TRENDS IN AMERICAN LIVING STANDARDS AND INEQUALITY, 1959–2007

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We analyze the trends from 1959 to 2007 using an expanded measure of income called the Levy Institute Measure of Economic Well-Being (LIMEW). LIMEW is different in scope from the official U.S. Census Bureau measure of gross money income (MI) in that our measure includes non-cash transfers, public consumption, imputed income from wealth, and household production and nets out personal taxes. While the annual growth rates of median LIMEW and MI are very close over the whole period (0.67 and 0.63 percent), median LIMEW grew much faster than median MI after 1982 and much slower before. The Gini coefficient of MI is uniformly higher than that of LIMEW but both show about the same change from 1959 to 2007. Decomposition analysis shows that changes in inequality are driven to a large extent by non-home wealth in LIMEW and earnings in MI. While the racial gap in MI declined somewhat over the 1990s and 2000s, the racial gap in LIMEW actually widened a bit. Over the same years, while there was little change in the gap in MI between the elderly and non-elderly, the LIMEW of the elderly actually overtook that of the non-elderly.

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1. Introduction

In our parlance, *economic well-being* refers to the household's command over, and access to, the goods and services produced in a modern market economy during a given period of time. An income measure is normally used to measure its magnitude, since household income should, in principle, reflect the resources available to the household over a given period of time (typically, a year) for facilitating current consumption or acquiring assets. In the U.S. and many other advanced industrialized countries, gross money income (MI) is the standard measure used for this.

However, MI is known to have many shortcomings. The landmark report by the Canberra Group (2001), a group of international experts on household income statistics, highlighted many of these deficiencies. In particular, MI does not include

an estimate of in-kind social benefits, no valuation is included for household production or public consumption, property income is a limited indicator of the benefits from wealth holdings, and taxes are not netted out of the measure.

Our aim in this paper is to propose a more comprehensive measure of income, which we call LIMEW (the Levy Institute Measure of Economic Well-Being), that overcomes many of the shortcomings of MI.[1] Indeed, as far as we are aware, LIMEW is the most comprehensive measure of income that has been developed to date. We then use our measure, LIMEW, to analyze trends in living standards and inequality in the United States. Our belief is that the LIMEW measure will provide more reliable information on trends in living standards, the level of inequality, and trends in inequality than MI. In particular, we believe that money income gives a distorted picture of actual living standards. Since the state plays a crucial role in the direct provisioning of the "necessaries and conveniences of life" (to use Adam Smith's famous expression), such as public education and highways, we include estimates of public consumption in our measure. Since non-market household work, such as childcare, cooking, and cleaning, also provides the necessaries and conveniences of life, we also include household production in LIMEW. We also include estimates of long-run benefits from the ownership of wealth (other than homes) in the form of an imputed lifetime annuity, a procedure that, in our view, is superior to considering current property income from assets. Services derived from owner-occupied housing are valued by means of imputed rent in our measure.

It should be noted at the outset that LIMEW is a hybrid income–consumption measure. It is best thought of as a measure of resource availability, which provides both actual and potential consumption from market, private (household), and public sources. Base money income and income from non-home wealth clearly constitute resource availability that is, though underpinned by historical and institutional factors, largely determined by market forces. Imputed values of benefits from owner-occupied housing, non-cash government transfers, and household production serve as market substitutes. Imputed rent to owner-occupied housing is a substitute for the payment of actual rent for a similar dwelling (this, in fact, is the definition of imputed rent in national accounts). Non-cash government benefits such as Food Stamps, Medicare, and Medicaid provide payment for market services. Our definition of household production is based on the provision of market substitutes by the household such as gardening, childcare, and the like.

Major components of public consumption in our measure consist of public services that provide private goods—that is, those that are rival and excludable in consumption. These include education, health, water and sanitation, and the like. These are services for which equivalents exist in the private market. In fact, many of these services like water and sewerage are "bought" by individuals through a user fee. User fees charged by the government are indicative of a market transaction. We exclude defense spending and government overhead spending because there are no clear substitutes of private goods and because they do not provide any

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[1]Wolff and Zacharias (2007a) provided an overview of the LIMEW and discussed results for the U.S. in the 1990s using MI, LIMEW and the Census Bureau's broadest definition of disposable income.

direct service to specific groups of households. The latter criterion (the provision of services directly usable by households) is the motivation behind including the expenditures on some types of "impure" public goods such as highways, firefighting etc., in our measure.

There are three key motivations behind constructing LIMEW. First, a broader measure of income might be a better guide to actual trends in the standard of living. Again, it should be noted that the standard measure MI omits non-market household labor, the security value of wealth, in-kind social benefits, and public consumption. A second motivation is to study disparities among demographic groups. By focusing on money income, we might end up with a distorted picture of differences in living standards between one group and another. Third, LIMEW provides a more comprehensive measure of economic inequality. As one might expect, household production and public consumption are distributed much more equally than earnings among households. On the other hand, inequality in wealth is generally much higher than that of income or earnings. LIMEW allows us to estimate the net effect of including all three components, as well as compare their impact on overall inequality with that of earnings, taxes, and the like.

Our LIMEW measure is, of course, not the first attempt to construct an "extended income" concept. The concept of personal income and national income used by most government agencies and economists today is the so-called Haig–Simons–Hicks (HSH) concept of income (Haig, 1921; Hicks, 1939; Simons, 1938). According to the HSH definition, income in a given period of time is the maximum amount that can be consumed in that period while keeping real wealth unchanged. In particular, Hicks (1939, p. 172) argued: ". . . it would seem that we ought to define a man's income as the maximum value which he can consume during a week, and still expect to be as well off at the end of the week as he was at the beginning. Thus, when a person saves, he plans to be better off in the future; when he lives beyond his income, he plans to be worse off."

Hicks went on to argue that suppose that the opening nominal wealth of an individual is V. Then, with a fixed rate of interest, r, the condition that income, Y, equals the maximum that can be consumed while leaving nominal net worth intact can be stated as: $(V - Y)(1 + r) = V$. It follows that: $Y = V[1 - 1/(1 + r)]$. In so far as the individual expects the rate of interest to remain unchanged, he will have an income equal to Y in each year. Income for any given year is thus simply the discounted value of the income that could be expected for that year if none of the starting wealth is used for consumption, all income from wealth is reinvested, and no change occurs in capital value.[2]

More recently, the Canberra Group (2001) followed up the Hicksian notion of income to propose a measure of extended income. However, their notion is narrower in scope than ours. In particular, they argued in favor of retaining property-type income as their non-home wealth measure (identical to that of money income), whereas we use an imputed annuity to non-home household wealth. Like us, they also propose using imputed rent on owner-occupied housing. While they net out only income taxes, payroll taxes, and property taxes to obtain

[2]See Zacharias (2002) for more discussion of the Hicksian concept of income.

their measure of adjustable disposable income, we also net out consumption taxes. Moreover, while we also include an imputed value to public expenditures allocated to households, their proposed measure does not.

Smeeding and Weinberg (2001) proposed a measure very similar to the Canberra Group. Their "wealth" measure is property-type income plus net realized capital gains on wealth. Though this concept is broader than that of the Canberra Group, it is still narrower than ours since we implicitly include both realized and *unrealized* capital gains. Smeeding and Weinberg use the return on equity on owner-occupied housing to value home real estate, whereas we, like the Canberra group, use imputed rent on housing. While the former subtract only income taxes, payroll taxes, and property taxes to obtain their measure of net total income, we also net out consumption taxes. Finally, as noted above, we include public consumption in our measure, whereas Smeeding and Weinberg do not.[3]

The new results contained in this paper force us to rethink the conventional wisdom concerning trends in well-being, inequality, and intergroup differences in the postwar period. The new findings also highlight the important role played by the government sector in promoting increases of living standards among non-whites, single female families, the elderly, and the middle class. In fact, according to the LIMEW measure, the public sector was the leading source of the growth in the standard of living of the middle class between 1959 and 2007.

It will also turn out that changes in inequality are to a large extent due to periodic spikes in household wealth. In fact, for the population as a whole, the share of income from wealth in LIMEW almost *doubled* between 1959 and 2007. This by itself would have led to rising inequality in LIMEW. However, government spending and taxes played an important role in lowering inequality throughout the postwar period, and this development was partially offset by a rise in the share of net government expenditures in LIMEW from 1.8 to 5.6 percent, which mitigated the rise in inequality.

We begin by briefly describing the methodology for the LIMEW (Section 2). The sources of data and methods used are described in the Appendix. In the subsequent section (Section 3), we report on time trends in LIMEW and MI from 1959 to 2007. We chose the years used in the analysis on the basis of data availability (see the Appendix for details). Our concerns are twofold. First, how have living standards changed over time on the basis of our extended income concept and how can we account for its movements over time? Second, how does this compare with the "conventional wisdom" based on money income? Section 4 provides details on the two measures by race, marital status, and age. We also show how the different components of LIMEW contribute toward the overall income gap between groups. Section 5 reports on inequality trends. Concluding remarks are made in Section 6.

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[3]See also Wolff and Zacharias (2003) for further comparisons with alternative approaches used to measure extended income. Other approaches to measuring extended income include Citro and Michael (1995) in the context of measuring poverty, and Figari *et al*. (2009) in relation to the imputation of non-cash government benefits. Anther concept of income is developed by Becker (1965) in his original household model. His measure of "full income" allows an economic value to be attached to both non-market and leisure activities (we exclude a valuation of leisure time in LIMEW).

TABLE 1

Components of LIMEW and Average Values for 2007 (per household)

Derivation of LIMEW	2007 Estimates		
	Mean	Bottom 20%	Top 5%
Money income (MI)	67,622	23,819	228,015
Less: Property income and government cash transfers	8,760	5,252	22,254
Equals: Base income	58,863	18,567	205,761
Plus: Income from wealth	24,687	1,748	297,269
Annuity from non-home wealth	17,285	−551	263,262
Imputed rent on owner-occupied housing	7,402	2,298	34,006
Less: Taxes	16,242	6,272	66,723
Income taxes[a]	9,986	3,916	46,724
Payroll taxes[a]	2,332	1,034	10,105
Property taxes[a]	3,924	1,323	9,895
Plus: Cash transfers[a]	6,428	4,018	9,385
Plus: Non-cash transfers[a]	6,358	3,910	6,611
Equals: Comprehensive Disposable Income (CDI)	80,093	21,971	452,302
Plus: Public consumption	11,197	3,784	14,934
Equals: Post Fiscal Income (PFI)	91,290	25,755	467,236
Plus: Household production	24,040	6,062	62,057
Equals: LIMEW	115,330	31,817	529,292

Note: [a]Aligned with the NIPA estimates.

2. Components of LIMEW

LIMEW is constructed as the sum of the following components (see Table 1): base money income; income from wealth; net government expenditures (both cash and non-cash transfers and public consumption, net of taxes); and household production. We provide here a summary of the procedures used to construct LIMEW.[4]

Base money income is defined as MI *less* the sum of property income (interest, dividends, and rents) and government cash transfers (e.g., Social Security benefits) that are included in MI. Earnings make up the overwhelming portion of base money income. The remainder consists of pensions, interpersonal transfers, workers' compensation paid by the private sector, and other small items. In 2007, base income was a little over half of total LIMEW.

The second component is imputed income from the household's wealth holdings. MI includes interest, dividends, and rent. From our perspective, property income is an incomplete measure of the economic well-being derived from the ownership of assets. Owner-occupied housing yields services to their owners over many years, thereby freeing up resources otherwise spent on housing. Financial assets can, under normal conditions, be a source of economic security greater than that provided by property-type income.

We distinguish between home wealth and other 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

[4]See Wolff *et al.* (2004) and Wolff and Zacharias (2007a) for more details on the methodology used to construct LIMEW.

replacement cost of the services derived from it (i.e., a rental equivalent).[5] We estimate the benefits from non-home wealth using a lifetime annuity method.[6] We calculate an annuity based on a given amount of wealth, an interest rate, and life expectancy. The annuity is the same for the remaining life of the wealth holder and the terminal wealth is assumed to be zero (in the case of households with multiple adults, we use the maximum of the life expectancy of the head of household and spouse in the annuity formula). Moreover, in our method, we account for differences in portfolio composition across households. Instead of using a single interest rate for all assets, we use a weighted average of asset-specific and historic real rates of return,[7] where the weights are the proportions of the different assets in a household's total wealth.

