

# WEALTH, REALIZED INCOME, AND THE MEASURE OF WELL-BEING

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## 4.1 Introduction

All modern societies attempt to measure well-being of their people for both policy and research purposes. Government must explicitly define well-being for purposes of designing tax and welfare policies, while researchers must explicitly choose classifications by which to compare data and perform statistical analyses.

Measures of well-being involve a contrast of means with needs. This chapter falls within that set of studies that deal with the measurement of means (Steuerle and McClung 1977; Smeeding 1982; David and Smeeding 1985). Changing the measure of means does not necessarily imply that households are better or worse off, nor that the government should collect less or spend more for any particular type of program. Given any standard of needs, however, it will be possible to assert that the distribution of means, and therefore of well-being, changes significantly as the measurement of means is changed.

Attention will be directed toward the measure of well-being used most widely today—realized income—and its relationship to wealth and economic income. Using a unique national sample of income tax returns matched with estate tax returns, this chapter will compare the realized property income of individuals with the associated amount of wealth that generates that income.

The purpose of this study is twofold. First, with respect to wealth holders, realized income (with emphasis on the word realized) is demonstrated to be an extremely poor measure of well-being. As a consequence, substantial inequity is introduced into tax and welfare programs. If the goal of these programs is to measure real economic

income, that purpose may be better served by first obtaining measures of property or wealth than realized income. Second, in reporting the initial findings of the first national estate-income collation, this chapter shows the promise of this approach to research on the relationship between wealth and income. Whatever the problems, and they are not few, this estate-income collation may provide the best national data ever assembled for studying the wealth-income relationship for persons with significant amounts of wealth.

### 4.1.1 Source of Data

This study uses a collation of estate tax returns, income tax returns of decedents in years before death, and income tax returns of heirs in years both prior to and following the death of the persons granting the bequests. The estate tax returns were filed in 1977 (for deaths generally in 1976 or 1977), while income tax returns were collected for years 1974 through 1980. Each estate in the sample had a gross estate of

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\$60,000 or more (\$120,000 or more for decedents dying in 1977). The collation sample was a one-in-ten sub-sample of the sample of over 41,000 estate tax returns used for purposes of the Statistics of Income-Estate Tax Returns (U.S. Department of the Treasury, Internal Revenue Service 1979) and for related wealth studies (Schwartz 1983).

While the collation sample began with 4,143 estate tax returns, in many cases there was an absence of accurate reporting of bequests made, and many income tax returns could not be found or were not filed for both decedents and heirs. For purposes of this study, therefore, two subsamples were used: decedents with income tax returns in the year prior to death (sample size, 2,924); and nonspousal heirs for whom a bequest of \$50,000 or more could be determined, while income tax returns were filed in a year prior to and a year following receipt of inheritance (sample size, 1,451).

The match of a decedent's estate tax return with the previous year's income tax return allowed a direct comparison of the realized or reported income from capital with the value of capital that produced that income. Similarly, the match of a bequest amount with income tax returns of an heir in years both prior to and after receiving the inheritance allowed comparison of the change in realized or reported income with a change in wealth.

Both types of comparisons suffer from the inexact match of income with wealth. Under ideal conditions, one would want to compare income on an instantaneous flow basis with the stock of wealth at a given point in time. The estate-income collation falls short of that ideal in two respects. First, only annual flows of income are reported. Second, accounting for wealth takes place in a period different from that in which income is measured. Because partial-year returns are often filed on behalf of decedents in year of death, obtaining an annual measure of income requires the use of an income tax return in a year prior to death. In measuring change in income for heirs, on the other hand, it was necessary to allow a sufficient time

to elapse so that income from inheritances would be reflected in the income tax returns rather than returns of estates. For both decedents and heirs, therefore, the comparison of income with wealth is inexact to the extent that any wealth transfer (not reported on estate tax returns), consumption out of wealth, or wealth accumulation out of income took place between the points in time at which measurements were made. Those problems are believed to be minor for the vast majority of returns, although important in a small number of cases.

For tax accounting reasons, a net upward bias exists in the measure of realized rates of return. Valuations for estate tax purposes are typically low for reported assets, especially businesses, farms, houses, and other illiquid or infrequently traded assets. Estimates must be reasonable, but there is a strong incentive to provide the lowest among available estimates. In addition, much wealth from life insurance and pensions does not pass through estates, so estimates of value of estates and inheritances are understated. Observations are also excluded from each subsample when income tax returns of decedents or heirs could not be found; in some of these cases, the decedent or heir did not file a return because of low amounts of realized income.<sup>1</sup>

Finally, the collation file has not yet been merged to obtain estate tax weights; therefore, the reported data are unweighted. Fortunately, estate tax filers were sampled according to size of gross estate. Weighted results in each wealth or similar class therefore would differ little from unweighted results, and most issues of within- or between-class differences can be addressed either way.

While these problems mean that the data must be interpreted with caution, the estate-income match still offers the possibility of vast improvements in our understanding of the wealth-income relationship for persons with significant wealth holdings. An analogy might be provided by the improvement in our understanding of the wealth distribution first obtained through the efforts of Lampman (1962) and Smith and Franklin (1974). Both then and

now, the advantage of using administrative data stems in part from the considerable underreporting of wealth and income from property in survey data, even surveys dedicated to the measurement of such items. The evidence is fairly conclusive: even though there is some bias to underreport for tax purposes, population estimates of income from property or of wealth are much higher when using tax return data than survey data. As will be seen, the variation in realized rates of return is so great across taxpayers that our qualitative conclusions with respect to horizontal equity would hold even in the presence of significant bias and limitations of data.

#### **4.2 Why Realized Income is Used as a Measure of Well-Being**

The most common measure of well-being used for both statistical and policy purposes is realized income. Realized income is used to define income tax burdens, eligibility for various tax expenditures such as deductions for cost of health care and property tax relief, amount of assistance in various welfare programs, and distributions of income by class in many, if not most, census and survey analyses. The reason for this dominance is partly the result of historical circumstances. Originally, both in England and America, ability to pay was measured by property ownership (Musgrave 1959). In modern times, however, income has come to dominate other measures such as property as the prime measure of ability to pay and eligibility to receive. A major explanation for this shift is the increasing importance of wage income to most households' well-being. When labor income for most households was thought to equal only subsistence income, was derived in the form of self-employment income, or was paid in the form of in-kind benefits such as crop sharing, it was largely treated as both nontaxable and nonmeasurable.

With the development of the modern firm and the rise of the middle class, the problems of nontaxability and nonmeasurability dwindled enormously. Wage income now was large, varied markedly from one individual to the next, and could no

longer be treated merely as subsistence income. In addition, there was a significant improvement in the availability and accuracy of measures of income because wage payments were entered in two different sets of accounts: those of employers and employees. Increasingly, therefore, the measure of ability to pay or eligibility to receive has come to be defined as wage-plus-property income. This measure of means is often compared to a measure of needs such as a subsistence level of income, with income taxes being imposed principally above that level, and income-conditioned grants or subsidies targeted mainly below that level.

Property is still used today to measure well-being for certain purposes, and debates do take place over such issues as assets tests in welfare programs and methods of valuation for wealth subject to property tax and estate tax. Income has become the dominant measure of well-being for most tax and welfare purposes, nonetheless, and property-related issues have declined in relative importance. Moreover, since wage income is a major source of total income, the accuracy of the measure of wage income has tended to make income itself appear to be accurately reported or measured, at least in aggregate terms.

