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# Permanent Income and the Annual Income Tax

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## PERMANENT INCOME AND THE ANNUAL INCOME TAX

Daniel Shaviro\*

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### I. INTRODUCTION

Should the United States shift from an income tax to a consumption tax? Should we permanently repeal the estate tax? What should be the aims of Social Security reform? Should there be time limits on welfare benefits? These big fiscal policy questions of recent years share a little-recognized common element. They cannot be answered without exploring the broader rationales for having a mainly annual system, like the income tax and welfare, or a more lifetime-based system, like Social Security.

The mainly annual character of a system like the federal income tax has two distinct components, apart from the frequency of filing. The first pertains to information, and the second to the timing of cash flows between the taxpayer and the government.

As to information, tax liability largely depends on measuring the taxpayer's position during the current year. For the most part, one's income for the year determines one's tax liability without regard to one's income in other years, leaving aside the carryover of various tax attributes such as net operating losses.<sup>1</sup> As to the timing of cash flows, taxpayers generally must settle up each year with the Internal Revenue Service. They cannot, at a market interest rate, accelerate or defer the tax payments that are due.

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\* Wayne Perry Professor of Taxation, NYU Law School. I am grateful to Lily Batchelder, Neil Buchanan, Lee Anne Fennell, Jeffrey Liebman, Kirk Stark, and David Weisbach for writing papers that helped stimulate my thinking about these issues. I am also grateful to Alan Auerbach, Lily Batchelder, and Alex Raskolnikov for helpful comments on an earlier draft, and to Jubin Niamehr for research assistance.

<sup>1</sup> However, attributes such as asset basis make possible the use of information from past years.

Early payment is not rewarded with a time value discount to keep its present value constant, and late payment (beyond permissible extensions) is penalized, rather than simply leading to the imposition of a market interest charge. Poverty programs likewise rely mainly on current year (or even current month) information, with exceptions such as the five-year time limit on receiving Temporary Aid to Needy Families (TANF) benefits.

The restriction to current-year information inevitably has important effects in the presence of non-flat marginal rates (including not only rising rates, but those that decline with income due to phase-outs, such as those of income tax credits or welfare benefits). If non-flat rates apply to annual income, then the sequence of one's earnings and other taxable income, and in particular whether they fluctuate or are relatively constant over time, affects one's lifetime tax burden. Earning fluctuations can significantly increase one's lifetime tax burden if marginal rates rise with income.

By contrast, the requirement of annual cash flow settlement matters only contingently. In the presence of (1) complete capital markets, permitting people to borrow and lend across time however they like, and (2) rational consumers who make consistent intertemporal choices given their preferences, it would make no difference whatsoever. Having to pay federal income tax at a given time, rather than being allowed to accelerate it or defer it at a market interest rate, would have no effect on people's work or consumption activity if they could (and did) borrow and lend at will to arrange their overall cash flows as they liked. However, where markets are incomplete or people fail to exercise consistent rational choice across time, the sequence of cash flows between oneself and the government can be important.

Historically, the first of these two features of an annual tax system has been a lot more controversial than the second. In particular, it has led to calls for income averaging, a system under which marginal rates would apply to one's average annual income over a period longer than a year – perhaps even one's entire life. Annual cash settlement, by contrast, has prompted little dissatisfaction. While caring about it may be logically reconcilable with favoring the use of a long-term income picture,<sup>2</sup> the two are uncomfortable bedfellows. For annual cash settlement to matter, the current sequence of cash flows – deemed inconsequential in the long-term view – must matter.

This ambivalence is prominently on display in the best-known and most comprehensive income averaging proposal to date, made by economist William Vickrey in 1939.<sup>3</sup> The normative criteria on which Vickrey based his proposal included the following:

- (1) The discounted value of the series of tax payments made by any taxpayer should be independent of the way in which his income is allocated to the various income years. ...
- (4) Any given tax payment should not be too large in relation to the income of the period immediately proceeding (Vickrey 1994 ed. 107).

These two criteria can be (and in Vickrey's scheme are) pursued simultaneously, since the former relates to lifetime tax burden and the latter to the timing of tax payments. Yet Vickrey's Criterion (4) is a poor intellectual fit with his Criterion (1). If only the discounted present value of cash flows matters, why worry about the relationship

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<sup>2</sup> For example, one might favor annual cash settlement on the ground that the government is ill-equipped to handle the default problems that might be raised by letting people borrow their current tax liabilities at a market interest rate.

<sup>3</sup> I discuss the Vickrey plan *infra* at \_\_\_.

between a given tax payment and income of the immediately preceding period? And if we do need to worry about that relationship, doesn't this suggest that not all present-value-equivalent cash flows are the same?

The reasons for this ambivalence lie in the explanatory power and limits of economic theory. Vickrey's Criterion (1) would be completely persuasive, and his Criterion (4) irrelevant, if one fully accepted the permanent income hypothesis of Milton Friedman,<sup>4</sup> under which people's consumption decisions are based on their lifetime incomes, not on how much they earn in a given period.<sup>5</sup> However, given incomplete capital markets and time-inconsistent preferences, the permanent income hypothesis does not fully hold. Its descriptive validity is context-dependent in ways that the government cannot easily observe, and that general tax rules cannot easily capture. Accordingly, there is no generally applicable answer to the question of how we should weigh information concerning the past and the expected future, relative to information concerning the current period.

As we will see, the significance of this question reaches well beyond income averaging. For example, full acceptance of the permanent income hypothesis would strongly support shifting from an income tax to a consumption tax, eliminating the estate tax, regarding Social Security as irrelevant other than as a system for transferring wealth

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<sup>4</sup> Milton Friedman, *A THEORY OF THE CONSUMPTION FUNCTION* (1957).

<sup>5</sup> Closely related to the permanent income hypothesis is the life-cycle model of consumption smoothing, pioneered by Franco Modigliani and Richard Brumberg. See Franco Modigliani and Richard Brumberg, *Utility Analysis and the Consumption Function: An Interpretation of Cross-Section Data*, in K.K. Kurihara, ed., *POST-KEYNESIAN ECONOMICS* (1954). See also Angus Deaton, *UNDERSTANDING CONSUMPTION* (1992) at 214, describing the permanent income and life cycle hypotheses as "well-defined special cases of the general theory of intertemporal choice." For convenience given that the differences between the two models are unimportant for my purposes, I emphasize Friedman's permanent income hypothesis throughout.

between individuals, and dramatically changing welfare law to base aid on people's lifetime income rather than their current circumstances. As we will see, some of these implications are merely weakened by recognizing the limits to permanent income, while others are refuted. In illustration, the claim that Social Security is irrelevant apart from its transfers can simply be rejected, while the support that the permanent income hypothesis provides to consumption-based tax reform is merely weakened by real-world departures from its conditions.

One conclusion *not* properly derived from the problems with the permanent income hypothesis is that an annual approach remains the proper default (administrative issues aside) in designing taxes and transfers. A completely annual view requires that each year be an entirely separate period, in which people's currently available resources are unaffected by their past decisions and will be unavailable in future periods. Such a view appears, if anything, even harder to defend, as a description of the world, than the permanent income hypothesis. Thus, among other implications, the revival of income averaging in the federal income tax may be overdue despite its inevitable imperfections.

