# Where Has All the Income Gone?

Middle American incomes rise substantially even while inequality increases

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Almost all the benefits	Since the mid-1970s,	The modern American
of economic growth since	however, income growth	economy distributes the
[the 1970s] have gone to	has been confined almost	fruits of its growth to a
a small number of people	entirely to top earners.	relatively narrow slice of
at the very top.	—Robert H. Frank,	the population.
—Robert Reich,	<i>NY Times</i> , March 9, 2008	—David Leonhardt,
Financial Times, Jan. 29, 2008		NY Times, April 9, 2008

The economic progress of middle-income households over the past generation is difficult to assess. Many recent reports portray stagnation—household incomes increased little, wages increased even less and rising expenses drove families into debt. In contrast, another set of reports describe large gains—income per person almost doubled, people are healthier and living longer, and the quality, quantity and variety of goods and services being consumed are greater than ever. It seems that life for middle America is stagnating at the same time it's getting much better.

This article is the second in a *Region* series that seeks to reconcile the apparent conflict between statistics indicating stagnation in standards of living and statistics indicating robust growth. The issue addressed here is whether income growth over the past three decades bypassed middle America and accrued almost entirely to the rich. I find that—contrary to many reports—middle America did quite well.

A theme of this series is that much of the apparent contradiction can be resolved by taking a closer look at the statistics being reported. A better understanding of the underlying data provides a more accurate assessment of the economic progress of middle America, which, in turn, is a critical input in the formulation of sound public policy.

The first article in the series (September 2007 *Region*) focused on hourly wages and compensation (wages plus benefits). The central findings were that hourly compensation increased more than hourly wages because nonwage benefits grew rapidly and that the price index used to adjust for inflation has a substantial impact on growth rates. The analysis showed that inflation-adjusted hourly compensation of middle Americans rose by almost 30 percent from 1975 to 2005.

But hourly compensation is just one part of the story. This article takes a closer look at annual household income growth over the past 30 years. Income here is from all sources, not just labor earnings. A forthcoming article will examine other factors related to standards of living—including



consumption, debt and income volatility.

A quick note before proceeding. The recent slowdown in the growth of the national economy has been extremely difficult for many individuals. Unfortunately, such downturns are an inevitable part of a dynamic market economy. Thirty years ago, the economy suffered a series of recessions that lasted through the early 1980s; the economy was characterized by widespread unemployment and high inflation.

While keeping in mind the hardships endured in such periods, I hope in this series to address a broader, longer-term question: Is the average standard of living for middle Americans still rising? More specifically, are cyclical job losses and income fluctuations occurring around a higher, or lower, average standard of living compared with a generation ago?

Let's take a look at the data on income growth and preview the main findings.

# Income gains mostly to the rich?

According to the U.S. Census Bureau, median household income adjusted for inflation increased a scant 18 percent over the past 30 years (see Chart 1).<sup>1</sup> In contrast, data from the Bureau of Economic Analysis (BEA) indicate that income per person was up 80 percent, almost doubling (see Chart 2). A widely reported explanation for these statistics is that the rich



# The household income of Middle America

• The U.S. Census Bureau reports that median household income stagnated from 1976 to 2006, growing by only 18 percent. In contrast, data from the Bureau of Economic Analysis indicate that income per person was up 80 percent.

Three data issues adversely impact reported median household income gains: the choice of price index, a change in the mix of household types and the measure of income used.

• After adjusting the Census data for these three issues, inflation-adjusted median household income for most household types is seen to have increased by 44 percent to 62 percent from 1976 to 2006.

reaped most of the benefits of economic growth over this period, while middle-income households gained little. Findings on rising inequality are consistent with this view.

These statistics appear quite compelling, but hiding in the background are some key issues that might alter the story. Average household *size* declined substantially during the past 30 years, so household income is being spread across fewer people. The mix of household types—married versus single, young versus old also changed considerably, so the "median household" in 2006 looks quite different from the "median household" in 1976. Finally, the measure of income used by the Census Bureau to compute household income excludes some rapidly growing sources of income.

The goal of this article is to examine the income gains made by middle American households over the past 30 years. The analysis requires a careful look at data, with the payoff being a more comprehensive picture of income gains by middle-income people. The analysis will also clarify how the modest growth in median household income is consistent with the large increase in income per person.

