

## Distribution of U.S. Personal Income – Growth Incidence Curves

### Overview

Growth Incidence Curves (GICs) provide a graphical representation of changes in the level of personal income for households in different segments of the income distribution. First introduced by Ravallion and Chen (2003), they provide a means to compare income growth for households at the top vs. the bottom of the income distribution over a certain period of time. Therefore, they are a useful metric for assessing how households share in the nation's economic growth.

Estimates of growth incidence curves from BEA's most recent release of the Distribution of Personal Income show that over the period 2000-2024 (Figure 2A), low-income households benefitted relatively more from aggregate economic growth than high-income households, on average. The GIC for this period is downward sloping, indicating that real personal income grew at a faster rate for households in lower deciles of the income distribution. However, there are two main caveats to this finding. First, households in the highest decile of equivalized real personal income experienced higher growth in equivalized real personal income than average over this period. Second, the years 2016-2024 – especially the sub-period 2019-2024, which contained the economic recovery from the COVID-19 pandemic – largely accounted for the overall shape of the GIC for 2000-2024. The period 2000-2015, which contained recessions in both 2001 and 2008, exhibited much flatter GICs.

### Background on Growth Incidence Curves

Economists and policymakers are often interested in understanding the distributional effects of economic growth. Economic growth may or may not be “broad-based” in that it may benefit certain segments of the population relative to others. Additionally, it may be associated with either increases or reductions in the overall poverty rate. One method for assessing whether growth is providing greater benefits to households at the bottom of the income distribution or those at the top – is the Growth Incidence Curve or “GIC.”

The GIC plots deciles of the income distribution on the horizontal axis vs. the rate of personal income growth for that decile on the vertical axis. It is defined for any two points in time and may be expressed as an average annual growth rate or as a total growth rate over the relevant time period (World Bank Group, 2024). It is also common to compare the GIC to the average growth rate (or growth rate in the average) of personal income in order to understand which segments of the income distribution experienced higher or lower than trend growth.<sup>1</sup> Lastly, GICs may be

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<sup>1</sup> Note that “growth rate in the average” and “average growth rate” represent two distinct concepts. The former entails calculating average income in each time period and then taking the growth rate between the two averages. The latter entails calculating growth rates of income for households or persons individually and then taking the average of these growth rates (Ravallion and Chen, 2003). Furthermore, because we do not have panel data the average household in each time period need not be the same.

estimated for an arbitrary set of households (anonymous) or the *same* set of households (non-anonymous) at two points in time.<sup>2</sup>

The shape of a GIC provides information about inequality and how it has changed over time. For instance, if the curve is upward sloping it indicates that lower-income households experienced slower growth than higher-income households. If the curve is downward sloping it indicates that lower-income households experienced faster growth than higher-income households. Therefore, reductions in inequality are associated with a downward sloping GIC, while increases in inequality are associated with an upward sloping GIC. A flat GIC (no slope) indicates that the benefits of aggregate economic growth were experienced equally by all households, at least in terms of personal income growth. The GIC serves to supplement other measures of inequality such as the Lorenz curve, the Gini coefficient or the shares of personal income going to different deciles because it provides a way to assess changes in inequality over time as opposed to just a point in time (Berman and Bourguignon, 2024).

### **Growth Incidence Curves for BEA's Distributional Accounts**

Beginning with the 2026 update, the nominal personal income estimates for each decile are deflated using income-stratified PCE price indices (ISPCEPX) rather than a single aggregate PCE price index. The ISPCEPX are Fisher chain-linked price indices constructed separately for each decile of the equivalized disposable personal income distribution, using the expenditure composition of that income group as weights rather than economy-wide expenditure shares. Because consumption bundles differ across the income distribution, the relevant price deflator also differs by income group.

The figures below show GICs for the latest release of BEA's Distribution of U.S. Personal Income statistics.<sup>3</sup> They are generated by taking the average of equivalized real personal income within a certain decile at two points in time, computing the percentage change between the averages, and dividing by the number of years in the respective time period. Although it is more common to use medians instead of averages within income deciles when comparing distributional statistics, Figure 1 shows that the median of equivalized real personal income was very close to the average of equivalized real personal income for all deciles other than deciles 1 and 10. We therefore proceed using averages, as it permits an easier comparison across years. Broadly, the GICs indicate that over the time period 2000-2024, households in the bottom of the income distribution experienced faster rates of real personal income growth than those at the top of the

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<sup>2</sup> Berman and Bourguignon argue that non-anonymous growth incidence curves (NAGICs) may be better suited to capturing changes in rank income mobility. That is, how households move *within* the income distribution. BEA's Distribution of Personal Income estimates use repeated cross-sections of households from the Current Population Survey, so panel data are not available for this analysis. Accordingly, this post studies *anonymized* GICs, in which the same household may appear in different deciles of the income distribution at different times.

