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# The U.S. Income Distribution: Trends and Issues

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## Summary

Income inequality—that is, the extent to which individuals’ or households’ incomes differ—has increased in the United States since the 1970s. Rising income inequality over this time period is driven largely by relatively rapid income growth at the top of the income distribution. For example, in 1975, the average income of households in the top fifth of income distribution was 10.3 times as large as average household income in the bottom fifth of the distribution; in 2019, average top incomes were 16.6 times as large as those at the bottom.

The pace and pattern of distributional change was not constant over this time period. Census Bureau statistics on household incomes show the following:

- **From the mid-1970s to 2000**, incomes grew, on average, for households in each quintile (i.e., each fifth of the distribution). Income inequality increased significantly because incomes rose more rapidly for the top quintile (i.e., the top fifth or top 20% of the distribution) than it did for other quintiles.
- **Between 2000 and 2010**—a period that contained two economic recessions, with the second being particularly deep—average real household income declined for all quintiles, and overall income inequality declined modestly.
- **Between 2010 and 2019**, average household incomes recovered for each quintile, but the timing and pace of recovery varied. As a result, income inequality grew over the 2010-2019 period.

In 2019, Black- and Hispanic-headed households were disproportionately in lower income quintiles (although less so than in recent decades), whereas White- and Asian-headed households were disproportionately in higher income quintiles. Over recent decades, income inequality has also increased in most other advanced economies, although most others have more equal income distributions than the United States does today and did not experience as much of an increase in inequality as the United States has recently.

Households do not necessarily stay in a given quintile from year to year. A new job or profitable investment can propel a household from a lower quintile to a higher one over time; likewise, income loss can result in movement down the distributional ranks. Such movement throughout the income distribution over time is called *income mobility*. Mobility can be measured in different ways and over different time frames. This report considers analyses of mobility over the short-term, the longer-term, and across generations. In general, data from governmental sources reveal three broad trends: (1) households and individuals are not perfectly mobile, that is, their current distributional rank is related to past rankings; (2) mobility is greater over longer time periods; and (3) intergenerational mobility varies considerably within the United States.

Economists have identified several factors that are likely to have contributed to widening inequality since the 1970s. The relative importance of each factor depends on how and over what time period inequality is measured.

- Labor income has become less equal because some factors have tended to curb wage growth of lower- and middle-income workers relative to higher-income workers. These factors include technological change, globalization, declining unionization, and minimum wage fluctuations.
- Other changes aided by globalization and technological change, such as economies of scale, winner-takes-all markets, and the superstar phenomenon may have boosted wages for very high-wage workers. Change in pay dynamics and social norms may help explain the rise in CEO pay.

- The distribution of financial wealth has grown more unequal over time, which affects income inequality through the capital income that wealth generates.
- The changing demographic composition of households has also contributed to income distribution patterns. Over time, there has been an increase in two earner households, female single-headed households, and marriages of couples with more similar earnings or educational attainment.

Research has investigated the link between income inequality and economic growth. In theory, greater inequality could increase or decrease growth through many channels, and vice versa. Empirically, studies have tried to tease out the relationship between the two across a large number of countries over time. Those studies tend to find stronger evidence that inequality reduces growth in developing countries, which may be of limited relevance to the United States.

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## Introduction

The distribution of income in the United States continues to hold considerable congressional and public attention. Growing distance between the incomes of those at the top of the distribution and those in the middle and bottom of the distribution in recent decades has been a particular focus, as policymakers and analysts seek to understand the driving forces behind these distributional patterns and their broader implications for living standards and economic growth.

In support of congressional consideration, this report describes recent and long-term income distribution trends; provides a summary of research on key factors that contribute to recent distributional patterns; and identifies potential linkages between inequality and economic growth.

### Key Findings

- Income inequality has increased over the past 40 years. It has increased most relative to the top of the income distribution, but inequality also grew among the lower 80%. In 1975, mean household income in the top quintile (i.e., top 20%) was 10.3 times greater than mean income in the bottom quintile; in 2019, it was 16.6 times greater. However, a less prominent trend of rising inequality can also be seen among households in the lower 80% of the income distribution. In 1975, mean income in the 4<sup>th</sup> quintile was 5.9 times greater than mean income in the bottom quintile; in 2019, it was 7.3 times greater.
- **Inequality was primarily driven by the relatively rapid growth of mean income in the top quintile.** Relatively rapid growth in incomes at the top of the distribution was a significant driving factor over this period. Between 1975 and 2019, annualized growth rates were 0.4% for the bottom quintile, 0.6% for the 2<sup>nd</sup> quintile, 0.7% for the 3<sup>rd</sup> quintile, 0.9% for the 4<sup>th</sup> quintile, and 1.5% for the top quintile.
- **The pace and pattern of inequality growth has changed over time.** Between the mid-1970s and 2000, high-income households experienced rapid real income growth relative to middle- and low-income households, but incomes grew on average for all quintiles. Between 2000 and 2010—a period that includes two economic recessions—average incomes fell in all quintiles of the distribution, and overall income inequality declined modestly. As the economy recovered over the 2010 to 2019 period, average incomes increased for each quintile, but the timing and pace of recovery varied. The top quintile was the first to have positive growth and the quickest to return to its pre-recession average income level. As a result, income inequality grew markedly over this period.
- **There are racial and ethnic differences in the distribution of household income.** In 2019, 37% of all households (i.e., regardless of race) had annual incomes under \$50,000 whereas the share among households with a Black householder (i.e., head of household) or a Hispanic householder was higher.<sup>1</sup> Black-headed households and Hispanic-headed households were less represented at the very top of the distribution, where only 5% of Black-headed households and 5% of Hispanic-headed households had incomes of \$200,000 or more, compared to 10% of all U.S. households. Asian-headed households were more uniformly distributed and had higher shares in the top two income groups than White- or Black-headed households.
- **Income mobility is limited, but households and individuals have not become significantly less mobile over time.** Households (and tax units) do not necessarily stay in a given quintile from year to year; they can move up or down through distributional ranks over time. Such movement throughout the income distribution over time is called income mobility. In general, data from governmental sources reveal three broad trends: (1) households and individuals are not perfectly mobile, i.e., there is a relationship between one's current rank in the distribution and past rankings; (2) individuals and households are more mobile over longer periods of time, (3) intergenerational mobility varies considerably along several dimensions within the United States.

<sup>1</sup> *Householder* is a Census Bureau concept that identifies the individual in a household in whose name the housing unit is rented or owned. In the discussion of Census Bureau data in this report, racial groups are not mutually exclusive. *Black* describes householders who indicate that they are of a single race (Black only) and householders who report they are Black and of another race (i.e., *Black alone or in combination*, to use the Census terminology). Likewise, *Asian* describes householders who report their race as Asian alone or in combination, and *White* describes householders who report their race as White alone or in combination. Unless noted otherwise, every racial group includes persons who are Hispanic and non-Hispanic.

- Many factors influence recent distributional trends; the relative importance of each factor has varied over time and across income groups. Technological progress, wage-setting institutions, globalization, and social norms around compensation have altered labor productivity, workers' bargaining power, and pay dynamics with distributional consequences. Macroeconomic conditions affect the availability of jobs and earnings, but are also significant for capital income, a relatively important source of income for the top of the income distribution. Changing demographic composition of households has also contributed to income distribution patterns.
- Research suggests a complex relationship between income inequality and economic growth; empirical findings are based on a large number of countries and may not hold for the United States. The impacts of inequality on incentives, policy, and access to resources that affect economic growth are likely to differ for low-income and high-income countries. Many studies find that higher inequality reduces growth, but some find it raises growth and some find that the relationship is not statistically significant. Methodological challenges restrict researchers' abilities to produce clean estimates of these impacts for a given country, including the United States.

## Trends: Income Distribution and Mobility

This section explores income distribution and income mobility trends using estimates from a variety of data sources. Census data are used to illustrate distributional trends for the overall population and within racial groups. Income data from the World Inequality Database (WID)—a privately constructed series based on multiple sources, including Internal Revenue Service (IRS) records—are used to explore income shares at the very top of the income distribution. Both data sources are used to quantify the relative impacts of the 2007-2009 Great Recession and its recovery across the U.S. income distribution overall and for certain income groups. Income inequality patterns in other high-income countries are examined using a database maintained by the Organization for Economic Cooperation and Development (OECD). This section closes with a discussion of income mobility patterns—that is, how individuals' placement in the income distribution changes over time—using Census Bureau analysis of survey data and estimates calculated from linked IRS tax records.

Describing the income distribution is complicated on several levels. At its heart, this task requires meaningful choices about which data source(s) to use, which in turn affect how income is defined, the unit of analysis, and the extent to which analysis will characterize the full distribution. This report draws upon several sources, but primarily relies on official Census Bureau income statistics and WID income estimates. These sources vary along all dimensions just mentioned (i.e., income definition, unit of analysis, coverage of the full distribution); a summary description of these series is in the text box below. Likewise, there is not one consensus indicator that captures all aspects of the distribution.<sup>2</sup> For example, comparing incomes at the top of the distribution to the bottom captures the overall span of the distribution, whereas top-to-middle (i.e., upper-tail inequality) or middle-to-bottom (i.e., lower-tail inequality) comparisons provide more information about the shape and pattern of change throughout the distribution. A single summary measure like the Gini coefficient<sup>3</sup> can also be employed to examine changes over time, but sometimes at a loss of details on changes within a distribution. This report focuses on a small set of indicators, noting where other indicators tell a different story.

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<sup>2</sup> For an overview of the variety of indicators, see CRS Report R43897, *A Guide to Describing the Income Distribution*, by Sarah A. Donovan.

<sup>3</sup> The Gini coefficient describes the relationship between the cumulative distribution of income and the cumulative distribution of the population. It varies from 0 (total equality) to 1 (total inequality). For more information, see CRS Report R43897, *A Guide to Describing the Income Distribution*, by Sarah A. Donovan.

### Census Bureau and WID Income Statistics

The two primary data sources for the analysis presented in this section are (1) official income statistics published by the Census Bureau, and (2) (unofficial) estimates of the income distribution published in the World Inequality Database (WID). Census and WID estimates differ along several dimensions, are not directly comparable, and, like all income data, have strengths and limitations for purposes of characterizing the U.S. income distribution.

Census Bureau income statistics are published annually and are based on the Current Population Survey (CPS) Annual Social and Economic Supplement (ASEC). Census statistics describe *household money income*, which is pre-tax cash income received by households on a regular basis from market and nonmarket sources. *Market income* includes labor income, in the form of salaries and wages, self-employment earnings, and capital income, in the form of interest and dividend income, rents, royalties, estate and trust income, and nongovernment pensions and annuities. *Nonmarket sources of income* include the value of all public cash transfers (e.g., Temporary Assistance for Needy Families [TANF] and Social Security benefits) and other regular, nongovernment sources of income (e.g., child support). Notably, Census income statistics exclude periodic income (e.g., capital gains) and in-kind transfers (e.g., Supplemental Nutritional Assistance Program [SNAP] benefits, employer contributions to health insurance plans, and others).

Some aspects of the Census Bureau CPS-ASEC data limit its usefulness in characterizing households at the top of the distribution. A key limitation derives from Census data recording and internal processing procedures, which effectively “top-code” individuals’ four earnings categories at \$999,999 each, so that any individual’s income above that limit is reduced to \$999,999 per category.<sup>4</sup> In addition, Census data exclude capital gains income, which is an important source of income for certain top-income households because the distribution of wealth is also skewed (see the section below entitled, “Capital Income”).

The WID income series are based on a combination of sources, including U.S. income tax return statistics published by the IRS, survey data (CPS-ASEC and the Federal Reserve’s Survey of Consumer Finances), and macroeconomic data published by the Bureau of Economic Analysis and the Federal Reserve. The statistics presented in this report describe pretax income, which comprises all income from labor and capital sources, including private and public pensions, and disability and unemployment insurance. The unit of observation is adult individuals ages 20 years and older. Where primary data sources to WID estimates describe the income of a group of adults (e.g., household income or jointly filed tax returns), the joint income is distributed across all adult household members to arrive at *individual-level income estimates*.

WID applies several adjustments to account for income sources missing from IRS administrative data.<sup>5</sup> For example, IRS statistics have less coverage among low-income individuals and households because some low-income individuals and families are not required to file tax returns at all. To account for this missing information, WID uses CPS-ASEC data to identify non-filers (based on reported income) and incorporates them into their final dataset. IRS records do not include tax-exempt labor income. To capture this income source, WID estimates and incorporates employers’ shares of payroll taxes and nontaxable health and pension fringe benefits into their income series. Using data from the Survey of Consumer Finances, WID estimates and includes tax-exempt capital income.

WID income estimates are superior measures of top incomes because (1) they are not based on top-coded data and (2) they include capital gains income. However, they may not measure top incomes perfectly because tax filers may have incentives to misrepresent income flows and losses to reduce tax liability.

Differences in income definitions and units of analysis complicate direct comparisons of Census Bureau and WID income data. In addition, both data sources have changed methods over time and IRS tax policy and tax filing trends change as well; consequently, income statistics from a single source are not perfectly comparable over time.

<sup>4</sup> Census earnings data are top-coded at \$9,999,999 per earnings category at the time of data collection. Once collected, Census edits its income data to minimize the incidence of interviewer error or misreporting on the part of the individual interviewed. For the purposes of Census-published data tabulations (which are used in this report) and public-use data, the internal processing limit is \$999,999 for each of the four individual earnings categories.

<sup>5</sup> An in-depth discussion of methods is in the online appendix to Thomas Piketty, Emmanuel Saez, and Gabriel Zucman, “Distributional National Accounts: Methods and Estimates For The United States,” *Quarterly Journal of Economics*, vol. 133, no. 2 (May 2018), pp. 553-609.

## Distribution of Household Income

**Figure 1** illustrates the distribution of U.S. household income in 2019 by plotting income levels on the horizontal axis and the percentage of households on the vertical axis.<sup>6</sup> Data are from the U.S. Census Bureau’s statistics on households and measure “money income.”<sup>7</sup> Money income describes regular, pre-tax cash income from market and nonmarket sources, including government transfers, for all household members who are at least 15 years old.<sup>8</sup> It excludes capital gains and in-kind forms of income (e.g., noncash government benefits, goods produced and consumed at home or farm, and employer contributions). Capital gains income is significantly skewed across the income distribution<sup>9</sup> and it is also more volatile. For these reasons, excluding this income source may understate incomes at the top of the distribution during periods of economic expansion and understate losses at the top during recessions.

The Census Bureau collects household income data in the Current Population Survey, Annual Social and Economic Supplement (CPS-ASEC) (see the text box “Census Bureau and WID Income Statistics”). The CPS-ASEC is conducted between February and April in each year, and asks householders about income received in the previous calendar year (e.g., householders interviewed in 2020 were asked about income received during 2019). The timing of data collection is particularly meaningful in 2020, as it coincided with the start of the Coronavirus Disease 2019 (COVID-19) pandemic, which disrupted households in several ways (e.g., business and school closures, job loss). A study conducted by Census Bureau researchers indicates a higher nonresponse rate in 2020—meaning that a greater share of households did not complete the survey questionnaire than in recent years—and that the increase in nonresponse was greater for lower income households.<sup>10</sup> These patterns suggest that income statistics for 2019—including those presented in this report—may overstate true values and underestimate income inequality. For example, the researchers observe that whereas the survey data show median household income in 2019 to be \$68,700, they estimate that the true median, when adjusted to account for nonresponse patterns, was \$66,790 (2.8% lower than the official measure). Similarly, they estimate that household income at the 10th percentile in 2019 was 3.8% lower than the official

<sup>6</sup> The data presented in the figure represent household incomes in a single year (i.e., not lifetime income) and do not control for demographic characteristics or career experience. As such, households in the lowest income groups may comprise the working-age poor, retired persons, or students. See Gary Fields, “Does Income Mobility Equalize Longer-Term Incomes? New Measures of an Old Concept,” *Journal of Economic Inequality*, vol. 8, issue 4, December 2010, p. 409.

<sup>7</sup> The U.S. Census Bureau collects income data annually from a random sample of households through the Current Population Survey (CPS) Annual Social and Economic Supplement (ASEC). Data are collected from February to April of each year and measure income from the previous calendar year. Census compiles official income statistics based on these data and publishes them in the annual *Income and Poverty in the United States* report. For Census statistics on income and poverty for 2019, see Jessica L. Semega et al., *Income and Poverty in the United States: 2019*, U.S. Census Bureau, Current Population Reports P60-270, September 2020, <https://www.census.gov/library/publications/2020/demo/p60-270.html>.

<sup>8</sup> Census defines a household as one or more people who live together and may or may not be related. A household may be a single person, a collection of roommates, or one or more families living together.

<sup>9</sup> For example, Congressional Budget Office estimates for 2013 indicate capital gains make up 0.1% of market income for households in the bottom quintile and 19.1% of market income for households in the top 1% of the distribution. Congressional Budget Office, *The Distribution of Household Income and Federal Taxes 2013*, June 2016, at <https://www.cbo.gov/sites/default/files/114th-congress-2015-2016/reports/51361-HouseholdIncomeFedTaxes.pdf>.

<sup>10</sup> Jonathan Rothbaum and Adam Bee, *Coronavirus Infects Surveys, Too: Nonresponse Bias During the Pandemic in the CPS ASEC*, Social, Economic, and Housing Statistics Division Working Paper 2020-10, September 2020, <https://www.census.gov/library/working-papers/2020/demo/SEHSD-WP2020-10.html>.

statistic and household income at the 90th percentile was 1.6% lower.<sup>11</sup> That household income in the lower portion of the household income distribution is estimated to be more overstated than that at the top suggests that income inequality in 2019 may be greater than reflected in official Census Bureau statistics.

### Preliminary Income Distribution Patterns in 2020

This report describes U.S. income distribution trends for 2019, the most recent year for which data are available. Recent and stark economic changes—including the onset of the recession related to the COVID-19 pandemic—suggest that distributional patterns for 2020 may be quite different. Monthly labor force indicators published by the Bureau of Labor Statistics have identified a sharp decline in employment during the pandemic, which is likely to translate to income losses for some households (i.e., through lost earnings).<sup>12</sup> As of October 2020, job loss has been concentrated in occupations at the lower end of the earnings distribution, and therefore may result in greater income inequality in 2020 (relative to 2019). Another high-frequency survey, the Census Bureau’s biweekly Household Pulse Survey, has found that a significant proportion of U.S. households have experienced losses in employment income over 2020. This survey also finds disproportionate impacts amongst households at the lower end of the income distribution, with large proportions of low- and middle-income households reporting income losses.<sup>13</sup>

Additional data are needed to fully assess distributional patterns for 2020. This is because higher-earning occupations—such as professional and technical jobs—have had large employment losses as well, and there is not data available on capital income patterns by income distribution in 2020. Further, automatic stabilizers like unemployment insurance (UI) as well as pandemic-era policies such as economic stimulus payments and the temporary augmentation of UI benefits significantly mitigated lost earnings for some households. The release of the 2020 CPS-ASEC in September 2021 as well as data from other sources will provide a more authoritative understanding of how the income distribution has changed during the COVID-19 pandemic.<sup>14</sup>

**Figure 1** shows a right-skewed distribution—meaning that the bulk of households are found on the left hand side of the figure with a smaller share of households spread out to the right, with considerably more distance (in terms of income) between them.<sup>15</sup> In 2019, median household income was \$68,703 and mean (average) household income was \$98,088.

<sup>11</sup> The full set of estimates is in Table 13 of Jonathan Rothbaum and Adam Bee, *Coronavirus Infects Surveys, Too: Nonresponse Bias During the Pandemic in the CPS ASEC*, Social, Economic, and Housing Statistics Division Working Paper 2020-10, September 2020, <https://www.census.gov/library/working-papers/2020/demo/SEHSD-WP2020-10.html>.

