

**MULTIPLE MYOPIAS, MULTIPLE SELVES,  
AND THE UNDER-SAVING PROBLEM**

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**I. INTRODUCTION**

In both public policy debate and the academic literature, there is widespread, though not universal, agreement that millions of Americans are saving too little for their own retirements, as defined based on their own preferences regarding consumption in different periods.<sup>1</sup> If this is true, we could potentially increase such individuals' welfare through the adoption of policies that resulted in their saving more. A key dilemma, however, is that, unless one understands *why* people are under-saving, it is hard to evaluate either their likely responses to a given policy, or its capacity to target erroneous under-saving in particular, rather than just low saving (by some metric) that people actually prefer for themselves.<sup>2</sup>

“Myopia” is the catch-all term that one naturally employs to describe behavior that reflects making too little provision for the future. As we will see, however, there are multiple phenomena potentially at work when people under-save. Not all are cognitively myopic. What is more, depending on how one defines rationality,<sup>3</sup> not all are necessarily irrational. Consider, for example, individuals who decide not to save by reason of their psychological aversion to

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<sup>1</sup> See *infra*.

<sup>2</sup> Note the moral hazard / fiscal & altruistic externality issue, but this would lead to a much more limited & targeted response. See *infra*.

<sup>3</sup> See *infra*.

“making a bad decision and suffering regret” with respect to what they classify as active, rather than merely passive, choices.<sup>4</sup> While one could define such behavior as rational, given the underlying preference for avoiding regret, that would not contradict viewing those whom it influences as having under-saved. After all, they presumably would have saved more, increasing their lifetime utility from material consumption, had the savings choice not been bundled with regret aversion in a particular way.

Despite the heterogeneity and (at least in some cases) arguable rationality of the various possible reasons for under-saving, one could, purely for descriptive convenience, call them multiple “myopias.” After all, each involves acting as if one was making insufficient provision for the future, given one’s intertemporal consumption preferences. Yet we must keep in mind that many of the “myopias” have very different implications than true myopia with regard to how particular policies would affect people’s behavior and welfare.

Initial explanatory heterogeneity for under-saving might ultimately do little to complicate the analysis if there were a small set of clearly denominated potential explanations, and some prospect of proving one of them “right,” with all the rest being “wrong.” Unfortunately, however, this appears unlikely. Indeed, the same individual may under-save for several disparate reasons all at once, and may be subject to varying predominant influences at different times. Even weighing the relative aggregate significance of different explanations is a daunting research project, albeit one on which initial progress has been made.

Given the large and complicated set of plausible causes for under-saving, no single-bullet response to the problem is likely to be optimal. Instead, different mechanisms are likely to be most effective in response to different reasons for under-saving. As it happens, current policy

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<sup>4</sup> Erin Todd Bronchetti, Thomas S. Dee, David B. Huffman, and Ellen Magenheimer, “When a Nudge Isn’t Enough: Defaults and Saving Among Low-Income Tax Filers,” 66 Nat’l Tax J. 609, 613 (2013).

does indeed deploy multiple mechanisms. These include, in particular: (1) income tax preferences for retirement saving, (2) federal regulation of employer-run retirement saving plans, and (3) imposing forced saving for retirement through Social Security. However, despite the likely appropriateness of using multiple tools, there is reason to believe that current policy could be greatly improved.<sup>5</sup>

In recent years, the main issues that have been raised in public policy debate concerning retirement saving include the following:

1) Voluntary versus mandatory saving – Do we merely need to reformulate existing mechanisms for inducing voluntary saving, such as those provided through the federal income tax? Or should we also – or instead – increase mandatory retirement saving, such as through Social Security?<sup>6</sup> Does the apparent “Washington consensus” that Social Security benefits must be cut, in the interest of restoring long-term U.S. fiscal balance,<sup>7</sup> need to take greater account of the effects on retirement saving that this would have?

2) Means of encouraging voluntary saving – Recent research about savings behavior suggests that many people, while surprisingly unresponsive to incentives, including those that affect the ultimate payoff to retirement saving, respond strongly to the use of “choice architecture”<sup>8</sup> in government policy, designed to “nudge” them towards making what we consider likely to be good choices.<sup>9</sup> This research has been cited in support of combining (a) revision of the structure of employer-run retirement programs, so that employees are

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<sup>5</sup> Cites.

<sup>6</sup> Note that this is saving by the beneficiary even if unfunded and/or not increasing societal saving.

<sup>7</sup> Cites.

<sup>8</sup> See Richard H. Thaler and Cass R. Sunstein, *NUDGE: IMPROVING DECISIONS ABOUT HEALTH, WEALTH, AND HAPPINESS* 3 (2008). See also Cass R. Sunstein and Richard H. Thaler, *Libertarian Paternalism Is Not an Oxymoron*, 70 *U. Chi. L. Rev.* 1159 (2003)

<sup>9</sup> See, e.g., Raj Chetty, John N. Friedman, Soren Leth-Petersen, Torben Heien Nielsen, and Tore Olsen, “Active Vs. Passive Decisions and Crowd-Out in Retirement Savings Accounts: Evidence from Denmark” (2012). See also [from Thaler and Sunstein at 111-112, include [Carroll et al 2005, James J. Choi, David Laibson, Brigitte Madrian, and Andrew Metrick, [2002, 2004, and 2006, and Madrian-Shea 2001]

automatically enrolled subject to their opting out, rather than needing to enroll or opt in, with (b) the repeal of income tax preferences that affect the payoff to retirement saving.<sup>10</sup>

One important aspect of this critique of income tax preferences for retirement saving that has received little attention to date is the following. Regular, non-preferential income taxation generally *discourages* retirement (and other) saving compared to immediate consumption, rather than treating it neutrally. Accordingly, evidence that the “preferences” for retirement saving have little direct behavioral effect has implications for tax base design that are not limited to retirement policy. It is potentially relevant, for example, to the longstanding income tax versus consumption tax debate,<sup>11</sup> as well as that concerning wealth taxes and capital levies.<sup>12</sup>

3) Actuarial “fairness” and portfolio choice for mandatory private saving – Existing Social Security offers only a very weak connection between payroll tax liability on the one hand, and the accrual of expected retirement benefits on the other. Even insofar as the two sides of the ledger actually do increase in tandem under existing Social Security rules, people may commonly fail to perceive this connection, causing them to regard their mandatory contributions as pure taxes, rather than as being accompanied by a simultaneous increase in expected retirement benefits.<sup>13</sup> However, mandatory savings programs could be structured to make the marginal connection between taxes paid and benefits accrued both actually stronger and optically clearer. They also could be designed to offer participants greater portfolio choice with respect to the accrual of their retirement benefits.<sup>14</sup> Indeed, these were the two main changes offered by the

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<sup>10</sup> See, e.g., Raj Chetty, John N. Friedman, Soren Leth-Petersen, Torben Heien Nielsen, and Tore Olsen, *Subsidies vs. Nudges: Which Policies Increase Savings the Most?*, Center for Retirement Research of Boston College, March 2013, Number 13-3.

<sup>11</sup> Cites.

<sup>12</sup> Cites.

<sup>13</sup> Cite to my Social Security book and Elder Law piece.

<sup>14</sup> See *id.*

ill-fated “private accounts” plan for Social Security that President George W. Bush briefly advocated in 2005.<sup>15</sup>

In general, my premise in this article is that debate over retirement savings policy would be aided by a greater sense of how alternative explanations for under-saving should affect the analysis. Accordingly, I review a number of plausible theories that attempt to explain how people make savings decisions, and examine what recent empirical research may tell us about the leading alternatives. I then turn to the question of how particular explanations, where applicable, might affect proper evaluation of the main issues in the U.S. retirement savings policy debate.

The rest of this article proceeds as follows. Section II reviews the main existing institutions by which current U.S. policy addresses retirement saving. Section III describes and then evaluates what I call a “narrow” rational choice framework, in which people are assumed to act consistently to maximize lifetime utility in light of well-defined consumption preferences.<sup>16</sup> The term “narrow” reflects that the standard neoclassical framework not only posits rational choice, but also defines the relevant underlying preferences in what is arguably too exclusive a fashion. Section IV reviews a number of plausible alternatives to the standard rational choice account that might help account for systematic under-saving,<sup>17</sup> and then turns to recent empirical research. Section V discusses how we should look at the main issues in retirement savings policy debate, given both the rational choice framework and leading alternative theories. Finally, section VI offers a brief conclusion.

## **II. MECHANISMS FOR RETIREMENT SAVING UNDER EXISTING U.S. LAW**

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<sup>15</sup> Cite.

<sup>16</sup> [In particular, note the permanent income / consumption smoothing literature.]

<sup>17</sup> [In particular: I discuss frameworks involving naïve myopia, sophisticated myopia, procrastination, regret aversion, inattentiveness, and multiple selves.]

Before turning to the behavioral questions that may shed light on whether (and, if so, why) many Americans are under-saving for retirement, it is useful to examine briefly the main vehicles for U.S. retirement saving under existing law and practice. A common adage explains that the U.S. retirement system (and that of many other countries) is a “three-legged stool.”<sup>18</sup> Or else, to change the metaphor, existing retirement policy rests on three pillars: voluntary personal saving, employer pensions, and Social Security.<sup>19</sup>

Only employer pensions and Social Security are expressly administered through the workplace, but voluntary personal saving might also be viewed as “employment and employer based ... [since, for most people,] individual savings ... are indirectly dependent on employment and earnings.”<sup>20</sup> There are major differences, however, between the applicable regulatory and tax regimes for each pillar,<sup>21</sup> and in how personal choice affects its operation as to a given individual.

#### A. Voluntary Personal Saving

##### 1. General Effects of Saving Under an Income Tax

Voluntary personal saving is that which one does individually, rather than through an employer plan. While savings decisions generally are treated by government policy as a matter of free individual choice, that is not to say that they are treated neutrally, relative to spending all of one’s earnings on immediate consumption. Income taxes, at least in principle (and often in

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<sup>18</sup> See, e.g., Larry DeWitt, SSA Historian’s Office, Research Note #1: Origins of the Three-Legged Stool Metaphor for Social Security, available on-line at <http://www.ssa.gov/history/stool.html> .

<sup>19</sup> See, e.g., Robert M. Ball and Thomas N. Bethel, Bridging the Centuries: The Case for Traditional Social Security, in Eric R. Kingson and James H. Schulz (eds.), SOCIAL SECURITY IN THE 21<sup>ST</sup> CENTURY (1997) at 259. On the applicability of this metaphor to other countries’ retirement systems, see, e.g., Gregory N. Filosa, International Pension Reform: Lessons for the United States, 19 Temple Int’l & Comp. L.J. 133, 138 (2005).

<sup>20</sup> Patricia E. Dilley, Hope We Die Before We Get Old: The Attack on Retirement, 12 Elder L.J. 245, 322 (2004). .

<sup>21</sup> [As we’ll see, voluntary personal saving has tax benefits though not a regulatory structure similar to that for employer pensions.]

practice), place heavier burdens on saving for future consumption, whether at retirement or otherwise, than they do on immediate consumption.

To illustrate, suppose that, in Year 1, you earn \$100 under a 40 percent income tax, and immediately spend the full \$60 that is left after paying the tax. The bad news is that you will have nothing left to spend on consumption next year, unless you have new earnings or other resources. But the good news is that the income tax will never reach these particular earnings again. You have paid \$40 of tax and are done.

Now suppose instead that you save the full \$60 that is left after-tax, earning a compounding 5 percent annual pretax return. In Year 2, you earn \$3 before tax and pay \$1.20 in income taxes, leaving net savings of \$61.80. In Year 3, you earn \$3.09 before tax and pay a further \$1.24. Your income tax bill then keeps on growing annually, as your savings continue to compound. The longer you wait to spend the money, the greater the up-front present value of all the income taxes on the saving that you end up paying.

Joseph Bankman and David Weisbach have shown that paying income taxes on the return to savings that you eventually spend is arithmetically equivalent to paying a rising sales tax rate on the increasingly deferred consumption.<sup>22</sup> For example, with a 40 percent tax rate on savings and a 5 percent pretax return, consumption in Year 2 faces the equivalent of a 2 percent sales tax on top of the Year 1 levy.<sup>23</sup> This extra sales tax-equivalent levy rises to 6.4 percent if you consume in Year 4, and to about 80 percent if you wait for thirty years to consume<sup>24</sup> - a plausible timeframe for retirement saving.

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<sup>22</sup> Joseph Bankman and David A. Weisbach, *The Superiority of an Ideal Consumption Tax Over an Ideal Income Tax*, 58 *Stan. L. Rev.* 1413, 1419 (2006).

<sup>23</sup> *Id.*

<sup>24</sup> *Id.*

A consumption tax, unlike an income tax, is neutral between current and deferred consumption, if the same tax rate applies to consumption in all years. Thus, suppose that your \$100 of Year 1 earnings will be taxed at 40 percent whenever you consume them, once again with a 5 percent pretax return on savings. If you saved for one year, you would have \$105 to spend before tax, generating a liability of \$42. After a second year, these amounts would rise to \$110.25 and \$44.10. At a 5 percent interest (and discount) rate, both \$42 in a year and \$44.10 in two years have the same present value as \$40 immediately. Since a consumption tax, so long as its rate remains constant over time, thereby is neutral between immediate and deferred consumption, it differs from an income tax in avoiding discouragement of retirement (and other) saving.

There is a vast literature on the rationales for and against having an income tax that discourages saving, rather than a consumption tax that can avoid doing so.<sup>25</sup> Many of these are quite independent of the debate over retirement saving. However, two potential interactions between the tax base debate and the retirement savings debate are worth noting here. First, discouraging saving, while it goes with the income tax territory, may be viewed as especially regrettable, and thus perhaps as worth selectively addressing, if one is focusing specifically on the question of whether people are saving enough for their retirement years. Indeed, some rationales for favoring income taxation might be consistent with trying to avoid discouragement of retirement saving. Suppose, for example, that one favors income taxation, perhaps accompanied by estate or inheritance taxation, on the view that it is needed to address rising

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<sup>25</sup> My own contributions to this literature include Shaviro, Simplifying Assumptions: How Might the Politics of Consumption Tax Reform Affect (Impair) the End Product?, in Diamond and Zodrow (eds.), FUNDAMENTAL TAX REFORM: ISSUES, CHOICES, AND IMPLICATIONS (2008); Shaviro, Beyond the Pro-Consumption Tax Consensus, 60 Stan. L. Rev. 745 (2007); and Shaviro, Replacing the Income Tax With a Progressive Consumption Tax, 103 Tax Notes 91 (2004).



income inequality.<sup>26</sup> One then might not mind permitting individuals to escape its impact insofar as the saving is directed at their own retirement-period consumption.<sup>27</sup>

Second, we will see that at least one prominent rationale for income taxation is potentially affected by empirical issues that are at the center of the retirement savings debate. Emmanuel Saez argues that people with high earnings ability tend to have a higher taste for savings than those with low ability, making a tax on the returns to saving potentially a useful supplement to taxing earnings directly.<sup>28</sup> Since this argument relates to savings behavior and underlying consumer preferences, it is potentially influenced by theory and evidence concerning such behavior and preferences.

## 2. Savings “Incentives” Under the Existing U.S. Federal Income Tax

The actual U.S. income tax does not always discourage voluntary personal saving, whether for retirement or otherwise. For example, it is rich in deliberate tax benefits for particular types of saving. An example is the tax-free status of the accruing investment value of life insurance contracts, followed by exemption from beneficiaries’ income of life insurance payouts that they receive.<sup>29</sup> Under this rule, so long as there is enough of a mortality “bet” for the underlying contract to qualify as life insurance for income tax purposes, one can also build into it a substantial tax-free savings element.<sup>30</sup>

Tax benefits also are available for particular investment choices that one might make with one’s savings. For example, research and experimentation outlays generally can be

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<sup>26</sup> See, e.g., Thomas Piketty, *CAPITAL IN THE TWENTY-FIRST CENTURY* (translated by Arthur Goldhammer, 2014) (predicting rising income inequality around the world, and arguing that this will have adverse societal effects).

<sup>27</sup> Could cite McCaffery on multiple types of saving.

<sup>28</sup> See Emmanuel Saez, *The Desirability of Commodity Taxation Under Non-Linear Income Taxation and Heterogeneous Tastes*, 83 *J. Pub. Econ.* 217, 227-228 (2002).

