The Levy Economics Institute of Bard College

Levy Institute Measure of Economic Well-Being

How Much Does Wealth Matter for Well-Being? Alternative Measures of Income from Wealth

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September 2004

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Preface

This document supplements previous findings of the Levy Institute Measure of Economic Well-Being (LIMEW) research project within our program on distribution of income and wealth. Some readers have questioned the sensitivity of our estimates in view of our imputation techniques. Therefore, the authors explore the sensitivity associated with imputing the values of income from home and nonhome wealth—which together comprise a major component of the LIMEW—by varying the assumptions they made in their approach.

The authors provide new calculations for 1989 and 2000 that show that their initial major findings remain intact using alternative estimation procedures: mean income from wealth increases by decile of the LIMEW, the share of mean income from wealth rises between 1989 and 2000, and inequality is higher in 2000 than 1989.

We intend to supplement our LIMEW reports on an ad hoc basis, while continuing to provide periodic updates of our analyses of economic well-being. Our next supplementary report will explore the sensitivity associated with the public consumption component of the LIMEW.

Dimitri B. Papadimitriou, *President*
September 2004

Introduction

Economic well-being refers to the command or access by members of a household over the goods and services produced in a modern market economy during a given period of time. The Levy Institute Measure of Economic Well-Being (LIMEW) is a comprehensive measure that is constructed as the sum of the following components: base money income (gross money income minus property income and government cash transfers), employer contributions for health insurance, income from wealth, net government expenditures (transfers and public consumption, net of taxes), and the value of household production.

Our previous work provided estimates of the LIMEW and its components for households in the United States, estimates of the LIMEW for some key demographic groups, and estimates of overall economic inequality. These estimates were compared with those based on the official measures (*see* Wolff, Zacharias, and Caner 2004 for more information regarding our concepts, sources, and methods). Some readers have questioned the sensitivity of our estimates to the particular types of imputation techniques that we use. This document explores the sensitivity of the LIMEW to the underlying assumptions on imputing income from wealth, a major component of the LIMEW. We provide new calculations for 1989 and 2000 that show that our initial major findings using the LIMEW hold up, generally, using alternative estimation procedures: mean income from wealth increases by decile, the share of mean income from wealth rises between 1989 and 2000, and inequality is higher in 2000 than 1989.

Wealth is an indispensable component of household economic well-being. In our concept of wealth, houses, a real asset, provide shelter and potentially appreciate in value. Financial assets can, under normal conditions, serve as a source of economic security. Liquid financial assets, such as bank accounts, temporarily serve to overcome periods of economic stress associated with job loss, sickness, or family dissolution. Households also receive income when they own real estate and financial assets. Although property income is included in money income, the annual income received from the ownership of assets is, in our view, an incomplete measure of the economic well-being derived from the ownership of those assets.

As discussed in previous publications, our approach to imputing income from wealth differs from the standard approach in two significant ways. First, we distinguish between home and nonhome wealth. Housing is a universal need and home ownership frees the owner from the obligation of paying rent, leaving an equivalent amount of resources for consumption and asset accumulation. Hence, benefits from owner-occupied housing are reckoned in terms of the replacement cost of services derived from it (i.e., the rental equivalent). Second, we modify the standard lifetime annuity method by accounting for differences in portfolio composition across households. Instead of using a single interest rate for all assets to compute the lifetime annuity value of a household's nonhome wealth, we use a weighted average of asset-specific and historical real rates of return, where the weights are the proportions of the different assets in a household's nonhome wealth.

Income from Wealth

Since information on wealth is not available in our main data source (Annual Demographic Survey [ADS]), it is generated via statistical matching of the ADS files with the Federal Reserve's Survey of Consumer Finances (SCF). From there, income from wealth is imputed. Two alternative assumptions can be used to impute income values for the home and nonhome components of wealth. We discuss below how these assumptions affect our results when one component is changed and everything else is held constant. The benchmark case corresponds to our original estimates using the LIMEW.

Assumption 1: In the benchmark case, we estimated the imputed rental cost by distributing the total amount of imputed rent on nonfarm, owner-occupied housing in the GDP (NIPA table 8.21, line 172) 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 by the Census Bureau (*see* DeNavas-Walt et al. 2003). The annuity value is already estimated by the Census Bureau and available in the ADS. In the benchmark case, the variation in income from home wealth is determined by the variation in house values, while under the first alternative assumption, the variation is due to the value of home equity, which depends on house values and the remaining mortgage principal.

