

Winners and Losers in the Shift to a Consumption Tax

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INTRODUCTION

The surprising popularity of various flat tax proposals now pending in Congress has refocused attention on the longstanding debate between an income and a consumption tax. The terms of debate over the flat tax are familiar ones. Commentators generally believe a switch to a consumption (or cash-flow) tax produces efficiency gains, although they hotly debate the amount of those gains. Despite potential efficiency gains, many find the distributional effects of a switch undesirable, or at least troublesome. The reason for the distribution-related qualms is straightforward. Under conventional assumptions, a consumption tax reduces the tax on newly invested (new) capital to zero.¹ It is generally assumed that a tax on capital is borne primarily by capital. In this country, the wealthy hold a disproportionately high percentage of capital,² and hence earn a disproportionately greater share of income from capital. Thus, repealing the tax on (new) capital will disproportionately benefit the wealthy. In legal and political circles, at least, the debate over the flat tax thus shapes up as the age-old debate about the optimal tradeoff between equity and efficiency.

Several qualifications limit the validity of the foregoing (standard) account of the distributional impact of shifting to a consumption tax. This article lays out these qualifications and examines their empirical validity and normative implications. Part I dissects an investment return into various components and examines whether an income and a consumption tax treat these components differently, as well as any distributional effects of such differences.

Part II examines the two hypotheses that have given impetus to analyzing tax changes on a lifetime rather than an annual basis—income mobility, and the lifecycle hypothesis of savings behavior. The Part then summarizes empirical estimates of tax liability on a lifetime basis, which suggest that the shift to a consumption tax will be less regressive when judged from a lifetime perspective rather than an annual perspective. Part II concludes by discussing some of the arguments for and against a lifetime perspective.

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1. ALAN J. AUERBACH & LAWRENCE J. KOTLIKOFF, DYNAMIC FISCAL POLICY 127 (1987); R. Glenn Hubbard, *Distributional Tables and Tax Policy*, in DISTRIBUTIONAL ANALYSIS OF TAX POLICY 81, 92 (David F. Bradford ed., 1995).

2. One recent estimate, for example, suggests that households in the top 5% of the wealth distribution hold roughly 57% of net worth. WILLIAM M. GENTRY & R. GLENN HUBBARD, DISTRIBUTIONAL IMPLICATIONS OF A CONSUMPTION TAX 26-27 tbl. 6-3, 32 (1997).

Part III examines the implications of a switch to a consumption tax for old capital—resources already invested at the time of the tax change. Imposition of a consumption tax without any exemption for old capital would effectively impose a one-time tax on previously invested capital, with distributional effects that potentially swamp in magnitude the steady-state distributional effects of a consumption tax that preoccupy most analysts.

Before proceeding, we wish to clarify the scope of our analysis. The recent so-called “flat tax” proposals floated in Congress would change the existing income tax system in three ways. First, the proposals shift the tax base from income to consumption. Second, they change the definition of taxable consumption, in most cases broadening it by eliminating deductions for such things as childcare and charitable contributions. Finally, the proposals make the tax rate structure considerably less progressive.³ These changes are analytically, administratively, and politically separable. Legislators could adopt a consumption tax base without changing the rate structure or definition of consumption; alternatively they could retain our existing income tax base but broaden it and/or flatten the rate structure. The failure to separate these three changes has needlessly confused analysis of and political debate over the proposals.⁴ Here, we focus our efforts on the first change—the shift from an income to a consumption tax base. In Part I, we deal with that change only. However, some of the data presented in Parts II and III on the likely distributive effects of shifting to a consumption tax are based on models of a cash-flow tax that incorporate all three changes—shifting to a consumption tax base, changing the definition of that base, and changing the rate structure. In such cases, we could not always isolate the effects of the first change alone.

I. SIMILAR TREATMENT OF MOST COMPONENTS OF INVESTMENT RETURN UNDER AN INCOME AND CONSUMPTION TAX

As stated above, it is generally assumed that a cash-flow consumption tax, however administered, is equivalent to a wage tax with a zero rate of tax on (new) capital (the latter sometimes referred to as a “yield-exempt tax”). The conventional explanation for this equivalence is a taxpayer’s ability, under the cash-flow tax, to use the tax savings from writing off her initial investments in year one to increase the level of her initial investment. This grossed-up investment generates a return that is greater than in the no-tax world by the amount of tax eventually owed on the aggregate return when dissaved.

The following example illustrates the point. Assume a taxpayer, who is subject to 50% marginal tax rate, has \$50 to invest for one year in an opportunity with an expected pre-tax annual return of 10% (equal to the discount rate). In a no-tax world, the initial investment of \$50 would have yielded \$55 at the

3. For further discussion of all three changes, in particular changes to the rate structure, see Joseph Bankman & Barbara Fried, *Why Not a Flat Tax?*, BOSTON REV. (Summer 1996).

4. For further discussion of this issue, see *id.*

end of year one. Under an income tax, at the end of year one, the taxpayer would have \$52.50 (\$55 minus 50% of the \$5 in income).⁵ Under a cash-flow tax, the taxpayer may deduct immediately the initial investment, whatever its amount. Assuming the taxpayer can use the deduction fully against current income, she can costlessly gross up her initial investment to \$100: the \$100 deduction at a 50% tax rate yields a tax savings of \$50, for an after-tax cost to the taxpayer of only \$50. (More formally, in moving from the no-tax to cash-flow tax world, the taxpayer can costlessly gross up her investment by $1/(1-t)$, where t = tax rate.) The grossed-up \$100 investment yields a pre-tax return of \$110. Under a cash-flow tax, if the taxpayer withdraws the proceeds for personal consumption at the end of the year, she will be taxed on the full \$110. At a 50% tax rate, that will leave her with \$55, precisely her position in a no-tax world.⁶

At least in the legal tax literature, discussions of the effects of shifting from an income-tax to a consumption-tax base have, like the above example, focused primarily on one component of capital income: the riskless rate of return (or discount rate). This is particularly evident in debates over fairness, which deal almost exclusively with the arguments for and against exempting the riskless rate of return, reflecting a payment for pure deferral.⁷ Notwithstanding that explicit preoccupation with the riskless return, most legal commentators have traditionally assumed that shifting from an income to a consumption tax would affect all returns to (new) capital investments the same, moving them in each case from a positive to zero rate of tax.

Over the last fifteen years, commentators have chipped away at the standard analysis of a consumption tax as repealing the existing (positive) tax on all forms of (new) capital investments. To better convey what remains of the standard analysis, we divide investment return into five components: (1) the real (inflation-adjusted) riskless return to financial capital; (2) inflation premia for financial capital; (3) (marginal) returns to risk for financial capital; (4) supernormal returns to financial capital; and (5) all returns (normal and supernormal) to human capital.

For reasons illustrated by the above example, a consumption tax treats the first two components—real riskless return and inflation premia—more favor-

5. We ignore as de minimis any one-year depreciation allowance the taxpayer might claim on the investment under existing depreciation or amortization schedules. That allowance, of course, would slightly increase the one-year after-tax return on the project.

6. The above example holds whether a consumption tax is administered at the individual level (the expanded IRA model) or at the business level (the modified VAT model proposed in ROBERT E. HALL & ALVIN RABUSHKA, *THE FLAT TAX* (1985), and incorporated in Representative Dick Arme's flat tax proposal pending before Congress, H.R. 1040, 105th Cong. (1997)).

7. William D. Andrews, *A Consumption-Type or Cash Flow Personal Income Tax*, 87 HARV. L. REV. 1113 (1974); Mark Kelman, *Time Preference and Tax Equity*, 35 STAN. L. REV. 649 (1983); Alvin C. Warren, Jr., *Fairness and a Consumption-Type or Cash Flow Personal Income Tax*, 88 HARV. L. REV. 931 (1975); Alvin Warren, *Would a Consumption Tax Be Fairer Than an Income Tax?*, 89 YALE L.J. 1081 (1980) [hereinafter *Consumption Tax*]; cf. Barbara H. Fried, *Fairness and the Consumption Tax*, 44 STAN. L. REV. 961 (1992).

ably than does an income tax. Under certain assumptions, however, those are the *only* two components taxed differently under a consumption and an income tax.⁸ As discussed below, the third component—marginal returns to risk—is arguably subject to a zero rate of tax under both systems. The fourth and fifth components—supernormal returns to financial capital and all returns to human capital—are arguably subject to the (same) positive rate of tax under both systems. We now turn to these latter three components.

A. MARGINAL RETURNS TO RISK: RISK PREMIA AND LUCK

As noted above, under some assumptions, investors can offset the effects of a *cash-flow* tax by using their initial deduction to gross up their investment. The example given above concerned riskless investments, but the same analysis holds for (marginal) returns to risky investments.

Although not widely recognized, a similar technique allows investors to offset the effects of tax on (marginal) returns to risky investments under an *income tax*.⁹ An income tax reduces the gains on risky investments by the tax rate. But by providing a deduction for losses, and subject to the conditions described below, an income tax also reduces the losses by the tax rate. The net result is not only a reduction in the expected return but also a reduction in the riskiness of the investment. In other words, the income tax reduces the standard deviation in possible outcomes on the upside and downside, by shifting a portion of the risk onto the government as an involuntary co-investor.

This implies that investors may be able to offset entirely the effects of an income tax on risk by increasing their pre-tax level of risk, through one of two strategies: investing the same pre-tax amount in a more risky asset, or increasing their level of investment in the original risky asset by borrowing (at the riskless interest rate).¹⁰ Under either strategy, the investor will be worse off

8. In the example above, we assume a discount rate of 10%. That rate reflects two components: the real, riskless rate of return as well as an inflation premium. Each component is subject to the analysis above. That is, under an income tax, both components of the return are taxed fully. Under a consumption tax, both are subject to a nominal positive tax that can be offset by grossing up the initial investment by the tax rate. If one compares a consumption tax to what is often taken to be an "ideal" income tax—one that is inflation-adjusted—only the real, riskless rate of return is taxed differently under the two systems. The inflation premium would be exempt from taxation under either tax system.

9. For discussions of the possibility of offsetting the effects of an income tax on risk, see Joseph Bankman & Thomas Griffith, *Is the Debate Between an Income Tax and a Consumption Tax a Debate About Risk? Does it Matter?*, 47 TAX L. REV. 377, 393-403 (1992); E. Cary Brown, *Mr. Kaldor on Taxation and Risk Bearing*, 25 REV. ECON. STUD. 49, 50-51 (1957); Jeremy I. Bulow & Lawrence H. Summers, *The Taxation of Risky Assets*, 92 J. POL. ECON. 20, 22-25 (1984); Louis Kaplow, *Taxation and Risk Taking: A General Equilibrium Perspective*, 47 NAT'L TAX J. 789, 794-98 (1994); Warren, *Consumption Tax*, *supra* note 7, at 1102-05.

10. The following illustrates the strategy of increasing the pre-tax level of risk. Over the years, the annual riskless return has been about 5%. The additional annual return on a portfolio of stocks that comprise the Standard & Poor's 500 has been about 8% (providing a total annual return of 13%). The additional annual return on a portfolio of stocks with twice the variance of the Standard & Poor's 500 has been about 16% (providing a total annual return of 21%). Suppose that in the no-tax world, an investor wants to move from a riskless investment to an investment in the Standard and Poor's 500. She

under an income tax than a consumption tax by the tax owed on the riskless rate of return built into the investment (the conventional view described above). But the investor will be in an identical position with respect to returns to risk.

The claim that investors can offset entirely the effects of an income tax on returns to risk relies critically on several assumptions. First, it assumes full loss offsets under the income tax, clearly not the case under existing law.¹¹ To the extent losses cannot be recognized currently, an income tax will reduce the expected return to risky investments in a form that cannot be offset by portfolio adjustments.¹² Second, it assumes that imposing an income tax will not change the pre-tax price of risky investments. The assumption is not a trivial one, because imposing a tax on risk likely increases the demand for risky assets, which will, *ceteris paribus*, drive down their expected return.¹³ Third, it assumes that investors can relatively costlessly increase the riskiness of their portfolio.