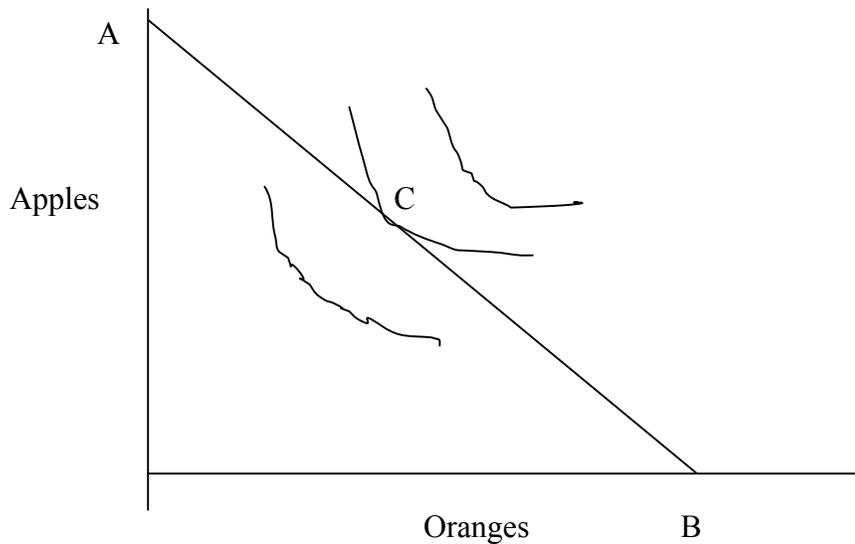
The rest of this paper proceeds as follows. Section II explores the rationale for permanent income, the conditions that would be necessary for it fully to hold, and its implications if fully true. Section III discusses the ways in which it does not fully hold, and section IV explores how these departures modify its implications. Section V offers a brief conclusion.

## II. PERMANENT INCOME AND ITS IMPLICATIONS

### A. The Permanent Income Hypothesis

The Friedman permanent income model is mathematically sophisticated. So is the closely related life-cycle model of consumption smoothing that was pioneered by Franco Modigliani and Richard Brumberg.<sup>6</sup> Yet the core idea behind both models is simple and intuitive, reflecting familiar economic reasoning. To illustrate the core intuition in a different setting, suppose we posit a world with only two consumer goods, apples and oranges, which are freely tradable for each other at a fixed ratio and at zero transaction cost. Each worker has a wage rate and therefore a budget line, reflecting the largest combinations of the two consumer goods that she can earn. Her choice will depend on her preferences, which reflect declining marginal utility for each good, and which can be represented through indifference curves showing combinations of the two goods that she rates as equal, as shown in Figure 1.

**FIGURE 1**



<sup>6</sup> See n. \_\_, supra.

The worker in Figure 1, who can obtain any of the apple-orange combinations on line AB, picks the combination at point C, which lies on the highest indifference curve that is tangent to AB.

Now suppose that, despite the free exchangeability of apples and oranges, some of the firms that might employ this worker pay purely in apples, while others pay purely in oranges. Under standard economic reasoning, the worker would be expected to end up at C no matter which firm ends up employing her. Given the goods' free exchangeability, and adding as well the standard neoclassical economic assumption of consistent rational choice given one's preferences, she will trade her way to the favored spot even if she starts at A or B. Under these assumptions, we also would expect her choice of employer to be unaffected by whether a given firm paid in apples or in oranges.

A further possible implication requires more assumptions. Suppose that, if two workers at the same budget line chose the same commodity mix, we would assume that they had the same total utility and marginal utility for an extra unit of consumption. We might base this assumption on the view that, so far as we can tell, they have identical utility functions. By contrast, if we observe two workers making different choices at the same budget line, we learn that their utility functions must be different. Still, if this observation conveys no information to us about the two workers' total or marginal utility, we may reasonably continue to treat the two workers as identical.

This little model has wide-ranging applicability. Make the goods "market consumption" and "leisure," with tax being imposed only on the former, and you have the basic set-up for optimal income tax analysis, with its implication that the equal taxes imposed on people who are relevantly equal should in principle reflect ability (i.e., the

wage rate), rather than labor supply choice.<sup>7</sup> Emphasize the assumption that the worker will head to point C no matter where she starts out, and essentially you have the Coase theorem.<sup>8</sup> Or, of greatest interest here, make the two goods “earlier consumption” and “later consumption,” and you get the permanent income hypothesis.

The permanent income hypothesis holds that people’s current consumption choices depend on their anticipated lifetime income, rather than their income for any given period. Thus, the sequence of one’s earnings is entirely independent of the sequence of one’s consumption, keeping in mind that labor supply (as distinct from earnings) in a given period may affect how much one wants to consume in that period.

While not logically necessary to the model thus described, proponents note that earnings tend to be more concentrated in particular periods than preferred consumption.<sup>9</sup> For example, to consume after retirement, people must save for it. Likewise, good years and bad years from an earnings standpoint need not have any correlation with years when one prefers high consumption as opposed to low consumption, suggesting that consumption may be smoothed, relative to annual earnings, even during one’s working years.

If consumption in any one period has declining marginal utility as the amount of consumption in that period increases, people will have some tendency to prefer complete income smoothing as between periods. There is no reason to predict complete smoothing, however, with realistic utility functions. Various plausible preferences, such

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<sup>7</sup> See, e.g., Daniel Shaviro, Endowment and Inequality, in Joseph Thorndike and Dennis Ventry (eds.), *TAX JUSTICE RECONSIDERED: THE MORAL AND ETHICAL BASES OF TAXATION* (2002).

<sup>8</sup> See Ronald Coase, *THE FIRM, THE MARKET, AND THE LAW* (1988).

<sup>9</sup> See, e.g., Lee Anne Fennell and Kirk Stark, *Taxation Over Time* (forthcoming in *Tax Law Review*).

as for rare but long vacations, or to travel more while one is still young, can lead to one's choosing uneven consumption between periods, or particular patterns such as smoothly rising or falling levels of consumption.

All this is merely a theoretical model for behavior, still requiring empirical validation. It is logically compelling, however – i.e., one *should* expect to observe it – if its underlying assumptions of complete markets and consistent rational choice fully hold. I will discuss in section III these assumptions' decided failure to hold in many respects, but for now I examine what would be the consequences of their fully holding. This is of interest because, while the assumptions are not entirely true, they also are not entirely false, and hence their implications, even if not fully correct, remain of interest.

## **B. Income Averaging**

1. The case for basing tax liability on lifetime earnings rather than annual earnings – In the permanent income model, people's consumption over time depends purely on their budget lines, lifespans, and intertemporal consumption preferences. Thus, two individuals with different earnings sequences but identical lifespans, budget lines, and consumption choices would have identical total and marginal utility, so far as we know, if the differences in their earnings sequences did not convey information to the contrary.

Under a utilitarian social welfare function, which treats social welfare as an additive function of people's utility,<sup>10</sup> the two individuals' presumed identical marginal utility would support taxing them the same. If one shifted to a social welfare function that only counted people's subjective wellbeing but gave independent weight to reducing

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<sup>10</sup> See, e.g., Louis Kaplow and Steven Shavell, FAIRNESS VERSUS WELFARE 24 n. 15 (2002).

inequality in wellbeing, one still would want to tax them the same, given their presumed identical total utility. Various other normative views (though surely not all possible views) would likewise support taxing them the same. For example, under a liberal egalitarian view, one might conclude that the two individuals are relevantly equal because they have the same opportunities, and that redistribution would unfairly treat their distinct life choices unequally.<sup>11</sup> A proponent of horizontal equity would likewise want to tax them the same if pre-tax budget lines were considered the right metric for defining pre-tax equals.<sup>12</sup>

The case for basing tax liability on lifetime income would not be limited to individuals who were equal in this respect. Rather, insofar as either total or marginal utility is of interest in one's favored distribution policy, lifetime income would offer the correct standard for comparison, and income or consumption over any shorter period, such as a year, would not. However, even if the permanent income hypothesis fully holds, a definitive case for using lifetime income and nothing else – for example, under the Vickrey approach with any needed modifications – would depend on the absence of any other relevant information about total or marginal utility (whichever one considers of interest), including that derived from people's earning or consumption patterns or from the relationship between the two.