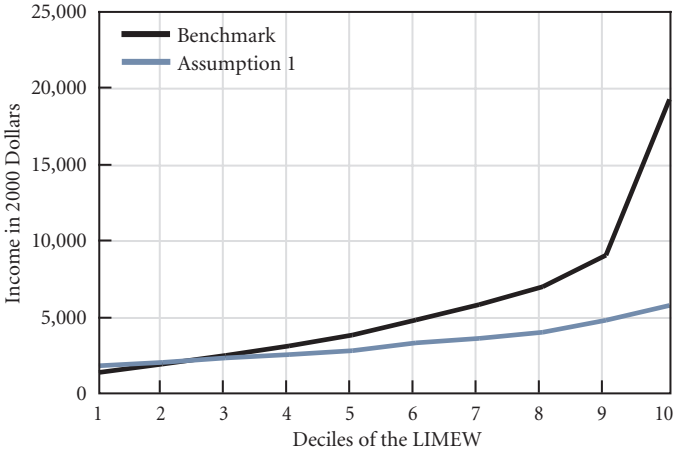
Assumption 2: In the benchmark case, income from nonhome wealth is estimated by the constant lifetime annuity flow generated by nonhome wealth, using average total real rates of return. In the sensitivity analysis, we assume that the sum of

property income (interest, dividends, and rent) and net realized capital gains represents the benefits generated by nonhome wealth (an assumption that reflects the current practice of the Census Bureau). Property income and realized capital gains and losses are also available in the ADS. Using the second alternative assumption, the variation among households in the income value of nonhome wealth is determined by the variation in actual income from assets, while in the benchmark case, it is due to the variation in three factors: the value of nonhome wealth, the life expectancy of wealth holders, and portfolio composition.

Figure 1 and Table 1 compare the mean values of income from the home component of wealth, by decile of the LIMEW, for the benchmark case and Assumption 1. They show that the imputed rental cost of homes in the benchmark case is higher than the annuity value of home equity in the alternative assumption for all but the lowest deciles, and that the differences by decile appear to be higher in 2000 than 1989. The overall mean values in the benchmark case in 1989 and 2000 are higher by 41 percent and 78 percent, respectively, compared to the alternative assumption. Figure 1 also shows greater divergence with increasing deciles between the benchmark case and alternative assumption. Higher deciles show higher house values and home ownership rates, but the annuity value of homes increases at a much slower pace due to mortgage debt.

Figure 2 and Table 2 compare the mean values of income from nonhome wealth for the benchmark case and Assumption 2. On average, the income from nonhome wealth estimated under the assumption of property income plus net realized capital gains, instead of the annuity value of nonhome wealth, is much lower—the overall mean is approximately 40 percent of the benchmark case. However, the annuity value of nonhome wealth is higher than property income plus net realized capital gains for only the two highest deciles in 1989 and the three highest deciles in 2000. As shown in Figure 2, the gap between the estimates widens drastically for the top decile. Again, the differences between the benchmark case and the second alternative assumption appear to be larger in 2000 than 1989. Another noteworthy difference, as shown in Table 2, is that, while the mean income from nonhome wealth increases continuously by decile for the benchmark case, it declines between the first and second deciles and increases thereafter for the alternative assumption. This trend occurs because property income receipts of households in the lowest decile are higher than those

Figure 1 Mean Income from Home Wealth, 2000



Notes: Benchmark case: our original estimates using the LIMEW.
Assumption 1: using return on home equity instead of imputed rental cost.

Source: Authorsí calculations

Table 1 Mean Income from Home Wealth, 1989 and 2000 (in 2000 dollars)

