

# Trends in Income From 1975 to 2018

Carter C. Price and Kathryn A. Edwards

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# Trends in Income From 1975 to 2018<sup>1</sup>

By Carter C. Price<sup>2</sup> and Kathryn Edwards<sup>3</sup>

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## Abstract

The three decades following the Second World War saw a period of economic growth that was shared across the income distribution, but inequality in taxable income has increased substantially over the last four decades. This work seeks to quantify the scale of income gap created by rising inequality compared to a counterfactual in which growth was shared more broadly. We introduce a time-period agnostic and income-level agnostic measure of inequality that relates income growth to economic growth. This new metric can be applied over long stretches of time, applied to subgroups of interest, and easily calculated. We document the cumulative effect of four decades of income growth below the growth of per capita gross national income and estimate that aggregate income for the population below the 90<sup>th</sup> percentile over this time period would have been \$2.5 trillion (67 percent) higher in 2018 had income growth since 1975 remained as equitable as it was in the first two post-War decades. From 1975 to 2018, the difference between the aggregate taxable income for those below the 90<sup>th</sup> percentile and the equitable growth counterfactual totals \$47 trillion. We further explore trends in inequality by applying this metric within and across business cycles from 1975 to 2018 and also by demographic group.

## Introduction

For the two decades following the Second World War, income grew at a rate close to the economy-wide growth rate across the full income distribution, which reduced income inequality by most measures. Anemic growth from 1969 to 1974 further reduced inequality. But since then, the benefits of growth have not been evenly shared. Multiple studies have found that labor, capital, pre-tax, and post-tax income has been increasingly concentrated at the top of the distribution since the middle of the 20<sup>th</sup> century.<sup>4</sup>

These patterns, which are the primary motivation for this paper, can be seen in Figure 1 which shows the real income growth for different parts of the family income distribution by business cycle. Starting from the left, the first 5 bars are the five income quintiles arranged from poorest to richest, then the top 5 percent is shown separately. The last bar, in black, is the growth of per capita GDP. We use per capita GDP as a reference growth rate to identify the scale of increases or decreases in inequality. If incomes rose apace with per capita GDP growth, all of the bars would be of equal height. One approach to measuring earnings growth across time is to consider changes over a discrete economic cycle comprising both a recessionary period and an expansionary period, commonly referred to as a business cycle. We take this approach in the

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<sup>2</sup> Senior Mathematician, RAND Corporation

<sup>3</sup> Economist, RAND Corporation

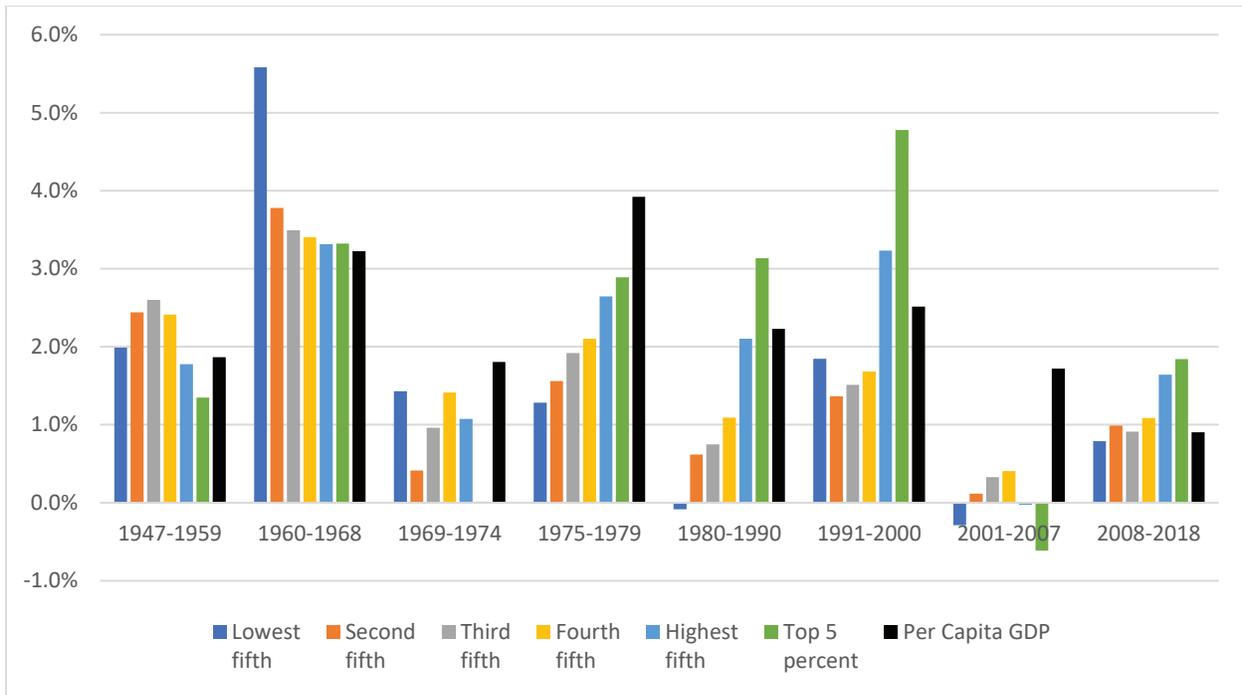
<sup>4</sup> See, for example, Juhn, Murphy, and Pierce (1993), Piketty and Saez (2003), Frank (2009), Saez and Emmanuel (2015), Saez and Zucman (2016).