<sup>3</sup> See Gindelsky (2026) for a detailed methodology on measuring the distribution of personal income. In particular, households are ranked on *equivalized* personal income in order to adjust for household size.

income distribution. However, examining smaller sub-periods reveals that this phenomenon was not uniform across all years.

Figure 2A shows the GIC (blue, solid line) for the entire period 2000-2024. Over this time horizon, the average annual growth rate of the mean of equivalized real personal income was about 1.7% (orange, dashed line). The GIC is downward sloping, which indicates that households in the bottom few deciles of the income distribution experienced higher average growth rates in real equivalized personal income (about 2.0%) than households in the top few deciles of the income distribution (about 1.4%). The exception to this pattern is the very top decile, which experienced slightly higher than average real personal income growth. Figure 2B shows the effect on the GIC of using a single aggregate price index across all income deciles (grey, dashed line). Deflating by decile-specific price indices (ISPCEPX) attenuates the downward slope of the GIC somewhat (blue, solid line). This is because prices rose faster (slower) than average for low (high) income households. Collectively, the analysis reveals that aggregate economic growth during these years was relatively more beneficial to low-income households, on average.

However, this broad conclusion does not apply uniformly across all sub-periods within 2000-2024. Figures 3 and 4 show the GICs for the sub-periods 2000-2007 and 2008-2015, respectively. A few patterns stand out. First, the growth rate for the highest (10<sup>th</sup>) decile is above the average growth rate in both sub-periods. Second, the growth rate for the lowest (1<sup>st</sup>) decile is below the average growth rate in the sub-period 2000-2007. Third, the average annual growth rate of mean real equivalized personal income was higher in the first sub-period (about 1.4% per year) than in the second sub-period (about 0.9% per year). Aside from the behavior that the GICs display at the extremes of the income distribution, they are downward sloping within the middle of the income distribution in each sub-period. Overall, however, the GICs are relatively flatter and lower on average in the sub-periods 2000-2007 and 2008-2015 than in the entire period 2000-2024.

Figure 5 shows the GIC for the sub-period, 2016-2024, which reflects the most recently available data. Over this time period, the average annual growth rate of the mean of equivalized real personal income was about 2.1%, the highest of the three sub-periods. This reflects both the strong economic growth the U.S. experienced over this time horizon after the recovery from the Great Recession and transfers during the COVID-19 pandemic. For the bottom deciles, wage growth was particularly strong during this period (Autor et al., 2024). Figure 6 shows that the GIC for the period 2019-2024 is above the average annual growth rate for the bottom and the top and below the average annual growth rate for the middle deciles. This is indicative of the substantial increase in transfers as a part of the COVID response, which significantly raised incomes at the bottom of the distribution.

Recent estimates of the distribution of personal income produced by the BEA show that economic growth was broadly distributed over the last 24 years, with lower-income households experiencing slightly larger increases in real personal income. However, this pattern is largely accounted for by more recent years. While the first two decades of the 21<sup>st</sup> century saw a

moderate degree of growth for low-income households, the past few years of economic growth had much larger benefits for low-income (relative to high-income) households.