The main finding is that—after adjusting the Census Bureau data for three key factors—inflationadjusted median household income for most household types increased by roughly 44 percent to 62 percent from 1976 to 2006. The only household types with substantially lower growth were "working-age male householder without spouse present" and "male householder with children but without spouse," but these types constitute just 10 percent of all households. Household income inequality increased notably over this period; nonetheless, middle American households had substantial income gains.

Here is a preview of the key data issues that lead to the higher estimates of median household income growth.

(1) The price index used by the Census Bureau overstates inflation, and thus understates income gains, relative to a preferred price index.

(2) A changing mix of household types leads the overall median increase to understate the median increase of most household types.

(3) The Census Bureau measure of household income understates income growth by excluding some rapidly growing sources of income.





The remaining difference between the 44 percent to 62 percent increase in median household incomes and the 80 percent increase in BEA personal income per person appears to be largely attributable to an increase in income inequality. The findings in this article are consistent with recent research showing that the largest income increases occurred at the top end of the income distribution. However, the findings here are not consistent with the view that the incomes of middle American households stagnated over the past 30 years. Income for most middle American households increased substantially.

# Inflation-adjusted

The first step in most analyses of income growth is to adjust the income data for inflation. This procedure is meant to account for the declining purchasing power of the dollar over time. The phrase "adjusted for inflation" suggests that economists have agreed on one adjustment procedure. In fact, there are several measures of inflation, and the selection can have a substantial impact on reported growth in inflation-adjusted variables. (See the sidebar on page 29 for a more complete discussion.)

Since there is no one "correct" measure of inflation, a choice must be made on which price index is most



appropriate. Throughout this analysis, I use the price index for personal consumption expenditures (PCE deflator) for all inflation adjustments. This index uses the basket of goods and services that people consume each year, and it avoids some of the shortcomings of the consumer price indexes produced by the Bureau of Labor Statistics.<sup>2</sup> The PCE deflator is widely used by the Federal Reserve and macroeconomists. Using the PCE deflator, inflation-adjusted median household income rose by 26 percent from 1976 to 2006, compared to 18 percent using the CPI-based measure of inflation used by the Census Bureau.

*Key point:* Using the PCE deflator to adjust for inflation adds 8 percentage points to median house-hold income growth, raising the median increase to 26 percent.

### Household mix

The next step in the analysis—and it is a much bigger step—is to look at the impact of changes in the mix of households. Using households as a unit of measure (income per household) creates difficulties. Household size has changed over time; the average number of people per household declined from 1976 to 2006, so household income is being spread over fewer people.<sup>3</sup> The mix of household types (for example, married versus single) changed substantially. Finally, there is the odd statistical fact that almost 60 percent of people live in households with above-median income, and this percentage changes over time. Interpreting household statistics presents challenges.

I address these difficulties by examining how median household income has changed for specific types of households. This allows separation of the income gains made by each type from the impact of the changing household mix.

#### Breakdown by household types

A basic characteristic of a household is whether or not a married couple is present, and, if not, whether the "householder" is male or female.<sup>4</sup> Here households are divided into four types: "married couple," "female householder with no spouse present," "male householder with no spouse present," and "all other."<sup>5</sup> Each of these household types includes family members living in the household; so, for example, a female householder with no spouse present need not be a single female living alone.

Chart 3 shows how the mix of household types changed from 1976 to 2006. The fraction of married-couple households declined from almost two-thirds of all households in 1976 to one-half of households in 2006, while the fraction of male and female householders without spouses present increased.<sup>6</sup>

Dividing households into these basic types leads to a surprising result: Each household type has considerably higher median income growth than the overall household median growth of 26 percent. Chart 4 (on

# Which Inflation?

To measure economic progress over time, a central issue is adjusting the data for changes in the overall price level—that is, inflation. The goal in measuring inflation is to answer the question, How much more income do people need with today's (this year's) prices to be just as well off as they were with yesterday's (last year's) prices? This is referred to as the change in cost of living (COL).

Calculating a single inflation number that summarizes the change in the prices of hundreds of thousands of items—one Wal-Mart store has over 40,000 differently priced items—is extremely difficult. In addition, inflation measures must also take into account a continuous stream of new products and quality improvements in existing products, differences in prices across stores and across days of the week, consumer substitution away from products with rising prices and a host of other issues.