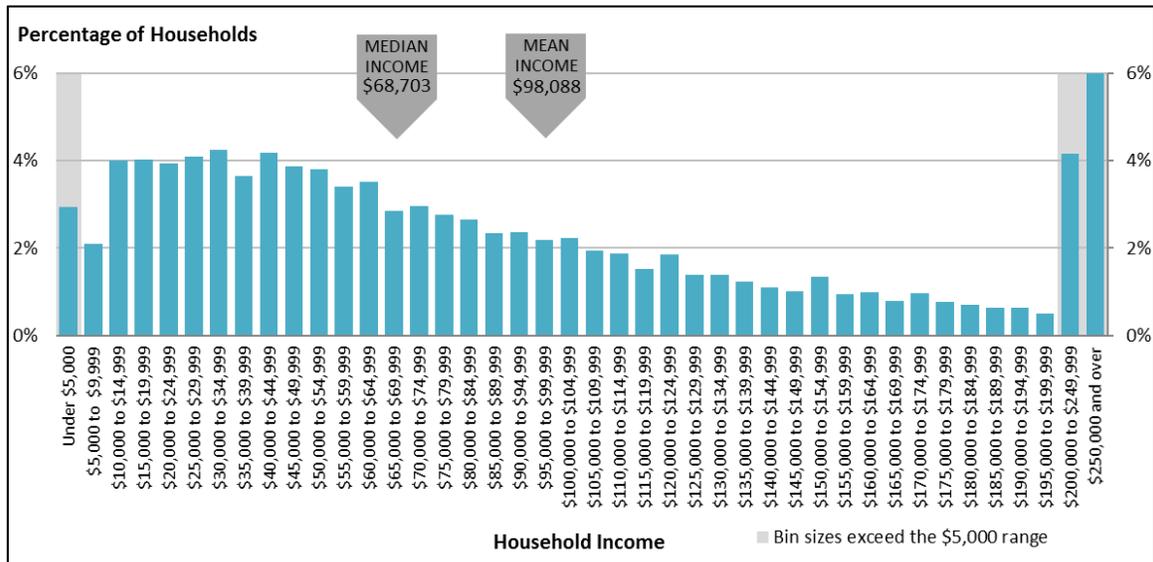
<sup>12</sup> CRS Report R46554, *Unemployment Rates During the COVID-19 Pandemic: In Brief*, coordinated by Gene Falk

<sup>13</sup> CRS Insight IN11457, *COVID-19 Pandemic’s Impact on Household Employment and Income*, by Gene Falk.

<sup>14</sup> Data sources other than the CPS-ASEC will be important to assessing the overall distributional impact of the pandemic and economic recession, as some forms relief (e.g., SNAP expansion, episodic cash transfers) are not included in *household money income*, as defined by the Census Bureau.

<sup>15</sup> When the mass of households are found clustered toward the bottom of the distribution, with a tail to the right, the distribution is said to be *right-skewed* or *positively skewed*. The group of relatively high incomes at the top pulls up the mean, so that it will exceed the median in right-skewed distributions.

Figure I. Distribution of Household Income, 2019



**Source:** U.S. Census Bureau, *Annual Social and Economic Supplement*, available at <https://www.census.gov/data/tables/time-series/demo/income-poverty/cps-hinc/hinc-06.html>.

**Notes:** Income in this figure refers to household money income as defined by the Census Bureau: pre-tax cash income received by households on a regular basis from market and nonmarket sources. Money income excludes periodic income, such as capital gains, and in-kind transfers (e.g., SNAP, housing subsidies). Due to the way the Census Bureau aggregates incomes at the top of the distribution, the top two income groups—“\$200,000 to \$249,999” and “\$250,000 and over”—represent wider income ranges than the groups that categorize the majority of the distribution. The “Under \$5,000” group includes households earning zero or negative money income.

Although **Figure 1** provides meaningful information about the shape and breadth of the income distribution at a point in time (i.e., for 2019), it does not indicate how the distribution of income has evolved over time. **Figure 2** provides some insight to these changes by plotting mean quintile household income from 1967 to 2019 (earliest and latest year, respectively, that data are available).<sup>16</sup> In particular, four main observations can be drawn from the figure:

1. **Mean income increased for all groups.** Mean household income increased in real terms (i.e., adjusted for inflation) for all quintiles over this time period. For example, mean income in the bottom 20% increased from \$10,738 (in 2019 dollars) in 1967 to \$15,286 in 2019.
2. **Rising income inequality was primarily driven by the relatively rapid growth of mean income in the top quintile.** The rate of growth in mean income differs across quintiles, with the top quintile experiencing the highest rate of growth over the 1975-2019 period.<sup>17</sup> Annualized growth rates over this period

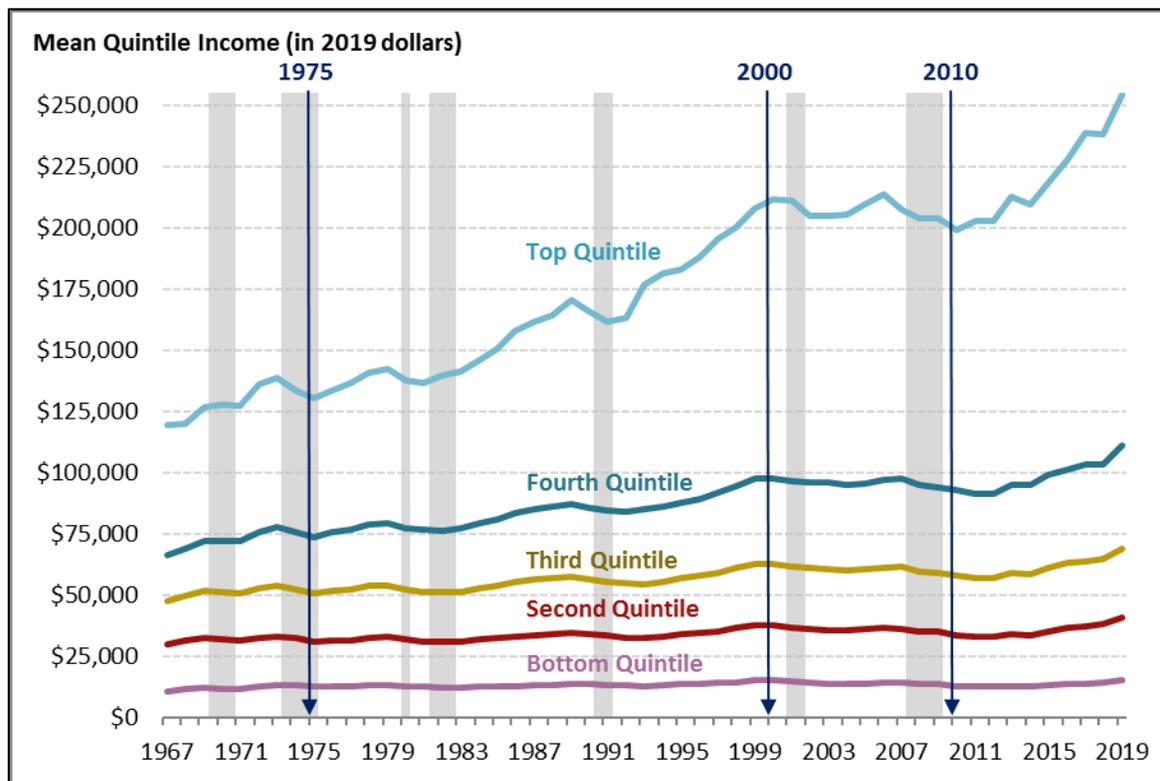
<sup>16</sup> Quintiles divide the population of households—ordered by income from lowest to highest—into fifths. So, e.g., the bottom quintile in a given year represents the 20% of households with the lowest incomes for that year.

<sup>17</sup> Growth in mean income for a given quintile does not mean that all households within a given quintile experienced income growth. Some households’ incomes grew at rates above their quintile average, some grew at rates below their quintile average, and some experienced income losses. In addition, the number of households does not remain constant, nor do households necessarily stay in a given quintile from year to year. So, for example, the households that comprise the middle quintile in 2018 may not be the households that comprise the middle quintile in 2000 or 1975. Analysis of microdata is needed to examine income dynamics; see the “Patterns of Income Mobility” section of this report for further discussion.

were 0.4% for the bottom quintile, 0.6% for the 2<sup>nd</sup> quintile, 0.7% for the 3<sup>rd</sup> quintile, 0.9% for the 4<sup>th</sup> quintile, and 1.5% for the top quintile.<sup>18</sup> Annualized mean income growth over this period for the top 5% of households—a subgroup of the top income quintile—was 1.9%, suggesting that incomes at the very top of the distribution may be driving growth patterns in the top quintile.

3. **Inequality also grew among households in the lower 80% of the income distribution.** In addition to growth in upper tail inequality (i.e., relatively rapid growth in mean income in the top quintile), the figure shows increasingly wider distribution of incomes among the lower 80% of households. In 1975, mean income in the 4<sup>th</sup> quintile was 5.9 times as large as mean income in the bottom quintile; in 2019, it was 7.3 times as large.
4. **Mean incomes respond to business cycles.** Mean income growth for all quintiles stalls or declines during periods of recession, and can take several years to bounce back after a recession. Across all quintiles, mean incomes fell by 1.7% (top quintile) to 4.2% (3<sup>rd</sup> quintile) between 2007 and 2009. Real mean incomes returned to their 2007 levels at different paces: the top quintile was the first to recover (in 2013) and the bottom quintile was the last (in 2019).

**Figure 2. Mean Quintile Household Income, 1967-2019**



**Source:** Figure created by the Congressional Research Service (CRS) based on data from U.S. Census Bureau, Current Population Survey (CPS), Annual Social and Economic Supplements (ASEC), available at

<sup>18</sup> The distance between mean incomes at the top and bottom of the distribution would have grown even if the quintiles had had the same growth rate. Annualized growth patterns over the full period of data (1967 to 2019) were similar: 0.7% for the bottom quintile, 0.6% for the 2<sup>nd</sup> quintile, 0.7% for the 3<sup>rd</sup> quintile, 1.0% for the 4<sup>th</sup> quintile, and 1.5% for the top quintile.

<https://www.census.gov/data/tables/time-series/demo/income-poverty/historical-income-households.html>. Recession data (in gray) are from the National Bureau of Economic Research, at <https://www.nber.org/cycles.html>.

**Notes:** Income refers to household money income as defined by the Census Bureau: pre-tax cash income received by households on a regular basis from market and nonmarket sources. Money income excludes periodic income, such as capital gains, and in-kind transfers (e.g., SNAP, housing subsidies). Census uses the CPI-U-RS to convert incomes to 2019 dollars. Periods of recession are shaded in gray. Apparent turning points in the patterns of distributional growth are indicated by vertical blue lines.

**Figure 2** illustrates three distinct distributional growth patterns, with the years 1975,<sup>19</sup> 2000, and 2010 being apparent turning points:

1. **Between 1967 and 1975**, inflation-adjusted average income grew for all five quintiles—except during recessions—with the *bottom quintile* experiencing relatively rapid growth at a 2% annualized rate.<sup>20</sup>
2. **Between 1975 and 2000**, inflation-adjusted average income continued to grow for all five quintiles—with brief interruptions during recessions—but in contrast to the 1967-1975 period, the mean income for the bottom quintile grew at the slowest rate (0.7% annualized growth over 1975-2000) and growth rates were progressively higher across the income distribution. As a result, overall income inequality increased markedly between 1975 and 2000, when compared with 1967 through 1975.<sup>21</sup>
3. **Between 2000 and 2010**—a period that contained two economic recessions, with the second being particularly deep—average real income declined for all quintiles. At an annualized rates, real average incomes *fell* by 1.6%, 1.2%, 0.8%, 0.5%, and 0.6% for the bottom, 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup>, and top quintiles, respectively, over this period, and overall income inequality declined modestly.<sup>22</sup>
4. **Between 2010 and 2019**, average incomes recovered for each quintile, but the timing and pace of recovery varied. The top quintile was the first to have positive growth and the quickest to return to its pre-recession average income level. Over the 2010 to 2019 period, real average income rose at annualized rate of 1.9%-2.2% for the bottom four quintiles, and at 2.8% for the top quintile. As a result, income inequality grew over the 2010-2019 period. The difference between mean incomes in the top and bottom quintiles increased at an annualized rate of 2.8%, which was the fastest pace growth (in this measure) of all periods considered here.

<sup>19</sup> Based on a comparison of income thresholds at the top and bottom of the income distribution, a sustained divergence in the growth rate of top quintile income relative to other quintiles appears to begin in 1975. However, other inequality measures or analyses of longer data series may indicate a different start point.

<sup>20</sup> Annualized growth rates over this period were 2% for the bottom quintile, 0.5% for the 2<sup>nd</sup> quintile, 0.8% for the 3<sup>rd</sup> quintile, 1.3% for the 4<sup>th</sup> quintile, and 1.1% for the top quintile.

<sup>21</sup> Between 1967 and 1975, the difference in mean incomes at the top quintile and the bottom quintile—a measure of the span of the income distribution—increased by 8% (i.e., 1% annualized growth), whereas between 1975 and 2000, this distance grew by 67% (i.e., 2% annualized growth).

<sup>22</sup> Between 2000 and 2010, the difference in mean incomes at the top quintile and the bottom quintile fell by 5% (i.e., 0.6% loss at an annualized rate).

### The Relationship Between Income Inequality and Poverty

Income inequality and poverty measures are both used to evaluate the economic status of people at the lower end of the income distribution. However, they measure different economic concepts. Income inequality measures tend to be *relative metrics*: they describe *individual incomes* and *household incomes* relative to each other, but not necessarily compared against any fixed income level. Poverty measures are used to examine the number or share of people facing economic deprivation, and to gauge the level of that deprivation. Deprivation (and thus poverty) can be defined in absolute terms (e.g., as income below a fixed income level) or as a relative measure.

In the United States, poverty is measured by comparing *family income* against a fixed income level, which is adjusted over time for inflation using the Consumer Price Index for All Urban Consumers (CPI-U), and is scaled according to family size and the ages of the members. That is, it is a *quasi-absolute measure*. In addition, the U.S. poverty rate is based on characteristics of *families* (i.e., people who live together related by birth, marriage, or adoption), whereas official Census data on the distribution of incomes is based on *households* (i.e., all persons living within the same housing unit). Because they measure different phenomena, income inequality measures and poverty measures need not necessarily move in the same direction. The poverty rate will be influenced by changes in the absolute level of income at the bottom of the distribution, while many measures of inequality will depend on changes in income at the bottom relative to the middle or top of the distribution.

The Census Bureau publishes data annually for both income inequality and poverty. Since the 1970s, the percentage of people in poverty has fluctuated between 10.5% and 15.2%, largely in tandem with the business cycle, but has shown no trend over the full period, while measures of income inequality have trended upward over the same period.<sup>23</sup>

Census data can be used to examine the relationship between mean income by quintile, defined using family income, and official poverty thresholds.<sup>24</sup> Between 1967 and 2019, average family income in the bottom quintile has remained close to the poverty threshold—the ratio of average family income in the bottom quintile to an appropriate poverty threshold ranges from 0.88 in 1993 to 1.2 in 2019, with no overall trend over the 1967-2019 period.

## Income Distribution by Race and Ethnicity

The trends in **Figure 1** and **Figure 2** describe distributional patterns for U.S. households in aggregate. This analysis is meaningful, but masks racial and ethnic dimensions of income inequality that have been the focus of some congressional interest. The Congressional Research Service (CRS) applies Census definitions in this section, which divide race into Black, White, or Asian and ethnic origin into Hispanic or non-Hispanic. People of Hispanic origin may be of any race.

Racial differences in the distribution of household income are illustrated in **Figure 3**, which plots the income distributions of households categorized by the race—Black, White, or Asian—of the *householder*.<sup>25</sup> In 2019, 37% of all households (i.e., regardless of race) had annual incomes under \$50,000 whereas the share among households with a Black householder was notably higher at 53%.<sup>26</sup> Black-headed households were less represented in all other income categories, particularly at the very top of the distribution where only 5% of Black-headed households had incomes of

<sup>23</sup> Jessica L. Semega et al., *Income and Poverty in the United States: 2019*, Current Population Reports, P60-270, September 2020, Table A-4, Table B-5, and Figure 7.

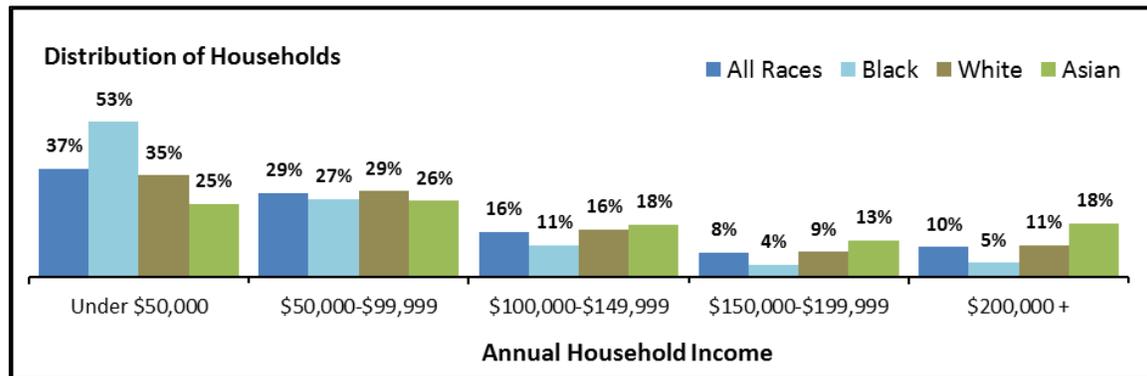
<sup>24</sup> U.S. Census Bureau, Table F-21 Average Income-to-Poverty Ratios for Families, by Income Quintile, Race and Hispanic Origin of Householder, at <https://www.census.gov/data/tables/time-series/demo/income-poverty/historical-income-families.html>.

<sup>25</sup> *Householder* is a Census Bureau concept that identifies the individual in a household in whose name the housing unit is rented or owned. In 2019, 78.3% of households were White-headed households, 14.1% were Black-headed households, and 5.7% were Asian-headed households; race is not published for the remaining share of households. Each of these categories contains Hispanic and non-Hispanic headed households. A discussion of recent U.S. demographic trends is in CRS Report RL32701, *The Changing Demographic Profile of the United States*, by Laura B. Shrestha and Elayne J. Heisler.

<sup>26</sup> To put the “Under \$50,000” income group in perspective, overall median household income in 2019 was \$68,703.

\$200,000 or more; by contrast, 10% of all U.S. households were in this income category. Although the distribution is also right-skewed for Asian-headed households, Asian-headed households were more uniformly distributed across the income groups and had higher shares in the top two income groups than any other racial group shown in **Figure 3**. The distributional pattern of White-headed households (i.e., the majority group) mirrored the overall distribution.

**Figure 3. Income Distribution of Households by Race of Householder, 2019**



**Source:** U.S. Census Bureau, Table H-17 Households by Total Money Income, Race, and Hispanic Origin of Householder, at <https://www.census.gov/data/tables/time-series/demo/income-poverty/historical-income-households.html>.

**Notes:** *Householder* is a Census Bureau concept that identifies the individual in a household in whose name the housing unit is rented or owned. The racial groups shown above are not mutually exclusive. *Black* describes householders who indicate that they are of a single race (Black only) and householders who report they are Black and of another race (i.e., *Black alone or in combination*, to use the Census terminology). Likewise, *Asian* describes householders who report their race as Asian alone or in combination, and *White* describes householders who report their race as White alone or in combination. Every racial group includes persons who are Hispanic and non-Hispanic. Percentages may not sum to 100% due to rounding.