<sup>29</sup> See U.S. Internal Revenue Code section 101 (making the proceeds of life insurance contracts generally excludable from income).<sup>29</sup> Unless otherwise indicated, all statutory references are to the Internal Revenue Code of 1986, as amended.

<sup>30</sup> Cite to Bankman-Shaviro-Stark casebook?

expensed by investors, rather than being capitalized and amortized over their economic useful lives.<sup>31</sup> This leads to effective exemption for the normal rate of return that one earns on amounts thus spent.<sup>32</sup>

Further opportunities for tax-free saving arise from structural elements of the U.S. federal income tax. Thus, consider the realization requirement, under which unrealized gains from the mere appreciation of property generally are not taxed. While this rule at least arguably serves mainly administrative goals, such as by not requiring measurement of unrealized gains,<sup>33</sup> it effectively provides tax exemption until sale.<sup>34</sup> The deferred tax on asset appreciation can then be permanently eliminated under Internal Revenue Code section 1014, which permits a tax-free basis step-up to fair market value for assets that are received by bequest.

There also are income tax benefits aimed directly at voluntary personal saving for retirement. Of particular note, individual retirement accounts (IRAs) may qualify for consumption tax-like treatment, through either of two mechanisms. First, under “traditional” IRAs, individuals can deduct their contributions to the accounts, and then receive tax-free accrual of the account value. Withdrawals (typically, during one’s retirement years) then are fully taxable. Alternatively, individuals can contribute to Roth IRAs. Under this mechanism, contributions are not deducted, but accrual and withdrawals are not taxed.

As is well-known in the literature, if the tax rate is the same both when you contribute funds to an IRA and when you withdraw them, traditional and Roth IRAs can be effectively

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<sup>31</sup> See IRC §174.

<sup>32</sup> Cite.

<sup>33</sup> See, e.g., Daniel N. Shaviro, An Efficiency Analysis of Realization and Recognition Rules Under the Federal Income Tax, 48 Tax L. Rev. 1, 3 (1992).

<sup>34</sup> [Note that, if the asset is corporate stock, need to consider whether income tax is effectively being imposed at the entity level.]

equivalent.<sup>35</sup> However, traditional IRAs provide better-than-neutral treatment for retirement saving, as compared to immediate consumption of one's earnings during one's working years, if the withdrawals are taxed at a lower rate than that which applied to one's deductible contributions. This may happen, under a graduated rate structure, to an individual whose taxable income declines sufficiently upon retirement to place her in a lower marginal rate bracket than that which applied to her when she contributed to the IRA. On the other hand, traditional IRAs provide worse-than-neutral treatment for retirement saving if the tax rate swing goes in the other direction – as could happen, for example, if rising budget deficits were eventually to prompt significant income tax rate increases. Roth IRAs, in contrast to traditional IRAs, are unaffected by future income tax rates, so long as future Congresses respect current Congresses' evident intent to commit to a policy of not taxing withdrawals.<sup>36</sup>

The estimated annual revenue cost of providing income tax benefits for traditional and Roth IRAs exceeds \$20 billion per year.<sup>37</sup> One should keep in mind, however, that the baseline against which this revenue cost is measured involves affirmatively discouraging retirement (and other) saving, relative to immediate consumption, via the application of income tax principles. In addition, the above amount is not a revenue estimate of the budgetary gain that Congress could actually generate by repealing the IRA rules. Rather, it is a “static” revenue estimate that aims to describe the dollar value of the IRA-related tax benefits that people actually claim,

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<sup>35</sup> Cites. Can note that  $X(1+r)(1-t)$  for traditional equals  $X(1-t)(1+r)$  for Roth. Note minor differences in the respective rules, which many commentators suggest should be eliminated. Can cite this to Brennan. Note also that credit-constrained taxpayers may be able to contribute more under traditional than Roth.

<sup>36</sup> Note that, e.g., future enactment of a consumption tax might cause retirement saving to be disfavored under Roth IRAs (as well as traditional IRAs), despite not formally violating the commitment to tax-free income tax withdrawals.

<sup>37</sup> See Joint Committee on Taxation, Estimates of Federal Tax Expenditures for Fiscal Years 2012-2017.

without any adjustment for the fact that people would presumably save less through IRAs if full income taxation applied to the accounts.<sup>38</sup>

## B. Employer Pensions

The second major component of Americans' retirement saving expressly focuses on the workplace. Employers frequently establish retirement programs, providing tax-favored (from an income tax standpoint) retirement saving to employees who elect to participate. In the most familiar scenario, treatment like that of a traditional IRA applies. That is, employer contributions to fund a participating employee's retirement are excludable from income – which is equivalent to first including them as current compensation, and then permitting them to be deducted by the employee. There also can be Roth IRA-equivalent treatment.<sup>39</sup> Either way, the end result is roughly consumption tax-like treatment,<sup>40</sup> resulting in neutral taxation of the decision whether (and how much) to save, if applicable marginal tax rates are constant across time. The estimated annual revenue cost of excusing pension contributions and their accrual from full income taxation exceeds \$100 billion per year.<sup>41</sup>

Tax-favored employer pension plans generally are subject to regulation under the Employee Retirement Security Act of 1974 (“ERISA”),<sup>42</sup> which specifies “minimum design features that pension plans must meet and standards of behavior that plan fiduciaries must meet.”<sup>43</sup> For example, these rules require investment diversification, and limit fiduciaries' self-dealing. While, within these parameters, employer plans may offer a significant range of prudent choices to participants, they often require the exercise of significant personal initiative. In a

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<sup>38</sup> See *id.* at 23.

<sup>39</sup> Statutory or other cite.

<sup>40</sup> Withdrawal vs. actual consumption of the withdrawn funds.

<sup>41</sup> See Joint Committee of Taxation, *supra*.

<sup>42</sup> 29 U.S.C. 1001-1461 (2013).

<sup>43</sup> Susan J. Stabile, *The Behavior of Defined Contribution Plan Participants*, 77 NYU L. Rev. 71, 73 (2002).

typical case, each participant must “(1) elect to participate in the plan, (2) elect her rate of contribution, (3) choose how to invest such contributions, and (4) decide what to do with the assets when switching jobs.”<sup>44</sup>

### C. Social Security

The third pillar of U.S. retirement saving, Social Security,<sup>45</sup> has more in common with employer pensions than is sometimes recognized. Social Security is funded through a 12.4 percent payroll tax – nominally split between the employer and the worker – on wages up to an annual limit that, for 2014, stood at \$117,000. Thus, suppose one earns \$100,000, with the result, after considering the Social Security portion of the payroll tax<sup>46</sup> but no other taxes, that one takes home \$93,800 and the payroll taxes that are paid (including the employer’s share) total \$12,400. Since one does in fact generally accrue Social Security retirement benefits by earning wages up to the annual payroll tax ceiling,<sup>47</sup> this is somewhat like having money taken from one’s paycheck to fund retirement benefits through a pension plan. At retirement, one receives a fixed real life annuity, which the formula for computing benefits causes to be related, albeit only very roughly and approximately, to the amount of one’s payroll tax contributions.

Obviously, there are also important differences between Social Security and employer pensions. In particular, these include the following:

(a) Participation in Social Security is mandatory. Workers not only cannot opt out of paying taxes and thereby qualifying for retirement benefits, but cannot sell their future benefit claims, or even use the claims as explicit loan collateral. The program thus in effect places a floor on the amount of one’s retirement saving. “Anyone who wants to save more through her

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<sup>44</sup> Amy B. Monahan, Addressing the Problem of Impatients, Impulsives, and Other Imperfect Actors in 401(k) Plans, 23 Va. Tax Rev. 471, 478 (2004).

<sup>45</sup> Medicare too, but will ignore here given its distinct health insurance aspect.

<sup>46</sup> [Note Medicare portion of payroll tax and overall 15.3 percent rate.]

<sup>47</sup> Note benefit formula based on 35 years. See Shaviro, Making Sense of Social Security Reform, *supra*, at \_\_.

own efforts can do so, and thus is not constrained by the floor as such.... However, those who would have preferred to save less, rather than more, are out of luck, unless they can find a way to borrow against the expected value of their future benefits.”<sup>48</sup>

(b) Social Security benefits do not depend on the performance of particular financial assets, such as stocks or bonds. Instead, they are set by a formula, causing Social Security to resemble a defined benefit (DB) plan. While DB plans used to be common in the private sector, they are now increasingly rare.<sup>49</sup> Instead, today most employer pension plans are defined contribution (DC) plans, in which one’s retirement benefits depend on the performance of a portfolio of financial assets, such as broad stock and bond indices.

(c) Social Security participants, unlike enrollees in private DC plans, cannot exercise what I call portfolio choice.<sup>50</sup> Thus, “[s]uppose you wanted to do any of the following: (a) increase your risk and expected return by causing your benefit level to depend on the performance of the stock market, (b) eliminate political risk by swapping your expected benefits for legally enforceable government debt, or (c) eliminate your life expectancy bet within Social Security by selecting a benefit, such as a fixed-term annuity, that had the same payout no matter what your life span and was even inheritable. None of these choices is permitted to participants within Social Security.”<sup>51</sup>

(d) In an employer pension, each dollar that is contributed to the employee’s account generates an additional dollar of investment funds. Thus, in terms of economic value, the relationship between contributions and benefits is one-to-one. Pension contributions therefore are not taxes at the margin – leaving aside, for now, the question of how workers actually value

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<sup>48</sup> Shaviro, *Should Social Security and Medicare Be More Market-Based?*, *supra*, at 121.

<sup>49</sup> See *id.* at \_\_.

<sup>50</sup> See *id.* at \_\_; Shaviro, *MAKING SENSE OF SOCIAL SECURITY REFORM*, *supra*, at 67-68.

<sup>51</sup> *id.* at 67-68.

them in practice. In Social Security, however, the marginal relationship between an extra dollar of payroll tax liability and one's expected future benefits is not only much weaker, but "complex and obscure."<sup>52</sup> Workers therefore may frequently "err in the direction of regarding Social Security as a 'pure tax' on work . . . rather than as a wage tax followed by a wage subsidy."<sup>53</sup>

(e) Social Security taxes and benefits also receive distinctive income tax treatment. In effect, employees get to deduct the employer's 50 percent share of the overall payroll tax liability, but not their own 50 percent shares.<sup>54</sup> At retirement, Social Security benefits are taxable, under a complicated formula, to recipients who otherwise have at least \$25,000 of income.<sup>55</sup> This is, in effect, a form of progressive means-testing for Social Security benefits that happens to be administered through the income tax.<sup>56</sup>

#### D. Recently Discussed Changes to the Existing Mechanisms

All three of the pillars of current U.S. retirement policy have received periodic attention from political actors and/or academic commentators in recent years. While much of this attention has directly reflected concern about retirement saving as such, in some instances proposed changes to the pillars would be collateral to addressing distinct policy aims.

The choices on the table logically fall into the categories of (a) adjusting the relative use of mandatory saving (i.e., Social Security) and programs that aim to induce voluntary saving, (b) rethinking the design of mandatory saving, and (c) rethinking the design of programs that aim to

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<sup>52</sup> Shaviro, *Should Social Security and Medicare Be More Market-Based?*, supra, at \_\_.

<sup>53</sup> Shaviro, *MAKING SENSE OF SOCIAL SECURITY REFORM*, supra, at 105 (citing Laurence J. Kotlikoff & Jeffrey Sachs, *It's High Time to Privatize*, *BROOKINGS REV.*, Summer 1997, at 16, 17 (1997)).

<sup>54</sup> Thus, for example, in the earlier example where I earned \$100,000 and both my employer and I paid payroll taxes of \$6,200, I am required to include \$100,000 in my taxable income, rather than \$106,200 or \$93,800. Excluding the employer share is equivalent to first including it, as part of the overall compensation package, but then permitting me to deduct it.

<sup>55</sup> See Internal Revenue Code section 86.

<sup>56</sup> Shaviro, *MAKING SENSE OF SOCIAL SECURITY REFORM*, supra, at 108-109.

induce voluntary saving. More specifically, however, the main topics of recent debate have included the following:

(1) Modifying income tax benefits for retirement saving – As we have seen, income tax rules that treat retirement saving preferentially, as defined from an income tax standpoint, mainly employ the consumption tax approaches of deductibility (as under traditional IRAs) and yield exemption (as under Roth IRAs).<sup>57</sup> Accordingly, in cases where the same marginal tax rate will apply at all relevant times, they merely treat retirement saving neutrally, rather than actually favoring them compared to immediate consumption.<sup>58</sup> However, if one is concerned that many people are inclined to save too little, there would seemingly be a rationale for *better* than neutral treatment of retirement saving.

There has nonetheless been relatively little discussion in recent years of changing the rules so as to treat retirement saving better than immediate consumption, except for individuals at the bottom of the income distribution.<sup>59</sup> This reflects concern about the effectiveness, targeting, and revenue cost (against an income tax baseline) of the existing retirement savings rules.

As to effectiveness, there is evidence that the income tax rules for IRAs and employer plans do surprisingly little to increase most participants' retirement saving (for reasons that I

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<sup>57</sup> Retirement saving may be treated more favorably than immediate consumption under Internal Revenue Code section 25B, which provides a limited retirement savings contribution tax credit that is subject to an income phase-out. However, this tax benefit is of relatively limited scope. The Joint Committee on Taxation, *supra* at \_\_, estimates its annual revenue cost at only about \$1 billion per year.

<sup>58</sup> While it is true that individuals frequently have lower marginal tax rates at retirement than during their working years, this does not necessarily reflect a policy aim of offering better-than-neutral treatment. Thus, when Roth IRAs were added to the Code, there was no effort made to ensure that they would generally be given better-than-neutral treatment.

<sup>59</sup> See, e.g., Lily L. Batchelder, Fred T. Goldberg, Jr., and Peter R. Orszag, "Efficiency and Tax Incentives: The Case for Refundable Tax Credits," 59 *Stan. L. Rev.* 23, \_\_ (2006) (suggesting that the retirement savings contribution credit be made refundable).



address in sections III and IV).<sup>60</sup> Raj Chetty and others have therefore argued for the replacement of existing income tax preferences with the use of “nudges,” such as automatic enrollment in employer-run retirement savings plans, subject to the opportunity to opt out.<sup>61</sup> As to targeting, it is widely believed that the problem of unduly low retirement saving mainly pertains to low-earners.<sup>62</sup> While the IRA rules contain income-related limitations,<sup>63</sup> the rules for employer plans are not similarly limited, and thus are viewed by some as too indiscriminately generous. Finally, the provisions’ estimated annual revenue cost of well over \$100 billion per year discourages proposing their expansion in an era of concern about budget deficits and the long-term U.S. fiscal gap.

(2) Partly or fully replacing the income tax with a consumption tax – The question of whether the existing U.S. income tax should be replaced by a progressive consumption tax has been a leading topic in the tax policy literature for many decades.<sup>64</sup> Indeed, I have elsewhere argued that, “while the prospects for fundamental [tax] reform [of any kind] are decidedly dim,” there has been intellectual movement towards “an emerging new consensus (widespread if not universal)”<sup>65</sup> that consumption taxation is at least potentially superior. Leading motivations among proponents of such a shift include support for tax neutrality towards saving decisions, and concern about the complexity and tax planning opportunities that an income tax is likely to generate if it must, as a practical matter, be realization-based.<sup>66</sup> Reflecting these and other

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<sup>60</sup> See, e.g., Raj Chetty, John N. Friedman, Soren Leth-Petersen, Torben Heien Nielsen, and Tore Olsen, “Active Vs. Passive Decisions and Crowd-Out in Retirement Savings Accounts: Evidence from Denmark” (2013).

<sup>61</sup> See, e.g., Raj Chetty, John N. Friedman, Soren Leth-Petersen, Torben Heien Nielsen, and Tore Olsen, Subsidies vs. Nudges: Which Policies Increase Savings the Most?, Center for Retirement Research of Boston College, March 2013, Number 13-3.

<sup>62</sup> Cites,

<sup>63</sup> Statutory cite.

<sup>64</sup> See, e.g., Daniel Shaviro, Replacing the Income Tax With a Progressive Consumption Tax, 103 Tax Notes 91, 92 (2004) (noting that the “literature on income versus consumption taxation could fill many rows of library shelves”).

<sup>65</sup> Daniel Shaviro, Beyond the Pro-Consumption Tax Consensus, 60 Stan. L. Rev. 745, 747 (2007).