A widely used measure of inflation uses the consumer price index for urban consumers published by the Bureau of Labor Statistics. Extensive research has concluded that the CPI overstates inflation, even after recent changes to improve its accuracy. However, no government agency publishes a price index that attempts to correct for all the identified shortcomings in the CPI. So economists have turned to other measures of inflation that address some, though not all, of the problems. The personal consumption expenditures deflator published by the Bureau of Economic Analysis is perhaps the alternative most widely used by economists, but other measures exist.

Economist Michael Boskin summarizes the research on CPI inflation in recent research, and he provides a rough estimate of how much the CPI has overstated inflation since the early 1970s.\* His work thus provides a rough estimate of how large inflation-adjusted growth would be under "correctly

#### INCOME GAIN ESTIMATES VARY WIDELY BY INFLATION-ADJUSTMENT METHOD

Inflation- Adjusted Median Household Income Growth	CPI-U (BLS)	CPI (Census)	PCE Deflator (BEA)	GDP Deflator (BEA)	Cost of Living Estimate (Boskin)
(1976–2006)	7%	18%	26%	31%	43%

measured" inflation.

The accompanying table lists the growth rate in median household income as reported by the U.S. Census Bureau using competing measures of inflation. The Price Index columns report income increases using four available measures of inflation. The last column uses Boskin's estimate of correctly measured inflation.

Two results stand out. First, Boskin's estimate of correctly measured inflation results in substantially higher income growth than any of the standard measures of inflation. If this estimate is anywhere near correct, inflation-adjusted growth rates of income, wages and so on are substantially higher than has been reported.

Second, income growth is strikingly different even across the currently published measures of inflation. Studies of economic progress that use CPI inflation will report notably lower inflation-adjusted growth rates. Readers should look carefully at what price index is being used when they see the generic phrase "inflation-adjusted."

#### —Terry J. Fitzgerald

<sup>\*</sup>See Michael J. Boskin, 2005, "Causes and Consequences of Bias in the Consumer Price Index as a Measure of the Cost of Living," *Atlantic Economic Journal* 33:1–13; and Michael J. Boskin, January 2008, "Better Living through Economics: Consumer Price Indexes," presented at American Economics Association Annual Meetings.

page 50) shows that married-couple households—the largest type—had a median income gain of 42 percent, while female householders with no spouse present—the second largest type—had a striking 56 percent gain in household incomes.

At first blush, this result seems like a mathematical contradiction: How can all subgroups grow faster than the entire group? But there is no contradiction. The explanation lies in the changing household mix. Married-couple households have much higher incomes than other household types, and there has been a large decline in married-couple households. This decline depresses overall median income growth. As an extreme but illustrative example, consider what

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# Middle America from page 29





'WITHOUT CHILDREN

would happen if one-half of all married couples were to divorce next year. Median household income would plummet as each higher-income married-couple household is dissolved into two lower-income households—the same income is spread across more households. This would be true even if wages increased substantially for all workers, so that household types had large income gains. (See the table on page 56 for detailed results used throughout this article.)

### A further breakdown of household types

The three major household types—married-couple, female householder without spouse and male householder without spouse—still encompass a wide range of households. Slicing these three categories each into four subtypes—all households with children under 18 years of age, young householders (ages 15–29) without children, working-age householders (ages 30–59) without children and retirement-age householders (ages 60 and over) without children—reveals other interesting results. Chart 5 shows median household income gains by these subtypes, as well as for all households and the "all other" household type.

Median household income increased by at least 36 percent for most subtypes. Only for male householders with children and for working-age male householders without children did income grow by substantially less. The low growth rate for these two subtypes, which comprise 10 percent of all 2006 households, is consistent with the well-established finding that average male wages increased little over this period. Young male and female householders without children had median income growth of 30 percent and 33 percent, respectively. The relatively narrow bars for these household types in Chart 5 show that they represent a small slice of all households. In fact, household types with at least 36 percent median household income gains comprise over 85 percent of all households.

