
Article

On the Edge: Declining Marginal Utility and Tax Policy

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Remember that all models are wrong; the practical question is how wrong do they have to be to not be useful.

—George E.P. Box & Norman R. Draper¹

INTRODUCTION

The assumption of declining marginal utility of income—that the next dollar a person receives is “worth less”² to a wealthy person than a poor person—has been crucial in tax scholarship over the last sixty or so years, as optimal tax theory and welfarism have become important ways that many in the legal academy evaluate tax policy.³ In spite of, or perhaps because of, the importance of this assumption, declining marginal utility has received little extended attention from the legal academy.⁴ This Article begins to fill that gap.

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1. GEORGE E.P. BOX & NORMAN R. DRAPER, EMPIRICAL MODEL-BUILDING AND RESPONSE SURFACES 74 (1987).

2. See *infra* text accompanying notes 39–42 (discussing what it means for a dollar to be “worth” a certain amount).

3. See *infra* Part I.A.

4. Important exceptions include Thomas D. Griffith, *Progressive Taxation and Happiness*, 45 B.C. L. REV. 1363 (2004), and Edward J. McCaffery, *Why People Play Lotteries and Why It Matters*, 1994 WIS. L. REV. 71.

Optimal tax theory, which attempts to balance distributional concerns and efficiency considerations, incorporates a welfarist approach to redistribution.⁵ Welfarism resolves distributional questions by maximizing social welfare, where social welfare is determined by aggregating individuals' welfare in some way. Welfarist analysis often assumes that everyone experiences income as having declining marginal utility, that the next dollar is always "worth more" to a poorer person than to a wealthier person. If income does have declining marginal utility, a welfarist who does not explicitly incorporate equality into her analysis (for example, a utilitarian, who sums individuals' welfare to arrive at total social welfare) will, given certain other simplifying assumptions,⁶ conclude that the government should take dollars away from rich people and give them to poor people.⁷ Declining marginal utility is thus a key assumption underlying the welfarist approach to tax law.

The legal academy is not unaware that declining marginal utility is open to question. In 1952, Walter J. Blum and Harry Kalven, Jr., questioned declining marginal utility in their seminal article *The Uneasy Case for Progressive Taxation*,⁸ in

5. See, e.g., LOUIS KAPLOW, THE THEORY OF TAXATION AND PUBLIC ECONOMICS 35 (2008) ("Optimal income tax analysis employs the standard welfare economic approach to policy assessment.").

6. Most crucially, everyone must have the same utility curve. See Sarah B. Lawsky, *Probably? Understanding Tax Law's Uncertainty*, 157 U. PA. L. REV. 1017, 1024–26 (2009). For a discussion of the various assumptions that are usually incorporated into a welfarist analysis, see discussion *infra* text accompanying notes 28–33.

7. See *infra* Part I.B.

8. Walter J. Blum & Harry Kalven, Jr., *The Uneasy Case for Progressive Taxation*, 19 U. CHI. L. REV. 417 (1952). The article was later expanded into a book, WALTER J. BLUM & HARRY KALVEN, JR., THE UNEASY CASE FOR PROGRESSIVE TAXATION (1953). Blum and Kalven do not explicitly discuss welfarism. Rather, they discuss two justifications for progressive taxation that depend on declining marginal utility: proportionate sacrifice and minimum sacrifice. Proportionate sacrifice holds that each taxpayer should be required to pay in tax an equal percentage of his utility. Blum & Kalven, *supra*, at 455–61. For most, but not all, situations in which income has declining marginal utility, this principle of proportionate sacrifice leads to progressive taxation. *Id.* at 459. Minimum sacrifice is essentially utilitarianism and holds that the law should bring about the greatest good for the most people, and thus government should impose taxes to "keep to a minimum the aggregate sacrifice imposed on the community as a whole." *Id.* at 466; see also *id.* at 470 (noting that the minimum sacrifice principle, as an adaptation of utilitarianism, "has been subjected to serious criticism and is hardly fashionable today [i.e., the mid-1900s]. The crux of the criticism has been that it reduces ethics and political science to accounting and that it does not discriminate sufficiently as to the quality of desires or satisfactions."). Thus, if income has declining marginal

which they argued that declining marginal utility of income could be established only through “sheer intuition.”⁹ A few articles have taken issue with Blum and Kalven’s view of declining marginal utility.¹⁰ With one notable exception, however, these articles do not point to actual evidence.¹¹ Rather, they respond to Blum and Kalven in kind, with purely theoretical arguments or arguments that rely on intuition.¹²

Aside from this fairly small line of scholarship, most tax legal scholarship simply assumes that marginal utility declines.¹³ Indeed, many articles reach policy recommendations that depend (to a greater or lesser extent) on the assumption of declining marginal utility, without seriously engaging the question of whether individuals actually experience declining marginal utility.¹⁴ For example, in an article defending an ideal

utility, the minimum sacrifice principle always involves transferring money from those who are wealthier (and for whom the next dollar has less utility) to those who are less wealthy (for whom the next dollar has more utility). *Id.* at 467.

9. Blum & Kalven, *supra* note 8, at 477; *see also* discussion *infra* Part I.C.

10. *See, e.g.*, Mark S. Stein, *Diminishing Marginal Utility of Income and Progressive Taxation: A Critique of The Uneasy Case*, 12 N. ILL. U. L. REV. 373 (1992) (“Typically, Blum and Kalven distort the argument for [diminishing marginal utility of income], thus obscuring both the force of the argument and the inadequacy of their response.”). *See generally* discussion *infra* Part I.C.

11. The exception is Griffith, *supra* note 4, which uses happiness surveys to obtain information about utility curves. *See* discussion *infra* Part I.C.

12. *See* discussion *infra* Part I.C.

13. *See, e.g.*, Reuven S. Avi-Yonah, *Globalization, Tax Competition, and the Fiscal Crisis of the Welfare State*, 113 HARV. L. REV. 1573, 1649 (2000) (“It is widely accepted that redistributive income taxation can be justified by considerations of vertical equity and the declining marginal utility of income.”); Joseph Bankman & Thomas Griffith, *Social Welfare and the Rate Structure: A New Look at Progressive Taxation*, 75 CALIF. L. REV. 1905, 1947 (1987) (introducing optimal tax models into the legal literature and noting that such models “assume that consumption and leisure have declining marginal utility,” and that “[t]he assumption that the value of an additional dollar to an individual declines as the number of dollars he owns increases (‘declining marginal utility’) is common in economic analysis”); James R. Repetti, *Democracy and Opportunity: A New Paradigm in Tax Equity*, 61 VAND. L. REV. 1129, 1137–38 (2008) (stating that “[one] justification for progressive rates under the benefits theory might be based on the declining marginal utility of money” and noting the conclusions that flow “if we assume declining marginal utility”); Stephen Utz, *Ability to Pay*, 23 WHITTIER L. REV. 867, 894 (2002) (“Perhaps the most popular assumption concerning . . . tax rates and the value of money to people is that the marginal utility of money income is not constant but diminishes.”); Lawrence Zelenak & Kemper Moreland, *Can the Graduated Income Tax Survive Optimal Tax Analysis?*, 53 TAX L. REV. 51, 52–53 (1999) (noting that in optimal tax analysis, “consumption [is] assumed to have declining marginal utility”).

14. *See, e.g.*, Lily L. Batchelder et al., *Efficiency and Tax Incentives: The Case for Refundable Tax Credits*, 59 STAN. L. REV. 23, 58 (2006) (“Greater in-

consumption tax, Joseph Bankman and David Weisbach explain why they assume declining marginal utility: “[Declining marginal utility] may not be true in every case. Some wealthy people may crave additional wealth more than the poor. But given that we must make some assumption about utility, an assumption of declining marginal utility . . . seems to be an unproblematic assumption.”¹⁵

The assumption of declining marginal utility is, however, far from “unproblematic.” Rather, as this Article shows, while some empirical evidence supports declining marginal utility, other evidence also suggests that certain individuals actually

come smoothing is desirable not simply because of risk aversion and the declining marginal utility of money, but also because it can reduce adjustment costs associated with economic instability and offset failures in insurance markets.”); Brian H. Jenn, *The Case for Tax Credits*, 61 TAX LAW. 549, 574 (2008) (arguing that “most consumers-taxpayers can reasonably be assumed to have convex preferences,” which means that “the marginal utility of purchasing some good or service that generates a public benefit will diminish as the amount of that good or service purchased increases,” and that “the government can most cost-effectively induce its desired behavior by offering the marginal incentive at as low a rate as possible to as broad a group as possible”); Jeffrey H. Kahn, *Personal Deductions—A Tax “Ideal” or Just Another “Deal”?*, 2002 LAW REV. MICH. ST. U. DET. C.L. 1, 22 (stating that it is “reasonable” to assume that “once the need for an amount equal to the cost of subsistence has been satisfied, the value or ‘utility’ of additional dollars earned will decline,” because commodities have declining marginal utility, and “there seems to be no reason why the same phenomenon would not occur when money is accumulated. . . . A progressive or graduated rate reflects the differences in marginal utility of dollars of income to persons with different amounts of income.”); Eric A. Posner, *Law and Social Norms: The Case of Tax Compliance*, 86 VA. L. REV. 1781, 1802 (2000) (assuming “a utilitarian social function and declining marginal utility of income” to model tax compliance); Deborah H. Schenk & Andrew L. Grossman, *The Failure of Tax Incentives for Education*, 61 TAX L. REV. 295, 345 n.184 (2008) (“The diminishing marginal utility of income . . . makes it unlikely that a poverty line taxpayer would be able to save at all.”); Daniel Shaviro, *The Long-Term U.S. Fiscal Gap: Is the Main Problem Generational Inequity?*, 77 GEO. WASH. L. REV. 1298, 1319 (2009) (adopting a utilitarian approach, and stating that “[i]f people and their circumstances are assumed to be identical in all respects except for material wellbeing, the [declining marginal utility] assumption does all the work and suggests redistributing solely from richer to poorer individuals,” though also acknowledging that our lack of knowledge about the future makes intergenerational distribution questions particularly difficult to answer); David Kamin, Note, *What Is a Progressive Tax Change? Unmasking Hidden Values in Distributional Debates*, 83 N.Y.U. L. REV. 241, 274 (2008) (proposing a measure for progressivity that depends in part on the declining marginal utility of income, noting that “it seems reasonable to assume that a person’s expected marginal utility of income declines as her income rises”).

15. Joseph Bankman & David A. Weisbach, *The Superiority of an Ideal Consumption Tax over an Ideal Income Tax*, 58 STAN. L. REV. 1413, 1421 & n.13 (2006).

experience increasing marginal utility, at least over some range of income.

The implications of such findings for tax policy and scholarship are profound. The U.S. income tax was shaped by the assumption of declining marginal utility. For example, early congressional debates over progressive taxation included various references, implicit and explicit, to declining marginal utility.¹⁶ And various economists who were crucial in shaping the modern income tax also relied on declining marginal utility to argue for progressive taxes.¹⁷

But if some people experience increasing marginal utility of income, a welfarist analysis that does not give explicit weight to equality will conclude that the tax system should redistribute not only from the rich to the poor, but also from certain less wealthy people to certain wealthier people. A welfarist who is uncomfortable with poor-to-rich redistribution can resolve this dilemma in various ways, one of which is to acknowledge that declining marginal utility is a normative judgment, not a fact about the world. This Article is thus part of a line of articles that make explicit and rigorously examine various assumptions crucial to the optimal tax approach to tax legal scholarship.¹⁸

16. See, e.g., sources cited *infra* notes 57, 61.

17. Ajay K. Mehrotra, *Envisioning the Modern American Fiscal State: Progressive-Era Economists and the Intellectual Foundations of the U.S. Income Tax*, 52 UCLA L. REV. 1793, 1851–54 (2005) (describing the importance of “marginalism,” that is, the idea that “each additional unit of a commodity, including money, was believed to be of lesser value than the previous unit,” to turn-of-the-century economists, and generally describing the impact that these economists, especially Edwin Seligman, had on the creation of the modern income tax).

18. See, e.g., Lawskey, *supra* note 6 (examining the assumption that rational individuals weight possible outcomes by the probabilities of those outcomes, and analyzing the implications for tax law of a subjectivist interpretation of probabilities); Chris William Sanchirico, *A Critical Look at the Economic Argument for Taxing Only Labor Income*, TAX L. REV. (forthcoming 2010), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1353322 (arguing against the claim that any tax on labor and savings can be replaced by a superior tax on labor only by focusing on the assumptions underlying that argument); Chris William Sanchirico, *Deconstructing the New Efficiency Rationale*, 86 CORNELL L. REV. 1003 (2001) (elaborating upon the argument in his earlier work, Chris William Sanchirico, *Taxes Versus Legal Rules as Instruments for Equity: A More Equitable View*, 29 J. LEGAL STUD. 797, 799–800 (2000) [hereinafter Sanchirico, *Taxes Versus Legal Rules*]); Sanchirico, *Taxes Versus Legal Rules*, *supra* at 799–800 (arguing that the result of the formal modeling laid out in Louis Kaplow & Steven Shavell, *Why the Legal System Is Less Efficient than the Income Tax in Redistributing Income*, 23 J. LEGAL

This Article does not, of course, suggest that the only problem, or even the only epistemological problem, with a welfarist analysis is that the marginal utility of income may or may not actually decline. As scholars have long recognized, there are many other possible problems. Individuals' marginal utility may decline at different rates.¹⁹ It may not be possible to compare individuals' utility.²⁰ Indeed, it may not be possible to measure utility at all.²¹ But these problems are distinct from (although of course related to) the declining marginal utility question. This Article, therefore, begins by assuming that individuals' utility curves are identical. Further, it assumes that it is possible to measure an individual's utility, and that it is possible to compare utility interpersonally.

Part I of this Article looks at where tax law scholarship stands now. This Part sketches out the current dominance of the welfarist position, and then defines declining marginal utility and examines the policy implications of, and evidence for, declining marginal utility. Part II presents evidence that some

STUD. 667 (1994), "follows from an implicit assumption that all agents are identical with respect to the tort system"); Daniel Shaviro, *Beyond the Pro-Consumption Tax Consensus*, 60 STAN. L. REV. 745, 750 (2007) (contending that arguments for a consumption tax rely on, inter alia, the assumptions that markets are complete and that people have stable preferences and are rational actors, and noting that "[r]eality is simply too messy for overly definite real world conclusions about the relative merits of [a consumption tax and an income tax] to hold outside the contours of stylized and simplified models"). More generally, see Reza Dibadj, *Weasel Numbers*, 27 CARDOZO L. REV. 1325 (2006), in which he argues that "traditional law and economics deeply misunderstands modern advances in welfare economics" and that "these advances point to the need for a robust administrative state"; Robert B. Ahdieh, *Beyond Individualism in Law and Economics* (Dec. 5, 2009) (unpublished manuscript), available at <http://ssrn.com/abstract=1518836>, wherein he argues that assumptions of individualized rationality fail to consider the limiting effects of social norms and other outside factors and explaining how these can shape one's understanding of law and economics; and the joke in which an economist solves the problem of being stranded on a desert island with a box full of canned goods by assuming a can opener.

