Labor's Declining Share of Income and Rising Inequality

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Labor income has been declining as a share of total income earned in the United States for the past three decades. We look at the past effect of the labor share decline on income inequality, and we study the likely future path of the labor share and its implications for inequality.

Labor income has declined as a share of total income earned in the United States. This decline was caused by several factors, including a change in the technology used to produce goods and services, increased globalization and trade openness, and developments in labor market institutions and policies.

One consequence of the labor share decline has raised concerns. Since labor income is more evenly distributed across U.S. households than capital income, the decline made total income less evenly distributed and more concentrated at the top of the distribution, and this contributed to increased income inequality. In this *Commentary*, we look at how the labor share decline has affected income inequality in the past, and we study the likely future path of the labor share and its implications for inequality.

The Decline in Labor's Share of Income

Household income comes in two types: labor income, which includes wages, salaries, and other work-related compensation (such as pension and insurance benefits and incentive-based compensation), and capital income, which includes interest, dividends, and other realized investment returns (such as capital gains). During the last three decades, labor's share of total income has declined in favor of capital income (see "Behind the Decline in Labor's Share of Income" in the Sources Cited for more detail).

There are a number of ways to measure the share of income that accrues to labor. We look at three different data sources, and each provides broad evidence of the decline. According to data from the Bureau of Economic Analysis, labor's share of gross national income fluctuated around 67 percent during the 1980s, 1990s, and early 2000s, but it has declined since then and now stands at 63.8 percent.[1] (See figure 1.) According to the Bureau of Labor Statistics, the ratio of compensation to output for the nonfarm business sector fluctuated around 65 percent

Figure 1. Labor's Share of Income

Labor income as a share of total income
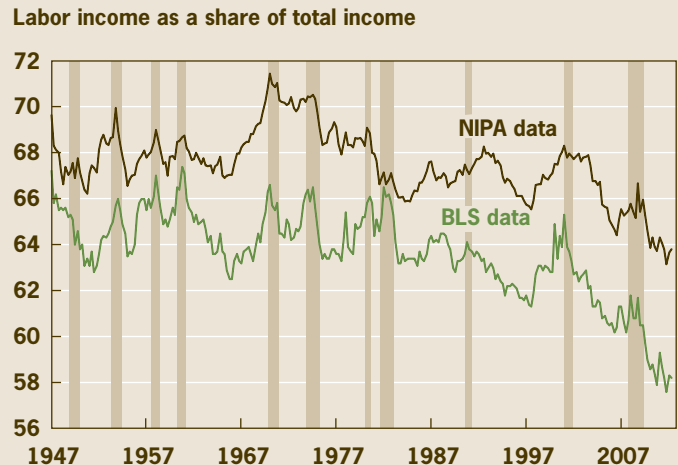
Note: Shaded bars indicate recessions.
Sources: Bureau of Labor Statistics; Bureau of Economic Analysis, National Income and Product Accounts (NIPA); authors' calculations.

until the early 1980s and has declined steadily since, from 63 percent during the 1980s and 1990s to 58.2 percent most recently. Finally, a 2011 study of income tax returns and demographic data by the CBO (CBO 2011) finds that labor's share of income decreased from 75 percent in 1979 to 67 percent in 2007.

These three data sources measure slightly different labor share concepts, which is why their estimated levels are different. But they agree in indicating a significant drop of 3 to 8 percentage points in labor's share of income since the early 1980s, with the trend accelerating during the 2000s.

Such a decline had implications for the distribution of incomes. Labor income is more evenly distributed across U.S. households than capital income, while a disproportionately large share of capital income accrues to the top income households. As the share that is more evenly distributed declined and the share that is more concentrated at the top rose, total income became less evenly distributed and more concentrated at the top. As a result, total income inequality rose.

Income Inequality

Income inequality is the dispersion of annual incomes across households, relative to the average household income. Inequality affects a variety of other important economic variables, such as the composition of consumption and investment, tax revenue and government spending, government policies, economic mobility, human capital accumulation, and growth. Some economists—most prominently Raghuram Rajan in his book *Fault Lines*—have suggested that rising income inequality contributed to the debt accumulation and financial imbalances that led to the recent financial

crisis. And of course income inequality is the focus of much attention as an indicator, albeit imperfect, of the inequality of lifetime income and welfare across households.

