Order Code RL33519

Why Has Household Income Fallen in the Current Expansion While GDP Has Risen?

Updated August 30, 2006

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Summary

Some policymakers have marveled at the economy's recent strength, whereas others have criticized the meager fruits of this expansion. Which camp is right? The answer depends on which data are used. After recovering from a recession in 2001, economic output, as measured by gross domestic product (GDP), grew at a rapid pace of 3.5% per year between 2003 and 2005. But household income, whether determined by a mean (average) or median (sample midpoint) measurement, fell from 2000 to 2004 in real (inflation-adjusted) terms. It rose about 1% in 2005, but remains below 2000 levels. Mean income fell from $64,767 per household in 2000 to $63,344 in 2005, and median income fell from $47,599 per household in 2000 to $46,326 in 2005. This report seeks to account for some of the leading causes of the divergence.

Household income (measured by the Census) and GDP (measured by the Bureau of Economic Analysis [BEA]) are two different concepts that are only indirectly related, which makes a direct comparison between them difficult. Fortunately, there is a measurement of personal income within the GDP accounts that makes for a more direct comparison with the Census Bureau's measurement of household income. Personal income grew more slowly than GDP from 2001 to 2005 because of the rapid growth in several statistical categories that are included in GDP but not personal income. By category, 41% of the difference can be attributed to the rise in indirect and corporate tax receipts, 35% to capital depreciation, 32% to undistributed corporate profits, and 17% to statistical discrepancy. Partially offsetting these categories, net transfer payments grew rapidly, which boosted personal income but not GDP.

Once these adjustments are made and personal income is calculated on a household basis, the annual growth rate of personal income per household falls to 0.1% between 2001 and 2005, compared with -0.4% for Census's mean household income. BEA's definition of personal income includes non-cash benefits, but Census's definition does not. Non-cash benefits have risen rapidly over the past few years and can explain the remaining difference between the two figures. Although personal income per household rose slightly during this period, when non-cash benefits are removed, it fell at the same rate that household income fell.

The recent rise in personal income has not been uniform across income categories. Wages and capital income have fallen in recent years. The decline in the latter is likely due to falling interest rates and BEA's omission of capital gains. On the other hand, non-cash benefits and transfer payments have risen rapidly. Due to the aging of the population and rising medical costs, this trend may continue in the future.

This report will be updated as events warrant.

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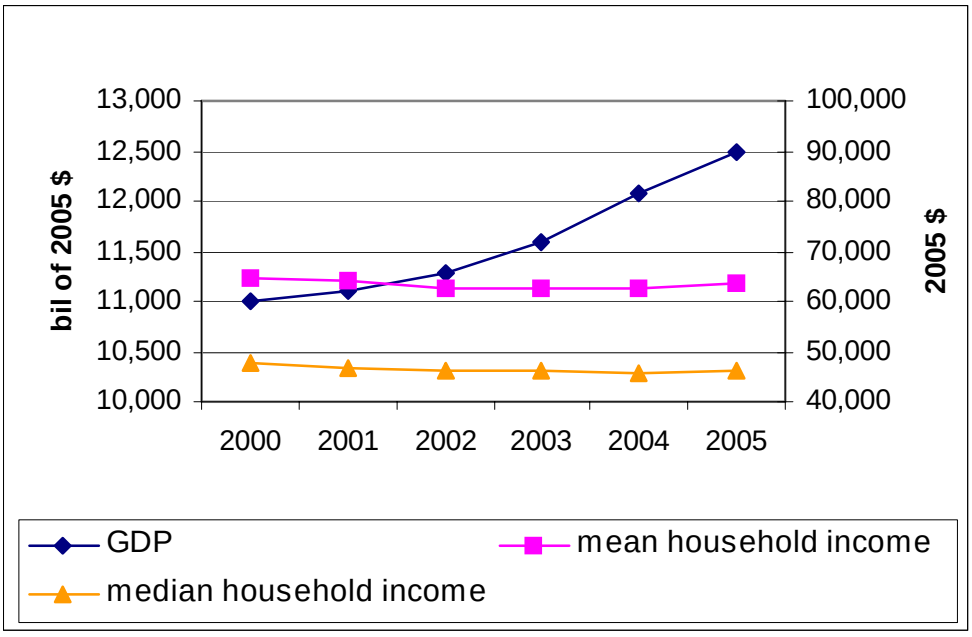
Figure 1. GDP vs. Household Income, 2000-2005



Source: Bureau of Economic Analysis, Census Bureau.
Notes: All measures are adjusted for inflation. GDP is measured in 2005 dollars using the GDP deflator. Household income is measured in 2005 dollars using the consumer price index (CPI).