By construction, the annuity valuation will assign a higher annuity value to persons with shorter remaining life expectancy. Thus, for the same level of wealth, the annuity value will be higher for older people than younger ones of the same sex and race, higher for men than women, and higher for blacks than whites. The rationale is *not* that economic well-being is greater the shorter the remaining years of life but rather that these valuations are consistent with a "perfect" annuity market. In particular, in such a market, competition among annuity suppliers should allow a person with fewer expected remaining years of life to obtain a higher annual payment than one whose life expectancy is longer. In 2007, income from home and non-home wealth (primarily the latter) made up a little over a fifth of LIMEW.

The third component is net government expenditures—the difference between government expenditures incurred on behalf of households and taxes paid by households. Our approach to determine expenditures and taxes is based on the social accounting approach (Hicks, 1946; Lakin, 2002: 43–46). Government expenditures included in LIMEW are cash transfers, non-cash transfers, and public consumption. These expenditures, in general, are derived from the National Income and Product Accounts [NIPA tables 3.12 and 3.15.5]. Government cash transfers are already treated as part of the money income of the recipients. In the case of government non-cash transfers, our approach is to distribute the appro-

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[5]This is consistent with the approach adopted in the U.S. national accounts.

[6]This method gives a better indication of resource availability on a sustainable basis over the expected lifetime than the standard bond-coupon method. The latter simply applies a uniform interest rate to the value of non-home wealth. It thereby assumes away differences in overall rates of return for individual households ascribable to differences in household portfolios. It also assumes that the amount of wealth remains unchanged over the expected (conditional) lifetime of the wealth holder. Wolff *et al*. (2005) explored the sensitivity of the LIMEW to the underlying assumptions on imputing income from wealth. In the benchmark case, income from non-home wealth was estimated by the constant lifetime annuity flow generated by non-home wealth, using average total real rates of return. In the sensitivity analysis, we assumed that the sum of property income (interest, dividends, and rent) and net realized capital gains represented the benefits generated by non-home wealth. Using the second alternative assumption, the variation among households in the income value of non-home wealth was determined by the variation in actual income from assets, while in the benchmark case, it was due to the variation in three factors: the value of non-home wealth, the life expectancy of wealth holders, and portfolio composition. The new calculations for 1989 and 2000 showed that our initial major findings using the LIMEW hold up, generally, using the alternative estimation procedure: 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.

[7]The rate of return used in our procedure is real total return (the sum of the change in capital value and income from the asset, adjusted for inflation). For example, for stocks, the total real return would be the inflation-adjusted sum of the change in stock prices plus dividend yields (see Table A1 for details).

priate actual cost incurred by the government among recipients of the benefit.[8] An alternative, the "fungible-value method", is based on the argument that the income value for the recipient of a given non-cash transfer is, on average, less than the actual cost incurred by the government in providing that benefit [see, for example, Canberra Group (2001: 24, 65)]. This valuation method involves estimating how much the household could have paid for the medical benefit, after meeting its expenditures on basic items such as food and clothing, with the maximum payment for the medical benefit set equal to the average cost incurred by the government.

We do not use the fungible-value approach because of its implication that recipients with income below the minimum threshold receive no benefit from the service (like health care). This implication is inconsistent with our goal of measuring the household's access to or command over products. Further, unlike the social-accounting method, the fungible-value method would not yield the actual total government expenditure when aggregated across recipients. Such a feature is incompatible with our goal of estimating net government expenditures using a consistent methodology.

The other type of government expenditure that we include in LIMEW is public consumption. We begin with a detailed functional classification of government expenditures. We then exclude certain items because they fail to satisfy the general criterion of increasing the household's access to goods or services. These items generally form part of the social overhead (e.g., national defense) and do not provide for a market substitute. Other expenditures, such as transportation, are allocated only in part to households because part of the expenditure is also incurred on behalf of the business sector. The household sector's share in such expenditures can be estimated on the basis of information regarding its utilization (for example, miles driven by households and businesses). The remaining expenditures (such as health) are allocated fully to households.

In the second stage, the expenditures for each functional category are distributed among households. The distribution procedures followed by us build on earlier studies employing the government cost approach [e.g., Ruggles and O'Higgins (1981)]. Some expenditures such as education, highways, and water and sewerage are distributed on the basis of estimated patterns of utilization or consumption, while others such as public health, fire, and police are distributed equally among the relevant population.[9]

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[8]In the case of Medicare and Medicaid—by far the biggest items in this list—the relevant cost is the "insurance value" differentiated by risk classes. We employed the risk classes used by the U.S. Census Bureau in calculating the imputed value of medical benefits. For both programs, average costs are differentiated by state. For Medicare, individuals are grouped into two categories: (a) age 65 and older; and (b) blind and disabled. For Medicaid, individuals are grouped into four categories: (a) age 65 and older; (b) blind and disabled; (c) age 21 and over, non-disabled; and (d) age less than 21, non-disabled (U.S. Bureau of the Census, 1993, pp. B3–B4).

[9]See Wolff and Zacharias (2007b) for more details. It should be noted that in the case of some expenditures, e.g., education, the government cost of provision need not coincide with the private or social benefit, as measured by an economic model. In that paper we also report the results of a sensitivity analysis to alternative assumptions regarding three components of public consumption: general public consumption, highways, and schooling. New calculations for 1989 and 2000 showed that our initial major findings remain intact using alternative estimation procedures: there was a positive correlation between public consumption and the LIMEW, overall inequality was higher in 2000 than 1989, and public consumption reduced inequality. The results showed that our measure of economic well-being was robust under alternative assumptions of public consumption.

The third part of net government expenditures is taxes. Our objective is to determine the actual tax payments made by households. We do not consider tax incidence in our analysis. Our approach is consistent with the government cost approach. We align the aggregate taxes in the Annual Demographic Supplement (ADS) (imputed by the Census Bureau) with their NIPA counterparts, as we did for government expenditures. We include only taxes paid directly by households, including federal and state personal income taxes, property taxes on owner-occupied housing, and payroll taxes (employee portion).[10] Taxes on corporate profits, on business-owned property, and on other businesses, as well as non-tax payments, are not allocated to the household sector because they are paid directly by the business sector. All told, net government expenditures amounted to 6 percent of LIMEW in 2007.

The fourth component of LIMEW is the imputed value of household production. Three broad categories of unpaid activities are included in the definition of household production: (1) core production activities, such as cooking and cleaning; (2) procurement activities, such as shopping for groceries and for clothing; and (3) care activities, such as caring for babies and reading to children. These activities are considered as "production," since they can be assigned, generally, to third parties apart from the person who performs them, although third parties are *not* always a substitute of the person, especially for the third activity.[11]

Our strategy for imputing the value of household production is to value the amount of time spent by individuals on the basis of its replacement cost as indicated by the average earnings of domestic servants or household employees (Kuznets *et al.*, 1941, pp. 432–33; Landefeld and McCulla, 2000).[12] Research suggests that there are significant differences among households in the quality and composition of the "outputs" of household production, as well as the efficiency of housework (Abraham and Mackie, 2005, ch. 3). The differentials are correlated with household-level characteristics (such as wealth) and characteristics of house-

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[10]We do not include the employer portion of the payroll tax since it is paid directly by businesses and is not included in personal income. Sales taxes, on the other hand, should be included here. However, because of a lack of pertinent information for the allocation of sales taxes in 1959, we are unable to include them in this time-series comparison.

[11]The third-party principle is sometimes ambiguous in the case of such personal care activities as shaving (see OECD, 1995, p. 11).

[12]Alternative approaches generally used are the opportunity cost and specialist wage approaches. As the name implies, the opportunity cost approach values the time spent by an individual on household production according to the wage that the individual is currently earning (or could potentially earn, in the case of non-employed individuals). In the specialist wage approach, household production tasks are categorized into a few groups (e.g., cooking, caring for children etc.) and valuation is performed according to the wages earned by workers in corresponding occupations (e.g., cooks, childcare workers etc.). Adding the value of household production to income, in general, would result in a less unequally distributed augmented income measure (i.e., income plus the value of household production), irrespective of the valuation method (see, e.g., Jenkins and O'Leary, 1996; Frazis and Stewart, 2011). However, the opportunity cost approach results in the least amount of inequality reduction because it "carries over" some of the inequality in hourly wages into the value of household production and the replacement cost approach results in the greatest amount of inequality reduction because the differences in the value of household production across households reflects only the differences in the hours spent on household production in this schema. The specialist wage approach tends to fall between the two. Our modified replacement-cost approach (discussed below) is closer to the opportunity cost approach in terms of its effect on inequality because our valuation schema "carries over" some of the inequality in money income.

hold members (such as the influence of parental education on childrearing prac-
tices, e.g., Yeung and Stafford, 2003). Therefore, we modify the replacement-cost
procedure and apply to the average replacement cost a discount or premium that
depends on how the individual (whose time is being valued) ranks in terms of a
performance index. Ideally, the performance index should account for all the
factors relevant in determining differentials in household production and the
weights of the factors should be derived from a full-fledged multivariate analysis.
Given the absence of such research findings, we incorporated three key factors that
affect efficiency and quality differentials—household income, educational attain-
ment, and time availability—with equal weights attached to each.[13] In 2007, house-
hold production made up about a fifth of LIMEW.

3. Trends in the Level and Composition of Income and Hours Worked, 1959–2007

We first look at trends in LIMEW. Over the entire 1959–2007 period, median
LIMEW grew at an annual rate of 0.67 percent (see Table 2). The choice of years
included in the empirical work is dictated almost solely by data availability,
particularly household wealth data (see the Appendix for details). There was a lot
of variation by sub-periods. Trends differ substantially between LIMEW and MI.
From 1959 to 1972, median LIMEW gained only 0.4 percent per year, while from
1972 to 1982 median LIMEW suffered an absolute decline. This was followed by
a growth burst from 1982 to 1989 of 2.8 percent per year. However, growth slowed
down from 1989 to 2007 when median LIMEW could muster only a 0.9 percent
advance per year.

How do these growth rates compare to the conventional measure MI? It is
first of note that by construction, MI has lower average values than LIMEW. The
median value of MI amounted to 59 percent of LIMEW in 2007. Over the entire
1959–2007 period, median MI grew at almost the same rate as median LIMEW,
0.63 per year compared to 0.67 percent per year. There are much larger differences
by sub-periods. In the 1959–72 period, median MI grew at an annual rate that was
four times higher than that of median LIMEW. From 1972 to 1982, both LIMEW
and MI fell in absolute terms, with LIMEW showing a rate of decline that was
twice as high. In contrast, in the years 1982 to 1989, both measures recorded very
high growth rates, but LIMEW grew almost twice as fast.[14] From 1989 to 2007,
median MI advanced at an annual rate of 0.2 percent, compared to 0.9 percent for
median LIMEW. Indeed, from 1959 to 1982, median MI showed an annual gain of
0.7 percent while median LIMEW declined in absolute terms by 0.1 percent per
year. In contrast, from 1982 to 2007, median MI grew by 0.6 percent per year while

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[13]It should be noted that in our approach household production is a function only of the imputed
time spent in these activities and the average cost of household workers (adjusted by income, education,
and time). This approach ignores the effect of technological improvements on household production.
Data on time use reported below indicates that time spent in household production has declined over
our time period of analysis. However, as Greenwood *et al.* (2005) argue, it may not be the case that the
output from these activities has correspondingly declined since the technology of household production
may have improved over time.

[14]Note the fact that 1982 is the bottom of a deep recession, which increases the measured growth
accordingly.