Retirement-age households had the largest median income gains, ranging from 47 percent for married couples to 74 percent for male householders with no spouse present. All subtypes of female householders had sizable increases, ranging from 33 percent to 54 percent. Female householders and retirement-age subtypes started with relatively low household incomes, so these high growth rates somewhat diminish the large income differences across subtypes.

# Outside the median

The results discussed for household types up to this point have been for the median households only. Here I look at how households above and below the median fared. Chart 6 shows income growth for marriedcouple households at the 25th, 50th (median) and 75th percentiles of the income distribution. Within each household type, the 75th percentile of households (higher-income) had larger income gains than the 25th percentile (lower-income). This reflects an increase in income inequality that has been widely documented. The results are qualitatively similar for the other household types.

But even with the increase in inequality, income gains for a broad set of middle-income households of most types were substantial. Incomes of the middle 50 percent of households—between the 25th and 75th percentiles—increased by at least 22 percent and as much as 59 percent for most household types, with gains exceeding 30 percent for most households. Retirement-age male householders had much larger gains, while working-age male householders and male householders with children had much smaller increases.

*Key points:* The change in household mix had a major impact on reported median household growth. While overall median household income grew by only 26 percent, the median gains for most household types ranged from 36 percent to 54 percent. Inequality increased notably within household types. Still, gains for most middle-income households ranged from 30 percent to 60 percent.

## Adding missing income

The final step in calculating the income gains made by middle American households requires a closer look at differing definitions of "income." The Census Bureau uses a narrow definition of income in its report on median household income that focuses on money income and excludes nonmonetary sources of income. The BEA, in contrast, defines personal income as income received from *all* sources. Examples of income excluded by the Census Bureau, but included by the BEA, are employer contributions to employee pension and insurance funds and inkind transfer payments such as Medicaid, food stamps and energy assistance. These sources of income contribute to economic well-being and

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should be included in the definition of income.<sup>7</sup>

Unfortunately, BEA data on personal income are not available for individual households, and I am left to use Census data with their narrow definition of income. Does the difference in definitions matter for measuring the *growth* in median household income? Most likely, yes.

Chart 7 presents data on income per person (average, not median) using BEA data on personal income and Census data on money income.<sup>8</sup> As expected, Census income is noticeably smaller than personal income—30 percent smaller in 2007. More important, Census income grew by 15 percentage points less over the 30-year period.<sup>9</sup> This reflects the fact that Census income excludes some rapidly growing nonmonetary income, such as health insurance benefits paid by employers. As a result, the income gains for middle Americans reported thus far are likely understated.

Providing an accurate estimate of how much larger household income growth would be using the broader BEA definition of income is beyond the scope of this article. However, a back-of-the-envelope calculation is suggestive.

The median household income gains of 36 percent to 54 percent tend to be well over half of the 65 percent increase in Census income per person. A conservative estimate is that median household income growth is one-half of income per person growth. Applying that ratio to the additional 15 percentage point growth in personal income would add about 8 percentage points to median household income growth.<sup>10</sup>

Using this estimate for the missing income, median household income for most household types rose 44 percent to 62 percent. Gains for most of the middle 50 percent of households in each type ranged from 35 percent to 65 percent.

*Key points:* A rough estimate is that 8 percentage points would be added to median household income growth if the nonmonetary income excluded by the Census but included by the BEA could be assigned to



households. This raises the range of median gains for most household types to 44 percent to 62 percent.

# **Reconciling with BEA personal income gains**

No further adjustments to median household income remain to be made. Yet the 44 percent to 62 percent range for median household income growth is substantially below the 80 percent increase in personal income per person. Why? While the accounting is not nailed down precisely, here are two reasons.

Some of the difference is due to a decline in the average number of children per household in households with children. A striking example is female householders with children, which had a 43 percent gain in median household income but a 65 percent median gain on a per person basis.<sup>11</sup> Married couples with children and male householders with children also had a decline in the average number of children and a larger (5–10 percentage points) gain in income per person.<sup>12</sup>

But much of the remaining difference between the reported median household income and the larger gain in personal income appears to be attributable to the increase in income inequality. When income rises faster for the richest households, median income grows by less than average income. Bill Gates' rising income over this period certainly increased the average income in Medina, Wash., but it had no effect on median income.