In many cases, one or more of these assumptions will lack validity. In that event, investors will be unable to offset the effect of an income tax on marginal returns to risk. The same assumptions, however, underlie the argument that investors can offset the effects of a *consumption tax* on marginal returns to risk. That is to say, full loss offsets and an ample supply of investments at the proper risk level and at the same before-tax price are all prerequisites to grossing up initial investments to offset the tax due upon consuming the investment proceeds.

The third assumption—the ability to change the level of portfolio risk—deserves special mention. If investments are “lumpy” or the investor is credit-constrained, fine tuning portfolio risk may be impossible. This may be the situation, for example, facing taxpayers who have invested all of their capital in

buys the stocks directly and expects an additional 8% return. Under a 50% income tax, she can obtain that same additional 8% return by buying a portfolio of stocks with twice the variance of the Standard & Poor's 500. The riskier portfolio will have an expected return of 16%, with higher highs and lower lows. The income tax will cut the risk and return in half, leaving the investor in the same (after-tax) position with respect to returns to risk as in the no-tax world.

11. The Internal Revenue Code limits current deductions for capital losses to the current year's capital gains income (plus \$3000 of ordinary income in the case of individuals). See I.R.C. §§ 1211, 1212 (1997). Corporations generally may carry the unused balance back three years and forward five years. See *id.* § 1212(a). Individuals may not carry capital losses back, but may carry them forward indefinitely. See *id.* § 1212(b). In addition, a number of Code provisions limit directly or indirectly the value of capital loss deductions, including the “at risk” rules, see *id.* § 465, the limitation on utilization of passive losses, see *id.* § 469, and limitations on interest deductions, see *id.* § 163. It is unclear how much of a limitation these provisions impose in practice. With regard to Sections 1211 and 1212, see Rosanne Altshuler & Alan J. Auerbach, *The Significance of Tax Law Asymmetries: An Empirical Investigation*, 105 J.Q. ECON. 61 (1990); Joseph Bankman, *The Structure of Silicon Valley Start-ups*, 41 UCLA L. REV. 1737 (1994).

12. See Bankman & Griffith, *supra* note 9, at 378; Bankman, *supra* note 11, at 1738.

13. This result could be avoided only by a simultaneous increase in the supply of risky assets. The government could supply these risky assets by dumping back onto the market the risk it assumed in imposing the tax, by, in effect, short-selling its future expected tax revenues. See Bulow & Summers, *supra* note 9; Kaplow, *supra* note 9.

a sole proprietorship. But in such circumstances, there is no reason to think that the risk-return ratio faced by any given investor in the no-tax world would be optimal. The investor may, for example, find herself with more risk than she desires. In that case, while she may be unable to increase her (pre-tax) risk to offset the effects of the tax, she may actually be better off now that the government has come in as a partner to absorb some of the risk.¹⁴

B. SUPERNORMAL RETURNS TO FINANCIAL CAPITAL

Unlike marginal returns to risky investments of financial capital, which are arguably *untaxed* under both an income and cash-flow tax, supernormal returns to financial capital *are taxed* under both. This is because under either regime investors generally will be unable to gross up their investments to offset the effects of the tax on such returns.¹⁵

In theory, an investor could offset the tax liability on supernormal returns to financial capital under an *income* tax by increasing initial investments (financed, if necessary, through borrowing). If investors could increase the level of investment *in response* to an income tax, however, they would have already done so in the no-tax world by borrowing to buy that second gold mine known only to themselves. To put it another way, in the case of inframarginal investments, unlike marginal risky investments, the income tax does not change the (pre-tax) optimal level of investment; it merely reduces the post-tax return to the investment.

That much, perhaps, is intuitively obvious. But the same logic explains why investors cannot offset the tax liability on supernormal returns to financial capital under a *cash-flow* tax. Under a cash-flow tax, unlike an income tax, investors can use the deduction from their initial investment to gross up costlessly the funds available for investment. But they can expect to receive only the normal (risk-adjusted rate of) return on the incremental funds they invest. If the opportunity existed to put those incremental funds in investments with an expected supernormal return, again they would have exploited that opportunity in the no-tax world with funds borrowed at the riskless rate of capital. The only exception may be cases in which the additional inframarginal investment opportunity is known only to the investor, but she cannot exploit it because of credit constraints. In that case, an income tax and a cash-flow tax will produce different results, because under the cash-flow tax the government solves the credit constraint by becoming an involuntary lender through the initial tax deduction for invested capital. Offhand, one suspects a relatively small number of cases would fit that description.

14. For further discussion of this point, see Fried, *supra* note 7, at 989.

15. While we treat inframarginal returns and returns to human capital as distinct, the lines between them may be difficult to discern. Many of the former may well be attributable to the latter. For example, one might attribute Polaroid's historic market power to the human capital of its founder. Given our conclusion that both categories likely fare the same under an income and a consumption tax—that is, will both be subject to the same (positive) tax rate under either tax regime—nothing turns on this categorization.

C. RETURNS TO HUMAN CAPITAL

Similar problems prevent investors of *human capital* from offsetting the effects of an income tax or cash-flow tax by grossing up their initial investment. As a result, both normal and supernormal returns to human capital are effectively taxed at the same (arguably positive) rate under either an income tax or a consumption tax.

Many returns to financial investments are largely attributable to human capital—good ideas, the labor to exploit them, etc. Human capital apparently explains the returns enjoyed by most successful high-tech companies over the past two decades. It may also explain the more modest wealth enjoyed by a successful real estate developer or entrepreneur. How precisely the existing tax system treats human capital has been the subject of some dispute. Arguably, the failure of our existing tax scheme to tax individuals on the value of their human capital (natural talents as enhanced by (subsidized) education, family connections, etc.) until realized in the form of wages or profits subjects human capital to a hybrid income/consumption tax regime. That is to say, the failure of the existing scheme to mark-to-market annually the value of human endowments, presumably as dictated by a broad accretion-type income tax, pushes the treatment of human capital in the direction of a cash-flow tax.¹⁶ On the other hand, by not permitting taxpayers to defer recognition of reinvested wages or profits from human capital, the existing scheme stops short of a pure cash-flow tax. For our purposes, however, this debate is irrelevant. The relevant point is that regardless of how one characterizes the treatment of human capital under the existing income tax, human capital will be treated identically under a cash-flow tax.

Under a cash-flow tax, the investment of human capital, unlike the investment of financial capital, yields no deduction. As a result, the government bears no part of the cost of any increase in the level of investment; any increase must come from a greater investment of time and/or new ideas by the taxpayer. Again, if feasible and relatively costless to increase the investment of time or ideas, investors would have done so in the no-tax world. (If Bill Gates could have acquired a second great idea—say, son of MS-DOS—and the spare time and inclination to transform it into a second software empire, he would have done so in a no-tax world.) As a result, under an income or a consumption tax, investors bear the positive tax levied on realized returns to human capital, whether those returns are normal or supernormal. How investors bear this tax depends upon their own preferences in trading off labor income for leisure. For those investments of time that generate surplus to the investor in both the no-tax and tax world, imposing an income or cash-flow tax does not change the (pre-tax) optimal level of investment. Instead, either tax merely reduces the post-tax return to the investment. For those investments of time that generate

16. For an argument that our current treatment of human capital approximates a cash-flow tax, see Louis Kaplow, *Human Capital Under an Ideal Income Tax*, 80 VA. L. REV. 1477 (1994).

surplus to the investor in the no-tax world but are extramarginal in the tax world, imposing an income or a cash-flow tax will cause the investor to forgo those investments in favor of more leisure, which (because the leisure was presumptively lower-valued in the no-tax world) reduces the investor's surplus. (If Bill Gates came by a pretty good second idea that was barely worth giving up his leisure time to exploit in a no-tax world, under either tax he'll go fishing instead, producing a pure deadweight loss.) Only those investments of human capital that are truly marginal in the no-tax world will be unaffected (in utility terms) by either tax; the tax merely leads the would-be investor to substitute one activity (leisure) for another (labor) that generates equal utility.¹⁷

At least two interesting implications follow from the preceding analysis. First, the differences between an income and a consumption tax are less than commonly imagined.¹⁸ Second, the distributional implications of switching to a consumption tax may turn not merely on the aggregate assets held by each income class but also on the *types* of assets. As noted above, a cash-flow tax will continue to tax inframarginal returns and returns to human capital. If these returns primarily benefit individuals in the highest income or wealth brackets, the regressive distributional effects predicted under a cash-flow tax will be muted considerably. The wealthy would receive a large share of capital income, but a disproportionately larger share of that capital income, in the form of inframarginal returns and returns to human capital, would remain subject to tax. The capital income enjoyed by other classes, on the other hand, would disproportionately be tax-free. In fact, a recent study by William Gentry and R. Glenn Hubbard reached this very conclusion.¹⁹ An unfortunate methodological approach taken in the study makes reliance on their particular findings questionable.²⁰ The authors, however, do amass data that suggest that the wealthy will more likely realize any inframarginal returns to capital. For example, the wealthy own almost all active businesses—perhaps the most likely source of inframarginal returns. Capital income realized by those in lower wealth brackets most likely comes from demand deposits and the like, which cannot possibly produce inframarginal returns.²¹

II. ANNUAL VERSUS LIFETIME PERSPECTIVES

Historically, distributional analyses of tax changes have classified people into income groups based on their current year's income. In recent years, a number

17. For further discussion of this point in the context of financial capital, see Fried, *supra* note 7.

18. For an early recognition of the possibility that an income and consumption tax differed only in their treatment of the riskless rate of return, see Warren, *Consumption Tax*, *supra* note 7, at 1105-07.

19. GENTRY & HUBBARD, *supra* note 2, at 35-38.

20. The authors based their conclusion on the fact that the ratio of fair market value to book value is higher for the wealthy. This measure—Tobin's *q*—may indicate the presence of supernormal returns. But it may also reflect a longer holding period and appreciation at the riskless rate. Alternatively, it may reflect equal holding periods but a willingness by the wealthy to hold riskier assets. Though riskier assets may appreciate faster than non-risky ones, it is inaccurate to characterize their higher return as "supernormal" for these purposes.

21. GENTRY & HUBBARD, *supra* note 2, at 28-29 tbl. 6-4.

of economists have argued that this annual “snapshot” view of the rich and poor produces an arbitrary and impoverished view of the true distributional impact of tax regimes. Legislators ought to be concerned with the distributional effects of tax changes on lifetime incomes—that is, on the lifetime rich and poor.²² Viewed from a lifetime perspective, the shift to a consumption tax is considerably less regressive than when viewed from an annual perspective.

Two different, but closely related, hypotheses have given impetus to analyzing tax changes on a lifetime rather than annual basis. The first is the so-called lifecycle hypothesis of savings behavior. In its traditional form, the hypothesis suggests that income from savings is earned by the middle-aged of all income classes, in proportion to labor earnings. If absolutely true, it implies that a tax on capital will have no distributional impact at all on lifetime income classes. To the extent it is true, it suggests that the distributional effects of a tax on capital will be muted from a lifetime as opposed to an annual perspective.

The second hypothesis is that, for a variety of reasons including lifecycle savings and earnings behavior as well as random fluctuations in income, people are highly mobile among income classes over the course of their lifetimes. High mobility implies that inequality in the distribution of (pre-tax) incomes will decrease, under conventional measures of inequality, when incomes are measured on a lifetime rather than an annual basis. The compression in pre-tax incomes, in turn, implies that most regressive taxes will appear less regressive, and most progressive taxes will appear less progressive, when measured on a lifetime rather than an annual basis. Some have also taken high income mobility to imply that inequality in incomes persists because of personal choice, and hence is less deserving of redress by the government through tax policy or other means.