19. See, e.g., Neil H. Buchanan, *The Case for Progressive Taxation and the Case Against the Use of Utility Theory in Tax Scholarship* (unpublished manuscript) (on file with author).

20. See, e.g., MATTHEW D. ADLER & ERIC A. POSNER, *NEW FOUNDATIONS OF COST-BENEFIT ANALYSIS* 39–52 (2006) (discussing and proposing possible solutions to the problem of interpersonal comparisons); Blum & Kalven, *supra* note 8, at 476 (citing Lionel Robbins's work to support the proposition that "it is not possible to make the necessary interpersonal comparisons").

21. The usual partial solution to this problem is to take an ordinal, rather than a cardinal, approach to utility. See, e.g., ADLER & POSNER, *supra* note 20, at 43–45 (discussing Kahneman's approach to interpersonal comparisons, focusing on experiences and relating them to ordinal values).

people actually have increasing marginal utility, at least for some range of wealth.²² Part III looks at implications of increasing marginal utility for tax policy and tax legal scholarship.

I. THE STATUS QUO: WELFARISM AND DECLINING MARGINAL UTILITY

This Part first describes the welfarist approach to distributive justice and then defines declining marginal utility, examines evidence for declining marginal utility, and looks at the implications of declining marginal utility to a welfarist analysis of tax policy.

A. WELFARISM

For the last few decades, with few exceptions, tax law scholarship has taken a welfarist approach to distributive justice. Welfarism holds that redistribution is desirable only if it improves overall social welfare,²³ as it is defined below.²⁴ Tax policies' redistributive effects are thus judged by whether they improve social welfare, and proposals for new tax policies within the legal academy have largely come from creative thinking

22. Specifically, this Part presents evidence for the Friedman-Savage utility curve, so called because it was first proposed in Milton Friedman & L.J. Savage, *The Utility Analysis of Choices Involving Risk*, 56 J. POL. ECON. 279 (1948). See generally *infra* Part II.

23. See, e.g., Anne L. Alstott, *Work vs. Freedom: A Liberal Challenge to Employment Subsidies*, 108 YALE L.J. 967, 973 (1999) ("In philosophy and constitutional law, liberalism occupies center stage. . . . But when it comes to taxes and transfers, liberal principles of distributive justice give way to utilitarian talk of costs and benefits, incentives and disincentives."); Reuven S. Avi-Yonah, *Why Tax the Rich? Efficiency, Equity, and Progressive Taxation*, 111 YALE L.J. 1391, 1414–15 (2002) ("It is fair to say that since the 1950s, and even more so since the 1980s, academic legal writing on taxation has been dominated by efficiency issues and by the optimal tax approach. . . . Most of the writing on distributive issues [by legal tax academics, especially in some of the elite law schools,] has been done within the confining framework of optimal tax theory."); Miranda Perry Fleischer, *Theorizing the Charitable Tax Subsidies: The Role of Distributive Justice*, 87 WASH. U. L. REV. 505, 529–31 (2010) (noting that recent discussions about the charitable deduction have emphasized efficiency over distributive justice); Dennis J. Ventry Jr., *Equity Versus Efficiency and the U.S. Tax System in Historical Perspective*, in TAX JUSTICE 25, 25 (Joseph J. Thorndike & Dennis J. Ventry Jr. eds., 2002); David A. Weisbach, *What Does Happiness Research Tell Us About Taxation?*, 37 J. LEGAL STUD. S293, S296 (2008) (referring to the optimal tax approach as the "now standard approach to taxation").

24. See *infra* text accompanying notes 38–39.

about welfarism-based models.²⁵ A few scholars have argued that more attention should be paid to a liberal or deontological approach, an approach that focuses on fairness, or equality, or freedom, or individualism.²⁶ But these scholars have been in the distinct minority.²⁷ This Part describes the currently dominant welfarist approach.

“[T]here are two steps to the welfarist analysis: a welfarist first determines individuals’ utilities, and, . . . second, aggregates those utilities in some way.”²⁸ But prior to these steps, a welfarist must first define utility (or welfare, or well-being).²⁹ Some take the position that well-being is equivalent to happiness, or subjective well-being.³⁰ Others equate well-being with preference satisfaction, whether actual preferences or “laundered” preferences (that is, preferences for things that informed, rational individuals acting only out of self-interest

25. See, e.g., Alex Raskolnikov, *Crime and Punishment in Taxation: Deceit, Deterrence, and the Self-Adjusting Penalty*, 106 COLUM. L. REV. 569 (2006) (proposing a new penalty structure based on economic theory, but noting uncertainty about the economic assumption of rationality).

26. See, e.g., Alstott, *supra* note 23, at 973 (proposing a liberal argument against employment subsidies and stating that “positive economics is enormously useful in analyzing the effects of tax policies. But on the normative side, utilitarian talk necessarily omits core liberal values of individualism, freedom, and equality”); Avi-Yonah, *supra* note 23, at 1415 (“It is time for legal tax academics to redress the balance [between equity and efficiency]. Efficiency issues cannot be neglected. . . . But issues of equity and ‘tax justice’ must be explicitly addressed as well.”); Fleischer, *supra* note 23, at 507–08 (arguing that recent work about the charitable deductions is incomplete because it “ignores or explicitly disavows normative distributive justice concerns,” focusing instead on efficiency).

27. A middle road, advocated by Matthew Adler and Eric Posner, is “weak welfarism,” which takes welfare into account, but also gives weight to other moral considerations. See ADLER & POSNER, *supra* note 20, at 39–52.

28. A version of this argument was presented in Sarah Lawsky, *Why Declining Marginal Utility Matters*, PRAWFSBLOG (DEC. 7, 2009, 10:15 AM), <http://prawfsblawg.blogs.com/prawfsblawg/2009/12/why-declining-marginal-utility-matters.html>.

29. See, e.g., ADLER & POSNER, *supra* note 20, at 28–35 (outlining three common definitions of utility); Mark Kelman, *Hedonic Psychology and the Ambiguities of “Welfare,”* 33 PHIL. & PUB. AFF. 391, 393 (2005) (describing the “basic ongoing conceptual problems that beset welfarism,” including how one defines welfare).

30. See, e.g., RICHARD LAYARD, *HAPPINESS: LESSONS FROM A NEW SCIENCE* 3–9 (2005) (proposing happiness as a goal); John Bronsteen et al., *Welfare as Happiness*, 98 GEO. L.J. 1583, 1586 (2010) (“A person’s well-being is the aggregate of how she feels throughout her life.”); Griffith, *supra* note 4, at 1368–71 (using happiness surveys to obtain information about utility curves); Richard Layard et al., *The Marginal Utility of Income*, 92 J. PUB. ECON. 1846, 1848 (2008) (defining utility as happiness).

would prefer).³¹ Still others believe welfare to consist in the satisfaction of certain “capacities,” or objective goods, so that society should work toward providing all citizens with, for example, bodily integrity, bodily health, and other specifically enumerated goods.³² Most economists and many law professors accept the preference-satisfaction definition of utility, though some recent articles have revived the happiness approach.³³ As this Article explains, one’s definition of utility is key for determining whether people uniformly experience declining marginal utility of money.

Utility, however it is defined, is a function of various facts about an individual and, possibly, the world in which he lives. Economic models often assume that a person’s utility depends only on the amount of his consumption and leisure, respectively. Some models take an even more composite approach and consider utility to be determined entirely by consumption,³⁴ but almost anything can be incorporated into a utility function, in-

31. See, e.g., ADLER & POSNER, *supra* note 20, at 35–39 (advocating a “restricted preference-based view of well-being,” which “stipulates that an outcome benefits a person if she has an appropriately ‘restricted’ preference for that outcome—a preference that survives idealization and concerns her own interests”); KAPLOW, *supra* note 5, at 360 (noting that many “argue that social welfare should be assessed by reference to individuals’ rational, fully informed preferences when they conflict with revealed preference. What is desirable for individuals should be understood ‘supposing the desirer to possess a perfect forecast, emotional as well as intellectual, of the state of attainment or fruition.’”); Matthew Adler & Eric A. Posner, *Happiness Research and Cost-Benefit Analysis*, 37 J. LEG. STUD. S253, S254 (2008) (“An individual’s well-being is determined by the satisfaction of her preferences—more precisely, by the attainment of those items that well-informed, rational, self-interested individuals would generally prefer.”).

32. See, e.g., MARTHA C. NUSSBAUM, *FRONTIERS OF JUSTICE: DISABILITY, NATIONALITY, SPECIES MEMBERSHIP* 69–81 (2006) (proposing a “capabilities approach”). See generally MARTHA C. NUSSBAUM, *WOMEN AND HUMAN DEVELOPMENT: THE CAPABILITIES APPROACH* (2000). The capabilities approach may be better understood as an alternative to welfarism, rather than a definition of well-being. Compare KAPLOW, *supra* note 5, at 367 (“In considering the subject of redistribution, some economists and philosophers would not assess individuals’ situations by reference to well-being [but rather by reference to] capabilities and functionings.”), with ADLER & POSNER, *supra* note 20, at 35–39 (“Traditionally, theorists of welfare have [defined welfare] in three different ways, offering *mental-state* accounts of welfare, *objective-good* accounts, or *preference-based* accounts.”), and KAPLOW, *supra* note 5, at 369 (“Primary goods or capabilities may best be understood as ways of gauging well-being rather than as substitute concepts.”).

33. See, e.g., sources cited *supra* note 30.

34. See, e.g., Louis Kaplow, *Concavity of Utility, Concavity of Welfare, and Redistribution of Income*, 17 INT’L TAX & PUB. FIN. 25, 26 (2003) (“[T]he utility functions . . . are taken to depend on each individual’s disposable income.”).

cluding a taste for fairness.³⁵ The key point is that utility, however one defines it, is a fact about the world. Once utility is defined, people have a certain level of utility, whether one can measure that level or not.³⁶

An individual's utility can be represented by what is known as a "utility curve." Utility curves map utility as a function of the amount of a particular commodity. For the purposes of this Article, the commodity is income. For example, Figure 1 represents someone who gets one unit of utility—commonly called a "util"—from each additional dollar.³⁷

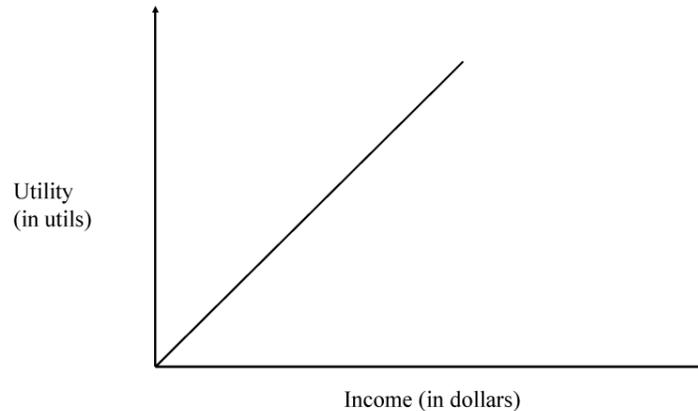


Figure 1: A Utility Curve

After determining individuals' utilities, the welfarist aggregates these utilities to arrive at total social welfare. While individual utilities are facts about the world, a social welfare function is a normative judgment. Social welfare functions can capture a variety of normative views. A utilitarian approach by definition weights each individual's utility equally and sums individual utilities to arrive at overall social welfare. But a wel-

35. See, e.g., Michael B. Dorff & Kimberly Kessler Ferzan, *The Perils of Forgetting Fairness*, 59 CASE W. RES. L. REV. 597, 599 (2009) ("Fairness counts as a preference."); Sarah B. Lawsky, *Fairly Random: On Compensating Audited Taxpayers*, 41 CONN. L. REV. 161, 191–94 (2008) (incorporating fairness into a welfarist model).

36. See, e.g., Kaplow, *supra* note 34, at 26 ("The degree of [utility] . . . is an empirical question . . ."); Harry Markowitz, *The Utility of Wealth*, 60 J. POL. ECON. 151, 158 n.11 (1952) (noting, in the context of discussing a particular utility function, that "[w]e seek a hypothesis to explain behavior, not a moral principle by which to judge behavior").

37. This would be the utility function $U(w) = w$.

farist might also choose a different social welfare function. A completely egalitarian social welfare function, for example, would require complete equality of welfare. A moderately egalitarian social welfare function would weight the utility of the less well-off more than the utility of the more well-off, because, all else being equal, such a function would recommend redistribution from the better-off person to the worse-off person.³⁸ For example, imagine a society comprising only two people: Penny, who is poor, and Rich, who is rich. Assume as well that Penny's next dollar would increase her utility by two utils, and Rich's last dollar increased his utility by two utils. A social welfare function that weighted Penny's utility twice as much as Rich's would require transferring a dollar from Rich to Penny, because giving Penny a dollar increases overall societal welfare by four utils (twice Penny's increase in utility), while taking a dollar from Rich decreases overall welfare by only two utils. Tax legal scholarship sometimes explicitly adopts or assumes a utilitarian social welfare function,³⁹ but more often does not specify a social welfare function. Whether the social welfare function is explicit or implicit, however, it remains a normative judgment.

A welfarist approach also usually incorporates the ideas of rational actors and expected utility.⁴⁰ To rationally maximize utility under this approach, a person determines the expected utility of an action by considering the utility of each possible outcome of an action, weighting the utility of each outcome by the probability of its occurrence, and summing the weighted utilities.⁴¹ For example, imagine a game in which a person gets \$1 if a coin flip turns up heads, but has to pay \$1 if the coin flip turns up tails. The expected value of playing that game is zero dollars: \$1 multiplied by the chance of getting heads (fifty per-

38. See KAPLOW, *supra* note 5, at 44–50 (discussing various social welfare functions).

39. See, e.g., *id.* at 370–90 (arguing that social welfare is “a function of individuals’ utilities”); Griffith, *supra* note 4, at 1364 (“How much . . . does redistributing income . . . increase total happiness . . . ?”); Posner, *supra* note 14, at 1811–13 (proposing the most efficient way to collect taxes); Shaviro, *supra* note 14, at 1319 (using a “utilitarian assessment of generational equity”).