In recent years, there also has been increasing emphasis on providing incentives for investment and savings, perhaps even replacing an income tax with a consumption tax. This new emphasis has had an impact upon attempts to reflect more accurately property income or other current measures of wealth in on an income or consumption basis, is viewed by some as an insignificant issue. Although theoretically one can argue that improvement in the measure of property or property income need have no impact on marginal tax rates paid on returns to capital, it is sometimes feared that improvements in the measure of property income will not result simply in a more uniform treatment of such income, but also in an increase in the taxes paid on returns to capital. As one example, the accelerated cost recovery system (ACRS) was designed with little concern over the actual rates of depreciation of assets. The word

*depreciation* was deliberately omitted in 1981 tax changes in favor of the term *cost recovery* to make clear that the accurate measure of income was no longer a policy goal. We will return in section 4.5 to the question of whether it is possible to move closer to the goal of horizontal equity regardless of the choice between consumption and income taxes.

#### 4.2.1 The Realization Base

In one sense the switch to income as a measure of well-being was as much a result of, as a cause of, prevalent accounting practices. Accounting practices were also extremely influential in determining that the measure of income to be used for most policy, as well as statistical purposes, would be based primarily upon realizations. Accounting for income, with a number of exceptions, has been associated with the realized payment and receipt of cash. The exceptions apply primarily at the business level, where accrual accounting is applied to such items as inventories and accounts receivable, and investment in plant, equipment, and buildings is treated differently from other expenses.<sup>2</sup> At the household level, however, measures of income for tax, welfare, and other purposes have tended to be recognized only when they show up in the form of cash. (This cash flow logic by the way, also helps explain the reluctance to count payments of in-kind benefits in the measure of income.)

It is well known that measuring income only when it shows up as household cash flow falls short in several respects of a Haig-Simons definition of economic income. The measure ignores implicit flows of services from housing and durables, accruals (less realizations) of gains and losses on assets, and often accruals of rights and services provided through insurance and pension plans. In addition, in an inflationary environment, a cash-flow-based measure tends to reflect nominal returns from assets, not real returns. Real payments and receipts of interest, for instance, are overstated by the inflationary component of the interest rate. Traditional measures of income of households are distorted, therefore, by nonrealiza-

tions of service flows, gains on assets, and accruals of benefits in certain institutional accounts, as well as by the failure to make proper adjustments for inflation.

In 1979 the income from over 80 percent of assets was found to benefit from one tax preference or another. Most of these preferences were a direct result of the tendency to recognize property income only when it showed up in the form of cash flow. As a result, only about 30 percent of the net real returns from capital were found to be reported on individual tax returns (Steuerle 1983c). These findings help support the view that at the individual level, the recognition of income from capital is in many ways a voluntary event for both tax and other purposes.

The voluntariness of the tax is actually a function of consumption needs (relative to income), risk, and knowledge. Put another way, the individual tax (and loss of benefits or implicit tax in welfare systems) on capital income is in part a tax on liquidity, risk reduction and diversification, simplicity, and ignorance. More than half of all interest and dividend receipts reported on individual tax returns are reported by taxpayers aged sixty-five and over. The elderly realize a greater percentage of their income than other wealth holders, although as a group they do not appear to draw down their wealth (Menchik and David 1983). Persons recognizing income from property are often in need of current receipts or liquid assets to cover consumption needs in the near future. For the person anticipating that savings may be needed soon, risk can also be reduced substantially by increasing the percentage of interest-bearing assets and by reducing the percentage of other assets in the portfolio. Those who realize capital gains or interest income also have greater opportunity for diversification relative to those who hold onto unrealized gains.

For many taxpayers, however, the tax is hardly paid after elaborate calculations of some optimally designed portfolio that achieves the maximum-expected after-tax rate of return. For these taxpayers, and to some extent for all taxpayers, the

tax is merely a tax on simplicity and ignorance.

It is not hard to find examples. Many persons fail to achieve tax savings obtainable by switching to assets of equal yield and equal risk, but with greater tax preference. Employer contributions to pensions can substitute for employee contributions; annuities with withdrawal rights can replace savings accounts; direct shareownership can replace ownership of mutual funds that recognize capital gains frequently, and so forth. Ownership can also be transferred among family members, a practice used less frequently than possible both by taxpayers and certain welfare (principally elderly Medicaid) recipients. The persons paying the additional direct or implicit taxes may find their time too valuable to search out alternative mechanisms for achieving tax savings and government benefits; they may find it distasteful to play socially unproductive games; or they may simply be ignorant of the laws.<sup>3</sup>

The voluntary nature of capital income realization does not imply that the total tax paid on returns from capital is too high or too low, nor that total welfare payments should be larger or smaller. Such issues are not addressed here and, to be treated properly, would require consideration of measures of needs, as well as the ways in which the various tax and welfare systems combine or stack on top of each other. What the voluntary nature of capital income recognition will imply, however, is that the taxes paid and benefits received will vary tremendously among persons in fairly identical circumstances, and that income classifiers in statistical analyses will be inaccurate for many purposes.

### 4.3 A Comparison of realized Income and Wealth

Aggregate data on income recognition lends support to the notion that substantial horizontal inequity is created when tax and welfare systems base the measure of well-being in part on recognized property income. To reinforce this view, we now turn to microdata on households.

Our first comparison of wealth and income is

between wealth in estates of decedents and their reported income in the year prior to death. Table 4.1 summarizes the sources of income and wealth for this sample. As is immediately apparent, by far the most important sources of recognized capital income are dividends and interest. Realized rates of return on farms and business assets are especially low, especially when it is noted that reported farm and business income represents returns to labor as well as capital.<sup>4</sup>

Table 4.2 narrows our focus to a comparison of gross capital income subject to tax (GCIST) and wealth. The realized rate of return declines significantly as wealth increases, reaching a low of 2.2 percent for decedents with assets of 2.5 million or more. What is equally interesting is the large variation in realized rates of return in every wealth class. At least 5 percent of each wealth class reported zero or negative returns from capital, while at least 23 percent of each class report rates of return between 0 and 3 percent.

Rates of return of 10 percent or more are reported by 30 percent of the lowest-wealth class, with the proportion dropping to 4 percent of those with assets of \$2.5 million or more. A separate analysis (not shown in the tables) was made on persons reporting unusually high rates of return. Capital gains were only a minor factor in explaining these rates; dividend and interest income, on the other hand, were implausibly high relative to total assets. Problems of accounting period differences or estate tax valuation are probably most significant for this group. That is, either many of these persons underreport wealth, or they transfer or consume wealth between accounting periods.

In table 4.3 we turn to a sample of beneficiaries other than surviving spouses, and compare the change in reported capital income between 1975 and 1978 to the amount of inheritance received in 1976 or 1977. Table 4.3 does not show any strong relationship between amount of inheritance and realized rate of return, but it does show striking differences within inheritance classes. In each class (except one class with a sample size of three), between 17 percent and 32 percent of all

Table 4.1 All Decedents: Average Income and Wealth by Source

Income by Source	Average Amount of Item	Item as a Percentage of	
		Net Income Subject to Tax	Net Worth
Salaries and wages	\$8,496	25.51	1.63
Dividends	10,425	31.30	2.00
Interest	6,951	20.87	1.33
Business (nonfarm)	1,460	4.38	0.28
Farm	-122	-0.37	-0.02
Partnership	644	1.93	0.12
Small business corporations	44	0.13	0.01
Capital gain distributions	11	0.03	-
Net capital gain	2,725	8.18	0.52
Supplemental gain	22	0.07	-
Pensions and annuities	1,220	3.66	0.23
Rents	1,751	5.26	0.34
Royalties	771	2.32	0.15
Estate and trusts	879	2.64	0.17
Alimony	34	0.10	0.01
Other	-744	-2.23	-0.14
Gross income subject to tax	34,339	103.10	6.59
Less: Interest deductions	1032	3.10	0.20
Net income subject to tax	33,308	100.00	6.39
Plus: State income tax returns	51	0.15	0.01
Less: Exemptions	2,196	6.59	0.42
Other deductions	9,224	27.69	1.77
Adjustments	227	0.68	0.04
Taxable income	22,970	68.96	4.41

  

Wealth by Source	Average Amount of Item	Item as a Percentage of Total Wealth
Corporate stock	\$228,813	40.7
Real estate	125,337	22.3
Cash, bonds, notes and mortgages	153,925	27.4
Noncorporate business assets	15,371	2.7
Other assets	39,185	7.0
Total wealth (total estate)	562,632	100.0
Less: Debts	41,208	7.3
Net worth (economic estate)	521,424	92.7

NOTE: Measures of income are from decedent's individual income tax return filed for year prior to death. Measures of wealth are from decedent's estate tax return.