analyses below. In the first two business cycles after WWII, between 1947-1959 and 1960-1968, all five income quintiles, from the lowest to the highest, grew between 1.5-2.5 percent, close to the economy-wide growth rate of just under 2 percent. Indeed, in the 1960s business cycle, the bottom quintile saw the fastest income growth, which reduced inequality. In the third business cycle, between 1969-1974, both the overall economy and incomes grew at a weak pace. For the next three decades, the 1975-1979, 1980-1990, and 1991-2000 cycles, the US settled into a pattern of unequal growth—the bottom four quintiles grew the slowest and the top quintile—and even more so the top 5 percent—grew the fastest, often faster than GDP. Thus, income inequality has increased substantially by most measures since 1975. The 2000s saw little or even negative income growth (at the top 5 percent, this is attributed to the decline in capital income), and the most recent cycle returned to the pattern of the 70s, 80s, and 90s: the top quintile grew faster than per capita GDP.

In this paper, we explore these trends in income growth and relate to the overall economic growth using a new metric that measures the degree to which overall economic growth is shared across the income distribution. Using this metric, we first characterize the trends in income inequality described above and then use it to explore the nuances of these trends by demographic group.

Our focus throughout this work is on taxable income as opposed to other income measures. Compared to more expansive definitions of income, taxable income is more convenient because of the data limitations and subjectivity involved in assessing the value of employer benefits. Alternatively, more restrictive measures such as income from labor do not capture key trends of the last several decades including the shift in income from labor to capital. The tail adjustment and measure of shared growth that we introduce in this paper are applicable for both more and less inclusive definitions of income.

Figure 1: Growth in Annualized Real Family Pre-tax, Pre-transfer Income by Quintile



Source: Authors’ calculations from U.S. Bureau of the Census, Current Population Survey, Annual Social and Economic Supplements. Tables F-2 and F-7.

This rise in inequality has been attributed to many different factors including technological advancement, decline in union membership, and globalization.<sup>5</sup> This study does not seek to explain why inequality has increased but, instead, describes how income has changed from 1975 to the present for different demographic groups and individuals across the income distribution. We establish key facts about the evolution of these distributions that can be used to help future studies explore plausible causes and implications of rising inequality. Given that, as shown in Figure 1, the turning point for inequality in income growth in the U.S. was the 1975-1979 business cycle, our discussion will examine the U.S. since 1975.

This paper is not the first to document income inequality trends,<sup>6</sup> but we have four key contributions. The first is methodological: we develop and implement a novel approach to correcting for the practice of “top-coding” high incomes to a maximum amount that is used across many surveys to protect the anonymity of high-earning survey respondents. This enables us to create a complete, consistent, and continuous income distribution that captures the full income picture better than top-coded survey data or income on the top earners alone.<sup>7</sup> Second,

<sup>5</sup> See, e.g., Lee (1999), Gordon (2008) and Autor, Katz, and Kearney (2008).