TABLE 2
TRENDS IN INCOME AND WORK, 1959–2007

	Median Values in 2007 Dollars						
	1959	1972	1982	1989	2000	2004	2007
Levy measures							
LIMEW	62,479	65,465	61,150	74,316	82,320	85,520	86,080
PFI[a]	40,759	49,762	47,915	55,658	62,067	63,786	65,030
CDI[b]	35,409	41,460	40,264	46,747	51,504	52,798	53,053
Official measure							
Money income (MI)	36,988	44,388	42,989	48,388	50,575	48,530	50,000
Addendum A: Equivalence scale adjustment							
Equivalent LIMEW	70,346	79,462	78,458	97,962	108,945	112,648	114,083
Equivalent MI	41,291	53,499	55,614	64,636	68,752	65,887	68,031
Addendum B: Annual hours of work (median values)							
Market work	2,150	2,105	2,080	2,236	2,340	2,080	2,080
Housework	2,617	2,065	2,155	2,103	2,063	2,123	2,014
Total	5,084	4,600	4,501	4,718	4,749	4,683	4,593

	Annual Percentage Change						
	1959–1972	1972–1982	1982–1989	1989–2000	2000–2004	2004–2007	1959–2007
Levy measures							
LIMEW	0.36	−0.68	2.82	0.93	0.96	0.22	0.67
PFI[a]	1.55	−0.38	2.16	1.00	0.69	0.65	0.98
CDI[b]	1.22	−0.29	2.16	0.88	0.62	0.16	0.85
Official measure							
Money income (MI)	1.41	−0.32	1.70	0.40	−1.03	1.00	0.63
Addendum A: Equivalence scale adjustment							
Equivalent LIMEW	0.94	−0.13	3.22	0.97	0.84	0.42	1.01
Equivalent MI	2.01	0.39	2.17	0.56	−1.06	1.07	1.05
Addendum B: Annual hours of work							
Market work	−0.16	−0.12	1.04	0.41	−2.90	0.00	−0.07
Housework	−1.80	0.43	−0.35	−0.18	0.73	−1.74	−0.54
Total	−0.77	−0.22	0.67	0.06	−0.35	−0.64	−0.21

Notes:
[a]PFI equals LIMEW less the value of household production.
[b]CDI equals LIMEW less the value of household production and public consumption.

median LIMEW advanced by 1.4 percent per year. Thus, median MI showed higher growth than median LIMEW in the 1960s and 1970s while the opposite was true in the 1980s, 1990s, and 2000s.

Table 2 also shows two alternative indices derived from LIMEW. If we strip away household production from LIMEW, we arrive at *post-fiscal income* (PFI). This measure reflects the effect of net fiscal incidence in an accounting sense; that is, it includes as part of household income all government expenditures incurred on behalf of households (public consumption and transfers), net of tax payments by households. PFI showed the highest growth between 1959 and 2007 of all the measures used here, 0.98 percent per year. Its higher growth in comparison to LIMEW reflects the fact that household production remained almost unchanged over these years. The difference is especially evident in the 1959–72 period when household production actually declined sharply in absolute terms.

The second measure derived from LIMEW is what we call comprehensive disposable income (CDI), which shows the effects of stripping away both household production and public consumption from LIMEW. Since public consumption grew faster than the other components of LIMEW, CDI showed a higher growth rate than LIMEW but a slower one than PFI.

Addendum A in Table 2 shows trends in the various measures of well-being in equivalent dollars (that is, income adjusted for family size and composition).[15] Both LIMEW and MI show a higher rate of growth when an equivalence scale adjustment is applied. This difference reflects the reduction in average household size over these years. Over the entire 1959 to 2007 period, median LIMEW and MI grew at almost the same rate, 1.01 and 1.05 percent per year, respectively. As before, median equivalent LIMEW displayed faster growth after 1982, while median equivalent MI grew faster before 1982.

3.1. *Hours Worked*

The story is not complete without considering hours worked (the obverse of leisure time). If LIMEW rises because households work more hours, then the actual increase in welfare is correspondingly lower (and conversely). Addendum B shows total hours worked. By our calculations, there was a noticeable decline in median annual hours worked from 1959 to 1982 (0.5 percent per year) that was almost entirely due to a large decline in housework. In contrast, there was a

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[15]The equivalence scale used here is the three-parameter scale employed in the U.S. Census Bureau's experimental poverty measures (Short, 2001, p. A-2), proposed originally by David Betson (1996). The scale equals $(A + 0.8 + 0.5 \cdot (C - 1))^{0.7}$ for single-parent households and $(A + 0.5 \cdot (C - 1))^{0.7}$ for all other households, with A and C representing, respectively, the number of adults and children. If we compare this scale to an alternative widely used scale of "square root of household size," we can see that the Betson scale allows less economies of scale among households with only adults. For example, a household with only two adults would need roughly 62 percent more income to be as well-off as a household with only one adult according to the Betson scale, while only 41 percent more according to the alternative scale. We can also see that the Betson scale treats children as requiring less than adults. For example, a single-parent household with one child would need approximately 51 percent more than a household with only one adult, and a household with two adults, 62 percent more according to the Betson scale; in contrast, the alternative scale would posit that both households would require the identical incremental amount relative to the household with only one adult. Additionally, it should be noted that the Betson scale postulates that the increase in household consumption is generally more when a child is added to a single-person family than when a child is added to a two-person family.
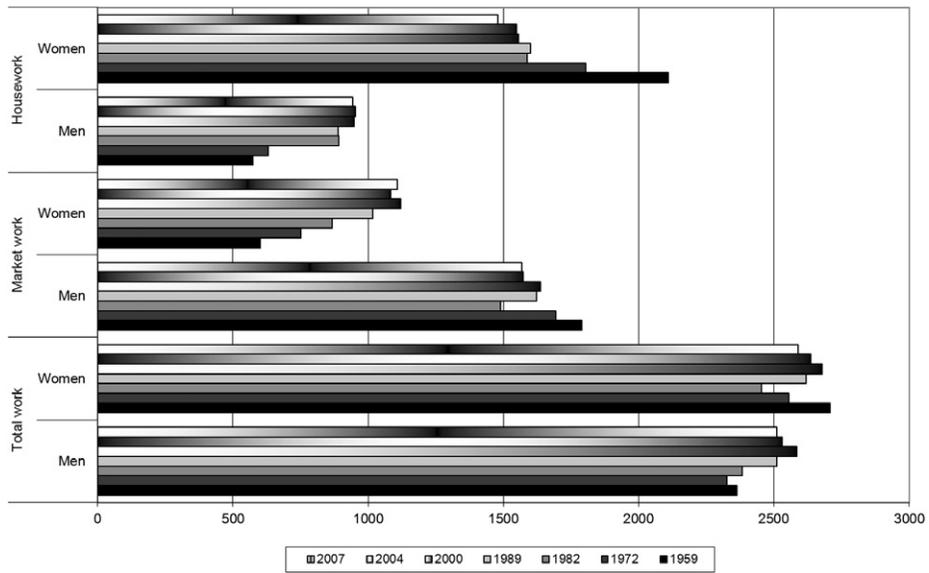
Figure 1. Total Hours of Annual Total, Market and Household Work, by Sex, 1959–2007 (mean values, persons 19 years and older)

marked rise in total hours worked from 1982 to 1989 (0.7 percent per year) that was entirely due to an increase in market work (i.e., the labor market).[16] There was little change from 1989 to 2000. But, between 2000 and 2007, total hours fell at the annual rate of 0.5 percent, due mainly to the sharp decline in market work and secondarily to a more modest reduction in housework. During the 1959–2007 period, median hours worked fell by 9.6 percent overall, as median market work fell by 3.3 percent and housework fell by 23.0 percent.

Figure 1 provides details about the *mean* annual hours worked by individuals. Each set of six bars in the figure represents individual years, and they are ordered such that the estimate for 2007 appears at the top and the estimate for 1959 appears at the bottom. It is clear that the large reduction in housework between 1959 and 1982 was attributable to a sharp drop of 521 hours in the housework of women (as shown in the set of bars that appear at the top of the figure). Men actually increased their housework by 319 hours (as shown in the set of bars that appear second from the top of the figure), but this did not compensate for the decline among women. Women further reduced their hours of housework by a modest 108 hours from 1982 to 2007, while men increased their hours of house-work by 50 hours.

Women nearly doubled their hours of market work from 1959 to 2007(as shown in the set of bars that appears third from the top of the figure). The increase was fairly uniform over each of four sub-periods to 2000, but there was a very slight decline between 2000 and 2007. Men, on the other hand, showed a decline in

[16]Again, the increase in labor market hours is due in part to comparing a recession year to an expansion year.

hours of market work throughout the period (as shown in the set of bars that appear fourth from the top of the figure). Total hours of work by men are shown in the set of bars at the bottom of the figure and total hours of work by women are shown in the set of bars that appear second from the bottom of the figure. Our estimates indicate that total hours of work by women declined by 120 hours, or 4.4 percent, from 1959 to 2007 because of the reduction in their housework, while that by men rose by 148 hours, or 6.3 percent, due to more time spent on housework. Another interesting finding is that in terms of total hours worked, women have consistently worked more hours than men. However, the differential has declined over time, with the ratio of total hours worked between women and men decreasing from 1.15 in 1959 to 1.03 in 2007.

Overall, average total hours (in contrast to median total hours) worked was down by 6 percent (estimates reported in this paragraph are not shown).[17] As a result, *mean* LIMEW per hour worked rose at an annual rate of 1.1 percent per year from 1959 to 2007. As a benchmark comparison, this figure contrasts with an annual growth of per capita GDP of 2.3 percent.[18]

3.2. *Changes in the Composition of LIMEW*

In order to explain time trends in LIMEW, it is crucial to understand how the relative importance of the various components of LIMEW shifted over time. For the household sector as a whole, the most notable change was a pronounced increase in the share of income from wealth in total LIMEW, which jumped from 11 percent in 1959 to 17 percent in 1989 and then surged to 22 percent in 2007 (see Table 3 and Figure 2A). Fluctuations over time reflected the growing magnitude of wealth, as well as the stock market boom in the late 1990s, the bust in the early 2000s, and its resurgence by the late 2000s.[19]

Another important development is the rise in the share of net government expenditures in total LIMEW, which increased from 1.8 percent in 1959 to 5.6 percent in 2007. The increase from 1959 to 1989 reflected mainly the sharp growth in transfers and, to a lesser extent, in public consumption that outstripped the growth in taxes. From 1989 to 2000, net government expenditure's share declined as increases in taxes outpaced those of transfers and public consumption. The sharp increase after 2000 was primarily due to the increase in government transfers (from 9.2 to 11.2 percent of LIMEW, or by $2,600 per household between 2000 and 2007) and in public consumption (from 9.0 to 9.8 percent of LIMEW, or by $1,300 per household), and to a lesser extent from the decline in taxes (from 16.6 to 15.4 percent of LIMEW, or by $700 per household).[20]

[17]Aguiar and Hurst (2007) also report similar results.
[18]This figure is based on the change in per capita GDP in 2005 chained dollars from NIPA (table 1.1.6, line 1; accessed 4/2/10).
[19]The 2007 figure is before the collapse of the stock market in 2008 and 2009 from the "Great Recession." On the surface, it might appear that the increase in income from non-home wealth from 1959 to 2007 might be due, in part, to the increase of the average age of the population over this period, since in our formulation the annuity will rise if remaining life expectancy falls. However, median life expectancy rose over this period as well, so that remaining life expectancy remained relatively unchanged over these years.
[20]All dollar values in the paper are in 2007 dollars, unless otherwise noted.