A. THE LIFECYCLE HYPOTHESIS

1. Overview

The lifecycle hypothesis is generally traced back to Milton Friedman’s permanent income theory, presented in his 1957 work *A Theory of the Consumption Function*, and the work of Franco Modigliani, Richard Brumberg, and Albert Ando in the 1950s and 1960s.²³ The basic, well-known argument of

22. For arguments supporting the use of lifetime rather than annual income measures, see DON FULLERTON & DIANE LIM ROGERS, WHO BEARS THE LIFETIME TAX BURDEN? (1993); A.B. Atkinson, *The Distribution of Wealth and the Individual Life-Cycle*, 23 OXFORD ECON. PAPERS 239 (1971); David F. Bradford, *The Case for a Personal Consumption Tax*, in WHAT SHOULD BE TAXED: INCOME OR EXPENDITURE? 75 (Joseph A. Pechman ed., 1980). The current controversy in tax policy circles over the relative merits of annual and lifetime perspectives centers on whether various government agencies charged with generating projections on the distributional impact of tax proposals ought to do those projections on a lifetime rather than annual basis. See generally GENTRY & HUBBARD, *supra* note 2.

23. Albert Ando & Franco Modigliani, *The ‘Life Cycle’ Hypothesis of Saving: Aggregate Implications and Tests*, 53 AM. ECON. REV. 55, 55-84 (1963); Franco Modigliani & Richard Brumberg, *Utility Analysis and the Consumption Function: An Interpretation of Cross-Section Data*, in POST-KEYNESIAN ECONOMICS 388, 388-436 (Kenneth K. Kurihara ed., 1954). The arguments of these and other key

lifecycle proponents is that people borrow and save throughout their lifetimes to smooth out annual consumption. Because people's earnings are typically low when young, peak at middle-age, and then decline shortly before retirement, people typically borrow (against future earnings) when young, save when middle-aged, and dissave (spend down savings) when old.²⁴

In analyzing the distributive effects of shifting to a consumption tax, the relevant point is not the ultimate lifecycle hypothesis—that people save to smooth consumption—but instead two subsidiary hypotheses in the traditional, stylized version of the lifecycle model. The first is that earnings patterns for each lifetime income class follow roughly the same pattern. In the standard version, income grows steadily from the 20s to the late 40s, peaks in the early 50s, and declines for the balance of life. The second is that to smooth out consumption, each lifetime income class will therefore save roughly the same percentage of earnings at the same points in their lifecycle. That is, members of a lifetime high-income class comprised solely of future, current, and retired surgeons will save the same percentage of their income at each point in their lives as members of a lifetime middle-income class comprised of future, current, and retired elementary school teachers and a lifetime lower-income class comprised of future, current, and retired janitors.

In its strongest form, the stylized lifecycle model implies that each income class benefits proportionately from the decline in the tax on capital income under a consumption tax, because the tax on capital income amounts to nothing more than a proportional surtax on earned income in middle and late-middle age. Thus, the choice between a consumption tax and an income tax would have no distributive consequences between income classes.

For those who care about class-based distinctions, that result would eliminate any equity-based objections to a consumption tax. For utilitarians and fellow travelers, the implications of the stylized lifecycle model are less clear. The model implies that a tax on savings will fall on all individuals in their high-earning years.²⁵ The increased revenues raised by taxing those in their high-earning years could be transferred to the same individuals in their low-earning years through either a reduction in wage tax rates or direct transfer payments. Is there any welfarist advantage to such government-financed intergenerational redistribution?

articles in the early development of the lifecycle hypothesis are summarized in Franco Modigliani, *Life Cycle, Individual Thrift, and the Wealth of Nations*, 76 AM. ECON. REV. 297 (1986).

24. See, e.g., MICHAEL R. DARBY, THE EFFECTS OF SOCIAL SECURITY ON INCOME AND THE CAPITAL STOCK 7 n.1 (1979) (summarizing the more recent literature on the lifecycle hypothesis). For a list of the assumptions behind the simplest, stylized version of the lifecycle hypothesis, see Orazio P. Attanasio, *Personal Saving in the United States*, in INTERNATIONAL COMPARISONS OF HOUSEHOLD SAVING 57 (James M. Poterba ed., 1994) (listing a constant utility function, no uncertainty, no changes in the interest rate, and perfect capital markets).

25. This result assumes a mark-to-market system, in which all gains are taxed as accrued. In the existing system, most retirement savings (for example, in qualified pension plans and longterm growth assets like stocks and real estate) are not taxed until consumed. The analysis here, as elsewhere in the article, compares idealized forms of the income and consumption tax. To the extent the existing income tax is a hybrid, it mutes many of these distributional effects.

In the case of redistribution from the middle-aged to the old, the answer is clearly no. No market constraints limit taxpayers' ability to save privately in their high-earning (middle-aged) years to finance their retirement. In the absence of evidence that the middle-aged systematically undersave, there is no reason for the government to intervene. Even if the middle-aged do systematically undersave, a mandatory savings program is a more sensible policy response to the problem than an intertemporally redistributive tax on capital income.

The case for redistribution from the middle-aged to the young is more problematic. If the young wish to borrow against future income to smooth lifetime consumption and no credit constraints prevent them from borrowing in the market, there is still no justification for government-financed intergenerational redistribution.²⁶ In reality, credit constraints do exist, although their magnitude remains unclear.²⁷ In the presence of significant credit constraints, whether forced government redistribution from middle-aged to young will improve welfare depends on the knotty relationship between age, income, and utility. If the young have the same utility function with respect to income as the middle-aged, and (as conventionally assumed) marginal utility of income declines as income rises, the lifecycle hypothesis does not change optimal tax policy. All other things being equal, legislators improve aggregate welfare by transferring wealth from the middle-aged (rich) to the young (poor), either through a tax on savings or other means. A number of factors, however, suggest that the young do not benefit as much from an additional dollar as the middle-aged: their Veblenesque reference group of Joneses to keep up with are mostly other (relatively poor) young; they generally have no dependents to support; they need not worry about status degradation relative to their past selves (the problem of settled expectations); and they expect to be relatively poor when young and have their status rise as they age. Violating those social expectations itself creates disutility.

Although the lifecycle hypothesis remains a resilient, indeed dominant, paradigm for analyzing savings behavior, it has not fared all that well (at least in its

26. An interesting, if slightly perverse, counterargument might be made that paternalism supports redistribution as a form of forced borrowing to finance earlier consumption. If the young systematically underestimate their future ability to carry high debt burdens (or simply dislike debt as a cultural, moral, or aesthetic matter), the young may underborrow from a utilitarian perspective, an irrationality perhaps corrected by lower wage tax rates for, or direct transfer payments to, the young, both financed through a capital tax on the middle-aged. (This assumes that the young will not respond by saving an equal amount to offset the expected higher tax liability later.)

The case for redistribution from middle-aged to young will strike many as counterintuitive, given the widespread assumption that young people in this society undersave rather than underborrow. It is also inconsistent with the possibility suggested below, that the young may be relatively happier with lower consumption than are the middle-aged or elderly.

27. MARJORIE FLAVIN, EXCESS SENSITIVITY OF CONSUMPTION TO CURRENT INCOME: LIQUIDITY CONSTRAINTS OR MYOPIA? 20 (National Bureau of Econ. Research Working Paper No. 1341, 1984); FULLERTON & ROGERS, *supra* note 22, at 21; Stephen P. Zeldes, *Consumption and Liquidity Constraints: An Empirical Investigation*, 97 J. POL. ECON. 305 *passim* (1991).

traditional form) against observed behavior. Actual patterns of savings and consumption diverge significantly from what the traditional lifecycle model would predict, and cannot generate (lifecycle) savings close to the magnitude of existing capital stock.²⁸

Not all of the attacks on the lifecycle hypothesis are relevant for analyzing the distributive impact of shifting to a consumption tax. Those that are relevant show class differences in accumulations of wealth, through differential patterns of earnings, savings, and inheritance. We summarize below the findings in all three areas. Together, the relevant critiques suggest that the lifetime rich will benefit disproportionately from the shift to a consumption tax. They also suggest, however, that the disproportionality is much less when income classes are measured on a lifetime than an annual basis.

2. The Lifecycle Model and Earnings Patterns

As suggested above, the lifecycle model of savings behavior produces uniform savings rates across income classes only if lifetime labor earnings patterns are also uniform across income classes. If they are not, then the optimal savings patterns necessary to smooth out lifetime consumption will also differ across income classes, leading to differential rates of capital income as a proportion of lifetime labor earnings, and hence differential effects from reducing the tax on capital.

The data suggest that earnings patterns are not consistent across income classes. Higher lifetime earners—the top 10% of lifetime income—tend to have more peaked earnings profiles, which means (under a lifecycle model) they must save more than others over their lifetimes to smooth consumption.²⁹ In addition, the data suggest that incomes for the *bottom* 10% and (more ambiguously) the *top* 10% peak earlier than for the middle class; all else equal, their earlier peaks increase the predicted lifetime savings under a lifecycle model for both extremes of the income distribution.³⁰

These data are not inconsistent with the lifecycle model per se—that is, with the prediction that people will save to smooth out consumption. But they do suggest that (contrary to the stylized version of the lifecycle model presented

28. Kotlikoff summarizes many of the critiques (through 1987). Laurence J. Kotlikoff, *Intergenerational Transfers and Savings*, in *WHAT DETERMINES SAVINGS?* 68 (1989); see also Laurence J. Kotlikoff & Lawrence H. Summers, *The Role of Intergenerational Transfers in Aggregate Capital Accumulation*, 89 J. POL. ECON. 706 (1981) (providing an earlier and shorter summary). For a more recent set of studies of six developed countries (including the U.S.), also showing savings and consumption behavior significantly at odds with the lifecycle hypothesis, see James M. Poterba, *Introduction to INTERNATIONAL COMPARISONS OF HOUSEHOLD SAVING* 1, 7-9 (James M. Poterba ed., 1994).

29. FULLERTON & ROGERS, *supra* note 22, at 28, 116; Attanasio, *supra* note 24, at 69; Milton Moss, *Income Distribution Issues Viewed in a Lifetime Perspective*, 24 REV. INCOME & WEALTH 119, 119-36 (1978).

30. The data seem inconclusive as to high incomes. Compare FULLERTON & ROGERS, *supra* note 22, at 115-17 (finding that income peaks for high and low lifetime earners earlier in life) with Attanasio, *supra* note 24, at 69-72 (finding that income peaks earlier only for low lifetime earners) and Moss, *supra* note 29, at 134 (finding that income peaks for high lifetime earners later in life).

above) a tax on savings would redistribute between income classes even under a pure lifecycle model of savings behavior, on the whole benefitting the rich and to a lesser extent the poor (since both groups must save a higher proportion of their income earlier to smooth consumption) at the expense of the middle class.³¹

3. The Lifecycle Model and Savings Behavior

a. The problem of bequests. The more serious challenge to the lifecycle hypothesis concerns observed savings behavior. Studies consistently show large disparities in the percentage of earnings saved by predicted low- and high-lifetime earners. Lower lifetime earners save a significantly lower percentage of their earned income than higher lifetime earners.³² Commentators have struggled to reconcile these disparities with a lifecycle motive, suggesting that social security and government social insurance programs may substitute for private (retirement and precautionary) savings among the poor, or alternatively that different savings patterns reflect variations in time preference between income classes.³³

For the distribution-related purposes of this article, the knottiest problem in savings behavior concerns intergenerational transfers. A substantial percentage of the observed capital stock at any time comes not from lifecycle (hump) savings accumulated from scratch by each generation for its own consumption, but rather from intergenerational transfers in the form of gifts and bequests, concentrated heavily among the wealthy. The percentage, however, has been

31. FULLERTON & ROGERS, *supra* note 22, at 27-28.

32. See Attanasio, *supra* note 24, at 72-74; B. Douglas Bernheim & John Karl Scholz, *Private Saving and Public Policy*, in 7 TAX POLICY AND THE ECONOMY 73, 76-87 (James M. Poterba ed., 1993); R. Glenn Hubbard et al., *Precautionary Saving and Social Insurance*, 103 J. POL. ECON. 360, 364-72 (1995); see also Poterba, *supra* note 28, at 9 (reporting similar findings in the five other developed countries studied as well). For other studies suggesting that the poor—due to different intertemporal preferences or liquidity constraints—have a higher marginal propensity to consume out of current resources than the rich, see RICHARD GOODE, *THE INDIVIDUAL INCOME TAX* 319-24 (1976); James Davies et al., *Some Calculations of Lifetime Tax Incidence*, 74 AM. ECON. REV. 633, 633-35 (1984); P.A. Diamond & J.A. Hausman, *Individual Retirement and Savings Behavior*, 23 J. PUB. ECON. 81, 81-114 (1984); Laurence J. Kotlikoff, *Taxation and Savings: A Neoclassical Perspective*, in WHAT DETERMINES SAVINGS? 221-23 (1989).