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[1] U.S. Census Bureau, *Income, Poverty, and Health Insurance Coverage in the United States: 2005*, August 2006. *Mean* measures the sample's average; *median* measures the sample's midpoint. Mean income is higher than median income because of very high income levels at the end of the sample's distribution.

This report seeks to account for some of leading causes for the divergence. The following section explains the difference between the various measures being evaluated.

Where Do the Data Come From and What Do They Measure?

Household income is released by the Census Bureau in the Department of Commerce and based on the Annual Social and Economic Supplement to the Current Population Survey (CPS), which is prepared jointly by the Bureau of Labor Statistics in the Department of Labor and the Census Bureau. It is a survey of 77,000 households based on the respondent's recollection.

Gross domestic product (GDP) is estimated by the Bureau of Economic Analysis in the Department of Commerce. It is the broadest measure of economic activity and includes personal consumption expenditures, fixed investment, net exports (exports less imports), and government consumption and investment. Within GDP, private sector production is measured through various surveys of business shipments, output, sales, and so on.

Household income and GDP are two different concepts that are only indirectly related, which makes a direct comparison difficult. Fortunately, there is a measurement of personal income within the GDP accounts that makes for a more direct comparison with the Census Bureau's measurement of household income. By accounting identity, personal income can be derived from GDP based on the following modifications. First, GDP is converted into GNP (gross national product). GDP measures the production of goods and services by anyone (regardless of nationality) within U.S. borders, whereas GNP measures the production of goods and services by Americans anywhere in the world. Second, GNP is converted to *net national product* by deducting capital depreciation. By identity, net national product is equal to *national income* because anything produced by an American generates equivalent labor and capital income that flows to an American.

National income can then be converted into *personal income* through the following modifications. First, corporate profits, indirect taxes, business interest, surpluses of government enterprises, and transfer payments are removed from national income. After-tax corporate profits are then retained by the corporation or paid out as dividends. Dividends and interest become capital income, which, along with transfer receipts, is then added back to personal income.

Personal income consists of employee compensation (wages and fringe benefits), capital income (dividends, interest, and rental income), proprietors' income, and transfer payments (e.g., Social Security) less social insurance contributions. Employee compensation is benchmarked against unemployment insurance records that cover 96% of total employment.

In theory, the only broad difference between the BEA's measurement of personal income and the Census Bureau's measurement of household income is that personal income is an aggregate measurement and household income is measured per household. Mean personal income per household can easily be derived by dividing personal income by total households, but a measure of median personal income cannot be calculated.[2]

For discrepancies between household income based on the CPS and personal income from the GDP accounts that cannot be attributed to differences in definition, the GDP accounts would be considered a superior data source. It is based on a much larger sample (so standard errors would be smaller), and it is benchmarked against "hard" records rather than unverified personal recollection. The Census Bureau identifies several sources of non-sample error that could statistically bias the CPS results: a non-response rate of 17.4%, definitional difficulties, different interpretations of the questions by different respondents, inability or unwillingness to provide correct information, inability to recall information (e.g., respondents may forget to include small sources of income), undercoverage, and so on.[3] These types of errors are generally less problematic for data from the GDP accounts.

Estimating the Causes of the Divergence Between GDP and Household Income Growth

Based on the technical explanation presented above, the broad question of why GDP is rising when household income is falling can be split into two parts. The next section explores the first part: within the GDP accounts, why is GDP rising more rapidly than personal income? The second section explores the second part: how does the BEA's measure of personal income compare to the Census's measure of household income?