<sup>6</sup> Stone, Chad, Danilo Trisi, Arloc Sherman, and Jennifer Beltrán. “A Guide to Statistics on Historical Trends in Income Inequality.” Center on Budget and Policy Priorities, January 13, 2020. <https://www.cbpp.org/research/poverty-and-inequality/a-guide-to-statistics-on-historical-trends-in-income-inequality>.

<sup>7</sup> The data sources are not sufficient for us to perform this analysis before 1975 because of the lack of detail in unearned income data prior to the 1976 CPS.

we develop a metric to assess the degree to which income at any point on the distribution has grown at the reference rate. Third, using this new metric, we generate a set of analyses of income inequality across time by demographic measures including race, gender, and education level. The United States population is not a fixed point in terms of educational attainment or labor force participation of individuals of different races and genders. Our accounting offers a critical insight into how increased overall income inequality is shaped by compositional changes in the labor force. Finally, we estimate the cumulative income effects of the growth in inequality to quantify the total effect of the trend over the course of the four decades.

We describe our new metric in the next section. We then apply this metric to identify the degree of equity in growth across the income distribution and assess the aggregate implications of this differential growth. Finally, we apply the metric to different demographic groups to look for additional trends.

## Data and Methods

We produced income estimates from administrative and survey data to identify the trends in growth over the last several decades for different portions of the income distribution and for different demographic groups. Our approach was two-fold. First, we used administrative data on national income from the Bureau of Economic Analysis (BEA) and statistics on income shares in the World Inequality Database (WID)<sup>8</sup> to establish general trends in income and determine the scale of the trends. Then we performed a finer level of analysis using survey data from the Current Population Survey (CPS) to explore demographic variation within the broader trend.

While conceptually straightforward, the survey analysis required substantial care to ensure consistency across the time period of this study. The primary data source for the individual level analysis was the CPS, augmented with the WID. However, limitations in the CPS's ability to capture income at the top of the distribution required augmentation to represent the full income distribution.

We used the Annual Social and Economic Supplement (ASEC) of the CPS from 1976 to 2019, which provides income data for the period 1975 to 2018.<sup>9</sup> We specifically use the details on personal income, household structure, and demographics. We identified families within the CPS households using the family identification variable and the variable describing the relationship to the head of household. We assessed whether the household comprised a single adult or a married couple and then identified the number of minor children in the family. In case of multifamily households, their sub-units within a household were constructed by matching adults with spouses and minor children, if present.

For each individual, we calculated the earned income by summing income from wages and salary, business income, and farm income. We calculated the taxable income by adding the

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<sup>8</sup> Piketty, Thomas, Saez, Emmanuel and Zucman, Gabriel (2016). *Distributional National Accounts: Methods and Estimates for the United States*.

<sup>9</sup> Sarah Flood, Miriam King, Renae Rodgers, Steven Ruggles, and J. Robert Warren. *Integrated Public Use Microdata Series, Current Population Survey: Version 6.0 [dataset]*. Minneapolis, MN: IPUMS, 2018. <https://doi.org/10.18128/D030.V6.0>

income from interest, rent, and dividends to the earned income. Throughout the document we will refer to taxable income as “income” unless otherwise specified. As mentioned above, the CPS top-codes high incomes to protect privacy. Additionally, greater refusal to report incomes among respondents at the top of the income distribution leads to disproportionate incidence of missing values among this group. Both of these issues contribute to the potential underreporting of income at the top of the distribution.<sup>10</sup> Therefore, we developed an approach to impute the missing values and used other data sources to adjust the top tail of the income distribution from the CPS data. Specifically, we used the WID to provide details about the incomes of the highest earners for the tail adjustment. The WID was built from administrative tax data of every filer. It contains summary statistics about the income distribution above the ninetieth percentile of tax units over the entire period we examined.<sup>11</sup>

For the individual level income trends, we looked at trends in real income for different parts of the income distribution by demographic group and by state. To do this, we used Gross Domestic Product (GDP) data from the Bureau of Economic Analysis,<sup>12</sup> National Income Deflator from the National Income and Product Accounts (NIPA),<sup>13</sup> Personal Consumption Expenditures Price Index (PCE) from the Bureau of Economic Analysis, and the Consumer Price Index for all Urban Consumers, Research Series (CPI-U-RS) from the Bureau of Labor Statistics.<sup>14</sup>