<sup>66</sup> See, e.g., Shaviro, Replacing the Income Tax With a Progressive Consumption Tax, *supra*, at 92.

concerns, a number of prominent recent proposals would either entirely replace the income tax with a progressive consumption tax,<sup>67</sup> or else enact a value-added tax (VAT) and use the revenues to eliminate income tax liability for individuals earning less than \$100,000 per year.<sup>68</sup>

Making such a shift would inevitably raise the question of what to do about the income tax rules pertaining to retirement saving. On the one hand, for individuals who no longer were subject to income taxation, no special rules for retirement saving would be needed in order to offer it consumption tax treatment. On the other hand, if one believes that it is desirable to encourage employer retention of retirement plans that can attract widespread participation, one might want to continue extending special tax benefits to the plans. Leading proposals have come out both ways on this question.<sup>69</sup>

(3) Encouraging participation in employer-run retirement saving through “nudges” – As noted above, a number of empirical studies suggest that participation in employer-run retirement plans is far higher if employees are automatically enrolled in the plans, and must specifically opt out in order to avoid participating, than if (as under current U.S. practice) the usual default rule is non-participation, requiring them to opt in. This result of “sticky” defaults appears to hold even if changing one’s participation status is extremely easy – for example, merely requiring that one file a readily available form.<sup>70</sup> Such research underlies arguments that “[a]utomatic enrollment or default policies could increase household saving much more, at a much lower cost to the government, [than the use of income tax preferences,] because defaults are far more effective at

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<sup>67</sup> See, e.g., Robert Carroll and Alan D. Viard, *PROGRESSIVE CONSUMPTION TAXATION* (2012).

<sup>68</sup> See Michael Graetz, *100 MILLION UNNECESSARY RETURNS: A SIMPLE, FAIR, AND COMPETITIVE TAX PLAN FOR THE UNITED STATES* (2007).

<sup>69</sup> Compare Carroll and Viard, *supra*, at 55-56 (noting that special rules favoring retirement saving are unnecessary under a progressive consumption tax) with Graetz, *supra*, at \_\_\_ (supporting tax benefits for employers that offer retirement plans to employees, on the view that this will help ensure widespread retention of the plans).

<sup>70</sup> See, e.g., Sunstein and Thaler, *supra*, at 131.

increasing the saving of passive savers,”<sup>71</sup> a group that (as I discuss in section IV) is estimated to comprise about 85 percent of the population.<sup>72</sup>

(4) Changing the size of Social Security – Given Social Security’s status as forced saving that effectively puts a floor on one’s overall retirement saving, increasing the retirement benefits that it provides is a natural tool to consider if one is concerned about inadequate retirement saving. Obviously, the merits of this approach, compared to encouraging voluntary saving, depend on further issues. For example, what role does one believe that consumer choice, even if flawed in practice, should play with respect to people’s savings decisions? And relatedly, is one aiming just to address starkly inadequate retirement saving, or to steer people towards achieving lifetime optimization of their consumption choices? One who believes that choice remains important might want to limit Social Security to preventing grossly inadequate retirement saving, while using nothing stronger than incentives and nudges to encourage optimization that goes beyond this. But a skeptic about people’s capacity to optimize retirement through the exercise of choice might disagree.

Despite sentiment in favor of relying on free choice, it is plausible that support for increasing Social Security benefits would be more widespread if not for the program’s well-known expected long-term funding shortfall. The Social Security Trustees recently reported: “Making Social Security solvent over the infinite horizon requires some combination of increased revenue or reduced benefits for current or future participants amounting to \$23.1 trillion in present value, 4.0 percent of future taxable payroll, or 1.4 percent of future GDP.”<sup>73</sup> Moreover, this funding shortfall is embedded in a broader U.S. long-term fiscal imbalance which

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<sup>71</sup> Chetty et al, *Subsidies Vs. Nudges*, supra, at 5.

<sup>72</sup> See id. at 4.

<sup>73</sup> 2013 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds (69).

suggests that, absent future spending cuts and/or tax increases relative to projected current policy, the overall ratio of U.S. public debt to GDP will continue growing indefinitely, perhaps to an unsustainable level.<sup>74</sup> Thus, policymakers have paid considerably more attention to proposals that would cut Social Security benefits, rather than increase them,<sup>75</sup> although such proposals may include benefit increases at the bottom of the lifetime income distribution.<sup>76</sup>

(5) Changing the design of Social Security – As noted above, Social Security has been criticized both for the weakness and opacity of its linkage between payroll taxes incurred and benefits accrued, and for not offering participants portfolio choice with respect to their accruing benefits. As to the former, even if one does not deem actuarial fairness within a single government program to be an important element of overall distributional fairness, there are efficiency arguments in favor of strengthening both the actual and the perceived tax-benefit relationship. For example, the payroll tax may cause unnecessarily large labor supply distortions if the program structure causes workers to “err in the direction of regarding Social Security as a ‘pure tax’ on work . . . rather than as a wage tax followed by a wage subsidy.”<sup>77</sup> Likewise, support for consumer choice may motivate permitting workers, say, to choose between fixed benefits and those that will vary based on the performance of particular financial assets.

Private accounts plans that would have made such changes have lost considerable popularity in recent years. They were “widely discussed in the late 1990s, when the stock

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<sup>74</sup> See, e.g., Alan J. Auerbach and William G. Gale, *Forgotten but Not Gone: The Long-Term Fiscal Imbalance* (March 2014), available on-line at [http://www.brookings.edu/~media/Research/Files/Papers/2014/03/long%20term%20fiscal%20imbalance%20gale/longterm\\_fiscal\\_imbalance\\_gale.pdf](http://www.brookings.edu/~media/Research/Files/Papers/2014/03/long%20term%20fiscal%20imbalance%20gale/longterm_fiscal_imbalance_gale.pdf).

<sup>75</sup> An example is the widely discussed Bowles-Simpson plan. See National Commission on Fiscal Responsibility and Reform. “The Moment of Truth” (Dec. 3, 2010), Doc 2010-25486, 2010 TNT 231-35 (proposing significant Social Security benefit cuts, such as from raising the retirement age and changing the inflation measure that is used to calculate annual cost-of-living adjustments).

<sup>76</sup> See *id.*

<sup>77</sup> Shaviro, *Should Social Security and Medicare Be More Market-Based?*, *supra*, at 104 (quoting Laurence J. Kotlikoff and Jeffrey Sachs, *It’s High Time to Privatize*, *BROOKINGS REV.*, Summer 1997, at 16-17).

market run-up (including the Internet bubble) made stocks look artificially reliable. Stock market performance in the years since has decidedly dampened enthusiasm for this approach,”<sup>78</sup> with the coup de grace having perhaps been administered by the rapid political collapse of the 2005 Bush Administration proposal.<sup>79</sup> Nonetheless, such changes should not be ruled out, given that they both may retain significant reserves of political support and would more closely align Social Security policy with that which is followed elsewhere in the retirement policy realm.<sup>80</sup>

### III. RATIONAL CHOICE AND RETIREMENT SAVING

#### A. Defining “Too Little” Retirement Saving

Is it indeed true that millions of Americans are saving too little for their retirements? Obviously, the answer to this question depends in part on how one defines “too little.” I will do so based on people’s own welfare, given the utility that they would derive from consumption in different periods. Hence, there is no implication that, say, thrift and prudence should be treated as virtues for their own sake, rather than as desirable only if, and insofar as, honoring them tends to increase people’s welfare.<sup>81</sup>

One additional factor that needs to be considered is the fiscal externality that may result from low retirement saving. The fact that seniors who were entirely destitute could count on receiving at least minimal public support creates a direct fiscal motivation for requiring them to save enough for retirement to forestall this eventuality.<sup>82</sup> This consideration would not, however, motivate policy interventions beyond thus keeping them out of the “safety net,” whereas concern for their own welfare potentially could push a lot further.

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<sup>78</sup> Shaviro, *Should Social Security and Medicare Be More Market-Based?*, supra, at 113.

<sup>79</sup> Cite, and note that the Bush Administration never made a specific proposal.

<sup>80</sup> Note skepticism about such changes in my Elder Law J article.

<sup>81</sup> Can note Bernheim-Rangel discussion at start of their paper.

<sup>82</sup> See Shaviro, *Should Social Security and Medicare Be More Market-Based?*, supra, at 128. Can note here the broader altruistic externality.

In general, there are two main types of explanation for people's saving too little for retirement, as defined from the standpoint of their own welfare. The first is market failure, or the lack of adequate vehicles for the saving that one prefers. In illustration, suppose that people want fixed real life annuities, so they can insure against the risk of outliving their own savings. Adverse selection could prevent private insurers from offering such annuities at attractive prices, if individuals are sufficiently better-informed than the insurers about their own life expectancies.<sup>83</sup>

Such market failure may, however, be somewhat of a special case in the retirement setting. Annuitization (which Social Security addresses) aside, it is not obvious that market failure should do much to undermine the adequacy of retirement saving if rational choice by employees is operating robustly. Indeed, even insofar as the design of employer plans ends up influencing people's savings behavior, well-operating rational choice on the part of employees would seemingly induce employers to compete with each other by offering better-designed plans, rather than worse ones. Thus, suppose prospective employees generally preferred employer retirement plans with automatic enrollment (subject to opt-out) to those requiring one affirmatively to opt in, based on believing that they would make better savings decisions if automatically enrolled. This would permit employers to make their compensation packages more appealing to potential recruits, at little or no extra cost to themselves, by catering to this preference.

This brings us to the second set of explanations for potential inadequacy of retirement saving, pertaining to how people make savings decisions during their working years. If people face discrete choices regarding how much to save – that is, if the choice is not bundled with other choices (as in the earlier example where it potentially interacted with regret aversion that focuses

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<sup>83</sup> See id. at 127.

on active choice<sup>84</sup>) – and if they are choosing rationally, in the sense of optimizing the expected utility of consumption in all periods – then, by definition, they are not under-saving based on the information they have. As we will see, however, there are multiple grounds for challenging this sunny conclusion. This is best shown by starting with a review of how rational choice regarding retirement saving has been modeled in the literature.

#### B. Standard Rational Choice Models of Retirement Saving

How should people be expected to make savings decisions if they are simply maximizing their expected lifetime utility from consumption, consistently and rationally, in light of well-defined preferences regarding consumption in different periods? Fortunately, two closely related models in the economic literature – known as the theories of permanent income<sup>85</sup> and of lifetime consumption smoothing,<sup>86</sup> but often jointly cited as establishing the life-cycle hypothesis or model<sup>87</sup> – provide substantial insight into this question.

The basic set-up under the life-cycle hypothesis is merely a more complicated version of the standard two-goods consumer choice model that one finds in introductory economics textbooks.<sup>88</sup> Say that you have \$X to spend either on pizza or clothing. Each has a market price, and you have a utility function for each, generally featuring declining marginal utility. (For example, you do not value the second slice of pizza as highly as the first.) Given the budget constraint of having only \$X available, you can only buy so much of each, and getting more of either comes directly at the expense of getting as much of the other.

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<sup>84</sup> See text accompanying n. \_\_\_, supra.

<sup>85</sup> See Milton Friedman, *A Theory of the Consumption Function* 20-37 (1957).

<sup>86</sup> See Franco Modigliani & Richard Brumberg, *Utility Analysis and the Consumption Function: An Interpretation of Cross-Section Data*, in *Post Keynesian Economics* 388 (Kenneth K. Kurihara ed., 1954); see also Angus Deaton, *Understanding Consumption* 214 (1992) (describing the permanent income and life cycle hypotheses as "well-defined special cases of the general theory of intertemporal choice"). See also Daniel Shaviro, *Beyond the Pro-Consumption Tax Consensus*, 60 *Stan. L. Rev.* 745, 763-766 (2007) (discussing the permanent income tax hypothesis and lifetime consumption smoothing).

<sup>87</sup> Lee Anne Fennell and Kirk J. Stark, *Taxation Over Time*, 59 *Tax L. Rev.* 1, 6 (2005).

<sup>88</sup> See, e.g., Jonathan Gruber, *PUBLIC FINANCE AND PUBLIC POLICY* (4<sup>th</sup> ed. 2013) at 26-35.

As a rational actor, you buy whatever combination of pizza and movies, among those available given your budget line and their prices, would offer you the greatest total utility. This involves equalizing the marginal utility that you derive from the last unit purchased of each. For example, suppose that, at a given budget allocation between the two items, your last unit of pizza would offer greater marginal utility than your last unit of clothing. With declining marginal utility for both items, this implies that you could increase your total utility by increasing pizza purchases, at the expense of clothing purchases, until you reached the point where your marginal utilities from consuming the two goods had been equalized.

To turn this into the life-cycle model, suppose that your choice lies between present consumption and future consumption, rather than pizza and clothing. Suppose further that you know your earnings for all periods, including the future, and that you can freely borrow and lend across periods at the market interest rate. That is, in addition to being able to save and invest current earnings to fund future consumption, you can also borrow against future earnings to fund current consumption. Finally, suppose that declining marginal utility applies separately to consumption in each period. Thus, for example, if today and the date arising one year from today are otherwise similar, you would greatly prefer having one dinner each time to having two dinners on one of the nights and none on the other.

Once again, the aim is to maximize total utility by equalizing the marginal utility that you ascribe to the last unit of consumption in each period. While present consumption and future consumption therefore take the place of pizza and clothing, the element of time adds several complications. For example, in a fuller model we would need to worry about uncertainty concerning future earnings and about incomplete capital markets, as in the scenario where one has difficulty borrowing against future earnings (reflecting that they are uncertain).



In addition, there presumably will be a positive interest rate (itself uncertain across time) for borrowing and lending across periods. This means that you can get more than a dollar's worth of later consumption by forgoing a dollar of earlier consumption. On the other hand, you may also have a rate of time preference concerning present versus future consumption, as in the case where you are impatient and thus have some degree of preference for consuming a fixed amount sooner. This can make it rational to ascribe a lower marginal utility to future consumption than one would ascribe to it at the future moment when the consumption actually occurred. Illustratively, suppose that you are already hungry for dinner by the early evening. It is not irrational to eat right away, rather than waiting to have dinner at midnight, even though at that point you would be hungrier still and enjoy your food even more.

The strength of the conclusions that can be derived from the life cycle model depends on what further assumptions one makes. A "weak" version asserts only that, with farsightedness plus capital markets, people's consumption choices should be entirely "shaped by tastes and by life-cycle needs, and not by the temporal pattern of life-cycle labor income."<sup>89</sup> Thus, suppose one has high earnings in Year 1 and low earnings in Year 2. Under the life cycle model, this should have no effect on whether one spends more on consumption in Year 1 or Year 2, unless having high earnings affects the marginal utility derived from contemporaneous consumption. (An example of such an effect would be eating out more when one is working longer hours and thus has less time to cook.)

Relatedly, even under a weak version of the life cycle model, one should respond flexibly, over a long time horizon, to new information about attainable consumption levels across time. Thus, for example, the effects of a positive or negative earnings shock on affordable

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<sup>89</sup> Deaton, *supra*, at 26. See Fennell and Stark, *supra*, at 8 ("[A]t least one interpretation of the life-cycle hypothesis [i.e., that by Deaton, *supra*] suggests that its real contribution lies in its theoretical decoupling of consumption patterns from income patterns").

consumption should be smoothed over present plus future periods. Or suppose that the after-tax interest rate that is available on one's saving unexpectedly increases. The incentive effect suggests increasing saving, because the amount of future consumption that one can purchase by foregoing current consumption has now become greater.<sup>90</sup> On the other hand, the income effect may suggest reducing saving, so that the greater lifetime consumption one now can attain will be shared between all periods.<sup>91</sup> No matter which way the bottom line plays out regarding the amount saved,<sup>92</sup> retirement-period consumption should increase in response to a rise in the available after-tax return.<sup>93</sup> In any event, however, the life cycle model suggests that one should continually be re-optimizing in response to new information, with the aim of preserving the equivalence of the marginal utility ascribed to the last unit of consumption in each period.

A stronger version of the life cycle model emerges if one adds in the fact that contemporary life expectancies go well past typical retirement ages. This suggests that significant retirement saving is often optimal, even leaving aside precautionary and bequest motives. Moreover, it is plausible that many or even most people will want to save enough to avoid any significant reduction in their standards of living when they retire. Under typical utility functions, people grow habituated or "accustomed to any state that has existed for a substantial period of time, a tendency that would make downward adjustments in standard of living particularly painful."<sup>94</sup>

An even more strongly predictive version of the life cycle model emerges if we assume that, so far as your utility function is concerned, all periods are exactly the same, and also that

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<sup>90</sup> See, e.g., Gruber, *supra*, at 651-652 (discussing substitution effects of taxes on savings).