TABLE 3
COMPOSITION OF LIMEW BY QUINTILE, 1959–2007

	Quintiles					
	Lowest	Second	Third	Fourth	Highest	All
	Mean LIMEW (in 2007$)					
1959	20,124	42,837	62,482	83,248	149,682	71,675
1972	21,997	44,942	65,701	90,274	161,022	76,791
1982	23,586	42,852	61,329	84,352	156,293	73,684
1989	28,376	52,045	74,507	102,643	191,465	89,808
2000	30,552	56,670	82,535	116,393	266,444	110,520
2004	31,117	58,534	85,769	121,287	260,837	111,517
2007	30,819	59,093	86,224	121,426	272,392	113,994
	Share of base income in LIMEW (percent)					
1959	46.0	53.6	57.9	57.3	53.1	54.6
1972	42.2	52.2	61.8	64.4	57.9	58.5
1982	43.4	54.8	59.0	64.9	59.2	59.0
1989	50.9	54.2	57.4	60.8	55.5	56.6
2000	56.2	57.4	58.0	58.0	50.4	54.2
2004	53.4	52.3	53.0	53.0	51.4	52.2
2007	62.2	54.0	54.0	54.2	48.1	51.6
	Share of income from wealth in LIMEW (percent)					
1959	10.2	7.7	6.5	7.2	17.0	11.4
1972	7.1	8.5	8.4	9.1	22.8	14.5
1982	7.7	7.7	8.1	8.9	26.2	15.9
1989	6.9	7.4	8.2	9.9	27.6	16.7
2000	6.5	7.5	8.7	11.7	37.2	22.9
2004	4.2	5.8	7.4	10.2	32.1	19.2
2007	5.4	7.2	7.7	10.2	36.2	21.7
	Share of net government expenditures in LIMEW (percent)					
1959	11.3	7.6	3.2	1.4	−1.6	1.8
1972	27.9	17.2	7.0	2.2	−4.2	3.6
1982	30.7	18.6	12.0	3.6	−6.4	4.2
1989	21.4	16.0	10.2	4.0	−6.1	3.2
2000	18.0	13.2	9.7	5.3	−6.9	1.6
2004	22.2	19.1	15.1	11.3	−2.7	6.8
2007	13.0	17.9	14.7	10.7	−3.0	5.6
	Share of household production in LIMEW (percent)					
1959	32.5	31.1	32.4	34.1	31.5	32.3
1972	22.8	22.1	22.7	24.4	23.5	23.4
1982	18.2	18.9	20.9	22.6	21.0	20.9
1989	20.7	22.4	24.2	25.3	22.9	23.5
2000	19.3	21.8	23.5	25.0	19.3	21.4
2004	20.3	22.8	24.5	25.4	19.1	21.8
2007	19.4	20.9	23.5	25.0	18.8	21.1

Source: Authors' calculations.

In contrast, the share of base income in LIMEW, after rising from 55 percent in 1959 to 59 percent in 1982, fell off to 52 percent by 2007. The share of household production in LIMEW fell sharply, from 32 percent in 1959 to 21 percent in 2007. The overall change from 1959 to 2007 largely reflected the decline in hours spent on housework, particularly between 1959 and 1982 (see Table 2 and Figure 1).[21]

[21]It is also of interest is that while hours of housework averaged almost exactly half of total hours worked over the 1959–2007 period, household production accounted for only about a fifth of LIMEW over the period.
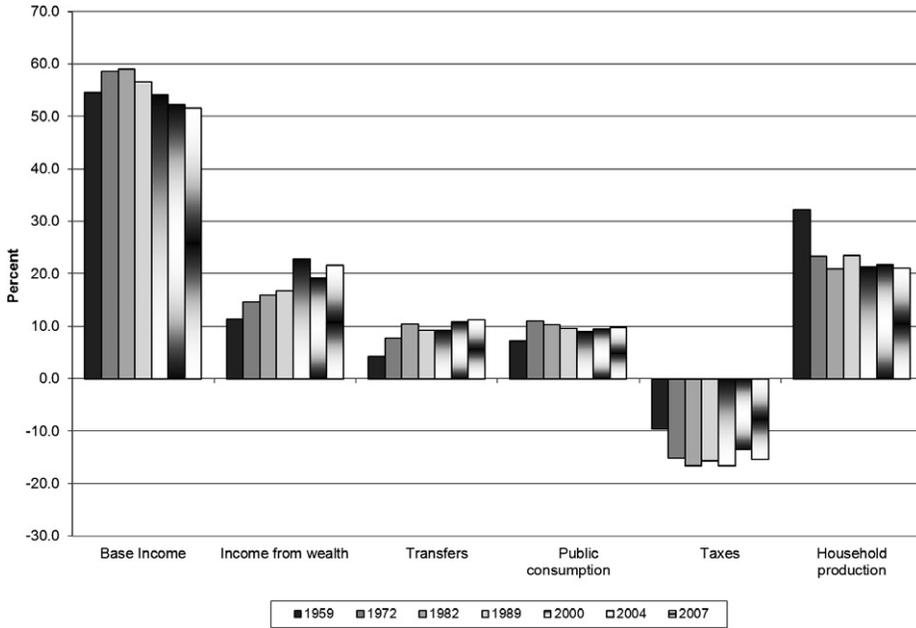
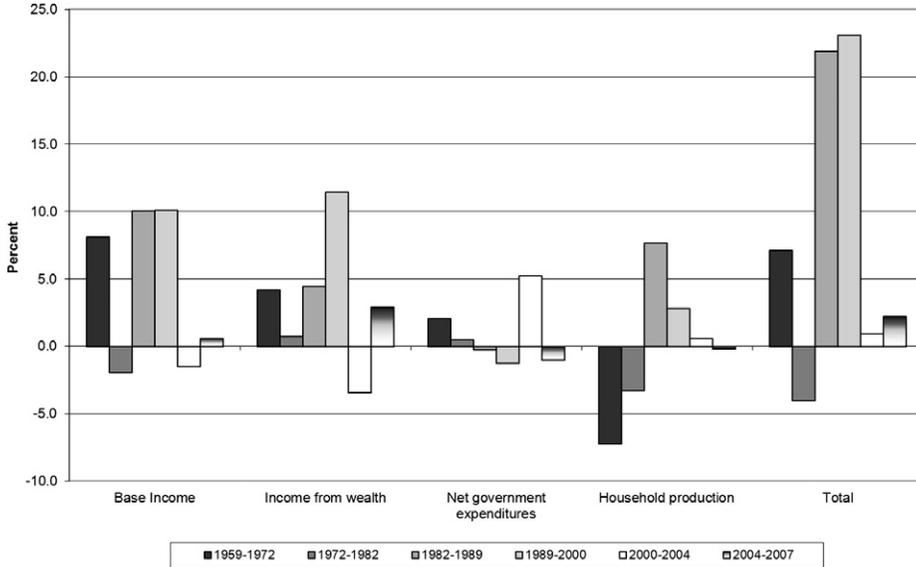Figure 2A. Composition of LIMEW, 1959–2007 (percent)

Figure 2B. Contribution to the Percentage Change in Mean LIMEW (percent)

There are marked differences in the relative importance of the components of LIMEW by LIMEW quintile (Table 3). Income from wealth becomes progressively more important by quintile, advancing from 5 percent of total LIMEW for the lowest quintile to 36 percent for the highest quintile in 2007. The opposite is the case for net government expenditures, which plummets from 13 percent of LIMEW for the lowest quintile to −3 percent for the highest. There is much less variation across quintiles in terms of base income and household production.

The most dramatic changes have taken place at the bottom and top of the distribution. For the bottom quintile, the share of net government expenditures, after surging from 11 percent in 1959 to 31 percent in 1982, declined to 18 percent in 2000 and then to 13 percent in 2007. In contrast, the share of base income jumped from 46 percent in 1959 to 62 percent in 2007. Likewise, the share of income from wealth dropped from 10 percent in 1959 to 5 percent in 2007),[22] while the share of household production also fell during the period, from 33 to 19 percent.

There was a sizeable increase in the share of income from wealth in LIMEW for the top quintile, which rose from 17 percent in 1959 to 36 percent in 2007. This was accompanied by a decline in the relative importance of base income and household production. Net government expenditure also fell off, from −1.6 percent in 1959 to −3.0 percent in 2007. In sum, for those at the bottom, there was greater reliance on base income (mainly labor income) over time, while for those at the top, income from wealth became significantly more important, and base income and household production less important.

3.3. *Sources of Growth of LIMEW*

We are now in a position to account for time trends in LIMEW over the years 1959 to 2007. Figure 2B shows the contribution to the overall change in *mean* LIMEW by component and sub-period. From 1959 to 1972, mean LIMEW grew by 7 percent. The main contributor was the growth in base income. The growth of income from wealth and net government expenditures also contributed positively, whereas household production had a decidedly negative effect (−7.3 percentage points). Between 1972 and 1982, mean LIMEW fell by 4 percentage points. The growth in income from wealth and net government expenditures made positive contributions (0.7 and 0.5 percentage points, respectively) but these were offset by declines in base income (−2 percentage points) and household production (−3.3 percentage points). The slow growth in LIMEW from 1959 to 1982 is traceable primarily to a substantial decline in household production (33 percent).

From 1982 to 1989, mean LIMEW surged by 22 percent. The main contributors were the growth in base income and household production, while income from wealth made a more modest contribution. Mean LIMEW surged another 23 percent between 1989 and 2000, mainly due to the growth of base income and that of income from wealth. Mean LIMEW then increased by 0.9 percent between 2000 and 2004 because of a 5.2 percent jump in net government expenditures, offset by declines in base income and income from wealth, while household production

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[22]This large decline can be traced to the rising share of debt in the household portfolio of the bottom quintile.

made only a small contribution. From 2004 to 2007, mean LIMEW rose by 2.2 percent. The main reason was a large contribution from income from wealth of 2.9 percentage points, reflecting the recovery in the stock market. Base income also made a small positive contribution, while net government expenditures and household production made negative contributions. In sum, from 1982 onward, the rapid gains in LIMEW were attributable primarily to substantial gains in income from wealth (111 percent) and net government expenditures (106 percent), in addition to smaller boosts from household production (56 percent) and base income (36 percent).

Over the entire 1959–2007 period, mean LIMEW registered a 59 percent increase, of which 47 percent (not percentage points!) emanated from the growth in base income and 39 percent from the gains in income from wealth. Gains in net government expenditure contributed 12 percent, whereas household production made virtually no contribution.

3.4. *The Middle Class*

We now turn to a closer examination of the changes in the third quintile of the LIMEW distribution, because the trends in the mean value of LIMEW for this quintile provide a close approximation to the changes in the median LIMEW for all households. Focusing on the mean LIMEW for the third quintile allows us to assess the roles played by different components of the LIMEW in the well-being of the average household. The third quintile is sometimes considered the "middle class," and we follow that convention here.

As noted before, median LIMEW in 1982 was slightly lower than in 1959. The same pattern is also observed for mean LIMEW for the third quintile. The decline in the latter was partially due to the decline in household production from 32 to 21 percent or by $7,000 (see Tables 3 and 4, and Figure 3). Decreases in housework hours and the unit value of housework represented 28 and 72 percent of the decline, respectively (estimates not shown). This decline was partially offset by the robust growth in net government expenditures, which climbed from 3 to 12 percent of LIMEW, or by $5,300. Another reason for sluggish growth in LIMEW over this period was the drop in base income between 1972 and 1982, (from 62 to 59 percent, or by $4,400), that wiped out the $4,400 gain in the 1959–72 period.

The composition of LIMEW for the middle quintile remained relatively stable from 1982 to 1989 and the very high rate of growth of the mean LIMEW of the middle quintile (22 percent) was due to relatively balanced growth in all four components. In particular, average base income for the middle quintile rose by $6,600, and household production increased by $5,200. Most of the gain (98 percent) in household production was due to a rise in the unit value of housework.