33. See Hubbard et al., *supra* note 32, at 370-72 (summarizing and critiquing the various arguments seeking to explain the low savings rate of lower lifetime earners). For the argument that the social safety net reduces precautionary savings among the poor, see *id.* at 372-94 (all means-tested social programs); Laurence J. Kotlikoff, *Health Expenditures and Precautionary Savings*, in WHAT DETERMINES SAVINGS?, *supra* note 32, at 141 (looking at Medicaid and precautionary savings); Laurence Levin, *Demand for Health Insurance and Precautionary Motives for Savings Among the Elderly*, 57 J. PUB. ECON. 337, 337-67 (1995) (Medicaid and health insurance). For consideration of the possibility that the lower savings rate among the poor reflects differences in time preference, see Victor R. Fuchs, *Time Preference and Health: An Exploratory Study*, in ECONOMIC ASPECTS OF HEALTH 93 (Victor R. Fuchs ed., 1982) (finding weak correlation between income and time preference); Emily C. Lawrance, *Poverty and the Rate of Time Preference: Evidence from Panel Data*, 99 J. POL. ECON. 54 (1991) (finding significantly higher rate of time preference among the poor).

vigorously disputed, with estimates ranging from 15% to as high as 70%.³⁴ On even the most conservative estimates, however, the existence of substantial bequests poses a significant challenge to the lifecycle hypothesis, since it means that the (primarily wealthy) elderly fail to dissave for their own consumption as the lifecycle model predicts they will. For our purposes, the significant point

34. For a summary of the studies concluding that lifecycle savings cannot account for a substantial portion of capital stock, see LAURENCE J. KOTLIKOFF & LAURENCE H. SUMMERS, *THE CONTRIBUTION OF INTERGENERATIONAL TRANSFERS TO TOTAL WEALTH: A REPLY 3-7* (National Bureau of Econ. Research Working Paper No. 1827, 1986). For particular estimates, see DARBY, *supra* note 24, at 3 (concluding that at most 29% of U.S. private net worth is devoted to future consumption, with the rest destined for intergenerational transfer); FULLERTON & ROGERS, *supra* note 22, at 196 (estimating lifecycle savings to explain about 54% of total capital stock); Atkinson, *supra* note 22, at 251-52 (finding that lifecycle factors cannot explain the upper tail of wealth distribution in England); Alan J. Auerbach & Laurence J. Kotlikoff, *Simulating Alternative Social Security Responses to the Demographic Transition*, 38 NAT'L TAX J. 153 *passim* (1985) (concluding that lifecycle savings motives imply a much smaller wealth to income ratio than is actually observed); Laurence J. Kotlikoff, *Intergenerational Transfers and Savings, in WHAT DETERMINES SAVINGS?*, *supra* note 28, at 68, 76-79; Kotlikoff & Summers, *supra* note 28, at 721-26 (estimating lifecycle wealth at about 19% of 1974 total U.S. wealth, subsequently revised to 22% in KOTLIKOFF & SUMMERS, *supra*, at 13); Paul L. Menchik & Martin David, *The Incidence of a Lifetime Consumption Tax*, 35 NAT'L TAX J. 189 *passim* (1982) (estimating bequest savings at 44% of the total capital stock); Nicholas Oulton, *Inheritance and the Distribution of Wealth*, 28 OXFORD ECON. PAPERS 86, 86-101 (1976); Betsy B. White, *Empirical Tests of the Life Cycle Hypothesis*, 68 AM. ECON. REV. 547, 547 (1978) (concluding lifecycle savings accounted for at most about 60% of observed saving). *But see* Owen J. Evans, *Empirical Tests of the Life Cycle Hypothesis: Comment*, 74 AM. ECON. REV. 254 (1984) (critiquing White).

For studies finding that the elderly fail to decumulate assets as the lifecycle theory would predict, see Attanasio, *supra* note 24, at 116-17 (showing that mean and median wealth in the United States have little tendency to decline after retirement); Paul L. Menchik & Martin David, *Income Distribution, Lifetime Savings, and Bequests*, 73 AM. ECON. REV. 672, 672-88 (1983) (showing that elderly individuals do not decumulate wealth); Thad W. Mirer, *The Wealth-Age Relation Among the Aged*, 69 AM. ECON. REV. 435, 435-42 (1979) (showing that the elderly continue to accumulate wealth); Poterba, *supra* note 28, at 8 tbl. 3 (summarizing data from 6 countries which show positive savings rates among the elderly; in 2 countries (Italy and Japan) the savings rates for those over 65 exceed 30% of annual income); A.F. Shorrocks, *The Age-Wealth Relationship: A Cross-Section and Cohort Analysis*, 57 REV. ECON. & STAT. 155, 155-63 (1975) ("no significant decline in wealth during retirement").

A minority of studies reach the opposite conclusion, finding that the elderly *do* decumulate assets at a significant rate. See Michael D. Hurd, *Savings of the Elderly and Desired Bequests*, 77 AM. ECON. REV. 298 (1987) (finding, contrary to earlier studies, that the elderly do dissave at a significant rate, and that, contrary to what a bequest motive would predict, their terminal wealth is unrelated to whether they have children); M.A. King & L.-D.L. Dicks-Mireaux, *Asset Holdings and the Life-Cycle*, 92 ECON. J. 247 (1982) (discussing problems of previous studies of the lifecycle model that rejected the hump-shaped pattern of the wealth-age profile and offering evidence that wealth declines after retirement when one controls for differences in permanent income).

For a summary of studies finding relatively low bequest savings—ranging from 15% to 18%—and a critique of studies (principally Kotlikoff and Summers) that have reached contrary conclusions, see Franco Modigliani, *The Role of Intergenerational Transfers and Life Cycle Saving in the Accumulation of Wealth*, 2 J. ECON. PERSP. 15, 17-21, 25-32 (1988).

Much of the discrepancy between Kotlikoff and Summers' findings and studies that have found relatively low bequest savings arises from differences in the definition of "bequest savings." Kotlikoff and Summers have included income from bequests in inherited wealth rather than in lifecycle savings. They have also treated transfers to children older than 18 for higher education as a form of inheritance rather than personal consumption in the nature of support. For a defense of their definitions, see KOTLIKOFF & SUMMERS, *supra*, at 9-12.

lies not in the weakness of the lifecycle hypothesis per se, but in what it implies about the distributive effects of a consumption tax. If the wealthy do not dissave at the same rate as other income classes, they are saving longer, which means (*ceteris paribus*) that they and their heirs will benefit more than others from eliminating the tax on capital.

b. Bequest motives. Lifecycle proponents have offered a number of hypotheses to reconcile the existence of sizable inter vivos gifts and bequests with the lifecycle hypothesis, by reinterpreting intergenerational transfers themselves to be part of a transaction motivated by the donor's nonaltruistic consumption. The most prominent hypothesis, applicable only to bequests, is that bequests are merely residual transfers at death of what turned out (*ex post*) to be unneeded precautionary savings to protect the donor against lifespan uncertainty, earnings uncertainty, and uninsured health risks.³⁵ But as critics have noted, this hypothesis is hard to square with the extremely weak demand for private annuities to deal at least with lifespan uncertainty. Assuming the presence of actuarially fair instruments and no bequest motives, annuities would be the rational means to provide for uncertain needs, since—unlike self-insurance in the form of savings—they spread the risk of uncertainty across individuals to avoid oversaving on an *ex ante* basis.³⁶ The hypothesis also seems inadequate to explain the magnitude of bequests among wealthy families, assuming any remotely conceivable level

35. The seminal work in this area is Menahem E. Yaari, *Uncertain Lifetime, Life Insurance, and the Theory of the Consumer*, 32 REV. ECON. STUD. 137 (1965). More recent versions include ATTANASIO, A COHORT ANALYSIS OF SAVINGS BEHAVIOR BY U.S. HOUSEHOLDS (National Bureau of Econ. Research Working Paper No. 4454, 1993); Andrew B. Abel, *Precautionary Saving and Accidental Bequests*, 75 AM. ECON. REV. 777 (1985); Robert J. Barro & James W. Friedman, *On Uncertain Lifetimes*, 85 J. POL. ECON. 843 (1977); James B. Davies, *Uncertain Lifetime, Consumption and Dissaving in Retirement*, 89 J. POL. ECON. 561 (1981); Zvi Eckstein et al., *The Distribution of Wealth and Welfare in the Presence of Incomplete Annuity Markets*, 100 J.Q. ECON. 789 (1985); Eytan Sheshinski & Yoram Weiss, *Uncertainty and Optimal Social Security Systems*, 96 J.Q. ECON. 189 (1981).

36. Laurence J. Kotlikoff, *Intergenerational Transfers and Savings*, in WHAT DETERMINES SAVINGS?, *supra* note 28, at 68, 79-80; Laurence J. Kotlikoff & Avia Spivak, *The Family as an Incomplete Annuities Market*, 89 J. POL. ECON. 372 (1981); *see also* B. Douglas Bernheim, *How Strong are Bequest Motives? Evidence Based on Estimates of the Demand for Life Insurance and Annuities*, 99 J. POL. ECON. 899 (1991). For evidence of the extremely weak demand for nonpension annuities, see BENJAMIN M. FRIEDMAN & M. WARSHAWSKY, THE COST OF ANNUITIES: IMPLICATIONS FOR SAVING BEHAVIOR AND BEQUESTS I (National Bureau of Econ. Research Working Paper No. 1682, 1985); DOROTHY S. PROJECTOR & GERTRUDE S. WEISS, SURVEY OF FINANCIAL CHARACTERISTICS OF CONSUMERS 110-13, 147, tbls. A8, A31 (Federal Reserve Bd. 1966); B. Douglas Bernheim et al., *The Strategic Bequest Motive*, 93 J. POL. ECON. 1045 (1985). While private annuities offer an unfavorable rate of return, due primarily to adverse selection, studies suggest that at least at older retirement ages, the rate is not sufficiently unfavorable to explain the preference for self-saving in the absence of any bequest motive. See BENJAMIN M. FRIEDMAN & MARK WARSHAWSKY, ANNUITY PRICES AND SAVING BEHAVIOR IN THE UNITED STATES *passim* (National Bureau of Econ. Research Working Paper No. 1683, 1985); FRIEDMAN & WARSHAWSKY, *supra*, at 18-20. These findings are reinforced by the weak demand for "reverse annuity mortgages," which are offered on relatively more favorable terms than standard private annuities. Bernheim et al., *supra*, at 1069 (citing URBAN SYSTEMS RESEARCH AND ENGINEERING 8 (1983)). For arguments to the contrary, see Modigliani, *supra* note 34, at 37 (arguing that a fair amount of consumer wealth at retirement—that portion in pensions and social security—is in fact annuitized).

of precaution.³⁷ That conclusion is underscored by a recent comparative study of savings behavior in six developed countries, which found (among other things) that people save at substantial rates as they approach retirement even in countries, such as Germany, with extensive social insurance programs that obviate the need for individual precautionary savings.³⁸

Alternatively, lifecycle proponents have argued that both inter vivos transfers and bequests are part of an implicit exchange, in which parents transfer or promise to transfer resources in exchange for services from their children (attention, home production, implicit annuity contracts, modification of children's own behavior in accord with parents' desires, etc.).³⁹ With regard to the annuity coverage argument, the presence of (in the aggregate) very substantial positive bequests suggests that parents overpay significantly for that coverage, as compared to an actuarially fair insurance market. Again, absent a strong indication that no such market exists, one suspects that the annuity motive is at a minimum mixed with a bequest motive.