These distributional patterns among White-headed and Black-headed households have been largely similar since 2002, the first year for which Census published data based on its current method of collecting data by race. The income distribution among Asian-headed households has been somewhat more volatile than that of other racial groups, but households appear to be shifting from lower to higher income categories.<sup>27</sup> Prior to 2002, Census recorded race using a different methodology and consequently data collected before and after 2002 are not entirely comparable.<sup>28</sup> Between 1967 and 2001, the shares of households in the “under \$50,000” (in constant dollars) income group declined for all three racial groups (Black, White, and Asian). The share of Black-headed households in the lowest income category declined markedly over this period, and increased in the four other income categories.<sup>29</sup> Shares of White-headed households shifted from the lowest two categories to the highest three income categories over the same period. Between 1987 (the earliest year of data) and 2001, the shares of Asian or Pacific Islander headed

<sup>27</sup> For example, in 2002 36% of Asian-headed households were in the “under \$50,000” income category, in 2019 this share was 25%. In 2002, 8% of Asian-headed households were in the “\$200,000+” category and in 2019 this share was 18%.

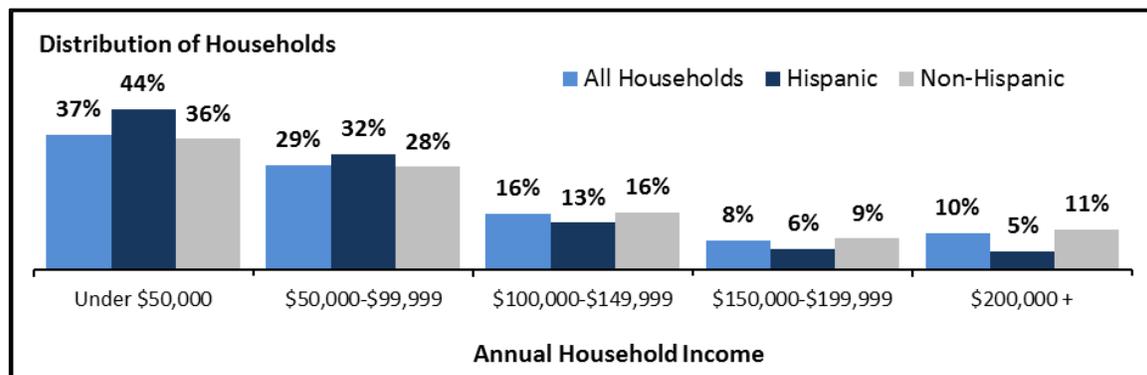
<sup>28</sup> Until 2002, Census recorded only one racial group per respondent, and therefore could not publish separate statistics on individuals who identify with more than one race. Some multiracial individuals will be included in the pre-2002 single-race groups, but all of them will not.

<sup>29</sup> Although the percentage of Black-headed households in the “under \$50,000” income group rose and fell over 1967 to 2001, overall it followed a downward trend.

households in the bottom two income categories declined, while their shares in the top three income categories climbed, with notable gains in the top income category.

As noted above, Census classifies Hispanic as an ethnic origin, not a race, therefore incomes of Hispanic-headed households cannot be directly compared with Black-, White-, or Asian-headed households in Census data. **Figure 4** plots the income distribution in 2019 of households with a householder of Hispanic heritage. Hispanic-headed households were more concentrated in the lowest income category shown in the figure (incomes under \$50,000) than the full population of U.S. households. Hispanic-headed households were less represented in the top three income categories, particularly at the very top of the distribution. Only 5% of Hispanic-headed households had incomes of \$200,000 or more, whereas 10% of all U.S. households were in this income category. Non-Hispanic households (i.e., those whose head of household is not Hispanic) had a similar income distribution to the overall population.<sup>30</sup>

**Figure 4. Distribution of Household Incomes, by Hispanic Origin of the Householder, 2019**



**Source:** Census Bureau statistics for Hispanic-headed households and all households. CRS calculations using Census data for Non-Hispanic households. U.S. Census Bureau, Table H-17 Households by Total Money Income, Race, and Hispanic Origin of Householder, at <https://www.census.gov/data/tables/time-series/demo/income-poverty/historical-income-households.html>.

**Notes:** “Householder” is a Census Bureau concept that identifies the individual in a household in whose name the housing unit is rented or owned. Householders are identified as being of “Hispanic origin” if they indicate that their origin was Mexican, Puerto Rican, Cuban, Central or South American, or some other Hispanic origin. People of Hispanic origin may be of any race. See <http://www.census.gov/programs-surveys/cps/technical-documentation/subject-definitions.html#ethnicorigin>.

Since 1972, when information on Hispanic origin was first collected by Census, the share of Hispanic-headed households that were in the under \$50,000 income category has declined steadily, while shares in the top three income categories have increased.<sup>31</sup>

## Trends at the Top of the Distribution

As discussed above, income distribution trends have been driven by relatively faster income growth in the top quintile of the distribution. Even within that quintile, income gains have been

<sup>30</sup> This observation of distributional similarity between all households and non-Hispanic-headed households partly reflects the relatively small share of Hispanic-headed households (13.8% of all households) in 2019.

<sup>31</sup> When analysis is restricted to 2002-2019 (i.e., the break in the data series for households categorized by race), a similar shifting of households from low- to high-income categories is observed for Hispanic-headed households, but in terms of magnitude, the change is much more subtle.

further concentrated. This section looks at income trends for the top 1% of the distribution. Because some aspects of Census data on household income limit their usefulness in characterizing households at the top of the distribution, this report provides analysis using estimates of top income shares from the WID.<sup>32</sup>

WID estimates are constructed from several data sources, including IRS tax statistics, which allows for a better measure of top incomes.<sup>33</sup> Income includes all income sources reported on federal tax returns before deductions, including realized capital gains—a significant difference from the Census data presented earlier. Different from Census data on *household income*, the WID estimates presented in this section describe *income per adult ages 20 years and older*.

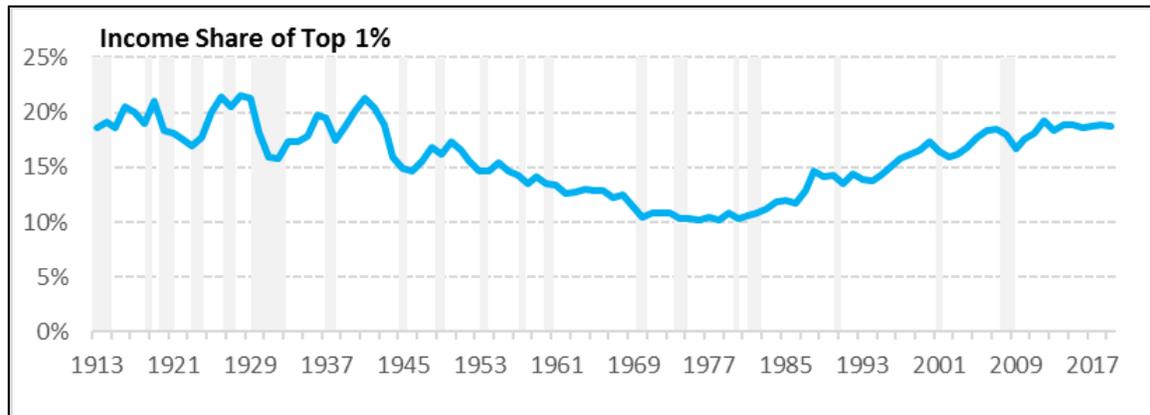
### Long-Run Trends in Income Shares of the Top 1%: The U-Shaped Curve

**Figure 5** plots the estimated share of national income earned by the top 1% of adults from 1913 to 2019. Shares are based on income that includes realized capital gains income. The figure extends analysis back beyond 1967 (i.e., the starting year for Census data) to address questions about income distribution trends over the long run, and whether recent trends are unprecedented. **Figure 5** illustrates the U-shaped curve of top income shares over the last century; concretely, income shares of the top 1% peaked during the 1920s, fell and then stabilized over the next 50 years, and started climbing again in the early 1980s. The figure further shows that income shares among the top percentile tend to respond to business cycles, falling during economic recessions, and rising during periods of expansion.

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<sup>32</sup> The World Inequality Database, <http://www.wid.world/>, accessed by CRS on October 11, 2020. A primary limitation of the Census data is that earnings data are top-coded at \$9,999,999 per earnings category at the time of data collection. Once collected, Census edits its income data to minimize the incidence of interviewer error or misreporting on the part of the individual interviewed. For the purposes of Census-published data tabulations and public-use data, the internal processing limit is \$999,999 for each of the four individual earnings categories. For more on these limitations of Census data for describing top incomes, see CRS Report R43897, *A Guide to Describing the Income Distribution*, by Sarah A. Donovan.

<sup>33</sup> The methods for constructing WID estimates for the United States are described in Thomas Piketty, Emmanuel Saez, and Gabriel Zucman, “Distributional National Accounts: Methods and Estimates For The United States,” *Quarterly Journal of Economics*, vol. 133, no. 2 (May 2018), pp. 553-609. In that article, the authors acknowledge the limitations of their data, including the tendency for national accounts data to underestimate some income sources, and the authors’ reliance on certain assumptions to impute all national income, taxes, transfers and public goods spending. Others have offered a critique of the WID data as well, such as James K. Galbraith, “Sparse, Inconsistent and Unreliable: Tax Records and the World Inequality Report 2018,” *Development and Change*, vol. 50, no. 2 (2018), pp. 329-346.

**Figure 5. Estimated Share of National Income Earned by the Top 1%, 1913-2019**

**Source:** Income data are from the *World Inequality Database*, accessed on January 12, 2021, <http://www.wid.world/>. Recession data are from the National Bureau of Economic Research (NBER), at <http://www.nber.org/cycles.html>.

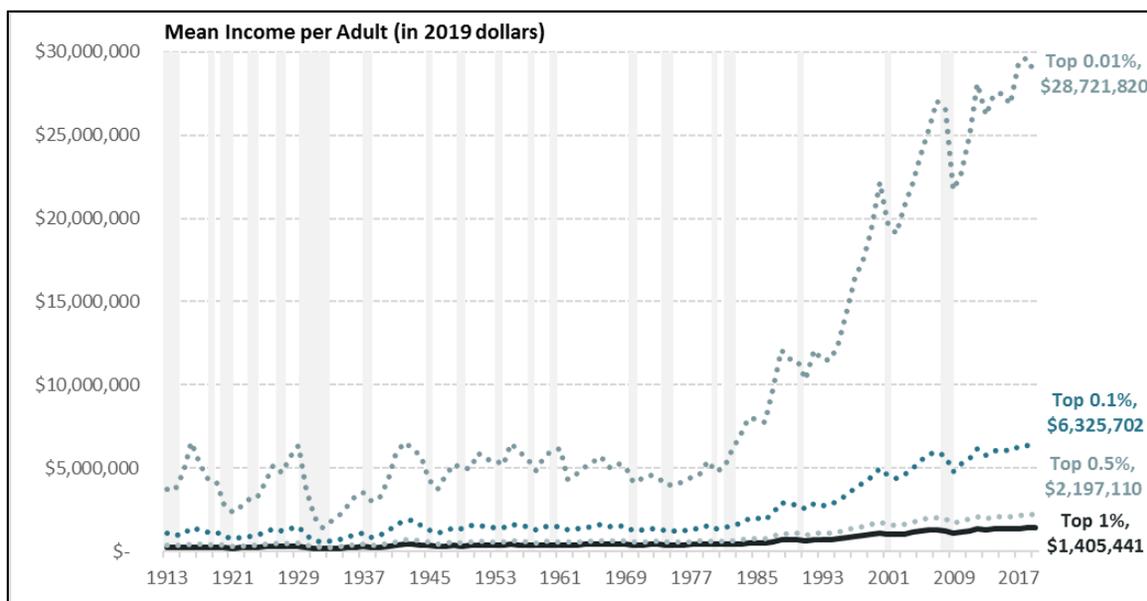
**Notes:** Income estimates are based on a combination of sources including U.S. administrative tax records, survey data, and national accounts. National income is defined as gross domestic product minus capital depreciation plus net income received from abroad. Periods of recession are shaded in gray.

### The Widening Distribution of Income within the Top 1%

**Figure 6** plots average income per adult for select income groups within the top 1% of the income distribution from 1913 to 2019, and illustrates a wide and growing divide between incomes of those at the top of the distribution. With the exception of the top 0.01%, the income groups in **Figure 6** are overlapping; for example, the top 1% also includes data for the top 0.5%, top 0.1%, and top 0.01%; and the top 0.5% also includes the top 0.1% and top 0.01%. Individuals in these groups (and among the top 0.01% in particular) experienced a relatively rapid rise in incomes starting in the 1980s and slowing after 2000. Average top incomes exhibit greater volatility around the period of the Great Recession, with more steady growth starting in 2016.

Although data in the **Figure 2** and **Figure 6** are not directly comparable, **Figure 6** shows trends suggesting that top quintile mean income growth is driven by rapidly increasing incomes at the very top of the income distribution.<sup>34</sup>

<sup>34</sup> A significant difference between Census data examined in **Figure 2** and the WID data presented in **Figure 6** is the inclusion of reported capital gains in WID data. Analysis of an earlier and no-longer published WID income series based solely on IRS tax data (through 2015) shows that trends in income that *excludes capital gains income* is less volatile from year to year, but reveals similar trends overall. That series shows rapid income growth among top income groups that stalled in 2000. Between 2000 and 2015, average incomes oscillated within wide bands, but the trend was positive for all income groups (i.e., 2015 average incomes were higher than 2000 average incomes for all groups) and somewhat less volatile than the WID income series that includes capital gains.

**Figure 6. Mean Income per Adult, Select Percentiles, 1913-2019**

**Source:** Income data are from the World Inequality Database, accessed on January 12, 2021, <http://www.wid.world/>. Recession data are from NBER, at <http://www.nber.org/cycles.html>.

**Notes:** Income estimates describe pre-tax income and are based on a combination of sources, including U.S. administrative tax records, survey data, and national accounts. Periods of recession are shaded in gray. Data are in 2019 dollars. Income groups presented in this figures are not mutually exclusive. Instead, each income group includes data for all higher-level groups; for example the top 1% also includes data for the top 0.5%, top 0.1%, and top 0.01% and the top 0.5% also includes the top 0.1% and top 0.01%.

## The Impact of the Great Recession and the Recovery on Inequality

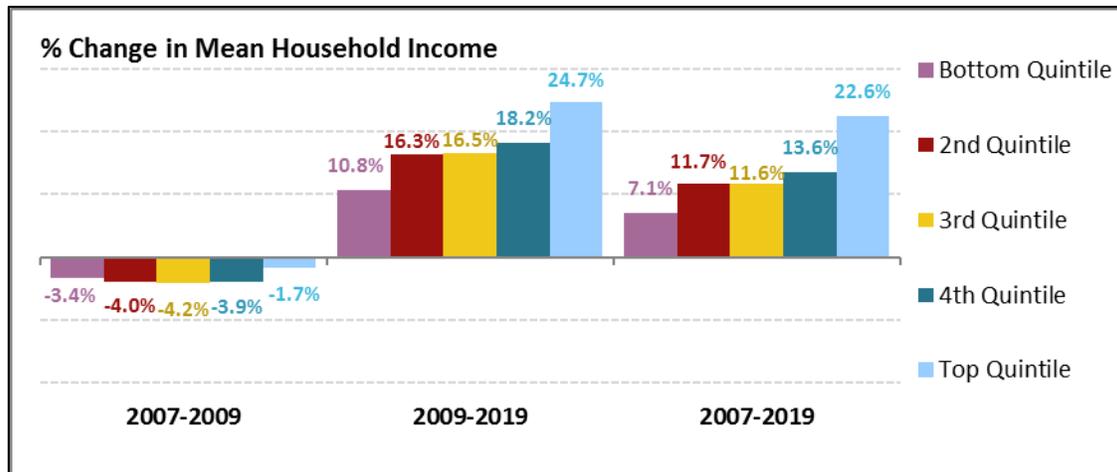
The Great Recession of 2007 to 2009 was the longest and deepest recession since the Great Depression, resulting in substantial income and job loss overall. Following the recession, the economic recovery featured below average growth that prolonged the return to full employment.<sup>35</sup> As noted earlier in this report, the United States has been in recession since February 2020 and economic changes since then suggest that the current downturn may have distributional impacts (see the text box “Preliminary Income Distribution Patterns in 2020”). This section looks at how households across the income distribution fared during and since the Great Recession. While not necessarily predictive of future patterns, this analysis may inform expectations for the impacts of the current recession on the U.S. income distribution.

According to Census data presented in **Figure 7**, real household income across all parts of the distribution fell during the recession. Mean income loss over 2007-2009 ranged from 1.7% (top quintile households) to 4.2% (3<sup>rd</sup> quintile households). Mean incomes continued to fall for all quintiles during the economic recovery, and the resumption of income growth was staggered. Mean incomes were below their 2009 levels for the top two quintiles until 2013, whereas the second and third quintiles were below 2009 levels until 2015; mean income for the bottom quintile remained below its 2009 level until 2017. Over the 2009-2019 period, these patterns translated into net mean income growth for all quintiles but with growth rates increasing with

<sup>35</sup> For more information, see CRS Report R44543, *Slow Growth in the Current U.S. Economic Expansion*, by Mark P. Keightley, Marc Labonte, and Jeffrey M. Stupak and CRS Report R43476, *Returning to Full Employment: What Do the Indicators Tell Us?*, by Marc Labonte.

quintile rank. Looking at the period as a whole, the income distribution became less equal as mean income growth in the top two quintiles outpaced income growth in the 3<sup>rd</sup>, 4<sup>th</sup>, and bottom quintiles.

**Figure 7. Percentage Change in Mean Quintile Income Between 2007-2019**



**Source:** Figure created by CRS based on data from Census Bureau, CPS, Annual Social and Economic Supplements, available at <https://www.census.gov/data/tables/time-series/demo/income-poverty/historical-income-households.html>.

**Notes:** Income in this figure refers to household money income as defined by the Census Bureau: pre-tax cash income received by households on a regular basis from market and nonmarket sources. Money income excludes periodic income, such as capital gains, and in-kind transfers (e.g., SNAP). Census uses the CPI-U-RS to put dollar amounts into constant dollars.

Two limitations of the Census data make this story incomplete: the Census data (1) do not capture income trends at the very top of the distribution (as discussed above) and (2) exclude capital gains and losses.<sup>36</sup> The latter is significant because capital gains and losses are not evenly distributed across the income distribution (as discussed below) and the financial crisis, which triggered the Great Recession, caused a large loss in wealth that reduced capital gains income. WID data shed some light on these issues. Because the data are based in large part on income tax data, however, they may exaggerate actual income losses since it is advantageous for tax purposes to realize gains when they are low and declaring losses reduces tax liability.<sup>37</sup>

Using the WID data, **Figure 8** presents the percentage change in average income for the lowest 90% of income tax filers, the top 10%, and selected groups within the top 10% (income includes capital gains).<sup>38</sup> Relative to trends shown in **Figure 7**, **Figure 8** indicates large losses in mean income for all groups during the recession. Whereas percentage loss in mean income ranged from 1.7% to 4.2% across quintiles in CPS data, WID data show losses of up to 14% for selected subgroups of the top 10% of adults. Similarly, **Figure 8** reveals relatively large gains in mean income during the 2009-2019 period for those at the top of the income distribution. Growth rates over this period for the top quintile (i.e., the top 20%) in CPS data and the top 10% in the WID are comparable. But growth rates of groups within the top 10% (e.g., top 5% to top 0.01%) were

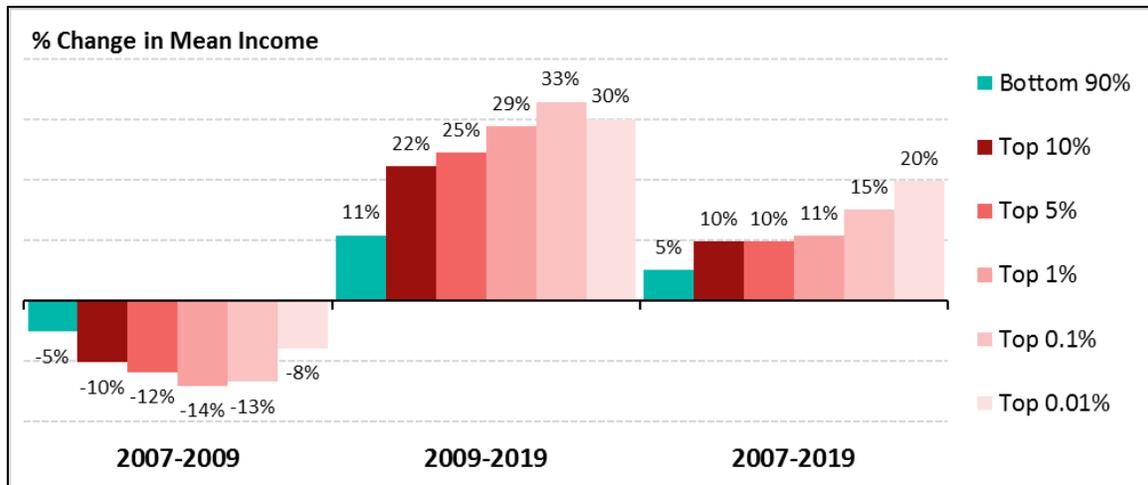
<sup>36</sup> As noted earlier, Census Bureau statistics on household money income also exclude in-kind transfers, such as SNAP.