Table 4.2 All Decedents: Gross Capital Income Subject to Tax as a Percentage of Wealth (amounts in thousands of dollars)

Size of Wealth	Total Number	Average Wealth	Average Gross Capital Income	Gross Capital Income as a Percentage of Wealth	Gross Capital Income Subject to Tax as a Percentage of Wealth		
					Zero or Negative		
					Number	Wealth	Gross Capital Income
Under \$100,000	519	72	9	12.4	41	3,269	-43
\$100,000 under \$250,000	980	164	10	6.1	66	10,460	-140
\$250,000 under \$500,000	445	344	20	5.9	22	7,597	-139
\$500,000 under \$1,000,000	668	675	34	5.1	39	25,608	-775
\$1,000,000 under \$2,500,000	255	1,458	70	4.8	18	25,638	-144
\$2,500,000 or more	57	8,272	183	2.2	9	48,197	-578
All decedents	2,924	563	26	4.5	195	120,770	-2,116

  

Size of Wealth	Under 3 Percent			3 Percent under 5 Percent		
	Number	Wealth	Gross Capital Income	Number	Wealth	Gross Capital Income
Under \$100,000	120	9,620	140	99	7,930	315
\$100,000 under \$250,000	263	42,429	547	235	39,291	1,541
\$250,000 under \$500,000	102	35,261	532	109	37,055	1,487
\$500,000 under \$1,000,000	168	114,206	1,273	204	139,757	5,692
\$1,000,000 under \$2,500,000	75	110,868	1,656	93	134,038	5,337
\$2,500,000 or more	23	314,916	1,211	14	71,788	2,591
All decedents	751	627,302	5,361	754	429,860	16,964

  

Size of Wealth	5 Percent under 7 Percent			7 Percent under 10 Percent		
	Number	Wealth	Gross Capital Income	Number	Wealth	Gross Capital Income
Under \$100,000	57	4,340	260	48	3,850	331
\$100,000 under \$250,000	161	27,583	1,623	98	15,943	1,360
\$250,000 under \$500,000	92	31,282	1,808	54	18,931	1,576
\$500,000 under \$1,000,000	119	78,818	4,628	70	47,243	3,852
\$1,000,000 under \$2,500,000	29	41,848	2,436	22	32,441	2,618
\$2,500,000 or more	7	24,838	1,462	2	6,128	507
All decedents	465	208,707	12,216	294	124,534	10,244

  

Size of Wealth	10 Percent under 15 Percent			15 Percent or More		
	Number	Wealth	Gross Capital Income	Number	Wealth	Gross Capital Income
Under \$100,000	42	2,968	358	112	5,192	3,237
\$100,000 under \$250,000	81	13,338	1,579	76	11,969	3,232
\$250,000 under \$500,000	40	14,490	1,716	26	8,398	1,916
\$500,000 under \$1,000,000	39	25,314	3,059	29	19,720	4,627
\$1,000,000 under \$2,500,000	11	17,137	1,925	7	9,790	3,999
\$2,500,000 or more	-	-	-	2	5,645	1,751
All decedents	213	73,247	8,636	252	60,716	18,761

Table 4.3 Change in Gross Capital Income Subject to Tax as a Percentage of Inheritance Received (Amounts in dollars)

Size of Inheritance	Number of Beneficiaries	Gross Capital Income Subject to Tax		Change in Income 1975-78	Inheritance Received	Income Change as a percentage of Inheritance
		1975	1978			
Under \$100,000	751	7,427,011	10,161,407	2,734,396	52,935,141	5.17
\$100,000 under \$250,000	521	7,693,609	11,823,199	4,129,590	80,309,871	5.14
\$250,000 under \$500,000	134	1,615,962	5,603,513	3,987,551	45,671,922	8.73
\$500,000 under \$1,000,000	42	1,506,610	2,874,181	1,367,571	28,563,514	4.79
\$1,000,000 under \$2,500,000	3	318,062	823,375	505,313	3,603,179	14.02
\$2,500,000 or more	-	-	-	-	-	-
Total	1451	18,561,254	31,285,675	12,724,421	211,083,627	6.03

Size of Inheritance	Zero or Negative			Under 5 Percent		
	Number of Beneficiaries	Change in Income	Inheritance Received	Number of Beneficiaries	Change in Income	Inheritance Received
Under \$100,000	242	(2,854,798)	16,997,682	148	294,188	10,248,779
\$100,000 under \$250,000	157	(2,079,446)	23,213,559	122	573,490	19,487,771
\$250,000 under \$500,000	31	(371,890)	10,784,633	44	434,550	14,924,315
\$500,000 under \$1,000,000	7	(43,158)	5,002,242	21	363,306	14,293,016
\$1,000,000 under \$2,500,000	-	-	-	-	-	-
\$2,500,000 or more	-	-	-	-	-	-
Total	437	(5,349,292)	55,998,116	335	1,665,534	58,953,881

Size of Inheritance	5 Percent under 10 Percent			10 Percent under 15 Percent		
	Number of Beneficiaries	Change in Income	Inheritance Received	Number of Beneficiaries	Change in Income	Inheritance Received
Under \$100,000	139	759,489	10,184,132	75	659,587	5,436,714
\$100,000 under \$250,000	110	1,314,997	17,805,773	56	1,050,233	8,529,982
\$250,000 under \$500,000	34	801,092	11,374,375	10	378,947	3,435,351
\$500,000 under \$1,000,000	8	364,623	5,392,852	3	211,936	1,879,189
\$1,000,000 under \$2,500,000	2	152,494	2,465,985	-	-	-
\$2,500,000 or more	-	-	-	-	-	-
Total	293	3,392,695	47,223,117	144	2,300,703	19,281,236

Size of Inheritance	15 Percent under 20 Percent			20 Percent under 30 Percent		
	Number of Beneficiaries	Change in Income	Inheritance Received	Number of Beneficiaries	Change in Income	Inheritance Received
Under \$100,000	34	405,801	2,355,276	43	755,138	3,085,816
\$100,000 under \$250,000	34	908,818	5,262,143	18	630,784	2,618,485
\$250,000 under \$500,000	6	317,876	1,821,144	3	223,257	1,022,271
\$500,000 under \$1,000,000	-	-	-	3	314,545	1,468,956
\$1,000,000 under \$2,500,000	-	-	-	-	-	-
\$2,500,000 or more	-	-	-	-	-	-
Total	74	1,632,495	9,438,563	67	1,923,724	8,195,528

Table 4.3 (continued)

Change in Gross Capital Income Subject to Tax as a Percentage of Inheritance (continued)			
30 Percent or More			
Size of Inheritance	Number of Beneficiaries	Change in Income	Inheritance Received
Under \$100,000	70	2,714,991	4,626,742
\$100,000 under \$250,000	24	1,730,714	3,392,158
\$250,000 under \$500,000	6	2,203,719	2,309,833
\$500,000 under \$1,000,000 } \$1,000,000 under \$2,500,000 }	2	509,138	1,654,453
\$2,500,000 or more	—	—	—
Total	102	7,158,562	11,983,186

NOTE: Table includes beneficiaries other than surviving spouses.