An important detail here concerns lifespan differences. The longer one lives, the greater one's lifetime consumption needs. Thus, while living longer may increase one's total utility, it also tends to increase the marginal utility of a dollar. From a utilitarian

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<sup>11</sup> See, e.g., Bruce Ackerman and Anne Alstott, *THE STAKEHOLDER SOCIETY* (1999). However, the source of the budget line – for example, as between earnings ability and inherited wealth – also might matter under a liberal egalitarian view.

<sup>12</sup> See, e.g., Martin Feldstein, *On the Theory of Tax Reform*, 6 *J. Pub. Econ.* 77 (1976).

standpoint, this suggests that, as between two individuals with the same lifetime income, the one who lives longer should pay less in lifetime net taxes (ignoring the private responses one would expect from complete markets and rational consumer choice, such as the purchase of life annuities).

Present law reduces lifetime net taxes for the longer-lived through the payment of Social Security and Medicare benefits to retirees for as long as they live. To similar effect under the Vickrey plan, if the averaging period extends to one's death, longer-lived retirees keep getting annual refunds throughout the retirement period as their average annual lifetime income keeps declining.

The discussion so far has been distributional. Where marginal rates rise or fall rather than being flat, a shorter than lifetime measure treats people with fluctuating incomes differently than those with steady incomes even though the two are identical (assuming equal discounted value and lifespans) under permanent income's assumptions. There also, however, are two efficiency reasons for using lifetime income under these circumstances. First, with a shorter than lifetime measure, people may have an incentive to shift their earnings to years where they face a lower rather than a higher marginal rate. A lifetime measure avoids this. Second, a lifetime measure permits rate smoothing. One can raise the same revenue from a given individual as under an annual system by blending what would otherwise be some years' high rates and other years' low rates into a single intermediate set of rates. This would be expected to reduce economic distortion even if earnings cannot be shifted between years, because the increase in distortion as

rates increase is more than linear.<sup>13</sup> Thus the reduced distortion from lowering the rates in some years should exceed the increased distortion from reducing them in other years.<sup>14</sup>

2. Implementing Income Averaging – William Vickrey’s “cumulative averaging” scheme remains the fullest proposed implementation of the idea that lifetime tax liability should depend on permanent income.<sup>15</sup> Vickrey’s basic idea was to have the taxpayer, each year, determine her average annual income through that year, and then adjust the amount she had paid to date to equal what she would have paid to date had she earned the average amount each year.

A simplified illustration of the Vickrey proposal, assuming for simplicity an interest rate of zero, is as follows. Suppose the tax rates are 20 percent for income up to \$100,000 and 50 percent above that, and that only two years are at issue. In addition, suppose that three taxpayers (A,B, and C) each earned \$200,000 total, but in different sequences: A had an even split between the two years, B earned everything in Year 1, and C earned everything in Year 2. The Vickrey system would apply as follows:

**TABLE 1**

	YEAR 1		YEAR 2		TOTAL	
	Earn	Tax	Earn	Tax (Refund)	Earn	Tax
A	\$100,000	\$20,000	\$100,000	\$20,000	\$200,000	\$40,000
B	\$200,000	\$70,000	0	(\$30,000)	\$200,000	\$40,000
C	0	0	\$200,000	\$40,000	\$200,000	\$40,000

<sup>13</sup> Jonathan Gruber, PUBLIC FINANCE AND PUBLIC POLICY 552-553 (2005).

<sup>14</sup> Weisbach, The Optimal Accounting Period for Taxes (unpublished manuscript) emphasizes two considerations potentially raised by income averaging that I ignore here. The first is that longer accounting periods increase economic distortion if there is no time value adjustment for when in the period one received a given dollar. In principal, however, no matter how long or short the period one uses informationally, one can make present value adjustments within the period. Second, Weisbach notes the administrative costs of requiring more frequent filing, clearly an important consideration although distinct from what information is used each time and from what payment schedule is imposed.

<sup>15</sup> See Fennell and Stark, *supra*, at \_\_\_.

(Tax rate is 20% on income up to \$100,000, 50% above that;  
B and C pay in Year 2 the amounts needed to equalize them with A)

Vickrey did not definitely commit himself to a particular averaging period, but noted the logic of extending it all the way from adulthood (reflecting that few children have significant earnings) until death.<sup>16</sup>

This may go well beyond anything one could realistically expect Congress to enact. However, from 1964 through 1986, the U.S. tax system had a narrower income averaging rule, under which people with rising income could in some circumstances apply the lower marginal rates that they had faced in preceding years to some of the growth component. In terms of Table 1, relief was offered to individuals resembling C, but not to those resembling B. Income averaging was repealed in 1986, not on the view that an annual system is best, but rather on the grounds (in considerable tension with each other) that (1) rate reduction made it unnecessary, and (2) the revenue gain from repeal was needed to help pay for the reform.<sup>17</sup> So the main remaining form of income averaging in the U.S. system is that resulting from the allowance of net operating losses.

A second income averaging episode worth noting is that of Wisconsin, which between 1929 and 1935 based income tax liability on the taxpayer's average annual income for the prior three taxable years.<sup>18</sup> The rule applied automatically rather than being elective, and it benefited taxpayers with falling as well as rising income.

### **C. Other Implications of Permanent Income**

1. Case for consumption taxation rather than income taxation – Leaving aside inter vivos gifts and bequests, an individual's lifetime consumption may be defined as

<sup>16</sup> William Vickrey, AGENDA FOR PROGRESSIVE TAXATION 186 (1947).

<sup>17</sup> See Joint Committee on Taxation, General Explanation of the Tax Reform Act of 1986.

<sup>18</sup> See Lily L. Batchelder, Taxing the Poor: Income Averaging Reconsidered, 40 Harv. J. Leg. 395, 415 n. 686 (2003); Vickrey, *supra*, at 183-184.

tautologically equal to her lifetime earnings. This provides strong support for imposing a consumption tax, with any non-flat rates being lifetime-based, rather than an income tax, which penalizes consuming later than one earns. Under the permanent income model, saving moves consumption to the future, and thus (unless otherwise informative) merely reflects a consumer preference for one set of goods (later consumption) relative to another (sooner consumption), thus making it no more relevant distributionally than preferring apples to oranges.

2. Estate and gift taxation – If we treat multi-generational dynasties as if they were individuals and assume that they smooth consumption over all of the multiple lifetimes involved, the case for taxing gratuitous transfers suffers the same ill fate as that for income taxation. The multi-generational budget line becomes the only thing that matters, with the implication that the level of wealth transfer should not affect a given multi-generational household's overall liability. What is more, under this view the proper time period for determining tax liability expands from any one individual's lifetime to that of the entire dynasty. Even under this view, however, the implications might change if the earnings split between generations provided distributionally relevant information.

Obviously, permanent income does not have to be applied to dynasties rather than individuals. Moreover, even full acceptance of multi-generational consumption smoothing would not, as a normative matter, require ignoring the fact that multi-generational households are composed of distinct individuals, each separately experiencing utility. Once we accept that point, the bequest motives underlying inter-

generational wealth transmission become important. These motives commonly are divided into the following four categories:<sup>19</sup>

(a) accidental bequesting, or that resulting when a decedent dies sooner than anticipated without having completely annuitized the wealth she meant to commit to her own consumption. This, however, is ruled out under the permanent income view, even as applied to individuals rather than dynasties, on the ground that it involves, at least ex post, imperfect lifetime consumption smoothing by the decedent.

(b) exchange, as in the case where one provides services to one's parent in return for a bequest.

(c) altruism, or making bequests out of concern for the heirs' wellbeing.

(d) warm glow motives, or leaving bequests so one will have been personally responsible for (or credited with) having increased the heirs' wellbeing.

