ECONSTOR
Make Your Publications Visible.

A Service of

ZBW Leibniz-Informationszentrum Wirtschaft
Leibniz Information Centre for Economics

Wolff, Edward N.; Zacharias, Ajit

Working Paper

Household wealth and the measurement of economic well-being in the United States

Working Paper, No. 447

Provided in Cooperation with:
Levy Economics Institute of Bard College

Suggested Citation: Wolff, Edward N.; Zacharias, Ajit (2006) : Household wealth and the measurement of economic well-being in the United States, Working Paper, No. 447, Levy Economics Institute of Bard College, Annandale-on-Hudson, NY

This Version is available at:
https://hdl.handle.net/10419/31603

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

WWW.ECONSTOR.EU

Mitglied der Leibniz-Gemeinschaft



Working Paper No. 447

Household Wealth and the Measurement of Economic Well-Being in the United States

by

Edward N. Wolff,
The Levy Economics Institute
and New York University

and

Ajit Zacharias
The Levy Economics Institute

May 2006

The Levy Economics Institute Working Paper Collection presents research in progress by Levy Institute scholars and conference participants. The purpose of the series is to disseminate ideas to and elicit comments from academics and professionals.

The Levy Economics Institute of Bard College, founded in 1986, is a nonprofit, nonpartisan, independently funded research organization devoted to public service. Through scholarship and economic research it generates viable, effective public policy responses to important economic problems that profoundly affect the quality of life in the United States and abroad.

The Levy Economics Institute
P.O. Box 5000
Annandale-on-Hudson, NY 12504-5000
http://www.levy.org

Copyright © The Levy Economics Institute 2006 All rights reserved.

ABSTRACT

The standard official measure of household economic well-being in the United States is gross money income. The general consensus is that such measures are limited because they ignore other crucial determinants of well-being. We modify the standard measure to account for one such determinant: household wealth. We then analyze the level and distribution of economic well-being in the United States during the 1980s and 1990s, using the standard measure and a measure that differs from the standard in that income from wealth is calculated as the sum of lifetime annuity from nonhome wealth and imputed rental-equivalent for owner-occupied homes. Our findings indicate that the level and distribution of economic well-being is substantially altered when money income is adjusted for wealth. Over the 1989–2000 period, median well-being appears to increase faster when these adjustments are made than when standard money income is used. This adjustment also widens the income gap between African Americans and whites, but increases the relative well-being of the elderly. Adding imputed rent and annuities from household wealth to household income considerably increases measured inequality and the share of income from wealth in inequality. However, both measures show about the same rise in inequality over the period. Our results contradict the assertion that the "working rich" have replaced the rentiers at the top of the economic ladder.

Keywords: living standards, household wealth, inequality.
JEL codes: D31, D6, H4, P16

1. INTRODUCTION

Conventional measures of household economic well-being do not adequately reflect the advantage from asset ownership or the disadvantage from liabilities. Income generated from asset ownership is usually counted in the form of property income (the sum of dividends, interest, and rent), but this does not reflect the "stock" dimension of the advantage from asset ownership and is, at best, a partial measure of the "flow" dimension. The disadvantage from the burden of debt is not captured at all in standard income measures. If the ability to approximate potential consumption over a given period of time is a desirable characteristic of a measure of economic well-being, then it seems appropriate to take wealth into account in a more comprehensive manner than is done in the standard measures.

The argument for including a better measure of income from wealth is a part of the wider agenda to improve measures of household economic well-being. An international panel of experts addressing this task has lamented the preponderant focus on money income and the absence of an appropriate concept of money income (The Canberra Group, 2001). Several authors have recently proposed measures that could provide a better understanding of the level and distribution of economic well-being (e.g., Smeeding and Weinberg, 2001; Wolff and Zacharias, 2003). From the early 1980s, the United States Bureau of the Census has published experimental measures of income that include, among other things, expanded definitions of income from wealth comprising imputed return on home equity and realized capital gains.

Our aim in this paper is to analyze the level and distribution of economic well-being in the United States during the 1980s and 1990s using the standard measures (that is, gross money income and gross money income plus realized capital gains) and a measure that differs from the standard ones in that income from wealth is calculated as the sum of lifetime annuity from nonhome wealth and imputed rental-equivalent for owner-occupied homes. Admittedly, an adequate measure of economic well-being must take into account components other than money income and wealth—such as the value of household production (Wolff, Zacharias, and Caner, 2004). We ignore those components here because we would like to present in stark detail the effects of modifying the standard measures for wealth, rather than confounding these effects with the effects that would stem from incorporating other components. The method of reckoning income from wealth as the sum of lifetime annuity and imputed rental-equivalent represents one

way of incorporating wealth. However, we also conduct a set of sensitivity analyses with alternative methods to see how robust our findings are.

The remainder of the paper has the following structure. We begin by briefly summarizing previous attempts to incorporate wealth into a measure of well-being (Section 2). We then describe the main sources of data and concepts of wealth used in the study (Section 3). This is followed by a discussion of how we incorporate wealth into a combined income-net worth measure. In Section 4, we look at the effects of the incorporation of wealth into income on the level of well-being for the total population as well as for specific sub-groups. Its effect on inequality is discussed next (Section 5). Decomposition analysis is deployed to examine two issues: the contribution of income from wealth to the level and changes in inequality; and, how the incorporation of wealth alters the rankings of, and relative income differentials among households. A critical comparison of our estimates of top income shares and those of Piketty and Saez (2003) is also undertaken to assess whether rentiers were at the top of the economic ladder during the period under scrutiny. A sensitivity analysis is conducted in Section 6 by replacing our definitions of income from wealth with alternatives: imputed return on home equity and bond-coupon returns. Concluding remarks are presented in the final section (Section 8).

2. A REVIEW OF PREVIOUS LITERATURE

It is often believed that income and wealth are almost interchangeable as measures of family well-being. That is to say, many believe that families with high income almost always (or, indeed, necessarily) have high wealth, and low income families are low wealth ones. However, Radner and Vaughan (1987) find that this is not the case by tabulating the joint distribution of income and wealth by quintile on the basis of the 1979 Income Survey Development Program (ISP) file.

They find that there is generally a strong positive correlation between income and wealth. For example, in the bottom income quintile, 40.5 percent of the households are in the bottom net worth quintile, while only 6.5 percent are in the top net worth quintile. In the top income quintile, only 4.5 percent are in the bottom net worth quintile, while 44.5 percent fall in the top net worth quintile.

However, the correlation is far from perfect. Indeed, there is still a substantial amount of dispersion of wealth by income group. No net worth quintile contains more than 44 percent of the households in the corresponding income quintile. Moreover, in the three middle income quintiles, each net worth quintile has at least 10 percent of the households in the income quintile. Income and wealth, while positively correlated, are distributed rather differently among households. Wealth thus represents another dimension of well-being over and above income.

There have been several attempts to combine the income and wealth dimension into a single index of household well-being. The most common technique is to convert the stock of wealth into a flow and add that flow to current income. In this approach, wealth is converted into a lifetime annuity for the expected remaining life of the family. The annuity is defined as a stream of annual payments which are equal over time and which will fully exhaust the stock of initial wealth. This annuity is then added to obtain an augmented measure of family income after property income is first subtracted from current money income so that there is no double counting of the returns from household wealth.

One of the first examples of this approach is by Weisbrod and Hansen (1968) on the basis of the 1962 Survey of the Financial Characteristics of Consumers (SFCC). The original data show that the share of the top two income classes ($15,000 and over in 1962 dollars) was 5 percent of total current money income in 1962, and that of the bottom income class (less than $3,000) was 20 percent. They then used both an assumed 4 percent and a 10 percent annuity rate on household net worth, and find that the share of the top two income classes increases from 5 percent to 8 percent at a 4 percent annuity rate and to 10 percent at a 10 percent rate, while the share of the bottom income class falls from 20 percent to 18 percent and then to 17 percent.

A second study, by Taussig (1973), makes use of the 1967 Survey of Economic Opportunity (SEO) database. Three calculations of the Gini coefficient were made: (i) current (after-tax) money income; (ii) the sum of current income and a 6 percent annuity on household wealth; and (iii) the sum of current income and a 6 percent annuity on household wealth after it is adjusted for underreporting of assets among high income families. Results were also computed by age group. When the adjusted annuity (iii) is added to current money income, the measured Gini coefficient for all families rises from 0.36 to 0.39. Inequality also increases for all age groups, though the disequalizing effect is considerably stronger for older age groups.

A third study, by Wolfson (1979), is based on the 1970 Canadian Survey of Consumer Finances. Wolfson employed the same general technique as Taussig, except that he used both a

4 percent and a 10 percent annuity rate and also included a separate calculation for the sum of current money income and imputed rent on owner-occupied housing (valued at 8 percent of net equity). He found that among all households the inclusion of a wealth annuity with money income has no effect on the Gini coefficient, which remains in the range of 0.36 to 0.37. However, the share of total income of the top 5 percent of families increases but the share of the bottom 20 percent also rises. Results by age class show relatively little change in measured inequality from adding a wealth annuity for the younger age groups but do show a disequalizing effect for older families.

Wolff (1990) used the coupon rate method to examine the effects of adding the return to wealth to household income. Using the 1983 Survey of Consumer Finances (SCF), he found that the inclusion of both imputed rent to owner-occupied housing and a 3 percent bond coupon rate on non-home wealth lowered the overall poverty rate by 4.8 percent. However, the effect was much stronger for the elderly (an 11.5 percent reduction) than the non-elderly (only a 3.1 percent reduction).

In sum, the Weisbrod and Hansen, Taussig and Wolfson studies generally find that the distribution of income becomes more unequal once the returns to wealth are included as part of total income. However, the disequalizing effects are not great. There are two reasons for this. First, though family income and wealth are positively correlated, they are not perfectly correlated, so that there are families with low income but high wealth and also with high income but low wealth. Second, the annuity payments are small relative to current money income, typically on the order of 10 percent on average. As a result, their inclusion in augmented income does not alter the overall distribution of income very much. In fact, annuities are much smaller for younger families than older ones, both because younger ones have lower wealth and because they have a longer remaining life expectancy. As a result, wealth annuities generally have a more disequalizing effect for older households than younger ones.[1]

[1] See Moon (1977), Lerman and Mikesell (1988), Citro and Michael (1995), and Caner and Wolff (2004) for related discussion and analyses.

3. DATA AND CONCEPTS

3.1. Household Wealth

Our basic data source is the Federal Reserve Board's Surveys of Consumer Finances (SCF) for 1983, 1989, 1995, and 2001. The SCF is the premier survey on household wealth in the United States, conducted every three years. Completed interviews in the SCF amount to 4262, 3143, 4299, and 4449 households, respectively for 1983, 1989, 1995, and 2001. Each survey consists of a core representative sample combined with a high-income supplement. The supplement is drawn from the Internal Revenue Service's Statistics of Income data file. For the 1983 SCF, for example, an income cut-off of $100,000 of adjusted gross income is used as the criterion for inclusion in the supplemental sample. Individuals were randomly selected for the sample within pre-designated income strata. The advantage of the high-income supplement is that it provides a much "richer" sample of high income and therefore potentially very wealthy families.

The principal wealth concept used here is marketable wealth (or net worth), which is defined as the current value of all marketable or fungible assets less the current value of debts. Total assets are defined as the sum of: (1) the gross value of owner-occupied housing; (2) other real estate owned by the household and net equity in unincorporated businesses; (3) cash and demand deposits, time and savings deposits, certificates of deposit, money market accounts and the cash surrender value of life insurance plans; (4) government bonds, corporate bonds, foreign bonds, and other financial securities, corporate stock and mutual funds, equity in trust funds; (5) the cash surrender value of defined-contribution pension plans, including IRAs, Keogh, and 401(k) plans. Total liabilities are the sum of: (1) mortgage debt, and (2) other debt such as auto and credit card loans.

Table 1 shows the mean and median values for different asset and liability types over the four years in 2001 dollars. While mean net worth climbed by 82 percent between 1983 and 2001, the median increased by only 36 percent, a result indicating rising inequality over this period. The mean value of houses, real estate and business equity, and liquid assets grew between 35 and 55 percent, less than the overall percentage increase of total assets. The biggest gains were recorded for financial assets (including stocks) of 162 percent and pension assets of 660 percent. The mean value of liabilities expanded by 66 percent, an increase less than that of total assets. Mortgage debt grew by 117 percent while other debt actually contracted by 2.7 percent. This

trend is likely to stem from the facts that mortgage interest rates are lower than those on consumer debt and that mortgage interest is tax-deductible while other interest is not.

Table 1. Family Net Worth and its Components (in thousands of 2001 dollars)

	1983		1989		1995		2001		% Change, 1983-01	
	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean
Assets	81.7	239.7	92.6	292.6	98.2	272.1	118.5	431.8	45.1	80.1
Houses	53.3	79.2	54.3	96.9	58.1	86.5	75.0	122.6	40.6	54.8
Real estate and business	0.0	89.4	0.0	103.7	0.0	83.2	0.0	121.1	--	35.4
Liquid assets	5.3	26.7	4.3	32.8	3.6	28.4	5.6	38.2	5.5	42.9
Financial assets	0.0	37.6	0.0	42.2	0.0	48.0	0.0	98.5	--	162.2
Pension assets	0.0	6.7	0.0	17.2	0.0	25.9	0.3	51.3	--	660.4
Liabilities	4.4	31.9	7.1	35.3	9.7	41.3	13.3	53.0	199.2	66.0
Mortgage debt	0.0	18.3	0.0	24.3	0.0	30.2	0.0	39.8	--	117.1
Other debt	1.1	13.6	1.8	11.1	2.0	11.2	2.0	13.3	87.5	-2.7
Net worth	54.5	207.8	57.8	257.3	53.3	230.7	74.0	378.7	35.9	82.3

Our definition of net worth reflects wealth as a store of value and therefore a source of potential consumption. Such a measure best reflects the level of well-being associated with a family's holdings. Thus, only assets that can be readily converted to cash without compromising current consumption (that is, "fungible" ones) are included. As a result, consumer durables are excluded here. Also excluded is the value of future retirement income: Social Security benefits (usually referred to as “Social Security wealth”) and retirement benefits from defined-benefit private pension plans (“pension wealth”) that individuals may receive upon retirement. Even though these funds are a source of future income to households, they are not in their direct control and cannot be marketed.

3.2. The Imputation of Annuities and Rent on Owner-Occupied Housing

The most common technique of combining income and wealth into a single measure of household well-being is to convert the stock of wealth into a flow and add that flow to current income. The income flow generated by wealth can be computed either as a lifetime annuity or a bond coupon. We incorporate household net worth by adding to the amount of money income

left after deducting property income (sum of dividends, interest, and rent), the imputed rental cost of owner-occupied housing and the lifetime annuity value of non-home net worth.[2]

Our approach differs from the standard approach in two significant ways. First, we distinguish between home and non-home wealth. Housing is a universal need and owning a house frees the owner from the obligation of paying rent, leaving that much more resources for spending on other needs. Hence, benefits from owner-occupied housing are reckoned in terms of the replacement cost of the services derived from it, i.e. a rental equivalent.[3]

We impute rent for owner-occupied housing by distributing the total amount of imputed rent in the GDP to homeowners in the ADS, based on the values of their house.[4] Formally, imputed rent can be expressed as $IR_i = (h_i / H) * IR$, where IR_i and h_i are the imputed rental cost and the value of house, respectively, of household i, while IR and H are the weighted sums of the same over households.[5] On average, imputed rent was 5.6 percent and 5.4 percent (respectively) of the total value of houses in 1989 and in 2000.

Another difference in our approach compared to the earlier ones cited above is that we use actual historical rates of return in computing lifetime annuities. Moreover, we take into account the differences in the portfolio composition of non-home wealth by computing the lifetime annuity as the weighted average of annuity flows generated by individual non-home wealth components and using portfolio shares of these six components as weights. The lifetime annuity amount calculated is such that (i) it is the same for all remaining years of the younger spouse's life;[6] and (ii) it brings wealth down to zero at the end of the expected lifetime.