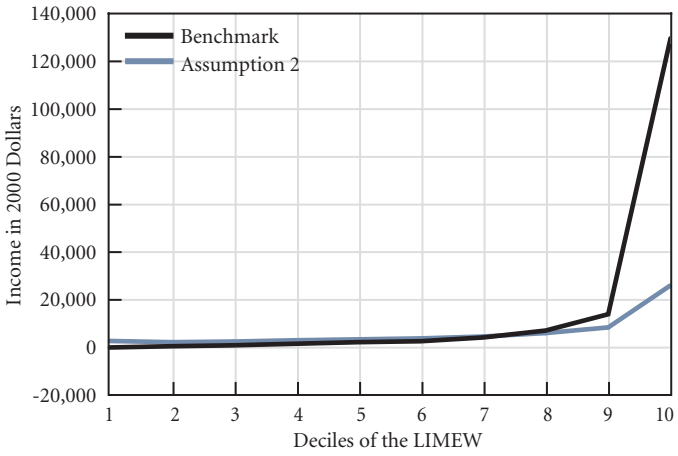
	1989		2000	
Decile	Benchmark	Assumption 1	Benchmark	Assumption 1
1	1,064	1,548	1,359	1,784
2	1,539	2,013	1,908	2,004
3	2,056	2,200	2,475	2,300
4	2,726	2,507	3,082	2,517
5	3,331	3,009	3,799	2,777
6	3,998	3,382	4,791	3,287
7	4,755	3,842	5,794	3,576
8	6,177	4,199	6,970	3,988
9	8,547	5,513	9,034	4,773
10	15,979	7,433	19,247	5,748
All	5,030	3,569	5,744	3,232

Notes: Benchmark case: our original estimates using the LIMEW.
Assumption 1: using return on home equity instead of imputed rental cost.

Source: Authors' calculations

in the second decile. In the benchmark case, however, households in the lowest decile have, on average, lower net worth than households in higher deciles. In fact, for these households, the value of all nonhome assets is less than the value of all debts. Therefore, these households have negative annuities.

Figure 2 Mean Income from Nonhome Wealth, 2000



Notes: Benchmark case: our original estimates using the LIMEW. Assumption 2: using property income plus net realized capital gains instead of the annuity value of nonhome wealth.

Source: Authors' calculations

Table 2 Mean Income from Nonhome Wealth, 1989 and 2000 (in 2000 dollars)

	1989		2000	
Decile	Benchmark	Assumption 2	Benchmark	Assumption 2
1	-701	2,873	-223	2,478
2	540	1,871	328	1,938
3	894	2,221	691	2,212
4	1,186	2,589	1,319	2,773
5	1,593	3,237	1,980	3,187
6	1,915	3,017	2,426	3,618
7	2,493	3,734	3,991	4,326
8	4,179	4,797	6,861	5,852
9	7,374	7,081	13,772	8,166
10	84,581	16,274	129,413	25,855
All	10,490	4,784	16,030	5,985

Notes: Benchmark case: our original estimates using the LIMEW. Assumption 2: using property income plus net realized capital gains instead of the annuity value of nonhome wealth.

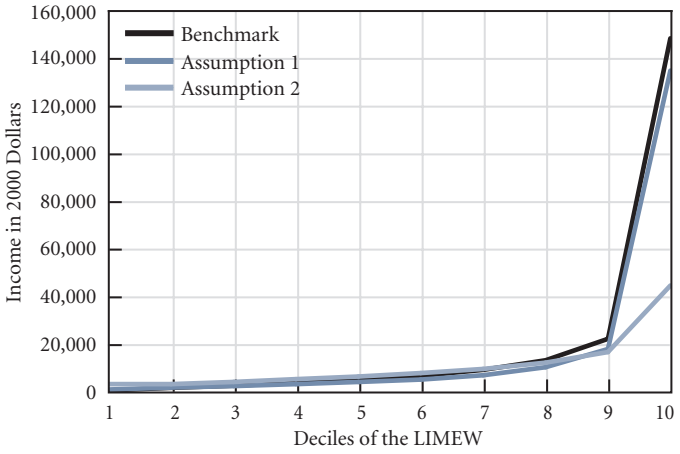
Source: Authors' calculations

We next compare the effects of Assumptions 1 and 2 on the mean value of income from wealth. As shown in Figure 3 and Table 3, the positive correlation between mean income from wealth and deciles of the LIMEW is unaffected, generally, by alternative assumptions. As expected, however, the alternative assumptions affect the level of mean income from wealth. The benchmark case yields the highest mean value of income from wealth compared to the alternatives for the higher deciles and overall. The overall mean value of income from wealth is affected much more by Assumption 2 than Assumption 1. Under the first assumption, the mean value of income from wealth is lower than the benchmark case throughout the distribution (with the exception of the lowest three deciles in 1989 and the lowest decile in 2000). In contrast, under the second assumption, it is substantially higher for the lowest decile, somewhat higher up to the seventh or eighth decile, and substantially lower for the highest decile.