Table 4.4 Average Net Capital Income Subject to Tax, 1975 and 1978

Item	All Individual Income Tax Returns		Beneficiaries Other Than Surviving Spouses	
	1975	1978	1975	1978
Dividends	266	336	3,807	7,344
Interest	528	682	2,427	4,810
Business	679	829	2,627	3,767
Capital and other gains	185	273	1,748	2,493
Rents and royalties	63	64	1,566	1,587
Estates and trusts	31	34	617	1,560
Gross capital income subject to tax	1,752	2,218	12,792	21,561
Less: Interest deductions	473	676	1,675	2,357
Net capital income subject to tax	1,279	1,542	11,117	19,205

SOURCES: For all returns, Statistics of Income, Individual Income Tax Returns for 1975 and 1978. For beneficiaries, all identifiable beneficiaries (included in the subject study) who received benefits of \$50,000 or more and who filed income tax returns for both 1975 and 1978.

Table 4.5 Change in Gross Capital Income Subject to Tax as a Percentage of Inheritance Received by Size of Gross Capital Income Subject to Tax (amounts in dollars)

Size of Gross Capital Income Subject to Tax in 1975	Number of Beneficiaries	Change in Income 1975-78	Inheritance Received	Income Change as a Percentage of Inheritance	Change in Gross Capital Income Subject to Tax as a Percentage of Inheritance		
					Number of Beneficiaries	Change in Income	Inheritance
Zero or negative	200	3,564,235	25,426,276	14.02	79	-316,980	8,468,557
\$1 under \$2,500	473	2,716,533	56,089,179	4.84	132	-271,430	15,089,443
\$2,500 under \$5,000	157	1,393,149	21,812,321	6.39	32	-138,315	4,426,021
\$5,000 under \$7,500	99	1,470,276	16,256,501	9.04	17	-136,400	1,883,314
\$7,500 under \$10,000	72	593,570	9,403,363	6.31	17	-74,386	1,776,119
\$10,000 under \$15,000	100	955,851	14,614,693	6.54	26	-279,450	3,622,226
\$15,000 under \$20,000	71	687,683	12,707,604	5.41	18	-246,667	3,157,892
\$20,000 under \$30,000	88	606,954	16,417,317	3.70	33	-610,026	5,549,910
\$30,000 under \$50,000	78	74,003	12,597,643	0.59	35	-752,210	4,469,510
\$50,000 under \$100,000	76	740,300	14,293,421	5.18	30	-108,660	3,856,196
\$100,000 or more	37	-78,133	11,465,309	-0.68	18	-155,958	3,968,928
Total	1,451	12,724,421	211,083,627	6.03	437	-5,349,292	56,268,116

Change in Gross Capital Income Subject to Tax as a Percentage of Inheritance (continued)

Size of Gross Capital Income Subject to Tax in 1975	Under 5 Percent			5 Percent under 10 Percent		
	Number of Beneficiaries	Change in Income	Inheritance	Number of Beneficiaries	Change in Income	Inheritance
Zero or negative	33	208,051	6,138,233	24	226,315	3,204,985
\$1 under \$2,500	150	537,712	19,387,097	113	939,439	13,784,498
\$2,500 under \$5,000	48	217,505	7,286,223	41	395,684	5,383,093
\$5,000 under \$7,500	27	150,513	5,308,098	30	432,486	6,122,792
\$7,500 under \$10,000	17	81,559	2,987,902	13	140,136	1,181,693
\$10,000 under \$15,000	19	116,850	4,030,581	21	215,045	2,975,436
\$15,000 under \$20,000	13	119,522	3,880,828	15	247,900	3,342,123
\$20,000 under \$30,000	13	127,667	4,995,503	11	139,487	1,676,855
\$30,000 under \$50,000	9	40,151	2,309,102	13	267,703	3,577,919
\$50,000 under \$100,000	3	24,356	826,337	12	388,500	5,273,723
\$100,000 or more	3	41,637	1,803,977	-	-	-
Total	335	1,665,523	58,953,881	293	3,392,695	46,523,117

Change in Gross Capital Income Subject to Tax as a Percentage of Inheritance (continued)

Size of Gross Capital Income Subject to Tax in 1975	10 Percent under 15 Percent			15 Percent under 20 Percent		
	Number of Beneficiaries	Change in Income	Inheritance	Number of Beneficiaries	Change in Income	Inheritance
Zero or negative	19	204,710	1,687,495	17	379,479	5,173,664
\$1 under \$2,500	37	481,917	3,993,123	14	264,787	1,537,155
\$2,500 under \$5,000	18	351,585	3,107,855	4	96,429	581,104
\$5,000 under \$7,500	11	143,625	1,196,516	6	101,321	569,838
\$7,500 under \$10,000	11	226,457	1,757,583	8	100,420	579,802
\$10,000 under \$15,000	12	157,298	1,378,723	5	113,922	641,633
\$15,000 under \$20,000	7	82,745	726,400	5	107,443	571,237
\$20,000 under \$30,000	12	247,563	2,036,655	5	147,587	899,864
\$30,000 under \$50,000	5	82,683	689,505	5	122,043	736,769
\$50,000 under \$100,000	7	184,108	1,541,160	5	199,064	1,147,497
\$100,000 or more	5	138,012	1,166,221	-	-	-
Total	144	2,300,703	19,281,236	74	1,632,495	12,438,563

Table 4.5 (continued)

Size of Gross Capital Income Subject to Tax in 1975	20 Percent under 30 Percent			20 Percent or More		
	Number of Beneficiaries	Change in Income	Inheritance	Number of Beneficiaries	Change in Income	Inheritance
Zero or negative	10	218,827	933,155	18	2,643,833	2,820,187
\$1 under \$2,500	14	295,789	1,250,384	13	468,319	1,047,479
\$2,500 under \$5,000	5	122,746	478,890	9	347,515	729,135
\$5,000 under \$7,500	2	45,482	186,458	6	610,489	989,485
\$7,500 under \$10,000	4	76,600	308,113	2	42,784	112,151
\$10,000 under \$15,000	8	277,136	1,235,791	9	355,050	730,303
\$15,000 under \$20,000	4	83,809	304,938	9	292,920	724,186
\$20,000 under \$30,000	7	195,190	836,729	7	359,486	511,801
\$30,000 under \$50,000	3	80,009	293,482	8	233,624	521,356
\$50,000 under \$100,000	7	213,591	898,632	14	907,080	1,654,220
\$100,000 or more	2	314,545	1,478,956	7	897,462	2,142,873
Total	66	1,923,724	8,205,528	102	7,158,562	11,983,176

NOTE: Table includes beneficiaries other than surviving spouses.

inheritors actually show a negative or zero change in gross capital income subject to tax. On the other hand, about 12 percent of those with inheritances under \$250,000 and 7 percent of those with inheritances over \$250,000 show a change in capital income that was equal to 20 percent or more of the recorded change in wealth.

Since reported capital income would normally increase over time regardless of inheritances, the number of inheritors reporting low or negative amounts of change becomes even more striking. Between 1975 and 1978, the average individual income tax return showed an increase of about 27 percent (from \$1,752 to \$2,218) in reported capital income, as contrasted with a 69 percent increase (from \$12,792 to \$21,562) for our sample (see table 4.4). If the change in interest rates, dividends rates, and growth in wealth in the economy were to have approximately equal effect on realized returns for both groups, capital income of inheritors also would have grown by 27 percent in absence of the inheritances. Thirty-nine percent (27 percent/69 percent) of the increase in reported capital income would then be attributable to factors other than the inheritances themselves.