<sup>37</sup> Additional limitations of these two data sources are discussed above in the section “Trends at the Top of the Distribution.”

<sup>38</sup> WID data does not provide any detail on income trends within the bottom 90% of the distribution, so direct comparisons between **Figure 7** and **Figure 8** cannot be made.

considerably higher than the mean income growth over that period for the top quintile reflected in the CPS data (24.7%). On net, between 2007 and 2019, average income increased for all groups in the WID data; growth rates were progressively higher for higher income groups.

**Figure 8. Percentage Change in Mean Income for Top Income Groups, 2007-2019**



**Source:** Income data are from the World Inequality Database, accessed on October 11, 2020, <http://www.wid.world/>.

**Notes:** Income estimates are based on U.S. administrative tax records and represent all income reported on tax returns (before tax and deductions), including realized capital gains income. Data for the bottom 90% and top 10% are mutually exclusive. Data for the top 10%, top 5%, top 1%, top 0.1%, and top 0.01% are overlapping.

The Great Recession could influence the income distribution through a number of channels. Focusing on pre-tax, pre-transfer income, effects of the Great Recession on the income distribution can be broadly categorized into effects on labor income (wage and salary) or capital income (from investment and saving). As a 2013 study noted, asset prices began rising more quickly than labor markets began improving after the Great Recession had ended, so a comparison will be sensitive to the end date.<sup>39</sup>

Labor income was affected by the increase in the unemployment rate from 4.4% before the recession to a peak of 10% in October 2009.<sup>40</sup> Higher unemployment directly reduces the income of the unemployed and indirectly puts downward pressure on the wages of workers, notably workers with characteristics in common with the unemployed. Because the unemployed are disproportionately made up of workers with lower educational attainment, who on average have lower incomes, a rise in unemployment might be expected to negatively affect primarily the

<sup>39</sup> Jeffrey Thompson and Timothy Smeeding, *Inequality and Poverty in the United States: The Aftermath of the Great Recession*, Federal Reserve, FEDS Working Paper no. 2013-51, July 2013, at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2340665](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2340665); hereinafter “Thompson and Smeeding, 2013.”

<sup>40</sup> In addition to the increase in unemployment, the number of individuals not in the labor force sharply increased around the time of the recession, which could also increase inequality if leaving the labor force reduced their incomes. Economists believe that part of this unprecedented increase in workers not in the labor force was caused by the recession and part was caused by structural factors. For more information, see CRS Report R43476, *Returning to Full Employment: What Do the Indicators Tell Us?*, by Marc Labonte.

bottom of the income distribution.<sup>41</sup> In terms of the employed, real median wages have been stagnant throughout the recovery, although they showed a modest acceleration since 2015.<sup>42</sup>

The Great Recession was caused by the 2007-2008 financial crisis, which featured a sharp decline in asset prices and rise in defaults on debt backed by assets, such as mortgages. This resulted in a sharp decline in capital income, particularly when capital gains and losses are included in the definition of income. Since financial assets are disproportionately held by households at the top of the income distribution, it might be expected that they would have been disproportionately affected by the financial crisis.<sup>43</sup> CRS calculations based on data from the Congressional Budget Office (CBO) offer some evidence of this.<sup>44</sup> The cumulative percentage change in inflation-adjusted capital income from 2007 to 2013 is roughly similar across the income distribution, falling by between 40% and 47% for each income quintile group. This decline is equivalent to 2% to 3% of income for the bottom 80% of the distribution, but because households at the top of the income distribution derive a larger share of their income from capital, it represents 12% for the top quintile and 28% for the top 1% of the distribution.<sup>45</sup> The fact that capital income is more volatile than labor income and capital income is a larger share of total income at the top of the distribution helps explain why, as shown in **Figure 8**, the top 1% saw a bigger drop in income in 2007 to 2009 and a bigger gain in income from 2009 to 2019 than did other groups.

## Inequality Trends in Other Advanced Economies

Rising income inequality is not unique to the United States. According to the Organization for Economic Cooperation and Development (OECD), income inequality (as measured by the Gini coefficient) has trended upward in 20 out of 22 of its member countries (for which data are available) since the 1980s or 1990s.<sup>46</sup> Typically, this was because income grew faster for the top of the distribution than the rest of the population before the 2007-2009 financial crisis. Across OECD countries for which data are available, inequality declined modestly in recent years in most countries, but over the decade as a whole, the experience was mixed. Not including the United States, in 11 countries inequality trended down over the decade, in 5 countries it trended up, in 6 countries it rose and then fell, and in 7 countries it was flat.<sup>47</sup>

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<sup>41</sup> For example, when the unemployment rate peaked at 10% in October 2009, the unemployment rate was 15.5% for workers with less than a high school diploma, 11.2% for workers with a high school diploma, 9.0% for workers with some college education, and 4.7% for workers with a bachelor's degree or higher.

<sup>42</sup> Median wage data for recent years can be viewed at <https://www.frbatlanta.org/chcs/wage-growth-tracker.aspx?panel=1>.

<sup>43</sup> The financial crisis also led to a decline in the value of nonfinancial assets, particularly in the value of primary residences, and net worth (i.e., wealth less debt). In most cases, the decline in the value of primary residences does not affect the income distribution because households do not derive money income from their primary residence.

<sup>44</sup> The Congressional Budget Office (CBO) estimates this data based on IRS and Census data. The latest available data is 2013. See [https://www.cbo.gov/sites/default/files/114th-congress-2015-2016/reports/51361-HouseholdIncomeFedTaxes\\_OneCol.pdf](https://www.cbo.gov/sites/default/files/114th-congress-2015-2016/reports/51361-HouseholdIncomeFedTaxes_OneCol.pdf).

<sup>45</sup> For example, households in the bottom 20% derived 4% of their market income from capital income in 2013. Their capital income fell by \$262 (or 44%) between 2007 and 2013, which was equivalent to 3% of their income. Households in the top 20% derived 13.3% of their market income from capital income in 2013. Their capital income fell by \$30,346 (or 47%) between 2007 and 2013, which was equivalent to 12% of their income.

<sup>46</sup> In 3 of the 22 countries, the rise was small. Federico Cingano, *Trends in Income Inequality and Its Impact on Economic Growth*, Organization for Economic Cooperation and Development (OECD), Social, Employment and Migration Working Paper no. 163, December 2014, <http://dx.doi.org/10.1787/5jxrjncwxv6j-en>; hereinafter "Cingano, 2014". The OECD is an international organization of advanced- and middle-income countries.

<sup>47</sup> Data on Gini coefficient downloaded from OECD Income Distribution Database, at <http://www.oecd.org/social/>

Rising income inequality across most OECD countries in recent decades suggests that it is driven by broader, global forces; thus, distributional trends in the United States have been affected by more than the U.S. cultural, economic, and institutional environment and domestic policy regime. However, noticeable country-specific differences in the magnitude and timing of inequality trends indicate that domestic conditions also matter. Inequality began rising earlier in the United States, and is comparable or higher today in the United States compared to all other OECD countries with comparable income levels. (Depending on the measure, it is lower than in some of the poorest OECD members, including Turkey, Chile, and Mexico.)<sup>48</sup> If larger economic and social forces explain the rise in inequality, then those forces have disproportionately affected the United States or the United States has been less effective than other countries at mitigating them.

## Patterns of Income Mobility

Between 1967 and 2019, income inequality increased within the United States because incomes grew faster, on average, for households in the top quintiles than for others (see **Figure 2**). While this finding may appear to imply that a fixed group of households gained relative to others over this period, this may not actually be the case for two reasons. First, mean income growth for a given quintile does not mean that all households in that group experienced income growth.<sup>49</sup> Moreover, households (and tax units) do not necessarily stay in a given quintile from year to year. That is, a new job or profitable investment can move a household from a lower quintile to a higher one over time; likewise, households experiencing income loss can move down the distributional ranks.<sup>50</sup> Such movement throughout the income distribution over time is called *income mobility*.

Mobility can be measured in different ways and over different time frames.<sup>51</sup> This section focuses on three frames—the short-term (e.g., one to five years), the longer-term (e.g., 10 years or more), and intergenerational (parent-to-child comparisons).<sup>52</sup> In general, data from governmental sources reveal three broad trends: (1) households and individuals are not perfectly mobile, i.e., there is a relationship between one's current rank in the distribution and past rankings, (2) individuals and households are more mobile over longer periods of time, and (3) (intergenerational) mobility varies considerably across several dimensions within the United States.

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income-distribution-database.htm.

<sup>48</sup> OECD Income Distribution Database, at <http://www.oecd.org/social/income-distribution-database.htm>.

<sup>49</sup> Some households' incomes may have grown at rates above their quintile average, some at rates below their quintile average, and some may have experience income loss.

<sup>50</sup> Because distributional rank describes one's placement *relative to others*, it is possible to change rank without any change in income levels (e.g., if the incomes of other individuals or households rise or fall).

<sup>51</sup> See Gary Fields, "Income Mobility," in Lawrence Blume and Steven Durlauf, *The New Palgrave Dictionary of Economics*, New York, NY: Palgrave Macmillan, 2008.

<sup>52</sup> This section focuses on income mobility as described by governmental sources. However, a prominent and rich literature on income mobility uses data from non-governmental sources, such as the Panel Study of Income Dynamics (PSID). The PSID has collected information from a large-scale nationally representative sample of families since 1968 and, important to mobility research, it continues to collect information on children who reach adulthood and leave their parents' home. A brief discussion of intergenerational mobility studies that use the PSID is in CRS In Focus IF10586, *Intergenerational Income Mobility*, by Sarah A. Donovan.

## Short-Term Mobility

Analyses of two government data sources indicate limited household income mobility and limited individual earnings mobility over the short term. That is, households and individuals tend to stay at or near their current income or earnings rank over one to five year periods.

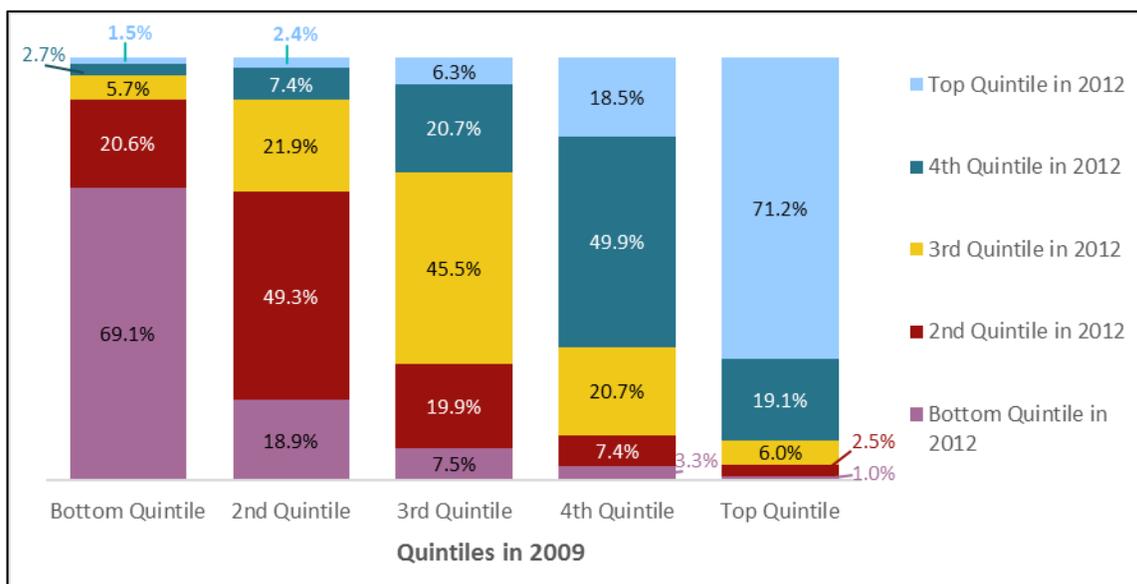
**Figure 9** summarizes Census Bureau analysis of households' income distribution rankings in 2009 and 2012, covering the aftermath of the Great Recession. It shows that households were mobile to varying degrees—and less mobile at the top and bottom of the distribution—over the short time period studied.<sup>53</sup> In particular, about 69% of households in the bottom quintile in 2009 were also in the bottom quintile in 2012, and 71% of households in the top quintile in 2009 were also in the top quintile in 2012.<sup>54</sup> This finding indicates that changes in mean income between 2009 and 2012 for the top quintile do not reflect the experience of a single, fixed set of “top income” households, however the set of households in the top income group was largely (71%) the same. Households in the middle quintiles in 2009 showed more upward- and downward-mobility—about 45% to 50% of these households stayed in the same quintile. Nevertheless, they were at least twice as likely to remain in the same quintile in 2012 as to move to any other individual quintile. Movement beyond an adjacent quintile was relatively rare.

For mobility by race and ethnicity, the Census study also found that non-Hispanic White-headed households were more likely to move up two or more quintiles in the income distribution and less likely to move down two or more quintiles, compared to Black- and Hispanic-headed households.

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<sup>53</sup> This is the most current Census analysis of income mobility using the Survey of Income and Program Participation (SIPP). The SIPP is a longitudinal household survey that follows the same respondents over a 2½-4-year period. Additional information about the SIPP is at <http://www.census.gov/sipp/>. John J. Hisnanick, Katherine G. Giefer, and Abby K. Williams, *Dynamics of Economic Well-Being: Fluctuations in the U.S. Income Distribution, 2009-2012*, U.S. Census Bureau, Household Economic Studies, P70-142, July 2017, at <https://www.census.gov/library/publications/2017/demo/p70-142.html>.

<sup>54</sup> The Census Bureau also analyzed SIPP data for 1996-1999, 2001-2003, and 2004-2007 in separate reports in the *Dynamics of Economic Well-Being: Fluctuations in the U.S. Income Distribution* series. These studies reveal mobility patterns that are largely similar to those found for the 2009-2012 period. These and related studies are at <https://www.census.gov/topics/income-poverty/well-being/library/publications.html>.

**Figure 9. Household Income Mobility Between 2009 and 2012**

**Source:** CRS using data from John J. Hisnanick, Katherine G. Giefer, and Abby K. Williams, *Dynamics of Economic Well-Being: Fluctuations in the U.S. Income Distribution, 2009-2012*, U.S. Census Bureau, Household Economic Studies, P70-142, July 2017, figure 2.

**Note:** Percentages may not sum to 100% because of rounding.

A separate and older study of Social Security Administration (SSA) earnings data (i.e., labor income only) revealed similar short-term mobility patterns.<sup>55</sup> In particular, SSA earnings data indicate a strong correlation, on average, between individuals' current ranks in the earnings distribution and their rankings in the previous year. The paper also examined a separate income mobility measure based on earnings over a five-year span and found similar results. Among top earners, individuals in the top 1% of the earnings distribution had a relatively high likelihood of staying in the top 1% over short periods of time (i.e., between 60%-80%, depending on the time frame examined), but were more likely to move to a different earnings rank over longer periods of time (i.e., more likely to move out of the top 1% over five years than over one year). These short-term earnings mobility patterns—overall and among the top 1% of earners—were largely stable over the 1978-2004 period, although overall earnings mobility across five-year periods appears to have decreased modestly and particularly among men.

### Longer-Term Mobility

The same study of SSA earnings data examined workers' earnings mobility over 20-year periods.<sup>56</sup> These data show that, while a degree of immobility persists over longer timeframes,

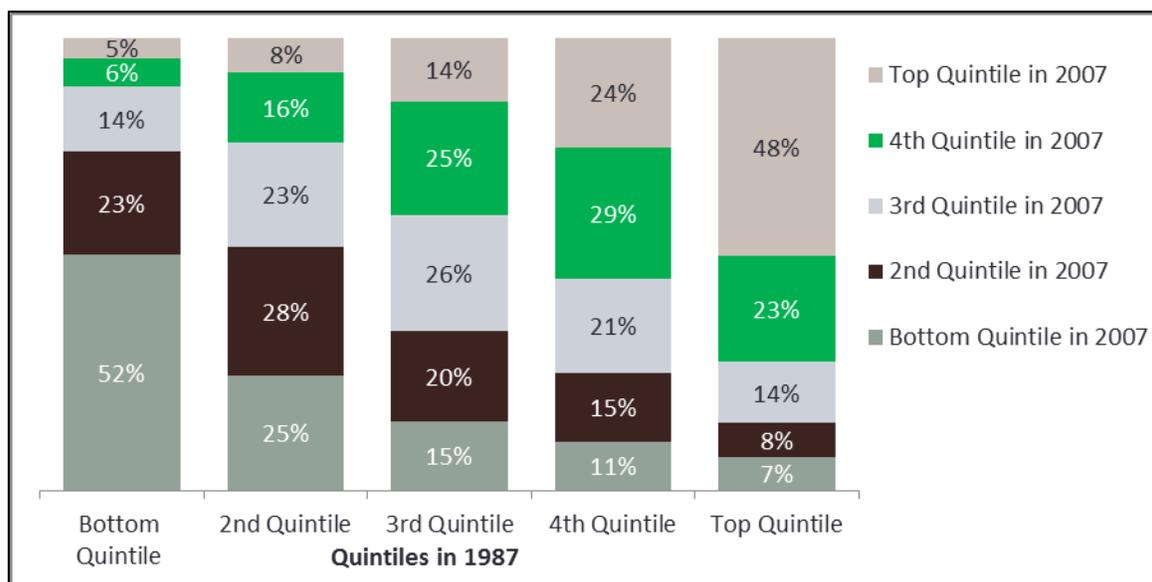
<sup>55</sup> Social Security Administration earnings data allow individual workers' earnings records to be linked over time based on the workers' social security numbers. This study examined income inequality and income mobility patterns for workers who were 25 to 60 years old, and had earnings from work in the commerce and industry sector. The authors attempted to account for a number of limitations in Social Security data, including the earnings cap on payroll taxes and changes in the coverage of Social Security over time. The data do not allow the authors to consider other sources of income, such as capital income and self-employment income, over the full sample, however. Wojciech Kopczuk et al., "Earnings Inequality and Mobility in the United States," *The Quarterly Journal of Economics*, February 2010, p. 91; hereinafter "Kopczuk et al., 2010."

<sup>56</sup> Kopczuk et al., 2010.

workers were more mobile in the long-term (here over 20 years) than they were over shorter periods (1-5 year periods). Put another way, an individual’s past earnings rank is a greater predictor of future earnings ranks in the short term than in the longer-term. They further find that overall earnings mobility in the longer-term has not deteriorated in recent decades.<sup>57</sup>

Another study measured long-term income mobility among families using income tax data.<sup>58</sup> **Figure 10** summarizes taxpayers’ distributional rankings in 1987 (when the taxpayers were 35-40 years old) and 2007 (when they were 55-60 years old). The figure reveals some degree of long-term income mobility for each quintile, although less so at the top and bottom of the distribution. **Figure 9** and **Figure 10** are based on different data sources and are not directly comparable, but nonetheless reveal different income mobility patterns over the short-term (i.e., a 3-year period, **Figure 9**) and the longer-term (i.e., a 20-year period, **Figure 10**). In particular, individuals appear more mobile—more likely to change placement in the distribution—over the longer-term than the short-term. For both time frames, individuals and households in the top and bottom quintiles were more likely to retain their ranks over time than those in the middle three quintiles.