The growth of the mean LIMEW of the middle quintile slowed between 1989 and 2000. The composition of LIMEW of the middle quintile was also relatively stable over this period and the slowdown was attributable to the reduced growth of all components. However, between 2000 and 2004, the growth of mean LIMEW of the middle quintile slowed to a crawl, gaining only 3.9 percent. Over these years, the composition of LIMEW changed dramatically in favor of net government expenditures, which rose by $4,900, while base income and income from wealth

TABLE 4

CONTRIBUTION BY COMPONENT TO THE CHANGE IN LIMEW AND MI OF THE MIDDLE QUINTILE, 1959–2007 (percent)

	1959–1972		1972–1982		1982–1989		1989–2000		2000–2004		2004–2007		1959–2007	
	LIMEW	MI	LIMEW	MI	LIMEW	MI	LIMEW	MI	LIMEW	MI	LIMEW	MI	LIMEW	MI
Base Income	7.1	10.5	−6.7	−7.0	10.7	12.4	6.9	6.0	−3.0	−3.6	1.3	2.5	16.6	23.4
Income from wealth	2.3	2.2	−0.9	2.2	1.9	0.6	1.5	−1.9	−1.1	−1.3	0.4	0.4	4.1	1.7
Home wealth	1.6		−0.5		0.5		−0.6		−0.6		−0.1		−0.3	
Non-home wealth	0.7		−0.3		1.4		2.1		−0.4		0.5		4.4	
Net government expenditures	4.2	8.0	4.1	3.9	0.5	−0.3	0.6	3.1	6.0	3.3	−0.3	−2.2	17.1	18.0
Transfers	5.3		4.1		0.7		2.0		2.7		1.3		17.9	
Public consumption	4.5		−0.6		2.0		1.6		0.6		0.8		9.5	
Taxes	−5.6		0.6		−2.2		−3.0		2.7		−2.3		−10.3	
Household production	−8.5		−3.2		8.5		1.8		2.0		−0.9		0.1	
Total	5.2	20.7	−6.7	−0.9	21.5	12.7	10.8	7.2	3.9	−1.6	0.5	0.6	38.0	43.2
Addendum: Decomposition of the changes in the value of household production														
Total change ($2007)	−5,298		−2,099		5,185		1,369		1,643		−738		61	
Contribution (percentage) to the change from:														
Change in hours	−45.4		8.1		2.6		−15.5		31.2		94.8		3,231.1	
Change in unit value	−54.6		−108.1		97.4		115.5		68.8		5.2		−3,331.1	

Notes:
Middle class refers to the third quintile of the measure. The numbers shown in the line labeled "Total" refer to the percent change in the third quintile's average between the two years.
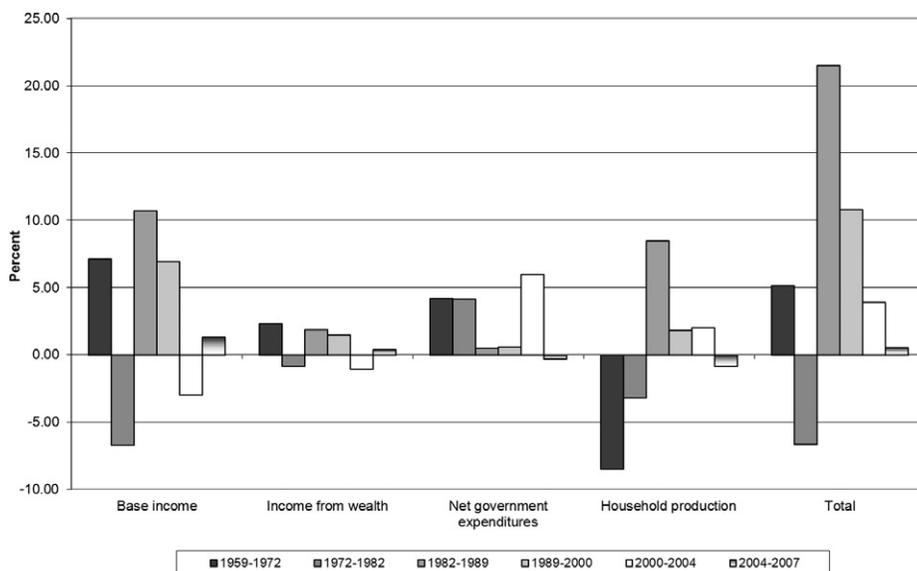Contributions of individual components add up to the total.

Figure 3. Contribution to the Percentage Change in the Third Quintile's Mean LIMEW (percent)

declined by $2,500 and $900, respectively. These trends were largely reversed from 2004 to 2007, with net government spending showing negative growth and base income and income from wealth showing positive gains. However, household production also declined over these years, and mean LIMEW grew by only 0.5 percent.

Mean LIMEW of the middle quintile grew by 38 percent (as about the same as median LIMEW for all households) over the 1959–2007 period. Of this gain, 17.1 percentage points (or 45 percent) was due to the increase in net government expenditures (Table 4 and Figure 3) in the form of an increase in transfers (18 percentage points) and public consumption (10 percentage points), while an increase in the tax burden subtracted 10 percentage points. The increase in base income added another 17 percentage points to the growth in LIMEW of the middle class, while gains in income from wealth contributed only 4 percentage points. Household production barely made any contribution toward the growth of middle class LIMEW over the period. Table 4 also presents a growth decomposition of the average MI for its middle quintile. For MI, 54 percent of its 43 percentage point gain was attributable to the growth of base income and 42 percent to increased cash transfers.

According to the LIMEW measure, the public sector was the leading source of the growth in the standard of living of the middle class between 1959 and 2007. We already saw (Table 3) that the share of net government expenditures in the LIMEW of the middle quintile rose dramatically from 3 to 15 percent between 1959 and 2007. Government expenditures for the middle class grew much faster than their LIMEW over the period: as a percentage of LIMEW, expenditures rose by 17 percentage points from 12 to 29 percent between 1959 and 2007. Much of

this increase was driven by the growth in transfers which, as a percentage of LIMEW, rose from 4 to 16 percent over the period, an increase of 12 percentage points. In turn, two-thirds of the increase in the percentage share of transfers in LIMEW occurred as a result of the expansion of transfer programs which did not exist in 1959 (Medicare, Medicaid, and Earned Income Tax Credit (EITC), etc.). Public consumption, the other type of government expenditures, also increased much faster than LIMEW but slower relative to transfers. This was reflected in its percentage share of LIMEW, which rose from 8 to 13 percent between 1959 and 2007. Out of the 5 percentage points increase in the share of public consumption in LIMEW, 3 percentage points came from the increasing share of education expenditures in LIMEW.

The increase in labor income was a close second to net government expenditures in contributing to the growth in the standard of living of the middle class between 1959 and 2007, while gains in income from wealth were a distant third. In contrast, the two leading factors accounting for the gain in *mean* LIMEW for all households were increases in base income and gains in income from wealth. According to MI, most of the growth in middle class living standards was due to rises in labor earnings over the period.

4. Demographic Differences in LIMEW and MI

We next look at disparities in well-being between population groups based on the following characteristics of the householder: race/ethnicity, age, and marital status.[23] We measure these by the ratio of mean values.[24]

4.1. *Racial Differences*

LIMEW and MI both show almost exactly the same gap between non-whites and whites in 2007, a ratio of three-quarters (Figure 4A).[25] In the case of LIMEW, the racial gap is attributable mainly to a huge differential in income from wealth ($23,700) and secondarily to a difference in base income ($13,800). On the other hand, non-whites had a decided advantage in net government expenditures ($11,400, exclusively from public consumption and taxes), which partially offset their relative disadvantage in income from wealth and base income (Figure 4B).

In 1959, the mean LIMEW of non-whites equaled 64 percent that of whites. The ratio grew rather steadily to 81 percent in 1989, then fell back to 76 percent in 2007. In contrast, the ratio of mean MI between non-whites and whites rose almost continuously from 58 percent in 1959 to 74 percent in 2007.

A major reason behind the decline of the relative mean LIMEW of non-whites during the 1990s and 2000s was the growing wealth gap. Income from wealth of

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[23]In the years prior to 1980, the husband was always designated as the "head" or householder in married-couple families in the Census Bureau surveys. Since then, the householder is the person in whose name the housing unit is owned or rented. If it is owned or rented jointly by a married couple, then the householder may be either the wife or the husband.

[24]We prefer to use the mean values rather than median values because it allows us to decompose the difference between subgroups into individual components. However, we will also note the median values where appropriate.

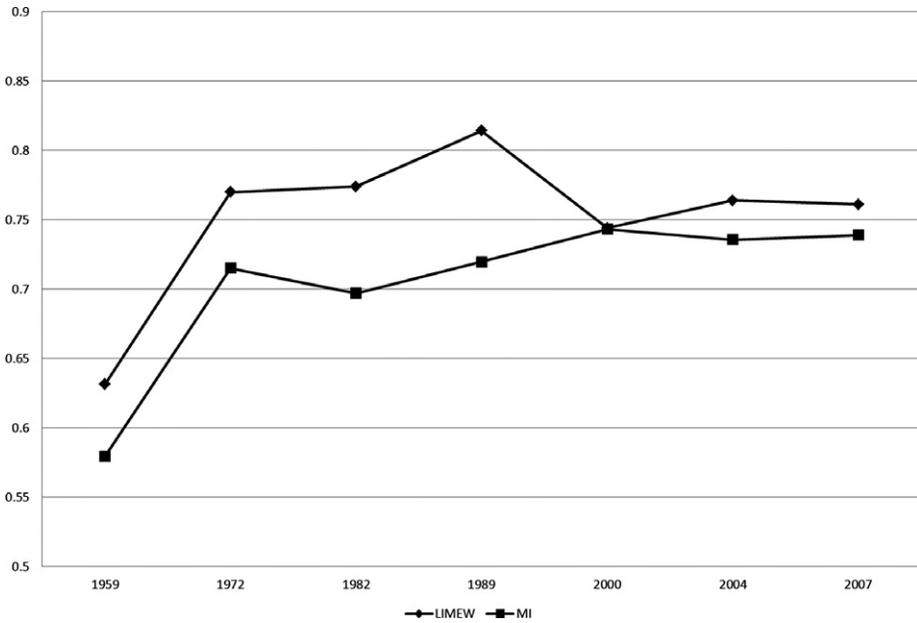[25]"Whites" are defined here as non-Hispanic whites. "Non-whites" refers to everyone else.

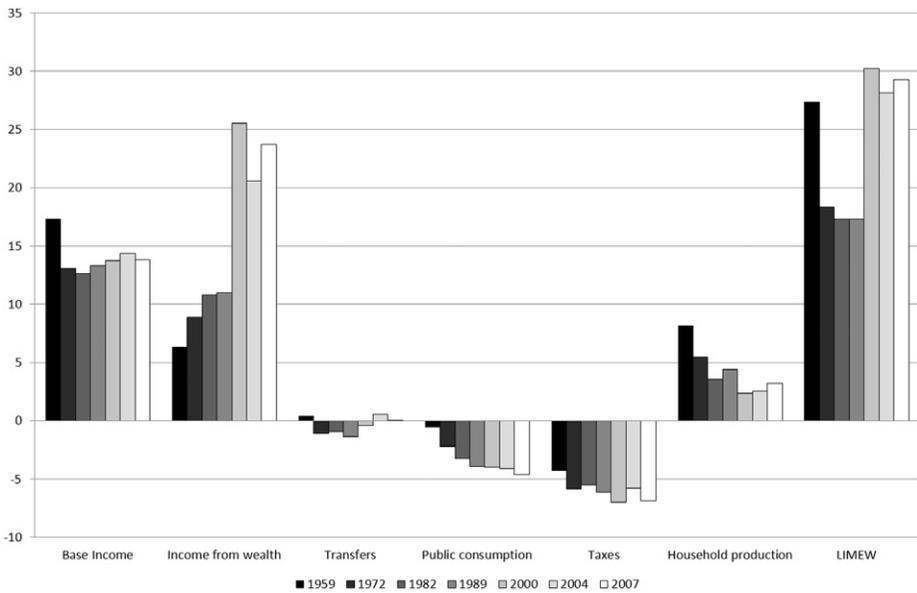Figure 4A. Non-White/White Ratio of Mean Measures, 1959–2007

Figure 4B. White/Non-White Gaps in LIMEW Components, 1959–2007 ($1,000s, 2007)

non-whites was $6,300 less than that of whites in 1959; the gap increased to $11,00 in 1989 and then to $23,700 in 2007, thus offsetting the trend toward greater parity in the other components (see Figure 4B). In fact, the gap in all other components narrowed (or moved in favor of non-whites) over the four decades. The gap in base income fell from $17,300 in favor of whites to $13,800. The gap in government transfers changed from $400 in favor of whites in 1959 to $100 in favor of whites in 2007. The gap in public consumption rose from $500 to $4,600 in favor of non-whites, and the gap in household production fell from $8,100 to $3,200 in favor of whites between 1959 and 2007. The gap in the tax burden increased from $4,300 to $6,900.