---

[2] In our sensitivity analysis conducted in Section 6 below, we also show alternative estimates based on return on home equity and the bond coupon approach.

[3] This is consistent with the approach adopted in most national income accounts.

[4] The NIPA procedure is to assign each unit of owner-occupied housing a rental equivalent on the basis of actual market rents paid on a tenant-occupied unit of similar value. (See NIPA table 7.12, line 209 for the estimated imputed rent.)

[5] An alternative would be to use a "foregone returns" approach. It posits that by tying up their financial resources in acquiring a home, the owners are foregoing the returns that they could have earned by investing the same in financial assets. In our sensitivity analysis conducted in Section 6 below, we shall show alternative estimates based on this approach as well.

[6] Information on remaining lifetimes are taken from the lifetables published by the U.S. National Center for Health Statistics for various years. Remaining lifetimes are reported by sex and three racial groups (white, nonwhite and black) for all the years included in this study except 2001, for which separate estimates are available only for whites and blacks. We estimated the remining lifetimes for the nonwhite group by assuming that the proportion between black and nonwhite lifetime at each age was the same in 2001 and 1996. The latter year was the last year for which separate estimates are available for nonwhites and blacks.

Formally, the annuity value of non-home wealth can be written as the product of (1x6) and (6x1) vectors: $A_i = \left[f_i(r_j, race_i, sex_i, age_i) \right] * \left[W_j \right]$. Each element f_i of the first vector gives the annuity flow that household i would receive each year if it held $1 in wealth component j. This amount is a function of the total real rate of return on the non-home wealth component, r_j, and of the race, sex, and age of the younger spouse. Multiplying this factor, f_i, by the total amount of money held in the j^{th} component, W_j, gives us the total annuity generated by this component.

The total real rate of return, r_j, of each non-home wealth component j, is the average of annual rates over a relatively long period of time. The rationale for employing this method, instead of using the rate of return in an arbitrarily chosen year, is that the annuity value estimated this way is a better indicator of the resources available to the household on a sustainable basis over its lifetime. The total rates of return data we use are inclusive of the incomes generated by the assets. Therefore, in order to avoid double counting, we net out from the total income measure any property income already included in money income.

The average rates of return by asset type were estimated from the data on asset holdings published by the Federal Reserve in the Flow of Funds Accounts for the United States and financial market information included in the 2005 Economic Report of the President.[7] The results are shown in Table 2. In this breakdown, pension assets had the highest real rate of return at 4.6 percent per year, though the period covered is only from 1986 to 2000. The rate of return for this asset is calculated over a comparatively shorter period, reflecting its relatively recent appearance in the Flow of Funds data. Financial assets had the second highest rate of return, at 3.8 percent per year, followed by real estate and business equity at 2.4 percent per year. Liquid assets had the lowest real rate of return—only 1.0 percent per year over the 1960-2000 period.

[7] The Flow of Funds data are available at: http://www.federalreserve.gov/releases/z1/Current/ and the 2005 Economic Report of the President is available at: http://www.gpoaccess.gov/eop/. Details on the data taken from the Flow of Funds, including series identifiers are available from the authors upon request.

Table 2. Long-term Average Rates of Return (in percent)

	Nominal	Real	Period
Real estate and business	6.97	2.39	1960-2000
Liquid assets	5.94	0.97	1965-2000
Financial assets	8.44	3.80	1960-2000
Pension assets	7.89	4.56	1986-2000
Mortgage debt	0.00	-4.28	1960-2000
Other debt	0.00	-4.28	1960-2000
Note: CPI-U (average)	4.47		

Notes:

Real estate and business: Holding gains (taken from the Flow of Funds table R.100) divided by equity in noncorporate business (taken from the Flow of Funds table B.100).

Liquid assets: The weighted average of the rates of return on checking deposits and cash, time and saving deposits, and life insurance reserves. The weights are the proportion of these assets in their combined total (calculated from the Flow of Funds table B.100). The assumptions regarding the rates of return are: zero for checking deposits, the rate of return on a 1-month CD (taken from the table "H.15 Selected Interest Rates" published by the Federal Reserve and available at: http://www.federalreserve.gov/releases/h15/data.htm) for time and saving deposits, and, one plus the inflation rate for life insurance reserves.

Financial assets: The weighted average of the rates of return on open market paper, Treasury securities, municipal securities, corporate and foreign bonds, corporate equities and mutual fund shares. The weights are the proportion of these assets in total financial assets held by the household sector (calculated from the Flow of Funds table B.100). The assumption regarding the rate of return on open market paper is that it equals the rate of return on 1-month Finance paper ((taken from the table "H.15 Selected Interest Rates" published by the Federal Reserve and available at: http://www.federalreserve.gov/releases/h15/data.htm). The data for the rates of return on other assets are taken from the Economic Report of the President 2005, Table B.73. The assumptions regarding Treasury securities, municipal securities, corporate and foreign bonds, and corporate equities are, respectively, average of Treasury security yields, high-grade municipal bond yield, average of corporate bond yields, and annual percent change in the S&P 500 index. Mutual fund shares are assumed to earn a rate of return equal to the weighted average of the rates of return on open market paper, Treasury securities, municipal securities, corporate and foreign bonds and corporate equities. The weights are the proportions of these assets in the total financial assets of mutual funds (calculated from the Flow of Funds table L.123).

Retirement assets: Net acquisition of financial assets (taken from the Flow of Funds table F.119c) divided by total financial assets of private defined-contribution plans (taken from the Flow of Funds table L.119c).

Inflation rate: Calculated from the CPI-U published by Bureau of Labor Statistics (Series Id: CUUR0000SA0).

4. TRENDS IN THE LEVEL OF WELL-BEING

4.1. Overall Trends

Table 3 shows trends in mean and median income using three different definitions over the years 1983 to 2001.[8] Line 1 shows the results using the U.S. Census Bureau's standard definition of money income. It is first of note that mean money income climbed by 35 percent between 1983 and 2001 while the median inched up by only 9 percent, suggesting a steep rise in inequality. Line 2 shows trends in SCF income, which is the sum of money income and realized capital gains. Its mean value gained 42 percent over the period, roughly 7 percentage points more than money income, indicating a strong growth in realized capital gains over these years. In contrast, the median value of SCF income increased by only 9 percent.

Line 4 shows results for our wealth-adjusted measure, including imputed rent on owner-occupied housing and the annuitized value of non-home wealth. Its mean value shows an even more robust growth than that of SCF income, 49 percent over the period. The median rises by nearly 18 percent, almost double the increase in the median of money income or SCF income. Further analysis shows that the main factor behind the sharp gains in wealth-adjusted income is the steep rise in annuitized wealth, which soared by 93 percent over these years. Imputed rent, on the other hand, grew by an anemic 13 percent.

[8] The income reported in the survey is for the previous year (i.e., 2001 survey has information on income received during 2000). However, we refer throughout this paper to the survey year.

Table 3. Family Income by Alternative Definitions (in 2001 dollars)

	1983		1989		1995		2001		% Change, 1983-01	
All Households	**Median**	**Mean**	**Median**	**Mean**	**Median**	**Mean**	**Median**	**Mean**	**Median**	**Mean**
1. Money income	35,717	48,079	36,228	56,278	34,655	54,412	39,081	65,087	9.4	35.4
2. SCF income	36,016	49,195	37,426	59,582	34,763	55,847	39,081	69,827	8.5	41.9
3. Wealth-adjusted income	38,642	56,942	41,397	67,526	39,242	66,397	45,578	84,572	17.9	48.5
Memo items:										
4. Income from home wealth	1,581	3,062	1,229	3,481	1,527	3,367	987	3,447	-37.6	12.6
5. Income from nonhome wealth	386	10,753	473	13,545	578	13,123	1,105	20,701	186.1	92.5

Notes:
1. Money income is SCF income minus realized capital gains, net of losses
2. SCF Income is calculated as the sum of its components and includes realized capital gains, net of losses.
3. Money income minus property income (sum of dividends, interest, and rent) plus income from home and nonhome wealth
4. Imputed rent on owner-occupied housing less the annuitized value of mortgage debt
5. Annuitized value of nonhome wealth less the annuitized value of other debt

4.2. Racial Differences

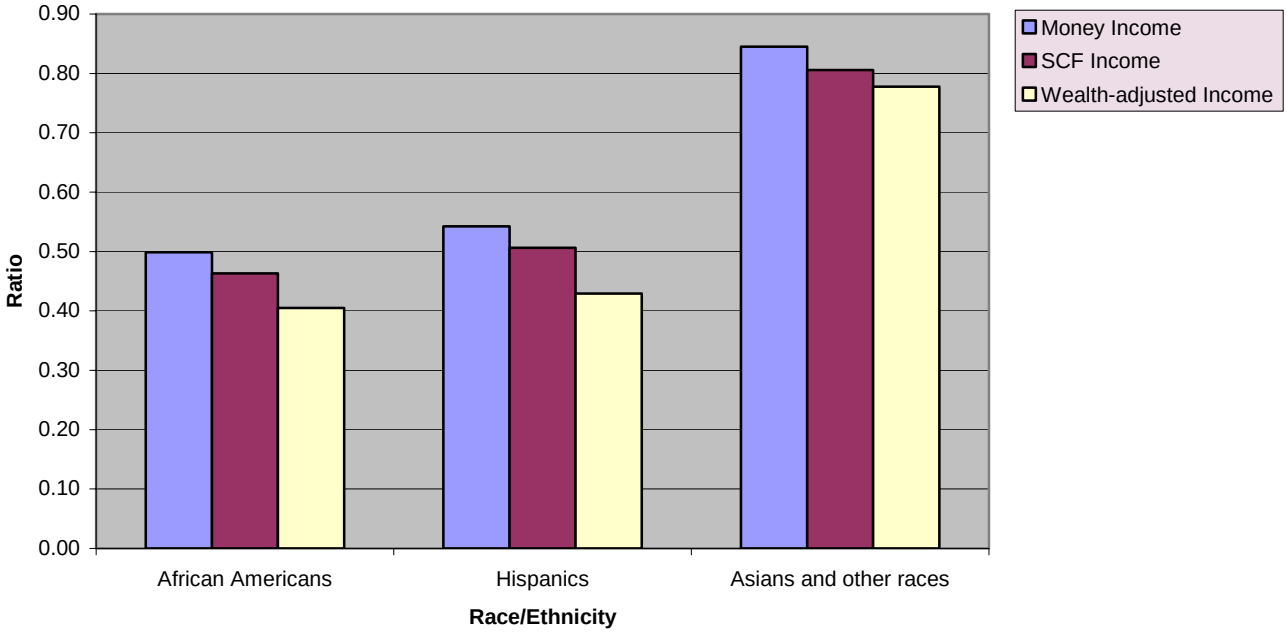
Next, we discuss similar statistics for demographic sub-groups. Table 4 shows results by race (also see Figure 1). In 1983, the ratio of median money income between African Americans and non-Hispanic whites was 0.56 and the corresponding ratio of mean income was 0.57. By 2001, the ratio of medians actually edged upward a bit to 0.57 while that of means slipped to 0.50. The ratios of both median and mean SCF income in 1983 were slightly lower than those of money income. The ratio of median SCF income remained unchanged in 2001 while the ratio of mean SCF income plummeted from 0.55 to 0.46, much lower than that of mean money income. Likewise, the ratio of median wealth-adjusted income in 1983 was somewhat lower than that of SCF income, while the ratio of mean wealth-adjusted income was a full 5 percentage points lower. In this case, the ratio of median wealth-adjusted income fell from 0.53 in 1983 to 0.49 in 2001, while that of mean wealth-adjust income fell even more steeply, from 0.50 to 0.41. Thus, the racial income gap is wider in 2001 and grows even more steeply between 1983 and 2001 when realized capital gains are included in income and the gap becomes still wider and grows even more when imputed rent and annuitized wealth (though mainly the latter) are added to money income. These results reflect the fact that the wealth gap between African Americans and whites is considerably larger than the income gap.

Table 4. Family Income by Alternative Definitions and Race/Ethnic Groups (in 2001 dollars)

	1983		1983 Ratio to Whites		2001		2001 Ratio to Whites	
	Median	**Mean**	**Median**	**Mean**	**Median**	**Mean**	**Median**	**Mean**
Non-Hispanic whites								
1. Money income	38,540	51,658	1.00	1.00	43,586	72,806	1.00	1.00
2. SCF income	38,764	53,011	1.00	1.00	44,738	78,871	1.00	1.00
3. Wealth-adjusted income	42,243	62,013	1.00	1.00	52,591	97,108	1.00	1.00
Memo items:								
4. Income from home wealth	2,047	3,441	1.00	1.00	1,710	4,115	1.00	1.00
5. Income from nonhome wealth	761	12,764	1.00	1.00	2,209	25,811	1.00	1.00
African Americans								
1. Money income	21,474	29,231	0.56	0.57	24,683	36,321	0.57	0.50
2. SCF income	21,474	29,244	0.55	0.55	24,683	36,525	0.55	0.46
3. Wealth-adjusted income	22,324	31,093	0.53	0.50	25,714	39,356	0.49	0.41
Memo items:								
4. Income from home wealth	0	1,164	0.00	0.34	0	740	0.00	0.18
5. Income from nonhome wealth	0	1,439	0.00	0.11	33	2,807	0.02	0.11
Hispanics								
1. Money income	25,693	32,912	0.67	0.64	25,711	39,494	0.59	0.54
2. SCF income	25,693	32,912	0.66	0.62	25,711	39,935	0.57	0.51
3. Wealth-adjusted income	25,719	34,523	0.61	0.56	26,365	41,709	0.50	0.43
Memo items:								
4. Income from home wealth	0	1,440	0.00	0.42	0	1,120	0.00	0.27
5. Income from nonhome wealth	0	576	0.00	0.05	1	3,056	0.00	0.12
Asians and other races								
1. Money income	38,356	51,619	1.00	1.00	34,967	61,544	0.80	0.85
2. SCF income	38,356	51,702	0.99	0.98	35,111	63,534	0.78	0.81
3. Wealth-adjusted income	40,156	55,303	0.95	0.89	38,508	75,514	0.73	0.78
Memo items:								
4. Income from home wealth	0	2,400	0.00	0.70	0	4,487	0.00	1.09
5. Income from nonhome wealth	19	3,688	0.03	0.29	463	15,005	0.21	0.58

See notes to Table 3 for definition of income measures.

Figure 1. Ratio of Mean Income to the Mean Income of Non-Hispanic Whites by Race/Ethnicity and Income Definition, 2001



The pattern of results is very similar for Hispanics. In particular, there was a more precipitous drop in wealth-adjusted income than standard money income, with the ratio of median money income between Hispanics and whites falling from 0.67 in 1983 to 0.59 in 2001 and the ratio of mean money income from 0.64 to 0.54, while the corresponding ratios for wealth-adjusted income declined from 0.61 to 0.50 (11 percentage points compared 8 percentage points) and from 0.56 to 0.43 (13 versus 10 percentage points), respectively. Moreover, by 2001 the ratio of medians was much lower for wealth-adjusted income, 0.50, than for money income, 0.59, as was the ratio of means, 0.43 versus 0.54.

The pattern is also similar for the fourth category, Asians and other races ("Asians" for short). In 1983 there was virtual parity in money income between Asians and whites. However, by 2001 the ratio slipped to 0.80 for median money income and 0.85 for mean money income. This drop is likely the result of a large Asian immigration and a big expansion of the Asian population in the intervening years. The ratio of wealth-adjusted income in 1983 was slightly below parity, a ratio of 0.95 for the median and 0.89 for the mean. However, by 2001 these ratios had plummeted to 0.73 and 0.78, respectively.

4.3. Age Differences

Table 5 shows the same set of results by age of householder (also see Figure 2). The effect of using wealth-adjusted income instead of money income is to increase the relative well-being of older groups relative to younger ones. There are two reasons. First, the wealth-income ratios are higher for older households. Second, mortality rates are higher for older individuals than younger ones, which result in larger annuity flows per dollar of wealth. Moreover, because of the tilt in age-wealth profiles in favor of older household over the years 1983 to 2001, wealth-adjusted income grows faster relative to money income for older groups than for younger ones.