40. Cf. Matthew D. Adler & Chris William Sanchirico, *Inequality and Uncertainty: Theory and Legal Applications*, 155 U. PA. L. REV. 279, 292–94 (2006) (listing various assumptions usually made by welfarists, and noting that they adopt these assumptions because they “facilitate [the] analysis and . . . demonstrate that the complex issues described in [the] Article arise within mainstream social welfare analysis”).

41. See Lawsky, *supra* note 6, at 1024–26 (describing expected utility).

cent), minus \$1 multiplied by the chance of getting tails (fifty percent).⁴² So the expected utility of the game is the utility of zero dollars, that is, zero.

This Article accepts welfarism's basic approach and assumptions, as described in this section. In addition to these assumptions, however, tax legal scholarship that incorporates a welfarist approach overwhelmingly assumes that individuals experience declining marginal utility of income.⁴³ It is to this assumption, the assumption of declining marginal utility, that this Article now turns.

B. DECLINING MARGINAL UTILITY

This section discusses a number of possible definitions of declining marginal utility, looks at the implications of declining marginal utility for tax policy, and examines the evidence for declining marginal utility.

1. What Is Declining Marginal Utility?

There are many ways to describe declining marginal utility. Most intuitively, declining marginal utility of income⁴⁴ means each dollar is worth less⁴⁵ than the dollar before. ("Marginal" utility of income refers, of course, to the utility of the dollar "at the margin," that is, the last dollar.) Equivalently, and more technically, strictly declining marginal utility of income means that the utility curve is strictly concave, that the slope of the utility curve is strictly decreasing, and that the second derivative of the utility curve is negative.⁴⁶ Figure 2 shows a utility function that has strictly declining marginal utility.

42. *Id.* at 1025.

43. *See, e.g.*, sources cited *supra* note 14.

44. By "income" I mean wealth (money saved) plus consumption (money spent). *See* HENRY C. SIMONS, PERSONAL INCOME TAXATION 41–58 (1938) (defining what has become known as the "Haig-Simons" concept of income). I do not mean *annual* income; the annual accounting system is simply an administrative convenience. *But see* Markowitz, *supra* note 36, at 151 n.4 (discussing the Friedman-Savage curve and noting that "I wish to avoid delicate questions of whether the relevant utility function is the 'utility of money' or the 'utility of income.' I shall assume that income is discounted by some interest rate, and I shall speak of the 'utility of wealth'").

45. Whatever that means. *See* discussion *supra* text accompanying notes 29–32.

46. A common utility function that displays strictly declining marginal utility of income (and is pleasantly tractable) sets the utility of income equal to its natural log, or

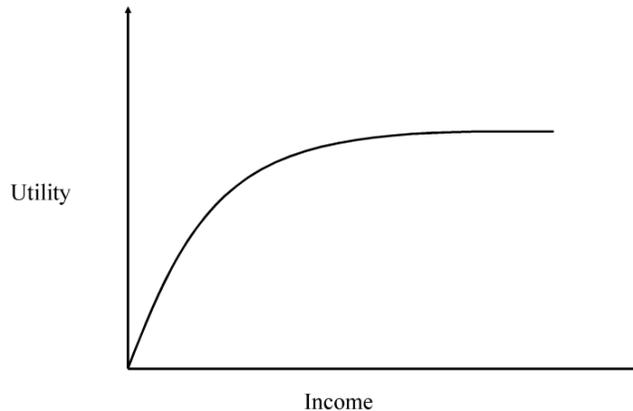


Figure 2: Declining Marginal Utility of Income

Less obviously, working strictly within expected utility theory, a person who has declining marginal utility of income is risk averse, and a person who is risk averse has declining marginal utility of income.⁴⁷ That is, a person experiences declining marginal utility if and only if he will pay to avoid risk. This can be illustrated intuitively.⁴⁸ Imagine a person who can either get a guaranteed \$10, or can play a coin-flipping game in which he gets \$9 if the coin comes up heads and \$11 if the coin comes up tails. If every dollar has the same utility to him, he should be indifferent between the guaranteed \$10, on the one hand, and playing the coin-flipping game, on the other hand. He is choosing between a one-hundred-percent chance of \$10, on the one hand, and a fifty-percent chance of \$11 and a fifty-percent

$$\begin{aligned}
 U(\text{income}) &= \ln(\text{income}) \\
 d/dx U(\text{income}) &= d/dx \ln(\text{income}) = 1/\text{income} \\
 d/dx 1/\text{income} &= -1/\text{income}^2
 \end{aligned}$$

Because income^2 is always positive, $-1/\text{income}^2$ is always negative. On the advantages of a logarithmic utility function, see, for example, Griffith, *supra* note 4, at 1367–68, which states that “[t]he popularity of the logarithmic utility function surely rests, in part, on its significant computational advantages. It may also roughly reflect some scholars’ intuitions.”

47. E.g., Matthew Rabin, *Diminishing Marginal Utility of Wealth Cannot Explain Risk Aversion*, in CHOICES, VALUES, AND FRAMES 202, 202 (Daniel Kahneman & Amos Tversky eds., 2000) (“Within the expected-utility framework, the concavity of the utility-of-wealth function is not only sufficient to explain risk aversion—it is also necessary: [d]iminishing marginal utility of wealth is the sole explanation for risk aversion.”).

48. For a description of the formal version of the following explanation, see KENNETH J. ARROW, ESSAYS IN THE THEORY OF RISK BEARING 90–120 (1971).

chance of \$9, on the other hand. The expected *value* (not the expected *utility*) of the latter is, of course, $(50\% \times \$11) + (50\% \times \$9) = \$5.50 + \$4.50 = \$10$.

If a person prefers the guaranteed \$10 over the gamble, there must be some reason why the expected *utility* of the gamble is less than the utility of its expected *value*, which is \$10. In other words, there must be some reason that getting one more dollar is not as good as getting one fewer dollars is bad. And within this system, there can be only one reason: the dollar that brings a person from \$10 to \$11 is worth less, has less utility, than the dollar that brings him from \$9 to \$10.

Somewhat more formally:

$$\begin{aligned} 50\% \times U(\$9) + 50\% \times U(\$11) &< U(\$10) \\ 50\% \times (U(\$9) + U(\$11)) &< U(\$10) \\ 2 \times 50\% \times (U(\$9) + U(\$11)) &< 2 \times U(\$10) \\ U(\$9) + U(\$11) &< U(\$10) + U(\$10) \\ U(\$11) - U(\$10) &< U(\$10) - U(\$9) \end{aligned}$$

This last equation means, of course, that the dollar that takes the person from \$10 to \$11 has less utility than the dollar that takes him from \$9 to \$10. But this is exactly what declining marginal utility means: the next dollar is “worth less,” or has less utility, than the previous dollar. Thus it is equivalent to say that the person does not want to take the gamble because he is “risk averse,” and to say that he does not want to gamble because he has declining marginal utility.

2. Implications of Declining Marginal Utility

If all individuals have the same utility curve, declining marginal utility supports redistributive taxation. The reasoning is simple: ignoring transaction costs, the dollar will “do more good” in the hands of the poor person than in the hands of the rich person. If Rich and Penny have the same utility curve, and that curve has declining marginal utility, taking \$100,000 from Rich and giving it to Penny increases overall utility, because getting \$100,000 increases Penny’s utility more than losing \$100,000 reduces Rich’s (see Figure 3). In other words, declining marginal utility can, assuming that all individuals have the same utility function, justify redistributive taxation.⁴⁹

49. At least, this is the common approach in the legal literature. *See, e.g.*, Shaviro, *supra* note 18, at 756 (“Utilitarianism motivates redistribution from better-off to worse-off individuals through the assumption of diminishing marginal utility If people have identical utility functions characterized by declining marginal utility, then transferring resources from better-off to worse-

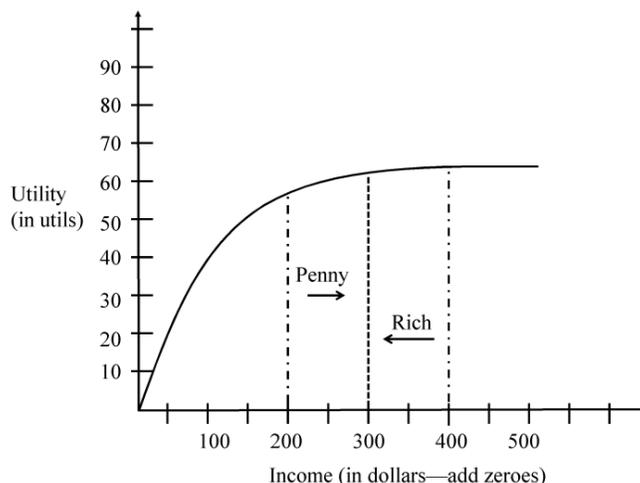


Figure 3: Redistribution on a Strictly Concave Curve

Moreover, the *only* reason to take a dollar from Rich (a person with more income) and give it to Penny (a person with less income) is that the dollar has more utility for Penny than for Rich.⁵⁰ There is no other reason to try to bring the amount of Rich's and Penny's income or utility closer together; there is no other reason to make them more equal.⁵¹ A utilitarian cares

off individuals will increase social welfare, all else equal."); Daniel Shaviro, *Endowment and Inequality*, in *TAX JUSTICE*, *supra* note 23, at 123, 137 ("Under a utilitarian calculus in which social welfare depends purely on the sum of people's utilities, the motive for progressive redistribution comes mainly from the assumption of declining marginal utility."); Weisbach, *supra* note 23, at S297 ("[D]eclining marginal utility of consumption . . . is an important motivation for redistribution."). This Article situates itself within the existing approach in the legal literature. It should be noted, however, that such an approach does not take into account the use that each person will make of the dollar. A rich person might, for example, invest the dollar in production, which could in turn increase overall social welfare. See David Schmitz, *Diminishing Marginal Utility and Egalitarian Redistribution*, 34 *J. VALUE INQUIRY* 263, 266–88 (2000) (arguing that redistribution might impair overall efficiency).

50. Even if this calculation somehow took into account the use that each person would make of the money, as described in Schmitz, *supra* note 49, at 266–88, the point remains that a purely welfarist inquiry is concerned only about the aggregation of individual welfare, not about other values.

51. See, e.g., KAPLOW, *supra* note 5, at 378 ("It is a property of a utilitarian [social welfare function] that individuals' marginal utilities count equally, whereas changes in utility levels per se are irrelevant."); Joseph Bankman, *What Can We Say About a Wealth Tax?*, 53 *TAX L. REV.* 477, 482–83 (2000) ("Most utilitarians believe that money has diminishing marginal utility and that interpersonal comparisons are possible. The belief in diminishing marginal utility in general pushes for equality of wealth But for the utilitar-

only about the sum of individuals' welfare, not about, say, social justice (unless social justice contributes to individuals' welfare).

C. EVIDENCE OF DECLINING MARGINAL UTILITY

Whether individual utility functions are strictly concave is an empirical question,⁵² one that, as this section explains, has no clear answer. This section investigates intuition, happiness research, and studies of risk aversion and shows that each provides some support for the proposition that individuals experience declining marginal utility of income, but none resolves the empirical question.

1. Intuition

That people experience declining marginal utility is an assumption that seemingly comports with intuition and day-to-day experience.⁵³ But, as this subsection explains, these intui-

ian, at the margin, the discovery of an extra level of utility enjoyed only by the wealthy would lead to less redistribution, not more.”).

52. *E.g.*, Bankman & Griffith, *supra* note 13, at 1948 (“[A]n individual utility function is value-free in the sense that it attempts to measure what *does* increase an individual’s utility rather than what *should* increase utility. A social welfare function, on the other hand, reflects an explicit normative theory of the nature of a good society.”); Kaplow, *supra* note 34, at 26, 37 (defining an individual’s utility by $U(y)$, a function of disposable income, and noting that “[t]he degree of concavity of $U(y)$. . . is an empirical question because it is reflected, for example, in behavior under uncertainty,” and finding fault with such an assertion because it “mixes empirical judgments about individuals’ utility functions and normative judgments about the welfare function. The former, of course, is not a matter of the analyst’s preferences. The latter may be, but ultimately must be justified”).

53. *See, e.g.*, Blum & Kalven, *supra* note 8, at 472 (stating that declining marginal utility seems “intuitively correct,” and suggesting that “[i]f through introspection we imagine ourselves in the two positions we are likely to feel that the loss of a dollar at the \$1,000 level would be quite a different matter than its loss at the \$100,000 level”); Friedman & Savage, *supra* note 22, at 282 (discussing “a strong introspective belief in diminishing marginal utility”); Martin J. McMahon, Jr. & Alice Abreu, *Winner-Take-All Markets: Easing the Case for Progressive Taxation*, 4 FLA. TAX REV. 1, 34 (1998) (“[W]e believe that to neglect the concept of the diminishing marginal utility of money is to ignore reality. The experiential case for the proposition that money has diminishing marginal utility is so strong that those who argue that it does not should be forced to bear the burden of proof.”); Joel B. Slemrod, *Progressive Taxes*, LIBR. ECON. & LIBERTY, <http://www.econlib.org/library/Enc1/ProgressiveTaxes.html> (last visited Oct. 31, 2010) (referring to the idea that “paying a dollar is a lesser sacrifice for a well-to-do person than for a poor person” as “plausible, but unprovable”).

tions are open to question.⁵⁴

Many commodities have declining marginal utility: the first chocolate chip cookie tastes wonderful, the tenth not as good, and the hundredth downright unpleasant.⁵⁵ But not all commodities are like chocolate chip cookies, and depending on how one defines utility, some commodities might even have increasing marginal utility. One's craving for heroin, for example, might increase over time (even if the experience becomes less and less enjoyable). Moreover, the desire for chocolate chip cookies would change if it were possible not only to eat them, but also to trade them for almost anything else.

There is, however, intuitive support for declining marginal utility not only of commodities (such as chocolate chip cookies), but also of income itself.⁵⁶ It makes sense that someone first buys the things he values more, and buys less important things later, thus deriving more pleasure from, or satisfying more intense preferences with, the first dollars spent.⁵⁷ For example, a

54. A version of this argument is made in Sarah Lawsky, *My Most Awesomest PrawfsBlawg Post Ever*, PRAWFSBLAWG (Dec. 3, 2009, 11:48 AM), <http://prawfsblawg.blogs.com/prawfsblawg/2009/12/my-most-awesomest-prawfsblawg-post-ever.html>.