Although table 4.3 shows little difference in realized rates of return across inheritors by size of

inheritance, table 4.5 provides some explanation. The ratio of the change in income to change in wealth is shown to decline significantly with an increase in the amount of capital income reported prior to the receipt of the inheritance. That is, beneficiaries with substantial amounts of realized income from wealth prior to the receipt of their inheritances were much quicker to convert their inheritances into assets for which the rate of income recognition would be low. Three consistent explanations can be offered for such behavior: (1) those with more capital income in 1975 faced higher marginal tax rates and therefore had more of an incentive to convert or hold their inheritances in the form of preferred assets; (2) those with greater amounts of capital income were more likely to be savers and accumulators and, in any case, would be less likely to need the income from their inheritances for near-term consumption purposes; (3) many of those owning substantial amounts of capital would already be engaged in tax-induced portfolio shifting and have access to investment advice, whereas inheritors without previous wealth accumulation more likely would react only with a significant time lag to the tax incentives to hold preferred assets.

Since the realized rate of return declines with an increase in 1975 capital income, it should not

surprise us that the percentage of returns showing a negative or zero change in capital income would actually rise with an increase in 1975 capital income. In fact, if one calculates returns reporting negative or zero changes in income as a percentage of total returns with similar amounts of 1975 capital income, a type of U-shaped curve emerges. At the bottom, 40 percent of those reporting zero or negative 1975 capital income show even more negative capital income by 1978 after receiving inheritances of \$50,000 or more.

In the middle, those with \$5,000 to \$7,500 in 1975 capital income have the smallest percentage of returns, 17 percent, showing a negative change after receiving their inheritance. At the top, 49 percent of those with \$100,000 or more of 1975 capital income show less (or the same) capital income in 1978. This finding is consistent with the observation that there are many wealthy taxpayers who report low or negative amounts of capital income because of substantial investment in tax-preferred assets or tax shelters of various sorts. They probably invest their inheritances in a similar manner. Those with significant amounts of reported capital income, on the other hand, include the wealthiest of taxpayers; they are also quite capable of limiting their increase in taxable income through sophisticated portfolio shifting. Those in the middle, however, often fall into neither category and include many whose experience of owning financial assets is confined principally to holding deposits in financial institutions. While this last group of individuals may also be likely to invest in owner-occupied housing -one of the best shelters of all- housing purchases are likely to take place only in discrete intervals and occur infrequently within a year or two after receiving an inheritance.

In summary, at least for persons receiving significant inheritances (\$50,000 or more) and for persons who eventually leave sizeable estates (\$60,000 or more), the measure of realized income from capital is likely to have only a small relationship to their economic rate of return from assets or any other accepted measure of well-being based on property income or property. Differences among households in realized rates of

return are quite large in all wealth classes.

#### 4.4 Horizontal Equity: Some Theoretical Considerations

We have argued that the recognition of income from capital is partly a voluntary event and, therefore, that the realized return from capital will vary across persons of equal circumstance, whether measured by equal economic income, equal wealth, or similar classifier of well-being. Our data showed such large variations in realized rates of return across taxpayers that using realized property income as a basis for measuring equals in statistical analyses, as well as tax and welfare programs, must be called into serious question. One cannot address this topic, however, without turning to some of the theoretical arguments against the existence of horizontal inequity. "With multiple abilities or different tastes," as Feldstein notes, "any feasible tax on income or consumption will violate horizontal equity" (1976b, p. 129). Abstracting from the general case, however, it is then argued that if persons differ only in their endowment of a single type of ability, but have the same tastes, there will be no horizontal inequity. In the extreme case, of course, this argument would be hard to refute if it were assumed that equals were so alike in every respect -abilities, tastes, and outcomes- that there was no difference among them, including taxes paid and transfers received.

The first qualification to the argument must therefore come when persons with equal abilities and equal tastes are at least allowed to have different outcomes because of luck, uncertainty, and risk. Persons with equal abilities and tastes, for instance, might still purchase different assets with equal expected returns and equal risk. Once we introduce some degree of randomness to the returns from engaging in various forms of (investment) behavior, ex post results will start to deviate from ex ante expectations.

If tax and welfare systems, as well as statistical analyses, were to be designed on the basis of ex ante conditions, there would be much less need

for many of them. In simplest terms, if all persons start out with equal opportunities in life, and several flips of the coin determine eventual well-being, a horizontally equitable tax or welfare system designed on an ex ante basis would tax everyone equally and grant everyone an equal amount of transfers. In that sense, except for required governmental goods and services such as defence, much of the tax-transfer system would be redundant and unnecessary. If, however, taxes, transfers, and statistical analyses are directed at ex post results, then they cannot ignore the issues of luck, risk, and uncertainty, nor can they treat those who have gambled and won the same as those who have gambled and lost.

Part of the argument against horizontal inequity also relies on what will be labeled here the market compensation effect. Even if persons purchase assets with different degrees of preference in tax or welfare systems, under certain assumptions (sometimes implicit), they will receive the same after tax rewards from those purchases. The market compensates purchasers of nonpreferred assets by equilibrating after-tax rates of return across assets, while differentials in tax rates are then reflected in different before-tax rates of return on assets.<sup>5</sup>

A second qualification must therefore be made if the assumptions of the model do not hold in practice. Suppose that taxpayers are taxed under a progressive tax system or one in which there are substantial numbers of investors (such as tax-exempt institutions or foreign investors). Then it is not at all clear that after-tax rates of returns will equilibrate across assets with different degrees of tax preference. Any movement up in the price of an asset A or asset B to equalize after-tax rates of return for a given group of taxpayers will give an incentive for arbitrage between A and B by tax-exempt investors (or investors in other tax brackets). For instance, foreign investors may turn to future markets, short sales, and other financial mechanisms to arbitrage between the assets whenever before-tax rates of return begin to diverge. Theory alone cannot determine whether this financial arbitrage dominates the tax-induced

tendency for before-tax rates of return to differ according to the preferences given various assets, and one must resort in part to studies of institutions and empirical data to try to find an answer.<sup>6</sup>

What the data show rather conclusively is that preferred assets generally have higher economic rates of return than nonpreferred assets (e.g., for corporate stock, see Ibbotson and Sinquefeld 1982; for farms see U.S. Department of Agriculture 1981).<sup>7</sup> In contradiction to the simple market compensation argument, interest-bearing assets usually have offered the lowest economic rate of return, yet at the same time are accompanied (for each investor) by the highest tax rate because of the inclusion of the entire inflationary component of the interest rate in income subject to tax. Even if the reasons for this result are partly institutional -statutory limitations of interest rates or the habitual tendency of many lenders and borrowers to require a higher before-tax rate of return on business investment than on loans financing that investment- the designer of a tax or welfare program or the statistical observer cannot assume away such differences.

Our own data also support the notion that those with lower realized rates of return have generally achieved higher economic rates of return. The very presence of large amounts of wealth means that the top wealth holders are likely to have been persons who were successful, rather than unsuccessful, in their investment. Yet at the same time, these are the same individuals holding the assets with the greatest amount of tax preference at the household level.

A further complication is added, however, once it is recognized that the assets with the greatest amount of tax preference are often the most risky, at least over a short period of time. One might argue that the compensation to holders of nonpreferred assets is hidden by this risk adjustment. Indeed, once account is made for risk, it is hard to deny that some compensation may have taken place through the lowering of economic rates of return on risky, but tax-preferred, assets relative to the rates paid on other assets; however, there

is no evidence, either theoretical or empirical, that this compensation is complete. Partly because of financial arbitrage and partly because of institutional factors, for instance, it would be quite difficult to provide full compensation to holders of interest-bearing assets if interest rates had to rise above the rate of return on other financial assets such as stock.

In deciding whether compensation for taxes paid takes place through equalization of after-tax rates of return, the obvious voluntary nature of the tax system also must be taken into account. It is simply not possible to argue that two persons owning the same stock receive a different economic rate of return or face a different risk because one recognizes capital gains and the other does not, nor that a person who finds a way to deposit and withdraw money from an annuity account faces a different risk or return than a person who engages in the same behavior at a bank. The greater the voluntariness of the tax, the less there can be any compensation through market adjustments to those who pay a higher rate of tax on the same income.