<sup>91</sup> See *id.* (discussing income effects of taxes on savings).

<sup>92</sup> See *id.* at 653 (noting that the overall effect is theoretically indeterminate).

<sup>93</sup> Again, even if the income effect predominates, this merely means that one is permitting earlier as well as later consumption to grow in response to an increase in the budget line of available present plus future consumption.

<sup>94</sup> Louis Kaplow, *An Economic Analysis of Legal Transitions*, 99 *Harv. L. Rev.* 509, 577 n. 199 (1986).

the real interest rate exactly equals your rate of time preference. Then the model predicts you will borrow and save as needed to fund exactly the same amount of consumption in all periods.<sup>95</sup> In other words, at least with fixed information that is known up-front with certainty, annual consumption will be perfectly smooth, continuing through the retirement period, even if annual earnings are highly variable.

Realistically speaking, perfectly smooth annual consumption is not in fact a plausible general implication of the life cycle model, given the lack of grounds for assuming that one's utility function for consumption in all periods will be exactly the same. Periods may differ in all sorts of ways – relating, for example, to changes in health, taste, family circumstances, and available leisure time. Nonetheless, under plausible assumptions, the life cycle model does indeed predict that consumption will tend to be much smoother, from year to year, than income. The latter is well-known in practice both to be potentially volatile from year to year, and to have a frequently humped path, in which it generally rises during one's career but then falls sharply no later than when one retires. Period-specific declining marginal utility for consumption creates a strong incentive to smooth it out, relative to earnings, by saving in high-income periods and borrowing or dissaving in low-income periods.

In sum, the life cycle model predicts that significant retirement saving will usually be optimal. Further reasons for expecting significant retirement saving may emerge when we enrich the model in various ways. Thus, consider the fact that you may face uncertainty – for example, concerning future earnings, your life expectancy, future prices and interest rates, and your future consumption needs. Insofar as you cannot insure against these uncertainties,<sup>96</sup> they may

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<sup>95</sup> See Deaton, *supra*, at 5-6.

<sup>96</sup> An example of such insurance would be purchasing a life annuity, such as that which Social Security offers, in order to insure against the risk of living “too long” and thereby facing unexpectedly high future consumption needs. Another example is purchasing health insurance in response to uncertainty regarding one's future medical needs.

motivate precautionary saving. Bequest motives may create further motivation for saving substantial amounts during one's working years.

C. Is Retirement Saving Lower Than the Rational Choice Models Would Suggest, and, If So, Why?

In apparent contrast to what the life cycle model leads one to expect, a predominant, though not unchallenged, view in the empirical literature holds that retirement, despite being predictable well in advance, often “prompts sharp belt-tightening, almost as if it had come as a surprise.”<sup>97</sup> A number of recent studies suggest that many people either must sharply reduce annual consumption upon retirement, or else are on a path to have to do so. It is true that some of these studies came in the aftermath of the 2008 financial crisis, when financial wealth around the world had taken a large and mainly unanticipated adverse shock.<sup>98</sup> What is more, at least one prominent pre-financial crash study found that under-saving for retirement was a problem for “[f]ewer than 20 percent of households ... and the wealth deficit of those who are under-saving is generally small.”<sup>99</sup> However, several other pre-crash studies found confirmation for the chronic under-saving hypothesis<sup>100</sup> – concluding, for example, that “average consumption falls significantly at retirement, even allowing for obvious work-related spending items.”<sup>101</sup>

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<sup>97</sup> Shaviro, MAKING SENSE OF SOCIAL SECURITY REFORM, *supra*, at 60 (paraphrasing the Nobel Prize-winning economist Robert J. Shiller).

<sup>98</sup> See, e.g., Gaobo Pand and Mark Warshawsky, Retirement Savings Adequacy of U.S. Workers (2013); Nari Rhee, The Retirement Savings Crisis: Is It Worse Than We Think? (2013); Alicia H. Munnell, Rebecca Cannon Fraenkel, and Josh Hurwitz, The Pension Coverage Problem in the Private Sector (2012); and Nasrin Dalirazar, Marina S. Vornovytsky, and David Hedengren, Can Americans Afford to Retire? (2010).

<sup>99</sup> John Karl Scholz, Ananth Seshadri, and Surachai Khitatrakun, Are Americans Saving Optimally for Retirement?, 114 J. Pol. Econ. 607 (2006).

<sup>100</sup> See, e.g., Sarah Smith, The retirement-consumption puzzle and involuntary early retirement: Evidence from the British Household Panel Survey, CMPO, University of Bristol and Institute for Fiscal Studies, Working Paper No. 06/138 (January 2006), and the papers cited therein at 1. See also Sarah Smith, Can the retirement-consumption puzzle be resolved? Evidence from UK panel data, Institute for Fiscal Studies, IFS Working Paper No. 04/07 (2004) (finding that, among those who retire voluntarily, some groups but not others achieve significant consumption-smoothing). However,

<sup>101</sup> Smith, The Retirement Consumption Puzzle, *supra*, at 1.

To those who are sufficiently committed to a rational choice view, and who thus assume that whatever people did must be what they wanted to do (at least, assuming complete markets), all this can possibly show is that people actually don't want to smooth consumption after all. If actual behavior is inherently the best (or even the only allowable) evidence of preference, then "saying that someone saves 'too little' is comparable to asserting that he or she doesn't listen to enough classical music – thrift is simply a matter of taste."<sup>102</sup>

More generally, in standard neoclassical economic theory, people are presumed to maximize their own utility, consistently and rationally, in light of stable and well-defined underlying preferences.<sup>103</sup> Within this framework, no level of retirement saving can be so low as to constitute a mistake. To be sure, one may have lacked mechanisms for adequate saving. Or one may reasonably have anticipated dying young, only to lose the "bet" by outliving one's assets. Thus, consider Mickey Mantle, who famously remarked: "If I knew I'd live this long, I would have taken better care of myself."<sup>104</sup> One tautologically could not, however, have mistakenly saved too little for retirement, taking full account of one's preferences and of the information and opportunities that were available during one's working years.

In this regard, consider Aesop's fable of the Ant and the Grasshopper.<sup>105</sup> In a typical version, we are told that the "Grasshopper was hopping about, chirping and singing to its heart's content," and responds to the Ant's suggestion that it store food for the winter by saying: "Why bother about winter? We have got plenty of food at present." Only when the winter arrives does the Grasshopper come to realize that "it is best to prepare for the days of necessity."<sup>106</sup>

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<sup>102</sup> Bernheim and Rangel, *supra*, at 17 (citing Edward P. Lazear, Some Thoughts on Saving, in David A. Wise (ed.), *STUDIES IN THE ECONOMICS OF AGING* (1994)).

<sup>103</sup> Cite.

<sup>104</sup> Quoted at [http://en.wikipedia.org/wiki/Mickey\\_Mantle](http://en.wikipedia.org/wiki/Mickey_Mantle) .

<sup>105</sup> See, e.g., Aesop's fables, retold by Joseph Jacobs, available on-line at <http://www.bartleby.com/17/1/36.html> .

<sup>106</sup> Aesop's Fables, *supra*.

Even from a narrow rational choice perspective, it might be unsurprising to learn that, once winter has come, the Grasshopper comes to regret that it has failed to save any of summer's bounty. However, "regret" here only means that the Grasshopper recognizes that, from the start of winter forward, it is worse-off than if it had saved. If we presume rationality, it remains the case that the Grasshopper must have benefited overall, in the sense that, under its utility function, the summer pleasures must have been great enough to outweigh the detriment of winter destitution.

This is indeed the exact analysis underlying the theory of rational addiction, which holds that even, say, a heroin addict or a smoker who keeps trying unsuccessfully to quit must have rationally decided up-front on a highly front-loaded consumption strategy.<sup>107</sup> However, this view has fared poorly in the literature, reflecting that a lot of evidence contradicts it. Consider, for example, addicts' unsuccessful efforts to quit, cue-triggered recidivism, frequent self-description of the behavior as a mistake, efforts to achieve self-control through precommitment, and efforts to alter their behavior through behavioral and cognitive therapy.<sup>108</sup>

While unshakable commitment to presuming rational choice is easy to caricature, one should note that there are arguments in its favor. For example, it is plausible that individuals tend to have both the best information about their own actual preferences, and the best incentive to promote their own wellbeing. What is more, presuming rational choice can be "an attractive political principle because it guards against abuse (albeit quite imperfectly in practice). Once we relax this doctrine, we potentially legitimize government condemnation of almost any chosen lifestyle on the grounds that it is contrary to a 'natural' welfare criterion reflecting the

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<sup>107</sup> Cites such as Becker-Murphy.

<sup>108</sup> See Bernheim and Rangel, *supra*, at 39-40.

individual's 'true' interests."<sup>109</sup> However, the prudential claim that departing from the rational choice presumption risks long-term political danger does not constitute evidence that it is actually empirically correct in particular cases.

In fact, few still defend the complete accuracy of the assumption that people always act consistently and rationally in furtherance of their preferences. Instead, behavioral economics has won a seat at the table,<sup>110</sup> making systematic error claims potentially plausible. The problem now is simply what to make of the motley array of cognitive frameworks, information-processing heuristics, and shifting context-dependent preferences that we now understand to underlie failures in the exercise of rational choice. If anything, there are too many, rather than too few, plausible explanations at hand of why people may be prone to under-save.

Thus, consider the theory that people engage in hyperbolic discounting, or applying a much higher discount rate between the current time and any future time than between future times.<sup>111</sup> One who is subject to hyperbolic discounting cannot hold consistent preferences. For example, at Time 1 she will want to apply a normal discount rate in dividing consumption between Times 2 and 3. Once Time 2 arrives, however, she will be much more inclined to concentrate her consumption in Time 2.<sup>112</sup> This can lead to unduly low retirement saving (among other departures from successful optimization) unless people can overcome it, such as by finding a way at Time 1 to commit irrevocably to saving enough for retirement starting at Time 2. Evidence supporting hyperbolic discounting comes both from self-reporting and from maneuvers that people engage in to restrict irresistible temptation by limiting their choice sets.<sup>113</sup>

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<sup>109</sup> Id. at 3.

<sup>110</sup> See, e.g., Ryan Bubb and Richard H. Pildes, *How Behavioral Economics Trims Its Sails and Why*, 127 *Harv. L. Rev.* 1593, 1595 (2014).

<sup>111</sup> See, e.g., David Laibson, *Golden Eggs and Hyperbolic Discounting*, 112 *Q.J. Econ.* 443, 445-46 (1997).

<sup>112</sup> See Shaviro, *Beyond The Pro-Consumption Tax Consensus*, *supra*, at 775

<sup>113</sup> See Bernheim and Rangel, *supra* at 7.

Likewise, consider evidence that people use “mental accounts,” causing them to classify fungible dollars differently depending on their source. In effect, these are rules of thumb that people use to economize on decision costs. Thus, amounts coded as "current income" apparently are more likely to be spent than those coded as "current assets," which in turn are more likely to be spent than those coded as "future income."<sup>114</sup> This may help explain why, as has been well-known in the life-cycle literature for more than twenty years, current consumption is much more closely linked to current income than the model predicts.<sup>115</sup>

The use of mental accounts might be viewed as rational in a broader design sense, as a way of simplifying decision-making and guarding against particular errors that might be especially egregious. For example, it weighs against zeroing out the value of current assets or borrowing to the hilt against expected future income, in circumstances where such behavior might be tempting but unwise. However, by reason of its flouting the basic principle that all money is fungible – i.e., a dollar is a dollar, no matter how one codes it – mental accounting can lead to predictable failures to optimize, if consumption smoothing would indeed increase utility. An example is its prompting splurges in high-income periods, followed by unpleasant belt-tightening in low-income periods, when annual earnings are volatile. And it can lead to inadequate retirement saving if the coding of wages as current income leads to their being spent with inadequate planning for the future.

The fact that mental accounting might be rational in a design sense given decision costs, at the same time that it leads people to make seemingly irrational distinctions, such as those ignoring the fungibility of money, helps to show an important limitation of standard rational choice models of savings behavior. They assume, not just rationality in seeking to maximize

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<sup>114</sup> See Hersh M. Shefrin & Richard H. Thaler, The Behavioral Life-Cycle Hypothesis, in Thaler (ed.), *QUASI-RATIONAL ECONOMICS* 96-98 (1991).

<sup>115</sup> See Deaton, *supra*, at 218.



one's utility, but also a limited range of relevant preferences, relating just to the utility of consumption in different periods. Both aversion to incurring decision costs and preferences about other things – pertaining, for example, to anxiety, regret, or self-esteem with regard to one's performance as a decision-maker – lie outside the standard model. Hence, one could call it, not just a rational choice model but one that is narrow in how it defines utility functions.

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At the end of the day, when evaluating surprisingly low retirement saving, one must decide how much explanatory power to attribute to rational choice on the one hand, and alternative explanations, such as myopia or mental accounting, on the other. Conclusive proof is impossible, and one thus must at least partly rely on intuition and judgment. Yet there is indeed significant circumstantial evidence that low retirement saving frequently reflects error, rather than stable preference. Thus, consider the following:

(1) Self-reporting: People often state that they are saving too little, and express plans to start saving more, but fail to follow through.<sup>116</sup> For example, consumers “report a preference for flat or rising real consumption paths .... [but then] actually implement downward-sloping consumption paths when they are not effectively liquidity-constrained.”<sup>117</sup> A prominent survey showed that 76 percent of respondents believed they should be saving more for retirement. Among those who felt they had reached a point when they “should be seriously saving already,” 6 percent reported being “ahead” in their saving, while 55 percent reported being “behind.”<sup>118</sup>

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<sup>116</sup> Bernheim and Rangel, *supra*, at 19.

<sup>117</sup> David Laibson, Andrea Repetto, and Jeremy Tobacman, Self-Control and Saving for Retirement, in Robin Brooks and Assaf Razin (eds.), *SOCIAL SECURITY REFORM: FINANCIAL AND POLITICAL ISSUES IN INTERNATIONAL PERSPECTIVE* (2005) at 74-75.

<sup>118</sup> *Id.*, quoting Steve Farkas and Jean Johnson, *Miles to Go: A Status Report on Americans' Plans for Retirement* (1997).

(2) Evidence of limited planning ability and low financial literacy – As Bernheim and Rangel note, “existing studies paint a rather bleak picture of economic and financial literacy.”<sup>119</sup> For example, many people have difficulty in comparing prices or understanding the significance of compound interest, and often lack elementary understanding about common financial instruments.<sup>120</sup> They also “report spending little if any effort formulating long-range financial plans,” and such plans as they have “appear to reflect rough rules of thumb ... vary[ing] neither with stated expectations about earnings growth nor with age.”<sup>121</sup>

(3) Clearly inefficient choices – There is extensive evidence that people engaged in retirement saving, through employer plans and otherwise, often, in effect, leave “\$100 bills on the sidewalk.”<sup>122</sup> Examples of what appears to be clearly suboptimal behavior include foregoing arbitrage profits that employer plans make available,<sup>123</sup> using high-cost financing when low-cost is available, failing to diversify, and delaying IRA contributions that would have generated greater tax savings if made earlier.<sup>124</sup> Such choices are difficult to interpret as optimal, even taking into account that in some cases, choosing the best available alternative may “involve[] complex arrangements and potentially high transaction costs.”<sup>125</sup>

#### **IV. ALTERNATIVES TO NARROW RATIONAL CHOICE**

There is an old saying that, at least in politics and at the racetrack, “you can’t beat a horse with no horse.”<sup>126</sup> Thus, dissatisfaction with a narrow rational choice view of retirement savings

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<sup>119</sup> Bernheim and Rangel, *supra*, at 19.

<sup>120</sup> *Id.* at 20.

<sup>121</sup> *Id.*

<sup>122</sup> See James J. Choi, David Laibson, and Brigitte C. Madrian, \$100 Bills on the Sidewalk: Suboptimal Investment in 401(k) Plans, 93 *Review of Economics and Statistics* 748 (2011).

<sup>123</sup> *Id.*

<sup>124</sup> Bernheim and Rangel, *supra*, at 22.