The other implicit exchange hypotheses, unlike annuities, should produce (net) positive transfers from older to younger generations in the aggregate as well as individual cases, since the parents purchase not a contingent stream of future cash income, but non-cash services. Thus, the mere presence of substantial positive net transfers from parents to children hardly refutes an exchange motive. At the same time, the magnitude of the transfers among the very wealthy seems excessive, at least for services that have a clear market substitute. It is difficult to know what to say about those that do not—for example, children's gratitude and affection. If King Lear transferred his kingdom to his daughters merely to obtain a retirement home for himself and his retinue of one hundred, he overpaid. If he transferred it in recompense for his daughters' past love and to secure their future love and gratitude, it is impossible to say he overpaid, at least *ex ante*. But it seems impossible as well to disentangle such motives from altruism in any meaningful way.

A few other aspects of actual bequest behavior cast doubt on the pure preclusive consumption motive for savings. First, some (but not all) studies have found that the size of bequests received by children is inversely related to

37. For a summary of contrary arguments, seeking to reconcile low asset decumulation with a lifecycle motive, see Attanasio, *supra* note 24, at 116 (summarizing Orazio P. Attanasio, *An Analysis of Life-Cycle Accumulation of Financial Assets*, RICERCH E CONOMICHE 47 (1993)).

38. Poterba, *supra* note 28, at 7-9 (summarizing the findings).

39. For a summary of the literature through 1987, see Donald Cox, *Motives for Private Income Transfers*, 95 J. POL. ECON. 508, 510-11 (1987); see also KOTLIKOFF ET AL., ANNUITY MARKETS, SAVINGS, AND THE CAPITAL STOCK *passim* (National Bureau of Econ. Research Working Paper No. 1250, 1983) (modelling implicit family annuity contracts); Bernheim et al., *supra* note 36, *passim* ("The Strategic Bequest Motive"); Cox, *supra*, at n.39 (arguing that inter vivos transfers are motivated by implicit exchanges); Kotlikoff & Spivak, *supra* note 36, *passim* (modelling implicit family annuity contracts). For evidence refuting Bernheim et al., see Nigel Tomes, *The Family, Inheritance, and the Intergenerational Transmission of Inequality*, 89 J. POL. ECON. 928 (1981) (finding, *inter alia*, that the size of bequests was not correlated to the frequency of contact between the decedent and the legatee).

the children's income—a fact that is consistent with altruistic motives but harder to square with other motives.⁴⁰ On the other hand, at least one study has found that terminal wealth is unrelated to whether the decedents have children, contrary to what a bequest motive would predict.⁴¹

Third is the phenomenon of bequests to surviving spouses. Most married couples insure that the surviving spouse (in the majority of cases, the wife) will be provided for out of pensions, social security, private savings and life insurance after the death of the nonsurviving spouse. Some of these spousal transfers are compelled by law and to that extent shed no light on bequest motives.⁴² But a significant percentage of spousal transfers are not so compelled. The literature on bequest savings generally finesses what these voluntary spousal bequests imply about savings motives by designating the married couple rather than individual to be the relevant unit for analyzing savings behavior. It is not clear what justifies that decision. On the one hand, given that most spouses are members of the same generation, bequests to spouses typically extend the horizon for personal consumption only a few years and hence are of little interest in explaining the preservation of capital stock across generations. On the other hand, there is no reason to assume that people's attitudes towards their spouses are discontinuous with their attitudes towards other family members. As a result, the motives that impel voluntary bequests to spouses may well shed light on the motives for other familial bequests.

Again, this issue is too complicated to be explored in depth here, but a few preliminary observations may be helpful. All of the nonaltruistic motives offered to explain sizeable bequests to children could apply as well to spousal bequests. Spousal bequests may reflect unintended residuals from individual precautionary savings, or more plausibly delayed payments for past services. The traditional household production model of marriage supports the delayed-payment-for-services explanation, but that model assumes the point rather than proving it. The implicit family annuity hypothesis, however, seems more implausible. Given the historical lopsidedness of male/female wealth and male/female mortality, a husband's promise to bequeath all assets remaining at his death to

40. See Tomes, *supra* note 39, at 943. On the other hand, while the correlation between heirs' need and bequest size may not be mandated by selfish explanations for bequests, it is not necessarily inconsistent with at least some of them. For example, once an individual has saved for purely selfish precautionary motives, even a very weak altruistic link to his children would suffice to motivate him to direct excess savings at his death disproportionately to the poorer of his children, or to his children as a group rather than, say, the Bide-A-Wee home for stray animals.

41. Hurd, *supra* note 34, *passim*.

42. We have in mind survivors' social security benefits, and the surviving spouse's mandated right to a share of pension benefits, unless explicitly waived. Other state laws regulating the use and disposition of marital property seem less germane here. While most states mandate that a minimum share (typically one-third or one-half) of whatever assets a decedent holds at death must be left to a surviving spouse absent a prenuptial agreement to the contrary, those provisions do not prevent the decedent from spending down his or her estate before death. The only meaningful restrictions on that are state laws or rules of financial intermediaries requiring consent of both spouses to sell or dispose of assets (personal residence, stocks and bonds, etc.) held in both spouses' names.

his surviving wife, in return for a reciprocal promise from his wife, would be money ill-committed on the selfish husband's part.

In the end, it seems doubtful that any of these purely selfish motives can explain the magnitude of interspousal bequests, at least among the wealthy. If they cannot—if, in treating spouses as one unit in analyzing lifecycle behavior, economists implicitly and correctly assume a high degree of altruism—the conceded presence of altruism in the spousal context calls into question the extreme skepticism many have evinced about altruism between parents and children. One qualification comes to mind, however: in a growing economy, an altruist generally would be more concerned about protecting his spouse of the same generation than his children, since the latter will face better economic prospects without his help.

Based on some combination of the above considerations, numerous observers have concluded that a significant portion of savings, at least among the wealthy, is in fact motivated by a desire to bequeath money to one's children, rather than lifecycle considerations.

c. Distributive implications of different theories of bequests. Which of the above hypotheses explains the existence of substantial, positive intergenerational transfers—or more precisely, the extent to which each explains it—does not alter the bottom-line numbers on savings destined for intergenerational transfers. It does, however, change the total utility generated by bequests and how the utility ought to be distributed among generations. A full treatment of this complicated issue exceeds the scope of this article, but we can at least adumbrate the difficulties entailed.⁴³

Under two of the theories—altruistic and precautionary savings—a dollar of savings ultimately bequeathed arguably produces two levels of utility: one for the original saver during her lifetime and one for the legatee at the saver's death. This additive effect results from the saver's realization of some or all of her utility in the form of nonpreclusive consumption. In the case of pure altruistic bequests, all of the saver's utility is in a nonpreclusive form—namely, the pleasure the saver derives from contemplating the increased utility her legatees will enjoy as a result of the bequest. In the case of pure precautionary savings, a portion of the saver's utility is in a nonpreclusive form as well—namely, the psychic comfort of knowing that she has protected against the worst case scenario in retirement. While the precautionary saver must overpay for that psychic benefit when compared to the cost in a well-functioning insurance market, the overpayment—which goes to the legatee as a residual bequest—merely shifts some of the material consumption derived from the savings from the saver to the legatee. It does not reduce the aggregate material consumption, or (more to the point) change the fact that like all insurance arrangements,

43. Fuller consideration of these issues is given in Barbara H. Fried, *A Note on Accounting for the Utility Generated by Bequests* (July 1997 draft) (on file with author).

precautionary savings against the hazards of old age generates psychic utility independent of actual, *ex post* consumption.

In contrast, under the various exchange motives described above, all consumption enabled by intergenerational transfers is preclusive. That is, for every dollar transferred from Lear to Goneril to purchase household services, Lear preclusively consumes the utility of a dollar's worth of Goneril's human capital, and Goneril preclusively consumes the dollar of Lear's financial capital.

What these differences imply about the distributional consequences of shifting to a consumption tax depends on a number of things, including the elasticity of savings as a function of interest rate, and the elasticity of bequests as a function of wealth. At the extreme, however, they could imply strikingly different consequences. For example, under an altruistic bequest model, if one presumes that each generation transfers to future generations most of the increased return to its own savings, that transfer will increase the utility both to the current generation (through the greater psychic satisfaction of greater giving) and to future generations (through increased consumption). At the extreme, an increased dollar of savings altruistically bequeathed through the generations could continue to generate utility in each generation. In contrast, under an exchange model of bequests, all or virtually all of the benefits of an increased return to savings will be consumed by the current generation earning it.

Unfortunately (but perhaps unavoidably), economists who have modelled the generational welfare effects of shifting to a consumption tax have ignored most of the complexities in accounting for inheritances. Don Fullerton and Diane Rogers's model, for example, assumes almost all of them away. For purposes of calculating who benefits from a consumption tax, the authors assign initial bequests to each lifetime income class based on actual data.⁴⁴ But they ignore motives for bequest savings and simply stipulate that each generation will bequeath an amount equal to what it has inherited, increased by a given growth rate/population growth. In other words, they assume everyone is a target bequest saver, for reasons unstated, and that the target is set exogenously at inheritances received plus an assumed growth rate in the economy. Given those assumptions, any increase in the after-tax rate of return on a given inheritance benefits only the immediate (first generation) legatee in one of two forms: an increased explicit return to savings on the inheritance during the legatee's lifetime, which finances higher explicit consumption for the legatee; or a lower deadweight loss from the tax cost of smoothing consumption through intertemporal substitution.

44. As noted above, Fullerton and Rogers do not include inheritances in the measurement of lifetime income; such measurement is based only on labor endowments. They do, however, attempt to account for the differences in utility to different lifetime income classes (as measured by labor endowments) that arise from the differential inheritances each income class is observed to receive, and how those utility levels will change if the tax on capital is reduced by shifting to a consumption tax. For these latter purposes, Fullerton and Rogers assign to each lifetime income class a fixed inheritance, based on observed data about inheritances drawn from Menchik & David, *supra* note 34. FULLERTON & ROGERS, *supra* note 22, at 75.

By assuming that the immediate legatees preclusively consume all of the benefits of the higher rate of return to savings, Fullerton and Rogers avoid all the thorny questions raised above, including how generations likely spread the increased preclusive consumption among themselves, and whether any increased intergenerational transfers might not generate nonpreclusive consumption for the donors as well. A more complex model ideally would include bequest motives in utility assumptions, and assume that the level of bequests would change as the rate of return to savings increases (presumably in most cases driving up bequests as well as legatees' own consumption).