## References

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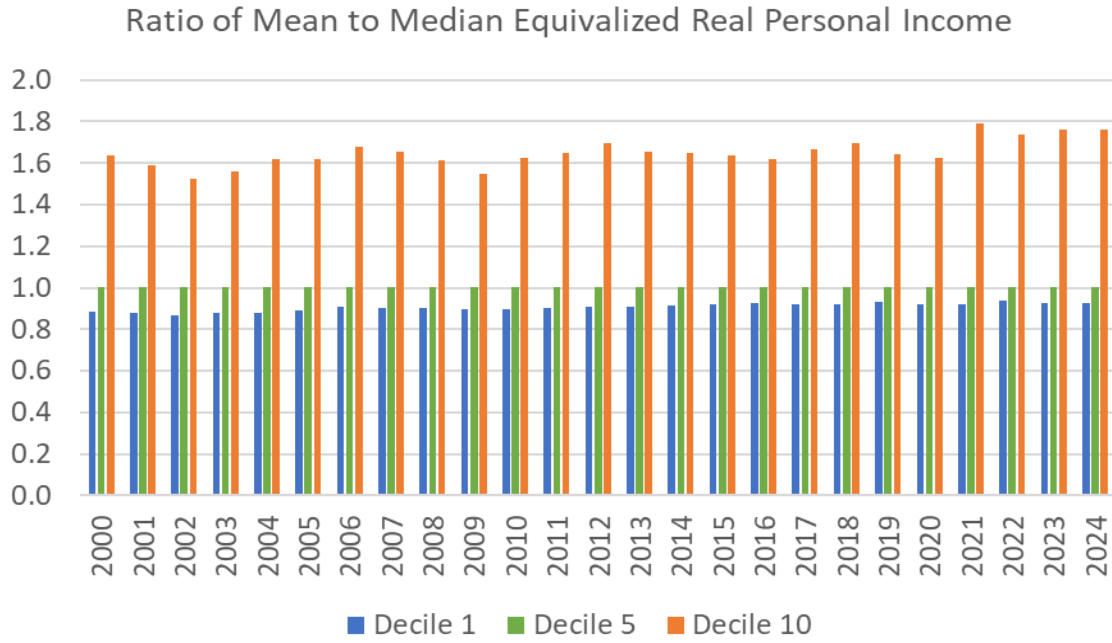
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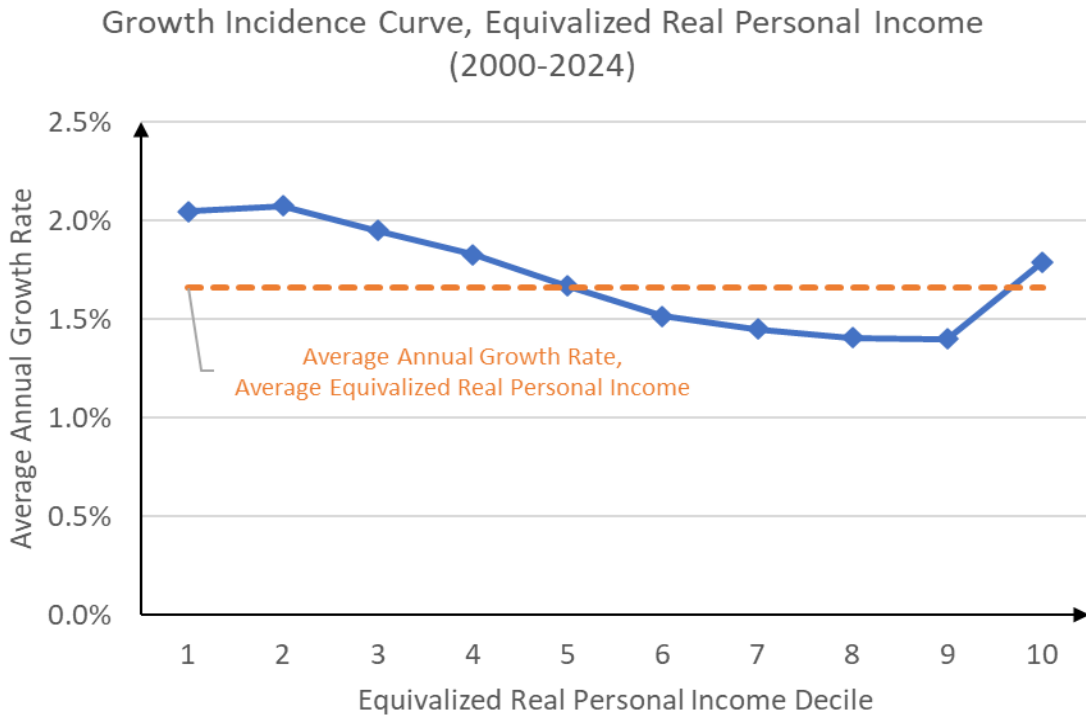
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**Figure 1**