**Figure 10. Taxpayers Income Mobility Between 1987 and 2007**



**Source:** CRS using data from Gerald Auten, Geoffrey Gee, and Nicholas Turner, “New Perspectives on Income Mobility and Inequality,” *National Tax Journal*, vol. 66, no. 4, December 2013, Table 1.

**Notes:** Quintiles in 1987 are based on primary and secondary taxpayers ages 35 to 40 in that year, and quintiles in 2007 are based on taxpayers ages 55 to 60 in 2007. Sample is based on taxpayers that appears in IRS administrative records in both 1987 and 2007.

<sup>57</sup> The study shows instead that long-term income mobility (overall) has increased. However, this result appears to be driven by significant improvements in women’s earnings. The authors note “[l]ong-term mobility among males has been stable over most of the period, with a slight decrease in recent decades. The decrease in the gender earnings gap and the resulting substantial increase in upward mobility over a lifetime for women is the driving force behind the increase in long-term mobility among all workers.” See Kopczuk et al., 2010, p.95.

<sup>58</sup> The study was conducted by U.S. Treasury Department analysts, using official IRS data, but was published in a professional tax journal. Gerald Auten, Geoffrey Gee, and Nicholas Turner, “New Perspectives on Income Mobility and Inequality,” *National Tax Journal*, vol. 66, no. 4, December 2013; hereinafter “Auten et al., 2013.”

Analysis of taxpayers who were in top decile (i.e., top 10%) in 1987 reveals that “[a]bout one-fourth of those in the top 1 percent were also in the top 1 percent 20 years later, but nearly 70 percent remained in the top income decile.”<sup>59</sup>

## Intergenerational Mobility

Another vein of this literature examines how parents’ placement in the income distribution affects their children’s future distributional rankings. The degree to which individuals can achieve a distributional rank that is different from the one they were born into is called *intergenerational income mobility*.

Efforts to estimate the degree of intergenerational income mobility in the United States have encountered several empirical hurdles.<sup>60</sup> A promising development is the publication of a detailed set of intergenerational income mobility estimates by researchers at the *Opportunity Insights Project*—a Harvard University-based project, and formerly called the *Equality of Opportunity Project*—which has produced intergenerational mobility estimates based on a large sample of federal income tax records that link adult children’s reported income to past income reported by their parents.<sup>61</sup> This linkage became possible through a 1986 change to the U.S. tax code that required tax return filers to provide dependents’ Social Security numbers, and allowed direct comparisons of the income distribution rankings of families in 1987-1998 to later rankings of children from those families decades later.

Analysis by this team of linked IRS records indicates that upward mobility, measured in absolute terms, declined markedly across birth year cohorts among individuals born between 1940 and 1984.<sup>62</sup> **Figure 11** summarizes this main result, and shows that whereas 92% of children born in 1940 earned higher incomes at the age of 30 than did their parents, this share dropped to 50% for children born in 1980 and those born in 1984, the two cohorts most likely to be affected by the Great Recession. The same study also finds that the degree to which absolute upward mobility declined is larger for individuals raised in higher income families.<sup>63</sup>

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<sup>59</sup> Auten et al., 2013, p. 896. The study also examines the relationship between tax filers’ ages and their placement in the income distribution and finds evidence that taxable incomes peak when individuals are in their early 50s.

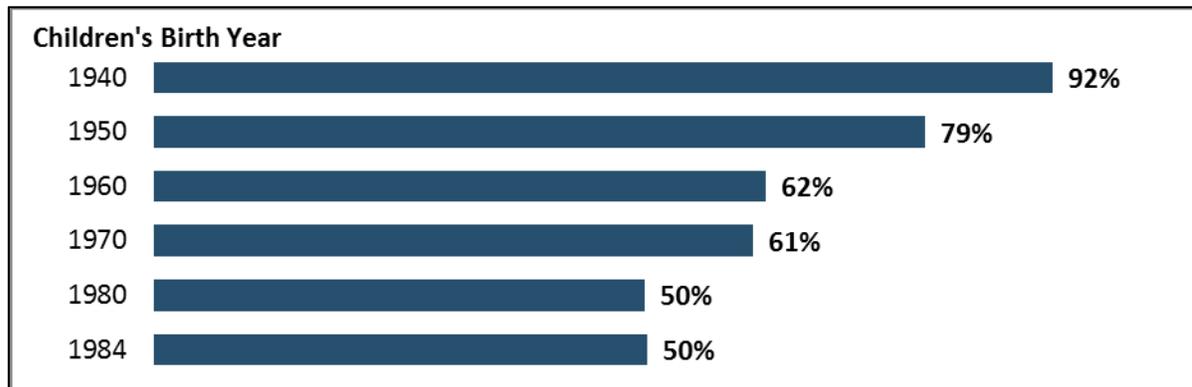
<sup>60</sup> These include a paucity of datasets that track incomes across generations, small sample sizes, and imprecise measurement of incomes.

<sup>61</sup> This source of estimates is important because it minimizes the empirical hurdles identified in footnote 60. Nonetheless it, like all data sets, has limitations. For one, “children’s” incomes (i.e., adult children) are observed at ages 29-30, which is arguably an early stage of an individual’s economic profile. In addition, because estimates are based on IRS records, they do not reflect the earnings of individuals not required to file taxes, reported income may be subject to fraud, and they exclude nontaxable income. Finally, access to IRS microdata is heavily restricted, and consequently the Opportunity Insights Project estimates cannot easily be replicated. Information about the Opportunity Insights Project can be found at <https://opportunityinsights.org/>.

<sup>62</sup> Raj Chetty et al., “The Fading American Dream: Trends in Absolute Income Mobility since 1940,” *Science*, vol. 356, no. 6336 (April 2017).

<sup>63</sup> Intuitively, the higher a parent’s income, the harder it is for a child to surpass it; consistent with the recent sharp rise in incomes at the top of the distribution, this hurdle has increased over time. A comparison of results across the 1940 and 1984 birth cohorts indicates that the share of children who earned more than their parents (in absolute terms) fell by 60.4 percentage points for children from families ranked at the 90<sup>th</sup> percentile of the income distribution, whereas the decline was 23.9 percentage points for those from the 10<sup>th</sup> percentile.

**Figure 11. Share of Children with Greater Incomes Than Their Parents (at Age 30) by the Time the Child is Age 30, by Children's Birth Year**



**Source:** Raj Chetty et al., “The Fading American Dream: Trends in Absolute Income Mobility since 1940,” *Science*, vol. 356, no. 6336 (April 2017).

A further contribution of research produced through this project is insight to the relationship between the location of children’s residences (at the county and neighborhood level) and their future incomes. Their estimates show a wide range of intergenerational mobility outcomes within the United States experienced by children born in years 1978-1983. For example, the share of children from low-income families (with incomes in the lowest 25% of the income distribution) that reached the top 20% of the national income distribution in adulthood is lower among children raised in the southeastern part of the country and higher for those raised in the Midwest.<sup>64</sup> Even more granular analysis shows that a child’s *neighborhood characteristics* have predictive power for her or his future income, and that outcomes can vary across neighborhoods that are closely located or even adjacent.<sup>65</sup> For example, children raised in low-income families (bottom quartile) in the Capitol Hill neighborhoods of Washington, DC, were much more likely to be in the top income quintile than children raised in other low-income households in southeast and northeast Washington, DC.

Racial disparities in intergenerational mobility are a clear and persistent finding in the mobility literature. To illustrate, **Figure 12** shows the average household income percentile by race and Hispanic ethnicity of adults whose household income in childhood was at the 10<sup>th</sup>, 50<sup>th</sup>, and 90<sup>th</sup> percentiles.<sup>66</sup> It shows that Black and Native American people raised in lower income (10<sup>th</sup>

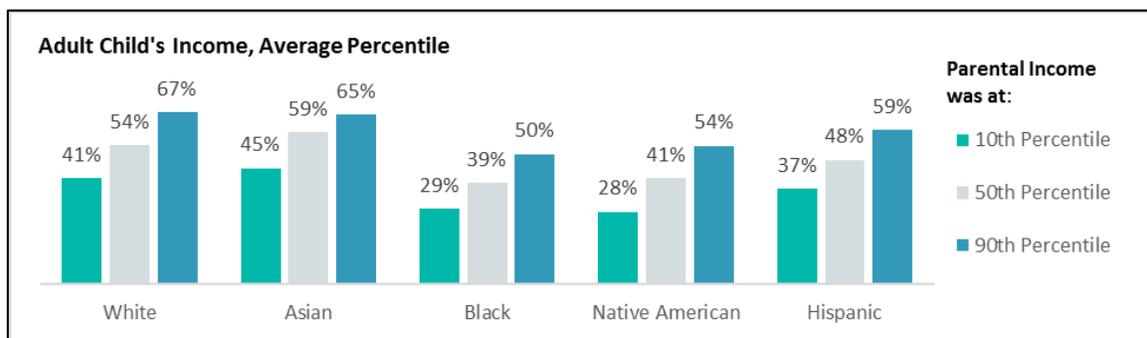
<sup>64</sup> Children’s income distribution rank in this study describes a child’s place relative to other children in the same cohort. The estimates displayed in the figure are based on anonymized data linked by the Census Bureau and include the 2000 and 2010 Decennial Census short form; federal income tax returns for 1989, 1994, 1995, and 1998-2015; and the 2000 Decennial Census long form and the 2005-2015 American Community Surveys. The methods used to produce the estimate are described in Raj Chetty, Jed Friedman, Nathaniel Hendren, Maggie R. Jones, and Sonya R. Porter, *The Opportunity Atlas: Mapping the Childhood Roots of Social Mobility*. 2018, National Bureau of Economic Research, Working Paper 25147, 2018, at <https://www.nber.org/papers/w25147>. For the persistence of poverty by county over time, see CRS Report R45100, *The 10-20-30 Provision: Defining Persistent Poverty Counties*, by Joseph Dalaker.

<sup>65</sup> One analysis of these patterns noted that relatively high upward mobility locations had these characteristics: less racial and income segregation, more equal income distributions (less income inequality), better quality (K-12) schools, more social capital (including less violent crime), and lower shares of single-parent families; these factors were particularly influential for boys’ mobility. Raj Chetty, Jed Friedman, Nathaniel Hendren, Maggie R. Jones, and Sonya R. Porter, *The Opportunity Atlas: Mapping the Childhood Roots of Social Mobility*. 2018, National Bureau of Economic Research, Working Paper 25147, 2018, <https://www.nber.org/papers/w25147>. A nontechnical summary and supplementary materials are at <https://opportunityinsights.org/paper/the-opportunity-atlas/>.

<sup>66</sup> The sample includes native-born children and foreign-born children who entered the United States legally as

percentile) families achieved considerably lower income ranks in adulthood on average than lower-income White and Asian individuals.<sup>67</sup> Hispanic persons raised in lower-income families reached the 37<sup>th</sup> percentile, on average, which is four percentage points below the average rank of low-income White children and eight percentage points above the average for low-income Black children. While all groups in higher income families (90<sup>th</sup> percentile) experienced some downward mobility, the drop in ranking was more notable for Black and Native American individuals when compared to other groups. Black and Native American children raised in median income (50<sup>th</sup> percentile) families experienced downward mobility on average, whereas children in other racial groups did not, on average. Hispanic children raised in median-income families experienced some downward mobility (i.e., they moved from the 50<sup>th</sup> percentile to 48<sup>th</sup> percentile, on average) but the fall was considerably smaller than that for Black and Native American children.

**Figure 12. Average Income Percentile of Adults Whose Childhood Household Income Was at the 10<sup>th</sup>, 50<sup>th</sup>, or 90<sup>th</sup> Percentiles, by Race and Hispanic Ethnicity**



**Source:** Raj Chetty, Nathaniel Hendren, Maggie R. Jones, and Sonya R. Porter, “Race and Economic Opportunity in the United States: An Intergenerational Perspective,” *The Quarterly Journal of Economics*, vol. 135, no. 2 (2020), pp. 711-783; data accessed from the “National Statistics by Parent Income Percentile, Gender, and Race” file at <https://opportunityinsights.org/data/>.

**Notes:** The sample is drawn from individuals born between 1978 and 1983 who were claimed on a federal income tax return at least once between 1994 and 2015, and whose mothers were born in the United States. Adult children’s incomes are the mean of their pre-tax household incomes in 2014 and 2015, when the individuals were in their mid-30s. Their parents’ incomes are the mean of their pre-tax household incomes over 1994, 1995, and 1998-2000 (tax records are unavailable for 1996 and 1997). Persons in the White, Asian, Black, and Native American groups identify as non-Hispanic. Persons in the Hispanic group can be of any race.

A recent working paper uses several large and detailed datasets to examine differences in intergenerational mobility outcomes for Black and White children.<sup>68</sup> While the racial mobility gap is smaller when mobility is assessed at the individual rather than household level (to account for

children.

<sup>67</sup> This finding is not new or unique to a particular dataset. Similar patterns across racial groups are found by Hertz (2005), who used data from the PSID, and Winship (2016) who used data from the National Longitudinal Surveys. See Tom Hertz, “Unequal Chances: Family Background and Economic Success,” in *Rags, Riches and Race: The Intergenerational Economic Mobility of Black and White Families in the United States*, ed. Samuel Bowles, Herbert Gintis, and Melissa Osborne (New York: Russell Sage and Princeton University Press, 2005); and Scott Winship, *The State of Economic Mobility and Why it Matters*, Federal Reserve Bank of St. Louis, Economic Mobility, Research & Ideas on Strengthening Families, Communities, and the Economy, 2016, at <https://www.stlouisfed.org/community-development/publications/economic-mobility>.

<sup>68</sup> Raj Chetty, Nathaniel Hendren, Maggie R. Jones, and Sonya R. Porter, “Race and Economic Opportunity in the United States: An Intergenerational Perspective,” *The Quarterly Journal of Economics*, vol. 135, no. 2 (2020), pp. 711-783. A nontechnical summary and supplementary materials are at <https://opportunityinsights.org/paper-category/race/>.

lower marriage rates among Black persons), it does not disappear.<sup>69</sup> At the individual level, the racial mobility gap for boys remains substantial (a 10 percentile difference),<sup>70</sup> and is not fully accounted for by location of residence. That is, Black boys have lower mobility than White boys who were raised in the same neighborhood, with presumably the same access to local schools and other public resources. The differences are also not fully accounted for by family structure (i.e., two-parent versus single-parent families), family wealth, or parental education.<sup>71</sup> The study observes that locations with narrow racial mobility gaps are low poverty areas, with less racial bias among Whites,<sup>72</sup> and high rates of Black father presence.

## Factors That Affect the Income Distribution: Theory and Evidence

There is broad agreement among researchers that several factors—working in concert—have driven income distributional trends since the mid-1970s. However, there is less agreement about their relative importance, particularly because most empirical research focuses on a specific factor in isolation. This section reviews leading theories and empirical work on factors believed to be significant contributors. Some studies attempt to explain what has held down income growth for low- and middle- income households and workers, others try to explain the rise in income at the top of the distribution, and some consider factors that affect the entire income distribution. Certain factors may also be more important than others at different times within this period; notably because, as discussed above, real income was generally rising before 2000, but since then has stagnated. This section provides an overview of factors affecting labor income and capital income and considers the role of changing household composition on the shape of the income distribution.

Although relevant to considerations of recent trends, how tax policy and government social insurance and cash transfer payments affect the income distribution is beyond the scope of this report.<sup>73</sup> While the progressivity of the tax system changes the after-tax income distribution, income data used in this report are measured on a pre-tax basis. In addition, while the receipt of certain noncash benefits, such as SNAP, employer-provided health benefits, and subsidized

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<sup>69</sup> Because married individuals are more likely to be in two-earner households than unmarried individuals, the lower marriage rate among Black persons (compared to White persons) results in lower Black *household incomes* (all else equal) relative to White households.

<sup>70</sup> By contrast, they find that among Black women and White women with the same parental income levels, Black women earn more than White women, in terms of individual earnings (i.e., not household or family earnings).

<sup>71</sup> Hertz (2005) similarly finds that parental education does not fully explain the racial mobility gap; Tom Hertz, “Unequal Chances: Family Background and Economic Success,” in *Rags, Riches and Race: The Intergenerational Economic Mobility of Black and White Families in the United States*, ed. Samuel Bowles, Herbert Gintis, and Melissa Osborne (New York: Russell Sage and Princeton University Press, 2005).

<sup>72</sup> These are not the main characteristics of neighborhoods in which black children do well, but those in which they do well in absolute terms and relative to White boys in the same neighborhoods (i.e., and thereby narrowing the Black-White mobility gap). Racial bias is measured using county level data from the Race Implicit Association database and the Racial Animus Index constructed by Seth Stephens-Davidowitz; see Seth Stephens-Davidowitz, “The Cost of Racial Animus on a Black Candidate: Evidence using Google Search Data,” *Journal of Public Economics*, vol. 118 (2014), pp. 26-40.

<sup>73</sup> For a recent analysis of income distribution before and after taxes and government transfers, see Congressional Budget Office, *The Distribution of Household Income and Federal Taxes, 2013*, June 2016, at <https://www.cbo.gov/sites/default/files/114th-congress-2015-2016/reports/51361-HouseholdIncomeFedTaxes.pdf>.

housing, may enhance the well-being of the individuals and households that receive them, they are excluded from consideration as income in the data used in this report.

## Labor Income

Labor income (i.e., earnings from employment) accounts for a significant share of total income for individuals and households throughout the income distribution, by CBO estimates.<sup>74</sup> As such, it follows that factors that affect relative earnings and the availability of jobs for low-, middle-, and high-wage workers will have consequences for the broader distribution of income, with a given change having a greater impact on the relative placement of the middle three quintiles who earn the largest shares of their income through labor income.<sup>75</sup>

Rapid growth in top incomes is a striking feature of distributional trends between 1967 and 2019 (see **Figure 2**), but is not the sole driver of rising income inequality over the period. Income inequality also increased among the lower 80% of households between 1967 and 2019, and distributional patterns from 2000 until the middle of the last decade were shaped in part by income losses among the bottom three quintiles. Accordingly, this section considers both the set of factors affecting the distribution of labor income generally (i.e., for low-, middle-, and high-wage workers) and factors driving trends for the very top earners.

## Factors Affecting the Distribution of Earnings Across Low-, Middle-, and High-Wage Workers

Broadly speaking, changes in the distribution of labor income can reflect changes across the distribution in workers' relative productivity, their bargaining power, or both.<sup>76</sup> Several factors are believed to have affected distributional patterns in labor earnings through these channels in recent decades. For example, technological innovation has improved productivity for some workers, but these gains are largely concentrated among skilled, high-wage workers. Trends affecting wage-setting institutions such as the minimum wage and collective bargaining had greater significance for workers in the bottom half of the distribution, as have recent global trading patterns that increased competitive pressures for the U.S. manufacturing sector.

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<sup>74</sup> According to CBO analysis, labor income (wage and salary income) made up at least 62% of market income for households in the lower 95% of the income distribution in 2017. Labor income comprised nearly 58% of market income for households in the 96<sup>th</sup> to 99<sup>th</sup> percentiles. For the top 1%, it made up 31% of market income. CBO defines *market income* as labor income, business income, capital gains realized from the sale of assets, capital income excluding capital gains, and income received in retirement for past services or from other sources. Conceptually, these percentages underestimate labor income because they exclude business income, and some business owners contribute labor to their firms and are compensated in the form of business income in lieu of wages. CBO, *The Distribution of Household Income and Federal Taxes, 2017*, October 2020, supplementary data, at <https://www.cbo.gov/publication/56575>.