The results are quite dramatic. The ratio of median money income to the overall median in 1983 was 0.66 for age group 65 to 74 while the corresponding ratio for wealth-adjusted income was 0.75. Likewise, the ratio of mean money income to the overall mean in 1983 was 0.88 for the same age group while the corresponding ratio for wealth-adjusted income was 1.07. While the ratio of median money income to overall grew modestly over the 1983-2001 period for this age group, from 0.66 to 0.71, the corresponding ratio for wealth-adjusted income climbed by 10 percentage points, from 0.75 to 0.85. The ratio of mean money income to overall for this age group actually fell over this period while the corresponding ratio for wealth-adjusted income rose by three percentage points. Results are similar for age group 75 and over. By 2001 the mean wealth-adjusted income of this group reached 90 percent of the overall, compared to 50 percent for money income.

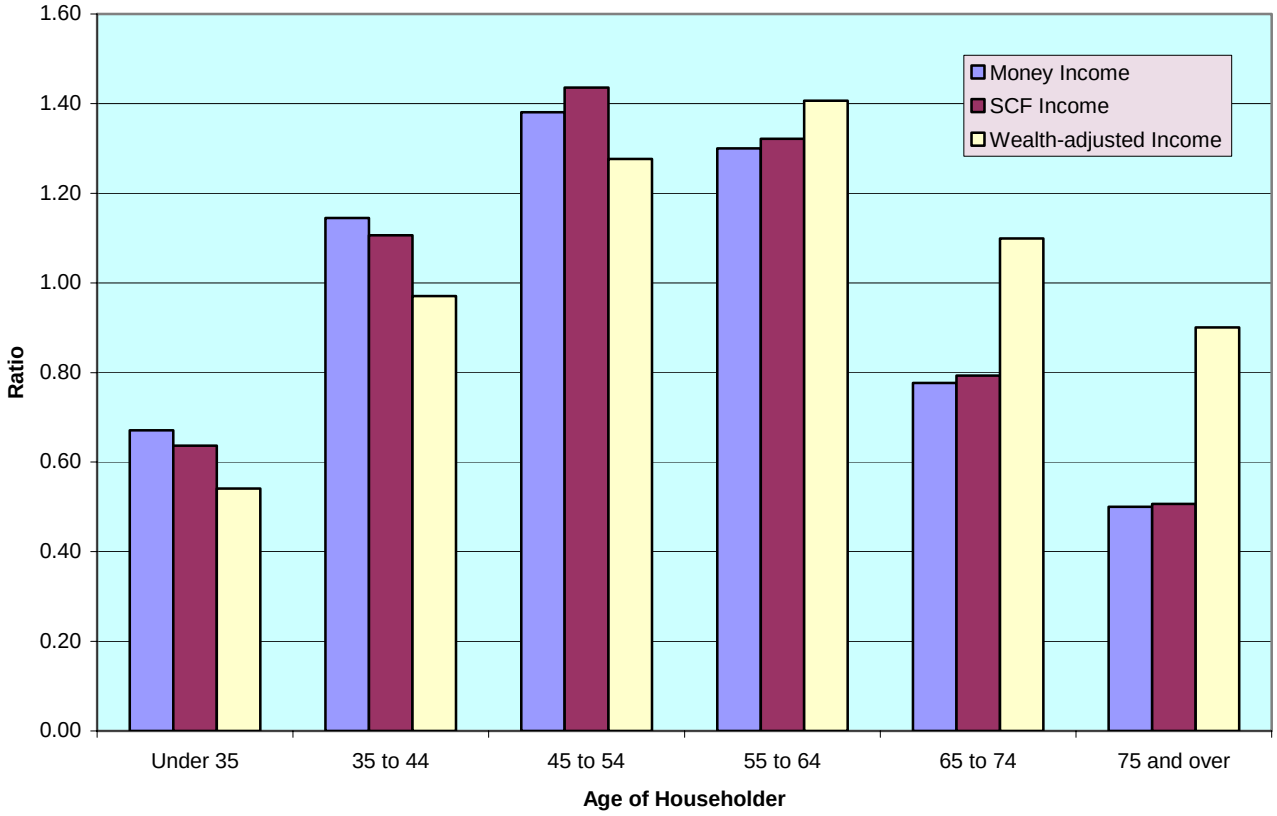
For age groups 45 to 54 and 55 to 64, the wealth-adjusted income figures relative to the overall are quite similar to those for money income. On the other hand, both the under 35 and the 35 to 44 age groups show a deterioration in their relative level of well-being when wealth-adjusted income figures are used instead of money income. For the under 35 age group, the ratio of mean wealth-adjusted income to the overall was 0.54 in 2001, compared to a ratio of 0.67 on the basis of money income, while for age group 35 to 44 the corresponding ratios are 0.97 and 1.15. Wealth-adjusted income also shows slower growth relative to the overall for the same two age groups over the 1983-2001 period than does money income.

Table 5. Family Income by Alternative Definitions and Age of Household Head (in 2001 dollars)

	1983		1983 Ratio to Overall		2001		2001 Ratio to Overall	
	Median	**Mean**	**Median**	**Mean**	**Median**	**Mean**	**Median**	**Mean**
Under 35								
1. Money income	32,166	37,646	0.90	0.78	32,931	43,680	0.84	0.67
2. SCF income	32,423	37,934	0.90	0.77	32,931	44,440	0.84	0.64
3. Wealth-adjusted income	33,173	39,072	0.86	0.69	33,608	45,729	0.75	0.54
Memo items:								
4. Income from home wealth	0	1,009	0.00	0.33	0	846	0.00	0.25
5. Income from nonhome wealth	5	1,173	0.01	0.11	0	2,010	0.00	0.10
35 to 44								
1. Money income	49,551	58,885	1.39	1.22	51,423	74,533	1.32	1.15
2. SCF income	49,845	60,080	1.38	1.22	51,423	77,230	1.32	1.11
3. Wealth-adjusted income	51,617	63,246	1.34	1.11	55,055	82,043	1.22	0.97
Memo items:								
4. Income from home wealth	2,063	3,049	1.30	1.00	741	2,684	0.75	0.78
5. Income from nonhome wealth	396	3,739	1.03	0.35	854	7,760	0.77	0.37
45 to 54								
1. Money income	47,514	60,612	1.33	1.26	55,537	89,871	1.42	1.38
2. SCF income	47,716	61,706	1.32	1.25	56,154	100,257	1.44	1.44
3. Wealth-adjusted income	52,146	71,562	1.35	1.26	61,576	107,966	1.37	1.28
Memo items:								
4. Income from home wealth	3,147	4,455	1.99	1.45	1,517	3,970	1.54	1.15
5. Income from nonhome wealth	738	11,107	1.91	1.03	2,207	19,274	2.00	0.93
55 to 64								
1. Money income	39,979	57,467	1.12	1.20	45,252	84,620	1.16	1.30
2. SCF income	40,025	59,103	1.11	1.20	45,252	92,273	1.16	1.32
3. Wealth-adjusted income	44,908	70,610	1.16	1.24	53,211	118,918	1.18	1.41
Memo items:								
4. Income from home wealth	3,256	4,511	2.06	1.47	2,834	5,234	2.87	1.52
5. Income from nonhome wealth	2,197	17,063	5.69	1.59	3,729	36,751	3.38	1.78
65 to 74								
1. Money income	23,487	42,410	0.66	0.88	27,563	50,580	0.71	0.78
2. SCF income	23,851	44,527	0.66	0.91	27,768	55,410	0.71	0.79
3. Wealth-adjusted income	28,923	60,980	0.75	1.07	38,959	92,959	0.87	1.10
Memo items:								
4. Income from home wealth	3,023	4,662	1.91	1.52	3,413	5,436	3.46	1.58
5. Income from nonhome wealth	3,184	27,019	8.25	2.51	5,336	45,638	4.83	2.20
75 and over								
1. Money income	13,764	26,298	0.39	0.55	18,615	32,550	0.48	0.50
2. SCF income	14,073	27,996	0.39	0.57	18,615	35,379	0.48	0.51
3. Wealth-adjusted income	17,726	49,178	0.46	0.86	30,337	76,134	0.67	0.90
Memo items:								
4. Income from home wealth	1,861	3,115	1.18	1.02	3,603	5,410	3.65	1.57
5. Income from nonhome wealth	2,125	29,096	5.50	2.71	5,396	46,009	4.88	2.22

See notes to Table 3 for definition of income measures.

Figure 2. The Ratio of Mean Income to the Overall Mean by Age and Income Definition, 2001



4.4. Family Type

Table 6 shows median and mean income according to alternative definitions of income for five family types (also see Figure 3). We first look at married couples with children. These families tend to fall in the 25 to 55 age range, so that their wealth-income ratios also tend to be below average. Moreover, since these families are relatively young, their life expectancies are longer than average, so that their annuity to wealth ratios are lower than average. On the other hand, this group has an above average homeownership rate, so that the value of imputed rent should be above average. In 1983, the median money income of the group was 37 percent above average and their mean income was 23 percent above average. There was a marked improvement in both median and mean money income for these families between 1983 and 2001 to 58 and 41 percent above average, respectively. The wealth-adjusted median income of this group was 35 percent above average in 1983, about the same as their relative money income, while their wealth-adjusted mean income was 13 percent above average, about 10 percentage points less than their

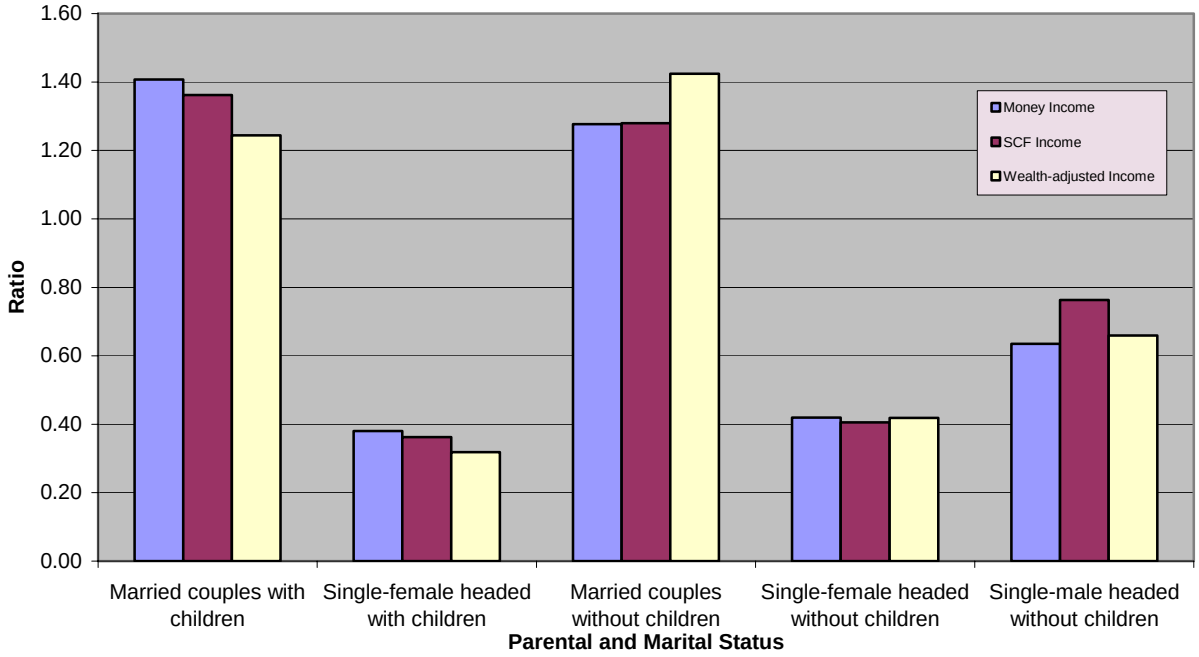
relative money income. Over the period, their relative median and mean wealth-adjusted income grew less than their relative median and mean money income, reaching only 49 and 24 percent above average, respectively. The main reason for the slower growth in wealth-adjusted income appears to be from a relative deterioration in their homeownership rate.

Table 6. Family Income by Alternative Definitions and Parental and Marital Status (in 2001 dollars)

	1983		1983 Ratio to Overall		2001		2001 Ratio to Overall	
	Median	Mean	Median	Mean	Median	Mean	Median	Mean
Married couples with children								
1. Money income	49,001	58,960	1.37	1.23	61,707	91,613	1.58	1.41
2. SCF income	49,001	59,746	1.36	1.21	61,800	95,109	1.58	1.36
3. Wealth-adjusted income	51,977	64,594	1.35	1.13	66,957	105,220	1.49	1.24
Memo items:								
4. Income from home wealth	2,098	3,278	1.33	1.07	1,204	3,458	1.22	1.00
5. Income from nonhome wealth	243	4,842	0.63	0.45	1,004	14,466	0.91	0.70
Single-female headed with children								
1. Money income	19,270	23,302	0.54	0.48	20,569	24,767	0.53	0.38
2. SCF income	19,380	23,627	0.54	0.48	20,569	25,315	0.53	0.36
3. Wealth-adjusted income	19,767	24,862	0.51	0.44	20,629	26,883	0.46	0.32
Memo items:								
4. Income from home wealth	0	1,315	0.00	0.43	0	897	0.00	0.26
5. Income from nonhome wealth	0	872	0.00	0.08	0	1,760	0.00	0.09
Married couples without children								
1. Money income	45,881	63,743	1.28	1.33	51,731	83,117	1.32	1.28
2. SCF income	45,991	66,038	1.28	1.34	52,863	89,368	1.35	1.28
3. Wealth-adjusted income	52,547	82,956	1.36	1.46	67,020	120,417	1.49	1.42
Memo items:								
4. Income from home wealth	3,072	4,523	1.94	1.48	2,803	5,273	2.84	1.53
5. Income from nonhome wealth	2,225	24,843	5.76	2.31	4,494	39,518	4.07	1.91
Single-female headed without children								
1. Money income	18,352	23,934	0.51	0.50	20,055	27,300	0.51	0.42
2. SCF income	18,433	24,258	0.51	0.49	20,055	28,300	0.51	0.41
3. Wealth-adjusted income	20,838	27,459	0.54	0.48	24,302	35,413	0.54	0.42
Memo items:								
4. Income from home wealth	279	2,221	0.18	0.73	367	2,397	0.37	0.70
5. Income from nonhome wealth	259	5,382	0.67	0.50	464	8,608	0.42	0.42
Single-male headed without children								
1. Money income	26,631	35,982	0.75	0.75	28,797	41,310	0.74	0.63
2. SCF income	26,794	36,729	0.74	0.75	28,797	53,272	0.74	0.76
3. Wealth-adjusted income	28,417	41,546	0.74	0.73	31,619	55,717	0.70	0.66
Memo items:								
4. Income from home wealth	0	1,455	0.00	0.48	0	1,964	0.00	0.57
5. Income from nonhome wealth	171	7,274	0.44	0.68	617	15,761	0.56	0.76

See Notes to Table 3 for definition of income measures

Figure 3. The Ratio of Mean Income to the Overall Mean by Parental and Marital Status and Income Definition, 2001



Single female-headed families with children constitute a group characterized by a very low wealth to income ratio and a low homeownership rate. In 1983 they were well below average in terms of money income and even further below average (3 to 4 percentage points) in terms of wealth-adjusted income. Their relative median money income declined slightly to 53 percent of the overall median in 2001, and their relative mean money income dropped sharply to 38 percent. However, their median wealth-adjusted income fell more steeply, to 46 percent of the overall in 2001, and their mean wealth-adjusted income collapsed even more, to only 32 percent of the overall mean.

Married couples without children are older than average and therefore have high wealth-income ratios, high annuity to wealth ratios, and a large homeownership rate. In 1983, their median and mean money income was, respectively, 28 and 33 percent above average, similar levels to married couples with children. However, between 1983 and 2001, there was very little change in their relative position (unlike married couples with children). The wealth-adjusted median and mean income of this group was, respectively, 36 and 46 percent above average in 1983, greater than their relative money income. However, here too, there was very little change in their relative median and mean wealth-adjusted income over the period. By 2001, their relative wealth-adjusted median income level was identical to that of married couples with children,

though their relative mean wealth-adjusted income was 18 percentage points above because of their greater wealth holdings.