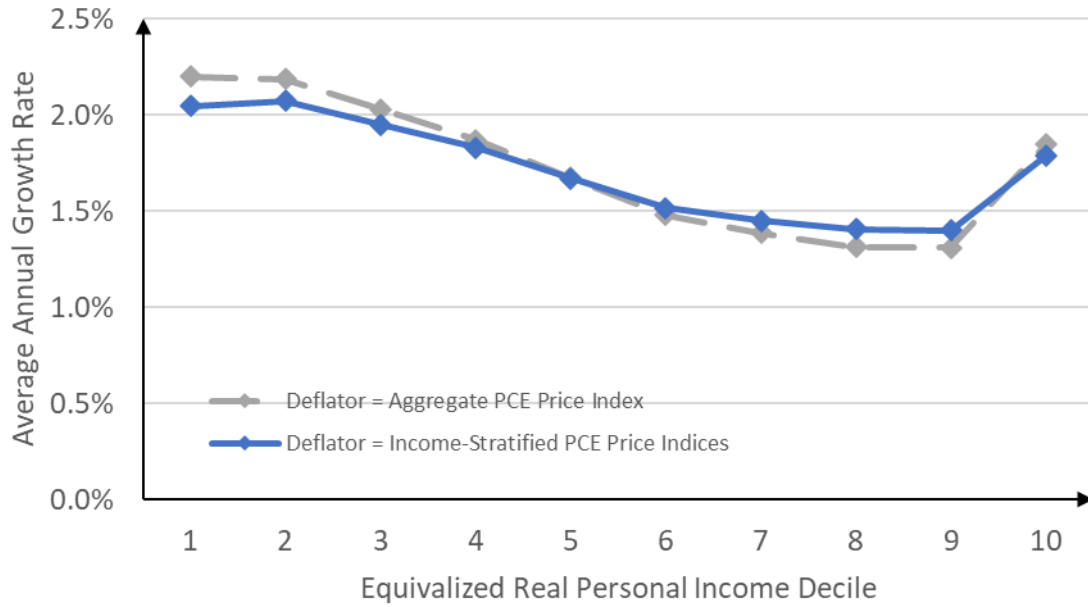
Note: Deciles 2, 3, 4, 6, 7, 8, and 9 not shown. For these deciles, the mean and median values differ by less than 1.5% in all years.

**Figure 2A**



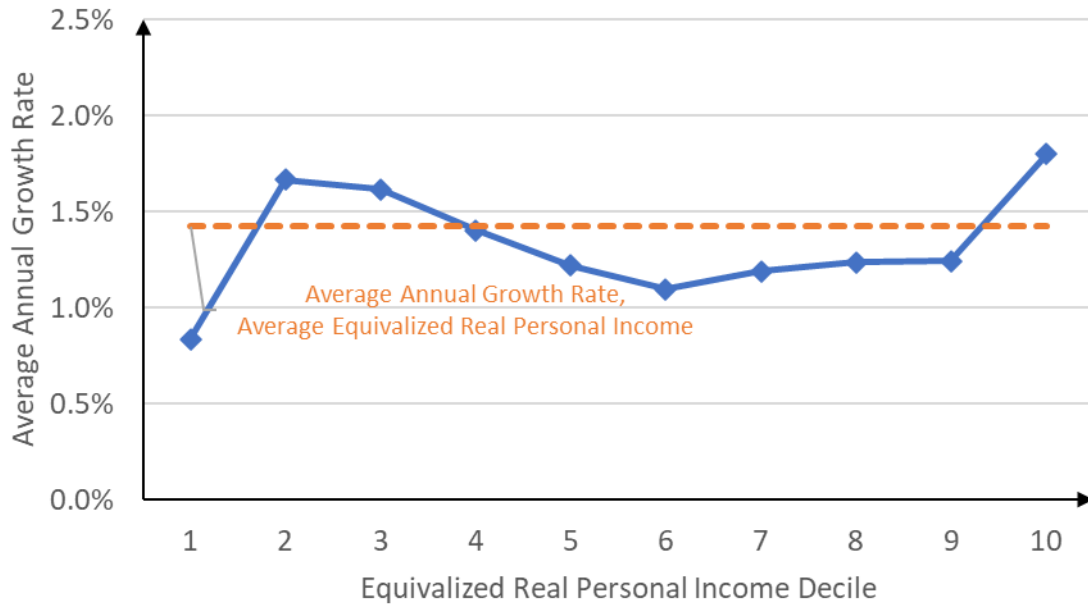
**Figure 2B**

Growth Incidence Curve, Equivalized Real Personal Income  
(2000-2024)