55. See also Ben Reeves, *Why Some Franchises Need to Accept Death*, GAME INFORMER, Sept. 2009, at 36 ("Why can't we end a successful video game series at its peak? Here's the problem: It's hard to keep a property fresh and exciting over a long period of time. Memorable gameplay elements are joyful the first time they happen, but their allure wanes each time they are implemented. . . . Economists call it declining marginal utility.").

56. See, e.g., McMahon & Abreu, *supra* note 53, at 33 ("The proposition that money has diminishing marginal utility follows from the empirical observation that all of the goods and services that money purchases have declining marginal utility.").

57. See, e.g., Blum & Kalven, *supra* note 8, at 472 ("[Declining marginal utility] seems to follow from the assumption that a man tries to dispose of his income in a way that maximizes the satisfactions which he can get from it. That is, he arranges to satisfy his most important needs first, and so on down the line."). This point was also raised early in the debates over the income tax.

If it be desired to tax individual income in such manner as to press lighter, in proportion as that income approaches to the confines of bare necessity, taxation must not only be equitably apportioned, but must press on revenue with progressive gravity. . . . [With non-progressive taxation a wealthy family] could not only live in abundance, but could still enjoy a vast number of gratifications by no means essential to happiness. Whereas [a poorer family subject to the same tax rate] would, with our present habits of life and ways of thinking, be stinted in the bare necessities of subsistence. Thus a tax merely proportionate to individual income would be far from equitable.

CONG. GLOBE, 38TH CONG., 1ST SESS. 2514 (1864) (statement of Sen. Charles Sumner) (quoting JEAN-BAPTISTE SAY, A TREATISE ON POLITICAL ECONOMY, bk. III, ch. VIII, at 417–18 (C.R. Prinsep trans., John Grigg ed., 3d Am. ed. 1827)).

person with less money might buy groceries, not theater tickets, while a person with more money would buy both groceries and theater tickets, and this might lead us to conclude that the person derives more utility from groceries than from theater tickets.⁵⁸ But while some people might have a fixed list of desires and satisfy those desires in order, people might also change their wants and needs, and how they rank and weight those wants and needs, over time.⁵⁹ A person's desires might change because his wealth increases or decreases,⁶⁰ or because of other life changes (for example, his family make-up changes), or because trends change, or simply because time passes.

A third common defense of declining marginal utility is that some rich people buy very expensive, frivolous, strange things.⁶¹ Malcolm Forbes, for example, threw himself an extravagant seventieth-birthday party in Morocco that cost about

58. Donna M. Byrne, *Progressive Taxation Revisited*, 37 ARIZ. L. REV. 739, 767 (1995).

59. See generally PREFERENCE CHANGE: APPROACHES FROM PHILOSOPHY, ECONOMICS AND PSYCHOLOGY (Till Grüne-Yanoff & Sven Ove Hansson eds., 2009) (discussing recent advances in modeling and theory related to understanding preference change).

60. See, e.g., Blum & Kalven, *supra* note 8, at 475–76 (“It is not plausible that the most important wants of a man with a \$5000 income remain his most important wants when he has an income of \$25,000. As his income changes his way of life changes. He becomes in effect a man with a different hierarchy of wants and values.”).

61. See, e.g., Martin J. McMahon, Jr., *Individual Tax Reform for Fairness and Simplicity: Let Economic Growth Fend for Itself*, 50 WASH. & LEE L. REV. 459, 464 (1993) (“[S]imple observation tells us that . . . money clearly has diminishing marginal utility. Even without first hand data, one need only watch the television show ‘Robin Leach’s Lifestyles of the Rich and Famous’ or read about Malcolm Forbes’ birthday party in Morocco to realize that individuals with large fortunes or incomes are not as careful about how they spend their dollars as those of modest means—the middle class, however it may be defined.”); McMahon & Abreu, *supra* note 53, at 35 (“[S]ignificant anecdotal evidence indicates that those with very high incomes attach very little value to tens of thousands, or even millions, of dollars. . . . Witness the \$2 million birthday party that Malcolm Forbes threw for himself in Morocco in 1989, or Bill Gates’ new \$100 million mansion, or consider Ross Perot and Steve Forbes’s self-financed runs for the presidency.”); see also, e.g., CONG. GLOBE, 38TH CONG., 1ST SESS. 1876–77 (1864) (statement of Rep. Josiah Grinnell) (“It is time that extravagance in gewgaws, snobbishness in display, and that large class whose great care is to safely compound their hundreds of thousands, should feel that there is war and a demand which they have not yet felt on their purses and on their patriotism To equalize burdens and mete equal justice is the purpose of my amendment. Let colossal wealth . . . meet the full share of burdens.”).

\$2 million.⁶² Forbes chartered jets to fly 800 friends to Morocco where he presented them with, among other attractions, a fireworks display, 600 belly dancers, a staged Moroccan cavalry charge, and Beverly Sills singing “Happy Birthday.”⁶³ Surely a dollar that buys a poor person bread does more good than a dollar that buys one two-millionth of Malcolm Forbes’s birthday party.

But there is a gap between “doing good” and utility. An argument that gives weight to “doing good” or meeting people’s basic needs, rather than happiness, or desire, or preference, is a reasonable way to approach moral judgments, but it is a very particular approach, and not identical to the more common preference-based and subjective well-being approaches to welfarism.⁶⁴ Most welfarists, by definition, take into account only factors that affect individual, self-regarding welfare functions, not a larger concern for societal good defined non-individualistically.⁶⁵

Moreover, even if comparing the tastes of a few very wealthy people to the needs of the very poor shows that the wealthy (at least, certain very wealthy people) have lower marginal utility than the poor,⁶⁶ such a comparison does not provide a way to compare the marginal utility of the vast majority

62. This was \$2 million in 1989, which is equivalent to about \$3.5 million in 2010. *Inflation Calculator*, BUREAU OF LAB. STATS., <http://data.bls.gov/cgi-bin/cpicalc.pl> (last visited Oct. 31, 2010) (stating that \$2 million in 1989 had the same buying power as \$3,516,274.19 in 2010).

63. See, e.g., Ben Macintyre, *Palace Where Father Partied*, *TIMES* (London), Aug. 19, 1999, at 18.

64. Indeed, this might not be welfarism at all. See *supra* notes 27–34 and accompanying text.

65. See ADLER & POSNER, *supra* note 20, at 28–29 (suggesting that traditional theories of welfare focus on what conditions cause an individual person to feel better off).

66. E.g., Bankman & Weisbach, *supra* note 15, at 1421 (“Redistributing one dollar from the trust-fund baby to the working poor is likely to increase overall welfare. Paris Hilton very likely has a much lower marginal utility of money than someone slaving in the salt mines sixty hours a week to support his family. Redistribution from Paris Hilton to the worker makes sense.”); Daphna Lewinsohn-Zamir, *Identifying Intense Preferences*, 94 *CORNELL L. REV.* 1391, 1415 (2009) (“As with comparable generalizations, one should rely upon this assumption [of declining marginal utility] cautiously. . . . [L]egal rules should aim at the relatively extreme cases: those in which the marginal utility to the recipients is likely to be especially large since they have no, or very little, of the (re)allocated good. In such cases, one may quite confidently assume that the marginal utility gain to the receivers is large enough to outweigh the possibility that the nonreceivers of the good would extract greater utility from it.”).

of income levels, which fall between the extremes of impoverished and blindingly wealthy. We need to know about the shape of the utility curve in this middle range to justify redistribution from anyone other than the extremely rich to anyone other than the extremely poor.

Finally, intuition can weigh against declining marginal utility as well as for it. As discussed above, declining marginal utility is, in expected utility theory, the same as risk aversion. If someone has declining marginal utility, he is risk averse, and if he is risk averse, he has declining marginal utility. But while it might seem obvious that a wealthy person values a dollar less than a poor person, it is less obvious that everyone is risk averse. In fact, the claim that everyone is risk averse might seem counterintuitive: some people love to gamble or play the stock market, or choose to become entrepreneurs instead of taking a job with a fixed salary.

In short, intuitive appeals are not proof, especially intuitive appeals as open to question as are these. Declining marginal utility is, after all, an empirical question about the world, and thus the next subsections investigate empirical evidence for declining marginal utility.

2. Happiness Studies

The best evidence for declining marginal utility comes from so-called happiness studies. There are a number of different sorts of such studies. Some simply ask subjects general questions, such as, “Taking all things into account, how happy are you these days?”⁶⁷ Others assess subjects from moment to moment, asking them throughout the day whether and how much they like what they are doing.⁶⁸ These surveys show that reported happiness increases with money, but the more money one has, the less additional happiness is reported from each additional dollar, and thus they provide evidence for declining marginal utility of money.⁶⁹ The surveys do not, however, prove declining marginal utility, for at least four reasons.

67. Layard et al., *supra* note 30, at 1848. For a general discussion of happiness surveys and other empirical measurements of welfare, see Matthew D. Adler, *Welfare Polls: A Synthesis*, 81 N.Y.U. L. REV. 1875 (2006).

68. See, e.g., Kelman, *supra* note 29, at 404 (describing “ecological momentary assessment”).

69. See, e.g., Griffith, *supra* note 4, at 1374, 1397 (noting some problems with happiness surveys, but concluding that happiness surveys show that “[a]dditional income increases the utility of the citizens of all nations but has the greatest effect where those citizens are poor,” and that “[t]he classic notion

The first three problems with the happiness studies are common problems with a variety of empirical studies. First, happiness studies provide information only about self-reported happiness, which is not, of course, the same as actual happiness.⁷⁰ Various cognitive biases may distort people's reports. More recent experiences tend to loom larger in people's minds, for example, so a recent happy day may color one's reporting of an entire week.⁷¹ Or testing conditions might distort one's answers—depressing testing conditions may make subjects report less happiness, while cheerful testing conditions may have the opposite effect.⁷²

How a researcher frames questions can also affect people's answers. One study asked students to recall three positive or three negative recent events.⁷³ Unsurprisingly, the students reported higher current life satisfaction after they recalled the three positive events.⁷⁴ Other respondents, however, were asked to recall events that had happened in the more distant past (at least five years before).⁷⁵ In contrast to the group that

of declining marginal utility throughout the income distribution remains sound"); Layard et al., *supra* note 30 (reviewing "six major [happiness] surveys" and concluding that marginal utility as against income falls somewhat faster than it would if marginal utility were inversely proportional to income); Andrew J. Oswald, *On the Curvature of the Reporting Function from Objective Reality to Subjective Feelings*, 100 *ECON. LETTERS* 369, 369 (2008) ("Large numbers of investigators . . . who have estimated subjective well-being regression equations on individual [happiness] data . . . have discovered that allowing for a concave form . . . in income fits reported well-being data better than a linear income term.").

70. See Griffith, *supra* note 4, at 1368 ("Answers to survey questions likely act as imperfect measures of actual happiness.").

71. See, e.g., Adler, *supra* note 67, at 1915; Griffith, *supra* note 4, at 1369. The "peak-end" rule provides a similar example of the availability heuristic: in repeated studies, the amount of pain subjects reported in retrospect was best predicted not by the most painful moment experienced during the experiment, but by averaging the most painful moment and the last moment of the experiment. Thus the peak amount of retrospectively reported pain could be reduced simply by tacking on thirty less painful seconds at the end of the experiment. Adler, *supra* note 67, at 1918; Griffith, *supra* note 4, at 1369.

72. See, e.g., Griffith, *supra* note 4, at 1370 ("Subjects interviewed on a sunny day are more likely to report satisfaction with their lives as a whole than subjects interviewed when it is raining.").

73. Norbert Schwarz & Fritz Strack, *Reports of Subjective Well-Being: Judgmental Processes and Their Methodological Implications*, in *WELL-BEING: THE FOUNDATIONS OF HEDONIC PSYCHOLOGY* 61, 65 (Daniel Kahneman et al. eds., 1999); see also Adler, *supra* note 67, at 1918 (citing Schwarz & Strack, *supra*, at 62–74).

74. Schwarz & Strack, *supra* note 73, at 65.

75. *Id.*

had recalled recent events, the students who recalled events in the more distant past reported higher current life satisfaction after recalling the negative events.⁷⁶ The students seemed to have included the recent events in their evaluation of their current happiness, but used the distant events as a comparison for their current state of mind (which benefited from the comparison).⁷⁷

Second, and more generally, reported happiness may decline more quickly than does actual happiness.⁷⁸ Imagine a person who is asked to rank how he feels on a happiness scale. First, he figures out how happy he *is*; then he decides how happy he should *say* he is. He might be unwilling ever to rank himself as a five on a happiness scale of one through five, with five as the happiest, perhaps because he does not want to suggest that he could never be happier.⁷⁹ The curve of reported happiness could thus be more concave than the curve of actual happiness.⁸⁰ That is, each additional dollar might increase actual happiness more than it increased reported happiness. It is likely that the concavity of the reporting function does not fully explain the concavity of the results of the happiness studies, but the relationship between reported happiness and actual happiness is unknown.⁸¹

Third, a number of happiness studies examine cross-sections of groups at a particular point in time, not groups across time.⁸² That is, such studies do not reveal what happens to a particular group as its income increases; rather, they compare different groups with different amounts of income.⁸³ While these cross-sectional studies generally show declining marginal utility, studies across time may, as Richard Easterlin has pointed out, provide a different answer.⁸⁴ Indeed, when Easterlin analyzed data from Japan and from the United States, he

76. *Id.*

77. *Id.*

78. *E.g.*, Oswald, *supra* note 69, at 369–71; Weisbach, *supra* note 23, at S308.

79. *See* Oswald, *supra* note 69, at 370.

80. Oswald, *supra* note 69, at 369–71; Weisbach, *supra* note 23, at S308.

81. Weisbach, *supra* note 23, at S308–09.

82. *See, e.g.*, Richard A. Easterlin, *Diminishing Marginal Utility of Income? Caveat Emptor*, 70 SOC. INDICATORS RES. 243, 244 (2005).

83. *Id.* (“[T]he diminishing returns generalization is based on data for a single point of time and on a simple bivariate comparison of happiness or life satisfaction with income . . .”).