It is of note that public consumption favored non-whites more than whites, largely reflecting the higher educational expenditures incurred on their behalf, which, in turn, was due to the higher number of children in the average non-white household. On the other hand, the value of household production was higher for whites in all years because the hourly replacement cost of household production was greater, which was due, in turn, to the larger average money income and educational attainment of white families. This relationship held despite the fact that over time white households went from spending more hours on household production than non-white households to significantly less.

4.2. *Differences by Marital Status*

Both LIMEW and MI show a very wide gap between families with a single-female householder ("single females") and families with a married householder ("married couples"), and this gap, moreover, widened over time (see Figure 5A).[26] In 2007, single females had an average money income that was less than half that of married couples; LIMEW paints a better picture with the ratio of mean values between single females and married couples of 0.63. The difference in results reflects the importance of net government expenditures for single females. Time trends are also striking. The ratio of mean LIMEW between single females and married couples declined over time, from 0.73 in 1959 to 0.63 in 2007. MI also shows a similar decline, with the ratio falling from 0.63 to 0.49.

In 2007, the average LIMEW for single females was lower by roughly $55,700 (see Figure 5B).[27] Favoring married couples were the gaps in base income ($41,500), income from wealth ($23,500), and household production ($15,800). On the other side of the ledger, married couples paid, on average, $14,500 more in taxes and received $5,600 less in transfers and $5,000 less in public consumption. The advantage in net government expenditures for single females amounted to $25,100.

We can now see why the gap in mean LIMEW between single females and married couples rose sharply over time. Between 1959 and 2007, the gap in mean LIMEW widened by $33,800. Of this, $21,500 was ascribable to the increased gap

[26]We include only family households in this comparison, thus leaving out households with only one person and households with only unrelated individuals (e.g., roommates or unmarried partners).

[27]The size of the difference can perhaps be appreciated by considering the following statistic: in 2007, the median annual earnings of average full-time, full-year, male worker was $45,113, and the corresponding mean value was $58,335.
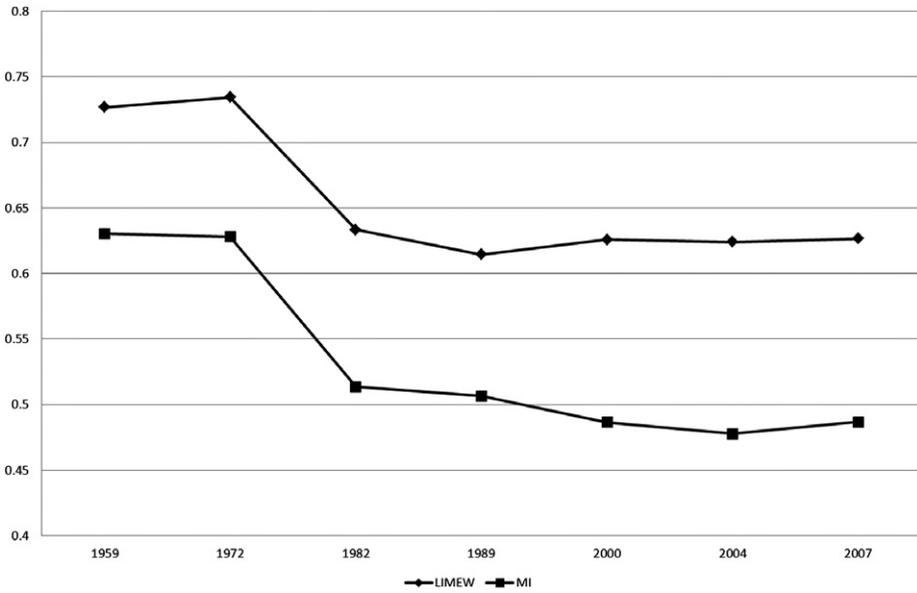
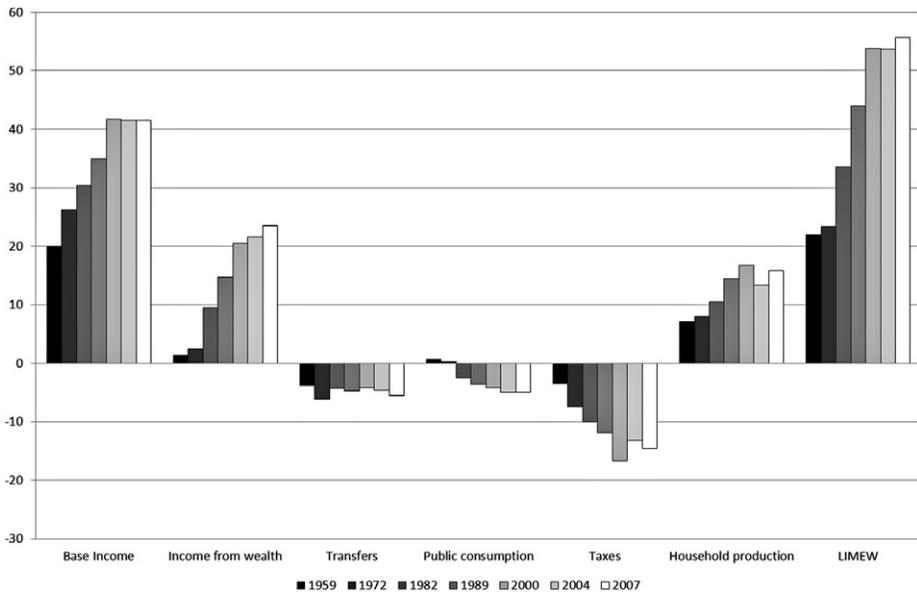Figure 5A. Single Female/Married Couple Ratio of Mean Measures, 1959–2007

Figure 5B. Single Female/Married Couple Gaps in LIMEW Components, 1959–2007
($1,000s, 2007)

in base income, $22,100 to the widening gap in income from wealth, and $8,700 to the increased gap in household production. Offsetting the increase was a large relative gain for single females in public consumption ($5,700), and particularly in taxes paid ($11,100), though government transfers contributed only a very small reduction in the total gap. All in all, the relative increase in net government expenditures for single females lowered the gap by $18,600 (or by 55 percent)!

4.3. *Differences by Age Group*

We next examine the income of the elderly in comparison to non-elderly households. It is at first striking that according to LIMEW, elderly households were 10 percent better off than non-elderly households in 2007 (see Figures 6A and 6B). In contrast, the average MI of the elderly was only 60 percent that of the non-elderly in the same year. Why the huge difference? According to the LIMEW measure, the base income of the elderly in 2007 stood at only 32 percent of the non-elderly. However, income from wealth (largely non-home wealth) was much higher among the elderly and made up $32,600 of the difference. Net government expenditures (particularly higher transfers and lower taxes) made up almost the entire remaining gap, a difference of $27,400.

Over time, the elderly made huge gains on the non-elderly in terms of LIMEW. Indeed, the mean LIMEW of the elderly relative to the non-elderly climbed from 0.79 in 1959 to 1.10 in 2007. MI showed a different time trend, with the mean MI of the elderly relative to the non-elderly dropping considerably between 1959 and 1972 from 0.58 to 0.51 and then rebounding to 0.60 in 2007.

The gap in mean LIMEW between the elderly and non-elderly in absolute terms changed from $14,300 in favor of the non-elderly in 1959 to $11,200 in favor of the elderly in 2007 (Figure 6B). In 2007, the non-elderly had a substantial advantage in terms of base income and a more moderate advantage in terms of public consumption and household production. However, the elderly were way ahead in terms of income from wealth (a difference of $32,600), government transfers ($24,500), and taxes paid (non-elderly paid $10,800 more in taxes). The difference in income from wealth reflects the fact that the LIMEW includes the annuity value from non-home wealth as income, which is quite high for the elderly owing to a greater amount of accumulated wealth and a shorter remaining life expectancy. Transfers also helped raise the LIMEW of the elderly much more than they do for the non-elderly, reflecting the large share of age-based entitlement programs (Social Security and Medicare) in total transfers. Taxes also fall much more on the non-elderly because of the former's larger taxable income.[28]

Of the $25,500 reduction in the mean LIMEW gap between the elderly and the non-elderly from 1959 to 2007, $23,400 was due to the increase in the gap in income from wealth. The other large contributors to reducing the LIMEW gap were government transfers ($17,000) and taxes paid ($6,500). The increased gap in base income between the non-elderly and elderly ($20,600 in favor of the former) helped to moderate the reduction in the overall gap.

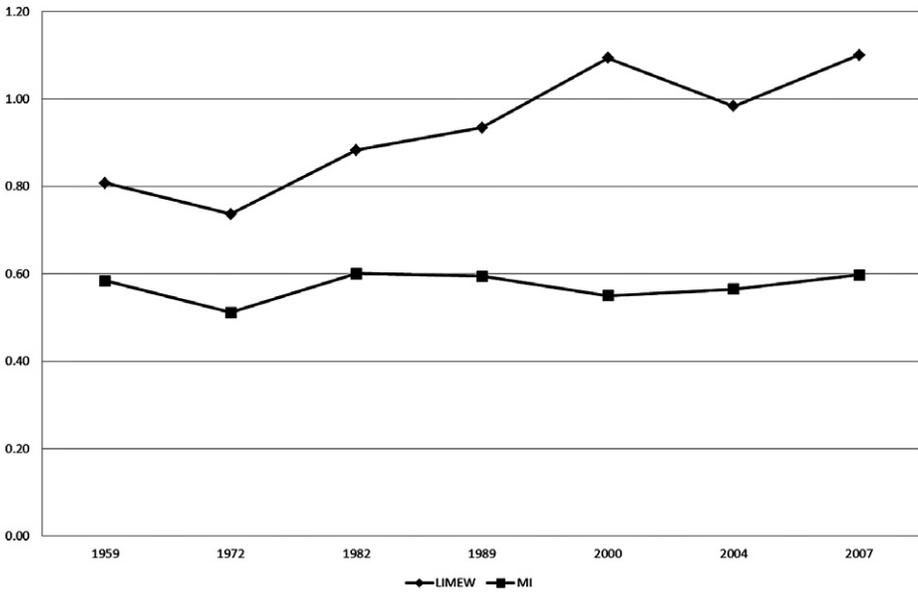[28]Most of Social Security income is excluded from taxable income.