<sup>125</sup> *Id.*

<sup>126</sup> An early use of this phrase comes from Heywood Broun, “It Seems to Me,” Pittsburgh Press, November 2, 1934, page 33, column 1, available on-line at

behavior has naturally led to a search for alternative explanations of such behavior. As it happens, there is no shortage of possible models, although the leading alternatives are difficult both to specify crisply and to test empirically. This section describes a number of plausible possibilities, and then considers recent research evidence that may shed light on their relative explanatory power.

A. A Taxonomy of Possible Explanations for Unduly Low Retirement Saving

1. Naïve Myopia

Consider again Aesop's fable of the Ant and the Grasshopper and the Ant. However, this time around, suppose we honor the evident authorial intention that the Grasshopper be viewed as making a mistake, rather than as acting rationally on a lifetime basis. In short, the Grasshopper is myopic, which we can define as placing excessive weight on sooner as compared to later consumption, such that his behavior thus reflects a different utility function than that which defines his wellbeing.<sup>127</sup> His response to the Ant shows, moreover, that he is naïvely myopic. Rather than regarding his own predilection to make no provision for the future as a weakness that he would benefit from reining in as best he can, he embraces it unselfconsciously.<sup>128</sup>

Naïvely myopic decision-making could be modeled and explained in many different ways. The term "myopia," which refers in its primary, optical setting to physical inability to see distant objects other than as indistinct blurs, might seem to imply cognitive inability even to conceive of the future as a possible subject for planning. However, usage of the term with

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<http://news.google.com/newspapers?id=KilbAAAIBAJ&sjid=m0sEAAAIBAJ&pg=1968,4887137&dq=you-can-t-beat-a-horse+no-horse&hl=en>.

<sup>127</sup> See Kaplow, Myopia and the Effects of Social Security and Capital Taxation, *supra*, at 3 and 5.

<sup>128</sup> Cf. James J. Choi, David Laibson, Brigitte C. Madrian, and Andrew Metrick, Passive Decisions and Potent Defaults, National Bureau of Economic Research Working Paper 9917 (2003), at 6 (describing "naïve hyperbolic discounters .... [who mistakenly] believe that their future selves will make choices that are consistent with their current preferences.")

respect to savings behavior often is motivational, rather than literally cognitive. Thus, the Grasshopper understands that there is such a thing as the winter to come, but simply is unwilling (and perhaps psychologically unable) to make any current provision for it.

Likewise, in a hyperbolic discounting model, the individual has a high discount rate as between the current moment and all future moments, as compared to a low discount rate as between future moments. This implies that one is in fact making tradeoffs between present versus future consumption that involve equalizing the marginal utility that is attributed the last unit of consumption for each. Under such a view, perhaps the Grasshopper would have saved for the summer after all, if only he had been offered a high enough return – say, double, triple, or perhaps a hundred times the food that he had at hand when the Ant tried to reason with him.

An alternative view might see the Grasshopper as compulsively using up all resources at hand – at least, until the marginal utility from current consumption declines to zero – without regard to any present-versus-future tradeoff. Or equivalently, suppose that, while he is in principle making tradeoffs, the discount rate that he uses solely for the present moment versus the next one is infinite. Under such a view, one may need to explain why the people who are thought to be deciding in this way fall short of consuming absolutely everything that they could get their hands on. For example, in addition to not saving any of their current income, why wouldn't naïve myopes with infinite discount rates borrow as much possible, sell or pawn all assets at hand, agree to oppressive long-term contracts with upfront payments, and so forth?

One possible answer, which helps further to highlight the ambiguity of how naïve myopia should be modeled, goes to the definition of current resources that one is prone to consuming heedlessly. Consider the case of a hyperbolic discounter who cannot resist eating all of the cookies on the table, even though she will be sorry afterwards, but who can resist going to the

cupboard – or at least the nearest grocery store – in order to get yet more cookies. This might reflect badly wanting more cookies, but applying hyperbolic discounting even just to the effort needed to go to the cupboard. Or it might reflect not being tempted to begin with, by cookies that are not in plain view.

Similarly, in the setting of retirement savings behavior, it is not immediately clear what should be treated as defining the relevant immediacy that triggers applying a high or even infinite discount rate. For example, would going to the pawnshop to hock all of one's possessions for additional current funds simply defer the gratification too much? Or might mental accounting lead to a predilection to spend all current income, but not similarly to deplete all current wealth? Such modeling questions can make a significant difference in assessing instruments that seek to address low retirement saving.

## 2. Sophisticated Myopia

Sophisticated myopia differs from naïve myopia in one key respect. The individual who is subject to it realizes that she is prone to undermining her long-term welfare by failing to resist temptation, and thus may plan in advance to pre-commit in favor of prudence. Thus, a self-conscious hyperbolic discounter who knows that, once Time Two has arrived she will make inadequate provision for Time Three, may attempt at Time One to place constraints on herself that will prove sufficiently binding at Time Two. The classic literary example is Odysseus's decision to have himself tied to the mast before he is in range to hear the Sirens singing. A classic real-world example is Christmas clubs, which people still sometimes use to pre-commit themselves to saving for the holiday season, even if the interest paid is below-market or even zero.<sup>129</sup>

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<sup>129</sup> See, e.g., Thaler and Sunstein, *supra*, at 48-49.

As we will see, there are potentially important modeling questions here with respect to the sophistication component, no less than the myopia. For example, how irrevocably must one pre-commit? Odysseus instructed his men to tie him so tightly that he physically could not escape (knowing also that, with their ears sealed, they would be unable to hear him). By contrast, in a typical Christmas club, withdrawing the funds may be possible even if it is mildly penalized, such as by forfeiture of the interest that one has earned.<sup>130</sup>

### 3. Regret Aversion

A leading explanation for the stickiness of enrollment defaults in employer-run retirement savings plans relies on extensive behavioral research evidence suggesting “the tendency for acts of commission to be psychologically more costly than acts of omission.”<sup>131</sup> In the scenario of an employer plan in which non-enrollment is the default, this could lower participation rates if changing one’s status or making investment choices is coded as active.

Regret aversion could also reduce personal saving outside employer plans, if people seek to avoid regret from making investment choices that turn out badly, and would not similarly view failing to save as an “active” error. Similarly, regret aversion might induce overly conservative investment choices, such as keeping all of one’s savings in a low-yielding passbook savings account, although in that scenario one should distinguish financially motivated risk aversion from that which turns on the active versus passive distinction.

Here, no less than with regard to naïve and sophisticated myopia, there are definitional and modeling questions that can affect the theory’s behavioral predictions and policy implications with respect to retirement saving. For example, what causes a given choice to be

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<sup>130</sup> Thus, Investopedia notes that Christmas club accounts “often punish early withdrawals by retracting interest earned if money is taken out before a given date.” See Investopedia, Definition of Christmas Club, <http://www.investopedia.com/terms/c/christmasclub.asp>.

<sup>131</sup> Bronchetti et al, *supra*, at 613. See also Choi et al, *supra*, at 3.

coded as active or as passive? Can we structure choices so that there is no perceived passive escape from needing to decide?

#### 4. Procrastination

A further explanation for low saving emphasizes “people[‘s] ... tendency to procrastinate. Even if they want to make a change, they have a tendency to delay that change longer than they should.”<sup>132</sup> Procrastinators can either be sophisticated or naïve about this tendency in themselves. They may be evincing myopia if what puts them off is the upfront effort, or regret aversion if they fear making the wrong decision.

Procrastination, like regret aversion, can cause one’s default enrollment status in an employer plan to be sticky, and can discourage engaging in private saving if one regards this as requiring affirmative steps such as choosing a mutual fund. It also similarly might be overcome by either forcing people to choose or giving them a suitable default course of action.

#### 5. Inattentiveness

As expressed by the notion of “bounded rationality,”<sup>133</sup> decision-making is constrained by the fact that one’s mental resources inevitably are distressingly finite, and hence costly to deploy. We can only pay attention to so many things, and are not especially good at many of the types of complex computations – for example, concerning optimal savings levels over a lifespan – that would be needed to satisfy full rationality. What is more, even a wholly rational actor will not ignore “the cost in money and time of obtaining information, processing and interpreting it,

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<sup>132</sup> Choi et al, *supra*, at 3.

<sup>133</sup> Social scientist Herbert Simon apparently coined the term “bounded rationality” in his pathbreaking 1957 book, *Models of Man*. See, e.g., Till Grune-Yanoff, *Bounded Rationality*, *Philosophy Compass* 2/3 (2007) at 534.

and deciding how to optimally act.”<sup>134</sup> This suggests that people may “rationally choose to update their information and plans infrequently.”<sup>135</sup>

In principle, inattention alone need not dictate large departures from a rational choice model in which people’s expectations reflect available information accurately, or at least without systematic error. Thus, a leading model of inattention, developed by Ricardo Reis, posits that, “[f]ollowing a new event, many agents will be unaware of the news for a while, and will continue following their updated plans, only eventually updating their expectations.... [But] while information in the economy is sticky, [it] gradually dissipate[es] over time to the entire population.”<sup>136</sup>

Inattention can be highly significant, however, even if one views inaccurate background assumptions as purely a lag phenomenon, and not a potentially stable one. In Reis’ model, “a person who faces very small costs of planning can be inattentive for a long time.”<sup>137</sup> Indeed, depending on how an inattentive individual chooses to make consumption versus saving decisions out of current income without incurring what she regards as excessive planning costs, it is possible that there will never be an adjustment, barring a large enough shock to command one’s attention.

For inattentive people who realize that retirement saving matters, Reis contrasts the following two interim strategies:

[I]f the agent is not monitoring her income every instant, she must choose to either set a plan for consumption and let savings adjust to the shocks, or to set a plan for savings and let consumption adjust. More concretely, an inattentive consumer is someone whose paycheck is deposited in her bank account, spends a planned amount, and leaves whatever remains in the bank. An inattentive saver is

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<sup>134</sup> Ricardo Reis, *Inattentive Consumers*, 73 *Rev. Econ. Studies* 793, \_\_ (2006).

<sup>135</sup> *Id.* at \_\_.

<sup>136</sup> *Id.* at \_\_.

<sup>137</sup> *Id.* at \_\_.



someone who receives her paycheck in her pocket, puts aside a planned amount in savings, and spends the rest until her pocket is empty.<sup>138</sup>

For an inattentive saver, “as long as the costs of planning are not too small, it is optimal to never plan at all.... The inattentive saver is a rational non-planner .... [who] optimally choose[s] to live hand-to-mouth.”<sup>139</sup>

Whether inattentive people make consumption plans and require savings to adjust, or make savings plans in advance and require consumption to adjust, the model suggests that incentives, and in particular unobserved changes to incentives, will have little or no influence on such individuals’ behavior. Indeed, a particular individual may never adjust. While inattentiveness can hamper policymakers by dampening responses to incentives that they deliberately create, it can also potentially aid them, by permitting tax and other burdens to be imposed without inducing undesired behavioral responses. Yet how inattentiveness plays out in practice depends on the particular details of how it operates.

## 6. Multiple Selves

As Douglas Bernheim and Antonio Rangel have noted, while a strong rational choice view “holds that people have well-defined, coherent preferences,” much research evidence suggests that “observed choices are highly context-dependent, with significant decisions turning on minor and seemingly irrelevant aspects of framing.”<sup>140</sup> This may give credence to the disturbing possibility that “people have poorly behaved or incoherent preferences (or possibly no preferences at all).”<sup>141</sup> Yet the degree of nihilism that this evidence supports could easily be exaggerated. “[W]hile there is *some* evidence of context-dependence and incoherence, we doubt anyone would claim that preferences are *entirely* incoherent (e.g., one can’t induce the typical

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<sup>138</sup> Id. at \_\_\_.

<sup>139</sup> Id. at \_\_\_.

<sup>140</sup> Bernheim and Rangel, *supra*, at 6 (citing the well-known research of Amos Tversky and Daniel Kahneman).

<sup>141</sup> Id.

person to exchange two weeks at a resort in Maui for two years in prison by manipulating framing).”<sup>142</sup>

In explaining why context often trumps consistency, surely part of the story is that people economize on decision-making costs through rules of thumb, mental accounting heuristics, and the like. However, a more conceptually radical possibility is that we do not have entirely unified or unitary decision-making “selves.” Louis Kaplow arguably takes a step in this direction by suggesting that particular individuals might act myopically in some settings but not others. On the one hand, he notes, they may make farsighted “decisions about whether to pursue higher education or what occupation to choose from among many that require different effort levels ... nonmyopically, in a cool, reflective state.”<sup>143</sup> Yet the same individuals “in a specific job at a given moment may forgo overtime opportunities because of the immediate temptation to go out with friends or home to watch favorite television shows.”<sup>144</sup>

While this example merely contrasts reflective versus excited or impulsive states, some recent psychological research and theorizing goes considerably further towards viewing people as acting, in some respects, as if they had multiple selves.<sup>145</sup> For example, in Allen McConnell’s multiple selves framework (“MSF”), while a given individual is effectively unitary insofar as she “has general affective experiences (e.g., mood states) and an overarching awareness of herself as a person derived from reflexive consciousness and self-awareness across time ... her behaviors

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<sup>142</sup> Id. at 7.

<sup>143</sup> Kaplow, *supra* at 7.

<sup>144</sup> Id.

<sup>145</sup> See, e.g., E. Tory Higgins, *Self-Discrepancy: A Theory Relating Self and Affect*, 94 *Psychological Review* 319 (1987) (describing discrepancies between alternate conceptions of one’s self); Hazel Markus and Paula Nurius, *Possible Selves*, 41 *American Psychologist* 41 (1986) (discussing how multiple “possible selves” may influence behavior); Brent W. Roberts and Eileen M. Donahue, *One Personality, Multiple Selves: Integrating Personality and Social Roles*, 62 *J. Personality* 199 (1994).

and experiences are primarily dictated by more distinct self-representations,”<sup>146</sup> each of which may differently guide her beliefs, preferences, and behavior when activated by particular “contextual inputs (e.g., environmental settings, social interactions, mental simulation).”<sup>147</sup>

In a multiple selves framework, the question of which self or self-aspect that is operating when one faces a particular choice may affect not only the decision that is made, but even the underlying utility function. Neither the marginal utility ascribed to consumption in different periods nor the rate of time preference that an individual applies need be the same for all personas. The possible implications go beyond suggesting that context may matter to savings decisions, and that particular decisions may be unstable if not locked in. Additionally, as Bernheim and Rangel have rightly asked, if “people have poorly behaved or incoherent preferences .... how does one evaluate an individual’s wellbeing?”<sup>148</sup>

#### B. Do the Alternative Explanations Suggest Irrationality – And Does It Matter?

The above theories of how people might make retirement savings decisions all clearly diverge from a narrow rational choice view, under which people are assumed to care solely about the utility of consumption in different periods. They vary, however, in their degree of tension, or at the limit irreconcilability, with a rational choice view that is revised merely to allow for a broader palette of preferences.

We have already seen that, as in the Reis model, inattention can be rational given the costs of devoting mental resources to difficult tasks. Likewise, in the case of regret aversion, there is nothing irrational about wanting to forestall future psychic pain that would be triggered by some types of incorrect decisions more than others. Indeed, under David Hume’s famous

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<sup>146</sup> Allen R. McConnell, The Multiple Self-Aspects Framework: Self-Concept Representation and Its Implications, 15 *Personality and Social Psychology Review* 3, 5 (2011).

<sup>147</sup> Id.

<sup>148</sup> Bernheim and Rangel, *supra*, at 6.

view of reason as merely the “slave of the passions,”<sup>149</sup> an underlying preference, such as for avoiding regret that would be triggered by what one codes as active but not passive decisions, by definition cannot be irrational. Saying that one should optimize without regard to the active versus passive distinction arguably amounts to saying that one ought to have different preferences than one actually has. This may be unhelpful and unrealistic, even if it is true that purging oneself of emotional responses to the distinction would permit the achievement of greater utility in other respects.

The fact that inattention and regret aversion can readily be added to a rational choice model does not, of course, prove that such a model is actually empirically correct. One could argue that the preferences which trigger inattention and being swayed by regret aversion do not in fact end up getting traded off rationally against other preferences. Suppose, for example, that reluctance to spend a couple of hours figuring out that one really ought to save significant amounts for retirement means that one ends up facing years of wholly avoidable deprivation after retirement – or equivalently, that such a dire result follows because one was finicky about taking fate actively into one’s own hands by simply filing a piece of paper. We can define this as consistent with rational choice if we like – after all, it depends on the psychic values assigned to the different source of utility and to the “correct” rate of time preference, neither of which can be directly observed – but such a view may fail to be as intuitively persuasive as, say, deeming myopia an important part of the story. A rationality claim becomes tautological, and not very illuminating about whether and how policy choices could increase people’s subjective welfare, if one always insists that whatever people do must be what was best for them, given their preferences.