<sup>75</sup> Labor income is an important resource for many low-income families (i.e., those in the bottom income quintile). However, because many retired workers and college students are located in the lower portion of the income distribution—and their labor income is relatively negligible—the labor earnings share of market income for the lowest quintile (66% by CBO estimates) may understate the significance of labor earnings for low-income workers.

<sup>76</sup> With some exceptions, private-sector compensation in the United States is set by agreement between employers and workers, and depends fundamentally on two main factors: the value of worker productivity and workers' bargaining power. Employers care about how much workers can produce (i.e., their labor productivity) and the profits generated from that production. Workers' productivity is enhanced by education, skills, experience, health, and technology, as well as their command of "soft skills" such as organization and the ability to work on a team. Workers' abilities to leverage their productive capacities into greater earnings depend on their bargaining power.

## Technological Change

Workplaces have long benefited from technological innovations, and recent gains have been particularly notable. Over the last several decades, use of personal computers and information technology (IT) became more prevalent, directly affecting worker performance but also spurring changes in the way tasks are organized. Technological progress has also increased the scope and reduced the cost of automating certain tasks, affecting workers in production and other jobs.<sup>77</sup>

Several economists have argued that technological change affects the relative earnings of workers (i.e., the distribution of wages and salaries) by reducing employers' demand for certain low- and middle-wage workers, while simultaneously increasing demand for high-skilled, high-wage workers. This occurs because technology alters the set of tasks associated with certain jobs— affecting worker productivity, labor demand, and potentially wages—but does so in a way that is *skilled-biased*, meaning that it affects workers differently based on their location on the skill spectrum. This explanation of the relationship between technological change, employment, and the skill premium (i.e., higher earnings for higher skilled workers) is called skill biased technological change (SBTC) theory.<sup>78</sup>

According to SBTC theory, new technology raises the productivity—and their value to employers—of highly skilled workers who perform complex, nonroutine tasks (e.g., physicians, managers). Productivity rises because technology *complements* the work performed by these groups of workers; it replaces time-consuming routine tasks (e.g., data processing, information organization), streamlines processes, and increases the precision of work performed by highly skilled workers. Productivity improvements generally translate into increased labor demand, which puts upward pressure on wages if demand is not mitigated by other forces.<sup>79</sup> At the same time, technological progress has *reduced* the demand for certain middle- and low-skilled workers who largely perform routine tasks—for example, certain clerical workers and production workers—because new IT and production technology *replaced* a significant share of the tasks performed by these workers, resulting in job loss. For example, the availability of affordable desktop computers, word-processing software, voicemail, and email eliminated many tasks traditionally performed by certain clerical staff (e.g., typists, secretaries), and increased automation in manufacturing plants reduced the demand for certain production workers.<sup>80</sup>

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<sup>77</sup> For a discussion of automation technology and its interaction with labor markets, see David H. Autor, “Why Are There Still So Many Jobs? The History and Future of Workplace,” *Journal of Economic Perspectives*, vol. 29, no. 3 (Summer 2015), pp. 3-30. See also Timothy F. Bresnahan, Erik Brynjolfsson, and Lorin M. Hitt, “Information Technology, Workplace Organization and the Demand for Skilled Labor: Firm-Level Evidence,” *Quarterly Journal of Economics*, vol. 117, no. 1, pp. 339-376.

<sup>78</sup> For an overview, see Daron Acemoglu and David H. Autor, “Skills, Tasks and Technologies: Implications for Employment and Earnings,” in *Handbook of Labor Economics*, eds. Orley Ashenfelter and David Card, vol. 4B (Elsevier, 2011), pp. 1043-1171.

<sup>79</sup> Many factors affect labor demand, including market prices of products or services generated by that labor, production technology, input factor prices (i.e., wage rates and capital prices), and other factors. SBTC theory does not predict that the skill premium will grow indefinitely. Workers respond to rising relative wages by adjusting their education and occupation decisions. Mechanically, the growth in the pay gap will slow down or contract as the relative supply of highly educated workers approaches relative demand. Moreover, perpetually rising demand for skilled labor is not guaranteed by SBTC. Growth in employers' demand for skilled workers may slow as technological improvements allow for greater task substitutions in highly-skilled occupations, or if technological change produces temporary spurts of increased labor demand. See Paul Beaudry, David Green, and Benjamin Sand, “The Great Reversal in the Demand for Skill and Cognitive Tasks,” *Journal of Labor Economics*, vol. 34, no. S1 (2016), pp. S199-S247; hereinafter “Beaudry, Green, and Sand, 2016.”

<sup>80</sup> The theory has less to say about the employment and earnings of the many low-skilled workers concentrated in personal services occupations, whose tasks are by and large neither complemented nor substituted by recent

Technological improvements have further affected employers' demand for certain middle-skilled workers by increasing the feasibility of offshoring (i.e., moving production outside the United States; sometimes referred to as *foreign outsourcing*) certain production tasks and services that do not need to be performed in proximity to the consumer (e.g., book-keeping, call-center activities).

### ***Wage-Setting Institutions: The Minimum Wage and Unionization***

Labor market institutions—particularly a lack of long-term growth in the inflation-adjusted value of the federal minimum wage and a decline in union membership—are also believed to have affected relative wages.

The federal minimum wage is not indexed to prices, and consequently falls in real terms over the time period between legislated increases; viewed over the longer-term, however, there has been no trend in the real value of the minimum wage since 1990.<sup>81</sup> As the anchor of the earnings distribution, a declining real minimum wage can have distributional consequences if earnings for workers throughout the distribution do not experience similarly paced declines. Research on this relationship focuses on the 1980-2000 time period, when wage inequality grew rapidly.<sup>82</sup> These studies produced a range of estimates, but in general find that the declining value of the minimum wage—particularly in the 1980s—contributed to the growing distance between wages of workers at the bottom of the distribution and those at the middle, particularly for women.<sup>83</sup> Although increasing the minimum wage may improve earnings of low-wage workers, some economists indicate that it can have important and potentially deleterious employment effects as well.<sup>84</sup> If a higher minimum wage raises firms' labor costs to the detriment of competitiveness, some minimum wage workers may lose their jobs or experience a reduction in hours, reducing (or eliminating) total labor income for these low-wage workers, with broader distributional consequences. That is, to the extent that there are disemployment effects of a rising minimum

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technological change. Although recent technological changes may not directly affect low-skilled workers by augmenting or substituting for their work, increased earnings at the top of the distribution may have increased the demand for services supplied by low-skilled workers and affected employment patterns through that channel. Reductions in middle-skill jobs mean that low-skilled workers now compete with a larger and better-skilled pool of workers for vacancies; this additional competition can place downward pressure on low-skilled wages. See David H. Autor and David Dorn, "The Growth of Low-Skill Service Jobs and the Polarization of the U.S. Labor Market," *American Economic Review*, vol. 103, no. 5 (2013), pp. 1553-1597 and Beaudry, Green, and Sand, 2016.

<sup>81</sup> In 1938, the Fair Labor Standards Act (FLSA) established the federal minimum wage, which set the wage floor for large swaths of the workforce. Congress has raised the federal minimum wage several times, and it is currently set at \$7.25. See CRS Report R43089, *The Federal Minimum Wage: In Brief*, by David H. Bradley. States can also set a minimum wage, and several have established a state minimum wage that is above the federal level. For information on state minimum wages, see CRS Report R43792, *State Minimum Wages: An Overview*, by David H. Bradley.

<sup>82</sup> For a discussion of this literature and its evolution, see Thomas Lemieux, "What Do We Really Know about Changes in Wage Inequality," in *Labor in the New Economy*, eds. Katherine G. Abraham, James R. Spletzer, and Michael Harper (University of Chicago Press, 2010), pp. 17-59, available at <http://www.nber.org/chapters/c10812>. More recent analysis is from David Autor, Alan Manning, and Christopher Smith, "The Contribution of the Minimum Wage to U.S. Wage Inequality over Three Decades: A Reassessment," *American Economic Journal: Applied Economics*, vol. 8, no. 1 (January 2016.), 58-99; hereinafter "Autor, Manning, and Smith, 2016."

<sup>83</sup> One factor limiting the federal minimum wage's influence on low-wage workers is that it is only binding for a small share of workers (e.g., 2% of workers and 3.3% of all hourly workers in 2015). States can also set a minimum wage, and several have established a state minimum wage that is above the federal level. Some studies have identified a "spillover" effect, whereby changes in the minimum wage affect not only minimum wage workers but also those paid close to but above the legislated minimum. One recent study that found evidence of this spillover—but was not able to distinguish it from measurement error in the data set—is Autor, Manning, and Smith, 2016.

<sup>84</sup> For a summary of arguments for and against raising the minimum wage, see CRS Report R43089, *The Federal Minimum Wage: In Brief*, by David H. Bradley.

wage, the loss of labor income that is concentrated among low-earners can widen the overall income distribution if lost income is not recouped elsewhere.

Evaluated at the median, union members have higher weekly earnings than nonunion members working in the same industry.<sup>85</sup> The theory underpinning the union wage premium is that workers can strengthen their overall negotiating stance over wages, employment, and benefits when they organize and put forth a unified position.<sup>86</sup> The union membership rate among wage and salary workers declined by 9 percentage points (from 20.1% to 11.1%) over 1983-2015.<sup>87</sup> Some studies that examine the role of declining unionization on wage trends, particularly over the 1980-2000 period, find that it is associated with an expanding wage gap between high- and middle-wage male workers.<sup>88</sup> As collective bargaining coverage declined so did workers' ability to bargain over pay.<sup>89</sup> This affected the dispersion of wages because union membership, historically, has been high in the middle-paying industries and occupations (e.g., construction, transportation, production jobs) relative to unionization rates in low- and high-paying industries and occupations. Given their high representation among unionized workers—especially during the 1980s—these effects are prominent for men.

### *Import Competition*

Recent global trading patterns have altered what goods and services the United States produces. Standard trade models predict that—although countries benefit *in aggregate* from international trade—gains from trade are not evenly distributed within countries.<sup>90</sup> In particular, the *specialization* of production that occurs when countries trade increases demand for a country's abundant production factors relative to those of its trading partners (capital and skilled labor in

<sup>85</sup> Average characteristics of union members and nonunion members tend to differ in terms of age, skill, position, job tenure, and overall work experience. These characteristics affect wages and therefore, the information gained from a direct comparison of union and nonunion pay is limited. A wage premium for union members is generally identified in more sophisticated analyses that control for worker, firm, and industry characteristics that affect wages. See, for example, Barry T. Hirsch, "Reconsidering Union Wage Effects: Surveying New Evidence on an Old Topic," *Journal of Labor Research*, vol. 25, no. 2 (Spring 2004), pp. 233-266.

<sup>86</sup> While unions may contribute to higher wages for unionized workers, some have argued that gaining a more equal negotiating stance with firms may have broader implications for employment opportunities and future wage growth for some employees. For example, as workers gain a larger share of profits, they could reduce incentives for firms to invest (i.e., by reducing the return on investment) and may reduce employment levels and growth. Further, wage and employment benefits that result from union deals may be exclusive to union members (*insiders*), while nonunion members (*outsiders*) might face greater employment barriers. Finally, by setting wages for a group, collective agreements may limit the ability for high productivity workers to strike a better individual deal.

<sup>87</sup> A slightly higher share of wage and salary workers were *represented* by unions—e.g., union members and nonunion members covered by collective bargaining agreements—in 2015 (12.3%), although this number has also declined. These declining trends—in membership and representation—largely reflects private sector trends, which declined sharply over the period (10.1 percentage point decline), while public sector union coverage is considerably higher and more stable (1.5 percentage point decline). 1983 is the first year for which union membership and representation statistics are available from BLS.

<sup>88</sup> See, for example, David Card, Thomas Lemieux, and W. Craig Riddell, "Unions and Wage Inequality," *Journal of Labor Research*, vol. 25, 2004.

<sup>89</sup> The relationship between the union wage premium and union density can run in the other direction as well. That is, if higher wages in unionized firms are not offset by higher productivity (or product prices), firm profitability may suffer and jobs will move to nonunionized firms, resulting in lower union density. For a fuller analysis of this channel see Barry T. Hirsch, "Sluggish Institutions in a Dynamic World: Can Unions and Industrial Competition Coexist?" *Journal of Economic Perspectives*, vol. 22, no. 1 (Winter 2008), pp. 153-176.

<sup>90</sup> For more information, see CRS Report R44546, *The Economic Effects of Trade: Overview and Policy Challenges*, by James K. Jackson.

the United States) and demand for its relatively scarce production factors (unskilled labor) will fall.<sup>91</sup>

Workers most affected by changing trade patterns are concentrated in industries directly competing with imports. The long-term decline in U.S. manufacturing employment, which lasted through the end of the Great Recession, has led a number of researchers to investigate the extent to which the decline is caused by increased import penetration in manufacturing, which can easily be traded.<sup>92</sup> Recent studies focus on the impacts of China's establishment (starting in 2000) as a global supplier of manufactured goods.<sup>93</sup> Increased international competition—and particularly from China<sup>94</sup>—resulted in factory closings and production shifts that displaced large numbers of U.S. workers. It had additional employment consequences for firms that provided inputs and support services to the manufacturing sector (e.g., suppliers of raw materials, delivery services, warehousing), and affected economic conditions in surrounding communities. These employment effects had distributional consequences because lost jobs were concentrated among low- and middle-wage workers. These workers lost labor income when displaced, and the effects were lasting for some workers—especially for less-educated workers—who were not able to find similarly-compensating work in local labor markets.<sup>95</sup>

As noted earlier in this report, other factors have contributed to a decline in manufacturing employment, such as productivity-enhancing technological changes that have made U.S. manufacturing less labor intensive. Technological progress paired with a changing international trade environment may have also increased the range of goods and services that can be traded, potentially exposing more U.S. workers to import competition than previously. For example, a greater ability to coordinate production (i.e., through better technology) and lower trade barriers may have encouraged U.S. firms to move a portion of production from their domestic plants to (company-owned or contractor) plants operating abroad.<sup>96</sup>

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<sup>91</sup> Abundance and scarcity of production factors is defined relative to trade partners. For example, a country can have more unskilled workers than skilled workers but be *relatively abundant* in skilled labor if its ratio of skilled-to-unskilled labor is greater than its trade partner's skilled-to-unskilled labor ratio.

<sup>92</sup> A 12-year decline in manufacturing employment ended in 2011. However, manufacturing employment as a share of total employment continued to decline, albeit at a slower pace. For a discussion of U.S. manufacturing sector employment, see CRS Report R41898, *Job Creation in the Manufacturing Revival*, by Marc Levinson.

<sup>93</sup> These include Daron Acemoglu, David Autor, and David Dorn, Gordon H. Hanson, and Brendan Price, "Import Competition and the Great US Employment Sag of the 2000s," *Journal of Labor Economics*, vol. 34, no. 1 (Part 2 2016), pp. S141-S198; and Justin R. Pierce and Peter K. Schott, "The Surprisingly Swift Decline of U.S. Manufacturing Employment," *American Economic Review*, vol. 106, no. 7 (July 2016), pp. 1632-1662; and David H. Autor, David Dorn, and Gordon H. Hanson, *The China Shock: Learning from Labor Market Adjustment to Large Changes in Trade*, National Bureau of Economic Research, 21906, January 2016, <http://www.nber.org/papers/w21906>. The results of these studies should be considered with a few caveats in mind. For one, these studies focus on gross employment changes in the manufacturing sector; they do not account for potential employment gains in other sectors (e.g., U.S. export sectors and related sectors like transportation and warehousing). Also the proliferation of complex international supply chains increasingly blurs line between foreign and domestic outputs and complicates empirical analyses such as these. Finally, these studies do not account for the potential positive impact lower-priced imports can have on the real incomes of a broad range of consumers in the economy.

<sup>94</sup> U.S. imports from China rose from \$100 billion in 2000 to \$483 billion in 2015. Census Bureau data on the volume of U.S. trade with China is available at <https://www.census.gov/foreign-trade/balance/c5700.html>.

<sup>95</sup> Increased job-churning and lower reemployment wages were found for displaced manufacturing workers, and attributed to increased trade from China after 2000, by Autor, Dorn, and Hanson (2016); see footnote 93 for caveats to this study. The experiences of displaced workers more generally is described in Lori G. Kletzer, "Job Displacement," *Journal of Economic Perspectives*, vol. 12, no. 1 (Winter 1998), pp. 115-136.

<sup>96</sup> Pierce and Schott (2016), for example, find evidence of this "within-firm offshoring" in their study of the employment impacts of the United States establishment of permanent normal trade relations with China in 2000.

Although more challenging to identify empirically, increased international trade has plausibly created opportunities for employment in other U.S. sectors that expanded as a result of new trade patterns (e.g., exporting sectors and those that use import-competing goods as inputs). The effect on the income distribution will depend on the magnitude of expansion and what types of workers are hired for these jobs. Finally, despite significant and lasting effects for a share of displaced workers, the long-run impact of a trade-induced production shift should attenuate over time, as the economy and new workforce entrants move away from import-competing sectors.

### *Immigration*

To the extent that immigrants' and nonimmigrant's wage distributions differ, a sizeable inflow of foreign-born workers will alter the overall wage distribution, all else equal. Immigration can further affect the wage distribution if incoming foreign-born workers *alter employment and earnings patterns of the existing workforce*. How immigration affects labor markets is a large and complex area of economic research.<sup>97</sup> Economic theory produces a range of possible outcomes that depend on the characteristics of incoming immigrant workers and how they compare to a country's existing pool of labor, the degree to which new immigrants and existing workers compete for jobs in the same labor markets, how employers respond to the new labor supply, macroeconomic considerations, and other factors.<sup>98</sup> A large literature has examined the impact of immigrant labor on the employment and wages of native (or resident) workers; the results of these studies are mixed and are sensitive to empirical methods, data sources, time frame of study, and the particular set of workers examined.<sup>99</sup>

Immigration can affect the *wage distribution* through several channels, but the relationship depends fundamentally on: (1) how immigration affects the employment and wage levels of native (or resident) workers, and (2) the degree to which employment and wage impacts are experienced differently by low-, middle-, and high-wage workers. As with impacts on wage levels, the magnitude of any *distributional* consequence of immigration is likely to differ over the short and long terms.<sup>100</sup> Relatively fewer studies have examined how immigration affects the distribution of wages. One recent review of this literature finds that “[w]hile some studies do find

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<sup>97</sup> A detailed discussion of what economic theory predicts about the labor market impacts of immigration for the United States, and a review of the empirical literature is in National Academies of Sciences, Engineering, and Medicine, *The Economic and Fiscal Consequences of Immigration*, ed. Francine D. Blau and Christopher Mackie (Washington, DC: The National Academies Press, 2016); hereinafter “National Academies of Sciences, Engineering, and Medicine, 2016”. For information on current immigration trends, see CRS Report R42988, *U.S. Immigration Policy: Chart Book of Key Trends*, by William A. Kandel.

<sup>98</sup> For example, immigration may have a neutral impact if incoming foreign-born workers fill vacancies that cannot be filled with native-born workers; alternatively, if immigration trends respond to increasing labor demand in certain industries or occupations, wage effects may be negligible. By contrast, if immigrants compete with native-born workers for jobs and certain conditions are met (e.g., no commensurate increase in labor demand, immigrant labor can substitute for native-born labor), immigrant labor can put downward pressure on wages for native-born workers. Finally, immigration can improve productivity and employment if firms respond to increased labor supply by investing in technology that expands capacity, or if immigrant and native-born workers specialize in occupations such that native-born workers are able to *upgrade* their jobs. A comprehensive review of research is in National Academies of Sciences, Engineering, and Medicine, 2016. For a discussion of foundational research on the impacts of immigration on host country labor markets, see George Borjas, “The Economic Analysis of Immigration,” in *Handbook of Labor Economics*, eds. Orley Ashenfelter and David Card, vol. 3A (North Holland, 1999), pp. 1697-1760.

<sup>99</sup> National Academies of Sciences, Engineering, and Medicine, 2016.