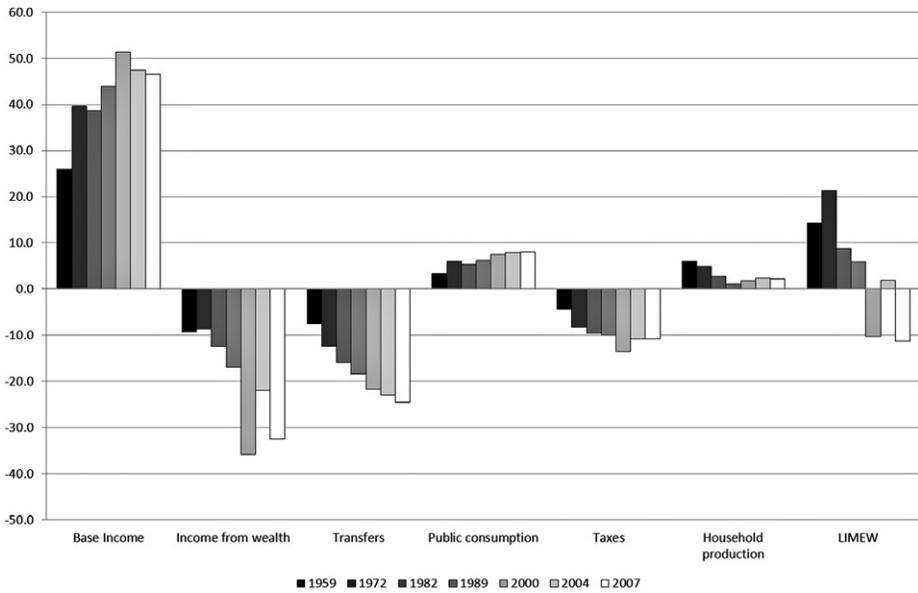Figure 6A. Elder/Non-Elder Ratio of Mean Measures, 1959–2007

Figure 6B. Non-Elder/Elder Gaps in LIMEW Components, 1959–2007 ($1,000s, 2007)

TABLE 5

SHARE OF EACH QUINTILE AND THE TOP 5% IN AGGREGATE INCOME
(IN PERCENT), 1959–2007

	Quintiles					
	1	2	3	4	5	Top 5%
1959						
LIMEW	5.6	12.0	17.4	23.2	41.8	17.1
MI	3.4	10.9	17.3	24.3	44.0	17.3
1972						
LIMEW	5.7	11.7	17.1	23.5	41.9	16.8
MI	3.7	9.7	17.4	25.2	43.9	16.2
1982						
LIMEW	6.4	11.6	16.6	22.9	42.4	17.6
MI	4.0	10.1	16.6	24.7	44.7	16.4
1989						
LIMEW	6.3	11.6	16.6	22.9	42.6	17.5
MI	3.9	9.7	16.2	24.5	45.6	17.0
2000						
LIMEW	5.5	10.3	14.9	21.1	48.2	23.5
MI	3.6	8.9	14.8	23.1	49.7	21.8
2004						
LIMEW	5.6	10.5	15.4	21.7	46.8	22.6
MI	3.4	8.7	14.7	23.3	50.0	21.6
2007						
LIMEW	5.4	10.4	15.1	21.3	47.8	23.1
MI	3.4	8.7	14.8	23.5	49.6	21.0

Note: Quintiles and the top 5% for each income measure are defined with respect to that income measure.

5. ECONOMIC INEQUALITY

As the final part of our analysis, we turn our attention to overall inequality. We investigate differences in measured inequality among our various measures, trends over time, and the sources of rising inequality.

It is striking that the income shares of the middle three quintiles were lower in 2007 than in 1959 in both the LIMEW and MI distributions (see Table 5).[29] The change in the division of the economic pie favored the top quintile and the top 5 percent far more than the bottom quintile. The bottom quintile showed a slight drop in its share of total LIMEW but no change in its share of total MI, while the top quintile's share of aggregate LIMEW and MI went up by 6.0 and 5.6 percentage points, respectively.

The increase in the share of the top quintile and the top 5 percent was relatively moderate in terms of both aggregate LIMEW and MI from 1959 to 1989, followed by a big surge from 1989 to 2000, and then little change between 2000 and 2007. The bottom quintile also saw modest growth in its share until 1989, but lost ground thereafter. In all the years studied here, the top quintile fared better according to MI than LIMEW in terms of its share in the overall pie (50 versus 48 percent in 2007) and the bottom quintile received a larger share in LIMEW than

[29]The quintiles of each income measure are defined by ranking households according to that measure. Therefore, in general, a given quintile of LIMEW need not be made up of the same households as the same quintile of MI.

TABLE 6

ECONOMIC INEQUALITY BY MEASURE, 1959–2007 (GINI COEFFICIENT × 100)

	1959	1972	1982	1989	2000	2004	2007
Levy measures							
LIMEW	36.1	36.3	36.0	36.3	42.3	41.0	42.0
PFI[a]	38.9	37.9	36.8	37.9	44.7	43.8	44.6
CDI[b]	41.1	40.7	39.5	40.6	47.8	47.0	47.9
Official measures							
MI	40.3	40.7	40.9	41.8	46.0	46.5	46.2
Equivalence scale adjusted measures							
Equivalent LIMEW	32.8	31.7	30.8	31.9	38.2	36.5	37.8
Equivalent MI	40.1	38.9	39.1	40.0	44.1	44.5	44.3

Notes:
[a]PFI equals LIMEW less the value of household production.
[b]CDI equals LIMEW less the value of household production and public consumption.

MI (5.4 versus 3.4 percent in 2007). However, with the exception of 1959, the top 5 percent had a higher share of the total in LIMEW than MI. This reflects, in the main, the greater inequality at the top in LIMEW due to our treatment of income from wealth. In fact, in 2007, income from wealth comprised 56 percent of the LIMEW of the top 5 percent (see Table 1).

The decline in the income share of the middle class (the third quintile) between 1959 and 2007 was similar in LIMEW and MI (2.3 and 2.5 percentage points, respectively). The share of the second quintile fell by 1.6 percentage points in LIMEW and 2.2 percentage points in MI, while that of the fourth quintile fell by 1.9 and 0.8 percentage points in LIMEW and MI, respectively. The most pronounced declines in the shares of the middle three quintiles happened during the 1989–2000 period, though the 2000–04 period was almost as bad in terms of LIMEW and slightly worse in terms of MI for the second and third quintiles.

Consistent with the data on quintile shares, MI shows a larger degree of inequality than LIMEW according to the Gini coefficient (see Table 6). The lower inequality in LIMEW compared to MI is primarily due to the inclusion of public consumption and household production. A comparison of the inequality in CDI, which excludes public consumption and household production, with that of MI shows this point clearly because both measures have practically identical Gini coefficients from 1959 to 1989 but that of CDI is larger in the later years. The Gini coefficient for PFI, which equals LIMEW minus household production, lies between that of LIMEW and CDI.

Equivalence-scale adjustment lowers measured inequality in both LIMEW and MI. This is not surprising in light of the well-known correlation that exists in the data between household size and income. The bottom rungs of the income distribution tend to have more single-person households and smaller families than the higher rungs. Additionally, in the case of LIMEW, public consumption and household production display strong positive correlation with household size. Consider, for example, households with school-age children. The single largest component of public consumption is public education, for which we have imputed per-pupil expenditures as a part of LIMEW. Households with more school-age

children would, in general, have larger amounts of public consumption allocated to them. Similarly, hours spent on household production also tend to increase with both the number of adults and the number of children at home, thus producing a positive correlation between household size and value of household production.[30]

The Gini coefficients indicate a considerably higher level of inequality in 2007 than 1959 for both LIMEW and MI. This result is also consistent with the pattern of changes in quintile income shares discussed earlier. The increase was about the same for MI (5.8 Gini points) and LIMEW (5.9 Gini points).[31] Neither measure shows considerable change in inequality between 1959 and 1972. According to MI, almost all of the increase in inequality occurred from 1989 to 2000. In somewhat similar fashion, the LIMEW measure shows almost no change in inequality from 1959 to 1982, a modest rise from 1982 to 1989 (0.2 point increase), and then a large spurt of 6.0 points from 1989 to 2000, followed by little change between 2000 and 2007.

Decomposition of inequality by income components (or sources) is a standard technique used to assess the amount of inequality accounted for by individual components in the total amount of inequality (Lerman, 1999). The decomposition results are not conclusive evidence on causality. However, they do identify the contribution of individual components to overall inequality. The degree of inequality accounted for by a component is the product of that component's concentration coefficient and its share in income (Kakwani, 1977). The contribution of the components to the *change* in the Gini coefficient between two years is calculated as the difference between the contribution to inequality accounted for by that component in the later year and the earlier year (Table 7).

We begin by looking at the contributions of the various components of LIMEW to the level of overall inequality of LIMEW. In 2007, the leading contributor was base income, which accounted for 46 percent of the overall Gini coefficient for LIMEW. Income from wealth was second, accounting for 39 percent and followed by household production (19 percent). Net government expenditures actually made a negative contribution of –4.2 percent, mainly due to taxes, –14 percent.

A comparison with the decomposition of MI is useful. In 2007 base income, the first component of the two measures, accounted for 94 percent of the overall Gini coefficient for MI. The contribution of base income to the level of inequality was thus markedly lower in LIMEW than MI. The lower contribution is mainly due to the fact that base income constitutes a smaller share of LIMEW than of MI. The reason is that, as noted earlier, MI is considerably smaller in size than LIMEW and hence the lower share of base income (the component that is common to both measures) in the latter is to be expected. The concentration coefficient of

[30]A separate issue concerns the applicability of standard equivalence scales to income measures that include non-market components such as public consumption and household production. This is an area that requires further research.

[31]Time trends are quite similar for equivalence-scale adjusted measures. However, the reduction in measured inequality as a result of the equivalence-scale adjustment is larger for all the other years relative to 1959, perhaps reflecting the fact that the correlation between household size and income was relatively smaller in 1959. Consequently, the overall increase in measured inequality of the equivalent income measures between 1959 and 2007 was smaller than the corresponding unadjusted measures.

TABLE 7

Decomposition of Inequality by Income Source and Income Measure (Gini points · 100)

A. Contribution to Inequality

	1959	2000	2007
LIMEW			
Base money income	19.7	20.9	19.4
Income from wealth	6.4	17.1	16.5
Imputed rent	1.2	1.8	1.5
Annuities	5.2	15.3	14.9
Net government expenditures	−1.4	−3.9	−1.8
Transfers	0.8	1.0	1.4
Public consumption	1.8	2.4	2.7
Taxes	−3.9	−7.3	−5.9
Household production	11.4	8.2	8.0
Total	36.1	42.3	42.0
Money income			
Base money income	38.6	43.6	43.7
Property income	1.5	3.4	3.4
Transfers	0.2	−1.0	−0.9
Total	40.3	46.0	46.2

B. Contribution to the Change in Inequality

	1959–2000	2000–2007	1959–2007
LIMEW			
Base money income	1.2	−1.6	−0.4
Income from wealth	10.7	−0.6	10.1
Imputed rent	0.6	−0.2	0.4
Annuities	10.1	−0.4	9.7
Net government expenditures	−2.5	2.2	−0.4
Transfers	0.2	0.4	0.6
Public consumption	0.7	0.3	1.0
Taxes	−3.4	1.4	−2.0
Household production	−3.2	−0.2	−3.4
Total	6.2	−0.2	5.9
Money income			
Base money income	5.0	0.1	5.1
Property income	2.0	0.0	1.9
Transfers	−1.3	0.1	−1.2
Total	5.7	0.1	5.8

Notes: Contribution of each income source is expressed in Gini points multiplied by 100.
The numbers shown in the row labeled "Total" refers to the Gini ratio of the income measure.

base income is also lower in LIMEW than in MI. This difference reflects the fact that the correlation between the rank in the base income distribution and rank in the total income distribution is weaker in LIMEW than in MI.[32]

There are three forces that weaken the correlation. Net government expenditures in LIMEW heavily favor those at the bottom of the earnings distribution and

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[32]The concentration coefficient of an income source j, denoted as c_j can be expressed as: $c_j = r_j g_j$, where $r_j = \text{cov}(y_j, F)/\text{cov}(y_j, F_j)$, g_j is the Gini coefficient of income source, y_j is the amount of income from the income source, and F_j and F are the cumulative distributions of the income source and total income (Lerman and Yitzhaki, 1985). Since the Gini of base income is identical in both LIMEW and MI by construction, the difference in its concentration coefficient is solely due to the difference in the "Gini correlation" between the two variables, r_j.

those with no earnings at all. Second, while there is some amount of positive correlation between the value of household production and earnings (partly as a result of our valuation schema), household production still reduces the gap between earners and non-earners and can change the rankings of households in the distribution.[33] Third, as discussed above, income from non-home wealth is heavily skewed toward the elderly, a group with relatively low conventional income (MI).