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<sup>149</sup> Cite to David Hume, from “On Reason.”

Other reasons for low retirement saving are harder to reconcile with rationality. For example, while procrastination presumably reflects a distaste for performing tedious or stressful tasks that, in Hume's sense, cannot be irrational, it differs from rational inattention in treating delay as a prophylactic. In this regard, unless one is rationally counting on the hope that subsequent developments will make performance unnecessary, presumably naïve myopia is at work, in the sense of unduly discounting the future benefits relative to the current unpleasantness. Moreover, procrastination involves cognitive error if one exaggerates the likelihood that one will be able to overcome it later on.

Naïve myopia is perhaps the canonical case of irrationality. To be sure, a hyperbolic discounter may be viewed as having multiple selves with different preferences, thus raising the question of which self's welfare should win.<sup>150</sup> In a more disparate multiple selves framework, while dictates of neoclassical rationality are violated, one cannot easily specify the normatively correct "rational" perspective. For hyperbolic discounting, however, the normative dilemma is made simpler by the fact that all of one's present and future selves *except* for this moment's current self would prefer one to apply the normal discount rate as between this moment and the next one. Accordingly, if low retirement saving reflects naïve myopia, inducing additional saving can yield significant welfare gain. In one hypothetical specification, it suggested that additional saving could "raise individuals' lifetime welfare to an extent equivalent to almost an additional year's worth of income."<sup>151</sup>

Why would rationality claims matter, with respect to explanations of low retirement saving that lie outside the narrow rational choice model? One reason is that establishing

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<sup>150</sup> See Bernheim and Rangel at 4 (noting some in the hyperbolic discounting literature point out that "the short-term perspective also has status as a welfare criterion"), and 25 (noting that the model can support viewing savings decisions as a "game played between multiple selves").

<sup>151</sup> *Id.* at 1, describing one of the specifications in David Laibson, *Golden Eggs and Hyperbolic Discounting*, 112 Q. J. Econ. 443, 465-468 (1996).

rationality might seem to forestall a need for intervention, at least absent demonstrable market failure. However, consider again the arguably rational case of low saving due to regret aversion. Here, as noted earlier, we could view changing the default as addressing a “bundling” problem. Suppose that I have higher expected utility from saving too little, in the scenario where this means I do not have to worry about later regretting an “active” mistake. Yet I would be better off still if I could separate the decision about saving from my differential coding of active versus passive choices that turn out badly ex post. Hence the conclusion, if regret aversion plays an important role, that people would have greater expected utility if the default choice involved automatic enrollment plus a prudently safe and diversified investment portfolio.

To be sure, for regret aversion operating in isolation, it is plausible (as noted earlier) that employees would prefer, and employers therefore offer, plans that permit them to save optimally without active choice bundling that reduced expected utility. However, adding complementary explanations for low retirement saving may rebut this scenario. For example, even rational inattention appears unlikely to be correctable through the operation of competitive labor markets. When it is operating, a worker who was choosing between jobs would actually have to buckle down and decide which employer plan was likely to yield the best level of retirement saving. Choosing the right job – unless it serves as a broader forcing event for attention even to the details of employer plans, which is unclear – may be no less subject to procrastination and inattentiveness than making the right savings choice given one’s job.

For sophisticated myopia, like regret aversion, there are scenarios in which no policy intervention would be needed, assuming that it is a stand-alone phenomenon. The sophisticated myope has a predilection to act irrationally, but is rationally seeking to rein it in, and the question is whether he can succeed without aid from policymakers. This presumably depends both on his

own internal capacity to pre-commit and on the mechanisms for doing so that are available to him in the environment.

In sum, with irrationality there is clearly scope for policymakers to improve individuals' welfare, so long as one can sufficiently define welfare. Only in the multiple selves scenario is this theoretically, rather than just practically, difficult. However, even with rationality but a broader set of preferences than that in a narrow rational choice model, there are a number of settings in which it is plausible that particular policy interventions could improve low savers' welfare.

### C. Recent Empirical Evidence Regarding Savings Behavior

As the previous section showed, there is no shortage of possible explanations for divergence from a narrow rational choice model of retirement saving. Unfortunately, many of the alternative models are hard to specify precisely. What is more, in various settings they may be hard to tell apart, even if there are circumstances in which they would yield different predictions, and notwithstanding that they may have distinct normative implications.

While any precise or comprehensive understanding of retirement savings behavior is therefore likely to remain elusive for some time (or perhaps even indefinitely), one way of making progress is to look at in-depth case studies. These can provide context and nuance for understanding savings behavior, even if their proper interpretation remains ambiguous. To this end, in this section I mainly focus on a landmark recent study (the “Chetty study”), by Raj Chetty and several coauthors that focused on comprehensive personal savings data not previously available to researchers.<sup>152</sup> In addition, because the Chetty study focuses on a setting

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<sup>152</sup> Chetty et al, Active Vs. Passive Decisions, *supra*. This study was specifically cited when Chetty won the prestigious John Bates Clark Medal. See *Report on Raj Chetty, American Economic Association Honors and Awards Committee, March 2013*, available on-line at [http://www.aeaweb.org/honors\\_awards/bios/Raj\\_Chetty.php](http://www.aeaweb.org/honors_awards/bios/Raj_Chetty.php) (describing Chetty's work that helped support his winning the Bates Medal, including the above article).

in which a nudge in employer-run plan design significantly increased retirement saving, I then more briefly examine a second study (the “Bronchetti study”), conducted by economist Erin Todd Bronchetti and several coauthors,<sup>153</sup> in which a nudge failed to have significant effects. The contrast in results, reflecting very different settings, arguably helps to fill out our understanding of savings behavior more than would two studies that were more similar in design and outcome.

### 1. The Chetty Study

The Chetty study is based on comprehensive Danish data concerning people’s income, wealth, and employer pensions over a fifteen-year period, during which several major policy changes were enacted within a retirement system that generally resembles that in the U.S. The great advantage over prior studies is the existence of the wealth data, permitting the researchers (“Chetty et al”) to measure effects on a participant’s overall saving, not just that through her employer plan. Thus, they could observe whether or not increased within-plan saving was coming at the expense of (i.e., crowding out) private saving by the same individual. U.S. data, by contrast, generally does not permit one to examine this question. In addition, policy changes during the period of the study provided the equivalent of natural experiments regarding the effects of different types of rules. These changes pertained to income tax subsidies for retirement saving, and to a mandatory savings plan for certain years, which required people above threshold income levels to contribute 1 percent of earnings to retirement savings accounts.<sup>154</sup>

With this data, the Chetty study tests the predictions of a model under which there are two types of agents: active savers and passive savers. Active savers are standard neoclassical

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<sup>153</sup> Bronchetti et al, *supra*.

<sup>154</sup> Note also the use of event studies when people switched firms, steps taken in the study to assess validity.



rational actors who seek to optimize given their consumption preferences across time. Thus, they “make savings decisions by maximizing utility, taking into account the subsidies and automatic contributions.”<sup>155</sup> Passive spenders’ underlying decision metric is deliberately left out, although it might reflect inattention, unawareness, or following rough rules of thumb,<sup>156</sup> but it involves failure to adjust and respond in consistent pursuit of underlying objectives. Thus, the two groups’ assumed responses, in the model, to different legal rules and employer plan design details, include the following:

--Opt-in versus opt-out employer plans: Default enrollment status is expected to have no effect on active savers’ participation in employer plans. These individuals opt in or out, depending on whether they want to participate. By contrast, an automatic contribution rule (subject to opt-out) is expected to increase passive savers’ plan participation by the full amount of the default contribution. However, the effect on passive individuals’ overall saving remains ambiguous until one further specifies (as the model does not) how their consumer behavior is affected. “If passive savers absorb the reduction in disposable income due to the automatic contribution by maintaining a fixed consumption plan and running down their bank balance, automatic contributions have no impact on total savings even though they increase savings within pension accounts. But if passive savers absorb the reduction in disposable income by reducing consumption and maintaining a fixed non-pension savings target, automatic contributions increase total savings.”<sup>157</sup> In other words, using the terminology from Reis’s inattention model, Chetty et al’s passive savers could either be passive consumers who keep consumption constant when the amounts deposited from their paychecks change, or they could

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<sup>155</sup> Id. at 1.

<sup>156</sup> Id. at 4.

<sup>157</sup> Id. at 1.

be passive savers (in Reis's sense) who keep saving constant by basing spending on disposable income.

--Mandatory saving: A mandatory savings rule is expected to have no effect on active savers, unless they would otherwise have saved less.<sup>158</sup> As attentive rational actors, they count the automatic component towards meeting their overall savings targets, whether done inside or outside the employer plans. By contrast, passive savers are expected to increase overall saving by the newly mandated amount, even if they were already saving that much.<sup>159</sup>

--Changes in tax incentives: Active savers also are expected to respond to tax subsidies for employer plans, since the subsidies make saving through the plans more attractive than engaging in fully taxable saving. However, the model does not specify whether this should lead to an increase in their overall retirement savings, as this depends on the elasticity of their savings behavior.<sup>160</sup> At least to some extent, their response to the tax subsidy is expected to involve simply substituting in-plan, tax-favored saving for outside, non-subsidized saving. Accordingly, "there is substantial scope for crowd-out of the increased retirement savings induced by price subsidies."<sup>161</sup> Passive savers, by contrast, "make fixed pension contributions [which could be zero] that are invariant to the automatic contribution and subsidy."<sup>162</sup>

Against this background of model predictions, the Chetty Study's main empirical findings include the following:

1) Approximately 85 percent of the individuals whose behavior was observed in the study were "passive individuals who save more when induced to do so by an automatic contribution

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<sup>158</sup> In general, however, as farsighted rational agents, active savers generally are assumed to be saving for retirement.

<sup>159</sup> Cite. Check whether this was just a finding, or explicitly in the model.

<sup>160</sup> E.g., note that substitution effect increasing saving could be perfectly offset by income effect reducing it.

<sup>161</sup> Chetty et al, *supra*, at 2.

<sup>162</sup> *Id.*

but do not respond at all to price subsidies.”<sup>163</sup> The other 15 percent generally were active savers, responding to price subsidies but not to default rules or minimum savings requirements that did not constrain them to increase overall savings.

2) Passive savers generally maintained constant saving, rather than constant consumption, when their paychecks were reduced by automatic savings contributions. Thus, in Reis’s terms they were passive savers, rather than passive consumers. Or, in Chetty et al’s terminology, drawn from earlier models by John Campbell and Gregory Mankiw that had posited such behavior, the passive savers were “rule-of-thumb spenders who make consumption choices based on disposable income.”<sup>164</sup>

3) Active savers, while highly responsive to subsidies with respect to whether they funneled their saving through employer plans, had overall savings rates that were highly “inelastic with respect to net-of-tax interest rates.”<sup>165</sup> Hence, their responses “primarily ... [involved] shifting savings across accounts rather than raising the total amount they save.”<sup>166</sup>

4) Due to passive savers’ inattentiveness along with active savers’ inelasticity as to overall savings, subsidies had almost no effect on overall saving. Indeed, there was 99 percent crowd-out. That is, “each [Danish kroner] 1 of government expenditure on subsidies for retirement savings generate[d] less than 1 cent of net new saving.”<sup>167</sup>

5) By contrast, automatic contribution rules, including both employer defaults and mandatory contributions, substantially increased total saving, by reason of the effect on passive savers. Thus, as compared with price subsidies, “automatic contribution policies that influence

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<sup>163</sup> Id. at \_.

<sup>164</sup> Id. at 4, citing John Y. Campbell and N. Gregory Mankiw, Consumption, Income, and Interest Rates: Reinterpreting the Time Series Evidence,” in Olivier J. Blanchard and Stanley Fischer (eds.), NBER MACROECONOMICS ANNUAL 1989; and N. Gregory Mankiw, The Savers-Spenders Theory of Fiscal Policy, 90 Am. Econ. Rev. 120 (2000).

<sup>165</sup> Id. at \_.

<sup>166</sup> Id. at \_.

<sup>167</sup> Id. at \_\_\_.

the behavior of passive savers have lower fiscal costs, generate relatively little crowd-out, and have the largest impacts on individuals who are paying the least attention to saving for retirement.”<sup>168</sup>

6) The observed heterogeneity as between active and passive savers was not randomly distributed. Instead, active savers were generally wealthier, older, and better-educated. As compared to passive savers, they were not just responding more to the rules in place, but also generally were saving more for retirement.<sup>169</sup>

## 2. Contrasting the Chetty Study With the Bronchetti Study

The Chetty study is but one of many that finds significant retirement savings effects from the use of opt-out rather than opt-in rules for employer plans,<sup>170</sup> albeit distinguished by its access to non-plan savings data. Surely, however, not all possible defaults are comparably sticky. Suppose, for example, that workers would not be paid unless they filed pieces of paper at the start of each year confirming that they did not wish to be classified as volunteers. One suspects that take-up would be quite high, and the default of volunteer status not sticky at all.

Thus, in developing even a tentative and preliminary understanding of how actual savings behavior relates to that posited in the various models, it is useful to consider instances in which a default failed to change behavior significantly. The Bronchetti study serves nicely in this regard. Its background is as follows. During the 2010 U.S. federal income tax filing season, the Internal Revenue Service (IRS) implemented new procedures giving filers who were owed refunds the option of receiving some or all of their cash back in the form of U.S. savings bonds that are low-risk and fairly liquid.<sup>171</sup> This could be viewed by filers as a way of helping to nudge themselves

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<sup>168</sup> Id. at \_\_\_.

<sup>169</sup> Id. at \_\_\_.

<sup>170</sup> See, e.g., articles cited by Chetty et al at 4.

<sup>171</sup> Bronchetti et al, *supra*, at 610.

towards saving, rather than spending, their refunds, without either taking on major investment risk or being irrevocably committed to long-term saving.

An earlier pilot study of this program, conducted at Voluntary Income Tax Assistance (VITA) sites for low-income filers, had found only about 6 percent take-up of the U.S. savings bond option. The 2010 field experiment, also conducted at VITA sites, tested whether take-up would increase when it was presented to the filer as the default choice, leading to the receipt of U.S. savings bonds in lieu of cash, unless one specifically requested that one's refund be all cash. However, switching from opt-in to opt-out for receipt of the bonds turned out to have "no detectable effect on the decision to allocate a portion of the tax refunds to U.S. Savings Bonds."<sup>172</sup> The default therefore was not sticky at all.

In comparing this negative finding to positive findings regarding default stickiness with respect to participation in employer retirement plans, the study's authors ("Bronchetti et al") make the following points:

--Insofar as the impact of a default choice turns on whether prospective savers assume that it represents an expert recommendation, one might have expected the Bronchetti study to show greater, rather than lesser, efficacy from changing the default to involve receipt of U.S. savings bonds. It has been argued that poorer individuals, such as those who used VITA sites to file for tax refunds, are likely to be "relatively more susceptible to recommendation effects" than the more affluent individuals who decide whether to participate in employer retirement plans.<sup>173</sup> However, this did not end up being the case here.

--On the other hand, the fact that the test population was relatively low-income may have contributed to the finding of inefficacy if, by reason of not wanting to save the tax refunds, there

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<sup>172</sup> Id. at 611.

<sup>173</sup> Id. at 611, relying on Marianne Bertrand, Sendhil Mullainathan, and Elder Shafir, Behavioral Economics and Marketing in Aid of Decision-Making Among the Poor, 25 J. Public Policy & Marketing 8 (2006).

was a “greater distance between the default and an individual’s optimum” in the Bronchetti study than in the others.<sup>174</sup> In the setting of employer plans, it has been posited that the defaults are “powerful ... precisely because they coincide with the pre-existing intentions to save of relatively affluent individuals,” even though these intentions might not have been realized in the case of an opt-in plan.<sup>175</sup>

--The savings bond option often conflicted with definite prior plans by the filers to use the tax refunds in particular ways.<sup>176</sup> In discussing the savings bond option with VITA tax preparers, “many tax filers in this study indicated having strong pre-existing intentions to spend their refunds, and many also mentioned difficulties paying bills.”<sup>177</sup> Bronchetti et al note that, in some cases, this may have involved paying down high-interest credit card debt<sup>178</sup> – a choice that clearly ought to be preferable, from a savings standpoint, to continuing that debt while earning a much lower interest rate on U.S. savings bonds.