Differences in the Growth Rates of GDP and the BEA's Personal Income Measure

As **Figure 2** illustrates, GDP has been consistently growing at a faster pace than the BEA's measure of personal income. From 2001 to 2005, real GDP grew at an average rate of 2.6%, whereas real personal income grew at an average rate of 1.4%. Personal income is reported only in nominal terms; to compare it with GDP, it must first be deflated by a price index. An index of consumer goods, such as the consumer

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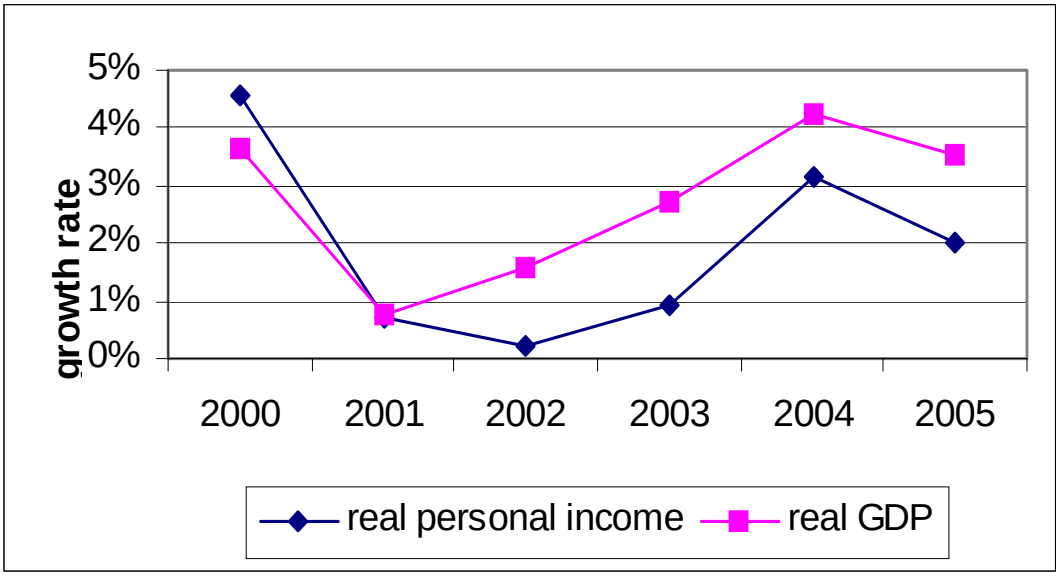
[2] For specific definitional differences between the data sources, see John Ruser et al., *Alternative Measures of Household Income*, working paper presented to Federal Economic Statistics Advisory Committee, Bureau of Labor Statistics, November 2004, and U.S. Census Bureau, *Comparability of Current Population Survey Income Data With Other Data*, at [http://www.census.gov/hhes/www/income/compare1.html], accessed August 30, 2006.

[3] U.S. Census Bureau, *Source and Accuracy of Estimates for Income, Poverty, and Health Insurance Coverage in the United States: 2004*, August 2005.

price index (CPI), is often chosen because most personal income is spent on consumption. The choice of index does make a difference in the calculations: the CPI has been rising more quickly than the broader-based GDP deflator in the 2000s, so using the CPI instead of the GDP deflator reduces the annual growth rate of personal income by 0.2 percentage points. In other words, part of the reason household income is growing more slowly than GDP is because the price of personal consumption is rising more quickly than the price of overall production. Some economists have described this as a negative movement in the "terms-of-trade" for workers.

Figure 2. Growth Rates of Real GDP and Real Personal Income, 2000-2005



Source: CRS calculations using data from Bureau of Economic Analysis.

Notes: GDP is adjusted for inflation using the GDP deflator. Personal income is adjusted for inflation using the CPI.

Even after accounting for the difference in price indices, a large gap in growth rates remains. **Table 1** estimates the major contributors to the difference in growth rates since they began to diverge in 2002.[4] Between 2001 and 2005, GDP grew by $2,359.1 billion and personal income grew by $1,513.6 billion, a difference of $845.5 billion, as seen in the **Table 1**.[5] Of the several adjustments made to convert GDP into personal income, the largest source of difference was corporate and indirect (mostly local) tax receipts, which grew by $348.7 billion between 2001 to 2005. Corporate and indirect tax receipts are levied before income is paid out to

[4] There are other adjustments made to convert GDP to personal income, but their growth between 2001 and 2005 was relatively insignificant.

[5] All data in this discussion are in nominal terms because there are not price indices available to deflate all of the data involved.

individuals, so neither is included in personal income. The second largest cause of GDP's more rapid growth was the $292.6 billion increase in capital depreciation. Some output is used to replace depreciated capital and thus does not become personal income.