The altruism and warm glow motives, although not the exchange motive, suggest that bequests have positive externalities,<sup>20</sup> and thus arguably should be subsidized<sup>21</sup> if we combine belief in permanent income with utilitarianism and assume that bequests do not provide other distributionally relevant information. Under this view, taxing bequests gets it backwards. Other normative approaches, however, such as one emphasizing equality of opportunity for individuals, might lead to different conclusions.

3. Case for applying a lifetime-based consumption or earnings measure to the transfer system as well as the tax system – While the discussion so far has been of taxes,

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<sup>19</sup> See, e.g., Barbara H. Fried, Who Gets Utility from Bequests? The Distributive and Welfare Implications for a Consumption Tax, 51 Stanford L. Rev. 641, 647-653 (1999).

<sup>20</sup> See id. at 664.

<sup>21</sup> By definition, accidental bequests do not respond to incentives, and thus are not worth subsidizing even if they produce positive externalities.

the above analysis of tax period and tax base would seem to apply equally to need-based transfers such as TANF. If the permanent income hypothesis fully holds, then the fact that someone is currently unemployed has no particular relevance. She presumably will have saved past earnings, or will borrow against future earnings, if she wants to consume during the current period. Low lifetime income is the sole point of distributional interest.

Unemployment insurance, which with incomplete markets may help to smooth consumption,<sup>22</sup> would cease to make sense under the permanent income view. If we assume complete information at all times, and thus that job loss is never a surprise, there is nothing to insure against. Being unemployed in a given period is merely an input to one's lifetime income. If A and B have the same lifetime income, with A earning more when employed but having occasional spells of unemployment, the only difference between them is that A may end up getting the same earnings for less labor, suggesting that A is better-off even if the unemployment is involuntary.

Even if permanent income is construed to permit surprise job loss, the cash flow shock from losing one's job would be less of a concern if complete markets permitted borrowing against future earnings. Unexpected job loss would simply be an example of negative shock to one's expected lifetime income, and possibly less worth insuring against than negative shocks (such as to hourly earnings) that do not similarly imply the benefit of getting to reduce one's labor supply.

4. Irrelevance of Social Security apart from its transfers – Under the permanent income hypothesis, an actuarially fair Social Security system would be completely irrelevant. In effect, the system forces one to save for retirement by taxing one's earnings

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<sup>22</sup> See, e.g., Jonathan Gruber, *The Consumption Smoothing Benefits of Unemployment Insurance*, 88 *Am. Econ. Rev.* 192 (1997).

and then paying retirement benefits. However, with complete markets and consistent rational choice, people would end up with whatever level of retirement saving they wanted. They would save more if Social Security did not shift enough of their lifetime resources to retirement, and would borrow against their future benefits if it did shifted too much. People who did not want the form of benefit it provides, a fixed real life annuity, would be able to sell its payment stream for cash of equal discounted value in any sequence that they preferred. Thus, all that would matter about Social Security would be that its redistribution shifts people's lifetime budget lines. Medicare would likewise be irrelevant, apart from its transfers and any implications of its being an in-kind rather than a cash benefit.

5. Irrelevance of the sequence of tax and transfer payments – Going beyond just Social Security, the timing of one's tax payments and transfer receipts, whether under an annual tax system, a Vickrey-style system, or TANF, would be irrelevant. Among the complete-market assumptions here is that one cannot default (or that the risk thereof is adequately reflected in the interest rate).

6. Household issues – The presence of children in a household may greatly increase its current consumption needs, a point that I have argued elsewhere supports greater relative generosity for households with children than the U.S. fiscal system currently exhibits above the poverty line.<sup>23</sup> One notable point about minor children, however, is that over time they grow up. At some point, they usually cease to draw on their parents' resources, and may even become a source of financial support. This suggests that the optimal level of relative generosity to households that currently have

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<sup>23</sup> See Daniel Shaviro, Households and the Fiscal System, 23(2) Soc. Phil. & Policy 185 (2006)..

dependent children is likely to be smaller under a lifetime view than if only current resources are relevant.

A more complicated question is how a lifetime view affects the proper application of income averaging to changes in marital status. If the tax system provides for joint returns on the premise that married couples pool and allocate their combined resources, one needs to determine how couples, if married only temporarily, divide lifetime resources that are assumed to be fully accessible by them at all times. The issues would be a lot simpler if income while married were all that the couples were pooling and allocating.

7. Implications for rate changes – Suppose tax rates change, whether due to new information about long-term fiscal needs or changes in the prevailing political sentiment. As we will see in section III, the assumption of complete markets requires that, when there are changes in information, including those concerning marginal rates, people be able to respond by adjusting their past as well as their future decisions (!). By stipulation, therefore, one cannot within the model have a rate change based on new budgetary information, although political changes that were entirely foreseen remain possible. For politically based rate changes, several considerations suggest fully retroactive application. First, whenever rates are to be increased or reduced, extending them back in time eliminates intertemporal distortion from people's anticipating them, and also permits tax smoothing since it obviates the need for them to rise or fall as much. Second, where rate changes reflect the enactors' preferences about the steady state, having their impact on a given individual depend on how much of her lifespan came before the change may be anomalous – depending, however, on the full distributional rationale for the rate

change.<sup>24</sup> Third, the proponents of the changed rates presumably would want their policy preference to apply as widely as possible.<sup>25</sup> However, further information might change the analysis – for example, by suggesting that different rates were optimal at different times or through unlimited retroactivity’s political economy implications.

8. Near-irrelevance of Keynesian counter-cyclical policy – The permanent income hypothesis is not entirely inconsistent with one’s wanting to apply counter-cyclical fiscal stimulus, such as by cutting taxes in a recession and raising them in response to inflation. One could conceivably ground the case for favoring such policy on the view that it solves collective action problems, as in the circumstance where each of us would start consuming more if we were confident that everyone else would start doing so as well, thus affording everyone the extra earnings needed to finance the extra consumption.<sup>26</sup> The permanent income hypothesis does, however, indicate that Keynesian fiscal policy is likely to be ineffective – a consideration not lost on Milton Friedman when he first developed the hypothesis.<sup>27</sup> Giving consumers a tax cut today that they will have to pay back through tax increases in the future will have no effect on their behavior under the model’s assumptions. Giving one a lifetime tax cut to be repaid by future generations would increase one’s consumption<sup>28</sup> unless fully offset by increased

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<sup>24</sup> In principle, this would extend to the dead, although the idea of changing their taxes retroactively pushes the concept of complete markets well past the breaking point.

<sup>25</sup> See Louis Kaplow, *An Economic Analysis of Legal Transitions*, 9 Harv. L. Rev. 509 (1986). Cf. Daniel Shaviro, *WHEN RULES CHANGE: AN ECONOMIC AND POLITICAL ANALYSIS OF TRANSITION RELIEF AND RETROACTIVITY* (2000), noting that the enactors may be wrong about the virtues of their legislation from a social welfare standpoint.

<sup>26</sup> See Daniel Shaviro, *DO DEFICITS MATTER?* (1997).

<sup>27</sup> See Friedman, *Theory of the Consumption Function*, *supra*, at 3-5.

<sup>28</sup> For expositional convenience, the main text ignores the point, discussed below, that, in a pure version of the permanent income view, surprises are by definition impossible, suggesting that the recession and resulting tax cut would have been fully anticipated, and

bequests, but the effect would presumably be spread forward over one's remaining lifespan, rather than being concentrated in the present.<sup>29</sup>

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Permanent income is a powerful and elegant model, with significant real world implications in the directions described above. Merely laying out its full implications, however, begins to arouse suspicion (if not already present) that its preconditions do not fully hold. Thus, the implications need to be modified, or perhaps even discarded in some cases. I next examine the main reasons why the model does not fully hold.

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consumer spending smoothed forward as well as back relative to the case where there was no tax cut.

<sup>29</sup> Still potentially effective would be applying different tax rates to different periods as a way of inducing people to shift their economic activity from boom to bust years.

