussing efficiency. Hence, we need to look at how individuals actually perceive income and income tax rather than simply relying on neo-classical economic theory.<sup>227</sup>

ii. *Realization as Efficient Rule*

As discussed in above, a model which views the income as occurring when a “realization” event takes place is more consistent with the behavior of individual taxpayers. Both behavioral models and neo-classical models predict that if the tax rate is lower on a certain type of asset, there will be a higher amount of investment in these assets. This particular prediction is not in dispute, and empirical research shows that increasing the tax on an asset will generally result in less investment in the asset.<sup>228</sup> The question is whether the efficient level of investment in these assets is achieved by a mark-to-market rule or a realization rule.

Neo-classical models would predict that the realization doctrine would result in over-investment in assets which are capable of deferring gains, while behavioral models based on realization accounting predict that the appropriate level of investment would result. As discussed earlier, the currently available evidence is consistent with the behavioral view. For example, even with a significant tax incentive to behave differently, investors still sell stocks on which there is a gain and retain losing investments longer than a “rational” investor should.<sup>229</sup>

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<sup>227</sup> H. Lorne Carmichael, and W. Bentley Macleod, *How Should a Behavioral Economist Do Welfare Economics*. USC Center for Law, Economic and Organizational Research Paper no. C02-18 (2002)(on file with the author).

<sup>228</sup> For some contrary evidence see Chorvat, *supra* note 76. However, the assumptions behind the model in that paper are rather strenuous. In fact, even in the case of the corporate double tax, the empirical evidence shows that the current tax system results in less investment in a taxed asset.

<sup>229</sup> Odean, *supra* note 180.

If one adopts the “realization” model of income, the analysis of the current tax rules should be recast. A mark-to-market system or one that mimics it would impose too much tax on these assets. If we continue to view individuals as the most efficient selectors of investments,<sup>230</sup> but understand they have particular cognitive issues, then it best to design the system around their cognitive methods.<sup>231</sup> As demonstrated above, individuals tend to view “paper gains and losses” as unreal and therefore will react to them as if they have not yet occurred. Hence, a realization model should be the reference point rather than a mark-to-market model.

b. *Equity*

Another important issue is the fairness of the realization doctrine. As discussed earlier Haig and others thought it was best to proportion the tax based on psychological satisfactions.<sup>232</sup> However, those who argue against the realization doctrine often argue it is inequitable because it lowers tax rates for some, particularly wealthy individuals, and not others.<sup>233</sup> However, if individuals do not perceive themselves as better off, then they

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<sup>230</sup> It is important to note there is significant evidence that even with the cognitive issues discussed in this paper individuals may very well be the best selectors of investment. Paul Samuelson argued that markets show a great deal of micro-efficiency, that is individual are pretty goods judges of which enterprises are likely to succeed. In a private letter from Paul Samuelson to John Campbell and Robert Shiller, quoted in Shiller, *supra* note 174 at 46. In fact there is good empirical evidence that the market can these sort between investments. Jeeman Jung and Robert Shiller, *One Simple Test of Samuelson’s Dictum for the U.S. Stock Market*. NBER Working Paper no. 9348 (November 2002)(on file with the author).

<sup>231</sup> Richard Thaler and Shlomo Benartzi, *Save More Tomorrow*. University of Chicago, Graduate School of Business Working Paper (August 2001) (on file with the author).

<sup>232</sup> See discussion in part I, *infra*

<sup>233</sup> See discussion at notes 96-101, *supra*.

have not enjoyed the satisfaction on which the tax is based. Hence, under a realization model of taxpayer behavior, they should not be subject to tax. This argument applies to both the regressivity and the horizontal equity arguments. Therefore, the efficiency argument and the equity analysis both conclude that realization is the appropriate time for taxation.

### *5. Limits of Realization*

It is not necessarily the case that all individuals perceive income in a manner consistent with the realization doctrine. Very likely those who have had sufficient exposure to the market or have been trained in a mark-to-market thinking do not.<sup>234</sup> The leading texts in tax planning all adopt a “neo-classical” approach.<sup>235</sup> It has been shown that training can have a significant effect on the perception of income.<sup>236</sup> Many of the transactions described in Part I such as “short against the box” seem to indicate that taxpayers who engage in such transactions behave in a manner inconsistent with “realization” accounting.<sup>237</sup>

If we can show that a certain group of investors systematically does not perceive income in a realization fashion, then ideally we would apply some form of accrual or

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<sup>234</sup> Scholes et al., *supra* note 7.