Another finding that is unaffected by the alternative assumptions is that the share of income from wealth in the LIMEW increases between 1989 and 2000, due mostly to the growth in financial wealth. As shown in Figure 4, the share increases from 19.9 percent to 23.3 percent in the benchmark case. While the result for Assumption 1 is similar to the benchmark case, the result for Assumption 2 is a considerably lower share and a much smaller increase (from 13.6 percent to 14.0 percent). Once again, these results emphasize the fluctuations inherent in estimating benefits from nonhome wealth using different methods.

The finding that inequality in the LIMEW is higher in 2000 than 1989 is likewise unaffected by the alternative assumptions. Using either the Gini or Atkinson measures of inequality, a comparison shows that the degree of inequality under Assumption 1 is very close to the benchmark case, while that under Assumption 2 is considerably lower. As shown in Figure 5, the Gini coefficient is 41.6 in 2000 for the benchmark case and 41.0 and 35.1 for the alternative assumptions. Therefore, changing the way that nonhome (rather than home) wealth is treated has a crucial effect on the level of measured inequality. Nevertheless, all cases show a rise in inequality between 1989 and 2000. As shown in Table 4, the increase in the Gini coefficient is slightly greater for the benchmark case (2.8 points) than Assumption 1 (2.7 points), and much greater than Assumption 2 (1.7 points).

Figure 3 Mean Income from Wealth, 2000



Notes: Benchmark case: our original estimates using the LIMEW.
Assumption 1: using return on home equity instead of imputed rental cost. The benefit from nonhome wealth is estimated in the same way as the benchmark case.
Assumption 2: using property income plus net realized capital gains instead of the annuity value of nonhome wealth. The benefit from home wealth is estimated in the same way as the benchmark case.

Source: Authors' calculations

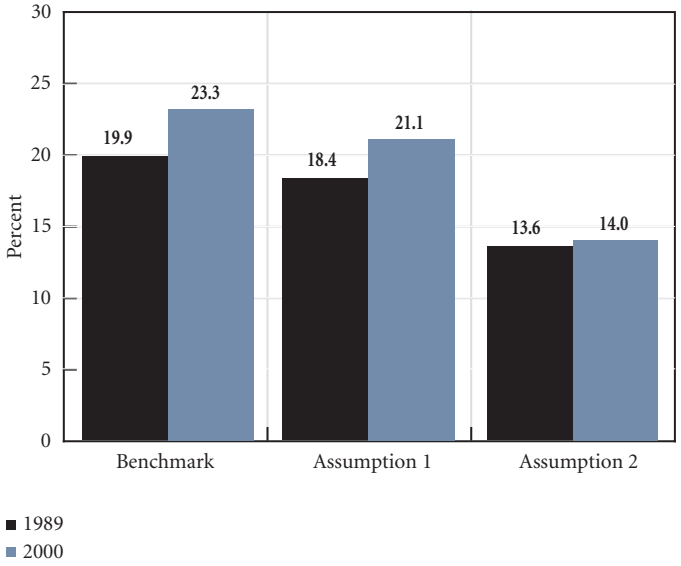
Table 3 Mean Income from Wealth, 1989 and 2000 (in 2000 dollars)

Decile	1989			2000		
	Benchmark	Assumption 1	Assumption 2	Benchmark	Assumption 1	Assumption 2
1	363	848	3,937	1,136	1,562	3,836
2	2,079	2,553	3,410	2,237	2,333	3,846
3	2,950	3,093	4,277	3,166	2,990	4,687
4	3,912	3,692	5,315	4,401	3,836	5,855
5	4,924	4,602	6,568	5,778	4,757	6,986
6	5,913	5,297	7,015	7,217	5,713	8,409
7	7,248	6,335	8,489	9,784	7,566	10,120
8	10,356	8,377	10,975	13,831	10,849	12,821
9	15,921	12,886	15,628	22,806	18,545	17,201
10	100,560	92,014	32,253	148,660	135,161	45,102
All	15,520	14,058	9,814	21,773	19,261	11,729

Notes: Benchmark case: our original estimates using the LIMEW.
Assumption 1: using return on home equity instead of imputed rental cost. The benefit from nonhome wealth is estimated in the same way as the benchmark case.
Assumption 2: using property income plus net realized capital gains instead of the annuity value of nonhome wealth. The benefit from home wealth is estimated in the same way as the benchmark case.