Chart 7 shows that Census income per person rose by 65 percent, and I calculate that median Census income per person rose by 50 percent. This suggests that increasing inequality may account for roughly 15–20 percentage points of the difference between the growth in median household income and the growth in BEA personal income per person. While this is a notable amount, the analysis in this article does not support the claim that only the rich have benefited from the economic growth of the past 30 years.

# Conclusion

The claim that the standard of living of middle Americans has stagnated over the past generation is common. An accompanying assertion is that virtually all income growth over the past three decades bypassed middle America and accrued almost entirely to the rich.

The findings reported here—and summarized in Chart 8—refute those claims. Careful analysis shows that the incomes of most types of middle American households have increased substantially over the past three decades. These results are consistent with recent research showing that the largest income increases occurred at the top end of the income distribution. But the outsized gains of the rich do not mean that middle America stagnated.

Why does the debate about middle America matter? Because an accurate assessment of the economic progress of middle America is a crucial input in formulating good public policy. Claims of long-term middle America stagnation—such as those quoted at the beginning of this article—are often part of a broader argument about the adverse impact of globalization, outsourcing and free trade. And middle class



stagnation is used as motivation for a specific set of policies. But if middle America has not stagnated—as this analysis has shown—then this motivation for those policies is without merit.

Furthermore, if it is understood that middle America has indeed experienced substantial gains, policy priorities may change. For example, more emphasis might be placed on policies that promote continued economic growth or that target deeply rooted poverty rather than middle class stagnation. But regardless of the specific policy, policymakers and the public should base their decisions on an accurate assessment of how the economy has impacted and continues to impact people's lives.

# Endnotes

<sup>1</sup> Median household income is calculated using the U.S. Census Bureau's recently revised CPI-based price index series. This revision lowered inflation-adjusted median household income growth during the 1976–2006 period from 21 percent to 18 percent.

<sup>2</sup> For a discussion of the biases in the consumer price index, see Michael J. Boskin, 2005, "Causes and Consequences of

Bias in the Consumer Price Index as a Measure of the Cost of Living," *Atlantic Economic Journal* 33:1–13.

<sup>3</sup> Average household size fell from 2.86 persons in 1976 to 2.56 persons in 2006. See U.S. Census Bureau: http://www.census.gov/hhes/www/income/histinc/h11ar.html.

<sup>4</sup> Current Population Survey definitions: A household consists of all the people who occupy a housing unit. The count of households excludes group quarters. The householder refers to the person (or one of the people) in whose name the housing unit is owned or rented (maintained) or, if there is no such person, any adult member, excluding roomers, boarders or paid employees. If the house is owned or rented jointly by a married couple, the householder may be either the husband or the wife.

<sup>5</sup> To maintain additional uniformity across households of each type, all household members are required to be from one family (related by birth, marriage or adoption), and at most one married couple may be present. About 5 percent of households do not satisfy these restrictions and are assigned to a generic "all other" category.

<sup>6</sup> Data for the Annual Social and Economic Supplement of the Current Population Survey are used throughout this study and were obtained through IPUMS databases maintained by the Minnesota Population Center: cps.ipums.org/cps. Miriam King, Steven Ruggles, Trent Alexander, Donna Leicach and Matthew Sobek, *Integrated*  Are Income Gains Due to More Wives Working Longer Hours?



How much of the gain in household income for middle-income married couples is attributable to more wives putting in longer hours in the workplace? According to the Bureau of Labor Statistics, the frac-

tion of married couples with *both* husband and wife as earners increased substantially between 1976 and 2005, from 48 percent to 57 percent.<sup>1</sup> This suggests that much of the growth in household income might be due solely to the increase in paid working hours of wives.

To study this question, the accompanying chart focuses on the middle 20 percent (by income) of married-couple households with children and separates their household income gains by source. Average household income growth from 1976 to 2006 in this "middle" group matches the median income growth rate (43 percent) reported in the table on page 56.

Average annual working hours of wives in this group almost doubled between 1976 and 2006, rising from 732 hours to 1,360 hours. But surprisingly, this large increase in wives' working hours accounts for just one-third of the overall income gain. Average earnings per hour for wives also rose substantially over this period. Earnings per hour—excluding benefits increased from \$9.48 to \$15.10 (2006 dollars). This increase accounts for one-fourth of the gain in household income.