<sup>235</sup> The leading textbooks on financial planning and business strategy adopt a mark-to-market approach. See e.g., Scholes et al., *supra* note 7; see also Brealey and Myers, *supra* note 86.

<sup>236</sup> Daniel et al., *supra* note 211, examined how business school students are “better” at these kinds of decisions.

<sup>237</sup> See discussion in Part III.B, *supra*.

mark-to-market taxation to their investments.<sup>238</sup> As an example, those who engage in futures trading or securities dealers are unlikely to view income in a realization manner.<sup>239</sup> Therefore, the rules under I.R.C. §§ 475, 1256, and 1259 by which those who engage in complicated securities transactions are taxed on a mark-to-market basis are completely consistent with the behavioral model. These taxpayers behave more consistently with the neo-classical model. The tax system seems to operate in correct manner for these taxpayers.<sup>240</sup>

In an ideal system, some taxpayers will be subject to realization accounting, others to mark-to-market accounting and perhaps others may be subject to realization accounting on some of their assets and mark-to-market accounting on other assets.<sup>241</sup> If two or more groups are treated differently, then the system will need rules to determine how to treat each taxpayer. Introducing distinctions between taxpayers can introduce

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<sup>238</sup> Michael Haigh and John H. List, *Do Professional Trader's Exhibit Myopic Loss Realization Aversion*. University of Maryland Working Paper, WP02-18 (2002)(on file with the author) . They find the answer to this question is yes, but to a much lower degree than other investors. There appears to be a significant group of investors who behave close to ways predicted by the neo-classical models. See Alan Auerbach et al. *Capital Gains Taxation and Tax Avoidance: New Evidence from Panel Data* in DOES ATLAS SHRUG? THE ECONOMIC CONSEQUENCES OF TAXING THE RICH (J. Slemrod, ed., 2000), see also Alan Auerbach and Jonathon Siegal, *Capital Gains Realizations of the Rich and Sophisticated*, NBER Working Paper W7532 (Feb. 2000). Tax rates do not seem to affect wealthy investors very much because they are able to avoid the tax. One would predict that the ability to offset losses against non-investment income should affect them.

<sup>239</sup> See *supra* note 238.

<sup>240</sup> The endowment effects etc. do not seem to effect firms as much as individuals Elizabeth Hoffman and Mark Spitzer, *Willingness to Pay vs. Willingness to Accept: Legal and Economic Implications*, 71 WASH. U. L. QUAR. 59 (1993).

<sup>241</sup> For example, securities professionals may be taxed on a mark-to-market basis for inventory and on a realization basis for their personal investments.

substantial inefficiency into the system.<sup>242</sup> This inefficiency occurs in part because the rules can misidentify taxpayers, and in part because taxpayers will attempt to be misidentified strategically. The inefficiency discussed here is not merely that tax revenues might be lower, but that taxpayers will waste resources in order to reduce taxes. In addition, by having two or more systems, taxpayers may attempt to take advantage of mismatches to reduce total tax paid.<sup>243</sup> One has to balance the concerns of obtaining the appropriate match of the kind of taxpayer with the proper tax rules and costs of enforcing the rules. This is essentially the process that the drafters of the tax rules have been involved in since the inception of the income tax.<sup>244</sup> This has resulted in a fairly detailed set of rules which impose significant costs on taxpayers.

The behavioral approach suggests that one way to reduce compliance cost is to impose mark-to-market taxation on some taxpayers rather than trying to impose realization taxation with a mark-to-market overlay.<sup>245</sup> That is, if some taxpayers do not view income in a realization manner, they should not be taxed under a realization system, even a modified one. This can reduce compliance costs because currently we have many rules to prevent taxpayers who clearly view the income from a mark-to-market system and yet are for the most part taxed in a realization accounting system.<sup>246</sup> If we could

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<sup>242</sup> Weisbach, *supra* note 92.

<sup>243</sup> This is often known as tax arbitrage. Scholes et al., *supra* note 7 at 107-117.

<sup>244</sup> There are currently many rules designed to prevent tax arbitrage, (e.g., the partnership substantial economic effect rules, I.R.C. § 704(b) (2002), and the rules in I.R.C. § 267(a)(3) (2002) which prevents tax arbitrage between parties on the cash method and the accrual method who are related).