### **III. DEPARTURES FROM PERMANENT INCOME**

The twin assumptions of complete markets and consistent rational behavior may have been easy to accept in the context of a stylized hypothetical concerning a world with nothing but apples and oranges. The assumptions become a lot more heroic, not to mention implausible and demonstrably untrue, when we shift to real world questions of the timing of consumption across one's lifespan. This section therefore first examines the departures and then considers how they modify the implications of permanent income.

#### **A. Incomplete Markets**

In the hypothetical with the apples and oranges, all that the "complete markets" assumption required was full tradability between these two goods. Once we turn to lifetime income, however, the complete markets that one needs are capital markets. People must be able both to invest past earnings and to borrow against future earnings. Obviously, the latter is not always possible, reflecting problems of moral hazard (once I have issued a claim against future earnings, I have less incentive to realize them) and adverse selection (I may know more than prospective lenders about my expected future earnings). Even when expected future earnings do not depend upon future labor effort, people with "great expectations" (or modest ones) may find that they are liquidity-constrained.

Another, less obvious missing capital market relates to risk and consequent changes in information when a risk is resolved. If I expect low career earnings and then suddenly learn that they will be high or vice versa, I cannot (absent a time machine) suitably adjust the amounts I consumed in earlier periods to reflect what I now know.

Accordingly, even if all other conditions for the model's applicability fully hold, I will fail *ex post* to achieve the optimal sequencing of my lifetime consumption.

Inability to smooth backwards to the period before a given risk was resolved reduces the total utility derived from one's actual lifetime income. In addition, it reduces the marginal utility of unexpectedly gaining a dollar, which would have been worth more if it could have been used to smooth consumption backwards. By contrast, it increases the marginal disutility of unexpectedly losing a dollar, since one cannot mitigate the loss by reducing past as well as future consumption.

The marginal rate change example from the prior section provides an illustration. Suppose I learn today that the tax rate on my lifetime earnings is going to be higher than I expected, reducing my lifetime budget line. I might have consumed less in the past had I seen the change coming. The inability to smooth backwards deprives me of this mitigation opportunity. Accordingly, my total lifetime utility declines more, and my marginal utility loss from the change is greater, than in the case where I saw it coming or (via the fantasy of markets for everything) could use a time machine to smooth backwards.<sup>30</sup>

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<sup>30</sup> The Friedman and Modigliani-Blumberg models exclude uncertainty. See Friedman, *Theory of the Consumption Function*, *supra*, at 7-14; Modigliani and Blumberg, *supra*, at 392. Friedman, *supra* at 15, concedes that uncertainty "blurs the sharp lines of the analysis and suggests additional factors that may produce departures from the shape of the consumption function [otherwise] specified." He suggests that uncertainty about the future "adds a new reason for holding wealth" by suggesting the need for an emergency reserve. *Id.* at 16. Modigliani and Blumberg, *supra* at 392, argue that "a satisfactory theory can be developed without seriously coming to grips with this rather formidable problem." They do, however, note some ways in which uncertainty may affect saving decisions. *Id.* at 428-429. Since Friedman and Modigliani-Blumberg are mainly concerned with challenging the link between current consumption and current income, arguing instead that long-term rational expectations are important, they view risk as merely a complication calling for further analysis and for the development of more

The fact that one can respond in advance to mitigate the utility loss from uncertainty, such as through precautionary saving, has mixed implications for the analysis. On the one hand, it adds to the inter-relationship between the periods before and after a given uncertainty is resolved, thus weakening any implication that they ought to be treated as entirely separate. On the other hand, it reinforces the point that ex post identical earnings streams need not produce the same consumption path, even as between two individuals with identical preferences.

### **B. Departures from Consistent Rational Choice**

A second empirical failing of permanent income is its assuming consistent rational choice. Behavioral economics research has revealed a number of real world departures from the neoclassical model of consumer choice.<sup>31</sup> An example is hyperbolic discounting, or applying a much higher discount rate between the current time and any future time than between future times.<sup>32</sup> People who are subject to hyperbolic discounting cannot hold consistent preferences. For example, the consumption split between Times 2 and 3 that one favors at Time 1 will differ from that which one favors when one is at Time 2. To the extent that people act under the sway of hyperbolic discounting, currently available resources will guide their consumption choices even without missing markets.

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complicated models. While thus in a sense not problematic for their purposes, it does contradict the premise being examined here, which is that all earnings streams are effectively the same if they are present-value-equivalent ex post.

<sup>31</sup> See, e.g., Cass R. Sunstein (ed.), *BEHAVIORAL LAW AND ECONOMICS* (2002); Richard H. Thaler, *QUASI-RATIONAL ECONOMICS* (1991).

<sup>32</sup> See, e.g., David Laibson, *Golden Eggs and Hyperbolic Discounting*, 112 *Q.J. Econ.* 443, 445-446 (1997).

A further source of departures from behavior under the permanent income model relates to “mental accounts” that affect the propensity to save rather than immediately consume a given dollar. Amounts coded as “current income,” for example, apparently are more likely to be spent than those coded as “current assets,” which in turn are more likely to be spent than those coded as “future income.”<sup>33</sup> Once again, the implication is that the time sequence of earnings matters independently of their discounted value.

Empirical research strongly supports the view that these predilections cause significant behavioral departures from the predictions of the permanent income model. In particular, current consumption and current income are “much more closely linked” than one would expect them to be if the model fully applied.<sup>34</sup> Tax and transfer systems cannot reasonably be designed without taking these departures into account.

People’s fear of death and consequent reluctance to plan properly for it could be another source of departures from rational choice. This could lead to accidental bequests, which involve foregone consumption that one would have valued. Alternatively, accidental bequests could result from missing markets. Here, even without imagining time machines, the problem could be that people cannot fully annuitize the wealth that they plan to spend on themselves, or else cannot combine full annuitization with some other objective, such as retaining the ability to front-load subsequent consumption.<sup>35</sup>

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<sup>33</sup> See Hersh M. Shefrin and Richard H. Thaler, *The Behavioral Life-Cycle Hypothesis*, in Thaler (ed.), *QUASI RATIONAL ECONOMICS* 96-98 (1991).

<sup>34</sup> Christopher C. Carroll & Lawrence H. Summers, *Consumption Growth Parallels Income Growth: Some New Evidence*, in B. Douglas Bernheim and John Shoven (eds.), *NATIONAL SAVING AND ECONOMIC PERFORMANCE* (1991).

<sup>35</sup> With complete markets, an annuitant who decided to front-load retaining consumption could borrow against the life annuity’s remaining value, but adverse selection could impede this if prospective borrowers have better information than prospective lenders about their own health.

### C. Additional Information

As noted at several points in section II, even if the conditions for permanent income generally held, its apparent normative consequences could be modified by other relevant information. The possibilities are infinite. Suppose, for example, that taste for chocolate as opposed to vanilla ice cream provided information about total or marginal utility. Here, however, I limit myself to three possibilities that not only are relatively plausible, but directly bear on the implications of permanent income.

1. Saving rate as a signal of ability – Suppose that a high rate of saving is a signal of ability. Even if everyone rationally optimizes the value of lifetime consumption given permanent income, savers might be more patient, and this might correlate with wage rate in a manner that adds to the informational content of simply observing wages. Or, if we relax the rational choice assumption, suppose that a high saving rate signals ability as a consumer, in the sense of a capacity to derive more utility from the same resources.

If a high saving rate is evidence of a high wage rate then, as between two individuals with the same lifetime income, we might want to tax the high saver (i.e., the later consumer) more than the low saver. The surmise would be that the high saver had a higher wage rate and simply chose more leisure than the low saver. We also might surmise that the permanent income model applies more fully to people with high lifetime income, who tend to have high wage rates, than to people with low lifetime income.