Several indicators suggest that inequality was declining up to the late 1970s, but it has since reversed course. It rose sharply during the 1980s and early 1990s and currently is at near record-high levels. Between 1967 and 1980, the average real income of the bottom 20 percent of households grew by 1.34 percent, faster than the 1.09 percent growth rate of the top 20 percent and the 0.67 percent of the top 5 percent. After 1980, however, the opposite occurred: average real income grew by 0.05 percent only for the bottom 20 percent of households, while it grew by 1.24 percent for the top 20 percent and by 1.67 percent for the top 5 percent (DeNavas-Walt et al. 2011). The share of income earned by the top-income households rose significantly after 1980, while the share earned by the bottom-income households declined (figure 2).

The most closely watched indicator of income inequality is the Gini index, an index that increases from 0 to 1 as income distribution becomes relatively more dispersed. The Gini index is equal to half the relative mean income difference, that is, the average difference in income between households in the economy, expressed as a percentage of the average household income. For example, if the Gini index is 0.40 and the average household income is $50,000, the relative mean difference is 0.40 × 2 = 0.80, or 80 percent, which means that on average the difference in income between two randomly selected households in the population is 0.80 × $50,000 = $40,000.
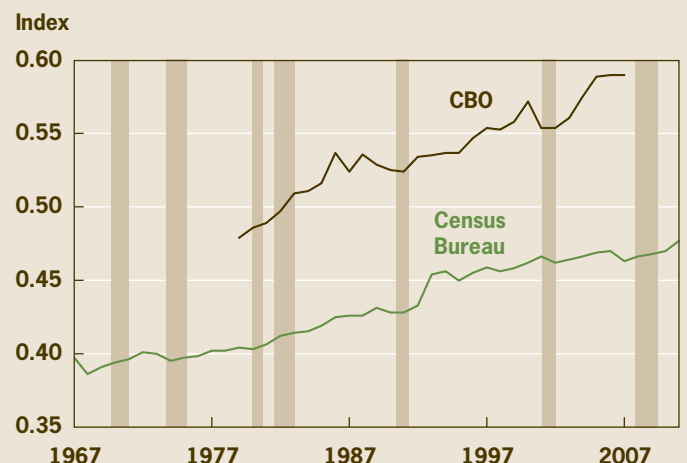
The Gini index points to increasing inequality during the entire 1967–2010 period, and especially during the 1980s

Figure 2. Household Income Shares
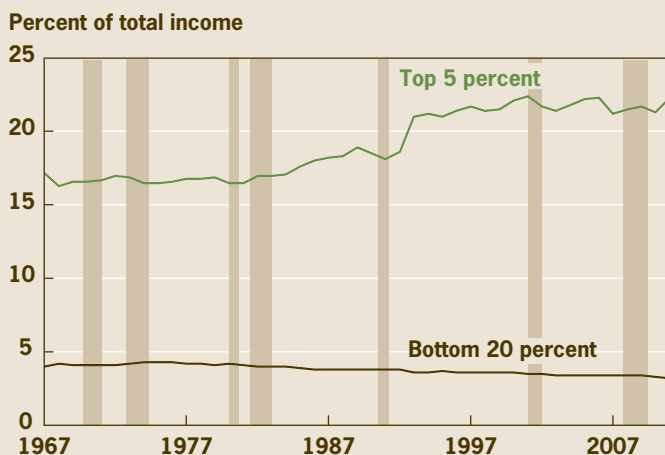
Note: Shaded bars indicate recessions.
Source: Census Bureau.

Figure 3. Gini Index

Notes: The index ranges between 0 and 1, with 0 indicating an equal distribution of income and 1 indicating unequal income. Shaded bars indicate recessions.
Sources: Congressional Budget Office; Census Bureau.

and early 1990s (figure 3). When computed using Census Bureau data, the Gini index increased from 0.40 in 1967 to 0.48 in 2011. This means that in 1967 the difference in income between households was on average 80 percent of the average household income, while in 2010 it was 96 percent. When computed by the CBO, which uses income tax data and a broader definition of income that includes capital gains, the Gini index increased from 0.48 in 1979 to 0.59 in 2007, which means that the relative mean difference in income between households increased from 96 percent to 118 percent.