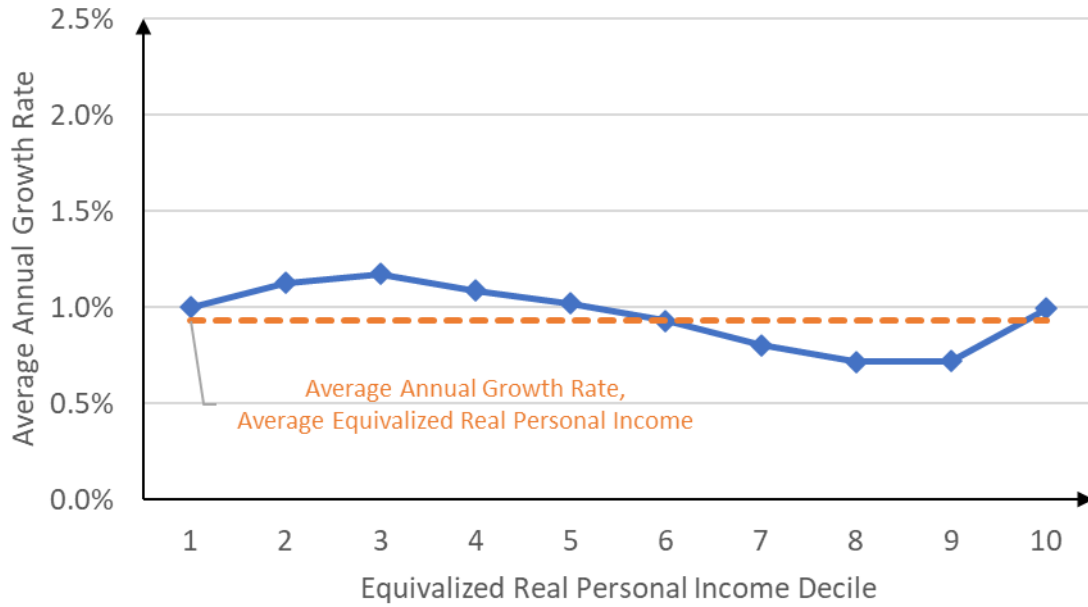
**Figure 3**

Growth Incidence Curve, Equivalized Real Personal Income  
(2000-2007)



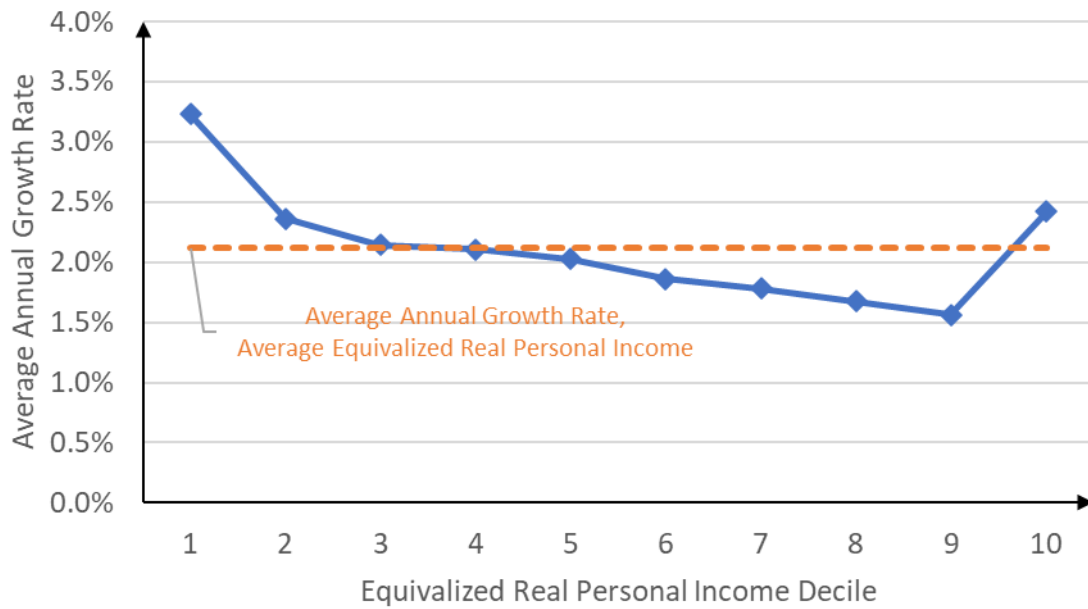
**Figure 4**

Growth Incidence Curve, Equivalized Real Personal Income  
(2008-2015)



**Figure 5**

Growth Incidence Curve, Equivalized Real Personal Income  
(2016-2024)



**Figure 6**

Growth Incidence Curve, Equivalized Real Personal Income  
(2019-2024)