<sup>245</sup> Weisbach, *supra* note 5 at 93-6, discusses how expensive these rules are.

<sup>246</sup> Weisbach, *supra* note 5.

simply tax under a mark-to-market system, this might significantly reduce compliance costs.<sup>247</sup> Examples of this are discussed in Part IV.

#### IV. LESSONS FROM THE REALIZATION MODEL

##### *A. Realization and Income from Mutual Funds*

As described earlier, investors are generally not taxed on gains from shares of stock until, and to the extent that, they either receive dividends on the shares, or sell their shares. The taxation of shares in a mutual fund is more complicated. To a large degree, a mutual fund is treated as a pass-through investment vehicle.<sup>248</sup> However, shareholders are only taxed on distributions from the mutual funds.<sup>249</sup> There are two types of distributions made by mutual funds. First, they must distribute dividends that they receive on the shares they own.<sup>250</sup> Second, they must distribute the net capital gains which result from the sale of shares.<sup>251</sup> Losses on stocks are permitted to offset gains on other stocks sold by the mutual fund within the year, but mutual funds cannot pass through capital losses to their shareholders.<sup>252</sup>

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<sup>247</sup> Knoll, *supra* note 13 at 2-5.

<sup>248</sup> I.R.C. § 851 (2002).

<sup>249</sup> A regulated investment company or mutual funds is permitted to carryforward net capital losses for eight years. I.R.C. § 1212(a)(1)(C) (2002) (Mutual funds are not permitted to carryback these losses, I.R.C. § 1212(a)(3)(B)(2002)).

<sup>250</sup> I.R.C. § 851 (2002).

<sup>251</sup> *Id.*

<sup>252</sup> Investment Company Institute, *supra* note 137.

Nearly half of all U.S. households own shares in a mutual fund.<sup>253</sup> The majority of investors in mutual funds choose to re-invest the proceeds of dividends and capital gains distributions back into the mutual fund.<sup>254</sup> The behavioral evidence discussed in Part III indicates that individuals do not view such “receipts” of income as realized income, but rather as merely unrealized because they are still invested in the mutual fund.<sup>255</sup> The realization doctrine applies to shareholders of a mutual fund because the fund has to collect the dividend or sell the shares before the gains and losses are included. The actions of the mutual fund are treated as the actions of the taxpayer.

Taxpayers are significantly worse off by ownership of a mutual fund than if they invested the same amount in individual stocks.<sup>256</sup> As discussed earlier, individuals tend to buy and hold shares and so are not generally taxed on capital gains and losses continually.<sup>257</sup> However, mutual funds generally have a fairly high turnover rate,<sup>258</sup> which significantly decreases the deferral benefits of the realization doctrine. In

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<sup>253</sup> Id.

<sup>254</sup> Investment Company Institute, *supra* note 137. In 1999, 18% of all common stock was held through mutual funds. FLOW OF FUNDS ACCOUNTS OF THE UNITED STATES 1991-1999, BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM, table L.213, p. 82 (2000).

<sup>255</sup> Loss aversion and all the other behaviors above apply to mutual funds investors as well, see note 184, *supra*; see also Joint Economic Committee, *supra* note 138.

<sup>256</sup> Generally, investors are willing to place capital in mutual funds because of the diversification offered by mutual funds, which reduces the risk.

<sup>257</sup> Wänneryd, *supra* note 217 at 3-6.

<sup>258</sup> Engler, *supra* note 198.

addition, the behavioral evidence indicates that individuals view mutual funds as a single investment.<sup>259</sup>

Because mutual funds can be taxed under a system that more closely approximates mark-to-market accounting, they are effectively taxed at a higher rate than owning individual stocks.<sup>260</sup> Of course, to the extent that individuals own mutual funds through pensions or individual retirement accounts and other tax-exempt accounts, these tax consequences are largely irrelevant.<sup>261</sup>

There have been a number of legislative proposals to exclude some portion of the “unrealized” capital gains distributions from mutual funds from taxable income.<sup>262</sup> The proposals generally have allowed some of the capital gains distributions from mutual funds to be exempt from tax, as long as those receipts are reinvested in the mutual fund.<sup>263</sup> The argument for such proposals becomes stronger when one considers the behavioral evidence. Individual investors view the gains and losses from mutual funds in the unrealized category.<sup>264</sup> For reasons discussed in Part II, if shareholders actually receive these distributions, they should not be exempt from tax because they are likely to

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<sup>259</sup> Joint Economic Committee, *supra* note 138.