84. *Id.*

found that even as these countries experienced economic growth, reported happiness did not increase significantly.⁸⁵ Easterlin did not conclude that his results would be universal, or that happiness was constant; he simply warned that cross-sectional studies are “not necessarily a trustworthy guide to experience over time or to inferences about policy.”⁸⁶

Finally, and most crucially, not everyone believes that welfare is equivalent to or well approximated by happiness.⁸⁷ Studies consistently find, for example, that having children makes people less, not more, happy.⁸⁸ One could respond to these studies with rage or doubt, but another possible response could be, so what? Having children could nonetheless be desirable and welfare increasing if welfare means more than emotional well-being or enjoyment or moment-to-moment happiness.⁸⁹ One might believe, for example, as many people do, that individual well-being consists in preference satisfaction, and thus includes not only happiness, but also “physical integrity, [one’s] physical security, [one’s] children’s well-being, whether [one] belongs to a group that is legally or socially subordinated, and other items that are not mental states.”⁹⁰ Happiness studies are even more problematic if one takes a laundered-preference view of welfare⁹¹ and believes that utility should be determined by taking into account only those preferences that are self-interested and laundered, or idealized.⁹² Under this account, while happiness and other welfare studies that examine only subjective well-being may be consistent with declining marginal utility, they

85. *Id.* at 246–51.

86. *Id.* at 253.

87. See Diane M. Ring, *Why Happiness? A Commentary on Griffith’s Progressive Taxation and Happiness*, 45 B.C. L. REV. 1413, 1414 (2004) (“Happiness is a likely component of utility, but its selection requires us to consider what the term does and does not capture. How, and in what ways, is happiness a good proxy for measuring utility? How does it compare to the concept of well-being. . . ?”); *supra* Part I.A.

88. See, e.g., Lorraine Ali, *True or False: Having Kids Makes You Happy*, NEWSWEEK, July 14, 2008, at 62, available at <http://www.newsweek.com/id/143792>.

89. See *id.* (“Parents still report feeling a greater sense of purpose and meaning in their lives than those who’ve never had kids.”).

90. Adler & Posner, *supra* note 31, at S265.

91. A “laundered-preference approach” is an approach that gives weight not to people’s actual preferences, but rather to the imagined preferences of an informed, rational individual who acts only out of self-interest. See *supra* note 30 and accompanying text.

92. E.g., ADLER & POSNER, *supra* note 20, at 30–35; Adler & Posner, *supra* note 31, at S254.

cannot establish the shape of an individual's overall utility curve, because happiness is not identical to utility.

Thus, while happiness studies are suggestive, they do not establish declining marginal utility of income.

3. Risk Aversion

Studies of attitudes toward risk also provide evidence that income has declining marginal utility.⁹³ Recall that within the expected utility framework, declining marginal utility is equivalent to risk aversion. Thus, within expected utility, evidence of risk aversion is evidence of declining marginal utility. And there is copious evidence that people are risk averse.⁹⁴

For example, people buy insurance, which is consistent with risk aversion. Insurance is priced so that it has negative expected value. (Otherwise the insurance company would go out of business.) A person who has a house worth \$1000 and a one percent chance of that house burning down has an expected value of \$990, and some risk—he might lose no money, and he might lose \$1000.⁹⁵ Insurance that will fully compensate him for the loss will remove that risk, because whether or not his house burns down, he has his \$1000 (whether in the form of his house or in the form of cash).⁹⁶ Thus if the insurance costs \$10, he still has an expected value of \$990, but he has no risk.⁹⁷ The insurance cannot cost \$10, though, because an insurance company has to charge more than \$10 for this insurance in order to stay in business. The purchaser in turn must have a lower expected *value* (not expected *utility*) from buying insurance than from not buying insurance.⁹⁸ If the insurance company charges

93. See, e.g., William Vickrey, *Measuring Marginal Utility by Reactions to Risk*, 13 *ECONOMETRICA* 319, 324–33 (1945) (discussing analysis of utility in terms of individual choices involving risk).

94. See, e.g., Roger Hartley et al., *Who Really Wants to Be a Millionaire? Estimates of Risk Aversion from Gameshow Data* 3–7 (Univ. of Warwick, Warwick Econ. Res. Paper No. 719, 2005) (reviewing empirical research showing various levels of risk aversion).

95. $(0.99 \times \$1000) + (0.01 \times \$0) = \$990$.

96. “Worth \$1000” means, in this example, the subjective value of the house to the house's owner. That is, the owner in this example has insured the house for an amount of cash that he values as much as he values his house.

97. Whether the house burns down or not he has \$1000, plus he has to pay \$10 to buy the insurance.

98. The expected *value* is the number of dollars expected from the insurance purchase, obtained by weighting the amount of money received from each possible outcome by the probability of that outcome. The expected *utility* is how much the particular individual in question enjoys or derives satisfaction from

\$15, for example, the purchaser's expected value if he buys insurance is \$985,⁹⁹ whereas his expected value if he does not buy the insurance is, as we have seen, \$990.¹⁰⁰ But many people buy insurance nonetheless, which means that they are willing to pay to get rid of risk.¹⁰¹

That people are risk averse in certain situations does not necessarily prove that their utility curves have declining marginal utility. Matthew Rabin has shown, for example, that declining marginal utility is not a plausible explanation for risk aversion at moderate or small stakes.¹⁰² If risk averse behavior can stem from something other than declining marginal utility, then showing that individuals are risk averse does not prove that individuals have declining marginal utility. In fact, a better explanation for small-scale risk aversion is probably loss aversion: people care more about losing what they already have than about getting something they do not yet have.¹⁰³

Within expected utility theory, however, risk aversion evidence generally supports declining marginal utility.¹⁰⁴ Nonetheless, as the next Part shows, some behavior cannot be explained by strictly declining marginal utility.

that amount of money. See generally the discussion of utility *supra* text accompanying notes 29–36.

99. Whether the house burns down or not he has \$1000, plus he has to pay \$15 to buy the insurance.

100. See *supra* note 95.

101. Savings is sometimes cited as evidence for declining marginal utility, as it can be seen as a form of insurance against future lower income. See, e.g., Stein, *supra* note 10, at 382–84. The United States has an extremely low personal saving rate, however. See, e.g., *Personal Saving Rate*, BUREAU ECON. ANALYSIS, <http://www.bea.gov/briefrm/saving.htm> (last visited Oct. 12, 2010) (finding a personal savings rate of between one percent and about five percent of disposable personal income for 2008, 2009, and the first quarter of 2010).

102. Matthew Rabin, *Risk Aversion and Expected-Utility Theory: A Calibration Theorem*, 68 *ECONOMETRICA* 1281, 1282–88 (2000) (using the example of someone who is risk averse in the range of approximately \$100); see also Rabin, *supra* note 47, at 202–05 (same); Matthew Rabin & Richard H. Thaler, *Anomalies: Risk Aversion*, 15 *J. ECON. PERSP.* 219, 220–24 (2001) (same).

103. Rabin & Thaler, *supra* note 102, at 226–27; see also PETER P. WAKKER, *PROSPECT THEORY FOR RISK AND AMBIGUITY*, ch. 8 (forthcoming 2010). As Rabin and Thaler point out, myopic loss aversion explains insurance purchases much better than does expected utility theory. Instead of purchasing insurance with high deductibles and a lot of coverage, most insurance policies have low deductibles and low levels of coverage. Rabin & Thaler, *supra* note 102, at 228.

104. See *supra* notes 93–94 and accompanying text.

II. AN ALTERNATIVE UTILITY CURVE

As the last Part showed, declining marginal utility of income is at least superficially consistent with intuition, and some evidence supports that, for some people, income has declining marginal utility. However, the evidence is not conclusive, and, as has long been recognized, some behavior is not consistent with declining marginal utility of income. For example, declining marginal utility, or risk aversion, does not explain why people sometimes seem to prefer risk—why, for example, many people play the lottery. And even more confusingly, some people seem to be both risk averse and risk preferring—for example, they both buy insurance and they play the lottery. This Part focuses on one solution to this apparent inconsistency: a modified utility curve, first proposed in 1948 by Milton Friedman and Leonard Savage, and thus known as the Friedman-Savage utility curve.¹⁰⁵ After describing the Friedman-Savage curve, this Part reviews evidence that some people do have utility functions that are better captured by Friedman-Savage curves than by curves with only declining marginal utility and then discusses the implications of such utility curves for tax policy.

This discussion is not meant to prove that the Friedman-Savage curve is the correct utility curve, nor that evidence is necessarily stronger for Friedman-Savage utility curves than for strictly concave utility curves. Rather, this Part problematizes the assumption of declining marginal utility by presenting evidence for utility curves that are not strictly concave.

A. INTRODUCING THE FRIEDMAN-SAVAGE CURVE

As discussed above, if one accepts an expected utility framework, declining marginal utility is equivalent to risk aversion. But while many people are risk averse in some situations, some seem never to be risk averse, and others are only sometimes risk averse. For example, people play the lottery, and playing the lottery is risk-preferring behavior. A person with \$10 has \$10, with certainty. A person who begins with \$10 and pays \$10 for a lottery ticket that has a one-percent chance of paying \$1000 has moved himself into a riskier position: he might end up with \$0, or he might end up with \$1000. The expected value of a lottery ticket with a one-percent chance of \$1000 is, of course, \$10, so a person who was risk neutral would

105. Friedman & Savage, *supra* note 22.

have no preference between keeping his \$10 or buying the ticket. But lotteries, like insurance, have negative expected value—that is, the states running the lotteries make money.¹⁰⁶ So a lottery ticket that had a one-percent chance of winning \$1000 would cost, say, \$15, not \$10. The expected value of that ticket is still \$10, so a person who buys the ticket for \$15 has an expected value of negative \$5. A person who plays the lottery is thus willing to pay to assume risk.¹⁰⁷

That people play the lottery and engage in other risk-preferring behavior presents a problem for expected utility theory if people are considered to have uniformly declining marginal utility. Expected utility theory imagines that a person chooses among alternatives by figuring out the relative utility (whatever that might be) of various options, weighting each option by the probability that it will occur, and then picking the option (or set of options) with the highest expected utility. But if people have declining marginal utility, expected utility theory cannot explain lotteries. People with declining marginal utility are risk averse, and thus should have to be paid to take on risk. They certainly should not be willing to pay for it.

One possible explanation for why people with declining marginal utility play the lottery is that lottery players have bad information. They might be ill-informed—for example, they might not know the chances of winning. Or they might not understand probability, and thus cannot figure out that paying a dollar for a one-in-200-million¹⁰⁸ chance of winning \$20 million has a negative expected value, as the expected value of a lottery with a one-in-200-million chance of winning \$20 million is, of course, ten cents. Thus the old saying, “The lottery is a tax on people who are bad at math” (or “the lottery is a tax on the stupid”).¹⁰⁹ But this is a dangerous explanation of lottery play for

106. It is more accurate to say that lotteries *almost* always have a negative expected value. If the pot gets big enough, as sometimes happens in cumulative lotteries like Powerball, it is actually worthwhile to play—or would be, if not for taxes, which push the expected value of the lottery negative again. *See, e.g.,* Jordan Ellenberg, *Is Powerball a Mug's Game?*, SLATE (Aug. 31, 2001, 8:30 PM), <http://www.slate.com/id/114577>.

107. *See generally* EDWIN J. ELTON, MODERN PORTFOLIO THEORY AND INVESTMENT ANALYSIS 246–48 (7th ed. 2007) (describing utility functions in terms of risk aversion, risk neutrality, and risk preference).

108. *See, e.g.,* *Powerball Payouts*, COLO. LOTTERY, <http://www.coloradolottery.com/index.cfm/ID/19/Payouts/> (last visited Oct. 14, 2010) (stating that the chance of winning or sharing the Powerball jackpot is one in 195,249,054).

109. Figuring out the expected value of Powerball is slightly more complex than simply dividing \$20 million by 200 million. Both the odds and the

those who are committed to expected utility theory and welfarism. If common behavior (gambling, or, more generally, taking on risk) can be explained only by acknowledging that people are irrational, expected utility theory loses much of its descriptive and predictive value.

The strongest explanation for risky behavior that is consistent with both expected utility theory and declining marginal utility is that people play the lottery (or engage in other risky behavior) because they enjoy the activity itself.¹¹⁰ Playing the lottery might be like any of a number of other leisure activities, such as going to the movies or playing basketball. The lottery might be enjoyable because of the thrill one gets from the moment when the balls are drawn, or, more likely, it might be enjoyable because it allows people to dream about what life would be like if they had a million dollars. Ads for various state lotteries play off this idea: the New York State Lottery, for example, ran a series of extremely successful ads, set to the song “If I Had a Million Dollars,” that featured ordinary people musing about what they would do with a million dollars.¹¹¹

While the consumption value of the lottery—the pleasure of playing, or of dreaming about winning—probably does explain part of why people play the lottery, it falls short of a complete explanation both practically and theoretically if one is committed to expected utility theory. First, one can dream about becoming rich unexpectedly whether or not one plays the lottery.¹¹² For example, someone might dream of finding a bag

amount of money at stake vary depending on how many people play and how long it has been since someone won the jackpot. There are also different sorts of Powerball tickets available, and a player wins some money for matching fewer than six balls. *See, e.g., How to Play, POWERBALL*, http://www.powerball.com/powerball/pb_howtoplay.asp (last visited Oct. 17, 2010).

110. *See, e.g.,* Lloyd R. Cohen, *The Lure of the Lottery*, 36 WAKE FOREST L. REV. 705 *passim* (2001) (arguing that playing lotteries is rational because lottery play is a consumption decision).

111. Rich Thomaselli, *NY Lottery Breaks Second Ad Wave*, ADVERTISING AGE, Feb. 25, 2002, at 6; Matt Pacenza, *If I Had a Gambling Problem*, CITY LIMITS MAG. (Mar. 2002), http://www.citylimits.org/content/articles/viewarticle.cfm?article_id=2713 (quoting a New York State Lottery spokesperson as saying that sales of lottery tickets had increased “significantly” since the campaign began).

112. *See, e.g.,* McCaffery, *supra* note 4, at 92 (“[A]nyone can daydream about being rich.”). Indeed, while it is true that “you can’t win if you don’t play,” as an old Illinois Lottery slogan had it, it is not true that you can’t dream if you don’t play. (Given the extremely long odds against winning the lottery, “you can’t win even if you do play” is also not so far from the truth.)

of money on the ground,¹¹³ or of discovering that a great-uncle she never knew has left her his riches.¹¹⁴ But more seriously, taking consumption value into account proves both too much and too little.¹¹⁵ The consumption value of lotteries is, technically, integrated into the expected utility model by adding another function, a “dream function,” onto the usual expected utility calculation. Such a function might explain why lotteries exist, but it does not explain their structure—the probability of winning, the size of prizes, and so forth.¹¹⁶ Moreover, whatever one observes can be “explained” by selecting the appropriate dream function.¹¹⁷

Milton Friedman and Leonard Savage proposed another solution to the mystery of risk preferrers. They recognized that risk-seeking behavior was inconsistent with expected utility theory if all individuals experience declining marginal utility of income.¹¹⁸ But instead of questioning expected utility theory, either by accepting that people behave so irrationally as to make expected utility analysis far less useful than it might otherwise be, or by expanding the utility function, Friedman and Savage offered an alternative approach to the shape of individuals’ utility curves.¹¹⁹

Risk-preferring behavior can, of course, be explained by a utility curve with increasing marginal utility. But such a curve does not resolve the problem, because many people choose to purchase both lottery tickets and insurance—that is, they en-

113. See, e.g., *MILLIONS* (Fox Searchlight Pictures 2004) (presenting a story in which the main character becomes wealthy after a bag of money is flung at him from a train); *SHALLOW GRAVE* (Film4 Pictures 1994) (presenting a story in which the main character discovers a substantial amount of cash in a suitcase).