B. INCOME MOBILITY

We turn now to the issue of income mobility. As stated above, for a variety of reasons (including lifecycle savings and earnings behavior, as well as random fluctuations in income), people appear highly mobile among income classes over the course of their lifetimes. In any given year, the annual poor include some people who, although temporarily low earners because they are young or temporarily unlucky, will be lifetime middle-class or wealthy; the annual rich will include some people who, although temporarily high earners because they are middle-aged or temporarily lucky, will be lifetime middle-class or poor; and so forth.

From a broad tax policy perspective, the existence of substantial income mobility is significant for at least two reasons. First, as alluded to above, high mobility implies that income distribution will be less unequal when judged on a lifetime rather than an annual basis. As a result, the impact of *any* tax policy choice, including the choice between income and consumption bases, likely will be muted when judged by lifetime rather than annual income classes. That is, viewed from the lifetime perspective, most regressive taxes appear less regressive, and most progressive taxes appear less progressive, than when viewed from an annual perspective.⁴⁵

Second, substantial income mobility has been read by many to imply the existence of significant opportunities for self-improvement in society.⁴⁶ Making sense of this enormously complicated issue requires a reasonably detailed understanding of the nature and extent of income mobility. Among the many other relevant factors is the composition of each group and how likely someone at the bottom of a cohort in her early years is to reach a higher place in that cohort in later years (and vice versa). While a considered treatment of these

45. FULLERTON & ROGERS, *supra* note 22, at 16-17 (citing further sources that support this premise); DAVIES ET AL., *supra* note 32, at 643.

46. The political salience of income mobility is evident in recent fights over the government's proper role in income equalization, triggered by the release of the March 1992 Census Report, showing increasing income inequality in the United States. For ensuing debates over whether high income mobility vitiates much of that inequality if one judges incomes on a lifetime rather than annual basis, see, e.g., Office of Tax Analysis, U.S. Dep't of the Treasury, *Household Income Mobility During the 1980s: A Statistical Assessment Based on Tax Return Data*, 55 Tax Notes (TA) 9 (June 1, 1992).

questions is beyond the scope of this article, we offer a brief overview of some of the literature on this subject, particularly income mobility by race, gender, and age groups.

Data on the composition of lifetime income groups by race and gender yield no surprises. In Fullerton and Rogers's sample, for example, the very poorest lifetime income group (bottom 2%, less markedly bottom 10%) is disproportionately nonwhite, female, and single, reflecting the prevalence of poverty among minority households headed by single females.⁴⁷ The top 2%, on the other hand, is 100% white.⁴⁸ Other studies reach similar findings.⁴⁹

One can glean some sense of mobility within age cohorts from the Fullerton and Rogers study. Fullerton and Rogers find considerable variation between non-age adjusted annual rankings and lifetime rankings.⁵⁰ For example, only 46% of individuals have a lifetime income ranking within one decile of their annual ranking.⁵¹ But the likelihood of mobility across more dispersed income deciles declines significantly. Only 13.8% of annual poor (bottom 30%) are lifetime rich (top 30%); only 2.6% of the annual rich are lifetime poor. The lack of movement between the extremes reflects a more basic fact about income mobility in this society. Most mobility apparently results from lifecycle variations in wage income—that is, from the fact that a 50-year-old janitor at the height of his earning capacity earns more than a 26-year-old surgical resident at the bottom of hers. There is very little income mobility within age cohorts.⁵² Almost 90% of those in the bottom decile of their age cohort at age 20 were in the bottom two deciles of their age cohort at age 49. None of the approximately 3,000 observations in the bottom decile of their age cohort at age 20 were in the top 4 deciles at age 49. Only 2.5% of those in the bottom 5 deciles of their age cohort at age 20 were in the top 3 deciles at age 49. At the other extreme, none of the people in the top decile of their age cohort at age 20 were in the bottom five deciles at age 49.⁵³

Comparisons between ages 49 and 79 reveal a similar pattern, though the data indicate slightly more mobility. Approximately 75% of those in the bottom

47. FULLERTON & ROGERS, *supra* note 22, at 115.

48. *Id.*

49. Daniel Slesnick, in a study of income mobility from 1947-1981, discovered fairly high income mobility *within* racial groups, but almost none between racial groups. Daniel T. Slesnick, *Welfare Distributional Change and the Measurement of Social Mobility*, 68 *REV. ECON. & STAT.* 586, 586-93 (1986). For similar findings for both race and sex, see GREG J. DUNCAN ET AL., *YEARS OF POVERTY, YEARS OF PLENTY: THE CHANGING ECONOMIC FORTUNES OF AMERICAN WORKERS AND FAMILIES* 49 tbl. 2.2, 61 (1984); Moss, *supra* note 29, at 128-29; Isabel V. Sawhill, *The Persistence of Poverty*, 26 *J. ECON. LITERATURE* 1073, 1081 (1988).

50. For a discussion of how Fullerton and Rogers measure annual and lifetime earnings, see *infra* note 57.

51. FULLERTON & ROGERS, *supra* note 22, at 111.

52. *Id.*; see also Morton Paglin, *The Measurement and Trend of Inequality: A Basic Revision*, 65 *AM. ECON. REV.* 598 (1975) (attributing most of the fluctuation in annual incomes to lifecycle variations rather than random fluctuations).

53. The foregoing data are all from FULLERTON & ROGERS, *supra* note 22, at 108 tbl. 4-6.

decile of their age cohort at age 49 were in the bottom two deciles at age 79; only 5% of those in the bottom decile of their age cohort at 49 climbed to the top five deciles at 79. Ninety percent of those in the top decile of their age cohort at 49 were in the top two deciles at 79; only 2% of those in the top decile of their age cohort at 49 fell below the top three deciles at 79.⁵⁴ In broad outline, Fullerton and Rogers's findings are confirmed by other studies, which show high mobility within one or two income deciles but relatively little mobility across more dispersed income deciles.⁵⁵

Contrary to the image of an equal opportunity society that income mobility is often proffered to support, the data suggest relatively rigid lifetime income classes. That is, one can predict fairly well who will be poor (relative to their age cohorts) at age 50 or 80 by looking at who is poor (relative to their age cohort) at age 25.⁵⁶ Of course, the stability of age-adjusted income rankings is not necessarily inconsistent with an "equal opportunity" society, depending upon how one defines equal opportunity. Perhaps by age 25 people have already

54. The foregoing data are all from *id.*, at 109 tbl. 4-7.

55. See, e.g., DUNCAN ET AL., *supra* note 49; Martha S. Hill, *Some Dynamic Aspects of Poverty*, in 9 FIVE THOUSAND AMERICAN FAMILIES—PATTERNS OF ECONOMIC PROGRESS 105 (Martha S. Hill et al. eds., 1981); Isabel V. Sawhill & Mark Condon, *Is U.S. Inequality Really Growing? Sorting out the Fairness Question*, The Urban Institute, Policy Bites, No. 13 (June 1992); see also Mary Jo Bane & David T. Ellwood, *Slipping Into and Out of Poverty: The Dynamics of Spells*, 21 J. HUM. RESOURCES 1, 1-21 (1982) (finding that the majority of the annual poor at any time are entrenched poor).

Some individuals find it important to know not only the degree of inequality but also the trend, if any, in income dispersion. The general view is that the inequality of pre-tax income has increased in recent years. Lynn A. Karoly, *Trends in Income Inequality: The Impact of, and Implications for, Tax Policy*, in TAX PROGRESSIVITY & INCOME INEQUALITY 95 (Joel Slemrod ed., 1994); see also CENSUS BUREAU, MARCH 1992 CENSUS REPORT; Edward N. Wolff, *Estimates of Household Wealth Inequality in the U.S., 1962-1983*, 33 REV. INCOME & WEALTH 231 (1987) (showing, after 15 years of flat or declining inequality, a sizeable jump in wealth inequality from 1979-1983, with the top quintile's share of wealth growing from 71% in 1979 to 81% in 1983). The significance of that change, however, is a matter of considerable dispute. Commentators generally accept the changing income distributional profile as real, resulting from an "increased dispersion of the ability to earn income which is exogenous to individual decisions." Joel Slemrod, *Introduction to TAX PROGRESSIVITY & INCOME INEQUALITY* 4 (Joel Slemrod, ed., 1994). Alternatively, some believe that the change is overstated by the use of income as a measuring rod. According to the standard argument, the sharply reduced marginal tax rates initiated in 1981 induced high-income people to work more, realize more capital gains, take more compensation in taxable form, and generally substitute taxable income for either non-taxed income or leisure. High-income individuals are unambiguously better off, but have made sacrifices (in the form of forgone leisure or an imputed tax on income received in tax-favored form) not accounted for in the gross statistics. See LAWRENCE LINDSEY, *THE GROWTH EXPERIMENT* 88 (1990).

56. The one arguable exception is that high lifetime income earners often earn little during their late teens and early twenties because they forgo work while pursuing education. Most people would not necessarily regard those temporarily depressed earnings, resulting from a voluntary decision to invest in human capital to increase future earnings, as evidence of income mobility in this society. It is also not clear that such temporarily depressed earnings should be reflected in depressed income under economic measures of income. Such investments in human capital would count as current income under one of two broader views of income. An accretion system that marked-to-market annual changes in human capital would include the full (present) value of that increased future earnings capacity when acquired. Alternatively, an endowments view of labor income, such as that adopted by Fullerton and Rogers, would include at least a portion of the investment in human capital in income by counting the wages forgone during years of education as current income.

sorted themselves by characteristics that are unlikely to change throughout life (relative willingness to work hard or relative inborn talents) and that many believe an "equal opportunity" society need not compensate for. The stability of such rankings, however, strongly undercuts the use of *non-age* adjusted income mobility data to *prove* the existence of such a society.

Furthermore, membership in at least the top and bottom lifetime income classes strongly correlates with race and sex. To the extent people regard a rigidly class-stratified society as an independent evil, and one in which class correlates with inborn characteristics as an even greater one, they are likely to look more unfavorably on any policy choice that exacerbates even slightly the income disparities between existing lifetime income classes.

C. DISTRIBUTIONAL EFFECTS OF A CASH-FLOW TAX VIEWED THROUGH A LIFETIME PERSPECTIVE

The discussion above has noted all the problems with the two hypotheses predicting divergence of annual and lifetime income rankings. Notwithstanding these problems, the data confirm that pre-tax earnings inequality is reduced when income is measured on a lifetime rather than an annual basis. Some studies have estimated that about one-half of earnings inequality (by conventional measures of inequality) disappears when one compares lifetime rather than annual incomes.⁵⁷

57. The literature in this area is substantial. For studies finding that inequality, measured by the coefficient of variation (the Gini coefficient)—a standard measure of income dispersion—drops by 40% to 50% when incomes are measured on a lifetime rather than an annual basis, see JACOB MINCER, SCHOOLING, EXPERIENCE, AND EARNINGS 24-40 (1974); ANTHONY F. SHORROCKS, INSTITUTE FOR RESEARCH ON POVERTY, INCOME STABILITY IN THE UNITED STATES (Discussion Paper No. 526-78, 1978); N.S. Blomquist, *A Comparison of Distributions of Annual and Lifetime Income: Sweden around 1970*, 27 REV. INCOME & WEALTH 243, 243-64 (1981); Lee A. Lillard, *The Distribution of Earnings and Human Wealth in a Life-Cycle Context*, in THE DISTRIBUTION OF ECONOMIC WELL-BEING 557, 589 (1977); Lee A. Lillard, *Inequality: Earnings v. Human Wealth*, 67 AM. ECON. REV. 42, 42-52 (1977). For somewhat lower but still substantial estimates of the decrease in inequality associated with lifetime income, see ALAN S. BLINDER, TOWARD AN ECONOMIC THEORY OF INCOME DISTRIBUTION 102-04 (1974); Ian J. Irvine, *The Distribution of Income and Wealth in Canada in a Lifecycle Framework*, 13 CANADIAN J. ECON. 455 (1980); see also Moss, *supra* note 29; Sawhill & Condon, *supra* note 55.