The relative money income of single-female headed households without children was very similar to that of single-female headed families with children in both 1983 and 2001. However, the relative wealth-adjusted income of the former was from three to ten percentage points greater than the latter, a reflection of their higher non-home wealth holdings and their higher homeownership rate. The relative income position of single-male headed households without children lies in between that of single-female headed households and married couples. Both their median and mean money income in 1983 was 75 percent of the overall mean. Their median money income remained about the same in 2001 though their mean money income slipped to 63 percent of the overall mean. Their relative wealth-adjusted income was about the same as their relative money income in 1983 but both their median and mean wealth-adjusted income fell between 1983 and 2001

5. INEQUALITY OF WELL-BEING

5.1. Overall trends

We next turn to trends in inequality using the three income measures. Table 7 shows time trends in Gini coefficients for the three income measures, as well as for net worth. On the basis of the SCF data and the Census concept of money income, the Gini coefficient climbed by a considerable amount, 0.093, between 1983 and 2001. The SCF definition of income leads to higher measured inequality in each year because of the concentration of capital gains in the upper income classes. In 2001 the difference in Gini coefficients between the two income concepts was 0.025. Inequality on the basis of SCF income shows an even sharper increase than money income, a gain of 0.111 over the period. The likely reason is the bull market of 2000 and the large realized capital gains in corporate stocks of that year.

Table 7. Economic Inequality by Income Measure (Gini coefficients)

Income Definition	1983	1989	1995	2001	Change 1983-2001
Money income	0.456	0.533	0.545	0.549	0.093
SCF income	0.464	0.553	0.552	0.574	0.111
Wealth-adjusted income	0.493	0.556	0.562	0.589	0.096
Memo items:					
Net worth	0.798	0.814	0.823	0.827	0.029
CPS Money Income[a]	0.412	0.426	0.456	0.462	0.050

a. Source: http://www.census.gov/hhes/www/income/histinc/h04.html
The income data are for 1982, 1988, 1994, and 2000, respectively. The Gini coefficients are not adjusted for changes in sampling design.

Our preferred measure—wealth-adjusted income—shows the highest level of inequality among all the income measures in all the years. Its level is considerably higher than that of money income (by 0.040 in 2001) but it shows about the same change over the 1983-2001 period as the Gini coefficient for money income. The last line shows the Gini coefficient for net worth. As expected, its value is much higher than that of any of the three income concepts. However, interestingly, inequality in net worth shows a much more modest rise over the 1983-2001 period than any of the three income concepts.[9] Another telling result is that for all three income measures, as well as for net worth, the big increase in inequality occurred between 1983 and 1989, followed by a more modest rise over the 1990s.

Another interesting comparison is between the SCF money income series and the CPS money income series. The former show much higher levels of inequality (a difference of about 0.8 in the Gini coefficients). The increase in the Gini coefficient from 1983 to 2000 (or 1982 to 2000) is about double for the SCF data than the CPS data. The differences between the SCF and CPS data may be due the absence of top-coding and the oversampling of the rich in the SCF.

The share of income from wealth in overall inequality depends crucially on how that income is measured. We separated the total income in each income definition into two sources, income from wealth and income from all other sources ("primary income"), and decomposed

[9] Wolff (2005) argues that the reason for this apparent discrepancy is the failure to include Defined Benefit (DB) pension wealth in the conventional definition of household wealth. In particular, the period 1989 to 2001 was characterized by a dramatic transformation of the pension system, with Defined Contribution plans substituted for DB plans. As a result, if DB pension wealth is included in the standard wealth definition, overall wealth inequality shows a large increase over the 1983 to 2001 period, commensurate with that of income inequality.

inequality by income source using the method discussed in Lerman and Yitzhaki (1985).[10] As shown in Table 8, the share of income from wealth in inequality is the smallest for money income in which standard property income (sum of interest, dividends, and rents) is used as the measure of income from wealth. The SCF definition includes realized capital gains too, which enhance the share by 3.7 percentage points in 1983 (from 15.3 to 19 percent) and 10.3 percentage points in 2001 (from 9.9 to 20.2 percent). As noted above, the stock market was very bullish in 2000 and that could account for the larger share of income from wealth in inequality when realized capital gains are included. However, in our measure of income, the share of income of from wealth in inequality is far higher than in either measure. Compared with SCF income, our measure shows that the share of income from wealth in inequality was 16.8 percentage points higher at 35.8 percent in 1983 and 17.6 percentage points higher at 37.8 percent in 2001. Closer examination shows that annuitized nonhome wealth is the driving force behind the larger share of income from wealth in inequality. In 2001 the share of annuities alone in wealth-adjusted income was 24.5 percent, almost double the share of income from wealth in SCF income (13.5 percent) and more than three times the share in money income (7.2 percent).

Table 8. Decomposition of Inequality by Income Source and Definition, 1983 and 2001

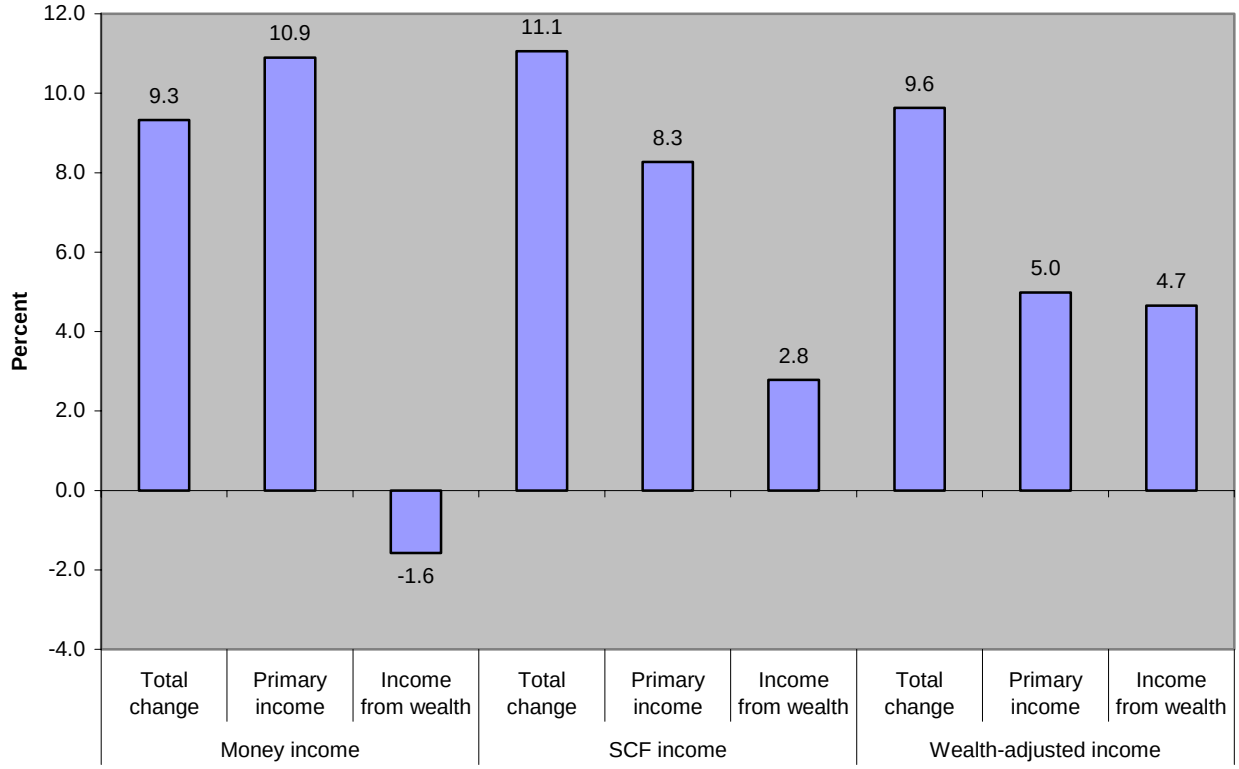
	1983			2001		
	Concentration coefficient	Income share	Share in inequality	Concentration coefficient	Income share	Share in inequality
A. Money income						
Primary income[1]	0.430	0.897	0.847	0.533	0.928	0.901
Income from wealth[2]	0.679	0.103	0.153	0.755	0.072	0.099
B. SCF income						
Primary income	0.428	0.877	0.810	0.530	0.865	0.798
Income from wealth[3]	0.716	0.123	0.190	0.860	0.135	0.202
C. Wealth-adjusted income						
Primary income	0.418	0.757	0.642	0.513	0.714	0.622
Income from wealth	0.727	0.243	0.358	0.779	0.286	0.378
Imputed rent	0.447	0.054	0.049	0.506	0.041	0.035
Annuities	0.806	0.189	0.309	0.825	0.245	0.343

1. Equals money income minus property income
2. Equals property income, i.e., the sum of dividends, interest and rent
3. Equals property income plus realized capital gains

[10] This is the so-called "natural decomposition." In this type of decomposition, the share of an income component in inequality is the product of its concentration coefficient and its share in total income divided by the Gini coefficient of total income.

Although the change in the Gini coefficient between 1983 and 2001 is similar for money income and wealth-adjusted income, there is a striking asymmetry between the two measures with respect to the contribution made by income from wealth to the increase in inequality (see Figure 4). Income from wealth actually had an inequality-reducing effect on money income since its contribution to the increase of 0.093 in the Gini was –0.016 points, suggesting that the increase in inequality was solely due to the increasing inequality of primary income. In contrast, income from wealth and primary income contributed roughly the same amount to the increase of 0.096 in the Gini of wealth-adjusted income. As noted above, SCF income showed the greatest amount of increase in inequality between 1983 and 2001 among the three income measures at 0.111. However, income from wealth accounted for only about a quarter this increase (0.028), with the remainder coming from primary income.

Figure 4 Contribution to the Total Change in the Gini Coefficient (in percentage points)



Differences between the Gini coefficients of the three income definitions reflect differences in relative income gaps and rankings of households across alternative definitions. Since money income includes the most restrictive definition of income from wealth it is useful to set it as the benchmark and analyze how expanding the definition affects rankings and income gaps (see Table 9).[11] Panel A of the table reproduces the Gini coefficients reported earlier for the three income measures. The next panel, Panel B, breaks down the difference between the Gini of the money income and the other two measures into two components: reranking and changing gaps in relative income.

Table 9. Changing Ranks and Income Gaps, 1983 and 2001

	1983	2001
A. Gini coefficients		
Money income (MI)	0.456	0.549
Wealth-adjusted income (WI)	0.493	0.589
SCF Income (SI)	0.464	0.574
B. Difference between the coefficients		
a. G(WI) - G(MI)	0.037	0.040
Reranking	0.017	0.033
(Percent of total difference)	*45%*	*83%*
Changing gaps	0.020	0.007
(Percent of total difference)	*55%*	*17%*
b. G(SI) - G(MI)	0.008	0.025
Reranking	0.002	0.006
(Percent of total difference)	*30%*	*22%*
Changing gaps	0.006	0.020
(Percent of total difference)	*70%*	*78%*
Memo items:		
Concentration coefficient for WI with respect to MI	0.476	0.556
Concentration coefficient for SI with respect to MI	0.461	0.569

[11] The approach used by us can be described as follows (Lerman and Yitzhaki, 1995). Assume that *A* and *B* are two measures of well-being that are related to each other by addition or subtraction of individual components (e.g., money income and wealth-adjusted income). Let *G* be the Gini coefficient for *A*, *G'* the Gini coefficient for *B*, and *C* the concentration coefficient for *A* with respect to *B*. Then, the difference between the Gini coefficients can be written as: $G - G' = (G-C)+(C-G')$, with the first term indicating the reranking effect and the second indicating the gap-changing effect.

In 1983, a substantial portion of the increase in the Gini coefficient (45 percent) that we observe when we move from money income to wealth-adjusted income is accounted for by reranking. The role of reranking increased dramatically in 2001 with this component accounting for the overwhelming chunk (83 percent) of the difference in inequality between the definitions. Our definition of income from wealth thus alters not merely the picture regarding how much households are apart from one another in terms of well-being; the position of individual households in the hierarchy of well-being is significantly changed. The bigger role of reranking in 2001 as compared to 1983 could be due to the sharp increase in the share of annuities that was noted above.

Reranking plays a role also in accounting for the higher Gini coefficient of SCF income relative to money income. However, its role is much more limited than that observed for the shift from money income to wealth-adjusted income. The bulk of the increase in the Gini—70 percent in 1983 and 78 percent in 2001—is accounted for changes in the income gaps between individual households. Understandably, such gaps were higher in 2001 because much of realized capital gains typically accrue to recipients of property income.

Further information on the relationship between rankings according to money income and wealth-adjusted income can be obtained by examining the joint distribution of households among the quintiles of the two distributions (see Table 10). If there were no reranking across quintiles, then each element of the diagonal of the matrix would equal 20 percent and the off-diagonal terms would all be zero. Generally, the majority of households in a given quintile of money income are to be found in the same quintile of wealth-adjusted income. In 2001, for example, in the bottom money income quintile, 87.5 percent (17.5/20.0) of the households are in the bottom wealth-adjusted income quintile, while none are in the top wealth-adjusted income quintile. In the top money income quintile, there are no households that belong to the bottom wealth-adjusted income quintile, while 84 percent (16.8/20) fall in the top wealth-adjusted income quintile. However, the correlation is less strong in the three middle quintiles. For example, 33 percent (1 – 13.4/20) of the households in the third money income quintile were not in the third quintile of wealth-adjusted income in 2001. It is also interesting that the diagonal terms of the matrix are consistently higher in 1983 than in 2001, indicative of a weakening correlation between the two income measures within any given quintile. The very high degree of reranking in 2001 indicated by the results of our decomposition analysis suggests that considerable reranking must also be taking place within quintiles.

Table 10. The Joint Distribution of Households among Quintiles of Wealth-Adjusted Income (WI) and Money Income (MI), 1983 and 2001

	1983					
	WI quintile					
MI quintile	1	2	3	4	5	All
1	17.9	1.7	0.2	0.1	0.1	20.0
2	2.0	15.3	2.0	0.4	0.2	20.0
3	0.0	2.9	14.8	1.8	0.4	20.0
4	0.0	0.0	3.0	15.7	1.4	20.0
5	0.0	0.0	0.0	2.0	18.0	20.0
All	20.0	20.0	20.0	20.0	20.0	
	2001					
	WI quintile					
MI quintile	1	2	3	4	5	All
1	17.5	2.1	0.3	0.1	0.0	20.0
2	2.5	13.8	2.2	0.7	0.3	20.0
3	0.0	4.1	13.4	2.3	0.7	20.0
4	0.0	0.0	4.1	13.6	2.2	20.0
5	0.0	0.0	0.0	3.2	16.8	20.0
All	20.0	20.0	20.0	20.0	20.0	

5.2. Income Shares And Income Composition

Table 11 shows the actual income shares by percentile group in the four years. According to all three income measures, there was a huge increase in the share of the top 10 percent over the 1983-2001 period. For money income, the share increased by 9.5 percentage points; for SCF income by 12.2 percentage points; and for wealth-adjusted income by 10.0 percentage points. Most of the increase of the top decile accrued to the top one percent of the overall distribution.