Table 1. Sources of the Difference Between the Growth Rates of GDP and Personal Income

	Change 2001-2005, billions of dollars	Contribution to overall change (%)
Difference between GDP and personal income	$845.5	100%
Corporate and indirect taxes	$348.7	41
Capital depreciation	$292.6	35
Undistributed corporate profits	$267.3	32
Net transfers	-$205.4	-24
Statistical discrepancy	$144.6	17
Other (net)	$2.3	<1

Source: CRS calculations based on data from the Bureau of Economic Analysis.

Note: Data are not adjusted for inflation.

Corporate profits have grown rapidly in recent years. Corporate profits can either be paid out in taxes or dividends (which are included in personal income) or retained by the corporations. The latter, which are classified as undistributed corporate profits, rose by $267.3 billion between 2001 and 2005, accounting for 32% of the divergence between GDP growth and personal income. Of course, corporations are owned by individuals, whose net wealth eventually rises when profits are retained through capital gains. But capital gains are not included in the GDP accounting framework, which measures only current production and the income generated by that production. Appreciation in the value of an existing asset does not change production levels, and so it is not considered to have altered the income of its owner. In this sense, because GDP includes undistributed corporate profits and personal income does not, the former is a better proxy of well-being (for capital owners) than personal income.

Transfers received by individuals grew by $205.4 billion more than business transfer payments and contributions to social insurance from 2001 to 2005. The difference between the two, referred to as *net transfers* in **Table 1**, caused personal income to grow more quickly than GDP, thereby offsetting 24% of the difference between GDP growth and personal income growth.

In theory, net national product and national income should be equal. Due to measurement error, there will always be a statistical discrepancy between the two,

and the growth of this discrepancy from 2001 to 2005 equaled $144.6 billion. Because the cause of the statistical discrepancy is not known, it is not known if, in reality, GDP grew more slowly or personal income grew more rapidly than reported.

Comparison of the Growth Rates of the BEA's Personal Income and the Census's Household Income

The previous section estimated why the BEA's measure of personal income has grown more slowly than GDP in recent years. Although this helps explain the difference between GDP growth and household income growth in recent years, it does not explain why the BEA shows personal income growing while the Census shows household income falling.

One further modification can be made to the BEA personal income data to make it more comparable to the Census household income data. Part of the growth in aggregate measures such as personal income and GDP comes from growth in the labor force: more workers can produce more output. Thus, data measured on a per capita or per household basis will always increase more slowly than aggregate data because of population growth. Making this adjustment eliminates much of the difference between the two measures: the BEA's personal income growth per household averaged 0.1% and the Census's mean household income growth averaged -0.4% from 2001 to 2005.[6] (By comparison, GDP per household has risen 1.2% a year during that period.) In other words, according to the BEA's data, the number of households has risen almost as quickly as personal income in recent years.[7]

Personal income, as defined by the BEA, is a broader measure than one might assume. In addition to wages, it includes asset income from interest and dividends, rental income, government transfer payments, fringe benefits, and so on. In principle, the Census definition of income also includes asset income, transfer payments, and business income, but it does not include non-cash fringe benefits. As the Census notes, however, interviewees may neglect to report minor sources of income, so wages may be more likely to be reported than other income sources for the average household. Thus, both personal income and mean household income are all-inclusive concepts that include everyone, from very wealthy households with income primarily from assets to more modest households with income primarily from worker compensation. Therefore, some popular explanations for why income growth is lagging behind GDP growth (such as globalization, inequality, and more competitive

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[6] Perhaps more puzzling, however, is the difference in the *levels* of income reported by the Census and the BEA. According to the BEA, mean personal income per household equaled $88,685 in 2005; according to the Census, mean household income equaled $63,344. Most of the difference is due to definitional differences, namely personal income's inclusion of imputed income from owner-occupied housing, in-kind federal transfers, adjustments for under-reported income, and income received by pension plans and nonprofits. After these adjustments are made, personal income is still 13% higher than household income.

[7] Disposable personal income (personal income less taxes) has grown more rapidly than personal income in recent years because of tax cuts.

labor markets) are unlikely to be sufficient because both income measures include capital income. Median household income, on the other hand, measures only the mid-point observation in the sample and is unreflective of what is happening to the rest of the population. **Table 2** shows how these different sources of income have grown in recent years.