Fullerton and Rogers, on the other hand, find an even more dramatic drop in the coefficient of variation, from 1.298 for annual incomes to only 0.456 for lifetime incomes. FULLERTON & ROGERS, *supra* note 22, at 17, 26, 105. Some of this disparity, however, results from the fact that the authors use different income bases in calculating annual and lifetime incomes. They define lifetime income as labor endowments—the amount people could earn each year at their predicted wage rate if they chose to work the maximum feasible number of hours. As is generally the case in lifetime income models, see, e.g., Davies et al., *supra* note 32, at 636, capital income is omitted entirely from the definition of lifetime income. In contrast, Fullerton and Rogers' annual income figures are based on labor income, rather than labor endowments, and include capital income as well as labor income. FULLERTON & ROGERS, *supra* note 22, at 105-06 & n.26. The authors find that if one calculates annual income using an endowment view of labor income (that is, if one uses wage rates rather than actual wages earned) and omits capital income, the disparity between the annual and lifetime measures declines significantly. *Id.* at 106.

Two points merit mention when evaluating the utility of lifetime income measures. First, the conclusions in these studies appear extremely sensitive to assumptions made about income mobility.

Because lifetime incomes display less inequality than annual incomes, the distributive effects of most taxes or tax changes are muted when judged from a lifetime rather than annual basis. That generalization appears to hold true for the shift to a consumption tax. Unresolved conceptual problems in measuring welfare, such as those alluded to in accounting for the utility generated by bequests, along with differing assumptions about the incidence of consumption taxes and the configuration of income and cash flow taxes under comparison, make it difficult to state with precision the distributional effects of shifting to a cash-flow tax.⁵⁸ In general, however, the lifetime perspective greatly reduces (though does not eliminate) the regressive distributional effects of that shift among different lifetime income classes. Fullerton and Rogers, for example, find that those in the bottom two deciles of lifetime (labor) income lose (dramatically for the lowest 2%, mildly for the next 18%), those in the top 2% benefit substantially from the switch, and all other income groups in the middle benefit somewhat.⁵⁹ Other statistical measures show a somewhat similar story,

For a striking example of how dramatically the Gini coefficients for lifetime income vary as assumptions about mobility within age cohorts are varied, see Davies et al., *supra* note 32, at 644-45.

The second point concerns the choice of discount rate used to transform a series of annual measures of income into a single lifetime measure. Studies of annual incomes and the impact on annual incomes of tax changes focus only on explicit (undiscounted) financial wealth. In contrast, economic models of lifetime incomes and the impact on such incomes of tax changes use a broader, utility-based definition of income, where utility is a function of (among other things) an individual's time preference and desire to smooth out income. In assessing total lifetime utility from an income stream and the effect of taxes on utility, the choice of a discount rate is therefore critical. In practice, studies of lifetime incomes have discounted future benefits using a single rate of time preference. The empirical evidence, however, suggests the presence of class-based differences in time preferences, with the poor having significantly higher time preferences than the rich. Thus, adopting a single discount rate for all taxpayers will understate the inequality in lifetime incomes by ignoring the expected surplus from inframarginal savings that accrues disproportionately to the wealthy. Because lifetime income measures discount labor earnings at a uniform discount rate in calculating lifetime incomes, these measurements may understate the inequality of lifetime labor incomes as well. For an interesting preliminary exploration of this point in the context of labor earnings, see Moss, *supra* note 29, at 119.

58. On the incidence of consumption taxes, see Davies et al., *supra* note 32, at 635 (contrasting the assumption of Browning and Johnson (taxes borne only on the sources side by factor incomes, and hence progressive) with the more standard assumption used by Pechman and Okner (taxes borne by consumers, and hence regressive)). Fullerton and Rogers embed their assumptions in their general equilibrium model, making them difficult to extract. Given the bottom-line conclusions of the Fullerton and Rogers study, however, the model likely assumes that consumers will bear at least a portion of the tax on capital. Consequently, savers will benefit disproportionately from the shift to a consumption tax.

59. FULLERTON & ROGERS, *supra* note 22, at 39-40, 187-88. In their model, Fullerton and Rogers equate welfare with the present value of lifetime consumption of (untaxed) leisure as well as material goods. Thus, welfare does not correspond simply to more conventional measures of wealth changes from tax changes. In addition, the authors have (inevitably) made a number of simplifying assumptions that may lead their predicted outcomes to diverge from likely actual outcomes. They ignore transitional effects. By comparing a somewhat simplified model of our current income tax with a proportionate consumption tax without an exemption level or any exemptions for necessities, Fullerton and Rogers overstate the regressive effect of any politically feasible switch. *Id.* at 187. Finally, they assume (without any supporting data on actual savings behavior) that each lifetime income class (measured by lifetime labor endowments) will engage in a pure lifecycle optimization pattern of savings, given their observed lifetime earnings profile, uniform, fixed minimum consumption needs in each period, and uniform parameters chosen for a net rate of return, time preference and intertemporal elasticity of

with the apparent regressivity of shifting to a cash-flow consumption tax declining (though not to zero) as one departs from the one-year snapshot approach.⁶⁰

Which perspective is the appropriate one? There is no right answer to this question. One's answer depends upon a number of empirical assumptions, as well as philosophical predispositions about how one subjectively experiences life as an intertemporal being. Assuming a world of perfect foresight and no credit constraints, the argument for a lifetime perspective seems very strong. Under those assumptions, people's consumption choices, and more generally their sense of well-being, at any point in their lives will correlate with their lifetime prospects rather than temporary fluctuations in income. Even relaxing both assumptions, the presence of any significant savings (through financial investments, purchase of consumer durables, etc.) or borrowing suggests a time horizon for economic planning considerably in excess of one year.

We note two other factors that favor a lifetime perspective. First, it has long been argued that people's sense of well-being correlates less with absolute wealth than relative wealth.⁶¹ We hypothesized above that people's Veblenesque reference group of Joneses to keep up with is more likely to be some subset of their own rough age cohort than others far removed in age. If both of the preceding hypotheses are correct, *given* lifecycle patterns of earnings, lifetime income rankings more accurately capture people's subjective sense of well-being *in any given year* than annual rankings. Annual rankings implicitly compare the 25-year-old surgeon earning \$35,000 to the 50-year-old janitor earning \$40,000, and conclude the latter is better off. If neither the surgeon nor the janitor would view the matter that way, because each implicitly compares herself principally to her own age cohort, annual rankings inaccurately describe how they subjectively experience inequality *at the moment of ranking*. On the other hand, lifetime rankings, which automatically strip out age-related differences in wealth, will come closer to capturing that subjective experience.

Second, the results obtained from annual rankings are more sensitive to debatable time framing decisions than those obtained from lifetime rankings.

substitution. *Id.* at 147. To the extent these assumptions prove untrue, the validity of Fullerton and Rogers's conclusions is undermined.

60. See, e.g., Alan J. Auerbach, *Tax Reform, Capital Allocation, Efficiency, and Growth*, in ECONOMIC EFFECTS OF FUNDAMENTAL TAX REFORM 29 (Henry J. Aaron & William G. Gale eds., 1996); Davies et al., *supra* note 32; James M. Poterba, *Lifetime Incidence and the Distributional Burden of Excise Taxes*, 79 AM. ECON. REV. 325 (1989).

Perhaps the single most important variable in assessing the distributional effects of a cash flow tax on an annual *or* lifetime basis is whether the government will ameliorate the effects of a change through cash transfers or other government programs aimed at the poor. Though important, analysis of this variable exceeds the scope of this paper, as well as the foregoing simulations, all of which focus only on tax changes.

61. The *locus classicus* of this observation is, of course, Thorstein Veblen, *The Theory of the Leisure Class: An Economic Study in the Evolution of Institutions* (1899). For a recent summary and analysis of social science literature testing out this hypothesis, see Richard H. McAdams, *Relative Preferences*, 102 YALE L.J. 1 (1992).

The problem is exemplified by recent debates over whether, within an *annual accounting* perspective, a consumption tax should be treated as paid in the year of consumption or in the year in which the income consumed is to be, or was, earned. The lifecycle hypothesis predicts that people save current income primarily to fund retirement. If consumption is constant but income is lower during retirement than during middle age, and if the burden of a consumption tax is assigned to the year of consumption, the tax will bear heavily on retirees as a percentage of their annual income, making the tax appear more regressive. Suppose, instead, that one thinks of each dollar of savings by the middle-aged as buying a given after-tax amount of retirement consumption. Then one might treat the tax as prepaid by the middle-aged. Assigning the tax burden in this manner substantially lessens, though does not eliminate, the regressivity of shifting to a consumption tax.⁶² One can gain some perspective on the magnitude of differences that result from varying assumptions by comparing a 1994 Joint Committee on Taxation analysis with an earlier (1985) analysis by Joseph Pechman. The 1994 analysis, which assigns the burden of a cash flow tax in the year income is earned, finds the burden of a hypothetical tax to be 1.33 times as great for the lowest income class as the highest income class. Pechman, who assigns the burden in the year of consumption, finds the effective tax rate to be 6 times as great for the lowest income class as the highest income class.⁶³

On the other side, the relative deficiency of the data available for lifetime incomes, in particular data on capital incomes, argues in favor of annual measures. While relatively good data are available for capital income (at least that portion realized for tax purposes) as a percentage of *annual* income, the existing panel data are inadequate to predict capital income as a percentage of lifetime income.⁶⁴ As noted earlier, Fullerton and Rogers dealt with this gap by assuming that each lifetime income class (measured by lifetime labor endowments) engages in a pure lifecycle optimization pattern of savings. That assumption allows Fullerton and Rogers to impute lifetime capital income to each lifetime income class, based on observed lifetime labor earnings profiles, and uniform parameters chosen for a net rate of return, time preference, and intertemporal elasticity of substitution.⁶⁵ As discussed at length above, however, there is substantial reason to doubt that most income classes engage in pure lifecycle savings. As Fullerton and Rogers concede, to the extent their model misspecifies actual savings behavior, its bottom-line conclusions about winners and losers under a consumption tax are suspect as well. For example, if (as appears to be the case) the very wealthy save more and longer than a pure lifecycle model predicts given their lifetime earnings patterns, the model may

62. This issue is discussed by many of the contributors to *Distributional Analysis of Tax Policy*, *supra* note 1.

63. See Edgar K. Browning, *Tax Incidence Analysis for Policy Makers*, in DISTRIBUTIONAL ANALYSIS OF TAX POLICY, *supra* note 1, at 164, 170.

64. See FULLERTON & ROGERS, *supra* note 22, at 20-21.

65. *Id.* at 147.

understate the current capital tax burden borne by the wealthy, and hence understate the relative gains to the wealthy of shifting to a consumption tax. Conversely, if (as appears to be the case) the very poor save less than the model predicts given their lifetime earnings pattern, the model may understate the relative costs to the poor of shifting to a consumption tax. The model's inclusion of minimum necessary purchases for each period may bring predicted savings behavior very close to actual savings behavior for all but the highest income groups.⁶⁶ The model, however, probably still underpredicts actual saving, and hence the benefits of a consumption tax, at the top end of the income scale, where the data reveal a large, disjunctive jump in savings out of discretionary income.

III. GENERATIONAL PERSPECTIVE: THE TRANSITIONAL LUMP-SUM TAX ON OLD CAPITAL

All of the above analyses deal with the effects of a cash flow tax adopted *de novo*. In the real world, of course, we would be shifting from the existing income tax to a cash-flow system. That reality creates a huge transitional problem: how to treat old capital already invested under the existing income tax. Most recent proposals, including Dick Arme's flat tax plan (modelled on the Hall/Rabushka flat tax), provide no transition relief for old capital. The efficiency and distributive implications of that decision are enormous and, in some analyses, overwhelm the other effects of adopting a cash-flow tax.