Table 11. Income Shares of Families in Aggregate Income, by Selected Percentiles and Income Measure (in percent)

	1983			1989		
	Money income	SCF income	Wealth-adjusted income	Money income	SCF income	Wealth-adjusted income
P0-25	5.7	5.6	5.3	4.5	4.2	3.9
P25-50	14.0	13.8	13.0	11.1	11.4	11.0
P50-90	46.9	46.6	43.6	43.9	41.4	41.2
P90-100	33.4	34.1	38.1	40.5	42.9	43.9
P90-95	10.7	10.3	10.3	11.1	11.0	10.9
P95-99	12.9	13.1	13.7	15.2	15.1	16.2
P99-100	9.9	10.7	14.1	14.1	16.8	16.7
	1995			2001		
	Money income	SCF income	Wealth-adjusted income	Money income	SCF income	Wealth-adjusted income
P0-25	3.6	3.8	3.8	4.2	3.9	3.7
P25-50	11.8	11.2	11.1	11.4	10.4	9.9
P50-90	42.7	42.3	40.4	41.4	39.4	38.3
P90-100	41.8	42.7	44.7	42.9	46.3	48.1
P90-95	10.7	10.5	10.6	10.2	10.1	10.5
P95-99	15.0	15.5	16.0	15.3	15.3	17.5
P99-100	16.1	16.7	18.1	17.4	20.9	20.1

The major difference in the distribution of money income and wealth-adjusted income is the much higher income share of the top decile. In 1983 the income share of the top 10 percent as ranked by wealth-adjusted income was 4.7 percentage points greater than that of money income and by 2001 the gap had increased to 5.1 percentage points. In 1983 there was almost no difference in the income shares of P90-95 between the two income concepts and a slight difference in the shares of P95-99. The main difference between the two concepts was in the share of the top one percent (P99-100)—a difference of 4.2 percentage points. In 2001, in contrast, while there was again a very small difference in the shares of P90-95 in the two measures, the difference in the shares of P95-99 had advanced to 2.2 percentage points and that of the top one percent to 2.7 percentage points. Interestingly, while there was very little difference in the income share of the top 10 percent between money income and SCF income in 1983, by 2001 the difference had mushroomed to 3.4 percentage points, mainly because of a widening gap in the income share of the top percentile. The likely reason again is the surge in realized capital gains in 2000 emanating from the stock market boom.

Table 12 provides more details on the differences in the distribution of money income and wealth-adjusted income in 1983 and 2001. There are several findings of note. First, mean imputed income from wealth and its components (imputed rent and annuities) generally increase with income decile—indicative of the positive overall correlation between wealth and income—and they soar as we move from the ninth to the top decile. However, the rate of increase from the ninth to the top decile is much higher in annuities than in imputed rent, showing the greater concentration of this type of wealth (primarily financial assets) among households at the very top decile. From the ninth to the top decile, annuities increased more than eight-fold in 1983 and increased almost six-fold in 2001. Second, the value of income from wealth as a percent of money income displays a U-shape. If we judge the importance of income from wealth relative to the level of money income, then it appears that the correlation between income and wealth is far from perfect, as shown by the high percentages for the lowest three deciles. This reflects the relatively low incomes but high wealth holdings of the elderly.

Table 12. Distribution of Imputed Income from Wealth by Money Income Decile, 1983 and 2001 (all dollar amounts are in 2001 dollars)

1983											
	Lowest	**Second**	**Third**	**Fourth**	**Fifth**	**Sixth**	**Seventh**	**Eighth**	**Ninth**	**Top**	**All**
Income from wealth	2,423	2,844	4,627	5,240	5,064	7,184	6,877	10,305	13,284	80,073	13,815
	38.3	*23.0*	*25.0*	*20.9*	*15.9*	*18.1*	*14.2*	*17.1*	*17.2*	*49.9*	*28.7*
Income from home wealth	990	1,299	1,706	2,049	2,089	2,412	2,735	3,458	4,790	9,058	3,062
	15.7	*10.5*	*9.2*	*8.2*	*6.6*	*6.1*	*5.6*	*5.8*	*6.2*	*5.6*	*6.4*
Income from nonhome wealth	1,433	1,545	2,921	3,191	2,975	4,772	4,142	6,847	8,494	71,014	10,753
	22.7	*12.5*	*15.8*	*12.7*	*9.4*	*12.1*	*8.5*	*11.4*	*11.0*	*44.3*	*22.4*
Memo item:											
Mean money income	6,321	12,362	18,512	25,079	31,821	39,589	48,510	60,095	77,305	160,462	48,079
Property income[a]	447	471	1,478	1,802	1,998	3,146	3,200	4,178	6,550	37,306	6,069
	7.1	*3.8*	*8.0*	*7.2*	*6.3*	*7.9*	*6.6*	*7.0*	*8.5*	*23.2*	*12.6*
2001											
	Lowest	**Second**	**Third**	**Fourth**	**Fifth**	**Sixth**	**Seventh**	**Eighth**	**Ninth**	**Top**	**All**
Income from wealth	2,932	4,511	7,456	8,304	11,342	13,882	15,349	18,401	24,983	133,617	24,149
	52.2	*35.3*	*38.2*	*31.2*	*32.9*	*31.4*	*27.3*	*25.5*	*25.8*	*47.6*	*37.1*
Income from home wealth	1,065	1,542	2,434	2,103	2,368	2,458	2,838	3,698	4,122	11,769	3,447
	19.0	*12.1*	*12.5*	*7.9*	*6.9*	*5.6*	*5.1*	*5.1*	*4.3*	*4.2*	*5.3*
Income from nonhome wealth	1,867	2,969	5,022	6,201	8,974	11,425	12,511	14,703	20,861	121,848	20,701
	33.3	*23.2*	*25.7*	*23.3*	*26.1*	*25.9*	*22.3*	*20.4*	*21.6*	*43.4*	*31.8*
Memo item:											
Mean money income	5,614	12,780	19,510	26,603	34,423	44,185	56,137	72,051	96,737	280,660	65,087
Property income[a]	677	300	1,039	1,516	1,889	3,318	2,606	3,885	9,495	69,001	9,403
	12.1	*2.3*	*5.3*	*5.7*	*5.5*	*7.5*	*4.6*	*5.4*	*9.8*	*24.6*	*14.4*

Note: shaded areas show the item as a percent of mean money income.

a. Property income is the sum of rent, interest, and dividend income in the SCF.

Third, the value of annuities is the main component of income from wealth, dominating imputed rent in all income deciles. On average, imputed rent is 28 percent of annuities in 1983 and only 17 percent in 2001. Fourth, compared to property income, which we replace, annuities are remarkably higher in all income deciles. Finally, comparing 1983 and 2001, we find a modest increase in imputed rent as a share of money income for the lowest three deciles and generally a slight decline for the upper deciles. The pattern is different for annuities, which about doubles as a share of money income for all deciles except the top decile, where it remains about constant.

It is also informative to look at the changes in the entire distributions of money income, SCF income, and wealth-adjusted income over time. Figure 5 shows the percent change in the percentiles at five-percentile increments. Clearly, the rate of increase is the highest for wealth-adjusted income at all percentiles and not only at the median. Furthermore, the percentage increase at the 95th percentile of the wealth-adjusted income distribution is striking (63 percent). However, the relative difference in percentage increases between money income and wealth-adjusted income are fairly uniform across percentiles—again reflecting the fact that the increase in the Gini coefficient between 1983 and 2001 was roughly the same for the two income concepts. It is also of note that percentage increases over the period by percentile are quite similar for SCF income as for money income.

Figure 5. Percent Change in Money Income, SCF Income, and Wealth-adjusted Income, 1983-2001

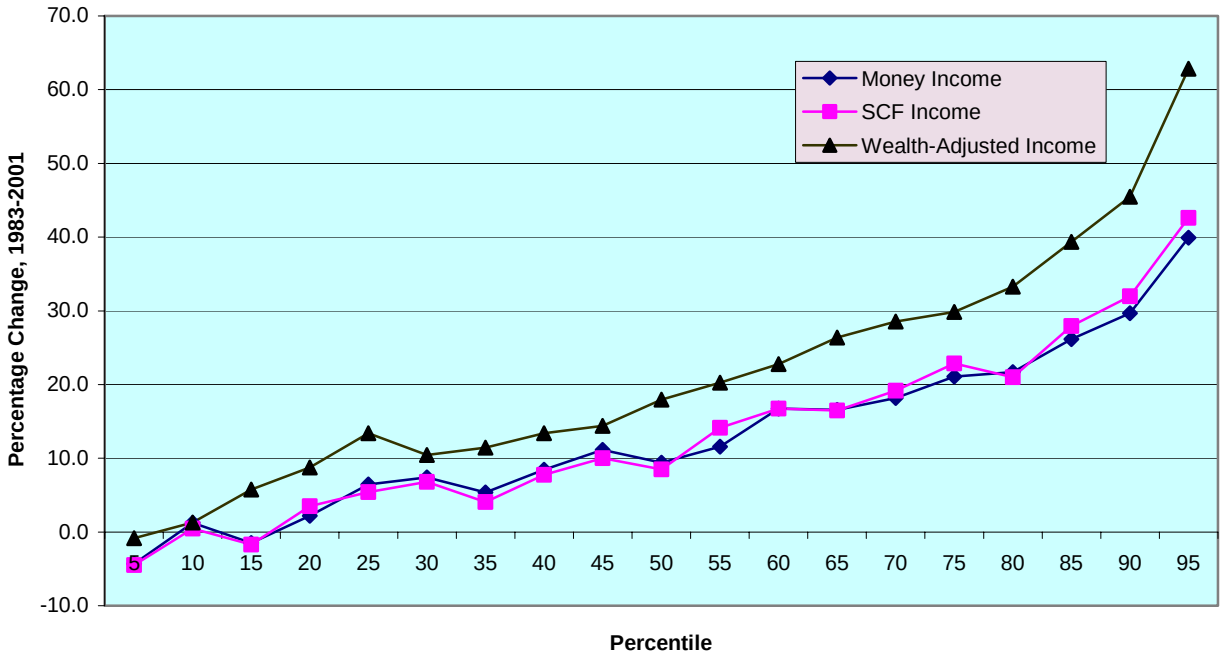


Table 13 shows a breakdown of income sources in 1983 and 2001. On the basis of the money income concept, earned income (the sum of wages and salaries and self-employment income) constituted 83.8 percent of total personal income in 2001, while income from wealth (in this case, property income) made up only 7.2 percent. Indeed, for the top percentile, 85.9 percent of total income was earned income and only 13.0 percent was in the form of property income. However, when the full value of wealth is properly accounted for as in our wealth-adjusted measure, then income from wealth appears far more important. Among all households in 2001, income from wealth now constitutes 28.6 percent of all income (compared to 7.2 percent in the money income measure) and earned income falls from 83.8 percent to 64.5 percent. For the top percentile, income from wealth now makes up 45.7 percent of total income (up from 13.0 percent), while earned income drops from 85.9 to 53.2 percent.

Table 13. Composition of Income by Income Definition and Selected Percentiles, 1983 and 2001

	1983									
	Money income					Wealth-adjusted income				
	All	P40-P60	P90-95	P95-99	P99-100	All	P40-P60	P90-95	P95-99	P99-100
A. Mean values in thousands of 2001 dollars										
Wages and salaries	30,576	25,673	64,214	86,691	142,839	30,576	26,930	70,349	68,543	126,158
Self-employment income	6,403	2,178	18,997	35,522	170,193	6,403	1,754	13,812	47,589	162,917
Income from wealth	4,952	2,230	13,026	23,452	139,741	13,815	4,771	25,394	71,505	492,600
Other income	6,148	5,598	5,956	10,198	21,543	6,148	5,587	8,055	7,839	25,074
Total income	48,079	35,678	102,193	155,863	474,316	56,942	39,043	117,611	195,477	806,748
B. Shares in total income (in percent)										
Wages and salaries	63.6	72.0	62.8	55.6	30.1	53.7	69.0	59.8	35.1	15.6
Self-employment income	13.3	6.1	18.6	22.8	35.9	11.2	4.5	11.7	24.3	20.2
Income from wealth	10.3	6.2	12.7	15.0	29.5	24.3	12.2	21.6	36.6	61.1
Other income	12.8	15.7	5.8	6.5	4.5	10.8	14.3	6.8	4.0	3.1
Total income	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	2001									
	Money income					Wealth-adjusted income				
	All	P40-P60	P90-95	P95-99	P99-100	All	P40-P60	P90-95	P95-99	P99-100
A. Mean values in thousands of 2001 dollars										
Wages and salaries	48,249	30,899	113,191	164,939	677,358	48,249	34,210	109,683	151,586	599,331
Self-employment income	6,289	595	8,379	44,230	305,359	6,289	708	10,667	41,577	305,382
Income from wealth	4,663	1,536	9,409	33,790	148,729	24,149	5,649	50,936	164,651	777,861
Other Income	5,885	6,234	5,701	5,685	12,945	5,885	5,391	6,732	11,586	17,807
Total Income	65,087	39,263	136,679	248,644	1,144,390	84,572	45,958	178,018	369,400	1,700,381
B. Shares in total income (in percent)										
Wages and salaries	74.1	78.7	82.8	66.3	59.2	57.1	74.4	61.6	41.0	35.2
Self-employment income	9.7	1.5	6.1	17.8	26.7	7.4	1.5	6.0	11.3	18.0
Income from wealth	7.2	3.9	6.9	13.6	13.0	28.6	12.3	28.6	44.6	45.7
Other income	9.0	15.9	4.2	2.3	1.1	7.0	11.7	3.8	3.1	1.0
Total Income	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

It is also of interest that between 1983 and 2001 property income fell from 10.3 to 7.2 percent of total money income of all households. Also, on the basis of money income, earned income rose from 76.9 to 83.8 percent of total income. For the top percentile, property income plummeted from 29.5 to 13.0 percent of money income, while earned income climbed from 66.0 to 85.9 percent. These results seem to give strong evidence that the rich have switched from being a "rentier" class to being the "working rich." However, on the basis of our wealth-adjusted income measure, income from wealth still fell in relative terms among the top one percent, but in this case from 61.1 to 45.7 percent of wealth-adjusted income, while earned income rose from 35.8 to 53.2 percent. Though the trends are similar for the two income measures, it is clear that in 2001 on the basis of our wealth-adjusted income measure income from wealth still constitutes a substantial share of the total income of the very rich.

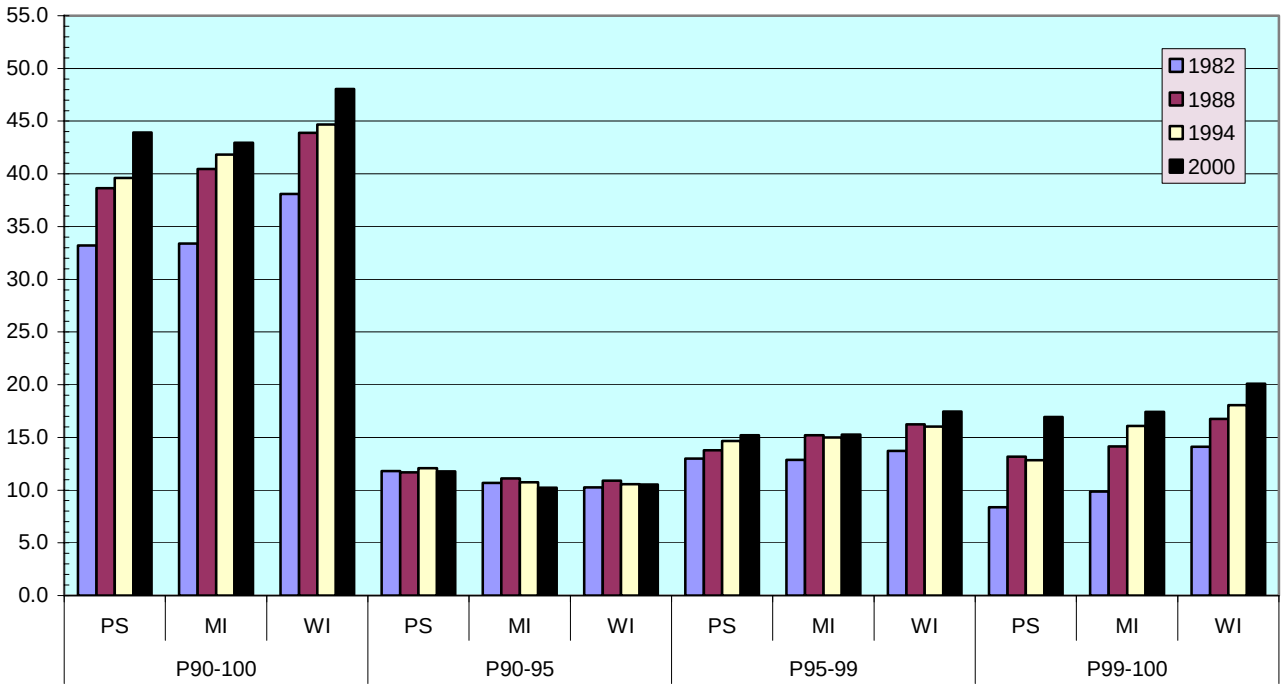
5.3. Income Sources of The Rich and a Comparison with Piketty and Saez

We next compare our results with those of Piketty and Saez (2003, 2001). Their data source is the Internal Revenue Service *Statistics of Income* database and their income concept is Adjusted Gross Income (AGI) less realized capital gains.[12] The most striking difference is in the level of inequality indicated by the three measures. The share of the top 10 percent computed by Piketty and Saez ("PS" in Figure 6) for 2000 is 43.9 percent, very close to the 42.9 percent figure on the basis of money income.[13] Since the two income concepts are quite close, this result is reassuring. However, not surprisingly, the share of the top 10 percent in wealth-adjusted income is quite a bit higher—48.1 percent. A similar pattern is found for the share of the top one percent in 2000—16.9 percent from PS, 17.4 percent on the basis of money income, and 20.1 percent using wealth-adjusted income.