In summary, horizontal inequity is unimportant in a world in which tastes are so similar among equals that they purchase exactly the same assets and one is concerned with *ex ante* rather than *ex post* distributions of welfare. By the same token, all tax and welfare systems can be shown to have some degree of horizontal inequity under real-world assumptions of several abilities or different tastes. Between these two worlds lies the world of the designer of a tax or welfare system and the statistical analyst, both of whom must classify individuals in categories of equals primarily on the basis of means relative to needs, but not tastes. This designer or analyst must take into account luck, risk and uncertainty, *ex post* results, the inability of financial markets to fully compensate holders of non-tax-preferred assets, and differences in taxes or benefits among individuals holding essentially the same assets, but having different patterns of recognition of income from those assets.

#### 4.5 Implications for Research and Policy

There are several research and policy implications to the poor relationship between the realized rate of return and the economic income, wealth, or similar measure of well-being of the household. The first of the research implications is in many ways the most obvious, but in other ways the most difficult to handle. A statistical analysis of household characteristics, government payments, or taxes can be very misleading when it uses realized income as a variable or classifier. The researcher may be aware of the misleading nature of the data, but in few cases will his readers have a similar level of understanding. The problem is difficult because the correlation often can be made only by imputation of other information. Because imputation is statistically imprecise, it often reduces bias only by adding errors of measurement to a file.

Studies such as the estate-income match help us to make the imputations that are necessary. Because we can obtain fairly good information on the relationship between realized income and wealth, we can enhance our ability to take files with only reported income from property and make imputations of wealth onto those files through the investment income approach to wealth estimation (Atkinson and Harrison 1978, p. 171). Imputations of economic income will be more difficult, but, once wealth is estimated, independent studies of returns to ownership of stock, land, housing, and other assets can also be used.

Information on the ratio of realized income to asset value can also help to correct measures of the degree of inequality in society or the count of those in poverty (e.g., U.S. Bureau of the Census 1981). From the type of data reported here, one can get an idea of the number of persons with substantial wealth who report low amounts of realized income from capital. This data must be supplemented at the bottom end of the distribution. Here survey data have a better chance of filling the void, both because wage income will tend to dominate property income no matter what the error and because there are usually fewer

types of assets held and, except for homes and pensions, lesser amounts of unrealized income for which to account.

Proper measurement of property and property income is crucial for policy purposes as well. Welfare programs using realized income as a measure of means would probably be better off abandoning altogether the measure of realized income (except as a compliance check of actual property ownership) and turning instead to a measure of ability based upon wage income and property. For instance, an estimate of expected economic income from net worth, a fraction of net worth, or the annuity value of net worth could be added to wage income. Any of these measures would appear to be a more accurate, and less horizontally inequitable, measure of means than wage income plus realized income from property. Such a shift would redistribute welfare benefits more toward the longer-term poor and those with lesser amounts of wealth (Steuerle and McClung 1977). This approach also would have the advantage of no longer separating homes from other assets, and it could eliminate the need for separate asset tests with arbitrary cutoff or notch points. In addition, it would solve the problem of treating interest income as real income no matter what the rate of inflation, thus requiring welfare recipients to spend down their wealth at different rates in different years. These corrections need not add nor subtract to total welfare payments, but can be done in a way to make more equal the distribution of such payments across households of equal means relative to needs.

As for the tax system, better measurement of property or property income is certainly necessary if the base of the tax is meant to be economic income. Better measurement would require some substantial changes in tax laws, including accurate measurement of economic depreciation, indexing or approximate indexing of different types of returns from capital, and movement toward an accrual rather than a realization base. By the same token, corporate, individual, and property taxes would need to be better integrated. One tax could be meant as a substitute for another tax, but

an integrated design would need to eliminate conditions whereby some persons paid double taxes, while others with equal incomes paid no tax at all. Some of these steps would tend to raise taxes and some would lower them, but that should not be allowed to detract from the fact that it is possible to move toward greater horizontal equity in the income tax without necessarily raising or lowering the taxes on income from capital.

If our capability of taxing uniformly income from wealth continues to prove so poor, it raises the distinct possibility that a solution to the problem may come from the measurement of property value rather than of realized income. Such a solution is readily feasible when considering corporate wealth in publicly traded stock. Even the normal property tax on real estate, despite the variation in effective rates because of poor administration, may prove to provide less horizontal inequity with respect to property owners than does the income tax.<sup>8</sup> Its potential to provide more horizontal equity than a realized property income base is even greater. Better integration of property taxes with realized income taxes again may provide a back-door way of moving toward more uniform treatment of income from all assets.

If horizontal equity is the goal, better measurement of property and property income is required regardless of whether society moves further in the direction of a consumption tax or maintains an income tax. Horizontal equity requires at a minimum that, if two persons have equal incomes and equal savings, they should pay the same amount of taxes regardless of whether the ideal tax base is income or consumption.

The current policy approach of using realized income, adjusted by various piecemeal savings and investment incentives, unequivocally fails the standard of horizontal equity. Although the focus of this chapter has been on equity issues, the efficiency costs of existing failures to provide uniform treatment of different sources of capital income may be quite substantial and are caused by the same measurement problems that create

horizontal inequity (Steuerle 1983b; Galper and Steuerle 1983).

Obviously, if no societal consensus exists on whether to move toward an income or a consumption standard, the steps that can be agreed upon will be less. All of the following, however, at least move in the direction of meeting the common standard of imposing the same tax on those who have both equal incomes and equal savings: uniform measurement and taxation of real economic income from property, regardless of source;<sup>9</sup> unification of savings and investment incentives to measure total savings and investment; and uniform reciprocal treatment of interest paid and received, or borrowing (dissavings) and savings.

In summary, both for research and policy purposes, reliance upon realized income from capital as part of a measure of well-being has led to misleading analyses and poorly designed programs. The standard of horizontal equity in tax and welfare programs is violated whether the measure of equals is on the basis of economic income or consumption. Accounting for economic income may be difficult, but there are approximate methods that would allow greater accuracy in statistical analyses and a fairer distribution of benefits and taxes in government programs.

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### Comment James D. Smith

All societies have both political and functional imparities to define well-being. It is inevitably a topic of political debate, but beyond the realm of campaign rhetoric. The political process is the mechanism by which measures of well-being are translated into policies for sharing the burden of

public goods, one of which is the distribution of well-being itself. The term well-being has a ring to it that endears it to those charged with ennobling entrances to public edifices, drafting political tracts, or engaging in pure theory - all endeavors where the felicity of language transcends understanding. For public policy a more analytically tractable concept is necessary. The most widely applied proxy for well-being is realized income. Steuerle suggests that the use of realized income derives from historic accident, convenience, and ideology. Whatever the reasons for the use, it is not Steuerle's chosen burden to explicate them, but rather to disabuse the reader of any notion that it is a wise use. He does this in a minor way by the didactics of public finance texts, but in a more compelling way by putting on display a new data base, indeed, a data base that is not yet quite finished. In its present state it is like the product of the consummate designer of women's fashion: in good taste, but revealing just enough to maximize speculation and interest on the part of the viewer. Steuerle speculates a great deal about what is behind his data, and I will turn to his speculations and some of my own in a moment, but first let me describe its nature.