#### Imputation Method for Tail Adjustment

To better capture the shape of the top tail of the income distribution, we modify the CPS using the WID. Our approach is an extension to that of Armour et al.<sup>15</sup> Specifically, they use the internal CPS to augment the public use CPS by fitting a Pareto distribution to the top earners. However, the income tail of the distribution, at least as derived from tax records as presented in the WID, is too fat to be appropriately modeled with a Pareto distribution and so it does a poor job for fitting the shape at the top. Thus, while their approach is useful for looking at the top of the distribution in aggregate, it is less useful for analysis that tries to differentiate among income at the top. By using the WID, we have additional information about the shape of the distribution of incomes in the top of the distribution which allows us to better fit the top tail. Specifically, the WID has threshold values for different percentiles (e.g., 95<sup>th</sup>, 99<sup>th</sup>, and 99.9<sup>th</sup>) and the mean value for incomes between those percentiles.

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<sup>10</sup> Burkhauser, Richard V., Shuaizhang Feng, Stephen P. Jenkins, and Jeff Larrimore. “Estimating Trends in US Income Inequality Using the Current Population Survey: The Importance of Controlling for Censoring.” *ISER Working Paper Series* 2008, no. 25 (September 2008). <http://www.econstor.eu/bitstream/10419/92206/1/2008-25.pdf>. Bollinger, Christopher R., Hirsch, Barry T., Hokayem, Charles M., Ziliak, James P. (2019). “Trouble in the Tails: What We Know About Earnings Nonresponse 30 Years after Lillard, Smith and Welch.” *Journal of Political Economy* 127(5): 2143-2185.

<sup>11</sup> Specifically, we used `afiwag992t` for labor income, `afilin992t` for earned income, and `afiinc992t` for taxable income.

<sup>12</sup> U.S. Bureau of Economic Analysis, Gross Domestic Product [GDP], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/GDP>, December 8, 2018.

<sup>13</sup> U.S. Bureau of Economic Analysis, Net domestic product (chain-type price index) [A362RG3A086NBEA], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/A362RG3A086NBEA>, February 27, 2019.

<sup>14</sup> U.S. Bureau of Labor Statistics, Consumer Price Index, <https://www.bls.gov/cpi/research-series/home.htm>

<sup>15</sup> Armour, Philip, Richard V. Burkhauser, and Jeff Larrimore. “Using the Pareto Distribution to Improve Estimates of Topcoded Earnings.” *Economic Inquiry* 54, no. 2 (2016): 1263–73. <https://doi.org/10.1111/ecin.12299>.

The first step to produce a representative top tail of the income distribution was to produce a comparable unit of analysis between the CPS and the WID. The CPS has details about individuals, but the WID is based on tax units.<sup>16</sup> Because the smallest unit of analysis in the WID is the tax unit, we used tax units for the tail adjustment. We constructed synthetic tax units in the CPS using the relationship information as described in Piketty and Saez<sup>17</sup> and in Burkhauser, et al.<sup>18</sup> Tax units can be single, married filing jointly, or, very rarely, married filing separately. Because we have no way to identify married couples that would file separately and this is a small share of the overall married population, we assume that all married couples file jointly.

Single people 20 years of age or older are flagged as single filers and married people of any age are flagged as married filers. People below the age of 20 are assumed to be dependents and are assigned to their parents if they are in the same household. Otherwise, they are associated with the adult who is the primary householder.

Next, we determine the taxable income for each tax unit in the CPS by summing the labor income (wages and salary, self-employed farm work, and self-employed non-farm work) with dividends, interest, and rental income. This excludes some types of income but still captures most sources of taxable income for the vast majority of tax units. Notably, capital gains are not included in this income information, but this does not impact the matching because the WID contains income information both with and without capital gains. Unless otherwise stated, we use the income with capital gains.

Income information in the WID is provided by groups of percentiles (e.g., the 90<sup>th</sup> to 95<sup>th</sup>, the 95<sup>th</sup> to 99<sup>th</sup>, and the top 1 percent). These percentile groups are defined based on the taxable income. We produced the income groups in the CPS based on the taxable income to correspond to the same groupings as provided in the WID.