[12] Piketty and Saez also exclude some other small items in AGI such as taxable Social Security income. The reference distribution is the distribution of income among taxpayers (tax units). However, the number of tax units in each quantile is defined relative to the total number of potential tax units (had everyone been required to file a tax return) and the share of each quantile is defined relative to the NIPA aggregate of personal income, after adjustments required for comparability with the AGI concept excluding realized capital gains.

[13] It should be noted that the PS data is for the year 1999 while our data is for 2000. As for 1982, both estimates pertain to income during that year. It is quite unlikely that the general pattern of results that we report here will be significantly affected by the fact that the endpoints are apart by one year.

Figure 6. Top Income Shares, 1982-2000



Notes:

Key: PS – estimates of Piketty and Saez (2001); MI – money income; WI – wealth-adjusted income.
PS estimates are taken from the data appendix posted at the National Bureau of Economic Research website: http://www.nber.org/data-appendix/w8467/ TabFigs2000web.xls, Table A7. Although labeled '2000' the PS estimates are for 1999.

On the other hand, the PS results show a very similar time trend of the income shares of the top percentiles as do both the money income and wealth-adjusted income series. According to the PS figures the share of the top decile jumped 10.7 percentage points between 1982 and 2000, while the money income data shows a 9.5 percentage point rise and the wealth-adjusted income figures a 10.0 percentage point increase. All three sources indicate almost no change in the income share of the P90-P95 income group. Wealth-adjusted income shows a 3.7 percentage point rise in the share of the P95-P99, while the PS figures indicate a 2.2 percentage point increase. In contrast, PS find a 8.6 percentage point rise in the share of the top percentile in comparison to a 6.0 percentage point increase in their share of wealth-adjusted income.

A key argument made by PS is that the surge in top income shares since the early 1970s is due to the relatively sharp increase of top wages as reflected in the growing share of labor income, at the expense of capital income, in the total income of the rich. (Piketty and Saez 2003: 17, 37). We also find a sharp decline in the share of income from wealth in the total income of

the top decile on the basis of money income, but no such decline occurs on the basis of wealth-adjusted income between 1983 and 2001 (see Table 14). Even more striking is the difference in the levels of alternative estimates. For the richest 10 percent, the share of income from wealth in total income was 42 percent in 2001according to wealth-adjusted income as compared to only 12 percent for money income and a still smaller 8 percent according to PS. Within the top decile of wealth-adjusted income, there is a notable diminution in the relative importance of income from wealth for the richest 1 percent: the share of income from wealth in total income declined from 61 percent in 1983 to 46 percent in 2001 for this group. This is still a far higher level than the corresponding estimates, 12-13 percent, based on money income or PS, and does not support the conclusion that the so-called "working rich" have displaced the "coupon-clipping rentiers" at the top of the economic ladder.

Table 14. Share of Income from Wealth in Total Income, 1983 and 2001 (in percent)

	P90-100		P90-95		P95-99		P99-100	
	1982	2000	1982	2000	1982	2000	1982	2000
PS	16	8	8	4	13	7	29	12
MI	19	12	13	7	15	14	30	13
WI	42	42	22	29	36	45	61	46

6. SENSITIVITY ANALYSIS

The next part of our research is to subject our estimates to sensitivity analysis. Two alternative assumptions can be used to impute income values for the home and non-home components of wealth. We discuss below how these assumptions affect our results when one component is changed and everything else is held constant. We also discuss some of the substantive implications of these alternative estimates. The benchmark case corresponds to our wealth-adjusted income (WI) estimates.

In the benchmark case, we estimate the imputed rental cost by distributing the total amount of imputed rent on nonfarm, owner-occupied housing in the GDP to homeowners, based on the gross value of housing. In our sensitivity analysis, we assign homeowners the annual benefit of converting their home equity into an annuity, as calculated in the same manner as the

Census Bureau uses in Annual Demographic Survey (ADS) of the Current Population Survey (*see* DeNavas-Walt et al. 2003). In the benchmark case, the variation in income from home wealth is determined by the variation in house values, while under the alternative assumption, the variation is due to the value of home equity, which depends, in turn, on house values and the remaining mortgage principal. Following the Census Bureau, we use the rate of return on high-grade municipal bonds for each year in the calculations.[14]

In the benchmark case, income from nonhome wealth is estimated by the constant lifetime annuity flow generated by nonhome wealth using average total real rates of return. In the sensitivity analysis, we use instead a constant coupon rate of 3 percent for each asset to generate income from wealth. The use of a fixed rate of return has two effects. First, it washes out differences in individual household overall rates of return caused by differences in household portfolios. Second, it also eliminates differences in annuity values deriving from differences in

conditional life expectancy. In particular, individuals with a shorter conditional life expectancy will, *ceteris paribus,* have higher ratio of annuity flow to nonhome wealth than individuals with a longer conditional life expectancy.

Table 15 shows trends in mean and median wealth using the alternative measures. While the mean value of imputed rent to owner-occupied housing rose by 13 percent over the 1983-2001 period, the mean value of the return on home equity actually declined by 26 percent, a reflection of the drop in the rate of return on municipal bonds. The mean value of both annuitized value of nonhome wealth and bond coupon income from nonhome wealth increased about the same rate over the period, both about doubling in size. However, mean annuity income was over twice as great as bond income from nonhome wealth in each of the four years.

[14] The values are: 9.47 percent in 1983, 7.24 percent in 1989, 5.95 percent in 1995, and 5.19 percent in 2001.

Table 15. Wealth-Adjusted Family Income with Alternative Definitions of Income from Wealth (in 2001 dollars)

	1983		1989		1995		2001		% Change, 1983-01	
All households	**Median**	**Mean**	**Median**	**Mean**	**Median**	**Mean**	**Median**	**Mean**	**Median**	**Mean**
1. Wealth-adjusted income (WI)	38,642	56,942	41,397	67,526	39,242	66,397	45,578	84,572	17.9	48.5
2. WI - A + C	40,665	59,831	43,439	69,553	39,350	66,477	46,342	85,547	14.0	43.0
3. WI - B + D	36,969	50,736	38,490	59,789	37,255	58,654	42,401	73,000	14.7	43.9
4. WI* = WI - A - B + C + D	38,767	53,626	39,984	61,817	37,325	58,734	43,170	73,974	11.4	37.9
Memo items:										
A. Imputed rent on owner-occupied housing	1,581	3,062	1,229	3,481	1,527	3,367	987	3,447	-37.6	12.6
B. Annuity income from nonhome wealth	386	10,753	473	13,545	578	13,123	1,105	20,701	186.1	92.5
C. Return on home equity	3,128	5,952	2,168	5,508	1,422	3,447	1,655	4,422	-47.1	-25.7
D. Bond coupon income from nonhome wealth	288	4,548	359	5,808	359	5,380	685	9,129	138.1	100.7

Notes:
1. Money income minus property income (sum of dividends, interest, and rent) plus income from home and nonhome wealth
A. Imputed rent on owner-occupied housing less the annuitized value of mortgage debt
B. Annuitized value of nonhome wealth less the annuitized value of other debt
C. Return on home equity
D. Bond coupon income from nonhome wealth (3% real rate of return)

As a result, wealth-adjusted income WI grew faster than WI*, the alternative wealth-adjusted income based on the return on home equity and bond coupon income from nonhome wealth. Between 1983 and 2001, mean WI climbed by 49 percent, compared to a 38 percent increase in WI*, and median WI gained 18 percent, compared to an 11 percent increase in median WI*.

Table 16 portrays inequality levels for the alternative definitions. It is at once apparent that using the return on home equity instead of imputed rent to owner-occupied housing has a minimal impact on the Gini coefficient for household income. However, substituting bond coupon income from nonhome wealth for the annuity income from nonhome wealth results in a sizeable reduction in the Gini coefficient—about 0.032 points in 2001. This difference reflects the much higher level of annuity income than bond coupon income. Annuity income from nonhome wealth was, on average, more than twice as great as bond coupon income in both 1983 and 2001. This ratio was fairly uniform across deciles (see Figure 7). It is also of interest that the ratio of both annuity income and bond income to money income drops sharply between the first and second decile, remains stable from the second to the ninth decile, and then shoots up in the tenth decile (more than doubling between the ninth and top decile). However, all four wealth-

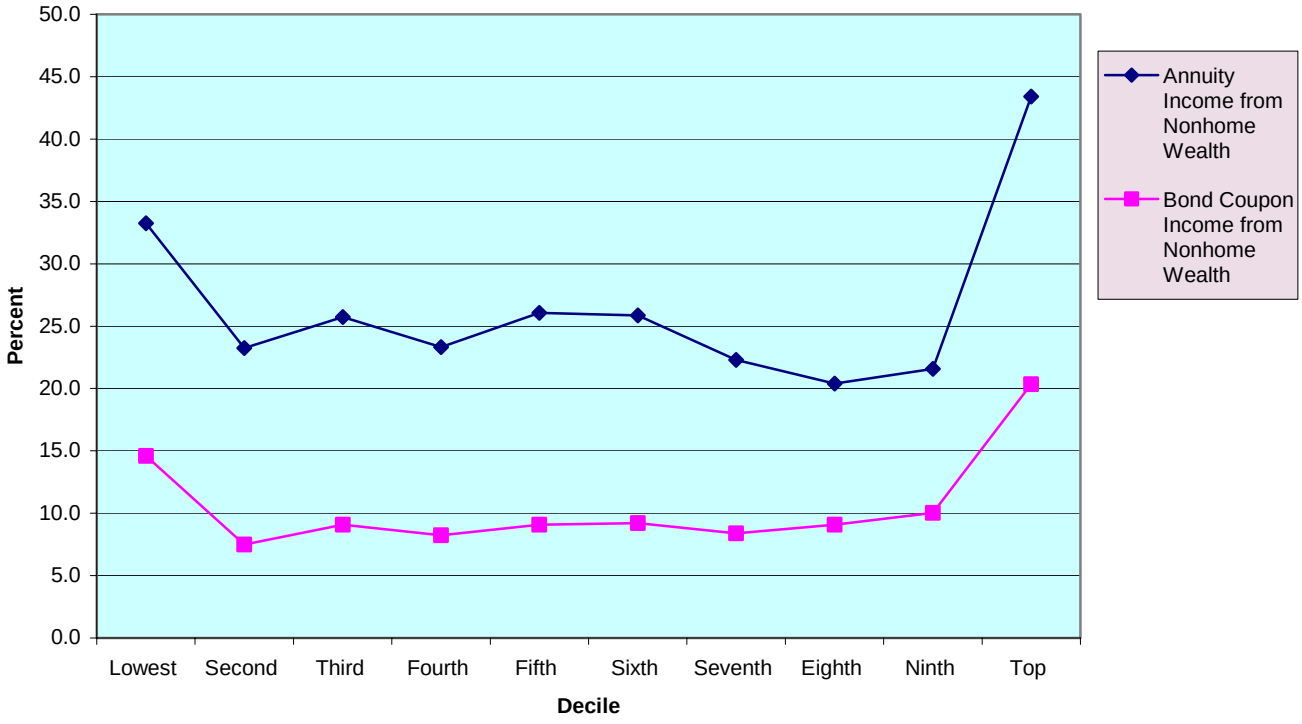
adjusted income measures show almost identical increases in the Gini coefficient over the 1983-2001 period.

Table 16. Economic Inequality with Alternative Definitions of Income from Wealth (Gini coefficients)

					Change
Income definition	**1983**	**1989**	**1995**	**2001**	**1983-2001**
1. Wealth-adjusted income (WI)	0.493	0.556	0.562	0.589	0.096
2. WI - A + C	0.491	0.554	0.561	0.588	0.096
3. WI - B + D	0.458	0.527	0.533	0.557	0.099
4 WI* = WI - A - B + C + D	0.457	0.526	0.533	0.555	0.098

Notes:
1. Money income minus property income (sum of dividends, interest, and rent) plus income from home and nonhome wealth
A. Imputed rent on owner-occupied housing less the annuitized value of mortgage debt
B. Annuitized value of nonhome wealth less the annuitized value of other debt
C. Return on home equity
D. Bond coupon income from nonhome wealth (3% real rate of return)

Figure 7. Income from Nonhome Wealth as a Percentage of Average Money Income by Decile, 2001



The share of income from wealth in overall inequality appears to be smaller when the alternative definition, rather than the preferred one, is employed to measure economic well-being (Table 17). In 1983, the share was 25.0 percent in the alternative definition and 35.8 percent in the preferred definition. As compared to the preferred definition, the alternative definition shows a lesser role for income from wealth in accounting for the level of inequality in any given year because the alternative definition entails a level of income from wealth that is smaller in both absolute and relative terms. While the share of income from wealth in inequality increased slightly in the preferred measure to 27.8 percent, it actually declined in the alternative measure to 22.4 percent. The decline was due to the sharp drop in the share of return on home equity in inequality (from 11.3 to 5.1 percent). In turn, the latter was due to an equally marked fall in the income share of return on home equity (from 11.1 to 6.0 percent) stemming from the lower yield on municipal bonds in 2001. As a result, in 2001, the share of income from wealth in inequality was roughly comparable in the alternative definition (WI*) and SCF income (22.4 vs. 20.2 percent). Another result of the lower income share of return on home equity was that the contribution made by income from wealth to the change in inequality of the alternative income definition was much smaller than in the case of the preferred definition (10 percent vs. 50 percent). It was, in fact, lower than the contribution of the income from wealth to the change in
inequality in SCF income (25 percent).

Table 17. Decomposition of Inequality by Income Source for Alternative Adjustments for Wealth, 1983 and 2001

	1983			2001		
	Concentration coefficient	Income share	Share in inequality	Concentration coefficient	Income share	Share in inequality
A.Wealth-adjusted income (Preferred definition)						
Primary income	0.418	0.757	0.642	0.513	0.714	0.622
Income from wealth	0.727	0.243	0.358	0.779	0.286	0.378
Imputed rent	0.447	0.054	0.049	0.506	0.041	0.035
Annuities	0.806	0.189	0.309	0.825	0.245	0.343
B. Wealth-adjusted income (Alternative definition)						
Primary income	0.427	0.804	0.750	0.528	0.817	0.776
Income from wealth	0.583	0.196	0.250	0.678	0.183	0.224
Return on home equity	0.465	0.111	0.113	0.473	0.060	0.051
Bond-coupon return	0.738	0.085	0.137	0.777	0.124	0.173
Addendum:						
Total change in Gini between 1983 and 2001						
A.Wealth-adjusted income (Preferred definition)	9.6					
Primary income	5.0					
Income from wealth	4.7					
B. Wealth-adjusted income (Alternative definition)	9.8					
Primary income	8.8					
Income from wealth	1.0					

The substitution of bond coupon income for annuity income from nonhome wealth may have a large impact on measured racial differences in well-being. The reason is that the higher mortality rates of African-Americans relative to whites imply a higher value of annuity payments relative to wealth for the former in the calculation of WI. The use of the bond coupon technique wipes out the effects of racial differences on differential mortality rates.