114. See, e.g., *BEVERLY CLEARY, RAMONA FOREVER 4* (1984) (stating that Mr. Quimby “thought maybe [Howie Kemp’s] long-lost uncle had died and left him a castle full of servants, jewels, and rare old wines”); William Meredith, *The Illiterate*, in *THE ART OF THE SONNET* 298, 298 (Stephen Burt & David Mickis eds., 2010) (“I am like a man / Who turns a letter over in his hand / And you might think this was because the hand / was unfamiliar but, truth is, the man . . . / has no other means / To find out what it says than to ask someone. / His uncle could have left the farm to him . . .”).

115. Roger Hartley & Lisa Farrell, *Can Expected Utility Explain Gambling?*, 92 AM. ECON. REV. 613, 614–15 (2002).

116. *Id.* at 615.

117. *Id.*

118. Friedman & Savage, *supra* note 22, at 280 (“Not only do risky occupations and risky investments not always yield a higher average return than relatively safe occupations or investments, they frequently yield a much lower average return.”).

119. *Id.* at 282 (introducing the “special” curve).

gage in both risk-averse and risk-preferring behavior. Friedman and Savage thus suggested that people may experience declining marginal utility for some lower range of income, and increasing marginal utility for a higher range.¹²⁰ This is represented by a utility curve with an initial concave section, representing risk aversion, followed by a convex section, representing risk preference (Figure 4).



Figure 4: A Utility Curve for Gamblers Who Buy Insurance

While a curve like that in Figure 4 explains someone who both buys insurance and plays the lottery, it does not quite solve the problem. If the utility curve remained convex, lotteries would always make more money by having one big prize, rather than many little prizes.¹²¹ But lotteries typically offer several prizes, not one huge prize. Friedman and Savage solved this problem by adding a third, concave section.¹²² This is the

120. *Id.* at 295.

121. For an intuitive sense of why this is true, imagine a lottery promoter who wants to make as much money as possible. Because the marginal utility of income increases, the utility of \$100 is more than twice as much as the utility of \$50. So the promoter can earn more by offering one chance at \$100 than he can by offering two chances at \$50. *See also id.* at 296–97 (providing a more detailed mathematical analysis of why lotteries have many smaller prizes).

122. This use of “concave” and “convex” is consistent with the current general approach. Friedman and Savage, however, describe their curve as “two convex segments . . . corresponding to qualitatively different socioeconomic levels, and [a] concave segment [corresponding] to the transition between the two levels.” *Id.* at 298. Friedman and Savage wrote in the 1940s, when the domi-

Friedman-Savage curve. For the lowest range of income, marginal utility declines. For a middle range of income, marginal utility increases. And above some level of income, marginal utility declines again (Figure 5). The Friedman-Savage curve does not, of course, describe reality; it is a simplification of reality (and does not purport to be otherwise).¹²³ The Friedman-Savage curve provides an explanation for insurance and risky behavior that is entirely internal to expected utility theory.

nant approach was to imagine examining the curve from above, whereas currently the approach is to imagine examining the curve from below. That is, they are describing the curve as having two convex “from above” segments (because upon observation from above, the two sections appear to curve away from the viewer), whereas I describe the curve as having two concave “from below” segments (because on observation from below, the two segments seem to curve toward the viewer). *See, e.g.*, OXFORD ENGLISH DICTIONARY 646 (2d ed. 1989) (defining concave as “having a curvature that presents a hollow *to the point of observation*,” and convex as “having a curvature that bulges *toward the point of observation*” (emphasis added)); Friedman & Savage, *supra* note 22, at 294 (using the terminology “convex from above” and “concave from above”); Adolf Kozlik, *Note on the Terminology Convex and Concave*, 31 AMER. ECON. REV. 103, 104 n.5 (1941) (“[T]he expression ‘convex or concave from above’ is more commonly used than ‘concave or convex from below’ and therefore should be adopted.”).

123. Harry Markowitz, for example, improved upon the Friedman-Savage curve, positing that the origin of a Friedman-Savage curve should be considered current wealth, and that another convex segment should be added to the left of the origin. Markowitz, *supra* note 36, at 151–54. There is also empirical evidence supporting Markowitz’s version of the curve. *See, e.g.*, Emily Haisley et al., *Myopic Risk-Seeking: The Impact of Narrow Decision Bracketing on Lottery Play*, 37 J. RISK & UNCERTAINTY 57, 59–60 (2008) (describing evidence for Markowitz’s utility function, in particular the underweighting of small gains and small losses, or the “peanut effect”). Charles Karelis proposes a different utility curve in which the marginal utility of income increases not at a mid-range of income, but rather at very low levels of income, and decreases once certain basic needs are met. CHARLES KARELIS, THE PERSISTENCE OF POVERTY: WHY THE ECONOMICS OF THE WELL-OFF CAN’T HELP THE POOR 67–85 (2007). Karelis shows that his utility curve comports perhaps even more strongly with intuition than does a utility curve with strictly declining marginal utility. *Id.* Karelis’s proposed utility curve problematizes the usual argument for progressive taxation, *id.* at 153–63, though in different ways than does the Friedman-Savage curve.



Figure 5: Friedman-Savage Curve

B. EVIDENCE OF FRIEDMAN-SAVAGE CURVES

This Part describes intuitive and empirical support for the Friedman-Savage curve.

1. Intuition

Although no story need be attached to utility curves,¹²⁴ one might reasonably ask for a story to explain the Friedman-Savage curve. Why would utility decrease, increase, and then decrease again? Does this curve represent mere ad hoc-ery, a technical solution that fails to speak in any way to common sense or shared experience? As it happens, the Friedman-Savage curve can be connected with a plausible story: as Friedman and Savage suggested, the two segments with declining marginal utility can be taken to represent distinct classes, or “socioeconomic levels.”¹²⁵ An increase in income that does not

124. See, e.g., Rabin, *supra* note 102, at 1282 n.3 (“My wording . . . gives a psychological interpretation to the concavity of the utility function. Yet a referee has reminded me that a common perspective among economists studying choice under uncertainty has been that the concavity of the utility function need be given no psychological interpretation.”).

125. Friedman & Savage, *supra* note 22, at 298. Friedman and Savage acknowledge that there may be more than two “qualitatively distinguishable social classes,” each of which should be represented by a new bend in the curve. *Id.* at 299. They also, however, state that “[a]t the moment, there seems to be no observed behavior that requires the introduction of additional . . . seg-

shift someone out of his class has diminishing marginal utility.¹²⁶ The middle section, with increasing marginal utility, represents the transition between the two classes.¹²⁷ Such a utility curve would particularly make sense if income confers benefits beyond what one can buy directly—that is, if wealth is not simply delayed consumption. (This portion might be extremely steep, if the two classes are almost completely discrete, or it might be more moderate, if the additional benefits of great wealth accrue incrementally.)

Thus, while an extra dollar to a middle-class person might mean no more than additional purchasing power, as a somewhat well-off person accumulates more money, he may enter a different sort of world altogether. A moderately wealthy person might be able to contribute \$1000 to a political campaign; an extremely wealthy person (wherever the cut off is for “extremely wealthy”) might be able to wield political power by hiring a lobbyist, by promising politicians access to other very wealthy people, or even by contributing enough money to a PAC or political party to change the outcome of an election. A moderately wealthy person might be able to get a fancy new television; an extremely wealthy person might be able to gain admission to various exclusive social clubs, giving him not only the pleasure of admission, but also even more access to people in power. Income, of course, brings value in the form of consumption, but some people have more money than they could spend in a lifetime, and still continue to accumulate more. This additional income does have value, not because these extremely wealthy people can buy yet another new house or new car, but because these additional resources give them access to other kinds of power.¹²⁸

ments, so it seems undesirable and unnecessary to complicate the hypothesis further.” *Id.*

126. *Id.* at 304.

127. *Id.*

128. Compare, e.g., HENRY CALVERT SIMONS, PERSONAL INCOME TAXATION 97 (1938) (“In a world where capital accumulation proceeds as it does now, there is something sadly inadequate about the idea of saving as postponed consumption.”), Anne L. Alstott, *The Uneasy Liberal Case Against Income and Wealth Transfer Taxation: A Response to Professor McCaffery*, 51 TAX L. REV. 363, 371 (1996) (“[P]rivate wealth remains a source of current social, economic and political power that goes beyond the potential use of wealth for consumption. In addition to the social and political influence that wealth creates, the possession of wealth confers significant economic security; one need not consume wealth to bask in its benefits.”), and Avi-Yonah, *supra* note 23, at 1406–07 (“Wealth confers power beyond its consumption value. This power is eco-

2. Empirics

The shape of individuals' utility curves is a factual question, though, not a theoretical one. And studies suggest that some individuals' utility curves are indeed better modeled by a Friedman-Savage utility curve than by a strictly concave utility curve.

There is some support for the Friedman-Savage curve at a societal level. As discussed above, the story behind the Friedman-Savage curve is that some amount of additional income allows an individual to climb into a new, qualitatively better social or economic class. If gambling is one of the few ways to get enough money to make this leap, societies with higher inequality should show higher levels of gambling.¹²⁹ And this is precisely what one study of sixty societies showed. The study examined the presence of games of chance in various non-European-based societies in the late 1800s (that is, before much contact with European-based societies) and found that, consistent with Friedman-Savage curves, social inequality was a statistically significant contributor to a society's level of gambling.¹³⁰

As one might expect, studies of individual risk takers also reveal attitudes consistent with Friedman-Savage curves. For example, bettors' attitudes towards risk have been shown to be consistent with a Friedman-Savage utility curve. One model,

conomic, social, and political.”), *with, e.g.*, Bankman & Weisbach, *supra* note 15, at 1448–51 (arguing that wealth offers benefits only because it can be used to buy things, and that power and prestige “likely come more from labor than from savings”). *See also* WALL STREET (Twentieth Century Fox Film Corporation 1987) (“Wake up pal, if you’re not inside you’re outside. And I’m not talking a \$200,000 a year working Wall Street stiff flying first class and being ‘comfortable.’ I’m talking rich, pal, rich enough to fly in your own jet, rich enough not to waste time, 50, 100 million, a player, Bud—or nothing.”). *See generally* Louis Kaplow, *Utility from Accumulation* (Nat’l Bureau of Econ. Research, Working Paper No. 15595, 2009) (providing a formal model of the effect of individuals’ “deriv[ing] utility from accumulation, that is, from the possession (in contrast with the expenditure) of wealth,” and providing citations to various literature that investigates the extent to which individuals derive utility from wealth, as opposed to consumption).

129. Frederic L. Pryor, *The Friedman-Savage Utility Function in Cross-Cultural Perspective*, 84 J. POL. ECON. 821, 823 (1976) (“[T]here should be a positive correlation between socioeconomic inequality and the presence of gambling.”).

130. The study controlled for a number of factors, including whether the society had experienced contact with “the West,” whether the culture was risk loving, and the degree to which the society was individual, as opposed to group, oriented. *Id.*

based on data including nearly 35,000 horse races, with a total of over 350,000 horses, found that racetrack bettors' estimated utility function had a shape similar to the Friedman-Savage utility function.¹³¹

Another study supporting the Friedman-Savage hypothesis analyzed data from a 900-person survey about gambling and found that among people who participated in lotteries, the less satisfied the person was with his current income, the more he tended to spend on the lottery.¹³² The lottery, unlike other forms of gambling such as poker or bingo, which produce smaller payouts, provided the person with the chance to increase his income dramatically and thus take the leap into or over the area of the utility curve with increasing marginal utility.¹³³

Studies that did not focus on gamblers also reached results consistent with the Friedman-Savage curve. One study asked over 2500 Dutch households to choose between a fixed amount of money and a gamble.¹³⁴ For example, the participants might be asked to imagine that they had a choice between a sure \$1 or a chance to win \$100. They would then be asked to pick the odds that would make them choose the chance for \$100 over the sure \$1. The odds selected would give information about the participant's attitude toward risk. A risk-neutral person, for example, would select the chance at \$100 if the chance of winning was greater than one percent, because \$1 is one percent of \$100.

The study varied the risk-free amount offered (in the example above, \$1) from about \$50 to about \$5000, and kept the risky prize fixed at about \$20,000.¹³⁵ Most of the respondents

131. Bruno Jullien & Bernard Salanié, *Estimating Preferences Under Risk: The Case of Racetrack Bettors*, 108 J. POL. ECON. 503, 525 (2000). The data included 34,443 races and 367,408 horses. *Id.* at 506. Of course, as with any model, this model depends on certain simplifications, and thus, as the authors note, "this particular exercise cannot pretend to realism." *Id.* at 525. Nonetheless, the results are suggestive, because their results are particularly strong when the amount at risk is large, and the amounts at risk would generally tend to be larger than the amount bet on a horse race. *Id.*

132. Gregory G. Brunk, *A Test of the Friedman-Savage Gambling Model*, 96 Q.J. ECON. 341, 345 & 346 tbl.2 (1981).

133. *See id.* at 344-45 (noting that among lotteries, football pools, bingo, raffles, and poker, "only the purchase of lottery tickets could result in a large increase in wealth that the Friedman-Savage model suggests is a motivation for gambling").

134. Joseph G. Eisenhauer, *How Prevalent Are Friedman-Savage Utility Functions?*, BRIEFING NOTES ECON., Sept.-Oct. 2005, at 1, 3.

135. The initial amounts ranged from f100 to f10,000. The sign "f" represents the Dutch guilder; this version of the question was asked in 1993,

were risk averse, regardless of the risk-free amount offered. None of the respondents were risk loving for all amounts offered, and only one percent of the respondents were risk neutral. But about twenty percent of the respondents showed different risk attitudes depending on the initial amount offered: some were risk averse at lower amounts but were either risk neutral or risk loving at higher amounts, and others were risk neutral at lower amounts and risk loving at higher amounts. In other words, about twenty percent of the respondents showed some inflection point in their utility curves. Indeed, this must be considered a lower bound, because some of the respondents who were consistently risk averse might have some threshold of income greater than those proposed in the study past which they would be either risk neutral or risk loving.¹³⁶ That is, had the risk-free amount been increased even more, these respondents might have revealed themselves to be risk neutral or risk loving given that higher risk free amount, which was, in this experiment, the stand in for income.