There are limits to what income inequality measures. For starters, it indicates inequality of outcomes, not of opportunities. It focuses on income, not on welfare, which depends on other variables such as consumption, leisure, health, and public goods. On one hand, income inequality does not respond to changes in the level of income, remaining constant when all households earn proportionally more (or less). On the other hand, it changes all the same regardless of whether the richest households earn more or the poorest households earn less. And, since it provides a snapshot of the relative dispersion of income across households in a given year, part of it is simply explained by the fact that households earn a variable income during the different stages of their lives. That part does not reflect lifetime income inequality. Because inequality responds similarly to very different factors, it is as important to learn why it has risen.

Most of the rise in income inequality since 1980 has been attributed to an increase in the returns to education and in the wage differential between high-skilled and low-skilled labor. Over time, the marginal productivity of high-skilled workers has increased relative to low-skilled workers, which

has driven the demand for their labor higher and raised their relative compensation. As a result of this change, labor income became less evenly distributed and more concentrated at the top.

However, part of the increase in income inequality was due to the decline in labor's share of income, and the associated shift from the more evenly distributed type of income to the more concentrated one. As shown in box 1, the Gini index increases by approximately 0.15 to 0.33 percentage points for every percentage point decline in the labor share. Given these numbers, the decline that the labor share has experienced since the early 1980s (3 to 8 percentage points depending on the measure) translates into an increase of the Gini index of up to 2.5 percentage points. This is close to the CBO's estimate, which suggested that the decline in the labor share from 1979 to 2007 raised the Gini index by 2.3 percentage points.

This is a sizeable effect. More importantly, most of the effect occurred during the last decade, when the decline in the labor share was accelerating. Is this trend going to continue, and how will it affect income inequality going forward?

Future Paths
We use the model described in box 2 to learn about the future path of the labor share. The model decomposes the labor share into its long-run trend and its transitory components, and then it forecasts the future path of the overall labor share. We do all the calculations twice, once with the BEA data and once with the BLS data.

According to our model, the labor share trend has declined since 1980, with an accelerated drop in the 2000s, in both sets of data (figure 4). In the BEA data, the trend declined

Figure 4. Labor Share with Trend and Forecast

Labor income as a share of total income

NIPA labor share
NIPA trend
BLS labor share
BLS trend
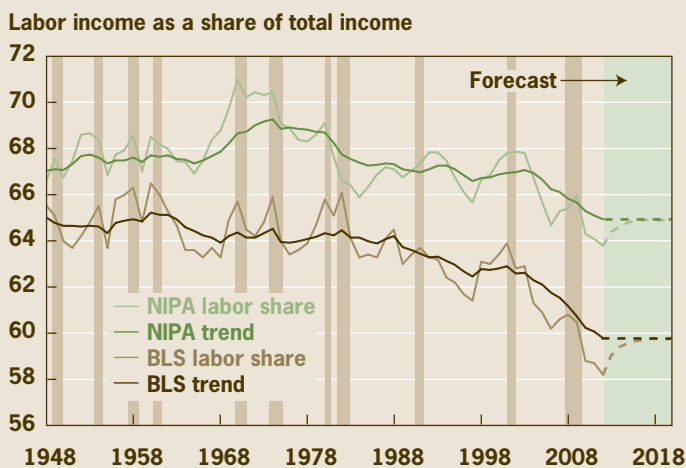
Note: Shaded brown bars indicate recessions.
Source: Congressional Budget Office.

Figure 5: Income Concentration Indexes
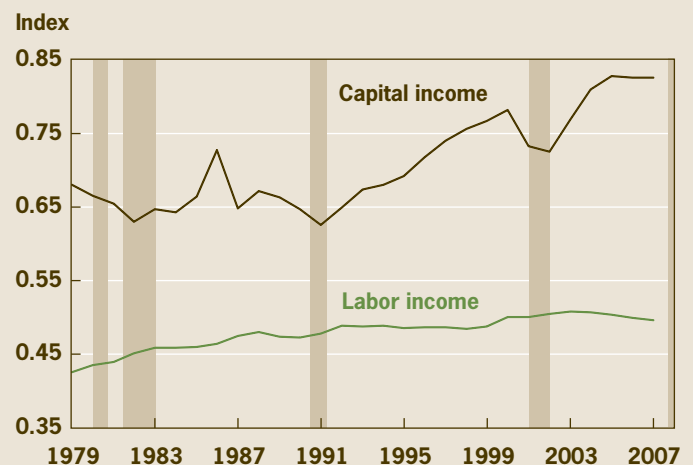
Index