--The savings bond option arguably presented less scope for procrastination than employer plans, since one had to decide on the spot whether to select U.S. savings bonds or all cash. By contrast, for opt-in employer plans, often one can choose between filing a piece of paper to enroll (which can be done at any time) and doing nothing.<sup>179</sup> While explanations for procrastination may differ, the need to decide one way or the other on the spot, rather than being able to do nothing for the time being, may make a large difference if one’s concern is with the level of up-front effort needed, rather than with regret aversion.<sup>180</sup>

### 3. Interpreting the Studies

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<sup>174</sup> Bronchetti et al, *supra*, at 611.

<sup>175</sup> *Id.* at 613.

<sup>176</sup> *Id.* at 629.

<sup>177</sup> *Id.* at 611.

<sup>178</sup> *Id.* at 614.

<sup>179</sup> See *id.* at 613 and 631.

<sup>180</sup> See *id.* at 611, noting that procrastination may operate via present-biased preferences or hyperbolic discounting.

Perhaps the two most important conclusions supported by the Chetty study are that (1) people making savings decisions are heterogeneous, with a split between active savers and a substantial majority who are passive savers, and (2) passive savers act, in many circumstances, as if they are inattentive. The Bronchetti study offers further evidence bearing on the scope and interpretation of the second conclusion.

It is hard to avoid using the word “inattentive” to describe behavior that involves ignoring incentives and failing to adjust one’s overall position, in pursuit of consistent goals, when it is changed automatically and one has ready means of steering back to the same place. Yet we cannot be entirely certain either of the underlying causation when people act as if they are inattentive, or of just how far the apparently inattentive behavior reaches.

In a rational inattention model such as that of Reis, inattentive individuals are economizing on decision costs, which they trade off against the expected utility gain from having made optimal savings decisions. Suppose instead, however, that they have multiple selves, such as internal Ants and Grasshoppers, along with mental accounting rules that determine when each comes to the fore. For example, one might be a Grasshopper with respect to amounts coded as current income, and an Ant with respect to human capital self-investment and amounts coded as wealth. Such an individual may act in the employer plan or Social Security setting as if inattentive, but is not making a rational assessment of the costs versus benefits of paying attention in the manner that the Reis model posits.

Chetty et al, despite emphasizing passive savers’ apparent inattention to incentives and reversible automatic changes, view the fact that “[l]arge changes (e.g., + / -5% of earnings) continue to have significant impacts on behavior [as] challenging models of rational inattention .... At least, the costs of attention are large enough such that in the policy-relevant domain –

which is unlikely to include automatic retirement contributions of more than 10% of income – most individuals behave passively.”<sup>181</sup> In other words, either a typical passive saver is treating decision costs as if they were higher than it seems rational to think they could really be – at least, absent complementary explanations such as myopia and risk aversion – or else decision costs, for whatever reason, are in fact experienced as so high that we can simply treat them, within the relevant policy range, as absolute constraints on people’s ability to optimize through the exercise of choice.

The Bronchetti study modifies this view, at least at the outer margins, by suggesting that one will nonetheless choose consistently, based on underlying preferences, either if they are sufficiently strong, or if one has already made firm plans, or if there is no option to do “nothing” instead of “something.” One would need further research to evaluate the relative strength of these alternative interpretations.

Moreover, the Bronchetti study’s setting of annual income tax filing may be importantly distinctive in ways that limit the broader applicability of its outcome. Arguably, the prominent once-a-year setting of filing one’s income tax return, with the expectation of receiving a significant refund, strongly focuses attention and encourages planning, in a manner that is hard to extend to other settings where decisions about consumption versus saving may be made. Employers’ open enrollment periods, even if time-limited rather than continuous, may fail to focus attention to this degree. Moreover, while taking a new job would certainly be expected to command one’s attention, this would not necessarily be focused on the enrollment choices one was offered.

In sum, what looks like inattention, both to incentives and to the impact on one’s position of automatic savings arrangements, appears to play a crucial role in employees’ retirement

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<sup>181</sup> Chetty et al, *supra*, at 20.



savings decisions. However, the underlying causal mechanism is not entirely clear, with inattentiveness as such (rational or otherwise) being just one of the contenders. Moreover, even if inattentiveness is the main cause of low participation in employer plans, voluntary private saving does not currently have an institutional mechanism in place for readily shifting from opt-in to opt-out. Explaining unduly low voluntary private saving might involve giving a prominent place to explanations that emphasize myopia, procrastination, and/or regret aversion.

As noted earlier, apparent inattention, whatever its causes, can be both bad news and good news for policymakers who want to address unduly low retirement saving at as low a budgetary and efficiency cost as possible. It makes incentive-based policies ineffective, but also tamps down undesired responses to policies. However, insofar as we base policy design on the expectation that people will be inattentive, it is important to have a good understanding of how inattention actually works. For example, suppose that we started subjecting retirement savings to full income taxation, based on the view that this would largely be unobserved. The strategy would be undermined, however, if people effectively caught on to it over time – as one might expect if systematic error from inattentiveness is merely a lag phenomenon, not an enduring one.

In addition, the fact that behavioral phenomena lying outside the narrow rational choice model may be unpredictably context-dependent in their scope raises further questions, not as yet well-illuminated by empirical research, concerning the broader effects that particular policies would have. Consider, for example, the case of a passive saver / rule-of-thumb spender who is enrolled or not in an employer plan, depending entirely on the default, and whose consumption for each period equals her disposable income. She appears not to notice that, solely in the case of plan participation, she is using part of her salary to accumulate retirement savings. After all,

“noticing” this difference between the two scenarios would seem to imply saving part of her (higher) disposable income in the case of non-participation.

But suppose we focus instead on another decision that she continually faces: that concerning her labor supply. For example, she may be deciding whether to keep the job or quit it, how hard to try to keep it if her effort level will affect job security, and whether or not to pursue increased salary from promotions or overtime. Are such decisions based purely on her take-home pay, as would seem to follow from positing that she does not notice her accumulating retirement savings in the case of participation? Or does she tend to recognize, when making labor supply decisions as distinct from consumption choices, that accruing retirement benefits have value (and perhaps even full value if she is not naively myopic)? After all, if she truly believed they were worth zero, perhaps she would consider opting out despite the factors that make default choices sticky. As we will see in section V, the answer to this question, and to others that are similarly uncertain in the present state of knowledge, may strongly affect one’s evaluation of the likely effects and overall merits of both automatic and mandatory retirement savings policies.

## **V. EVALUATING RETIREMENT SAVINGS POLICY UNDER THE NARROW RATIONAL CHOICE AND ALTERNATIVE VIEWS**

As section IV showed, much remains unknown regarding how people make retirement savings decisions. Yet significant progress has been made towards developing a rich theoretical and empirical understanding of the behavior. This section examines what conclusions we might at least tentatively draw, along with what main issues remain quite opaque in the current state of knowledge, first with regard to the likely behavioral effects of existing policy tools and then with respect to the main issues in the ongoing debate.

In performing this analysis, it is useful to start by examining the implications of a narrow rational choice view of retirement savings behavior. The reasons for doing so, even though I have argued that such a view is not entirely accurate, are twofold. First, people surely do engage in some rational optimization based on the utility that they ascribe to consumption in different periods. Incomplete accuracy does not necessarily imply complete inaccuracy. Second, the behavioral and welfare implications of a narrow rational choice model are relatively straightforward, compared to those associated with the alternative models, which often may vary greatly depending on exactly how a given model is specified. Accordingly, in examining the main empirical and policy issues with regard to retirement saving, I start by discussing the implications of a narrow rational choice view, and then ask how the analysis might be modified in light of relevant behavioral factors.

A. Evaluating the Behavioral Effects of Existing Retirement Savings Mechanisms

1. Income versus consumption taxation and the use of income tax preferences for retirement saving

Rational Choice – As noted earlier, paying income tax on the return to savings that one eventually spends is arithmetically equivalent to paying a rising sales tax rate on the increasingly deferred consumption.<sup>182</sup> Income taxation thereby unambiguously discourages later consumption relative to sooner consumption. Accordingly, an individual who is acting in accordance with the life cycle model would be expected to consume more during her working years, and less during her retirement period, than if she faced the same overall expected tax liability over her lifetime in present value terms, but with neutrality as between sooner and later consumption.

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<sup>182</sup> Bankman and Weisbach, *supra*, at 1419.

While the direction of the effect on the timing of lifetime consumption is straightforward, the effect of income taxation on the amount that one saves out of after-tax earnings is ambiguous. Although the incentive effect of the income tax induces reduced saving, the income effect pushes in the other direction, by requiring that one save more in order to reach any given level of retirement-period consumption. Note, however, that, even if the income effect predominates, and one therefore is saving more by reason of the income tax on savings, one still is in fact consuming more under the income tax during one's working years, and less during one's retirement period, than one would have under a revenue-equivalent, timing-neutral consumption tax. This reflects that, for the income and consumption taxes to generate the same present value tax liability over one's lifetime, the consumption tax would have to impose a higher tax rate on consumption during one's working years. In effect, the extra saving under an income tax (if the income effect predominates) is more than offset, so far as the allocation of lifetime consumption is concerned, by the need to use some of it towards paying the extra tax burden on later as opposed to sooner consumption.

Taxing the return to saving also has a theoretically ambiguous effect on labor supply. In a revenue-neutral scenario, where a consumption tax would have nominally higher rates than an income tax to make up for the fact that it is not taxing the normal return to saving, the incentive effect would be to reduce labor supply if one planned to consume relatively soon, and to increase it if one planned relatively deferred consumption. Suppose, however, that we focus instead on a given individual who reduces her retirement-period consumption – whether or not her interim savings from after-tax earnings – by reason of the income tax. Through its imposing a distortion on consumption choices, the income tax makes the return to work, in terms of the utility that can be derived from consumption, less valuable than it would otherwise have been. This would tend

to reduce labor supply, by inducing substitution towards leisure. On the other hand, as Louis Kaplow has shown, the fact that the income tax thereby leaves one in a worse position can have what amounts to an income effect, inducing greater labor supply. In effect, the lost utility from market consumption may induce one to “trade in” additional leisure for consumption opportunities, by working more.<sup>183</sup>

Alternative frameworks – Suppose we start, for convenience, with what is perhaps the overly fanciful case of a hyperbolically discounting naïve myope who actually makes marginal tradeoffs between present and future consumption, albeit with an anomalously high (but well short of infinite) discount rate that applies just to the present moment versus the very next one. For such an individual, there is no reason why the basic structure of a rational choice analysis should change. With or without an income tax, she presumably is saving for retirement, albeit too little given the hyperbolic front end discount rate. Otherwise, her process of trading off present versus future consumption is just like that of the rational life cycle saver, so it is plausible that taxing returns to saving will similarly affect her.

By contrast, a naïve myope who wholly ignores the future will spend all earnings on current consumption in any event, and respond only to the current year tax rate. For a sophisticated myope, the analysis depends on further specification of how advance self-control works. One who can fully bind herself into saving optimally may become equivalent to a rational actor. Or suppose that, as in Kaplow’s model, a sophisticated myope cannot avoid under-saving, but makes labor supply decisions farsightedly. With regard to such decisions, she will view the tax on saving as increasing the distortion of consumption allocations that she already expects to result from her myopia.<sup>184</sup> This reduces the lifetime utility that she can expect

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<sup>183</sup> See Kaplow, *supra*.

<sup>184</sup> See Kaplow, *supra*, at 23.

to derive from earning wages. Hence the substitution effect suggests working less, while the income effect suggests countering this loss in welfare from market consumption by working more.

Inattentiveness like that manifested by passive savers in the Chetty study likewise alters the baseline rational choice analysis, leaving things more indeterminate still. If the tax rate on future saving does not affect savings decisions, then – holding after-tax earnings constant – they will be the same under an income tax and a consumption tax. But suppose again that we are comparing revenue-equivalent taxes, and thus that the consumption tax will impose a higher current-year tax rate on earnings than the income tax. The higher current rate, if it was all that an inattentive individual noticed, would suggest a substitution effect of working less under the consumption tax than the income tax, and an income effect of working more. Unfortunately, however, while it would be good to know that this at least is the right way to model the problem, in fact we cannot be so sure of this, given that it remains unclear how inattentiveness regarding employer plans affects labor supply decisions.

## 2. Social Security

Rational Choice – In assessing how Social Security would affect behavior under a narrow rational choice model, it is useful to look separately at the program's forced saving element and its actuarial "unfairness." Thus, suppose initially that the former feature involved mandating pension contributions that would earn a market rate of return. Rational actors, such as the Chetty study's active savers, who wanted to save more than the program mandates would take their expected retirement benefits into account – in effect, reducing dollar-for-dollar the retirement saving that they otherwise would have done outside the program. Thus, ignoring portfolio

choice issues if the program did not permit them to invest in the asset mix that they preferred, it would end up having no effect on them.<sup>185</sup>

With respect to labor supply, an actuarially fair Social Security system's only effect on people exercising narrow rational choice would pertain to individuals who would have preferred to save less. Work would be less valuable to them than if they could spend their wages as soon as they liked, thereby reducing the incentive to work. However, the overall effect on labor supply would be ambiguous given the income effect, which might induce some such individuals to work more, so that they could reach the current spending levels that they preferred.

Now suppose we consider the case of actual Social Security, which generally imposes a net tax on workers in current generations, and which may (without departing too far from rationality assumptions) tend in practice to be viewed, due to its opacity, as imposing an even greater net tax at the margin than it actually is. For active savers who conform to the rational choice model, the labor supply effects should resemble those from the case of actuarial fairness coupled with irreversible over-saving. In either case, the system effectively imposes a net tax on earnings, which these individuals would rationally take into account when making labor supply decisions. Thus, once again, the substitution effect would suggest working less, while the income effect would suggest making up some of the loss by working more.

Alternative frameworks – Naïve myopes would regard even actuarially fair mandatory saving as equivalent to a tax on work (unless they were making marginal tradeoffs and the mandated saving did not exceed the level they wanted, in which case it might be irrelevant).

Sophisticated myopes who, as in Kaplow's model, were unable to save otherwise, but who were

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<sup>185</sup> Any rational actors who wanted to save less overall than the actuarially fair version of Social Security was mandating would not only save nothing for retirement outside its boundaries, but would attempt if possible to reverse the undesired forced saving. This might, for example, involve borrowing against the future value of the undesired benefits. As noted earlier, however, in the case of actual Social Security this may be difficult or even impossible to achieve.

making farsighted labor supply decisions, would regard the forced saving as akin to a wage subsidy. The substitution effect would suggest working more, while the income effect would suggest working less – the opposite of what happens under an income tax, which increases, instead of reducing, the expected distortion of lifetime consumption allocations.<sup>186</sup>

Now suppose that an actuarially fair version of Social Security applies to inattentive passive savers. They presumably go right on spending all of their disposable income, just as they would if the program did not exist and such income were therefore higher. The program therefore increases their saving, no less than it would have if they could opt out but the default was sticky. The labor supply effects on them remain unclear, just as under the sticky opt-out default scenario.

Next, let us suppose (more realistically) that Social Security is actuarially unfair to current workers, and/or for optical reasons appears to be levying a net tax. Naïve myopes ignore this if they do not make marginal tradeoffs. If they do make such tradeoffs and hence are rational actors apart from applying too high an initial discount rate, they will regard the actuarial unfairness as a tax on work. Whether or not they try to save more will depend on whether Social Security gives them enough retirement saving, by their blinkered lights. Kaplow's sophisticated myopes will presumably view the actuarial unfairness as imposing a wage tax, but the improvement in lifetime consumption allocations as equivalent to a wage subsidy. One would need further information to determine which of these two opposing effects would be greater in any particular instance.

Inattentive individuals, such as the passive savers in the Chetty study, presumably will make no adjustment in their saving to offset their loss from the system's actuarial unfairness to them. The effect of such unfairness on their labor supply decisions depends on the same

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<sup>186</sup> See *id.* at \_\_.



unknown factor as previously, concerning how they take retirement savings effects into account when deciding how much to work.