However, the results of Table 18 show instead that the ratio of bond coupon income between blacks and whites is higher than the ratio of annuity income. These results are due to the fact that the annuity rate of return is higher for whites than blacks. This, in turn, reflects the fact that white households have a different average portfolio composition than black households and, in particular, hold a higher percentage of their assets in the form of stocks than do black

households.[15] Though the mortality effect would lead to a higher ratio of annuity income than bond income between blacks and whites, the use of a uniform rate of return dominates the differential mortality effect and results in a higher ratio of bond than annuity income between the two races.

[15] Wolff (forthcoming) reports that in 2001 while white households held 25.4 percent of their total assets in the form of stocks, the corresponding figure for black households was only 14.9 percent.

Table 18. Family Income by Alternative Definitions of Income from Wealth and Race/Ethnic Groups (in 2001 dollars)

	1983		1983 Ratio to Whites		2001		2001 Ratio to Whites	
	Median	Mean	Median	Mean	Median	Mean	Median	Mean
Non-Hispanic whites								
1. Wealth-adjusted income (WI)	42,243	62,013	1.00	1.00	51,681	91,043	1.00	1.00
2. WI - A + C	44,542	65,238	1.00	1.00	53,335	98,202	1.00	1.00
3. WI - B + D	40,243	54,623	1.00	1.00	48,495	82,604	1.00	1.00
4. WI* = WI - A - B + C + D	42,406	57,848	1.00	1.00	49,402	83,697	1.00	1.00
Memo items:								
A. Imputed rent on owner-occupied housing	2,047	3,441	1.00	1.00	1,710	4,115	1.00	1.00
B. Annuity income from nonhome wealth	761	12,764	1.00	1.00	2,209	25,811	1.00	1.00
C. Return on home equity	4,069	6,667	1.00	1.00	2,669	5,209	1.00	1.00
D. Bond coupon income from nonhome wealth	506	5,374	1.00	1.00	1,267	11,306	1.00	1.00
African Americans								
1. Wealth-adjusted income (WI)	22,324	31,093	0.53	0.50	25,624	39,151	0.50	0.43
2. WI - A + C	23,858	32,287	0.54	0.49	25,768	39,858	0.48	0.41
3. WI - B + D	22,361	30,338	0.56	0.56	25,668	37,868	0.53	0.46
4. WI* = WI - A - B + C + D	23,731	31,532	0.56	0.55	25,668	38,371	0.52	0.46
Memo items:								
A. Imputed rent on owner-occupied housing	0	1,164	0.00	0.34	0	740	0.00	0.18
B. Annuity income from nonhome wealth	0	1,439	0.00	0.11	33	2,807	0.02	0.11
C. Return on home equity	0	2,358	0.00	0.35	0	1,242	0.00	0.24
D. Bond coupon income from nonhome wealth	0	685	0.00	0.13	29	1,320	0.02	0.12
Hispanics								
1. Wealth-adjusted income (WI)	25,719	34,523	0.61	0.56	26,365	41,709	0.51	0.46
2. WI - A + C	26,376	35,928	0.59	0.55	26,751	42,119	0.50	0.43
3. WI - B + D	25,727	34,315	0.64	0.63	26,437	40,230	0.55	0.49
4. WI* = WI - A - B + C + D	26,408	35,720	0.62	0.62	26,740	40,640	0.54	0.49
Memo items:								
A. Imputed rent on owner-occupied housing	0	1,440	0.00	0.42	0	1,120	0.00	0.27
B. Annuity income from nonhome wealth	0	576	0.00	0.05	1	3,056	0.00	0.12
C. Return on home equity	0	2,845	0.00	0.43	0	1,531	0.00	0.29
D. Bond coupon income from nonhome wealth	0	368	0.00	0.07	5	1,577	0.00	0.14
Asians and other races								
1. Wealth-adjusted income (WI)	40,156	55,303	0.95	0.89	38,508	75,514	0.75	0.83
2. WI - A + C	40,156	57,897	0.90	0.89	39,473	77,055	0.74	0.78
3. WI - B + D	40,934	53,669	1.02	0.98	34,983	68,160	0.72	0.83
4. WI* = WI - A - B + C + D	40,934	56,263	0.97	0.97	34,983	69,702	0.71	0.83
Memo items:								
A. Imputed rent on owner-occupied housing	0	2,400	0.00	0.70	0	4,487	0.00	1.09
B. Annuity income from nonhome wealth	19	3,688	0.03	0.29	463	15,005	0.21	0.58
C. Return on home equity	0	4,994	0.00	0.75	641	6,028	0.24	1.16
D. Bond coupon income from nonhome wealth	49	2,053	0.10	0.38	386	7,651	0.30	0.68

The black-white ratio of the return on home equity was about the same as the racial ratio of imputed rent in 1983 but much higher in 2001. A possible reason is that by 2001 white households had a larger ratio of mortgage debt to (gross) house value than black households (the return on home equity is based on the *net value* of owner-occupied housing whereas imputed rent

is based on the *gross value*). All told, the ratio of median WI* between African-American and white households was three percentage points higher than the corresponding ratio of median WI in both 1983 and 2001 and the ratio of mean WI* was five percentage points higher in the two years. However, the ratio of both median and mean WI* between black and white households shows about the same decline as median and mean WI between 1983 and 2001 (4 percentage points for the ratio of median values and 9 percentage points for the ratio of mean values).

The patterns are quite similar for both Hispanic and Asian households. The Hispanic-white ratio of mean bond income is somewhat higher than that of mean annuity income in the two years, and the Hispanic-white ratio of mean WI* is about 6 percentage points higher than that of WI in the two years. The Asian-white ratio of mean bond income is considerably higher (about 10 percentage points) than that of mean annuity income in the two years, and the Hispanic-white ratio of mean WI* is 8 percentage points higher than that of WI in 1983 and 5 percentage points higher in 2001.

The elimination of the mortality differential effect by age group has a pronounced effect on the measurement of relative well-being by age (see Table 19). The higher (conditional) mortality rates of the elderly lead to much higher annuity values relative to their wealth holdings in comparison to younger households. Using a bond coupon rate approach is roughly equivalent to standardizing mortality rates across all age groups.

Table 19. Family Income by Alternative Definitions of Income from Wealth and Age of Household Head (in 2001 dollars)

	1983		1983 Ratio to Overall		2001		2001 Ratio to Overall	
	Median	Mean	Median	Mean	Median	Mean	Median	Mean
Under 35								
1. Wealth-adjusted income (WI)	33,173	39,072	0.86	0.69	33,608	45,729	0.74	0.54
2. WI - A + C	33,680	39,877	0.83	0.67	33,657	45,892	0.73	0.54
3. WI - B + D	33,274	38,994	0.90	0.77	33,639	45,425	0.79	0.62
4. WI* = . WI - A - B + C + D	33,675	39,799	0.87	0.74	33,708	45,588	0.78	0.62
Memo items:								
A. Imputed rent on owner-occupied housing	0	1,009	0.00	0.33	0	846	0.00	0.25
B. Annuity income from nonhome wealth	5	1,173	0.01	0.11	0	2,010	0.00	0.10
C. Return on home equity	0	1,814	0.00	0.30	0	1,009	0.00	0.23
D. Bond coupon income from nonhome wealth	28	1,095	0.10	0.24	9	1,705	0.01	0.19
35 to 44								
1. Wealth-adjusted income (WI)	51,617	63,246	1.34	1.11	55,055	82,043	1.21	0.97
2. WI - A + C	54,028	66,039	1.33	1.10	55,714	82,749	1.20	0.97
3. WI - B + D	51,522	62,358	1.39	1.23	54,323	79,791	1.28	1.09
4. WI* = . WI - A - B + C + D	54,003	65,151	1.39	1.21	54,874	80,497	1.27	1.09
Memo items:								
A. Imputed rent on owner-occupied housing	2,063	3,049	1.30	1.00	741	2,684	0.75	0.78
B. Annuity income from nonhome wealth	396	3,739	1.03	0.35	854	7,760	0.77	0.37
C. Return on home equity	4,144	5,842	1.32	0.98	1,281	3,391	0.77	0.77
D. Bond coupon income from nonhome wealth	395	2,851	1.37	0.63	626	5,508	0.91	0.60
45 to 54								
1. Wealth-adjusted income (WI)	52,146	71,562	1.35	1.26	61,576	107,966	1.35	1.28
2. WI - A + C	54,962	75,882	1.35	1.27	62,302	109,227	1.34	1.28
3. WI - B + D	51,348	67,023	1.39	1.32	58,720	100,198	1.38	1.37
4. WI* = . WI - A - B + C + D	53,740	71,343	1.39	1.33	59,354	101,459	1.37	1.37
Memo items:								
A. Imputed rent on owner-occupied housing	3,147	4,455	1.99	1.45	1,517	3,970	1.54	1.15
B. Annuity income from nonhome wealth	738	11,107	1.91	1.03	2,207	19,274	2.00	0.93
C. Return on home equity	6,496	8,775	2.08	1.47	2,669	5,231	1.61	1.18
D. Bond coupon income from nonhome wealth	477	6,568	1.66	1.44	1,392	11,506	2.03	1.26
55 to 64								
1. Wealth-adjusted income (WI)	44,908	70,610	1.16	1.24	53,211	118,918	1.17	1.41
2. WI - A + C	48,572	75,154	1.19	1.26	54,175	120,559	1.17	1.41
3. WI - B + D	42,848	61,221	1.16	1.21	49,980	99,906	1.18	1.37
4. WI* = . WI - A - B + C + D	46,208	65,765	1.19	1.23	50,934	101,546	1.18	1.37
Memo items:								
A. Imputed rent on owner-occupied housing	3,256	4,511	2.06	1.47	2,834	5,234	2.87	1.52
B. Annuity income from nonhome wealth	2,197	17,063	5.69	1.59	3,729	36,751	3.38	1.78
C. Return on home equity	6,952	9,056	2.22	1.52	4,003	6,875	2.42	1.55
D. Bond coupon income from nonhome wealth	1,118	7,674	3.89	1.69	1,996	17,739	2.91	1.94
65 to 74								
1. Wealth-adjusted income (WI)	28,923	60,980	0.75	1.07	38,959	92,959	0.85	1.10
2. WI - A + C	31,857	65,461	0.78	1.09	39,502	94,650	0.85	1.11
3. WI - B + D	25,592	42,970	0.69	0.85	33,775	63,452	0.80	0.87
4. WI* = . WI - A - B + C + D	29,057	47,451	0.75	0.88	34,581	65,142	0.80	0.88

Table 19. CONT'D

Memo items:								
A. Imputed rent on owner-occupied housing	3,023	4,662	1.91	1.52	3,413	5,436	3.46	1.58
B. Annuity income from nonhome wealth	3,184	27,019	8.25	2.51	5,336	45,638	4.83	2.20
C. Return on home equity	6,083	9,144	1.94	1.54	4,377	7,127	2.65	1.61
D. Bond coupon income from nonhome wealth	1,056	9,009	3.67	1.98	1,871	16,130	2.73	1.77
75 and over								
1. Wealth-adjusted income (WI)	17,726	49,178	0.46	0.86	30,337	76,134	0.67	0.90
2. WI - A + C	20,140	51,988	0.50	0.87	31,306	77,305	0.68	0.90
3. WI - B + D	15,410	25,515	0.42	0.50	24,708	40,345	0.58	0.55
4. WI* = . WI - A - B + C + D	17,672	28,324	0.46	0.53	25,576	41,516	0.59	0.56
Memo items:								
A. Imputed rent on owner-occupied housing	1,861	3,115	1.18	1.02	3,603	5,410	3.65	1.57
B. Annuity income from nonhome wealth	2,125	29,096	5.50	2.71	5,396	46,009	4.88	2.22
C. Return on home equity	3,476	5,925	1.11	1.00	4,430	6,581	2.68	1.49
D. Bond coupon income from nonhome wealth	454	5,433	1.58	1.19	1,226	10,219	1.79	1.12

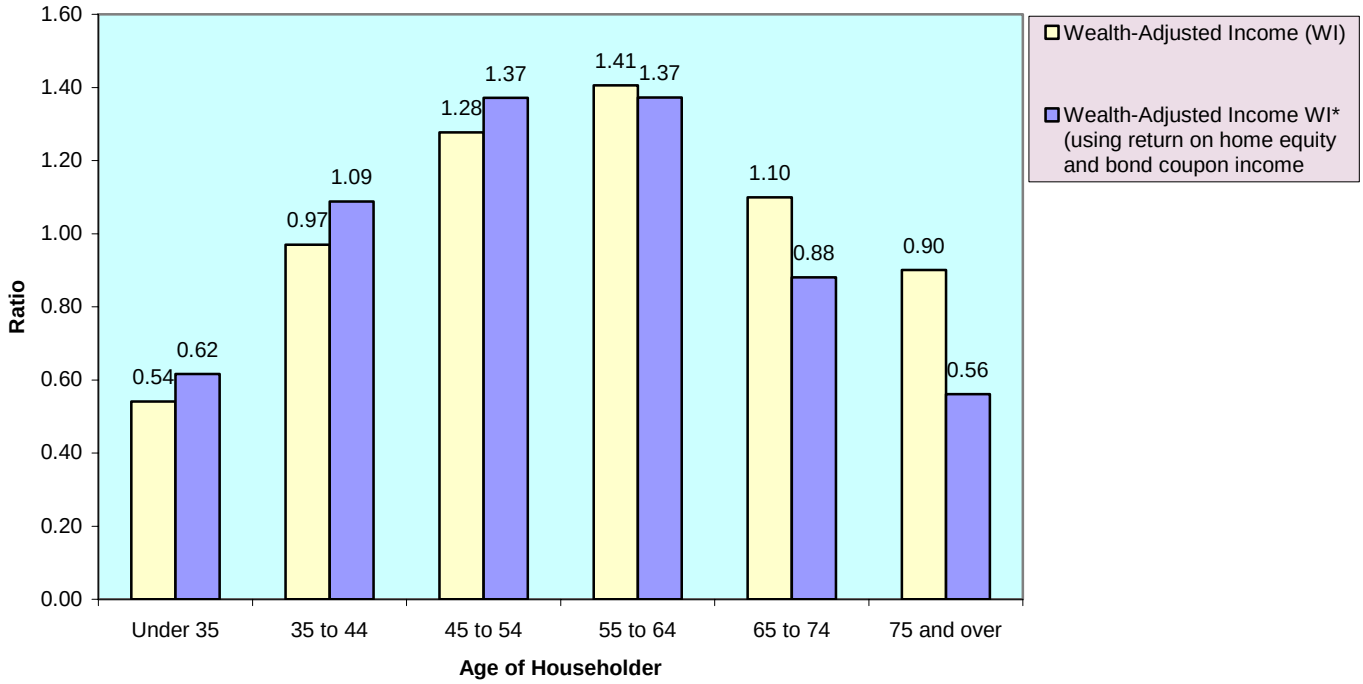
The ratio of mean bond income for the age group to the overall mean is much higher for the younger age groups (under age 55) than the corresponding ratio of mean annuity income, whereas the reverse is true for the older age groups (ages 65 and over). For age group 55 to 64, the ratio of bond income for that age group to the overall mean was 0.10 points higher in 1983 and 0.16 point higher in 2001 than the corresponding ratio of mean annuity income. The effect is particularly strong for the two older age groups. For the 65 to 74 age group, the bond income ratio was 1.77 compared to an annuity income ratio of 2.20 in 2001, while for the 75 and over age group, the former was 2.22 in 2001 and the latter was only 1.12.[16] On the other hand, differences between the ratio of the mean return on home equity by age group to the overall mean and the corresponding ratio of mean imputed rent on owner-occupied housing are very slight.