<sup>260</sup> Joint Economic Committee, *supra* note 138.

<sup>261</sup> To the extent income is earned in a pension or similar account it is not subject to tax until withdrawn, if ever. See Scholes, et al., *supra* note 7 at 41-51.

<sup>262</sup> H.R. 168 (107<sup>th</sup> Congress, 2001)(Rep. James Saxton), which provided a partial exclusion of \$3,000 for individuals or \$6,000 for joint filers for capital gains distributions from regulated investment companies. These amounts were to be indexed for inflation. A Previous version of the bill was H.R. 4723. (106<sup>th</sup> Congress, 2000)(Rep. James Saxton).

<sup>263</sup> Under H.R.168, the first \$3,000 (\$6,000 for married couples filing jointly) was exempt from income.

<sup>264</sup> Joint Economic Committee, *supra* note 138.



view such amounts as realized income. However, if mutual fund shareholders have reinvested their earnings, they are in many ways in the same position as they were before they received the distribution; the value of their holdings has not increased, nor has the fundamental nature of the position changed.

Any such exclusion should only apply to individuals, because it is unlikely that corporations or other sophisticated investors view income in a realization manner. Furthermore, any exclusion should also be limited in size in order to prevent abuse by wealthy and more sophisticated investors who are unlikely to view income under realization accounting. It certainly should not be extended to securities dealers and others who are or should be subject to mark-to market taxation.<sup>265</sup>

In addition, those who hold mutual funds are on average less wealthy than those who own individual stocks.<sup>266</sup> By extending the advantages of the realization doctrine to less wealthy individuals, this would reduce the regressivity of the doctrine. Extending full realization accounting to mutual funds accounts might increase the amounts invested in mutual funds, which might serve to help diversify the portfolios of the average investor.<sup>267</sup> There is quite a developed literature that these investors do not have diversified enough portfolios,<sup>268</sup> and mutual funds by their very nature are more diversified than owning individual stocks. Therefore, this may have additional social benefits.

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<sup>265</sup> See discussion of the taxation of corporations, in part III.C , *infra*.

<sup>266</sup> Joint Economic Committee, *supra* note 138.

<sup>267</sup> *Id.*

<sup>268</sup> Thaler, *supra* note 1.

### *B. Dividend Re-Investment Plans*

The prior section discussed the exemption of capital gains distributions from mutual funds that are reinvested. However, as discussed above there are two kinds of distributions which can automatically be reinvested. Mutual funds must also distribute out any dividends they receive. Initially, one might think that because dividends are normally treated as realized income, there is no reason to give any special treatment to these distributions.

If we apply the “realization” model to these plans, such plans should generally not result in taxable income to the investor. The investor does not in fact receive cash, or anything other than an increase in their investment in the stock of the company. As with the exemption for capital gains distributions, it is important not to let individuals decide to receive these amounts immediately before the dividends is paid.<sup>269</sup> For such income to be deferred, the taxpayers must have committed to re-invest it in the same asset and not to receive it until they sell the asset. Again, the rules allowing the exemption should be limited to individuals, and limited in amount to prevent wealthy individuals from using it to abuse the rules.

The logic of applying the realization doctrine to mutual fund re-investment would seem to apply just as strongly to dividend re-investment plans from single companies. Many corporations have adopted plans where the shareholders are permitted to elect to have their dividends paid in shares of the corporation rather than in cash.<sup>270</sup> These plans are known as dividend re-investment plans or DRIPs. For tax purposes such plans are

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<sup>269</sup> This is related to what is known as the constructive receipt of income. See Bittker and Lokken, *supra* note 3.