Without transitional relief, old capital effectively loses all as-yet unclaimed depreciation deductions forever. That will (*ceteris paribus*) drive down the equity price of old capital to a point where it will generate the same after-tax return on investment as new capital. Such devaluation amounts to imposing a one-time wealth tax on all existing capital at the time of the transition, at a rate equal to the tax rate on capital.⁶⁷

The fact that the transition to a cash-flow tax imposes a one-time lump-sum tax on existing capital has a number of important policy implications. First, it significantly moderates the regressive effect of a switch to a cash-flow tax, at least at the top of the income scale.

Second, the transitional lump-sum tax on old capital generates a significant portion of the efficiency gains from shifting to a cash-flow tax. Indeed, in at

66. That is, the model may predict correctly that the discretionary income *above minimum necessary purchases* that is available for saving under a lifecycle optimization scheme is close to zero for the very poor, and increases substantially as a percentage of total income for middle-income groups.

67. GENTRY & HUBBARD, *supra* note 2, at 14-15; Hubbard, *supra* note 1; Kotlikoff, *supra* note 32, at 212-16; Laurence J. Kotlikoff, *Investment v. Savings Incentives*, in *THE ECONOMIC CONSEQUENCES OF GOVERNMENT DEFECTS* (L.H. Meyer ed., 1983) [hereinafter *Investment v. Savings Incentives*]. Assume, for example, 100% expensing of new capital in an economy with a $t\%$ proportional income tax. For reasons discussed *supra* Part I, given full expensing of new capital, the effective tax rate on new capital is presumed to equal zero. Because the market will equate the after-tax rates of return on all marginal investments, it will depress the market value of the old capital by $1-t$ to yield the same after-tax return as new capital. Kotlikoff, *supra* note 32, at 214-15.

least some estimates, it is responsible for more than 100% of those gains.⁶⁸ That is to say, an income tax may be more efficient than a cash-flow tax with no old capital.⁶⁹ It is less efficient than the cash-flow tax that would replace it, but only because of the lump-sum tax on old capital that a cash-flow tax adds to the wage tax. This analysis implies that if it were practical to separate out returns to labor and capital, one could generate even greater welfare gains through a cash-flow tax with a higher tax rate on capital than labor, because the tax on capital will fall either as a (nondistortionary) lump-sum tax on old capital, or a (nondistortionary) tax on inframarginal surplus from new capital.⁷⁰ More importantly, this analysis suggests that, from an efficiency perspective, the tail may be wagging the dog in the debate over an income versus an consumption tax. To the extent that gains from shifting to a cash-flow tax come from the implicit lump-sum levy on existing capital, one could easily (in theory, if not political reality) achieve those same gains by imposing a one-time wealth tax on existing capital in the context of our current income tax system.

Third, it is generally assumed that the elderly (those 55 years and older at the time of the transition) will bear the brunt of the lump-sum tax, because they hold the majority of existing assets at any given time.⁷¹ One recent estimate,

68. Fullerton and Rogers, for example, find that replacing the existing income tax with a proportional consumption tax will provide a steady-state gain equal to 2.57% of lifetime income, but a gain of only one-quarter of that if all generations, including the present generation, are included. The lump-sum tax on the present generation finances the lower tax rate on future generations, which in turn produces virtually all of the steady-state savings. FULLERTON & ROGERS, *supra* note 22, at 188; *see also* AUERBACH & KOTLIKOFF, *supra* note 1, at 62, 77-81; Auerbach, *supra* note 60, at 63 (concluding that the Nunn-Domenici version of a flat tax (the USA Tax Act of 1995, S. 722, 104th Cong.) is a net welfare loser, primarily because the transition relief wipes out the welfare gains that would have been generated by an implicit lump sum levy on existing capital); Alan J. Auerbach et al., *The Efficiency Gains from Dynamic Tax Reform*, 24 INT'L ECON. REV. 81, 92-93 (1983); Kotlikoff, *supra* note 32, at 203.

69. The intuition behind this somewhat surprising hypothesis is that while an income tax imposes two distortions (labor/leisure and intertemporal) compared to only one for a consumption tax (labor/leisure), the broader tax base of an income tax allows for lower rates on both labor and capital. The aggregate distortion from both sources under those lower rates may be less than the distortion to labor alone under the higher (cash-flow) rate. *See* GENTRY & HUBBARD, *supra* note 2; Hubbard, *supra* note 1; Kotlikoff, *Investment v. Savings Incentives*, *supra* note 67; Kotlikoff, *supra* note 32.

70. In practice, a higher tax rate on capital would lead taxpayers to disguise returns to capital as returns to labor, and would likely be inadvisable for that reason.

71. For a dissenting view, see GENTRY & HUBBARD, *supra* note 2, at 24-25, 30-32. Their key points include: (a) The purchasing power of that portion of the elderly's wealth held in tax exempt bonds will not decline (assuming little change in prices) provided the elderly hold bonds for (unchanged) after-tax coupon payments rather than disposing of them at their (post-transition) discounted value; (b) The middle-aged cohort, which owns the greatest share of housing equity, will bear the brunt of transition losses in equity value to housing; and (c) The burden to the elderly as owners of old capital is offset partially by their untaxed, accrued capital gains, which (without a price level change) will mean a disproportionately large windfall to them.

Gentry and Hubbard suggest it is more accurate to describe the transition tax as falling simply on the currently wealthy—what they call the “Willie Sutton” hypothesis of transition incidence (the incidence falls where the wealth is). *Id.* at 32-33. They argue that disaggregating portfolio holdings bears out this hypothesis. While households in the top 5% of wealth hold 57% of aggregate household net worth, their portfolios contain even higher percentages of most of the assets most negatively affected by

based on the Federal Reserve's 1989 Survey of Consumer Finances, puts the aggregate holdings of the 55-plus years cohort at 51.5% of total net worth.⁷² On the flip side, the shift to a consumption tax without transition relief benefits the young and unborn generations at the time of transition by enabling them to purchase old capital at devalued prices.⁷³

The redistributive effect of the lump-sum tax will be offset to some extent by capital adjustment costs facing new capital, which will generate inframarginal rents on old (previously installed) capital, reflected in higher equity valuations.⁷⁴ The redistributive effect will also be offset to some extent by the repeal of the double tax on corporate dividends, which—if the personal-level dividend tax under the income tax is capitalized in the share price of existing capital—will drive up its equity value.⁷⁵ On the other hand, the redistributive effect of the lump-sum tax will be *exacerbated* if the effect of the cash-flow tax is to raise prices rather than depress after-tax wages, because the elderly, who already paid taxes on earned income, now get taxed again as they purchase (with withdrawn savings) goods or services at a higher (tax-inclusive) price.⁷⁶ This assumes that the elderly live on incomes not indexed to prices.

In at least some simulations, these intergenerational redistributive effects dominate the distributive consequences of tax reform, determining the ultimate winners and losers under the shift to a cash-flow tax (with no transition relief). Alan Auerbach, for example, estimates that, under the Hall/Rabushka tax with no transition relief, nearly all of the welfare gains accrue to those born after reform, and the elderly (those 55 years or older) show a slight welfare loss.⁷⁷

Is this good or bad? The question obviously raises a host of enormously complicated questions concerning intergenerational equity. Two points merit

the transition (tax exempt bonds, active businesses, real estate). The exception to this generalization is primary residences, of which the wealthy hold a far lower share (23% of value). *Id.* at 26-27, 32-33.

Gentry and Hubbard's analysis misses the (equity) point to some extent, however, in trying to shift focus from the elderly to the wealthy. For the young wealthy, as Gentry and Hubbard themselves note, the transition burden will be offset partially by higher after-tax rates of return on investments compounding until they dissave. Thus, the relative losers among the wealthy (taking into account losses from transition tax and gains from longterm breaks for capital) are the *elderly* wealthy.

72. *Id.* at 24-25, 30-32.

73. Kotlikoff, *supra* note 32, at 214-16.

74. Auerbach, *supra* note 60, at 61-63; Kotlikoff, *Investment v. Savings Incentives*, *supra* note 67, at 266-67.

75. GENTRY & HUBBARD, *supra* note 2, at 62; Alan Auerbach, *Share Valuation and Corporate Equity Policy*, 11 J. PUB. ECON. 291 (1979); David Bradford, *The Incidence and Allocation Effects of a Tax on Corporate Distributions*, 15 J. PUB. ECON. 1 (1981).

76. GENTRY & HUBBARD, *supra* note 2, at 13-14; Auerbach, *supra* note 60, at 81-100; Kotlikoff, *supra* note 32 at 203-04. Economists are divided about whether price levels are likely to change in shifting to a flat tax. Bob Hall has argued that a Hall/Rabushka-style flat tax would not inflate prices (presumably depressing after-tax wages), while a sales tax and VAT would inflate prices, due to a peculiarity in federal monetary policy as to what measurement of wages triggers intervention to raise prices. Robert Hall, *The Effects of Tax Reform on Prices and Asset Values*, in TAX POLICY AND THE ECONOMY, *supra* note 32, at 10; see also GENTRY & HUBBARD, *supra* note 2, at 14 (suggesting that a flat tax is unlikely to affect prices significantly, in contrast to a business-level VAT, because of the stickiness of pre-tax (nominal) wages).

77. Auerbach, *supra* note 60, at 58, 60-61 tbl. 2-3.

brief mention here. First, the transition may seem not only unproblematic, but desirable, to the extent the direction of the intergenerational redistribution effected here (from old to young) runs counter to the likely direction (from young to old) effected by current fiscal policies, including the social security system and the government's increasing debt burden.

Second is the problem of what time horizon to use for calculating well-being. The whole notion of intergenerational redistribution implicitly accepts the premise, reflected in lifecycle models, that each person's utility is determined only by her own lifetime consumption. To the extent that the premise is untrue—that one's utility actually incorporates the utility of succeeding generations—the conventional generational perspective may not accurately capture each generation's real welfare gains and losses. The loss to the elderly, for example, may be suffered in large part by their children, who in response will provide additional support, receive assets of lesser value, or simply feel worse off because of their interdependent utility function. Conversely, the expected welfare gains to future generations may well increase the welfare of the current generation, who may consume more (because they need to save less for their children's future needs), or who simply feels better because of their children's better future prospects. That is to say, it raises in a different guise the Ricardian Equivalence problem. If familial generations act as complete altruists with respect to each other, government fiscal policy that redistributes from current to future generations will, in the end, be distributively neutral. Individuals of all generations will act to offset the government transfer, with the older generation decreasing net transfers to their children or the younger generation increasing net transfers to their parents, to maintain the same (optimal) distribution of resources between generations.⁷⁸ To the extent altruism motivates intergenerational wealth transfers, the intergenerational redistribution resulting from the shift to a consumption tax will be muted.

CONCLUSION

In the legal literature and political discourse, a consumption tax is generally assumed to be significantly more regressive than an income tax. That assumption should probably be qualified in two respects. First, while the wealthy will almost certainly benefit disproportionately from the shift to a consumption tax, the extent of the disproportionality may be less than generally assumed. Both taxes treat most components of investment return in a like fashion. In addition, the regressivity of a consumption tax fades significantly when its distributional effects are judged on a lifetime—rather than an annual—basis, and when transitional effects (assuming incomplete transitional relief) are taken into account. Second, depending upon the transitional relief granted to old capital in any shift to a consumption tax, the redistributive consequences of the tax change between generations may be as significant, if not more significant, than redistribution among income classes.

78. Robert J. Barro, *Are Government Bonds Net Wealth?*, 82 J. POL. ECON. 1095 (1974); Gary S. Becker, *A Theory of Social Interactions*, 82 J. POL. ECON. 1063 (1974).