Table 2. Real Personal Income per Household, by Type, 2000-2005
(2005 dollars)

	2000	2001	2002	2003	2004	2005	Percentage change, 2000-2005
Personal income	88,307	88,026	86,644	86,879	88,717	88,685	0.4%
Wages	50,590	49,872	48,589	48,428	49,225	49,483	-2.2%
Benefits	9,988	10,083	10,831	11,465	11,856	12,135	21.5%
Proprietors' income	7,631	7,788	7,496	7,677	8,125	8,132	6.6%
Asset and rental income	16,104	15,613	14,497	13,932	13,981	13,256	-17.7%
Net transfers	3,994	4,670	5,231	5,376	5,529	5,679	42.2%

Source: CRS calculations using data from the Bureau of Economic Analysis and Bureau of Labor Statistics.

Notes: Data adjusted for inflation using the consumer price index (CPI). The percentage change for 2000-2005 is cumulative.

Because the BEA provides only aggregate data, personal income data can be directly compared only to mean, not median, income. Analysts using BEA data who are interested in the well-being of the "typical" household would most likely consider employee compensation (wages plus benefits), because it makes up the bulk of income for that household.[8] Employee compensation per household fell in real terms in 2001 and 2002, but has risen since then. It did not surpass its 2000 level until 2004. Overall, it grew at an annual average of 0.3%, considerably more slowly than personal income from 2001 to 2005. As shown in **Table 2**, wages fell slightly between 2000 and 2005. But this fall has been more than offset by a rise in fringe benefits, so workers are 1.7% better off overall than they were in 2000.[9]

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[8] According to the Federal Reserve's Survey of Consumer Finances, the median value of a household's financial assets was $29,800 in 2004, which would generate a very modest annual income stream compared with labor compensation.

[9] To the extent that the rise in benefits has been driven by medical price inflation, the rise in benefits in **Table 2**, which has been adjusted by the rise in overall prices, is exaggerated because medical price inflation has greatly exceeded overall price inflation.

Proprietors' (e.g., small business owners) income rose during that period as well. Economists classify proprietors' income as a combination of labor and capital income because unincorporated business owners typically contribute both labor and capital to their businesses, so the rise in proprietors' income can be thought to accrue to both workers and capital owners.[10]

Perhaps surprisingly, capital income has fallen over the past five years. Looking at its subcomponents, it turns out that the fall is concentrated in rental income and interest income, which presumably reflects the decline in interest rates over the past five years. The other subcomponent, dividend income, has risen during that period. The rise in undistributed corporate profits during this period suggests that capital income has risen in ways that are not captured in GDP accounting, such as through capital gains. For example, the Federal Reserve's measure of total household net worth has risen from $41,543 billion in 2000 to $52,430 billion in 2005, suggesting that, by a broader definition, capital income has risen, not fallen. Equities declined in value from 2000 to 2003 and have risen since, although they still have not reached their high in 2000. House prices have risen in value rapidly throughout the 2000s.

Finally, transfer income (net of social insurance contributions) has risen sharply in recent years. This primarily reflects the recent rise in government entitlement spending, mostly caused by demographic change. This suggests that a major source of income growth over the past few years was concentrated within a subset of the population.

The major component of the BEA's personal income not included in the Census's household income is non-cash benefits.[11] Because benefits rose quickly from 2000 onward, this difference is an important one. Omitting them yields a result similar to the pattern found in the Census data. As seen in **Table 2**, real wages per household fell from 2000 to 2003. They rose in 2004 and 2005 but are still 2.2% below their 2000 level. And indeed, even the broadest definition of cash income (personal income less benefits) follows the pattern of the Census's data fairly closely: it falls in each year from 2001 to 2005, except 2004, and has fallen by 2.3% from its level in 2000. **Figure 3** compares the movement in some of the measures discussed since 2000.