Capital income

Labor income

Notes: The index ranges between 0 and 1, with 0 indicating an equal distribution of income and 1 indicating unequal income. Shaded bars indicate recessions.
Sources: Bureau of Labor Statistics; authors' calculations.

Box 1. A Decomposition of the Gini Index

Income inequality increases when labor and capital incomes become more dispersed, or when the labor share of income declines in favor of capital income. To measure the size of these effects, we write the Gini index as the weighted average of the concentration indexes of labor and capital income, with the weights equal to the two income shares. Concentration indexes measure how concentrated capital or labor income is at the top of the income distribution (See the CBO study for further information):

Gini index = labor's share of income × concentration index of labor income
+ capital's share of income × concentration index of capital income

The Gini index increases if the concentration index of labor or capital rises (for instance if labor income becomes more concentrated at the top end of the income distribution) or if there is a shift from the less concentrated labor income to the more concentrated capital income.

The formula also tells us by how much the Gini index responds to changes in shares or concentrations. If the labor concentration increases by 1 percentage point, the Gini index increases by 1 percentage point times the labor share, and similarly for capital. If both concentrations increase by 1 percentage point, the Gini index increases by 1 percentage point as well. Suppose instead that the labor share decreases by 1 percentage point and the capital income share increases by the same amount. The Gini index then increases by 1 percentage point times the difference between the two concentration indexes.

Data from the CBO indicate that the difference between capital and labor concentrations has varied over time, approximately ranging from 0.25 in 1979, to 0.15 in 1991, to 0.33 percentage points in 2007. Hence, for every percentage point decrease in the labor share, the Gini index increases by approximately 0.15 to 0.33 percentage points (table 1).

Notice that shares and concentrations of labor and capital income are not the ultimate determinants of inequality. There are deeper, underlying factors that cause households and firms to change their behavior, and this results in changes in income shares, income concentrations, and ultimately in inequality.

Decomposing changes in inequality in terms of changes in shares and concentrations is useful because it sheds light on these underlying factors. For instance, an increase in the concentration of labor income at the top may reflect a higher return to education and a higher wage-skill premium, while a decrease in labor's share of income may be indicative of a technological change raising the productivity of capital relative to labor.

Decomposition is also useful for studying the dynamics of income inequality over time, since income shares and concentrations have different statistical and cyclical properties and can be studied separately, as we do in this *Commentary*.

Table 1. Effect of Component Changes on the Gini Index

Component	Gini index
Labor share, 1 percent decrease	0.15–0.33 percent increase
Labor concentration, 1 percent increase	0.6–0.7 percent increase
Capital concentration, 1 percent increase	0.3–0.4 percent increase

Sources: Congressional Budget Office; authors' calculations.

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from levels as high as 69 percent before 1980 to 66.9 percent in 2000, to 64.9 percent today. In the BLS data, the trend declined from levels of approximately 64.5 percent before 1980 to 62.8 percent in 2000, to 59.8 percent today. According to these measures, the trend in the labor share declined 1.5 to 2 percentage points between 1980 and 2000, and then dropped an additional 2 to 3 percentage points, for a total of 4 to 4.5 percentage points.

Our model indicates that the labor share is currently 1 to 1.5 percentage points below its long-run trend level. Part of the decline in the labor share in the past five years was temporary, and it will be reversed as the recovery continues. Going forward, the labor share will pick up and converge to its long-run trend value. This will tend to decrease income inequality, lowering the Gini index by up to 0.5 (0.33 × 1.5) percentage points, as the decomposition in box 1 indicates.

Income inequality will not necessarily decrease though. As shown in box 1, inequality is affected not only by the relative shares of labor and capital income, but also by the concentrations of each. Concentration refers to the way each type of income is distributed across the households that earn it. In particular, concentration indexes measure how concentrated capital or labor income is at the top of the income distribution.