Ability as a consumer has mixed implications, at least under a welfarist view. If, as between two individuals with the same permanent income, one is better at consumption smoothing than the other, that individual presumably has the higher total utility. This suggests redistributing from the efficient consumer to the inefficient

consumer if we believe that the marginal utility of a dollar tends to decline with rising total utility, and/or give independent weight to equality in wellbeing. However, the fact that the efficient consumer can derive more utility from an extra dollar suggests redistributing to her, rather than away from her.

2. Wealth effects on labor supply – Since market consumption has declining marginal utility, one would expect people to choose less labor supply when their wealth and remaining expected income are high rather than low. In addition, their labor supply elasticity may be lower when they do not have accumulated savings to fall back on. A recent paper by Mikhail Golosov and others makes use of this point in relation to the literature evaluating income and consumption taxation.<sup>36</sup> The paper offers a model in which a capital income tax is optimal as an adjunct to redistributive labor income taxation, because “the cost to high ability individuals of not working hard [in later periods] is reduced by the presence of additional resources”<sup>37</sup> derived from saving amounts the individuals earned in earlier periods. A capital income tax burdens this ability to opt out of the labor market by consuming saving, thus reducing the labor supply response to the wage tax. While the Golosov model does not have bequests, similar reasoning might apply to them. That is, taxing bequests, and thereby reducing the heirs’ labor supply elasticity, may permit greater redistribution at a given distortionary cost (or less distortion for a given amount of redistribution).

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<sup>36</sup> Mikhail Golosov, Narayana Kocherlakota, and Aleh Tsyvinski, Optimal Indirect and Capital Taxation, 70(3) Review of Economic Studies 569 (2003).

<sup>37</sup> See Alan J. Auerbach, The Choice Between Income and Consumption Taxes: A Primer, NBER Working Paper 12307 (2006) (explaining the intuition behind the Golosov paper, which is difficult to discern from the paper itself).

3. Age-related wage distribution and labor supply elasticity – A recent article by Michael Kremer<sup>38</sup> makes the point that an optimal tax structure might impose distinct marginal rates on people of different ages, for two reasons. The first is that labor supply elasticity may vary with age. In particular, young and old people tend to have more elastic labor supply than people in mid-career. Second, the annual earnings distribution varies with age, with young and old people being more concentrated at the low end of the scale than people in mid-career. Thus, the rates applying at low income levels will more commonly be inframarginal (and thus non-distorting) for mid-career than young and old workers. Both considerations suggest that young and old people should generally face lower marginal rates than mid-career workers.

These arguments for age-based taxation are entirely consistent with the permanent income hypothesis, but would modify its implication that tax liability depend purely on the discounted value of lifetime earnings (along with lifespan). A fanciful hypothetical can help to show this, while also illustrating the tradeoffs that age-based taxation involves. Suppose we were taxing restaurant meals, purely as a revenue-raising device and with the aim of altering people's menu choices when they eat out as little as possible. It might turn out that desserts are far more price-elastic than main courses. For example, ambivalent would-be dieters might swiftly switch to skipping dessert altogether. In these circumstances, it might on balance be optimal to tax entrees at a higher rate than desserts. The idea would be that, assuming the same total revenue, this might on balance reduce tax-induced behavioral changes, even though some people would respond by ordering cheaper entrees and more or costlier desserts.

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<sup>38</sup> Michael Kremer, "Should Taxes Be Independent of Age?", available at [http://post.economics.harvard.edu/faculty/kremer/webpapers/Should\\_Taxes.wpd](http://post.economics.harvard.edu/faculty/kremer/webpapers/Should_Taxes.wpd).

If we substitute mid-career work for the entrée and working when young or old for dessert, based on parallel observations about relative price elasticity, we get the analogous result that mid-career tax rates should be higher. Such a conclusion is entirely consistent with assuming that people choose rationally based on after-tax prices.

#### **D. A Purely Annual View**

So far, this section has shown that the assumptions underlying the permanent income model do not fully hold, and that, even insofar as they do hold, other information may require modifying the model's apparent implications. In determining tax liability or the timing of required payments, current period information about the taxpayer may merit being given greater or even exclusive weight as compared to information about other periods. However, even if the periods always were particular years, rather than being longer or shorter, a purely annual view would be even harder to defend than a pure lifetime view. It would seem to suggest, for example, that people do not deliberately save, since saving is forward-looking behavior, and thus that any observed saving must reflect the same lack of intentionality as accidental bequests.

For a purely annual view to hold, each year would have to be completely separate from all others, in two senses. *First*, it would have to be impossible for people to shift work or consumption between years, whether by saving current resources past year's end or borrowing against future expected resources. *Second*, information from other years would have to be irrelevant to the assessment of one's relevant current year attributes, such as wage rate, labor supply elasticity, and utility function.

This is not compelling as a picture of the world we live in. Yet the various departures from permanent income suggest that it often has some descriptive accuracy, at

least as applied to distinct periods that need not be years. Rather than trying to choose a winner between the two poles of taking a purely lifetime or a purely annual view, the better approach is to explore the implications of a suitably mixed view, relative to those I have ascribed to permanent income.

#### IV. MODIFYING THE IMPLICATIONS OF PERMANENT INCOME

##### A. Implications Concerning the Tax Period

1. Devices such as income averaging to make lifetime tax liability depend on lifetime resources – The implication of permanent income that lifetime tax liability should depend on lifetime, not annual, resources matters via the application of non-flat marginal rates. Thus, income averaging can be used to implement the permanent income idea in a system with annual computations, leaving aside for now the exact mechanism and the timing scheme for cash flows between taxpayers and the government.

If we consider two periods completely separate, the obvious response is not to permit income averaging between them. Or, if the separateness applies only to a particular component of income, the response could be to disregard the income so identified in applying income averaging as between years or periods. Some degree of income averaging is likely to be desirable however, given that a pure annual view of how people use resources seems, if anything, even less satisfying than a pure lifetime view. This suggests that existing tax penalties for having fluctuating rather than stable income ought in general to be reduced, even if not eliminated.

The implications for how one might like to structure or limit income averaging include the following:

(a) “Great expectations,” involving expected future earnings that greatly exceed current earnings, might generally be disregarded if we assume that borrowing against them tends to be difficult. Or we might take the expected future earnings into account only to a limited degree, reflecting that some borrowing against them may be possible

and that they may reduce the need to save current earnings. Among the groups to which this reasoning might apply are college, graduate, and professional school students.<sup>39</sup>

Denying income averaging causes those with great expectations, relative to those with level earnings that have the same discounted value, to be treated as worse-off during the earlier, pre-realization period, and better-off once the high earning period starts. If marginal rates rise with income, as typically they do once need-based transfers such as TANF have been phased out, the back-loaded earners who had to wait for realization of their great expectations would pay higher lifetime taxes than the level earners.

This may seem anomalous, given that the back-loaded earners would be expected to have lower total utility over their lifetimes than the level earners, all else equal, given the value of being able to optimize one's consumption path. Often, we think of lower total utility as implying higher marginal utility for a dollar, under the premise of declining marginal utility. Here, however, the level earners are in a sense more efficient consumers of an extra lifetime dollar, since they can direct it to the period where its subjective value is highest, rather than being constrained like the back-loaded earners. But in any event, measures of lifetime tax burden are not meaningful indicators of the fiscal system's effect on one's welfare, as applied to individuals who face separate periods, since the effect on their utility of a dollar change in lifetime tax burden depends on its timing (which lifetime measures ignore).