Once the different income groups were defined in the CPS, we adjust the taxable incomes for people in the top ten percent of tax units using information from the WID. Specifically, we use the information on thresholds, averages, and shares for each year. We assume that there exists a function  $f(q) = \alpha e^{\beta q}$  such that  $1 = \int_{q_a}^{q_b} f(q) dq$  and  $\bar{q} = \int_{q_a}^{q_b} q f(q) dq$ , where  $q$  is income,  $q_a$  is the bottom threshold of income for the group beginning at percentile  $a$ ,  $q_b$  is the top threshold of income for the group ending at percentile  $b$ ,  $\bar{q}$  is the average income in the group between percentiles  $a$  and  $b$ . The parameters  $\alpha$  and  $\beta$  describe the shape of the distribution. This functional form has the advantage of being smooth and monotonically decreasing which allows for different parameter values to be used for different groups without introducing discontinuities.

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<sup>16</sup> A tax unit is the filing unit for individual income taxes. This can either be an individual or two individuals filing jointly.

<sup>17</sup> Piketty, Thomas, and Emmanuel Saez. *The evolution of top incomes: a historical and international perspective*. No. w11955. National Bureau of Economic Research, 2006. <http://eml.berkeley.edu/~saez/piketty-saezAEAPP06.pdf>

<sup>18</sup> Burkhauser, Richard V., Shuaizhang Feng, Stephen P. Jenkins, and Jeff Larrimore. "Recent Trends in Top Income Shares in the USA: Reconciling Estimates from March CPS and IRS Tax Return Data," 2009. <http://www.ecineq.org/milano/WP/ECINEQ2009-139.pdf>.

We solve these equations to get:

$$1 = \int_{q_a}^{q_b} \alpha e^{\beta q} dq = \frac{\alpha}{\beta} e^{\beta q_b} - \frac{\alpha}{\beta} e^{\beta q_a} \rightarrow$$

$$\alpha = \frac{\beta}{e^{\beta} - e^{\beta q_a}}$$

And

$$\bar{q} = \int_{q_a}^{q_b} \alpha q e^{\beta q} dq = \frac{\alpha}{\beta^2} (e^{\beta q_b} \cdot (\beta q_b - 1) - e^{\beta q_a} \cdot (\beta q_a - 1)) \rightarrow$$

$$\beta = \frac{\alpha}{\beta \bar{q}} (e^{\beta q_b} \cdot (\beta q_b - 1) - e^{\beta q_a} \cdot (\beta q_a - 1)).$$

We used a fixed-point method to approximate the solution to these equations and produce an estimate of  $a$  and  $\beta$  for each group.

These distributions are then used to adjust each record within a group of tax units between the bottom percentile  $a$  and top percentile  $b$ . So, for  $X \in [a, b]$ , the income of an individual at the  $X^{\text{th}}$  percentile,  $q_x$ , can be calculated by:

$$X = \int_{q_a}^{q_x} a e^{c q} dq = \frac{a}{c} e^{c q_x} - \frac{a}{c} e^{c q_a} \rightarrow$$

$$q_x = \frac{\ln(X \cdot \frac{\beta}{\alpha} + \frac{\alpha}{\beta} e^{\beta q_a})}{\beta}.$$

This results in a smooth transformation that avoids artificial discontinuities that could potential bias analysis.

The family income was mapped to individuals, first by assigning the difference between the transformed income and survey income to the top coded individual in the tax unit or proportionally between the individuals if both individuals were top coded or neither individual was top coded. This provided us with individual and family level income distributions that provide an accurate depiction of the right tail of the income distribution.

### Limitations

Income from capital gains is only captured for tax units above the 90<sup>th</sup> percentile of taxable income. While this does mean that taxable income for those below the 90<sup>th</sup> percentile are understated, we do not believe this would meaningfully change the results given the high concentration of capital and capital income at the top of the distribution.<sup>19</sup> Capital income amounts for two percent of income for the bottom 99 percent of households.<sup>20</sup>

While we took measures to ensure the consistency of the data used, the definition of some data elements in the CPS changed over time. For example, prior to 1988 when categories for Asian

<sup>19</sup>Congressional Budget Office and Joint Committee on Taxation, “The Distribution of Asset Holdings and Capital Gains.” August 4, 2016. <https://www.cbo.gov/publication/51831>.

<sup>20</sup>Congressional Budget, “Projected Changes in the Distribution of Household Income, 2016 to 2021.” December 19, 2019. <https://www.cbo.gov/publication/55941>.

and American Indian were added, the race variable was divided into White, Black, and other. Additional categories were added in 1996. This limitation restricted our ability to project the trends for some demographic groups as far back in time as for other groups.