<sup>270</sup> Bittker and Lokken, *supra* note 3.

currently treated as if the investor received the dividends in cash and then re-invested the proceeds in the additional stock.<sup>271</sup> This results in the amount of dividend being treated as ordinary income, and the shareholder will have a basis in the new shares acquired equal to the purchase price.<sup>272</sup> As with capital gains distributions, the shareholder is in much the same position after the dividend as before. The evidence suggests that investors do not view such receipts as “realized” income.<sup>273</sup> To the extent this is true, stock received through a DRIP should be exempted from tax, and the basis in the original share should be apportioned pro-rata among the previously held shares and the new shares.<sup>274</sup>

Whatever limits that are applied to exempt mutual fund distributions should also apply to the DRIP exemption. Any such limits should apply to each taxpayer for all such income during the taxable year, rather than applying on an investment-by-investment basis. One could imagine a taxpayer investing in 25 mutual funds and earning \$250,000 a year while still being exempt from tax. Furthermore, these limits on DRIPs and mutual fund distributions should be cumulative for both of these exemptions. For example, if each taxpayer can exempt up to \$10,000 income from DRIPs or mutual fund distributions each year, then if the cumulative amount of DRIP shares and mutual fund distributions exceed \$10,000, the excess would be taxable income.

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<sup>271</sup> I.R.C. § 305(b)(2002); *see also* Rev. Rul. 76-3, 1976-1 C.B. 114 and Rev. Rul. 78-37, 1978-1 C.B. 54.

<sup>272</sup> I.R.C. § 305 (2002).

<sup>273</sup> Joint Economic Committee, *supra* note 138.

<sup>274</sup> This is the method of basis allocation under I.R.C. § 305 for tax-exempt stock dividends.

*C. Adoption of Mark-to-Market Accounting for Sophisticated Taxpayers.*

As discussed earlier, not all taxpayers view income in a manner consistent with the realization doctrine. The problem is then one of drawing the lines between different taxpayers or different transactions. The current line is that securities dealers and those who engage in sophisticated transactions (such as short-against the box transactions, exchanged traded options etc.) are taxed on in a mark-to-market fashion. Proposals have been made to place corporations on a mark-to market basis where corporate tax is based on the increase in value of shares.<sup>275</sup> These proposals are thoroughly consistent with the models in this article.<sup>276</sup> Just as corporations are generally forced to use accrual accounting method currently,<sup>277</sup> it would be entirely consistent to place them on a full mark-to-market system. As pointed out by the proponents of such systems, this could simplify the taxation of corporations a great deal,<sup>278</sup> and could also result in a lowering of nominal rates, both of which would be efficiency enhancing. One advantage of applying the system to corporations is that there is a clear dividing line between which taxpayers are and which taxpayers are not subject to the regime.

To the extent that other sophisticated investors can be identified, we should consider whether it might be optimal to tax them on a market -to-market basis. Of

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<sup>275</sup> Knoll, *supra* note 13 at 5; see also Bankman, *supra* note 12 at 1355.

<sup>276</sup> Under I.R.C. § 448, corporations already generally must use on the accrual method of accounting, which mimics mark-to-market to some degree. Individuals are generally permitted to the cash basis method of accounting, which is almost a pure realization system. See Knoll, *supra*, note 13 at 5 -9.. Therefore, individuals and corporations already have a distinction similar to this.

<sup>277</sup> I.R.C. § 448 (2002).

<sup>278</sup> Knoll, *supra* note 13. see also Bankman, *supra* note 12.

course, as with any system in which some taxpayers are subject to one set of rules and other taxpayers are subject to a different set of rules, there is the potential for arbitrage. The problem of arbitrage between the two systems could be prevented by rules similar to those we have in place to prevent arbitrage between taxpayers on the cash method and on the accrual method. To the extent that these arbitrage transactions can be identified, the best solution is to subject all of the parties to mark-to-market taxation. If a taxpayer is willing to enter into an arbitrage transaction, this probably demonstrates that they are not viewing income through a realization lens.

### CONCLUSION

The lesson from the law and economics movement is that in designing rules we need to be mindful of the ways people will react to them. The academic literature that has developed around the realization doctrine has assumed that taxpayers perceive income in a manner consistent with neo-classical models. While this may be true for some taxpayers, it is not true for most. We should not simply assume that real individuals necessarily follow the model of how they should behave. Actual behavior is what is important. These behavioral insights can be quite helpful in structuring tax policy. We should listen to common intuitions about such things in large measure because they are common intuitions and therefore tell us something about the way individuals actually perceive income. In so doing, we see that the realization doctrine is actually a fairly accurate way to tax the income of most individuals. This is in many ways a heartening finding, because as it turns out, our system has not been distorting investment as much as commonly thought among academics.