(b) Where people with high past earnings have low current resources due to low saving,<sup>40</sup> there are two main possibilities that one would want to distinguish (although in

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<sup>39</sup> Such students often borrow substantial amounts to finance their educations, but these amounts may be targeted to educational use, rather than being generally available for consumption.

practice this would be difficult or impossible). The first is that they chose rationally given their consumption preferences. In this case, the use of income averaging to treat them as having the marginal utility implied by their high past income would be appropriate, even though current consumption is low, since by hypothesis they would have equalized at the margin in choosing between past and current consumption. One could compare this to the case of an individual who prefers chocolate to vanilla ice cream, and whose vanilla ice cream consumption therefore need not be equalized with that of people who prefer this flavor. In both instances, one has less of a given consumption good (vanilla ice cream or consumption today) because one likes it less, and thus presumably would derive less benefit than others (all else equal) from being given a bit more.

The second possibility, however, is that the past high earner with low current resources failed to optimize her consumption choices, due to departures from the permanent income model of rational choice. In this case, one would want to treat her as poor in the later period, subject to concern about moral hazard (i.e., creating incentives to save less since one will be “rescued” in any event), and leaving aside for now the possibility of forestalling this scenario by mandating a minimum level of saving.

This point has particular implications for the design of need-based transfers such as TANF. Proponents of income averaging do not generally take the intellectually consistent step of urging that eligibility for need-based transfers depend purely on lifetime income, which would suggest denying the benefits to currently destitute

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<sup>40</sup> Low current resources despite high past earnings may also reflect ex post bad investment choices. Possible responses include mandating the use of sound investment principles (such as diversification) as to some saving, and providing compensation ex post at the cost of creating moral hazard with regard to investment choice.

individuals who had high earnings in the past. This seeming inconsistency can be defended on the ground that being destitute despite past earnings is prima facie evidence of poor lifetime consumption choice, rather than of something akin to preferring chocolate to vanilla ice cream.

(c) If one could identify changes in current earnings that reflected the resolution of a risk, rather than being predictable in direction, one would want to limit or deny income averaging between the pre- and post-resolution periods. One conceivable application is job loss due to recessions and sudden microeconomic shocks to particular industries. As in the case of denying full income averaging to people with back-loaded earnings, with rising marginal rates this causes individuals who are denied the averaging to pay higher lifetime taxes than those whose level or non-risky earnings had the same discounted value. Once again, therefore, higher total utility (from not having to face the risk) does not necessarily translate into higher lifetime taxes.

While the rationale for income averaging does not extend to risk resolutions, there may be other reasons for treating people favorably when their income suddenly declines and unfavorably when it suddenly rises (as would Vickrey's cumulative averaging). This would constitute insurance against the risk of an earnings shock, arguably best supplied by the government if adverse selection limits its availability from private insurers. Unemployment insurance is an example of this.

(d) The assumptions that underlie permanent income may systematically apply more to some types of individuals than to others. For example, people with generally high mid-career earnings might be more able to smooth their consumption than people with generally low mid-career earnings. If this is so, the case for income averaging might

be stronger for people who often are in the high end of the income range than for those whose fluctuations are confined to lower income levels. One might therefore want to consider adopting a greater degree of income averaging for people who have some high-income years mixed in with the rest, than for other people.

As a stand-alone change, this might make the fiscal system less progressive, by targeting higher-income individuals (at least as judged by their good years) to get the greatest benefit from income averaging. From a broader perspective, however, making this change might increase the optimal degree of progressivity, for two reasons. First, it would reduce the distortions that result from high marginal rates at the top end, by causing high earners more frequently to face the same rate each year. Second, it would cause the high top-end rates to be better targeted at people who *always* have high annual incomes, and thus who presumably are the best-off (all else equal) on a lifetime basis. Thus, adopting an income averaging rule that provided the greatest benefits at higher income ranges might logically be accompanied by other changes (such as to marginal rates) that made the fiscal system more progressive overall.

(e) The incomplete descriptive accuracy of permanent income suggests that, even if some form of income averaging is worth adopting (given the descriptive defects of a purely annual view), the relationship between current income and currently required tax payments does matter. Thus, Vickrey was right to laud, as a feature of cumulative averaging, its causing current year tax liability generally to rise and fall with fluctuating annual income. This relationship resulted from the fact that, under cumulative averaging, one does not simply determine current year liability based on average income over a longer period. Rather, one in effect adjusts the tax payments due for past years as well,

by reconstructing what total taxes one would have paid for all years with level annual income. Thus, rising income effectively increases the taxes due for past years, potentially leading to an extra net levy payable in the current year, and falling income works in the opposite direction.

A more conventional income averaging scheme treats only the current year's tax liability as open for adjustment based on past information. This was the approach taken in U.S. federal income tax averaging from 1964 through 1986, and in the Wisconsin three-year averaging system that applied from 1929 through 1935. Such systems, in contrast to cumulative averaging, cause a rise in income to reduce current year tax liability as a percentage of current income, while a fall in income increases the percentage paid in the current year. In principle, this seemingly backward relationship could be mitigated by causing the change in current year tax liability that results from income averaging to be carried forward with interest, rather than affecting current year tax payments.

2. Age-based tax rates – Whether or not one would want to let the political system play around with age-based tax rates,<sup>41</sup> in principle the case for them is compelling. By responding to life cycle differences in labor supply elasticity, they can reduce the deadweight loss from taxation without necessarily reallocating tax burdens between individuals. They also should not be dismissed out of hand as politically impractical.

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<sup>41</sup> The core political problem with age-based tax rates is transition, when they are first adopted or changed. While potentially merely reallocating the timing of lifetime tax burdens for generations that start work after their adoption, age-based rates could be used, for example, as one more device (along with Social Security and Medicare) for transferring resources to those who are seniors at the time of adoption.

While the prospect of Form 1040's using age-based rate tables may seem remote, they can be accomplished through other age-based programs.

For young people, income-conditioned education benefits provide a plausible mechanism, albeit one that raises rather than lowering their marginal rates compared to those of mid-career earners. For old people, though likewise tending in the wrong direction, the obvious mechanism is means-testing for Social Security and Medicare benefits. At present, means-testing associated with these programs is limited to the income taxation of Social Security benefits (imposing an income-conditioned reduction in net benefits), along with the income-related phase-out of Medicaid benefits that can be used to pay Medicare costs. However, greater means-testing of benefits is often proposed as a way of addressing the programs' fiscal gaps. A view that seniors should face *lower* marginal rates than mid-career workers might be relevant to the merits of this debate even if unlikely to be implemented directly.

While age-based tax rates are intellectually consistent with the permanent income hypothesis, they contradict the income averaging result of having lifetime tax liability depend purely on lifetime earnings and lifespans. Consider two individuals with lifetime earnings of exactly the same discounted value and who die at the same age. They have exactly the same lifetime market consumption opportunities, taking as given their labor supply choices. However, if tax rates are lower for young and old than middle-aged workers, they may end up paying different lifetime taxes.

If equalizing the lifetime taxes of people with the same lifetime earnings and lifespans were a foundational principle of distribution policy, this would suggest the need for a tradeoff between efficiency (potentially enhanced by age-based tax rates) and

distributional equity (which they would reduce). Things get more complicated, however, if tax burdens ought to depend on wage rates rather than on actual earnings, which exclude leisure and non-market consumption.

If work intensity when old as compared to when middle-aged is simply a consumption choice like that between chocolate and vanilla ice cream, then age-based tax rates do indeed present a tradeoff between equity and efficiency. Suppose instead, however, that, as between two individuals, A matches B's lifetime earnings, despite having a lower wage rate, by retiring later. A presumptively is worse-off than B on a lifetime basis, and thus (all else equal, including lifespan) ought to pay lower lifetime taxes. The same conclusion holds if they work the same number of years but A catches up financially by working more intensively in her later years, at a point when work has become physically more unpleasant. Either way, as applied to A and B, lower tax rates for older workers may advance equity as well as efficiency.