All told, the use of the bond coupon (and return on home equity) method leads to an increase in the measured relative well-being of younger households and a corresponding reduction of that of older households (also see Figure 8). The ratio of mean wealth-adjusted income by age group to the overall mean in 2001 rises from 0.54 (for WI) to 0.62 (for WI*) for age group 34 and under; from 0.97 to 1.09 for age group 35-44; and from 1.28 to 1.37 for age group 45-54. It falls from 1.41 to 1.37 for age group 55-64, from 1.10 to 0.88 for age group 65-

[16] Differences in portfolio composition are less marked by age group than by race. Wolff (forthcoming) calculates that in 2001 age group 65-74 held 25.0 percent of its total assets in the form of stocks and age group 75 and over held 29.3 percent in comparison to an overall figure of 24.5 percent.

64, and from 0.90 to 0.56 for the oldest age group. The elderly (65 and over) no longer appear to be better off than the average household according to the WI* measure. Similar results hold for the medians. However, changes over time by age group are very similar for WI* and WI. Both measures show a deterioration in the relative well-being of age groups under 35 and 35-44; almost no change for age group 45-54; a substantial increase in mean well-being but no change in the median level of well-being for age group 55-64; and small increases in mean well-being and substantial gains in median well-being for age groups 65-74 and 75 and over.

Figure 8. The Ratio of Mean Income to the Overall Mean by Age Group Using Alternative Defintions of the Return to Wealth, 2001



Results by parental and marital group (Table 20) seem to largely reflect age differences. The bond coupon method yields higher ratios to the overall mean than the annuity method for married couples with children and single-female headed families with children, and the reverse for married couples, single females without children, and single males without children. Since parents with children living at home are younger than average than adults without children, these results are consistent with the results by age group (see Table 14). In the case of single males, the

results may also reflect the higher mortality rates of men relative to females, which, in turn, imply higher annuity value relative to wealth for men than women.

Table 20. Family Income by Alternative Definitions of Income from Wealth and Parental and Marital Status (in 2001 dollars)

	1983		1983 Ratio to Overall		2001		2001 Ratio to Overall	
	Median	Mean	Median	Mean	Median	Mean	Median	Mean
Married couples with children								
1. Wealth-adjusted income (WI)	51,977	64,594	1.35	1.13	66,957	105,220	1.47	1.24
2. WI - A + C	54,621	67,637	1.34	1.13	67,104	106,255	1.45	1.24
3. WI - B + D	51,740	62,965	1.40	1.24	65,671	99,787	1.55	1.37
4. WI* = . WI - A - B + C + D	54,182	66,008	1.40	1.23	66,065	100,822	1.53	1.36
Memo items:								
A. Imputed rent on owner-occupied housing	2,098	3,278	1.33	1.07	1,204	3,458	1.22	1.00
B. Annuity income from nonhome wealth	243	4,842	0.63	0.45	1,004	14,466	0.91	0.70
C. Return on home equity	4,111	6,321	1.31	1.06	1,815	4,492	1.10	1.02
D. Bond coupon income from nonhome wealth	238	3,213	0.83	0.71	802	9,033	1.17	0.99
Single-female headed with children								
1. Wealth-adjusted income (WI)	19,767	24,862	0.51	0.44	20,629	26,883	0.45	0.32
2. WI - A + C	20,115	26,018	0.49	0.43	20,755	27,101	0.45	0.32
3. WI - B + D	19,794	24,680	0.54	0.49	20,605	26,366	0.49	0.36
4. WI* = . WI - A - B + C + D	20,338	25,836	0.52	0.48	20,776	26,585	0.48	0.36
Memo items:								
A. Imputed rent on owner-occupied housing	0	1,315	0.00	0.43	0	897	0.00	0.26
B. Annuity income from nonhome wealth	0	872	0.00	0.08	0	1,760	0.00	0.09
C. Return on home equity	0	2,471	0.00	0.42	0	1,116	0.00	0.25
D. Bond coupon income from nonhome wealth	0	690	0.00	0.15	1	1,244	0.00	0.14
Married couples without children								
1. Wealth-adjusted income (WI)	52,547	82,956	1.36	1.46	67,020	120,417	1.47	1.42
2. WI - A + C	55,695	87,372	1.37	1.46	68,143	121,906	1.47	1.43
3. WI - B + D	47,667	67,307	1.29	1.33	58,519	96,405	1.38	1.32
4. WI* = . WI - A - B + C + D	50,174	71,724	1.29	1.34	59,709	97,894	1.38	1.32
Memo items:								
A. Imputed rent on owner-occupied housing	3,072	4,523	1.94	1.48	2,803	5,273	2.84	1.53
B. Annuity income from nonhome wealth	2,225	24,843	5.76	2.31	4,494	39,518	4.07	1.91
C. Return on home equity	6,139	8,939	1.96	1.50	3,897	6,762	2.35	1.53
D. Bond coupon income from nonhome wealth	1,118	9,194	3.89	2.02	2,349	15,507	3.43	1.70
Single-female headed without children								
1. Wealth-adjusted income (WI)	20,838	27,459	0.54	0.48	24,302	35,413	0.53	0.42
2. WI - A + C	22,629	29,475	0.56	0.49	24,658	35,921	0.53	0.42
3. WI - B + D	18,594	24,584	0.50	0.48	22,257	30,345	0.52	0.42
4. WI* = . WI - A - B + C + D	20,918	26,600	0.54	0.50	22,726	30,853	0.53	0.42
Memo items:								
A. Imputed rent on owner-occupied housing	279	2,221	0.18	0.73	367	2,397	0.37	0.70
B. Annuity income from nonhome wealth	259	5,382	0.67	0.50	464	8,608	0.42	0.42
C. Return on home equity	804	4,237	0.26	0.71	801	2,905	0.48	0.66
D. Bond coupon income from nonhome wealth	179	2,507	0.62	0.55	262	3,540	0.38	0.39

Table 20. CONT'D

Single-male headed without children								
1. Wealth-adjusted income (WI)	28,417	41,546	0.74	0.73	31,619	55,717	0.69	0.66
2. WI - A + C	29,586	42,866	0.73	0.72	31,930	56,412	0.69	0.66
3. WI - B + D	27,436	36,946	0.74	0.73	30,259	46,130	0.71	0.63
4. WI* = . WI - A - B + C + D	28,957	38,266	0.75	0.71	30,951	46,825	0.72	0.63
Memo items:								
A. Imputed rent on owner-occupied housing	0	1,455	0.00	0.48	0	1,964	0.00	0.57
B. Annuity income from nonhome wealth	171	7,274	0.44	0.68	617	15,761	0.56	0.76
C. Return on home equity	0	2,775	0.00	0.47	53	2,659	0.03	0.60
D. Bond coupon income from nonhome wealth	167	2,674	0.58	0.59	370	6,174	0.54	0.68

7. CONCLUSION

The standard official measure of household economic well-being in the U.S. is gross money income. The general consensus is that such measures are limited because they ignore other crucial determinants of well-being. We examine one such determinant here—household wealth. Our findings indicate that the level and distribution of economic well-being is substantially altered when money income is adjusted for wealth.

There are three factors that determine the distributional effects from adding an annuity flow from nonhome household wealth. The first is the variation of wealth to income ratios both across the income distribution and among different demographic groups. The second is the joint distribution of income and wealth. The third consists of differences in portfolio composition among households and rates of return by asset type and the consequent variation in overall rates of return across households.

Over the 1989-2000 period, median well-being appears to increase faster when these adjustments are made for household wealth than when standard money income is used. While mean money income using the U.S. Census Bureau's standard definition of money income climbed by 32 percent between 1983 and 2001, our wealth-adjusted measure WI, including imputed rent on owner-occupied housing and the annuitized value of non-home wealth, surged by 44 percent over the period. Median money income grew by only 6 percent over this period, while median WI rose by 15 percent. Further analysis shows that the main factor behind the sharp gains in wealth-adjusted income is the steep rise in annuitized wealth, which soared by 87 percent over these years. Imputed rent, on the other hand, grew by only10 percent.

Adding imputed rent and annuities from household wealth to household income also increases measured inequality. However, both measures show about the same rise in inequality over the period. The Gini coefficient for money income climbed by a considerable amount, 0.093, between 1983 and 2001. The Gini coefficient for wealth-adjusted income WI is considerably higher than that of money income (0.040 in 2001) but shows about the same change over the 1983-2001 period, 0.096, as the Gini coefficient for money income.

Our results here are much stronger with regard to inequality than those of Weisbrod and Hansen (1968), Taussig (1973) or Wolfson (1979). All threee studies find that the distribution of income becomes more unequal once the returns to wealth are included as part of total income. However, the disequalizing effects in these studies are not great. The main reason is that in their work annuity payments are small relative to current money income, typically on the order of 10 percent on average. In contrast, in our work, we find that among all households in 2001, annuity income from wealth constituted 28.6 percent of all income.

We also found that the share of income from wealth in overall inequality is much higher for our wealth-adjusted measure than for money income—nearly four times as much in 2001 (10 vs. 38 percent). The share of the wealth component in the growth in inequality between 1983 and 2001 was also larger in the wealth-adjusted measure as compared to even SCF income that is inclusive of realized capital gains. The latter showed that about a quarter of the increase in inequality could be accounted for by the wealth component as opposed to a third in our preferred measure. These results are primarily due to the relatively large size of income from wealth, particularly the annuitized value of nonhome wealth in wealth-adjusted income.

Our results contradict the assertion that the working rich have replaced the rentiers at the top of the economic ladder. On the basis of the money income concept, it is true that for the top percentile, earned income (the sum of wages and salaries and self-employment income) constituted the vast majority (86 percent) of total personal income in 2001, while income from wealth (in this case, property income) made up only 13 percent. However, when the full value of wealth is properly accounted for as in our wealth-adjusted measure, then income from wealth appears far more important. For the top percentile, income from wealth now makes up 46 percent of total income (up from 13 percent), while earned income drops from 86 to 53 percent. In 2001, the very rich (the top one percent) relied about equally on earned income and income from wealth as a source of their income.

The addition of an annuity flow and imputed rent also widens the income gap between African Americans and whites but increases the relative well-being of the elderly. In 2001, the ratio of median money income between African Americans and non-Hispanic whites was 0.57 and the ratio of means was 0.50. In contrast, the ratio of median wealth-adjusted income WI between blacks and whites was 0.049 and that of mean wealth-adjusted income was 0.041. The racial income gap also increases more between 1983 and 2001 when imputed rent and annuitized wealth (though mainly the latter) are added to money income. These results reflect the fact that the wealth gap between African Americans and whites is considerably larger than the income gap. They also reflect differences in portfolio composition, with whites have a higher share of assets in stocks (mortality differences would go the other way, increasing the racial ratio).

The effect of using wealth-adjusted income instead of money income is to increase the relative well-being of older groups relative to younger ones. There are two reasons. First, the wealth-income ratios are higher for older households. Second, mortality rates are higher for older individuals than younger ones, which result in larger annuity flows per dollar of wealth. The results are quite striking. The ratio of mean money income to the overall median in 1983 was 0.88 for age group 65 to 74 while the corresponding ratio for wealth-adjusted income was 1.07. The ratio of mean money income to overall for this age group actually fell over the period 1983-2001 while the corresponding ratio for wealth-adjusted income rose by three percentage points. Results are similar for age group 75 and over. By 2001 the mean wealth-adjusted income of this group reached 90 percent of the overall, compared to 50 percent for money income.

Most studies of disparities in well-being among population subgroups and overall inequality employ money income as the metric of well-being. Since earnings are the overwhelming proportion of money income, academic and policy discussions center on differences in earnings capacity among those in the labor force and tax-transfer policies to alleviate the income shortfalls of those outside the labor force. Economic inequality often tends to be reduced to earnings inequality. By employing a combined income-net worth measure, we have attempted to demonstrate the importance of wealth inequalities in shaping overall economic inequality and disparities among subgroups. While further research is indeed required on several of the issues raised here, it appears certain that policies that ignore questions of asset ownership will only have partial success in redressing the relatively high level of economic inequality in the United States.

Bibliography

Board of Governors of the Federal Reserve System. 2005a. Federal Reserve Statistical Release, H.15, Selected Interest Rates. [http://www.federalreserve.gov/releases/h15/]

———. 2005b. Federal Reserve Statistical Release, Z.1, Flow of Funds Accounts of the United States [http://www.federalreserve.gov/Releases/z1/Current/data.htm]

Canberra Group. 2001. "Expert Group on Household Income Statistics: Final Report and Recommendations." Ottawa.

Caner, A. and E. N. Wolff. 2004. "Asset Poverty in the United States, 1984-99: Evidence from the Panel Study of Income Dynamics." *Review of Income and Wealth* 50 (4): 493-518.

Citro, Constance F. and Robert T. Michael, eds. 1995. *Measuring Poverty: A New Approach.* Washington, D.C.: National Academy Press.

Council of Economic Advisers. 2005. *Economic Report of the President.* February 2005.

DeNavas-Walt, Carmen, Robert Cleveland, and Bruce H. Webster Jr. 2003. U.S. Census Bureau, Current Population Reports, P60-221. *Income in the United States: 2002.* Washington, D.C.: U.S. Government Printing Office.

Lerman, D. L. and J. J. Mikesell. 1988. "Impacts of Adding Net Worth to the Poverty Definition." *Eastern Economic Journal* XIV (4): 357-70.

Lerman, Robert I. and Shlomo Yitzhaki. 1985. "Income Inequality Effects by Income Source: A New Approach and Applications to the United States." *The Review of Economics and Statistics* 67 (1): 151-156.

———. 1995. "Changing Ranks and the Inequality Impacts of Taxes and Transfers." *The National Tax Journal,* XLVIII (1): 45-59.

Moon, M. 1977. *The Measurement of Economic Welfare: Applications to the Aged.* New York: Academic Press.

Piketty, Thomas and Emmanuel Saez. 2003. "Income Inequality in the United States, 1913-1998." *Quarterly Journal of Economics* 118: 1-39.

———. 2001. "Income Inequality in the United States, 1913-1998." NBER Working Paper No. 8467.

Radner, Daniel B. and D. R. Vaughan. 1987. "Wealth, Income, and the Economic Status of Aged Households." In *International Comparisons of the Distribution of Household Wealth*. Edward Wolff ed. New York, Oxford University Press.

Smeeding, Timothy M. and D. H. Weinberg. 2001. "Toward a Uniform Definition of Household Income." *Review of Income and Wealth* 47 (1): 1-24.

Taussig, Michael K. 1973. *Alternative Measures of the Distribution of Economic Welfare.* Princeton University Industrial Relations Section Monograph.

U.S. Bureau of the Census. 2000. "The Changing Shape of the Nation's Income Distribution: 1947-1998." *P60 Series, Current Population Reports.* P60: 204.

———. 2002. Statistical Abstract of the United States: 2002, Washington, D.C.

U.S. National Center for Health Statistics. *United States Life Tables*. Various years.

Weisbrod, B. A. and W. L. Hansen. 1968. "An Income-Net Worth Approach to Measuring Economic Welfare." *The American Economic Review* 58 (5): 1315-29.

Wolff, Edward N. Forthcoming. "The Transformation of the American Pension System." In Teresa Ghilarducci and John Turner, eds., *Work Options for Mature Americans.* Notre Dame, Indiana: University of Notre Dame Press.

———. 2005. "Changes in Household Wealth in the 1980s and 1990s in the U.S." In Edward N. Wolff, ed., *International Perspectives on Household Wealth.* Northampton, Mass.: Elgar Publishing Ltd.

———. 1990. "Wealth Holdings and Poverty Status in the United States." *Review of Income and Wealth* 36 (2): 143-165.

Wolff, Edward N., Ajit Zacharias, and Asena Caner. 2004. "Levy Institute Measure of Economic Well-Being, Concept, Measurement, and Findings: United States, 1989 and 2000." Annandale-on-Hudson, N.Y.: The Levy Economics Institute.

Wolff, Edward N. and Ajit Zacharias. 2003. "The Levy Institute Measure of Economic Well-Being." *Indicators: A Journal of Social Health* 2 (4): 44-73.

Wolfson, Michael C. 1979. "Wealth and the Distribution of Income, Canada, 1969-1970." *Review of Income and Wealth* 25: 129-140.