<sup>100</sup> Over longer periods of time, the economy and labor markets (national and local markets) may adjust to immigration flows in ways that affect the distribution of labor incomes.

important effects, overall, it seems to us that most research does not find quantitatively important effects of immigration on native wage levels or the wage distribution.”<sup>101</sup>

## Factors Driving Trends Among Top Earners

This section looks at some of the factors that might help explain the other trend driving rising inequality in the long run—the significant growth in real income at the top of the distribution.

Before considering various theories for why income at the top of the distribution has grown, it may be useful to look at who the top earners are. According to BLS data, the top 9 occupations with the highest median pay in 2015 were different medical specialists and the 10<sup>th</sup> highest was chief executives.<sup>102</sup> However, median pay data does not reveal the occupations of households at the top of the income distribution. A 2012 study based on IRS tax filings found that in 2005 nonfinancial executives, managers, and supervisors, were the occupations of 31% of the top 1% of income earners. The next four occupations, making up a combined 43% of the top 1%, were medical, financial (including management), lawyers, and computer (including math, engineering, and technical). Between 1979 and 2005, top 1% earners in the executive and finance occupations saw the largest growth in their share of income (capturing 60% of the growth in top 1% income), whereas top 1% earners in finance and real estate saw their share grow most quickly.<sup>103</sup> A more recent study found that the industries with the most top 1% earners were the medical, legal and financial industries. (The only information technology industry among the top industries by this study’s classification was computer systems design.)<sup>104</sup> The fact that top earners are spread across a number of occupations and industries and have experienced varied income growth rates suggests that there may be multiple forces driving the trend of income growth at the top. A leading explanation is skill-biased technological change (as discussed in the section entitled “Technological Change”). The following discusses other explanations for income growth at the top of the distribution.

## Economies of Scale

Globalization, investment requirements (particularly in IT systems), and regulatory relief<sup>105</sup> have allowed some firms to grow in size and benefit from *economies of scale*.<sup>106</sup> Some studies have found that economies of scale in particularly large firms allow workers at the top of the firm’s

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<sup>101</sup> Francine D. Blau and Lawrence M. Kahn, *Immigration and the Distribution of Income*, National Bureau of Economic Research, 18515, November 2012, p.52, <http://www.nber.org/papers/w18515>. Blau and Kahn also considered the compositional effects of recent immigration flows to the United States. That is, they ask if differences between the characteristics of incoming immigrant workers and those of the resident workforce affect the distribution of wages (and other measures of earnings). They find that as of 2009 these effects were small, but note that they may become more important over time.

<sup>102</sup> Data available on BLS’s website at <http://www.bls.gov/ooh/highest-paying.htm>.

<sup>103</sup> Jon Bakija, Adam Cole, and Bradley Heim, “Jobs and Income Growth of Top Earners and the Causes of Changing Income Inequality,” working paper, April 2012, at <http://web.williams.edu/Economics/wp/BakijaColeHeimJobsIncomeGrowthTopEarners.pdf>. See also Steven Kaplan and Joshua Rauh, “Wall Street and Main Street: What Contributes to the Rise in the Highest Incomes?,” *Review of Financial Studies*, vol. 23, no. 3., March 2010, pp. 1004-1050.

<sup>104</sup> See Jonathan Rothwell, “Make Elites Compete,” Brookings Institution, March 25, 2016, <http://www.brookings.edu/blogs/social-mobility-memos/posts/2016/03/25-make-elites-compete-why-one-percent-earn-so-much-rothwell>.

<sup>105</sup> For example, banks could not operate across state lines or own nonbank subsidiaries until the 1990s.

<sup>106</sup> Economies of scale refers to production technology and firm organization that permits production (and profits) to increase by a factor *greater* than the increase in inputs. For example, economies of scale are present if 2 hours of labor produces 4 units of output, but 4 hours of labor produces 10 units of output.

hierarchy to also increase their productivity and capture higher wages.<sup>107</sup> Another example of the industries benefiting from economies of scale is “winner takes all” industries, discussed next.

### ***Winner Takes All Industries***

*Winner takes all* industries are those in which there are positive *network effects*, meaning that existing users benefit from the presence of more users, that lead to one firm or product developing a dominant position or product in that market. Technological change seems to have favored certain winner-takes all-industries, as evidenced by the success of many IT firms in market niches, including social media, internet search engines, and online sellers.<sup>108</sup> Winner-takes-all industries might naturally favor compensation structures in which top employees at the most successful firms are highly compensated, as discussed below. There is also evidence that highly successful firms pay all employees more than do similar firms, which may contribute to growing inequality.<sup>109</sup>

### ***Superstar Earners***

A related phenomenon is the economics of superstars.<sup>110</sup> Some industries, such as entertainment and sports, face consumption preferences in which consumers are willing to pay disproportionately more to see superstars than lesser performers. Although entertainers and sports figures make up only a small share of the top of the income distribution, this phenomenon may apply to a lesser degree in other industries as well. For example, some consumers may be willing to pay disproportionately more to engage the services of the very best doctor, lawyer, or investment professional.<sup>111</sup> Technology and globalization also seem to have increased the superstar effect, as superstars can reach increasingly larger markets across more platforms.

### ***Pay-Setting Dynamics and Compensation Structure***

Doubts have been raised about whether pay-setting dynamics at the top of the income distribution are best described by the competitive markets theory. In particular, studies have questioned whether the close relationship at some corporations between chief executive officers (CEOs) and their boards (which set their pay) creates “principal-agent” problems that have allowed CEOs undue influence over setting their own pay, resulting in rent seeking.<sup>112</sup> Many studies have sought

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<sup>107</sup> Xavier Gabaix and Augustin Landier, “Why Has CEO Pay Increased So Much?,” *Quarterly Journal of Economics*, vol. 123, February 2008, p. 49. Another study found no relationship between firm size and executive pay before the 1989s. See Carol Frydman and RE Saks, “Executive Compensation: A New View from a Long-Term Perspective, 1936-2005,” *Review of Financial Studies*, vol. 23, no. 5, 2010, p. 2099.

<sup>108</sup> Thomas Noe and Geoffrey Parker, “Winner Take All: Competition, Strategy, and the Structure of Returns in the Internet Economy,” *Journal of Economics and Management Strategy*, vol. 14, no. 1, March 2005, p. 141.

<sup>109</sup> One study found that inequality in pay between firms rather than within firms (e.g., manager vs. worker) is the cause of rising wage inequality overall. Jae Song et al., “Firming Up Inequality,” NBER, Working Paper no. 21199, May 2015, at <http://www.nber.org/papers/w21199>.

<sup>110</sup> Sherwin Rosen, “The Economics of Superstars,” *American Economic Review*, vol. 71, no. 5, December 1981, p. 845.

<sup>111</sup> While only a few chief executive officers (CEOs) would qualify as superstars in the traditional sense of the term, high-CEO pay has similarly been explained as analogous to a prize for winning a tournament against fellow employees. Edward Lazear and Sherwin Rosen, “Rank-Order Tournaments as Optimum Labor Contracts,” *Journal of Political Economy*, vol. 89, no. 841 (1981); Iman Anabtawi, “Explaining Pay Without Performance: The Tournament Alternative,” *Emory Law Journal*, vol. 54, issue 4 (Fall 2005), p. 1557.

<sup>112</sup> These arguments are evaluated in CRS Report RL33935, *The Economics of Corporate Executive Pay*, by Gary Shorter and Marc Labonte. For a literature review, see Carola Frydman and Dirk Jenter, “CEO Compensation,” *Annual*

to determine whether levels of CEO pay are well correlated with firm performance, and they reach different conclusions.<sup>113</sup>

Changes in the form of compensation may have also contributed to income growth at the top of the distribution.<sup>114</sup> For example, median CEO salary at S&P 500 firms has grown only modestly between 1992 and 2008 and now accounts for only 17% of total compensation, whereas other compensation (mainly in the form of stocks, options, bonuses, and long-term incentive plans) was almost four times higher in real terms.<sup>115</sup>

The growing use of stock options and other forms of incentive-based pay has increased how much the recipient can earn when certain targets are met, leading to outsized income gains if a company is highly successful or if incentive-based pay is poorly targeted. But incentive-based pay could also cause compensation to rise inadvertently (because it is poorly targeted) or, in the case of executive compensation, as a result of rent seeking.<sup>116</sup> An example of poorly targeted incentive-based pay is options that deliver value to the recipient even when the company's stock has risen no more than overall stock prices and retain value (or are revalued) even if the company's stock price falls.<sup>117</sup> Given the inherent unpredictability of future stock prices, pay that is tied to stock prices can be inadvertently high when future stock price gains are underestimated, as was the case during the stock market boom in the late 1990s. Increased use of stock options is not necessarily a sign of rent seeking, however. For example, a startup that is initially cash-flow poor or in a winner takes all industry may find it easier to offer employees stock options that have a small probability of being highly valuable than high initial salaries. For startups that are not ultimately successful, those options will not turn out to be highly valuable, but the minority that are successful will contribute to greater income growth at the top of the distribution. In this example, compensation rises (for employees at successful firms) to induce employees to accept a more risky form of compensation and outcomes across workers are more unequal than the value of compensation ex ante.

### *Social Norms*

It has also been suggested that income at the top of the income distribution is constrained by social norms. For example, executive pay might face an *outrage constraint*, meaning executives want to keep their pay below the level that would trigger a backlash from workers or shareholders who view it as unfairly high. Social norms are culturally based, and cultural differences might help explain, for example, why executives are paid more in the United States than in other

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*Review of Financial Economics*, vol. 2(1), December 2010, pages 75-102; hereinafter "Frydman and Jenter, 2010."

<sup>113</sup> Frydman and Jenter, 2010.

<sup>114</sup> For estimates of the relationship between performance based pay and inequality and a discussion of whether performance based pay causes greater inequality or is a symptom of greater inequality, see Thomas Lemieux et al., "Performance Pay and Wage Inequality," *Quarterly Journal of Economics*, vol. CXXIV, Issue 1, February 2009.

<sup>115</sup> Frydman and Jenter, 2010. When compensation to employees takes the form of stocks or stock options, compensation for labor then takes the form of capital income. Generally speaking, Census income data are reported when cash is received, so forms of compensation such as stocks and options might not be included or might be included with a lag in Census data. In addition, the actual incomes of CEOs with very high income would not be apparent in Census data because they are top coded, as discussed above.

<sup>116</sup> Lucian Ayre Bebchuk and Jesse M. Fried, *Pay without Performance: The Unfulfilled Promise of Executive Compensation* (Cambridge and London: Harvard University Press, 2004).

<sup>117</sup> Marianne Bertrand and Sendhil Mullainathan, "Are CEOs Rewarded for Luck? The Ones without Principles Are," *Quarterly Journal of Economics*, vol. 116, no. 3 (2001), pp. 901-932.

advanced economies, even at companies that are competing against each other globally.<sup>118</sup> If social norms are an important constraint on income at the top of the distribution, changes in social norms or growing efforts to disguise pay levels (through complex incentive-based pay schemes) to get around the outrage constraint may help explain the growth in income at the top of the distribution in recent decades.<sup>119</sup> It is difficult to quantify the effects of social norms and how they have changed over time.

### *Licensing Requirements*

One study argues that barriers to entry for workers in certain industries have reduced competition and raised incomes at the top of the distribution by allowing workers in those industries to capture *economic rents*. Examples of barriers to entry include licensing requirements for lawyers, doctors, and dentists that allows certain services to be offered exclusively by accredited professionals.<sup>120</sup> Because licensing requirements are long-standing in these industries, they can help explain inequality but not rising inequality. Licensing requirements also affect pay in certain industries that are not at the top of the income distribution, but their effect on the distribution is unclear. Overall, the Council of Economic Advisers cited data finding that the share of workers covered by state licensing requirements has increased from 5% in the 1950s to 25% in 2008.<sup>121</sup>

## Capital Income

For households in the bottom 99% of the income distribution, labor income (i.e., wages and salary) is the primary source of income (except for many elderly households, for whom retirement income is the primary source).<sup>122</sup> For the bottom households, factors affecting wages are driving income distribution trends. But for the top of the income distribution, capital income is also an important source of income. According to CBO data, in 2017, capital income (including capital gains) made up only 2%-3% of total market income for households in each of the bottom four quintiles, but made up 17% of total income for households in the highest quintile and 36% of total income for those in the top 1%.<sup>123</sup> Thus, trends in the distribution of wealth, which generates capital income, could have important effects on the income distribution.<sup>124</sup>

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<sup>118</sup> Different institutional and legal structures among countries may also contribute to pay differences. Fernandes et al. show that the difference in CEO pay across countries (surveys indicate that U.S. CEOs earn double their foreign counterparts, on average) is smaller after controlling for firm size and other factors, and the difference comes mostly in the form of bonuses and equity-based pay. Nuno G. Fernandes et al., “Are US CEOs Paid More? New International Evidence,” EFA 2009 Bergen Meetings Paper; AFA 2011 Denver Meetings Paper; ECGI – Finance Working Paper no. 255/2009 (May 2012), at <http://ssrn.com/abstract=1341639> or <http://dx.doi.org/10.2139/ssrn.1341639>.

<sup>119</sup> Robert Gordon and Ian Dew-Becker, “Controversies about the Rise of American Inequality: A Survey,” National Bureau of Economic Research, working paper No. 13982, May 2008, Part 8, at <http://www.nber.org/papers/w13982>.

<sup>120</sup> Jonathan Rothwell, “Make Elites Compete,” Brookings Institute, March 25, 2016, <http://www.brookings.edu/blogs/social-mobility-memos/posts/2016/03/25-make-elites-compete-why-one-percent-earn-so-much-rothwell>.

<sup>121</sup> Council of Economic Advisers, *Occupational Licensing: A Framework for Policymakers*, July 2015, at [https://www.whitehouse.gov/sites/default/files/docs/licensing\\_report\\_final\\_nonembargo.pdf](https://www.whitehouse.gov/sites/default/files/docs/licensing_report_final_nonembargo.pdf).

<sup>122</sup> See footnote 74.

<sup>123</sup> CBO, *The Distribution of Household Income and Federal Taxes, 2017*, October 2020, supplementary data, at <https://www.cbo.gov/publication/56575>. To the extent that other income categories, such as business income, include elements of what might be considered capital income, these data are an underestimate.

<sup>124</sup> Capital income will also fluctuate from year to year based on changes in the rate of return earned on assets. Over longer time periods, as considered in this report, rates of return smooth out.

The Federal Reserve conducts a triennial *Survey of Consumer Finances* that includes data on financial asset holdings by income distribution.<sup>125</sup> As seen in **Table 1**, the distribution of financial assets, and the income it can potentially generate, has become more unequal since 1989. Whereas the average inflation-adjusted holdings of financial assets for the ninth and top deciles tripled and the fourth quintile more than doubled over the 1989 to 2019 period, growth rates for the lower three quintiles were under 100%.<sup>126</sup> (The average holdings of the second quintile had considerably slower growth than any other group over that period.)<sup>127</sup> Median holdings of financial assets are more imbalanced than mean holdings. The value of inflation-adjusted median holdings is lower than the mean by about a factor of 3 in the top 10% of the distribution and 36 in the bottom 20% of the distribution. For example, median holdings for the bottom 20% of the distribution were \$1,100 compared with mean holdings of \$40,000 in 2019. Unlike mean values, median values are lower in 2019 than 1989 for the bottom two quintiles, somewhat higher for the third quintile, and considerably higher for the top two quintiles.

**Table 1. Mean Value of Family Financial Assets, by Percentile of Income**  
(in thousands of 2019 dollars)

	Bottom Quintile	Second Quintile	Third Quintile	Fourth Quintile	Ninth Decile	Top Decile
1989	23.8	46.8	62.8	97.4	141.6	721.5
1992	18.4	39.7	62.7	92.1	157.2	685.1
1995	26.5	54.2	71.3	115.1	203.0	821.0
1998	29.5	65.2	82.5	153.4	266.3	1,216.0
2001	34.9	64.4	116.6	216.9	339.5	1,584.6
2004	31.4	57.8	98.4	199.5	329.4	1,492.9
2007	36.6	60.9	97.4	203.3	293.2	1,689.7
2010	45.6	50.3	98.8	164.4	343.1	1,635.4
2013	34.3	48.3	86.0	176.4	360.6	1,774.6
2016	27.6	50.4	98.3	194.8	443.6	2,379.2

<sup>125</sup> Since the focus is on capital income, this report does not report data on net worth (assets minus liabilities). In this sense, the data in this section overstate the financial wellbeing of households because most households have liabilities partly offsetting their assets. Net worth is significantly lower than the value of financial assets for households in the bottom and second quintiles. Nevertheless, the Fed reports net worth is also positive for all quintiles in 2013, in part because net worth includes residential equity. Data available at <http://www.federalreserve.gov/econresdata/scf/files/BulletinCharts.pdf>. For more information, see Jesse Bricker, et al., “Changes in U.S. Family Finances from 2010 to 2013: Evidence from the Survey of Consumer Finances,” *Federal Reserve Bulletin*, vol. 100, no. 4 (September 2014), at <http://www.federalreserve.gov/pubs/bulletin/2014/pdf/scf14.pdf>.

<sup>126</sup> Financial assets include “transaction accounts, certificates of deposit, savings bonds, other bonds, stocks, pooled investment funds, retirement accounts, cash value life insurance, and other managed assets.” The Fed’s nonfinancial assets category includes some assets that are unlikely to generate income (i.e., vehicles and primary residences) and some assets that might generate income (i.e., secondary residences, equity in business, equity in nonresidential property). When nonfinancial assets are included, the trend across the income distribution for the mean value of total assets is similar to the trend for financial assets.

<sup>127</sup> The second quintile saw the smallest wealth gain of any cohort since 1989 because it was the only group to see a drop in wealth between 1998 and 2013. Since 1998, the value of its asset holdings declined in four out of five of the three-year intervals that comprise the 1998-2013 period.

	Bottom Quintile	Second Quintile	Third Quintile	Fourth Quintile	Ninth Decile	Top Decile
2019	40.0	49.4	94.2	218.9	476.9	2,312.9
<b>cumulative % change</b>	<b>68.1%</b>	<b>5.6%</b>	<b>50.0%</b>	<b>124.7%</b>	<b>236.8%</b>	<b>220.6%</b>

**Source:** Federal Reserve, *2019 Survey of Consumer Finances*, Internal Data, Table 6 at [https://www.federalreserve.gov/econres/files/scf2019\\_tables\\_public\\_real\\_historical.xlsx](https://www.federalreserve.gov/econres/files/scf2019_tables_public_real_historical.xlsx).

**Note:** Includes only families that hold financial assets.

These data are limited to families that own financial assets, but the share of families that own any assets is also skewed across the distribution. In 2019, 4.3% of families in the bottom quintile did not own any financial assets (including bank accounts), compared with 2.1% or less of families in the next two quintiles (100% of families in the top two quintiles held some form of financial asset in 2019). The most common asset for a family to hold was a transaction account, such as a bank account.

Since the financial crisis, wealth patterns have diverged across the distribution. Between 2007 and 2019, the median (and mean) value of financial assets rose for the top quintile and the median value fell for the bottom four quintiles of the income distribution.<sup>128</sup> These results might be because the top quintile held better performing assets than the rest of the distribution or it might be because the bottom 80% of the distribution reduced asset holdings, whereas the top 20% accumulated more assets over this period. In either case, the result would be that smaller asset holdings in 2019 for the bottom 80% would be expected to generate less capital income going forward.<sup>129</sup>

Although not reported in the *Survey of Consumer Finances*, the average rate of return on these assets may also vary by quintile. If high-income households earn higher rates of return on their assets than do low-income households (if the former invest in hedge funds and the latter deposit their money in bank accounts, to take an extreme example), then the distribution of capital income generated by these assets would be more skewed (and volatile) than the underlying holdings.

If high-income households continue to have higher savings rates than low-income households, as they have historically, the distribution of wealth would become more unequal and would likely contribute to higher income inequality in the future. Historical patterns may change, however. Even if the distribution of wealth did not change in the future, the capital income generated from these assets (if positive) will contribute to future income inequality.