With regard to the second component, the contribution of income from non-home wealth to overall inequality in LIMEW in 2007 was substantially higher (36 percent) than the contribution made by property income to MI inequality (only 8 percent). Both the concentration coefficient and income share were higher in LIMEW than MI. The lower share of property income in MI is partly a result of the well-known shortcomings of income surveys—namely, the underreporting of property income and lack of sufficient coverage of very high-income families. However, the more significant factor behind the difference in the share is the lifetime annuity method itself. The entire amount of non-home wealth is annuitized, including assets that do not yield any current income by their very nature (e.g. the cash surrender value of defined contribution pension plans) and assets that might have yielded no income or even generated losses in a given year (e.g. rental real estate). Furthermore, given the strong positive association between age and wealth, the average effective rate of return (i.e., the ratio of annuity to non-home wealth) will generally be higher than the average rate of return implied by the actual property income receipts.

The concentration coefficient of income from non-home wealth in LIMEW was also higher than that of property income in MI.[34] The reason appears to be the difference in the extent to which households in the different portions of the respective income distributions rely on this source of income. The richer households in the LIMEW distribution tend to have higher income from non-home wealth. In contrast, the richer households in the MI distribution tend to have higher labor earnings, rather than higher property income. As a result, the share of income from non-home wealth in total income tends to rise in a much steeper manner in the LIMEW distribution than the MI distribution. This difference explains the relatively higher concentration coefficient for income from non-home wealth in LIMEW in comparison to property income in MI.

The third component, net government expenditures, had a larger inequality-reducing effect in LIMEW (–4 percent) than transfers had in MI (–1 percent). The reason is that net government expenditures incorporate taxes, which reduce inequality.

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[33]Consider the following example of a household with no earnings and a household with some earnings. Assuming that both have positive hours of household production, an income measure that augments earnings with the value of household production would reduce the gap between the two households. The potential "re-ranking" effect of household production can be seen by considering an example of two households that have equal earnings but only one of them engages in household production. Earnings augmented by household production would now place one household behind the other in the distribution. While these are extreme examples, they do illustrate how the incorporation of household production can reduce gaps between households and change the rankings of households in the distribution.

[34]In contrast, the Gini coefficients for income from non-home wealth and property income are similar across the years studied here, around 0.91.

What are the factors accounting for the change in inequality of LIMEW and MI? With regard to LIMEW, by far the biggest contributor to rising inequality over the years 1959 to 2007 was income from wealth, particularly non-home wealth. This component accounted for 10.1 Gini points out of a total *increase* of 5.9 Gini points, or 171 percent. The other components made negative contributions—base income (−6 percent), net government expenditure (−6 percent), and household production (−58 percent).

In contrast, the contribution of base income to the inequality of MI grew between 1959 and 2007 and explained 71 percent of the change in the Gini coefficient for MI. The main reason was the increase in the concentration coefficient of base income (from 0.42 to 0.49). This was partly offset by a decline in the share of base income in total MI from 91 to 84 percent.

The amount of inequality contributed by income from non-home wealth to overall LIMEW inequality was 14.9 Gini points higher in 2007 than in 1959, mainly because its share of income more than doubled over the period, from 8 to 19 percent of LIMEW. In contrast, the contribution of property income to inequality in MI was only 3.4 Gini points higher in 2007 than in 1959. The reason is that though the concentration coefficient of property income increased sharply over these years, the share of property income in MI grew only slightly between the two years.

The evidence thus suggests that although LIMEW and MI show comparable increases in inequality over the 1959–2007 period, the principal source of the increase is different in the two measures: changes in the level and distribution of income from non-home wealth account for the bulk of the growth in the inequality of LIMEW, while for MI, base income accounts for by far the largest part in the increase in MI inequality.

Net government expenditures helped ameliorate the increase in inequality in LIMEW and transfers served the same function for MI. However, the moderating effect of net government expenditures appears to be more important in LIMEW in comparison to transfers in MI: a reduction of 1.8 Gini points between 1959 and 2007, compared to a reduction of 0.6 points in MI. In both cases the contribution of the component became *more negative* over time. In the case of LIMEW, the share of net government spending in total LIMEW advanced from 1.8 to 5.6 percent from 1959 to 2007, but while the concentration coefficient of transfers declined, that of public consumption increased and that of taxes fell. In the case of MI, the larger effect of transfers in the later years reflects both its increased share in total MI (from 5.1 to 11.3 percent) and the change in its concentration coefficient (from 0.051 to −0.054).

Household production was the largest single component restraining the growth of inequality of LIMEW between 1959 and 2007. The decline in its contribution (of 3.4 Gini points) stemmed entirely from the decline in its share of LIMEW, since its concentration coefficient actually showed a modest increase. The share of household production fell by 11 percentage points, from 32 percent in 1959 to 21 percent in 2007, while the concentration coefficient was 0.35 in 1959 and 0.38 in 2007. As noted before, there was a sizeable decline in the overall hours spent on household production activities and this development is mirrored in the fall in the share of household production in LIMEW.

During the 2000s (2000–07), LIMEW showed a slight decrease in inequality, while MI inequality increased slightly. However, the reasons are different in the two cases. In the case of LIMEW, there was a 1.6 Gini point decline in the contribution to inequality made by base money income, about equally a reflection of a decline in its concentration coefficient and its share in total LIMEW. This decline was offset by a 2.2 Gini point increase in the contribution made by net government expenditures. The smaller negative contribution made by net government spending to LIMEW inequality in the later year was due to a rise in both the concentration coefficient and the income share of transfers and public consumption, and a fall in the concentration coefficient (that is, a decrease in the progressivity) of taxes. For MI, base income contributed to the slight increase in inequality.

Our results also provide an important contrast with those of Piketty and Saez (2003). 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.[35] A key argument made by Piketty and Saez is that the surge in top income shares since the early 1970s was 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, pp. 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 MI, but no such decline occurred on the basis of LIMEW. We also find that according to MI, 87 percent of the increase in overall inequality was due to the rise of inequality of base income (mainly labor earnings) from 1959 to 2007. In contrast, according to LIMEW, base income actually made a *negative* contribution (−6 percent) to the increase in overall LIMEW inequality, while income from wealth accounted for 171 percent![36]

6. Conclusion

We find that median income grew sluggishly over the 1959 to 2007 period by any measure, particularly when compared to the annual growth in GDP per capita (2.3 percent). The annual growth rate in median LIMEW and MI were, respectively, 0.67 and 0.63 percent. When we exclude household production from LIMEW to obtain PFI, we obtain a somewhat higher 1.0 percent annual growth because household production itself showed almost no change in real terms over the period for the middle LIMEW quintile. In fact, median hours of housework fell by 23 percent, but this was almost exactly offset by an increase in the unit value of household work.

The congruence between LIMEW and the conventional measure, MI, in the rates of change in the median over the 1959–2007 period masks important differ-

[35]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 quintile 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 quintile is defined relative to the NIPA aggregate of personal income, after adjustments required for comparability with the AGI concept excluding realized capital gains.

[36]See Wolff and Zacharias (2009) for more details on the comparison over the 1989–2000 period.

ences by sub-period. Median LIMEW showed much slower growth from 1959 to 1982 than median MI. Subsequently, median LIMEW grew faster from 1982 to 2007. Trend differences in median well-being can be traced to differences in the composition of the measures. Household production—included in LIMEW but not in MI—contributed largely toward explaining the slower growth of the middle quintile's LIMEW in the 1959–82 period. A marked increase in net government expenditure (mainly a large increase in transfers) contributed substantially to the increase in the LIMEW of the middle quintile between 1982 and 2007.

For the population as a whole, the most notable compositional changes in LIMEW was the growth in the share of income from wealth, particularly between 1989 and 2000. Indeed, from 1959 to 2007, its share almost *doubled*. This by itself would have led to rising inequality in LIMEW. However, this development was partially offset by a rise in the share of net government expenditures in LIMEW from 1.8 to 5.6 percent, which mitigated the rise in inequality.

The compositional change differed between the top and bottom quintiles of the LIMEW. Between 1959 and 2007, households at the bottom became more reliant on base income (mainly consisting of labor income) and, somewhat, on net government expenditures. On the other hand, income from wealth more than doubled as a share of LIMEW for those at the top.

According to the LIMEW measure, the public sector was the leading source of the growth in the standard of living of the middle class between 1959 and 2007. The effect of net government expenditures in sustaining middle class living standards was particularly strong between 1959 and 1982 and between 2000 and 2007. Indeed, between 2000 and 2007, during which median LIMEW grew by only 0.6 percent per year, the increase in net government expenditures accounted for *134 percent* of the growth of LIMEW, as base income and income from wealth both contracted in absolute terms. The increase in net government expenditures of the middle quintile, in turn, was mainly due to gains in transfers and secondarily to increase in public consumption.

The LIMEW also provides a different picture of disparities among demographic groups than the conventional wisdom based on MI. Racial disparities in LIMEW decreased from 1959 to 1989, but then increased to 2000, while MI indicates that disparities lessened throughout these years. Both LIMEW and MI show almost no change in the racial gap between 2000 and 2007. The worsening racial gap during the 1990s according to the LIMEW measure is traceable mainly to strong relative gains enjoyed by white households in terms of household wealth.

Both measures show a very large gap in well-being between single female-headed families and married couples, as well as deterioration in the gap throughout the period. However, the gap is lower using LIMEW than MI. This difference, in turn, is traceable to the much greater importance of net government expenditures received by single females compared to married couples, which is reflected in LIMEW. Increasing gaps in base income and income from wealth explain most of the widening difference between the two groups according to the LIMEW measure.

The relative well-being of the elderly appears to be considerably better according to LIMEW than MI because of their higher income from wealth, non-cash transfers, and lower taxes. In fact, the elderly were 10 percent better off than the

non-elderly in 2007 on the basis of LIMEW. The elderly receive greater income from non-home wealth because of their greater amount of accumulated wealth and shorter remaining life expectancy. The inclusion of Medicare in LIMEW and the fact that tax rates are higher for the non-elderly also help explain the greater relative well-being of the elderly according to LIMEW. The trends in the relative well-being of the elderly are also different between the two measures because LIMEW showed an almost continuous improvement in the relative well-being of the elderly from 1959 to 2007, while MI showed virtually no change in the relative well-being of the elderly in 2007 as compared to 1959.

According to both MI and LIMEW, there was a substantial growth of inequality over the years from 1959 to 2007. Time trends were also similar for the two measures, though for different reasons. Both measures show a modest rise in inequality from 1959 to 1989 and then a large spike from 1989 to 2000 followed by little change through 2007. Decomposition analysis shows that income from non-home wealth made by far the largest contribution to the increase in inequality between 1959 and 2007 recorded for LIMEW. In contrast, in the case of MI, the principal factor behind the increase in inequality was the rising contribution from base income. These two factors were particularly important in explaining the inequality surge of their respective measures during the 1990s. Net government expenditures helped moderate the increase in inequality between 1959 and 2007 in the case of LIMEW.

During the 2000s, the Gini coefficient for LIMEW increased slightly. The small change in inequality over these years was due to two offsetting factors—a declining contribution to overall inequality from base income and a rising contribution from net government expenditures. The latter, in turn, was traced to a rise in both the concentration coefficient and the income share of transfers, a rise in the income share of public consumption, and a fall in the concentration coefficient (that is, a decrease in the progressivity) of taxes.

All in all, the government sector has made a remarkable contribution to sustaining middle class living standards, narrowing intergroup disparities and reducing inequality. Net government expenditures augmented the base income of non-whites by 30 percent in 2007 (compared to 5 percent for non-whites), that of single female females by *75 percent* (compared to 4 percent for married couples), that of the elderly by *128 percent* (versus 1 percent for the non-elderly), and that of the middle quintile by 27 percent (compared to 6 percent overall). The large relative contribution made by net government spending to the well-being of non-whites, single females, and the middle class offset to some extent their relative shortfall in terms of income from wealth, though for the elderly it compounded their substantial wealth advantage. Net government spending also helped restrain the growth of inequality before 2000 and helps to explain why inequality in LIMEW was uniformly less than that of MI.

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SUPPORTING INFORMATION

Additional Supporting Information may be found in the online version of this article:

Appendix: Data Sources
Table A1: Long-Term Average Rates of Return (in percent)

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