Whether, on balance, age-based tax rates advance equity or not, they would pose technical challenges for a conventionally implemented income averaging system. While income averaging ignores when a given dollar was earned (time value adjustments aside), age-based rates depend on it. One rough solution would be to limit or deny income averaging between what one defined as the mid-career period and the earlier and later periods. However, this would involve (and not necessarily optimize) the tradeoff between efficiency and equity when people could shift activity between the periods without thereby providing relevant distributional information.

3. Household issues – As noted previously, subscribing to the permanent income hypothesis would significantly reduce the optimal level of relative generosity to

households that currently have dependent children, and make irrelevant the timing of any benefits that were provided. Departing from permanent income weakens or eliminates these implications. A short-term view also supports separate determination of marital status for each period, without as much concern about the implications of the taxpayer's marital status in other periods.

4. Application of tax rate changes – If one otherwise believes that tax rate changes should apply retroactively, the fact that people who did not anticipate them cannot adjust their lifetime consumption patterns ex post provides an argument to the contrary. If the rate change is a surprise and thus cannot be spread backwards, it reduces the utility gain from a retroactive tax cut and increases the utility loss from a retroactive tax increase.

Given widespread aversion to nominal retroactivity, it seems plausible that the new rates would be made applicable to post-enactment earnings only. Yet reconciling this with income averaging poses technical challenges and leads to violation of the principle that people with the same lifetime earnings should pay the same lifetime taxes. It also creates incentives to accelerate income if tax rates are expected to rise, and to defer it if rates are expected to fall.

#### **B. Implications Concerning Tax Bases**

With departures from permanent income and additional information, both the income tax and the estate tax gain ground intellectually. In particular:

--With multiple separate periods between which one cannot shift resources (or else one fails to do so due to departures from consistent rational choice), the support that permanent income provides for consumption taxation loses some of its force. Suppose,

for example, that people were randomly assigned wealth endowments at the beginning of each period that they could not save past the end of the period. (Available resources at the beginning of each period might arise from assets assigned to no one, or from manna falling from the heavens at the start of each period.) Under these circumstances, expropriating the endowments would be efficient. Distributionally, if the endowments were not expropriated, they would be inputs to people's budget lines no less than labor earnings (and realizable without having to sacrifice leisure). An income tax, being in part a wealth tax, comes closer than a consumption tax to achieving this result.

--If an individual's high saving rate is evidence that she has a high wage rate, income taxation may improve upon the observation of wage rates that would be possible using earnings alone. If a high saving rate is evidence of ability as a consumer, the implications are mixed. In this scenario, high savers presumably are better off than low savers with the same earnings, but the high savers might be able to derive greater marginal utility from an extra dollar by reason of their greater ability to shift it to the optimal period. Thus, the scenario does not necessarily support taxing high savers more than low savers, but it makes the analysis of income and consumption taxation more complicated than under the simple permanent income view.

--Under the recent analysis by Mikhail Golosov and others,<sup>42</sup> the use of an income tax may be optimal because it reduces the labor supply elasticity of people with high wage rates. The same line of reasoning applies to bequests, thus providing an argument for estate or inheritance taxation.

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<sup>42</sup> See Golosov et al, *supra*.

--The fact that some bequests are accidental, reflecting incomplete markets or failures of rational planning, likewise provides an argument for estate or inheritance taxation. Individuals who leave purely accidental bequests presumably are not deterred from working or saving by the prospect of taxation of a residual that by hypothesis they do not care about.

### **C. Implications Concerning the Timing of Tax and Transfer Payments**

The various departures from permanent income show that the timing of tax and transfer payments does indeed matter, even holding constant their overall discounted value. Thus, Social Security and Medicare can affect the timing of individuals' lifetime consumption even if actuarially fair, and the feasibility of Keynesian counter-cyclical policy is widely accepted.<sup>43</sup> Timing therefore is a tool that the government can use to address incomplete markets and failures in rational planning, or else to exploit them (as in the cases of Keynesian stimulus and an estate tax responding to accidental bequests).

Timing questions conveniently break down into those concerning people's consumption opportunities when they are young, middle-aged, and old. For young people, the main question is whether the government should address the missing market for borrowing against one's future earnings, other than simply by subsidizing education loans. This could involve low tax rates for young workers that are not directed at labor supply elasticity, or outright transfers such as the recent proposal by Bruce Ackerman and Anne Alstott to give young people \$80,000 over four years once they reach age 18.<sup>44</sup>

Insofar as lenders are deterred from making the loans by moral hazard, it is hard to see how the government could do better. The government like private lenders, cannot

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<sup>43</sup> See Shaviro, *DO DEFICITS MATTER?*, supra.

<sup>44</sup> See Ackerman and Alstott, supra.

counter the ploy of not realizing one's great expectations after borrowing against them, unless it uses coercion, which we might rightly be reluctant to countenance. On the other hand, insofar as young people have difficulty borrowing against their future earnings due to adverse selection, the U.S. federal government arguably can overcome the private market failure. A further concern with supplying the missing market is that young adults may tend to have worse judgment than they will have later on concerning how to optimize the use of resources on a lifetime basis.<sup>45</sup>

For consumption in mid-career, the main issue may be consistent rational choice, rather than missing markets. In particular, the evidence that current income and current consumption are more closely linked than would seem optimal suggests pushing people in the direction of greater smoothing, on the view that this offers a superior default from which people can still choose to vary. Vickrey income averaging, unlike the U.S. and Wisconsin approaches to income averaging, has this effect. Mandatory accelerations or deferrals of tax liability, with interest, could offer another way of addressing this problem, as could incentives for saving in years when income rises.

For consumption by seniors, the main issue once again is rational choice, in particular inadequate retirement saving and annuitization. Social Security and Medicare directly address this issue by providing a floor on retirement saving, along with annuitized benefits. Other possible responses include incentive or default rules to encourage retirement saving, and lower marginal rates for seniors that are aimed at backloading consumption rather than at differential labor supply elasticities.

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<sup>45</sup> See Cass R. Sunstein, "Cash and Citizenship," *New Republic*, 5/24/99 at 42. For a transfer to young people as large as that contemplated by Ackerman and Alstott, Sunstein notes as well the possibility of undesirable income effects on young people's decisions to engage in work that develops valuable skills for later on.

## V. CONCLUSION

Permanent income is a powerful and appealing idea, logically applying basic precepts of neoclassical economics. It also has the pleasant consequence of making economic analysis more tractable. For example, if fully correct and unmodified by additional information, it definitively enshrines lifetime income as the right tool to use in gauging the distributional effects of government policy (at least, leaving aside bequest issues). It also creates a compelling case for consumption taxation relative to income taxation. And it supports basing marginal rates entirely on lifetime income, without regard to fluctuations in taxpayers' annual earnings or in their current resources. Likewise, it suggests that Social Security is totally irrelevant apart from its wealth transfers between participants, and that welfare benefits should be based purely on lifetime income rather than current circumstances – results that, while they would certainly make the world simpler, may immediately (and rightly) seem suspect.

Unfortunately from the standpoint of making life simple, the premises that permanent income requires do not entirely hold. First, markets are not complete. For example, it may be hard to borrow against one's future expected earnings, and it is impossible to change past consumption decisions by reason of new information about available lifetime resources. Second, people do not always exhibit consistent rational choice across time. For example, they may be myopic or prone to hyperbolic discounting, and they may use mental accounts, in deciding how to use various dollars, that lead them to violate the principle that a dollar is a dollar is a dollar.

Even with these defects, a purely annual view, in which past and future years are completely irrelevant, is implausible. It would suggest, for example, that any observed

saving is no more intentional than leaving an accidental bequest. One implication is that some form of income averaging, in the sense of using information about past and/or expected future income as an input to current year tax liability and payments due, is likely to be desirable unless the administrative costs are too great. How income averaging could best be designed, however, is a topic for another day.