For routine statistical processing in its Statistics of Income (SOI) program, the Internal Revenue Service drew a sample of about 41,000 Federal estate tax returns filed in 1977. These returns were for decedents who died in 1977 or before (the majority of them being for decedents in 1976 and 1977). A one-in-ten subsample, or about 4,100 estate tax returns, was selected for Steuerle from the initial IRS sample with the intent that for each of these, the income tax return of the decedent in the year preceding his death would be located as well as the income tax return of the decedent's nonspousal legatees in the year prior to and the year following inheritance. For reasons that are not obvious, but troubling, tax returns from the year preceding death were not found for over one-quarter of the decedents for whom an estate tax return had been selected. The about 2,900 decedents for whom an income tax return

could be found were used for part of the analysis presented in Steuerle's paper.

Estate tax returns require filers to list legatees along with their Social Security number and amount bequeathed them. Steuerle formed a second analysis file consisting of all nonspousal legatees who received \$50,000 or more and for whom an income tax return could be found for 1975 and 1978. Thus, he has a set of legatees for whom he knows taxable income shortly before and shortly after the receipt of a bequest of \$50,000 or more. The size of this sample is 1,451 legatees.

Thus, he has two sets of data, one relating decedent's wealth to income in the year preceding death and another relating the income in years preceding and following an inheritance to that inheritance.

I applaud the kind of administrative record matching Steuerle is doing; we need a lot more of it. In its present state the data are not representative of any meaningful population, however, and our uses of them should keep this in mind. Steuerle notes that the SOI file was stratified according to size of gross estate. He argues that because his analysis deals primarily with issues of within- and between-wealth classes that the unweighted form of his file will not be biased.

Although I agree with this proposition so far as he wishes to make statements about rich decedents and draw some inferences about income/wealth relationships, it does not follow, that one can safely make inferences about the importance of income/wealth relationships for the living population, which is the relevant one. The estate tax returns are a sample of wealthy, living persons stratified by age, sex, race, and marital status. The stratification occurs because the sample is drawn by death, and factors that influence mortality rates make it unrepresentative of the living population. For instance, his sample overrepresents older persons who have a higher probability of dying than do younger ones.

The sample can be unbiased by weighting the observations by the reciprocals of mortality rates applicable to decedent characteristics. In table C4.1, I compare the asset composition in Steuerle's sample of decedents to the asset composition of the SOI file after it was weighted to represent the living population sufficiently wealthy to file estate tax returns were they to die. The weighting reverses the relative importance of real estate and corporate stock - the two largest asset types, and ones that have quite different income realization potentials because real estate is dominated by owner-occupied structures.

Table C4.1 Comparison of Asset Composition from Weighted SOI File and Unweighted Collation File

Asset	Percentage of Total Wealth	
	Weighted SOI	Unweighted Collation
Corporate stock	23.9	40.7
Real estate	34.8	22.3
Cash, bonds, notes, and mortgages	22.5	27.4
Noncorporate business	4.5	2.7
Other assets	14.2	7.0
Total Assets	100.0	100.0
Debts	15.5	7.3
Net worth	84.5	92.7

SOURCE: Schwartz 1983.

To the extent that behavior related to age, sex, and other mortality-related variables bear upon realization rates or portfolio composition, properly weighted data would give different results. Steuerle's main point, that the variance of realization rates is so high as to render realized income an inappropriate measure of well-being is so obvious in the data that it will likely hold when the sample is weighted, but the observed dispersion of the realization rates will be compressed some. His findings also pose considerable challenge to researchers who would link income and wealth either by capitalizing income flows or by converting asset value to yield. I will return to these

research issues later. First, let me comment further on Steuerle's findings.

In table 4.1 Steuerle provides an overall view of the composition of the income of these relatively affluent individuals and of the proportion that each income type represents of total net worth. On first glance the percentages that incomes represent of total net worth seem too small. But when one remembers that these income flows are essentially for 1975, when the average yield of stocks traded on the New York Stock Exchange was 4.1 percent and treasury bills were yielding about 6 percent, the aggregate taxable income of this group which represented about 4.4 percent of its net worth certainly does not seem implausible. Keep in mind that not only is this group rich, but it is made up of considerably more women and older persons than would be found in a random selection of equally rich individuals. This accounts for the relatively small share, 25.5 percent, of total income represented by wages and salaries. The interpretation of the percentage that a particular income flow, such as dividends, represents of total net worth is not obvious. But Steuerle is pushed to such comparisons because in the period between the income tax return and death one can convert assets - stock into cash for instance. For treasury bills the opportunity for conversion to cash would be automatic with the maturity of the bill.

Steuerle goes on, making the point quite strongly in table 4.2 that considerable variability exists in realized income from capital. He compares the gross capital income reported on income tax returns in the year before decedents' deaths with the value of assets reported on their estate tax returns. He notes that the average rate of realization declines with size of wealth. Decedents with under \$100,000 in gross assets had a realization rate of 12.4 percent, while those with \$2.5 million or more of wealth had a realization rate of 2.2 percent. He points out that an examination was undertaken of cases with unusually high rates of realization; it was found that dividend and interest income were implausibly high relative to total assets. He speculates that the time interval

between the reporting of income and the recording of assets may have permitted people to transfer or consume wealth. Thus the high rates of realization observed for some decedents may, in fact, be a problem of intertemporal misalignment of accounting points and periods. I agree with the general speculation, but let me pursue it a bit.

First, it is known from estate tax data that costs of last illness can be substantial. The population with which he is dealing is quite old: the mean age is seventy-two. One can easily imagine prolonged illnesses. If the cost of these illnesses is less variable across individuals than is the value of their assets, the relatively higher medical cost for the less affluent of these rich folks diminishes their assets relatively more than it does the assets of the more affluent, and the ratio of their taxable income in the year before death to the wealth reported in their estate tax return is consequently higher. Steuerle can pursue this issue by examining the cost-of-last-illness value reported on the estate tax returns. He can also, with greater effort, locate decedents' death certificates, which provide information on cause of death and duration of last illness. Both of these might serve as proxies for the consumption of medical services.

In addition to consuming medical services, it is reasonable to expect that some of this decedent population was drawing down its assets for general consumption expenditures prior to death. If this drawing down involved the liquidation of bills, notes, and bonds as they matured, interest income will show up in the income tax returns, but some portion of the face value of the instruments will have been used for consumption and will not show up in the estate tax returns. If one hypothesizes, as I do, that consumption expenditures will not be proportional to wealth for this population, then the liquidation of assets will be relatively more important for the less affluent than for the more affluent. Thus the proportion of wealth represented by capital income would appear to be larger than for the more affluent in the Steuerle file.

There is also the problem that bearer bonds may

generate an interest flow but can be "informally" distributed among the heirs, hence escaping taxation and not appearing in the estate tax return. Finally, there is the problem of the tax-paying unit represented on the estate tax return versus the tax-paying unit represented on the income tax return. It is not clear from Steuerle's discussion how income reported on a joint income tax return is related to the assets on an estate tax return, which is always filed for a sole decedent. There is not an easy solution to the problem of ascribing ownership of income on joint returns to the person owning assets on the estate tax return. Although the income tax return in 1976 requested that dividend income be designated as joint or as belonging to the husband or wife, taxpayer compliance with this request is believed to have been very poor. Furthermore, large amounts of dividend income were frequently reported as from street accounts without differentiation among different street accounts or the ownership thereof. For other types of property income no designation of ownership was required on the return. Some insight into the joint return problem could be provided by analyzing separately joint returns and all other returns. It is suspected that if Steuerle were able to make corrections for the temporal misalignment of the income-reporting period and the asset evaluation point as well as for assets that are informally distributed, the variation of rates of return across wealth-size classes would be considerably compressed. There still would remain substantial within-class variation of rates of realization, however. Steuerle notes with respect to table 4.2 that at least 5 percent of each wealth class has zero or negative realization rates. Because the denominator for the realization rate is gross assets, negative rates must come about because of negative income. This suggests that significant numbers of farm and business losses are present on the income tax returns. Since farms and business assets are more likely to be held by men than women, when the file is weighted the proportion of negative and zero rates of return can be expected to increase.