The future path of labor concentration is hard to predict, as it depends on the evolution of the returns to education and of the wage-skill premium. The concentration of capital income, however, is strongly procyclical, rising during recoveries (figure 5), and this suggests that capital income will become more concentrated at the top in the coming years of the recovery, helping to raise income inequality even further. This effect has dominated the dynamics of income inequality during the past two business cycles, so the future

Box 2. A Model of the Labor Share

In this box we describe the model that we use to forecast the evolution of the labor share. To choose the model, we first look at the data. Inspecting figure 1, we notice that the labor share fluctuates cyclically around an underlying slow-moving trend: The labor share peaks right after the beginning of a recession, declines during the rest of the recession and the initial phase of the recovery, and then picks up and returns to trend during the later phase of the recovery. The first step in building our model of the labor share is to identify and isolate this cyclical component.

Looking more closely at how the business cycle affects the labor share, we notice that the labor share is related to the tightness of the labor market: It tends to decline when unemployment is high and increase when unemployment is low. In the data, a high level of unemployment tends to be followed by a decline in the labor share: The correlation between the unemployment gap (the difference between unemployment and its trend, computed with an HP filter) and the change in the labor share over the subsequent year is negative and large, –0.51. We use this information to compute the business cycle component of the labor share with a least square regression of the change in the labor share over the previous-year unemployment gap.

Turning to the trend component, we begin by looking at what determines the labor share in the long run. The main factor is the technology available to produce goods and services. In competitive markets, labor and capital are compensated in proportion to their marginal contribution to production, so the most important factor behind the labor and capital shares is the marginal productivities of labor and capital, which are determined by technology. In fact, one important cause of the post-1980 long-run decline in the labor share was a technological change, connected with advances in information and communication technologies, which made capital more productive relative to labor, and raised the return to capital relative to labor compensation. Other factors that have played a role in the long-run decline in the labor share are increased globalization and trade openness, as well as changes in labor market institutions and policies.

All these factors are slow moving and highly persistent processes. Their future evolution is hardly predictable. This suggests that we model the trend of the labor share as a very slow moving, highly persistent process—a random walk subject to small shocks. To compute the trend, then, we begin with the labor share, subtract the cyclical component computed as explained above, and separate the long-run hidden trend from other transitory components using the Kalman filter.

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path of income inequality will likely be determined by the strength of the recovery and the associated pickup of the concentration of capital income.

Footnote
1. In the BEA's NIPA accounts, gross national income equals the sum of the following categories: Compensation of employees; proprietors' income; rental income; corporate profits; net interest income; indirect taxes less subsidies; depreciation. To compute the labor share, we need to identify what part of each category is labor income, and what part is capital income. To do that, we follow an established methodology. (See Gomme and Rupert 2004 for a justification of this methodology.) We classify the compensation of employees as unambiguous labor income (UL), and we classify corporate profits, rental income, net interest income, and depreciation as unambiguous capital income (UK). The remaining categories, proprietors' income and indirect taxes less subsidies, are partly labor income and partly capital income, in proportion to UL and UK, respectively. As a result, labor's share is computed as the ratio of unambiguous labor income to the sum of unambiguous labor and capital income, i.e., UL/(UL+UK) .

Sources Cited
"Income, Poverty, and Health Insurance Coverage in the United States: 2010," Carmen DeNavas-Walt, Bernadette D. Proctor, and Jessica C. Smith, 2011. U.S. Census Bureau, Current Population Reports, P60-239, U.S. Government Printing Office, Washington, DC.

"Measuring Labor's Share of Income," Paul Gomme and Peter C. Rupert, 2004. Federal Reserve Bank of Cleveland, *Policy Discussion Paper*, no. 7.

"Trends in the Distribution of Household Income between 1979 and 2007," Edward Harris and Frank Sammartino, 2011. Congressional Budget Office.
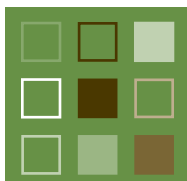
"Behind the Decline in Labor's Share of Income," Margaret Jacobson and Filippo Occhino, 2012. Federal Reserve Bank of Cleveland, *Economic Trends*.

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