## B. Evaluating Recently Discussed Changes to the Retirement Savings

### Mechanisms

Given all the uncertainties that surround retirement savings behavior and its associated welfare consequences, how should we evaluate the main issues in current retirement savings policy debate? The following analysis is inevitably both sketchy and tentative, aiming to identify key issues that merit further study where a firm conclusion cannot be reached. Once again, I start by suggesting what conclusions might follow from applying narrow rational choice to predict behavior and assess welfare, before turning to how the analysis might change given the broader behavioral issues.

#### 1. Modifying income tax benefits for retirement saving

Under a narrow rational choice view, taking as given the decision to impose an income tax, there might be no reason to exempt retirement savings from its reach. By definition, if people are making rational intertemporal consumption choices, no one is saving too little for retirement given the payoffs they actually face under the income tax. To be sure, people are generally consuming a smaller proportion of their lifetime resources after retirement than they would if the intertemporal distortion that the income tax imposes did not exist. However, the concern about mistaken under-saving that motivates so much of retirement savings policy would not be a relevant factor, given the assumption of rational choice.

The only ground on which it might make especial sense under a narrow rational choice view to exempt retirement saving, while otherwise taxing returns to saving, is that lifecycle consumption smoothing might turn out to be unrelated to one's reasons for favoring income

taxation. Thus, suppose one viewed the intergenerational transmission of high-end wealth inequality as having large negative effects on society. This might lead one to consider responding through corrective tax instruments such as income taxation, wealth taxation, and/or inheritance taxation.<sup>187</sup> Such a view might be consistent with not wanting to raise the tax burden on individuals who saved for their own retirements in lieu of consuming more during their working years.

Now suppose one combines favoring (or at least tolerating) income taxation with rejecting full adherence to the narrow rational choice view of retirement saving, potentially leading to concern that people are mistakenly under-saving for retirement. In this scenario, while it is not logically impossible that income tax benefits for retirement saving would help at the margin, there is nonetheless something a bit odd about thus responding to the problem. In brief, having observed that people do not always behave rationally given the incentives that they actually face, we respond by adjusting their incentives. This might be a baffling course of action even if we did not have empirical evidence, such as that from the Chetty study, that the income tax benefits do very little to increase retirement saving, and that responses come mainly from people who already were actively engaged in retirement planning.

Given this evidence, unless one generally favors moving towards consumption taxation in lieu of income taxation, there is reason to question the current law approach, under which IRAs and employer pensions receive consumption tax treatment in the apparently vain hope of increasing retirement saving. Where does this leave us, however? To answer that question, we must define the overall set of policy changes suggested by skeptics (such as Chetty et al) about the allowance of income tax benefits for retirement saving.

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<sup>187</sup> See, e.g., Piketty.

Suppose we simply repeal the income tax preferences for IRAs and employer pensions, thereby raising tax revenue by tens of billions of dollars per year. Would we then have to do something else, giving back part of the money, to ensure that employers generally retained their plans? Would labor supply be affected by our now imposing much higher tax rates on work? Would significantly raising taxes at a time when unemployment remains chronically and distressingly high have contractionary effects on the macroeconomy?

To avoid such conundrums, the proper counterfactual presumably involves reducing marginal tax rates to give back some or all of the long-term revenue lost from repealing the income tax preferences for retirement saving (in addition to using automatic enrollment to boost plan participation). This set of changes might raise the hope that inattentive workers would view the tax burden on work as having declined, even insofar as, given the tax increase for deferred consumption, it had actually remained the same or even increased.

If so, the result might be to reduce inefficient substitution away from work, whether or not there was an overall increase in labor supply given any income effects in the opposite direction. However, this possibility requires raising two further points. First, as noted above, labor supply responses to changes in the tax burden on saving remain less well-understood than savings responses. Second, the critique that underlies Chetty et al's advocacy of the repeal of income tax preferences for retirement saving is at least arguably much broader. It pertains as well to the longstanding debate concerning the relative merits of income taxation and consumption taxation.

## 2. Partly or fully replacing the income tax with a consumption tax

As noted above, the longstanding U.S. academic debate concerning the relative merits of income taxation and progressive consumption taxation turns on a wide range of issues, many of

which lie outside the scope of explaining how people make retirement savings choices.

Nonetheless, a narrow rational choice view of the behavior would potentially weaken two prominent arguments in favor of income taxation. The first is the argument that savings should be taxed because the capacity to make provision for the future by saving is a signal of high ability – no less than, say, earning high wages.<sup>188</sup> If we were to assume that people in general are making rational provision for the future, the signal's capacity to differentiate on the basis of ability would be called in to question.

Second, a narrow rational choice view would reject the hypothesis that, by charging a lower nominal rate than an equal-revenue consumption tax but effectively raising burdens on future consumption, the income tax in effect partly hides from inattentive individuals the true burdens that it is imposing. Under this hypothesis, suppose a 30 percent income tax and a 35 percent consumption tax would raise the same long-term revenues. As noted previously, one could view the income tax as effectively charging lower sales tax-equivalent rates for immediate consumption, and higher such rates for deferred consumption, leaving the two taxes comparable overall with respect to the tax burden imposed on labor supply and the market consumption that it funds. With narrow rational choice and no systematic errors in forming expectations, people would understand the rough overall equivalence, and the 30 percent income tax would not generally yield less substitution away from labor supply than the 35 percent consumption tax.

However, evidence of inattention, such as that from the Chetty study, may challenge both of these conclusions from applying a narrow rational choice view. First, it may directly support viewing savings as a tag of high ability. Again, the study found significant heterogeneity in

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<sup>188</sup> Saez.

savings behavior, with active savers not only responding more but generally saving more.<sup>189</sup>

Second, the evidence that inattentive passive savers seemingly ignore deferred tax considerations arguably gives policymakers scope to exploit this focus just on current after-tax income.

Analogously, consider the fact that, in credit markets, “[l]enders may exploit bounded rationality ... by increasing the complexity of the credit contract and lowering the price of the salient contract terms, while packing more of the overall contract cost into nonsalient, poorly understood terms.”<sup>190</sup> Taxing savings instead of current labor income arguably fits this pattern. However, it is worth noting once again that we do not know how inattentiveness plays out with respect to labor supply decisions.

### 3. Encouraging participation in employer-run retirement saving through “nudges”

Despite the fact that nudges, such as automatic enrollment in employer plans, seemingly should be close to irrelevant under a narrow rational choice view,<sup>191</sup> it is by now well-established that they can be quite sticky. Thus, if the people whose retirement savings would increase by reason of automatic enrollment appear to be saving too little, then the case that switching the default would tend to increase their welfare is quite powerful. Indeed, this conclusion readily follows even if one views their inattention as rational given decision costs. On the other hand, it is possible that opt-out enrollment would increase substitution away from labor supply, if (as

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<sup>189</sup> Note argument that high ability savers may, all else equal, derive greater utility from consumption because they can allocate it optimally between periods. While this may support a utilitarian argument for treating them more favorably in distribution policy, note that we can narrow the gap by requiring low-ability low-savers to do more consumption smoothing.

<sup>190</sup> Bubb and Pildes, *supra*, at 1643, drawing on Oren Bar-Gill, *SEDUCTION BY CONTRACT* 18-23 (2012).

<sup>191</sup> One possible argument that could be made in the effort to reconcile narrow rational choice with the substantive influence of default settings is that employees may “believe the default conveys information about the wisdom of a particular choice.” Bernheim and Rangel at \_\_\_ (noting, though not endorsing, this view). Thus, in effect, they rationally take what they regard as benevolent and well-informed advice by not changing the default, no matter which way it lies. Given, however, that this interpretation of the default setting is surely false, a narrow rational choice view suggests that it would tend to be self-correcting unless there is an unexplained market failure. After all, employers would presumably benefit from explaining to fully rational employees that the true lifetime value of one’s wages can be enhanced by saving appropriately and in a manner that gives rise to favorable income tax treatment.

remains uncertain) people make work decisions based purely on current take-home pay. The answer to the labor supply question could importantly affect the question of how much induced saving, even if accomplished purely through enrollment defaults from which people can opt out, is likely to be optimal.<sup>192</sup>

A further question is how one should think about using nudges, as compared to legislating increased mandatory retirement saving. If one values choice as good in itself, such as on libertarian grounds, then one might be glad that nudges permit one to opt out of the arrangement that policymakers prefer, even if one is making a mistake. Thus, Cass Sunstein and Richard Thaler, in their 2008 bestseller *Nudge*, describe themselves as “libertarian paternalists” who agree with the late Milton Friedman that “people should be ‘free to choose.’ We strive to design policies that maintain or increase freedom of choice .... Libertarian paternalists want to make it easy for people to go their own way.”<sup>193</sup>

An alternative normative view would value choice only instrumentally to the aim of increasing people’s welfare. From this perspective, preserving free choice is a good thing insofar as people either use it to make choices that improve their own welfare, or directly value having it whether the actual choices they make are good in bad. However, evidence of inattention, such as that from the Chetty study, undermines the usual presumption that choice is likely to be good in all settings. The inattentive (and even more so the regret-averse) appear to treat it as too costly and burdensome to be worth exercising. This leaves the question of whether those who change the default are on average increasing or reducing their overall welfare.

One could call this the “sorting” question of whether choice, in the form of changing the default with respect to retirement saving, is improving or worsening the match between those

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<sup>192</sup> See Louis Kaplow, Government Policy and Labor Supply With Myopic or Targeted Savings Decisions 25 (May 19, 2014).

<sup>193</sup> Thaler and Sunstein, *supra*, at 5.

who end up participating in employer plans and those who would benefit from participating. Given the heterogeneity of people's preferences and circumstances, it is clear that a one-size-fits-all default will not be optimal for everyone. Indeed, even if it set on the low side, there presumably will be some people for whom it is too high. Consider again Mickey Mantle, if he was probabilistically likely to die (as he in fact did) before reaching retirement age.<sup>194</sup> On the other hand, one needs to ask whether flawed decision-making could systematically result in opt-out that is disproportionately by the “wrong” people, not the “right” ones.

In this regard, the alternative behavioral theories have differing implications. For example, rational inattention might suggest that people will only go to the trouble of reversing a default when it departs significantly from their preferences. This might suggest that the sorting process will improve the fit between who does increase her retirement saving through the program and who should. On the other hand, if opting out depends on the level of one's naïve myopia about the value of retirement saving, then conceivably the people who opted out would tend to be precisely those who would benefit from a mandatory rule.

#### 4. Changing the size of Social Security

Under a narrow rational choice view, there are two main reasons why mandating forced saving through Social Security might make sense. First, it addresses the fiscal externality that would arise if people deliberately under-saved because they knew they would receive income support if indigent after retirement. Second, if the market cannot supply fixed real life annuities at actuarially fair prices due to adverse selection, then mandating universal participation could be

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<sup>194</sup> Mantle in fact died shortly before he would have turned 54. His expectation that he would die at an even younger age reportedly reflected that “the men in his family had all died young, so he expected to die young as well.... Mantle did not know at the time that most of the men in his family had inhaled lead and zinc dust in the mines, which contribute to Hodgkins' and other cancers.” See [http://en.wikipedia.org/wiki/Mickey\\_Mantle](http://en.wikipedia.org/wiki/Mickey_Mantle) .

welfare-enhancing on balance, if we are sufficiently persuaded that most people would want to hold this insurance product at a fair price.

The first of these two explanations calls for only a relatively small retirement benefit under Social Security – and possibly one with significant means-testing, so as to eliminate forced saving by those who appear unlikely to end up on the public dole.<sup>195</sup> In this scenario, it would be anomalous and perplexing that “[d]iscussions of ... Social Security policy often focus on replacement rates, which represent ... Social Security benefits relative to preretirement earnings .... [based on appreciation of the importance] of smoothing consumption over individuals’ lifetimes.”<sup>196</sup> Smoothing simply would not be Social Security’s job if people were doing that adequately on their own, and all that remained for the system was addressing moral hazard from the fiscal externality.

With respect to the adverse selection argument for a mandatory fixed real life annuity, a narrow rational choice view need not imply that Social Security should be relatively small and concentrated on the low end. That depends on the severity of the posited adverse selection problem, and on evidence regarding the extent to which people actually want to annuitize. While there is some evidence of adverse selection in U.S. life annuity markets,<sup>197</sup> U.K. evidence may be to the contrary,<sup>198</sup> perhaps supporting the inference that Social Security has made the problem worse by thinning out demand for fixed real life annuities. There also is some evidence that

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<sup>195</sup> But note that one does have to keep in mind effective marginal tax rates from phasing out Social Security benefits.

<sup>196</sup> Andrew G. Biggs and Glenn R. Springstead, *Alternate Measures of Replacement Rates for Social Security Benefits and Retirement Income*, 68 Soc. Sec. Bulletin, No. 2 (2008).

<sup>197</sup> See Jeffrey R. Brown et al., *Mortality Risk, Inflation Risk, and Annuity Products* (Nat’l Bureau of Econ. Research Working Paper No. 7812, 2000).

<sup>198</sup> Cite – Poterba?



people often do not want the degree of annuitization of their wealth that the lifetime income hypothesis arguably suggests is rational.<sup>199</sup>

As noted above, once we allow for alternative behavioral theories, it becomes plausible that mandatory saving, such as that through Social Security, is useful as an optimization tool, and not just to keep people out of dire poverty that might lead to their receiving safety net benefits. A focus on replacement rates can make sense if significant consumption smoothing is generally optimal, falling short of it indicates a strong probability of mistake, and mere nudges' sorting qualities are not sufficiently well-directed.

##### 5. Changing the design of Social Security

If people tend to respond rationally to the reasonably discernible incentives and opportunities that they face, then – even short of one's adopting a narrow rational choice view – there is reason to be concerned about the potential distortionary costs, with regard to labor supply, of having so opaque a relationship between Social Security taxes and benefits. Even if one chooses to redistribute through the program via deliberate actuarial unfairness – reflecting the standard tradeoff between efficiency and distributional goals – it remains the case that causing the Social Security tax to look more like a pure tax than it actually need be, in order to advance these goals, may yield gratuitous additional inefficiency.

There may, of course, be political economy rationales for the opacity, if people are generally less attentive as voters than they are as consumers. Such a distinction between the two realms can reasonably be asserted, even under a strong rational choice view, given the collective action issue in voting. That is, while I can unilaterally change my own labor supply, giving me good reason to evaluate all of my choices, in the realm of politics I can only contribute one vote

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<sup>199</sup> Cites – e.g., Shiller?

among millions, making informational under-investment in this realm all too rational.<sup>200</sup> It thus has been argued, without necessarily contradicting a rational choice-based view of labor supply, that Social Security's opaque relationship between taxes and benefits serves to increase middle-class political support for a program that serves important safety net functions.<sup>201</sup>

Given the political economy issues, the merits of this argument depend on more than just one's understanding of the reasons for under-saving. However, the applicable behavioral model could significantly affect one's assessment of the efficiency costs. For example, in the case of naively myopic labor supply with infinite discounting rather than the making of tradeoffs, the marginal relationship between taxes paid and benefits accrued might be unimportant. Workers would be ignoring benefit accrual in any event. The same might hold for inattention, subject again to the caveat that its labor supply effects are not well understood. By contrast, under a view of sophisticated myopia that saw people as making farsighted labor supply decisions despite inability to save optimally through their own efforts, increasing the program's actuarial fairness (and making it more transparent) could significantly reduce its efficiency costs.

## **VI. CONCLUSION**

Retirement savings behavior poses a clear challenge to the standard neoclassical model of rational choice that views people as maximizing expected utility given their preferences for consumption in different periods. Not only does observed behavior often appear to be at variance with the predictions of the life cycle model, but widespread inattentiveness to incentives and defaults tends to contradict inferring an underlying process of informed optimization.

However, it is easier to reach the conclusion that "behavioral" processes must be at work than it

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<sup>200</sup> Cites.

<sup>201</sup> Cites.

is to draw a clear and convincing picture of what those processes imply regarding how particular retirement savings policies would affect either people's choices or their welfare.

For example, consider passive savers, who tend neither to change default enrollment status in an employer plan nor to adjust consumption outlays (which depend on disposable income) to reflect the amount of saving that they are accumulating on the side. It is unknown whether they make labor supply decisions similarly inattentively. Yet the answer to this question could strongly influence one's views regarding, not just the design of rules that aim to increase participation in employer plans, but also the amount of saving that such rules seek to induce, the size and structure of an improved Social Security system, and the relative merits of income taxation and consumption taxation.