In short, it is plausible that at least some people have a utility curve that does not display declining marginal utility, but rather has locally increasing marginal utility.

III. IMPLICATIONS OF INCREASING MARGINAL UTILITY

As the last Part showed, declining marginal utility may not be universal: evidence suggests that at least some people, over some range of income, have increasing marginal utility. This Part shows the tax policy implications of this counterintuitive finding and suggests how legal scholarship might change if some people do not have declining marginal utility. Because, as described above,¹³⁷ there is some empirical evidence for Friedman-Savage utility curves, both sections use Friedman-Savage curves as the example of how marginal utility might increase.

before the Netherlands adopted the Euro as its currency. In January 1993, the guilders-to-dollars exchange rate was approximately 0.55 dollars to one guilder. *Historical Exchange Rates*, OANDA, <http://www.oanda.com/convert/fxhistory> (last visited Oct. 31, 2010).

136. *Id.*

137. *See supra* Part II.B.

A. TAX POLICY MEETS FRIEDMAN-SAVAGE

This section examines the tax policy implications of accepting that at least some people have increasing marginal utility, as captured by Friedman-Savage utility curves.¹³⁸

A welfarist who does not explicitly incorporate equality into his analysis (that is, a nonegalitarian welfarist) and assumes that all individuals have Friedman-Savage utility curves (that is, all utility curves are convex for some range of income) will recommend a tax system that is quite different than the current progressive, redistributive system. A welfarist who does not explicitly incorporate equality into his analysis maximizes utility by summing individuals' utility, giving equal weight to each individual.¹³⁹ Thus, he always wants to take a dollar from someone with lower marginal utility and give that dollar to someone with higher marginal utility.

Return to the world with only two people: Rich and Penny. If there is only one dollar to distribute, and the goal is to increase overall utility, then Rich and Penny's total utility is irrelevant. All that matters is how much utility each would derive from receiving this next dollar. If Penny would derive more utility than would Rich, then, regardless of how much utility each has right now, a nonegalitarian welfarist would give the dollar to Penny. Moreover, if taking a dollar from Rich reduces Rich's utility less than giving a dollar to Penny increases her utility, a nonegalitarian welfarist would transfer a dollar from Rich to Penny regardless of how much utility each has. In fact, such a welfarist would transfer dollars from Rich to Penny as long as Rich's marginal utility remains less than Penny's. The transferring should stop only when the two have equal marginal utility, because only then will the next transfer make no difference—only then will the next transfer fail to increase overall utility. And indeed, the goal of a nonegalitarian welfarist is to reach a point where everyone has equal marginal utility.

138. I do not analyze here the efficiency or distortive effects of redistribution in a world with Friedman-Savage curves; rather, I discuss only distributional concerns. Thus, I do not present a full optimal tax analysis of a world where individuals have Friedman-Savage curves. *Cf., e.g.,* KAPLOW, *supra* note 5, at 29–30 (noting that there are two dimensions to any welfarist analysis of a tax policy, and describing a two-step analysis that involves, first, a “distribution-neutral income tax adjustment” and, second, a “purely redistributive income tax adjustment”).

139. Another approach would be to maximize *average* utility (that is, sum individuals' utility and then divide by the number of individuals). Whichever approach one chooses, the analysis in this section remains the same.

A shared utility curve with a convex portion mandates redistribution, as in the current system, but unlike the current system, a Friedman-Savage curve mandates some redistribution from those with less money to those with more. If Penny is not actually poor, but rather has enough income to meet all her basic needs and somewhat more, she may be on a relatively flat portion of the utility curve, and her next dollar thus has relatively little utility. Rich, on the other hand, is rich but not extremely rich, and thus he is on a steep part of the curve, so that his next dollar has a relatively high utility for him. A nonegalitarian welfarist takes money from Penny and gives it to Rich until both have the same marginal utility, even though Penny has less money than Rich to begin with.

A simple example shows why. Imagine, as in Figure 6, that Penny and Rich both have the same utility curve, a Friedman-Savage curve. Before any redistribution, Penny has \$200,000 (adding three zeroes to the numbers in Figure 6, to keep things interesting) and Rich has \$400,000. Penny is still on the declining marginal utility portion of the curve, but Rich has enough income that he actually has increasing marginal utility. As Figure 6 suggests, total utility is about 100 utils. After money is transferred from Penny to Rich until they have equal marginal utility, Rich has \$500,000 and Penny has \$100,000, and total utility has increased to about 110 utils. It makes perfect sense that total utility has increased, because we know that while each of Penny's last \$100,000 had less and less value to her, each of Rich's new \$100,000 has more and more value to him.

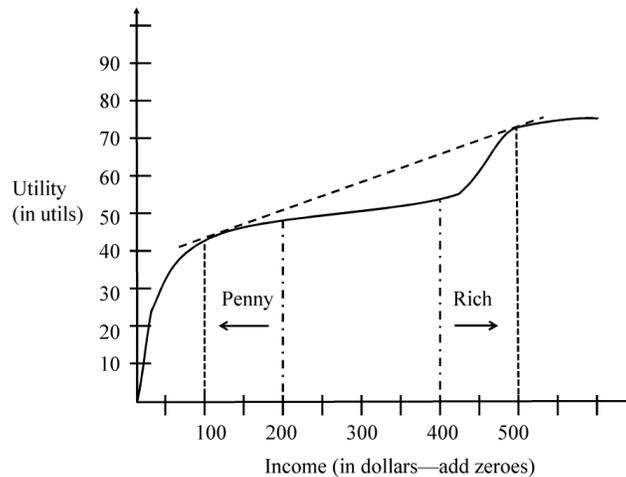


Figure 6: Redistribution on a Friedman-Savage Curve

While equal marginal utility is necessary to optimal distribution for a nonegalitarian welfarist, it is not sufficient if utility curves are not strictly concave. On a Friedman-Savage curve, marginal utility would also be equalized by transferring money from Rich to Penny until both had the same amount of money. But this would not maximize utility. To maximize utility, transfers take place only when the marginal utility of the transferor's *previous* dollar is less than the marginal utility of the recipient's *next* dollar. Because Rich's portion of the utility curve is steep, the marginal utility of his previous dollar is greater than the marginal utility of Penny's next dollar.

For example, if Rich transfers money to Penny until both have \$300,000, they will obviously have the same marginal utility, because they will both be at the same place on the utility curve. But their total utility will be only about ninety-five, because Rich gave dollars to Penny that had less utility to her than to him, and thus the transfer reduced the amount of total utility. (If the curve is strictly concave, the marginal utility of the wealthier person's previous dollar will always exceed or equal the marginal utility of the less wealthy person's next dollar, simply because we have defined our curve so that an increase in money means a decrease in marginal utility, and equalizing marginal utility is thus both necessary and sufficient to maximize utility.)¹⁴⁰

The tax policy recommendations are similar but perhaps even more drastic under the assumption that not everyone has a Friedman-Savage curve, but rather that most people have strictly concave utility curves and only some people have Friedman-Savage curves.¹⁴¹ In Figure 7, Penny's and Rich's utility curves are identical up to a point, after which Penny's marginal utility continues to decrease, while Rich experiences increasing marginal utility. After this portion, if the two have the same income, Rich has higher utility than Penny, but the two have identical marginal utility.

140. Additionally, if everyone has the same utility curve and that curve is concave, a nonegalitarian (or utilitarian) welfare function recommends that everyone have the same amount of wealth. KAPLOW, *supra* note 5, at 47.

141. Friedman and Savage themselves argued that their curve would be relevant even if not shared by everyone. Friedman & Savage, *supra* note 22, at 299 ("[I]t is not necessary that every consumer unit have a utility curve [like the Friedman-Savage curve]. Some may be inveterate gamblers; others, inveterately cautious. It is enough that many consumer units have such a utility curve.").

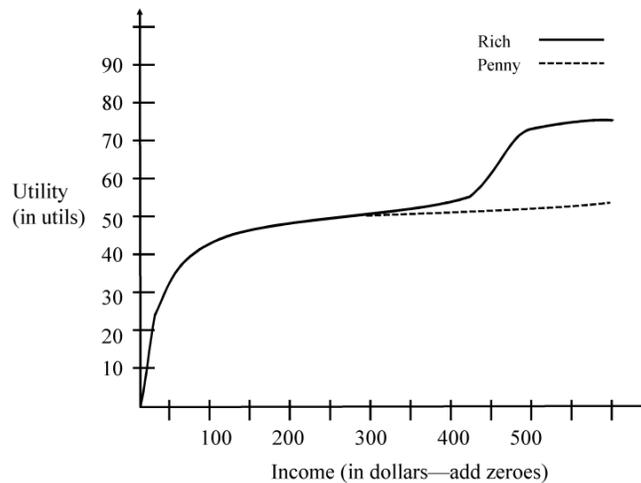


Figure 7: Different Utility Curves

In this scenario, as in the last scenario, Penny will sometimes be called upon to transfer to Rich when she has less income than he does. But Rich will be asked to transfer to Penny only when he has more income than she does. Rich, that is, will sometimes be the beneficiary of redistribution from those who are less wealthy, but Penny never will be. (She might, however, be the beneficiary of redistribution from those who are more wealthy and have lower marginal utility than she does.)

Assuming that at least some people have Friedman-Savage curves does not necessarily mean that the tax system should redistribute from the truly poor to the wealthy. A very poor person might well always be on a steeper portion of the utility curve than anyone else.¹⁴² To put this in terms of the story about Friedman-Savage curves, it might be that everyone derives more utility from income that permits him to buy bread to prevent himself from starving than from income that pushes him into an elite class with access to political power and exclusive clubs. More concretely, a Friedman-Savage utility curve could be consistent with the government's current level of redistribution to the very poor.¹⁴³ While very poor people pay

142. Of course, it is not actually possible to measure an individual's utility with such accuracy, but this Article generally works within the assumptions made by various welfarist scholars. See discussion *supra* text accompanying notes 28–33.

143. See generally KAPLOW, *supra* note 5, at 151–78 (discussing transfer payments and noting that taxes and transfer programs should be considered

some tax,¹⁴⁴ this payment may be more than offset by various sorts of transfers from the government, both cash (whether from welfare¹⁴⁵ or the earned income tax credit¹⁴⁶) and in-kind (such as Medicaid,¹⁴⁷ food stamps,¹⁴⁸ and housing vouchers¹⁴⁹). Net transfers to the poor are defensible under a nonegalitarian welfarist analysis and a Friedman-Savage utility curve if the initial section of the utility curve is steeper than any other section.

But if marginal utility increases for some range of money, some wealthier people will always have greater marginal utility than some less-wealthy people. Thus, there should, in principle, be some upward redistribution from the middle class (say) to the more wealthy. For example, in 2008 and 2009, the government transferred billions of dollars to private companies in an attempt to stem economic collapse.¹⁵⁰ One of those companies, American International Group, or AIG, received about \$170 billion from the government and then paid \$165 million in bonuses to its executives.¹⁵¹ Over seventy people received bonuses of more than \$1 million each, including six people who received more than \$4 million each and one person who re-

as a whole, since “[i]t simply does not matter if the income tax makes poor individuals pay some tax as long as the generosity of transfer payments makes up the difference”).

144. There is a small zero bracket for income tax, but social insurance taxes (also known as “payroll taxes”) are imposed from the first dollar of earnings. Social security tax is 6.2 percent of wages, I.R.C. § 3101 (2006), and Medicare tax is 1.45 percent of wages, *id.* Compare *id.* § 1 (imposing tax on taxable income), and *id.* § 63 (reducing taxable income by either a fixed-amount deduction or, if greater, itemized deductions), and *id.* § 151 (reducing taxable income by the amount of a personal exemption), with *id.* § 3101 (imposing social insurance tax on employees’ wages), and *id.* § 3121 (defining “wages” for social insurance tax purposes as including all remuneration, with some exceptions).

145. 42 U.S.C. §§ 601–619 (2006) (providing block grants to states for temporary assistance to needy families).

146. I.R.C. § 32 (providing a refundable credit, known as the “earned income tax credit”).

147. 42 U.S.C. §§ 1396–1396v (authorizing health care payments for low-income individuals).

148. 7 U.S.C. §§ 2011–2036 (2006) (authorizing the Supplemental Nutrition Assistance Program).

149. 42 U.S.C. § 1437f (authorizing the Housing Choice Voucher Program).

150. This included transfers under the Emergency Economic Stabilization Act of 2008, Pub. L. No. 110-343, 122 Stat. 3765, as well as loans from the Federal Reserve.

151. Louise Story, *Cuomo Details Million-Dollar Bonuses at A.I.G.*, N.Y. TIMES, Mar. 17, 2009, <http://www.nytimes.com/2009/03/18/business/18cuomo.html>.

ceived \$6.4 million.¹⁵² These bonuses were met by outrage. Some of this outrage was due, surely, to the feeling that AIG had done something morally wrong.¹⁵³ But some of the outrage seemed due more to the idea that the government would transfer taxpayer dollars to the already wealthy.¹⁵⁴ A Friedman-Savage utility curve does, however, sometimes support transfers from the less wealthy to the more wealthy. In contrast, the government did not bail out Lehman Brothers, and as a result many wealthy people lost their job, savings, and social status.¹⁵⁵ A Friedman-Savage curve and a nonegalitarian welfare function might well have supported payments to the Lehman Brothers employees, like the payments to AIG, where the government used tax dollars to pay relatively wealthy individuals who might be on a steeper portion of the utility curve. This is not to endorse such a policy, but rather to suggest that it might be an implication of nonegalitarian welfarism plus a Friedman-Savage curve. Similarly, tax shelters might be, overall, a good thing. Tax shelters are risky, and those who engage in tax shelters tend to be wealthy. Thus, tax shelters might effectively reduce the tax paid by wealthy, risk-preferring individuals, exactly those who could be on the steeper part of the Friedman-Savage curve.¹⁵⁶

Assuming that at least some individual utility functions are better represented by a Friedman-Savage curve than a strictly concave curve—that is, assuming that marginal utility is not strictly declining—pushes toward unfamiliar tax policy recommendations. Combined with a nonegalitarian social welfare function, Friedman-Savage utility curves, like strictly concave utility curves, mandate redistribution. But unlike strictly

152. *Id.*

153. For example, in a U.S. House committee meeting, Representative Paul Hodes said that AIG stood for “arrogance, incompetence and greed,” and House Majority Leader Steny Hoyer said that people felt “anger and disgust” about the bonuses. Randall Smith & Liam Plevin, *Some Will Pay Back AIG Bonuses*, WALL ST. J., Mar. 19, 2009, at A1. The outrage was a bit odd given that \$165 million is less than one-tenth of one percent of \$170 billion.