Together, the rise in hours worked by wives and earnings per hour for wives account for three-fifths of the overall gain in household income. The rise in husbands' earnings—mostly due to higher earnings per hour—accounts for another third of the overall increase. The remaining gains stem from a variety of other sources of income.<sup>2</sup>

—Terry J. Fitzgerald

<sup>1</sup> See Bureau of Labor Statistics at http://www.bls.gov/cps/wlftable23-2007.pdf.

 $^2$  The decomposition of the income gains for married couples without children and with a householder between the ages of 30 and 59 is very similar to the results presented here.

Public Use Microdata Series, Current Population Survey: Version 2.0 (machine-readable database). Minneapolis, Minn.: Minnesota Population Center (producer and distributor), 2004.

<sup>7</sup> The differences between Census income and personal income are more subtle than indicated here. For an excellent conceptual and quantitative discussion of these differences, see John Ruser, Adrienne Pilot and Charles Nelson, November 2004, manuscript, *Alternative Measures of Household Income: BEA Personal Income, CPS Money Income, and Beyond.*  <sup>8</sup> Census income includes data for people who live in group quarters, who contributed 1.3 percent of total Census income in 1976 and 2006. The growth rate of income from 1976 to 2006 based only on household income is the same.

<sup>9</sup> The BEA's measure of national income per person deflated using the PCE deflator increased 74 percent over this period. That is 6 percentage points less than personal income growth, and 9 percentage points greater than Census income growth.

<sup>10</sup>I also did a rough calculation of the impact of adding one

MUST HOUSEHOLDS HAD LARGE MEDIAN INCOME GAINS
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Median Household Income By Household Type

			Household Income (\$2006)		
	Percent of HHs 1976	Percent of HHs 2006	Median 1976	Median 2006	Percent Change
ALL HOUSEHOLDS	100	100	38,257	48,054	26

# HOUSEHOLDS BY TYPES

Married Couples	63.5	50.5	48,592	69,200	42
Male, No Spouse	9.3	16.6	25,342	35,000	38
Female, No Spouse	22.9	27.7	16,318	25,378	56
All Others	4.2	5.1	44,135	60,000	36

# HOUSEHOLDS BY SUBTYPES

With Children	34.1	23.2	51,418	73,570	43
Without Children		1			
Young	4.4	1.7	43,866	61,017	39
Working Age	12.2	13.5	59,108	82,025	39
Retirement Age	12.8	12.1	31,718	46,485	47
Male Householder, No Spor	lse				
With Children	0.7	1.8	39,814	41,001	3
Without Children				I	
Young	2.3	2.8	25,354	33,000	30
Working Age	3.7	8.0	34,752	40,000	15
Retirement Age	2.7	4.0	14,581	25,406	74
Female Householder, No Sp	ouse				
With Children	6.6	7.9	18,131	26,000	43
Without Children				I	
Young	1.8	2.2	22,568	30,000	33
Working Age	4.5	7.8	24,780	36,264	46
Retirement Age	10.1	9.9	12,082	18,613	54

excluded source of income: health benefits provided by employers. In this exercise I used data from the national income and product accounts to estimate the ratio of employer-paid health benefits to wages, and multiplied household wages in the CPS ASEC survey by this ratio. The result of this accounting exercise is that the median income gains of young and working-age households and households with children across all types increased by an additional 5 to 10 percentage points. Retirement-age household types gained less—1 to 4 percentage points—since fewer are currently working. Census income plus NIPA health benefits still grew by 7 percentage points less than personal income; adding other sources of excluded income would also impact growth rates. These results roughly support the 8 percentage point addition used in the text.

<sup>11</sup> Per person income is defined as follows: Income for each individual is total household income for his or her household divided by the number of household members.

<sup>12</sup> The average number of children per household for female householders with no spouse fell by 0.36 (2.15 in 1976 versus 1.79 in 2006). For the middle 20 percent of these households, the decline was a more dramatic 0.72 children (2.51 versus 1.78). The drop in the average number of children was notable but less striking for married couples and male householders. The average number of children in the third quintile for married couples fell by 0.24 (2.10 in 1976 versus 1.86 in 2006), and for male householders with children by 0.32 (1.82 in 1976 versus 1.51 in 2006).