Thirty percent of the decedent population had realization rates of 10 percent or more as calculat-

ed by Steuerle. However, 20 percent of the decedent population with assets of \$100,000 or less reported realization rates of 15 percent or more. I suggest that the factors offered in explanation for the overall high average realization rate (12.4 percent) for the group are at work to generate these unusually high rates of realization.

There is another factor that can generate artificially high realization rates. Professional practices and some small business assets are frequently identified with the owner. The value of the business for estate tax purposes may come down to an evaluation of accounts receivable and physical property, but the business income reported on tax returns reflects the owner's marketability. In purely economic terms, there would be a large factor payment to labor, but on the tax return it would all appear as business income. Thus we have a confounded problem of misconceptualization of income and asset devaluation induced by death.

Next Steuerle looks at the change in capital income from 1975 to 1978 for legatees other than spouses who inherited \$50,000 or more. In the upper-right-hand portion of table 4.3 Steuerle calculates the change in gross capital income amounted to approximately 6 percent. Because these inheritors were nonspouses, it is reasonable to speculate that assets such as residential housing, consumer durables, works of art, and other non-yield-producing forms were less important in these inheritances than they would have been in the inheritances of spouses. Given this and the fact that one might reasonable expect some increment in legatees' asset holdings to have occurred quite independent of any inheritance, a change in gross capital income that amounted to 6 percent of the inheritance does not seem unreasonable at all. Steuerle notes there is relatively little difference in the realization rate by size of inheritance. This is also plausible for the same reasons. When one looks at the percentage that change in gross capital income represents of the value of inheritance within inheritance-size classes, however, one finds a substantial variability. For instance, nearly one-third of those inheriting

between \$50,000 and \$100,000 have negative changes in gross capital income between 1975 and 1978. It is difficult, however, to tease much understanding out of the table because so many unobservable things are going on. For instance, we know little about the age of the inheritors and to what extent they might be selling off assets. We do not know the value of the assets they held prior to inheritance. For inheritors with substantial preinheritance wealth, small fluctuations in the rate of return of their prior wealth could swamp percentage changes in income due to inherited wealth. For inheritors who are farm and business proprietors, normal year-to-year variability in income could be substantially greater than any variability induced by the newly inherited assets. If the inheritance was itself a farm or business asset, then the variability in the asset yield on the inheritance itself could be quite large. In this particular instance the data has revealed too little to us to excite much speculation.

Finally, in table 4.5 Steuerle looks at changes in gross capital income over the period 1975 to 1978 by size of 1975 gross capital income. This is somewhat of a proxy for preinheritance wealth, but the whole thrust of Steuerle's argument on realization rates qualifies this use of it. Yet when he does this he finds that individuals with zero or negative capital income in 1975 were much more likely to have zero or negative changes in their capital income from 1975 to 1978 as were individuals with relatively high 1975 capital income. He speculates that persons with zero or negative capital income in 1975 and those with high capital income in 1975 are, in fact, similar individuals, the implication being that those with zero or negative capital income really were holding substantial amounts of assets but were effectively using tax shelters, as were very wealthy persons in 1975. It was, he argues, the petty rich, those with capital incomes between \$2,500 and \$20,000, who had high realization rates and consequently were taxed on their lack of tax sophistication. He speculates that legatees with large 1975 capital incomes were sensitive to high marginal tax rates and had strong incentives to convert their inheritances into preferred asset forms since they were

likely to be savers and had already accumulated large amounts of wealth. Their propensity to consume out of their inheritances would be low. He also speculates that the owners of substantial capital would have a higher probability of having already engaged in tax-induced portfolio shifting and have access to investment advice. Legatees without previous wealth accumulations would have a tendency to engage in tax minimization efforts only after a time lapse. Again, Steuerle's speculations are plausible and the evidence is suggestive, but the reader is left with a terrible sense of urgency to examine the files in detail to understand what is really going on behind the tabulated results.

### Conclusions and Research Implications

Steuerle, without a doubt, demonstrates that realized income is an inappropriate measure of well-being. To the extent that it is used as a basis for allocating tax burdens and transfers, it introduces substantial horizontal and vertical inequities. Although the collation file will provide substantial insight into the equity issues posed by the use of realized income, even after it is weighted and much more is understood about the file, we will have done only the necessary preliminary work to exploit the rich body of data he has assembled. Although I encourage Steuerle to continue examining the relationship between income tax returns and assets on estate tax returns, I suggest that once he has completed this task that he consider a slightly different strategy.

Given the information he has available from the collation file plus some additional information he could obtain or may already have, I would argue for reconstructing a balance sheet for each individual decedent as it existed at some point within the year of the income tax return in the collation file. This would not necessarily be an easy task. It will require using information income tax returns filed by the decedent prior to his death and by executors of the estate for periods during which the decedent was alive but did not file. It might also require searching for gift tax returns. The central issue is that of entering into the balance sheet the

value of assets that disappeared because they were consumed or transferred between the income tax observation and the estate tax observation in the collation file. Schedule C will be of some value in their endeavor as will information on medical costs that appear in the estate tax return as well as in the income tax return. Once one has such a file, not only can one make judgements about equity distortion introduced by the utilization of realized income but one can move a consider

able distance the derivation of economic income for relatively affluent individuals. Such a file could be the basis for simulating a variety of tax policies.

### References

Schwartz, Marvin. 1983. Trends in personal wealth, 1976-81. Statistics of Income Bulletin 3: 1-26.

### Endnotes

1. It was not possible to distinguish between cases in which an income tax return was not filed and cases in which the return could not be found because of an invalid Social Security number.
2. Even at the business level, major items of income such as accrued capital gains and nominal interest payments and receipts are measured essentially by a cash flow criterion.
3. One can model ignorance as a cost of acquiring information. If we assume that the cost of acquiring information rises with one's ignorance of the tax and welfare laws, however, then the tax and welfare systems still impose taxes that rise with ignorance. These taxes can be paid directly to the government or indirectly to advisors.
4. For a separate analysis of the returns to owners of farms and closely held businesses, see Steuerle 1983a.
5. For an excellent model of the extent to which such market compensation might take place in a progressive tax system, as well as the implicit taxes paid and transfers received under certain conditions, see Galper and Toder 1984. For other portfolio effects, see Bailey 1974 and Blume, Crockett, and Friend 1974.
6. A related issue is the effect of taxes on interest rates, especially in a period of inflation. Because inflation raises the effective tax rate on real income from interest-bearing assets, and because income from these assets is more vulnerable than other assets to this inflation-induced tax, one might initially expect the interest rate to rise by a multiple of the increase in the inflation rate. In almost all attempts to explain the effect of inflation and taxes on observed interest rates (e.g., Darby 1975; Tanzi 1980; Peek 1982), however, it is assumed incorrectly that the tax system is proportional or, through use of average marginal tax rates, effectively proportional for all investors, both domestic and foreign. This assumption prevents the type of financial arbitrage discussed above from working to reduce the increase in the interest rate. In addition, the failure to take into account the extent to which interest is deducted at a higher tax rate than it is included in income, as well as the extent to which receipts are never counted at all (Steuerle 1984), leads to a misestimation of average marginal rate.
7. An exception, of course, is provided by tax-exempt bonds, but even wealthy individuals generally hold only a small percentage of their assets in tax-exempt bonds. See Schwartz 1983,
8. See Aaron 1975 for an argument that the property tax may also be progressive.
9. Strictly speaking, if one were to move all the way to a consumption tax, economic income would not have to be measured. However, a consumption tax would require wealth accounting, or, to be more precise, at least a measure of withdrawals and deposits in qualified (wealth) accounts. In addition, during a transition period, wealth accounting of existing assets would be required to insure that trillions of dollars worth of consumption were not allowed to go tax free for current holders of wealth.

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