154. *See, e.g.*, Editorial, *Grabby at AIG*, BOS. GLOBE, Mar. 17, 2009, http://www.boston.com/bostonglobe/editorial_opinion/editorials/articles/2009/03/17/grabby_at_aig.

155. *See, e.g.*, Louise Story & Landon Thomas Jr., *Tales from Lehman’s Crypt*, N.Y. TIMES, Sept. 13, 2009, at BU1, available at 2009 WLNR 17964914 (describing the effects of the Lehman bankruptcy on some of the members of the financial industry who worked there).

156. I thank Ethan Yale, Hunton & Williams Professor of Law at the University of Virginia School of Law, for this point.

concave utility curves, Friedman-Savage curves mandate at least some redistribution from those with less money to those with more money.

B. WHAT'S A WELFARIST TO DO?

We can group the responses a welfarist might have to this discussion into two categories, which we might call “refusal” and “accommodation.”

1. Refusal

First, a welfarist might find this discussion completely unconvincing, and might insist that everyone does have declining marginal utility. It is difficult to know what to say to this, other than to investigate the source of the conviction, given the lack of proof of declining marginal utility. Someone might think that wealthier people *should* care less about the next dollar than do less-wealthy people, but the shape of an individual's utility function is a fact, not a moral judgment.¹⁵⁷ Or someone might have a commitment to both nonegalitarian welfarism and redistribution (moral judgments), and thus conclude that marginal utility declines (a fact about the world). A deep conviction that declining marginal utility is true might be an example of the moralistic fallacy,¹⁵⁸ or what one might call the “ought-is” problem,¹⁵⁹ whereby one derives the descriptive from the normative. Relatedly, this could be an example of what is known in psychology as motivated cognition. People may feel a moral commitment to redistribution, and this moral commitment might in turn shape how they perceive facts about the world, facts which are ostensibly not moral judgments.¹⁶⁰

157. See *supra* note 52 and accompanying text; cf. Thomas Nagel, *Personal Rights and Public Space*, 24 PHIL. & PUB. AFF. 83, 92 (1995) (“This is a curious type of argument, for it has the form that P is true because it would be better if it were true. That is not in general a cogent form of argument: One cannot use it to prove that there is an afterlife, for example. However, it may have a place in ethical theory, where its conclusion is not factual but moral.”).

158. Bernard B. Davis, *The Moralistic Fallacy*, 272 NATURE 390, 390 (1978) (coining the term “moralistic fallacy” and defining it as “an illogical effort to derive an ‘is’ from an ‘ought’”).

159. Cf. DAVID HUME, A TREATISE OF HUMAN NATURE 469 (L.A. Selby-Bigge et al. eds., 2d ed. 1978) (identifying the “is-ought” problem, whereby the normative is derived from the descriptive); *Hume's Moral Philosophy*, STANFORD ENCYCLOPEDIA OF PHIL., <http://plato.stanford.edu/entries/hume-moral> (last updated Aug. 27, 2010) (explaining the is-ought problem).

160. E.g., Dan M. Kahan et al., *Whose Eyes Are You Going To Believe?* Scott v. Harris and the Perils of Cognitive Illiberalism, 122 HARV. L. REV. 837, 842–

Second, a welfarist might accept that some people do not have declining marginal utility, and might even have Friedman-Savage curves, but might believe that there are not enough people with Friedman-Savage curves to make it worthwhile to think about them. The current dominant model, in other words, is right enough.¹⁶¹ It is not clear what standard is being applied here. Perhaps the claim is that there are, numerically, too few people who are locally risk preferring to count. This would have to be based on empirical work, though, not intuition, and there is no empirical work that shows that only a tiny minority of people are locally risk preferring. To the contrary, as discussed above, one study found that twenty percent of people showed local risk preference, and this number was a lower bound.¹⁶²

Third, a welfarist might accept that some people do not have declining marginal utility, but might argue that the government cannot distinguish among those who have entirely declining marginal utility and those who do not. Therefore, the argument would go, because it seems that a majority of people have declining marginal utility, policy should be constructed as though everyone has declining marginal utility. This is an interesting problem. There are, of course, typical behaviors that could mark people as having locally increasing marginal utility. These people would take more risks—they might choose to work in the financial services industry, for example, or gamble, or engage in tax shelters. And people's willingness to take bets with an apparently negative expected value might even indicate where they fall on a utility curve. But what makes this problem interesting is that if the government redistributes to people who have locally increasing marginal utility, everyone has an incentive to act as if he has locally increasing marginal

43 (2009) ("Social psychology teaches us that our perceptions of fact are pervasively shaped by our commitments to shared but contested views of individual virtue and social justice. It also tells us that although our ability to perceive this type of value-motivated cognition in others is quite acute, our power to perceive it in ourselves tends to be quite poor."). An emotional commitment to redistribution or to declining marginal utility might also explain the vigorous response some people have to the suggestion that marginal utility does not strictly decline. One legal academic, for example, has referred without elaboration to the Friedman-Savage curve as "the most implausible investment rationale for the lottery." Cohen, *supra* note 110, at 715 n.16.

161. See *supra* text accompanying note 1.

162. See *supra* notes 134–36 and accompanying text.

utility.¹⁶³ And redistributing by lowering tax on activities that might be associated with having a Friedman-Savage curve, rather than on individuals, will distort the incentives to engage in those activities. On the margin, that is, a person might choose to engage in a risky activity not because he has a Friedman-Savage curve, but just to take advantage of the lower tax rate.

This is a version of the basic information problem underlying optimal taxation: a tax system must somehow take into account that high earners try to disguise themselves as low earners to reduce their tax, by, for example, lying about their income. Although it can be difficult to distinguish among people with differing preferences, it is not impossible,¹⁶⁴ and further study and modeling could point toward the amount that should be expended in making this distinction. A normative commitment to declining marginal utility or to redistribution would be the only *a priori* reason to conclude that the correct expenditure is zero.

The third refusal relates to the last: a welfarist might accept that a fair number of people have Friedman-Savage curves or some other utility curve that is not strictly concave, but might still not want to consider these alternative curves, because they make modeling too difficult. Optimal tax modeling usually assumes that everyone has the same preferences, and imagining that individuals have different preferences does complicate things. This is not an intractable problem: some, most notably Louis Kaplow, have begun modeling heterogeneous preferences.¹⁶⁵ But heterogeneous preferences do make modeling significantly more difficult.

163. See, e.g., KAPLOW, *supra* note 5, at 47 (citing ABBA P. LERNER, THE ECONOMICS OF CONTROL 29 (Macmillan 1960), for the proposition that equal distribution should be extended “to the case in which individuals’ utility functions may differ and the government cannot observe utility functions”); LERNER, *supra* (noting that “[e]very individual could declare that he has exceptionally high capacities for satisfaction and so should be given more income than anybody else if total satisfaction is to be maximized; and there is no way of testing the validity of such a claim,” and showing that “[i]f it is impossible, on any division of income, to discover which of any two individuals has a higher marginal utility of income, the probable value of total satisfactions is maximized by dividing income *evenly*”).

164. See, e.g., Lewinsohn-Zamir, *supra* note 66 (proposing multiple ways to accurately identify various heterogeneous preferences).

165. E.g., Louis Kaplow, *Optimal Policy with Heterogeneous Preferences*, 8 BERKELEY ELECTRONIC J. ECON. ANALYSIS & POL’Y 1, 2 (2008).

Given the added complexity of modeling heterogeneous preferences, the “too difficult” response might be fair for an economist who uses models to gain knowledge incrementally, testing what happens with a different assumption or a different set of data. But it is less acceptable for a law professor who is arguing for a practical result, or a concrete tax policy. Another version of this response calls on Ockham’s Razor, or the idea that the best theories are the simplest ones.¹⁶⁶ But Ockham’s Razor is a heuristic, not a proven theory or a scientific principle. Those who claim to think about the real world and who propose concrete changes in the world cannot refuse to acknowledge concrete evidence simply because that evidence points towards complexity.

Additionally, a curve with declining marginal utility is not the simplest utility curve. Ockham’s Razor would seem to push us not toward declining marginal utility, but constant marginal utility (as in Figure 1). Many economic models assume utility that is linear in income, that is, utility that has a constant marginal utility. Constant marginal utility can also serve as the basis for concrete proposals: a Canadian tax policy commission, for example, assumed constant marginal utility when it made its policy recommendations.¹⁶⁷ But the U.S. legal academy does not take this simple approach, preferring to assume declining marginal utility, with its more complicated concave utility curve. Again, there could be a normative justification for preferring a strictly concave utility curve, but simplicity cannot be the only reason, because other curves are just as simple (or simpler).

2. Accommodation

A welfarist who accepts that some people do not have declining marginal utility can accommodate that fact in at least one of three ways: she can accept redistribution that increases inequality; she can explicitly incorporate equality into her

166. *E.g.*, David A. Weisbach, *What Does Happiness Research Tell Us About Taxation?*, 37 J. LEGAL STUD. S293, S295 (2008) (“A standard response is to use Occam’s razor to argue for a higher standard of proof on models that add complexity to the utility function . . .”).

167. Theodore P. Seto & Sande L. Buhai, *Tax and Disability: Ability to Pay and the Taxation of Difference*, 154 U. PA. L. REV. 1053, 1101–02 (2006). As described in Seto & Buhai, *supra*, the Canadian commission nonetheless recommended effectively progressive taxation, because it took as the tax base “income available for discretionary use.” *Id.*

analysis; or she can continue to act as if marginal utility declines, while acknowledging that it does not.

First, a welfarist might accept the perhaps odd policy recommendations that arise from taking a nonegalitarian approach and accepting that some people do not have strictly declining marginal utility. Nonegalitarian welfarism might be more important to her than is equality. Accordingly, she might encourage redistribution from the less wealthy to wealthier people with local risk preference. She will be concerned about increased inequality only if she believes that equality should be incorporated into individuals' utility functions and that inequality reduces utility. And if she does not want to expand the utility function to include equality as a source of welfare, she will simply give no weight to equality. This seems to me to be a perfectly acceptable approach. The argument against it would either be an argument about social welfare functions, or an argument whether welfarism is an acceptable approach to distribution, and these are important arguments.

Second, a welfarist might decide that equality is actually important to her, regardless of whether it increases individuals' utility. She could incorporate equality into her analysis in any number of ways. She could remain a pure welfarist and select a social welfare function that weights the well-being of the less well-off more than the well-being of the more well-off. She could also, however, decide that aggregating individuals' utility is not the best approach. She might adopt an approach like weak welfarism, which takes into account not only aggregate welfare but also other moral concerns.¹⁶⁸ Or she might give up on welfarism and expected utility theory altogether. These are perfectly reasonable responses. Someone might disagree with her, and then they would argue about the advantages of various welfare functions, or whether equality, whether of income or utility, should be given weight outside of a welfarist analysis. Again, these are reasonable conversations.

Finally, a welfarist might decide that she will continue to act as if everyone has declining marginal utility. This essentially imports the normative into the descriptive but acknowledges the normative judgment. The judgment might be that people should have declining marginal utility, or that a tax system should redistribute only to the less well-off, or that society should be more equal. Her bottom line does not change: she

168. See *supra* note 27.

continues to assume that there is declining marginal utility of income, and so she continues to support redistribution in only one direction, redistribution that reduces inequality. But the conversations that she has will change. She can no longer refuse to discuss moral commitments, because she has acknowledged that her assumption of declining marginal utility of income is a moral commitment.¹⁶⁹ Her results are not incontrovertible or unassailable; rather, they are open to challenges from those with different moral commitments. In fact, she will have the same conversations as the second accommodator, the person who chooses equality over nonegalitarian welfarism.¹⁷⁰ And these are conversations worth having.

CONCLUSION

This Article challenges one assumption common to tax legal scholarship's welfarist approach to analyzing tax policy: that income has declining marginal utility. While some evidence supports declining marginal utility, there is also evidence that some people have increasing marginal utility over at least some range of income. In particular, this Article describes the evidence for the Friedman-Savage utility curve, which shows locally increasing marginal utility. A welfarist analysis that does not give explicit weight to equality always mandates redistribution from those with lower marginal utility to those with higher marginal utility. Therefore, if some people do not experience declining marginal utility of income—for example, if

169. See, e.g., Blum & Kalven, *supra* note 8, at 471 (raising the question of “whether the minimum sacrifice notion has any persuasiveness independently of the frank case for greater economic equality or whether it is merely a circumlocution for a more obvious position. . . . Would any one who favors progressive taxation on minimum sacrifice grounds not continue to do so on egalitarian grounds if he came to believe that the utility of money was constant?”); *id.* at 485 (“The ostensibly scientific form of sacrifice theory, which purports to deal with the way people actually react to money, frequently conceals a normative judgment either about the way that people ought to value money or about the social value of typical expenditures at different levels of income.”); Dibadj, *supra* note 18, at 1390 (“Of course economic models . . . are useful tools, but at their core [they] rest on value judgments, not meta-truths. . . . By making economic assumptions explicit, we can debate them rather than succumb to the polarization between ‘economic’ and ‘non-economic’ approaches. . . . Inevitably, weasel numbers, just like weasel words, encompass value judgments.”).

170. The conversations may be identical, but the models will not be. As Louis Kaplow has shown, models differ depending on whether utility curves, on the one hand, or social welfare functions, on the other, are assumed to be concave. Kaplow, *supra* note 34, at 38.

some people have Friedman-Savage utility curves—such an analysis would mandate redistribution from poor to rich, or at least from the less wealthy to the more wealthy.

This Article argues that a welfarist who accepts the evidence that casts doubt on universal declining marginal utility has three choices. First, she can accept that tax policy should redistribute from some people who are less well-off but have declining marginal utility to others who are more well-off and have locally increasing marginal utility. Alternatively, if she finds poor-to-rich redistribution unpalatable, she could incorporate equality into her welfarist analysis (for example, by selecting another social welfare function) or can soften or reject welfarism. Finally, she can acknowledge that just as selecting an overall societal welfare function requires a normative judgment, assuming that individual welfare functions exhibit declining marginal utility represents a normative judgment. Such a welfarist analysis of tax law would remain valuable, but it would also acknowledge that it does not provide a scientific or unassailably true answer to the question of how a tax system should be structured.