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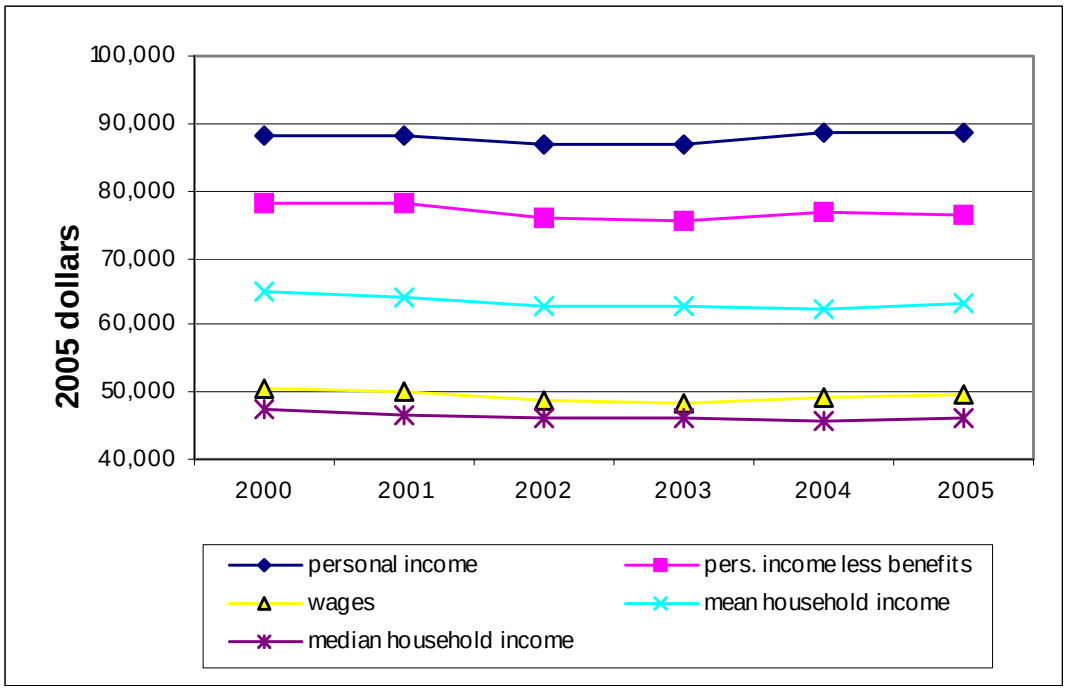
[10] If two-thirds of proprietors' income is counted as wages — a standard assumption — then wages still fell from 2000 to 2005, albeit at a slower pace.

[11] The questionnaire reads, "Which category represents the total combined income of all members of this FAMILY during the past 12 months? This includes money from jobs, net income from business, farm or rent, pensions, dividends, interest, social security payments and any other money income received by members of this FAMILY who are 15 years of age or older." Although household income does not include pension contributions such as personal income, it does include pension disbursements.

Figure 3. Different Measures of Income Per Household, 2000-2005



Source: For personal income and wages, CRS calculations based on Bureau of Economic Analysis; for mean and median household income, Census Bureau.

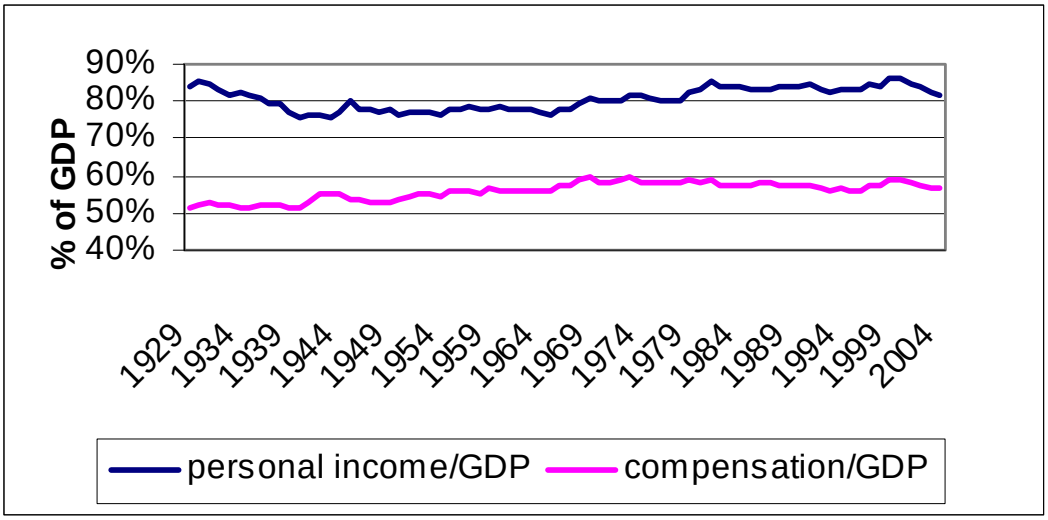
Notes: Personal income, personal income less benefits, and wages are measured per household. All data are expressed in 2005 dollars using the CPI.