Source: Authors' calculations

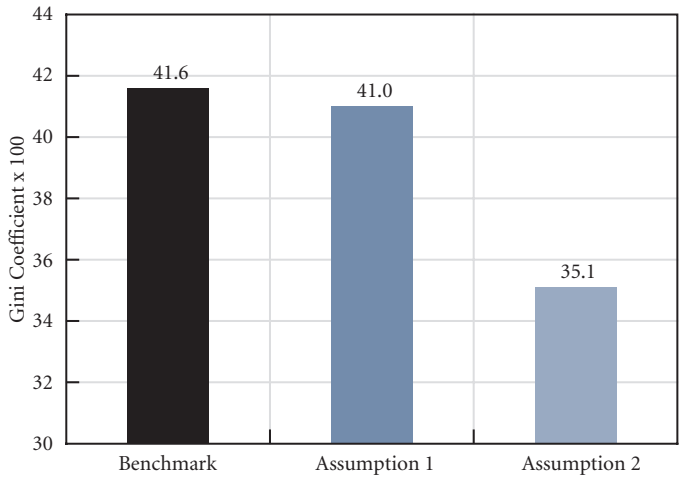
Figure 4 Share of Income from Wealth, 1989 and 2000



Notes: Benchmark case: our original estimates using the LIMEW.
Assumption 1: using return on home equity instead of imputed rental cost. The benefit from nonhome wealth is estimated in the same way as the benchmark case.
Assumption 2: using property income plus net realized capital gains instead of the annuity value of nonhome wealth. The benefit from home wealth is estimated in the same way as the benchmark case.

Source: Authors' calculations

Figure 5 The Effects of Alternative Assumptions on Inequality, 2000



Notes: Benchmark case: our original estimates using the LIMEW.
Assumption 1: using return on home equity instead of imputed rental cost. The benefit from nonhome wealth is estimated in the same way as the benchmark case.
Assumption 2: using property income plus net realized capital gains instead of the annuity value of nonhome wealth. The benefit from home wealth is estimated in the same way as the benchmark case.

Source: Authors' calculations

Table 4 The Effects of Alternative Assumptions on Inequality, 1989 and 2000

LIMEW	1989				2000			
	Gini x 100	Atkinson x 100			Gini x 100	Atkinson x 100		
		e = 0.25	e = 0.50	e = 0.75		e = 0.25	e = 0.50	e = 0.75
Benchmark	38.8	7.4	13.5	19.0	41.6	8.6	15.5	21.6
Assumption 1	38.3	7.2	13.2	18.6	41.0	8.3	15.1	21.0
Assumption 2	33.4	4.6	9.1	13.7	35.1	5.3	10.3	15.2

Notes: Benchmark case: our original estimates using the LIMEW.
Assumption 1: using return on home equity instead of imputed rental cost. The benefit from nonhome wealth is estimated in the same way as the benchmark case.
Assumption 2: using property income plus net realized capital gains instead of the annuity value of nonhome wealth. The benefit from home wealth is estimated in the same way as the benchmark case.

Source: Authors' calculations

Concluding Comments

As noted in the Introduction, our three major results using the LIMEW remain unchanged under the alternative assumptions: (1) mean income from wealth increases by decile (i.e., the positive correlation between the mean income from wealth and the mean value of the LIMEW across deciles is unaffected); (2) inequality is higher in 2000 than 1989; and (3) the share of income from wealth is higher in 2000 than 1989. A new finding from the sensitivity analysis is that changing the treatment of nonhome (rather than home) wealth has a significant effect on both the level and distribution of economic well-being. The differences are striking, especially at the very top of the distribution. Consequently, we argue that actual annual income generated by nonhome wealth (i.e., property income plus net realized capital gains) underestimates the benefit from those assets and that our initial method (the benchmark case) is better at capturing the value of total benefits from nonhome wealth.

The results of the sensitivity analyses give greater support to our standard LIMEW measure and show that the measure is robust under alternative imputations of income from wealth. We hope that these findings will give readers greater confidence in the LIMEW.

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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.

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