## Family Composition

Another explanation for widening inequality over time stems from how the income distribution is measured. Because income is measured on a household or family basis instead of a per capita (individual) basis, trends in the composition of households and families can alter the income

<sup>128</sup> The mean value of financial assets declined for the 2<sup>nd</sup> and 3<sup>rd</sup> quintiles. The mean values increased for the 1<sup>st</sup> and 4<sup>th</sup> quintiles, but to a considerably lesser degree than for the top quintile.

<sup>129</sup> When nonfinancial assets are included, the median and mean values of total assets fell for all quintiles between 2007 and 2013, but fell less for the top decile than for the bottom three quintiles.

distribution.<sup>130</sup> Since 1967, three notable trends in family composition have influenced the income distribution:

- **The increase in dual income families.** According to Census data, the share of married families with two earners has risen from 44% in 1975 to 59% in 2015. Since World War II, the female employment-population ratio increased continually from 31% in 1948 to a peak of 59% in 1999. (It has fallen modestly since, mainly because of the aging of the labor force and recessions.) If this trend were uniform across the income distribution, it would not affect inequality,<sup>131</sup> but the rise in female entry into the labor force is more pronounced among higher income families. One study found that married women’s labor force participation rate at the 80<sup>th</sup> income percentile rose from 42% in 1960 to 77% in 2005, but rose from 25% to 34% in those years for households at the 20<sup>th</sup> percentile.<sup>132</sup>
- **The increase in assortative matching.** In addition to the rise in dual income households, there has been an increase in “assortative matching”—spouses marrying those with similar incomes or educational attainment—over time. One study found that the result of assortative matching increased the Gini coefficient<sup>133</sup> in 2005 from 0.34 to 0.43 or 0.44, indicating an increase in income inequality.<sup>134</sup>
- **The increase in female single-headed families.** The long-term increase in single-headed families (with most of the increase occurring in the 1970s and 1980s) increases measures of household inequality. According to Census data, the median and mean income of families with a single female head of household was less than half that of married families in 2015. The share of families with a female head has increased from about 13% in 1975 to 19% in 2015. One study attributed 21% of the rise in inequality between 1979 and 2006 to the decline in married couple households.<sup>135</sup>

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<sup>130</sup> In addition, the size of households has declined over time, from 2.9 in 1975 to 2.5 in 2019. While this does not necessarily affect measures of inequality, it understates the growth rate of income per capita over time.

<sup>131</sup> In the sense that earnings inequality has been more pronounced for men than for women, married women’s entry into the labor force has decreased inequality compared to the counterfactual. See Maria Cancian and Deborah Reed, “Assessing the Effects of Wives’ Earnings on Family Income Inequality,” *The Review of Economics and Statistics*, Vol. 80, No. 1 (Feb. 1998), pp. 73-79.

<sup>132</sup> Jeremy Greenwood, Nezih Guner, Georgi Kocharkov, Cezar Santos, “Marry Your Like: Assortative Mating and Income Inequality,” *American Economic Review*, vol. 104, p. 348-353, 2014; hereinafter “Greenwood, Guner, Kocharkov, and Santos, 2014”.

<sup>133</sup> The Gini coefficient describes the relationship between the cumulative distribution of income and the cumulative distribution of the population. It varies from 0 (total equality) to 1 (total inequality). For more information, see CRS Report R43897, *A Guide to Describing the Income Distribution*, by Sarah A. Donovan.

<sup>134</sup> See Greenwood, Guner, Kocharkov, and Santos, 2014. For evidence of assortative mating by educational attainment, see Christine R. Schwartz and Robert D. Mare, “Trends in Educational Assortative Marriage from 1940 to 2003,” *Demography*, volume 42 (no. 4): 2005, pp. 621-646. For research finding assortative matching to have a small effect on overall inequality, see Dmytro Hryshko et al., “Trends in Earnings Inequality and Earnings Instability among U.S. Couples: How Important is Assortative Matching?”, Center for Economic Studies, working paper CES 15-04, January 2015.

<sup>135</sup> Gary Burtless, “Effects of Growing Wage Disparities and Changing Family Composition on the U.S. Income Distribution,” Center on Social and Economic Dynamics, Working Paper No. 4, July 1999, at <https://www.brookings.edu/wp-content/uploads/2016/06/disparities.pdf>.

## Does Income Inequality Affect Economic Growth?

Gross domestic product (GDP) measures the economy's production of goods and services. Economic growth measures the rate of increase in GDP, which is the economy's ability to produce more goods and services. GDP is closely related by accounting identity to national income (which is composed of business income and household income), so by definition GDP and national income grow together.<sup>136</sup> However, the connection between GDP growth and national income says nothing about the distribution of income. Mathematically, an increase in overall income is only possible with GDP growth, but may or may not result in income rising for all households. In other words, GDP growth increases the size of the income pie, whereas distribution concerns how the pie is divided. Thus, the question becomes whether the division of the pie affects how quickly the pie grows.

A look at the historical record in the United States reveals no consistent relationship between GDP growth and income inequality. Relatively high and rising inequality has coincided with high GDP growth periods, such as 1995 to 2000, and with low growth periods, such as 2008 to 2015. Likewise, falling or stable inequality has coincided with high growth periods (expansions in the 1940s to 1960s) and with low growth periods (the 1970s). An international comparison also does not provide *prima facie* support for the idea that a higher *level* of inequality reduces growth, because the United States is more unequal than other developed countries and average U.S. growth rates have exceeded all large- and most medium-sized developed countries since the 1980s.<sup>137</sup> These results are perhaps unsurprising considering that many factors influence growth. Therefore, exploring connections between inequality and GDP growth requires analysis more sophisticated than simple correlations. Broadly speaking, two steps are needed to address the question of whether inequality has effects on growth. The first is to identify the theoretical channels that link them. The second is to use sufficient data and appropriate empirical methods, if possible, to isolate and measure the direction and magnitude of the relationship.

### Theoretical Channels Linking Income Inequality and GDP Growth

Economists have identified various transmission channels through which inequality and GDP growth could theoretically be correlated.<sup>138</sup> Some of these channels predict that higher inequality would be associated with lower growth and others predict it would be associated with higher growth.

Channels that predict higher inequality would be associated with lower growth include the following:

- **Opportunity and Mobility.** Greater inequality could reduce growth if it derives from unequal opportunities or barriers to advancement (i.e., individuals do not have the opportunity to reach their full potential). Gender or racial inequality, in particular, might have a strong link to lower growth through this channel if they

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<sup>136</sup> In National Income and Product accounting, net national product is equal to national income by definition. Gross national product less capital depreciation equals net national product. GDP measures goods and services produced in the United States and gross national product measures goods and services produced by U.S. citizens.

<sup>137</sup> This simple comparison is silent on whether a *change* in inequality could affect growth, particularly since the United States started from a higher-level than its peers.

<sup>138</sup> The direction of causation between the two is discussed below. For a literature survey, see Pedro Cunha Neves and Sandra Maria Tavares Silva, "Inequality and Growth: Uncovering the Main Conclusions from the Empirics," *Journal of Development Studies*, vol. 50, no. 1 (2014), p. 1.

create barriers to or reduce the incentive for women or minorities to seek education, invest, or pursue business opportunities. Inequality of opportunity could persist if low income individuals cannot access credit markets to make efficient capital or human capital (e.g., education) investments.

- **Governance.** Greater inequality could be associated with poorer governance or political instability, and those factors reduce growth.<sup>139</sup> Greater inequality might increase (or be the by-product of) rent seeking behavior and undermine the legitimacy of political institutions. For example, in the extreme, coups, civil war, corruption, and graft have significantly negative effects on growth.
- **Redistribution and Taxation.** Some researchers posit that greater inequality leads to pressure for redistributive policies that lower growth. Those policies could lower growth if incentives to work, save, or invest are reduced by the policies themselves or by higher taxes that are required to fund those policies, all else equal. However, asserting that redistributive policies reduce growth may be an overgeneralization that is only true in some cases, as some redistributive policies, such as those that provide greater access to public education or health care and those that incentivize work, could have the opposite effect and boost growth.

Alternatively, channels that predict higher inequality would be associated with higher growth include the following:

- **Incentives.** Greater inequality could increase growth because it increases incentives to work, acquire skills, innovate, and save. For example, a greater wage gap between high school and college educated workers increases the incentives to go to college, which would raise the productivity of the workforce.<sup>140</sup>
- **Concentrated Savings.** Since high-income households have higher saving rates on average and saving is necessary for long-term growth (because it finances capital investment), greater inequality might induce more saving that spurs more growth.<sup>141</sup>

As these channels illustrate, it may not be inequality per se that has a negative or positive effect on growth, but other phenomena that tend to be associated with inequality, such as lack of income mobility or opportunity for individuals at the bottom of the income distribution. Inequality may be an easily measurable and well-correlated proxy for these true drivers of growth, and so these distinctions would not significantly change research results. From a policy perspective, if the policy goal were to boost growth, it could be more effective to tackle the root causes than the inequality associated with them.

The next section discusses empirical evidence of the relationship between inequality and growth based mainly on cross-country studies. In evaluating these studies, identifying which of these

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<sup>139</sup> One study examined whether inequality reduced growth by leading to polarization that reduced property rights. See Philip Keefer and Stephen Knack, "Polarization, Politics and Property Rights: Links Between Inequality and Growth," *Public Choice*, vol. 111 (2002), p. 127, at <http://siteresources.worldbank.org/INTINVTCLI/Resources/polarizationpropertyrightsandthelinksbetweeninequalityandgrowth.pdf>.

<sup>140</sup> This channel could be weakened if there are significant barriers to mobility or accessing education, which might be more prevalent when inequality is higher.

<sup>141</sup> One study estimated that the bottom 90% of the wealth distribution had a saving rate of 0.1%, while the top 10% had a saving rate of 24% in 2010 to 2012. Emmanuel Saez and Gabriel Zucman, "Wealth Inequality in the United States Since 1913: Evidence from Capitalized Income Tax Data," *Quarterly Journal of Economics* (2016), Table B33.

theoretical channels dominates is not as important when trying to estimate the average effect of inequality across a large number of countries as it is when trying to estimate the effect on an individual country. Each of these channels works differently and is of relatively different importance in any given country. Political instability is an example of a channel that could be a dominant determinant of growth in some countries, but of limited relevance to the United States. If, say, the cross-country results were being driven by political instability, those findings could be robust and would still arguably not be particularly relevant to the United States.

## Empirical Evidence and Challenges

Given that theoretical channels predict that greater inequality could result in higher or lower economic growth, empirical evidence is needed to determine which of these effects discussed above dominates. Dozens of studies have attempted to measure the relationship between inequality and growth, and reach differing conclusions.<sup>142</sup> Most studies try to identify the relationship between growth and inequality by comparing results across many different countries, rather than using data for a single country over time. According to a recent literature review,

The review suggests that the effect of inequality on growth tends to be negative and more pronounced in cross-section studies, in less developed countries, and when inequality in wealth distribution is considered. By contrast, when panel data are used, the sample is mostly composed of developed countries, regional dummies are added to the growth regression and income distribution is used instead of wealth distribution, the impact of inequality on growth becomes insignificant or even positive.<sup>143</sup>

A few fundamental challenges hinder any attempt to identify the true relationship between growth and inequality, and these studies attempt in various ways to address them:

- **Direction of Causation.** Basic statistical analysis assumes that causation runs in one direction, with a set of independent variables causing changes in a single dependent variable. In the case of inequality and growth, causation may run in both directions (i.e., inequality affects growth and growth affects inequality), and it is not clear which direction might dominate.<sup>144</sup> Although this section explores how inequality affects growth, there are many examples from history that suggest economic growth leads to a widening distribution of income, notably when countries industrialize.<sup>145</sup> For example, the development of an integrated economy across the continental United States in the 19<sup>th</sup> century thanks to railroads, telegraphs, and other innovations allowed U.S. businesses to achieve

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<sup>142</sup> For a literature survey, see Pedro Cunha Neves and Sandra Maria Tavares Silva, “Inequality and Growth: Uncovering the Main Conclusions from the Empirics,” *Journal of Development Studies*, vol. 50, no. 1 (2014), p. 1. According to Forbes, early studies that found statistically significant effects on growth had shortcomings with data quality and estimation techniques. See Kristin Forbes, “A Reassessment Of The Relationship Between Inequality And Growth,” *The American Economic Review*, vol. 90 (2000), p. 869.

<sup>143</sup> Because different studies use different measurements of inequality and different estimation techniques, a quantitative range for the effects of inequality on growth cannot easily be summarized. Pedro Cunha Neves and Sandra Maria Tavares Silva, “Inequality and Growth: Uncovering the Main Conclusions from the Empirics,” *Journal of Development Studies*, vol. 50, no. 1 (2014), p. 1.

<sup>144</sup> The proper direction of causation is also an issue for the channels through which researchers have posited that inequality affects growth. For example, if corruption lowering growth is the relevant channel, does greater inequality increase corruption or does greater corruption increase inequality?

<sup>145</sup> Statistical methods exist to address this challenge, what economists refer to as an endogeneity problem, but obtaining sufficient data to execute them can be extraordinarily challenging, particularly in a cross-country analysis.

greater economies of scale that increased both growth and inequality at the top of the income distribution.<sup>146</sup>

- **Data Quality and Consistency.** Unlike GDP growth, inequality is not a basic statistic collected by all governments using standardized, widely agreed upon definitions (of income, for example) and data collection standards. The quality and availability of data on inequality vary from country to country, although these have improved over time.<sup>147</sup> Moreover, as discussed above, inequality can be represented by various measures, and unless these measures are perfectly correlated, then the results will depend on which measure is used. Different measures of inequality have different policy implications. For example, an OECD study found that “In particular, what matters most [for growth] is the gap between low income households and the rest of the population. In contrast, no evidence is found that those with high incomes pulling away from the rest of the population harms growth.”<sup>148</sup>
- **Omitted Variable Bias.** Many different factors besides income inequality affect a country’s growth rate, but there is not a consensus among economists about which factors are most important. Some of the theoretical channels posited above, such as corruption, cannot be easily or directly measured. Furthermore, statistical analysis is limited in the number of explanatory variables that can be included, and consistent, high-quality data may be lacking on important explanatory variables. Therefore, studies vary on which explanatory variables besides inequality to include and generally include relatively few. If an important explanatory variable is omitted and that omitted variable is correlated with inequality, then the effects of inequality on growth will not be isolated and the results will be statistically biased, overstating or understating inequality’s effect on growth. Using a large number of countries in a sample may help to mitigate problems with omitted variable bias. The fact that the relationship between growth and inequality is weaker when country-specific or region-specific effects are controlled for suggests that omitted variable bias may be a significant shortcoming.
- **Lack of Variation in the Data.** Cross-country comparisons are common because they provide more variation and observations than single-country studies, but even cross-country studies can suffer from a lack of variation in the data. As discussed above, inequality in most countries has risen in recent decades. Likewise, growth is somewhat correlated across countries from year to year. Statistical analysis to identify causal relationships depends on variation in the

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<sup>146</sup> Economist Simon Kuznets posited that when economies begin developing, inequality initially increases, and as economies reach a more mature level of development, inequality lessens. Economists refer to this relationship as the Kuznets curve, and this relationship held in the United States until the 1980s, when inequality began to increase again. See Simon Kuznets, “Economic Growth and Income Inequality,” *The American Economic Review*, vol. XLV, no. 1 (March 1955), at <https://assets.aeaweb.org/assets/production/journals/aer/top20/45.1.1-28.pdf>.

<sup>147</sup> There are databases containing income distribution data for a large number of countries, such as the United Nations University’s World Income Inequality Database (WIID), but these compile national data of varying quality, availability and consistency, as opposed to collecting original uniform data according to consistent standards. For information about the WIID and shortcomings, see Stephen P. Jenkins, “World Income Inequality Databases: An Assessment of WIID and SWIID,” Institute for Social and Economic Research, ISER Working Paper Series no. 2014-31, September 10, 2014, at <https://www.iser.essex.ac.uk/research/publications/working-papers/iser/2014-31>.

<sup>148</sup> Cingano, 2014. The OECD is an international club of advanced and middle-income countries. In 3 of the 22 countries, the rise was small.

data; if variation is lacking, the results may not be meaningful. This problem is compounded because some of the channels through which inequality affects growth, such as saving and income mobility, are longer run phenomena. If multiple year averages are used to account for this, the number of observations and variation in those observations will be reduced further.<sup>149</sup>

- **Assumption that the Growth-Inequality Relationship is Stable Across Countries.** Cross-country studies assume that the effects of inequality on growth are the same across countries, and that the effects of other sources of growth are properly identified and the same across countries.<sup>150</sup> Given the large institutional, structural, and cultural differences between countries, and the limited number of other variables controlled for, inequality may have a different effect on U.S. growth than its effect in another country.<sup>151</sup>

In particular, most studies include both developed and developing countries. The growth experience and growth dynamics in those two sets of countries widely differ. Some studies that separated results by developed and developing countries found that the negative relationship between inequality and growth only held or was only statistically significant for developing countries.<sup>152</sup> To the extent that the results are driven by experiences in developing countries, the results may be of limited relevance to the relationship between growth and inequality in the United States and other developed economies. For example, arguments that inequality reduces growth by fostering corruption and undermining good governance may be more important in developing countries than in the United States.

Most of these studies attempt to identify the long-term effects of inequality on growth, but some commentators have noted the coincidence with rising inequality and the two worst economic crises of the past 100 years, the Great Depression of the 1930s and the Great Recession (December 2007 to June 2009). Although much less research has been done on this link, some economists have hypothesized that greater inequality might result in financial and economic instability, by resulting in unsustainable credit bubbles.<sup>153</sup> However, some sort of tipping point explanation would be needed to explain why inequality is destabilizing only beyond a certain

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<sup>149</sup> Alternatively, if shorter time periods are used, then the data are likely to be autocorrelated, which would create additional empirical challenges.

<sup>150</sup> The relationship may also not be linear. Lower growth may be associated with very low inequality (such as in communist countries) and very high inequality, for example. If so, more sophisticated statistical methods would be needed to identify the true relationship between the two.

<sup>151</sup> This problem can be addressed using country fixed effects, but some studies that did so found that the other variables, including inequality, then lost much of their explanatory power.

<sup>152</sup> Amparo Castelló-Climent, "Inequality And Growth In Advanced Economies: An Empirical Investigation," *Journal of Economic Inequality*, vol. 8 issue 3 (September 2010), p. 293; Dustin Chambers and Alan Krause, "The Relationship Between Inequality And Growth Affected By Physical And Human Capital Accumulation?," *Journal of Economic Inequality*, vol. 8 issue 2 (June 2010), p. 153; Sherif Khalifa and Sherine El Hag, "Income Disparities, Economic Growth, And Development As A Threshold," *Journal of Economic Development*, vol. 35, no. 2 (June 2010), p. 23; Robert Barro, "Inequality And Growth In A Panel Of Countries," *Journal of Economic Growth*, vol. 5 (2000), p. 5.

<sup>153</sup> See Andrew G. Berg and Jonathan D. Ostry, *Inequality and Unsustainable Growth: Two Sides of the Same Coin?*, International Monetary Fund, IMF Staff Discussion Note SDN/11/08, April 8, 2011, at <http://www.imf.org/external/pubs/ft/sdn/2011/sdn1108.pdf>; Barry Z. Cynamon and Steven M. Fazzari, *Inequality and Household Finance During the Consumer Age*, Levy Institute, Working Paper no. 752, at [http://www.levyinstitute.org/pubs/wp\\_752.pdf](http://www.levyinstitute.org/pubs/wp_752.pdf); Kumhof and Rancière, *Inequality, Leverage and Crises*, IMF, Working Paper no. WP/10/268, at <https://www.imf.org/external/pubs/ft/wp/2010/wp10268.pdf>.

point, because high and rising inequality in the United States is not limited to those two periods of instability.

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