Future Trends

Since the GDP accounts were first recorded, personal income has fluctuated between about 75% and 85% of GDP, as seen in **Figure 4**. Since the early 1980s, it has tended toward the high end of that range. From 2001 to 2005, personal income fell from 86% of GDP to 82%. This suggests that while it is possible for GDP growth to continue to outpace personal income growth for a few more years, at most, in the long run, the two growth rates should even out. Whether median household income can keep pace with mean household income in the future will depend primarily on what happens to income inequality. If inequality continues to widen, as it has in recent decades, mean income will probably rise more quickly than median income.[12]

[12] For more information, see CRS Report RS20811, *The Distribution of Income in the United States*, by Brian Cashell.

Figure 4. Personal Income and Worker Compensation as a Percentage of GDP, 1929-2005



Source: CRS calculations based on data from Bureau of Economic Analysis.

Figure 4 also demonstrates that worker compensation has been a relatively constant share of GDP since 1970, with a slight decline in recent years. Economists attribute the low growth rate of worker compensation in recent years to the weakness of the labor market during and after the 2001 recession. In a situation where jobs are scarce, workers' bargaining power in wage negotiations tends to diminish. Recently, the labor market has strengthened, which, in the short term, suggests that compensation may rise more rapidly.

Within personal income, the trends seen over the past five years are likely to become magnified in the future under current policy. The main story over the past five years has been high rates of growth in benefits and transfer payments, balanced by stagnant wages and capital income. (Interest rates have already begun to rise, so the decline in capital income, caused by falling interest and rental income, may soon reverse.) With the retirement of the baby boomers, entitlement and pension spending is projected to continue its rapid rise. Furthermore, the rapid rise in medical costs has been a persistent story in recent decades. Coupled with an aging population, rising medical costs could make the rapid rise in benefits and transfer payments more pronounced in future years unless policymakers and innovation within the private sector can find ways to restrain it.[13] The tradeoff between growth in transfers and the decline in other income categories is likely to become more explicit in the future if the transfers are financed through higher taxes or lower government spending, rather than larger deficits. If the growth in personal income continues to be concentrated in benefits and transfer payments, it is likely to raise equity issues among individuals who are not recipients, such as the young and those without health insurance. A

[13] For a detailed discussion, see CRS Report RL32747, *Social Security and Medicare: The Economic Implications of Current Policy*, by Marc Labonte.

further potential source of contention could arise if individuals perceive, perhaps unfairly, that rising benefit costs are not being matched with commensurate quality improvements. If this is the case, economic theory's prediction that workers would be indifferent between receiving compensation gains in the form of wages or benefits might not hold.

Conclusion

Economists use many different statistics to evaluate economic well-being. Two of them, GDP and household income, have moved in opposite directions in recent years. GDP has grown at a healthy pace from 2003 onward, but household income has declined slightly since 2000. This report has sought to reconcile the diverging movements in the two measurements.

By converting GDP into the BEA's measurement of personal income, and then measuring personal income on a per household basis, most of the divergence can be eliminated. While GDP grew at 2.6% annually from 2001 to 2005, real personal income per household grew 0.1% annually during that period. The main causes of the difference are the rapid rises in indirect and corporate taxes, capital depreciation, and undistributed corporate profits. All three of these items are included in GDP but not personal income. The remaining difference is accounted for by the more rapid inflation in consumer goods than overall inflation, statistical discrepancy, and the conversion to a per household basis.

Although the annual growth rate in real personal income per household from 2001-2005 was low, it still exceeded the growth rate of the Census's measure of mean household income, -0.4%. (Median household income, which is less directly comparable, fell at about the same pace as mean income during that period.) Part of the difference can be accounted for because personal income includes non-cash benefits, which have grown rapidly in recent years, whereas household income does not. When non-cash benefits are excluded, the annual growth rates of wages and BEA's personal income (both -0.4%) were equal to Census's mean household income from 2001 to 2005. Both data sources tell the same general story — despite rapid economic growth from 2003 to 2005, the average household is not much better off today than at the end of the last expansion, and the improvements seen have come mostly in non-cash form.

Some popular explanations for why income growth is lagging GDP growth include globalization, inequality, and more competitive labor markets. These explanations are unlikely to be sufficient because both income measures include capital income. Furthermore, the divergence between income growth and GDP growth is also found in mean-income data, which include high-income individuals.

Personal income gains in recent years have been concentrated mostly in benefits and transfer payments, whereas labor and capital income have stagnated. With an aging population and rising medical costs, this is a trend that could easily continue in the absence of policy changes