We use per capita GDP as the goal rate for taxable income growth. However, taxable income does not account for the growth in health insurance benefit costs and other non-monetary compensations that are portions of GDP. Similarly, GDP includes factors such as deflation that would not be included in personal income growth. While these are limitations, the approach describe can be applied with these other targets applied.

### Measures of Inequality

The most common measures of inequality are built on the distribution at a single point in time. For example, the Gini coefficient measures dispersion in a distribution and is often used to express the degree of concentration of wealth or income at a given point in time. Other measures compare two points in the distribution at one time, rather than summarize the entire distribution, such as quantile ratios like the 90-10 comparison. The primary drawback to these types of distribution-based measures is that they do not provide any way to characterize the price of inequality for those at the bottom, nor do they establish any benchmark for a “good” distribution. The Gini coefficient expresses dispersion relative to a perfectly even distribution, which no country or policy maker would say is the aim of an economy. Similarly, with quantile ratios, the 90-10 split can be compared to 90-10 splits in prior periods, but there is nothing in the measure that statistically defines what the split *should* be.

Of course, expressing any kind of normative “should” for an inequality measure gets away from statistical measurement and into socioeconomic policy and political belief quickly. Hence, most measures are abstracted away from a benchmark goal and rather enable comparisons to other time periods or countries. What should the Gini coefficient be? What has been the foregone income gains at the 10<sup>th</sup> percentile given the 90-10 split? These are secondary questions that other measures could be used to address, but that the primary measures do not, in fact, answer.

In this paper, we created a measure that captures inequality, benchmarks the change in inequality relative to prior periods, and provides a measure of the cost of inequality over time. We assess how realized income growth compares to a historic level and a counterfactual growth rate. Specifically, we identify the  $\omega$  such that:

*Realized Income* = (100- $\omega$ )\**Reference Income* +  $\omega$ \**Counterfactual Income*, or

$$\omega = 100\% \times \frac{\text{Realized Income} - \text{Reference Income}}{\text{Counterfactual Income} - \text{Reference Income}}$$

Reference income is the observed starting income at one point in time, realized income is the observed income at a second point in time, and counterfactual income is the income level had the reference income grown at a certain rate,  $\theta$ , which we call the goal rate. This goal rate is expressed in percent and can be any rate, whether it is economically significance or not. In this paper, and in explaining  $\omega$ , we examine reference and realized incomes within business cycles, and construct counterfactual income based on the economic growth rate over that time. For each

of these values we adjust for inflation using the PCE. Our  $\theta$ , is the real growth rate of per capita GDP. Other potential economically relevant  $\theta$  rates include average income growth rates in prior periods, income growth rates in neighboring or comparable countries, or the growth rates in the prices of certain goods or commodities.

Solving for  $\omega$  gives us a numeric value that we can use to interpret income evolution over time. Further, because this measure it is income level agnostic and time period agnostic, it can be applied over any time period and for any income level to assess how the income distribution has evolved over time. Table 1 provides an interpretation of  $\omega$  for different values. A value of zero would indicate that the realized level was only the reference income, while a value of one hundred percent would indicate that the level reflected a growth rate equal to the growth of the goal rate. A negative value occurs when the realized income is below the reference and a value above one hundred percent indicates the growth rate was above the growth of the goal rate.

**Table 1. Interpretation of  $\omega$  with a General Goal Rate and per capita GDP Goal Rate**  
Goal Rate is per capita GDP Growth

$\omega$	Any Goal Rate	(Reference Income in Real Terms)
$< 0$	Income fell in absolute terms; realized income is less than reference income	Income grew at a rate below the inflation rate (real income decline)
$= 0$	Income was flat; realized income and reference income are equal	Income grew at the rate of inflation (zero real income growth)
$0 < \omega < 100\%$	Income grew slower than the goal rate	Income grew faster than inflation but slower than GDP
$= 100\%$	Income grew at the goal rate	Income grew at the rate of GDP
$> 100\%$	Income grew faster than the goal rate	Income grew faster than GDP

$\omega$  is straightforward, easy to calculate, and readily interpretable. It opens up a wide array of comparisons relative to a goal rate: income of any group (demographic, economic, etc.) over any period can be compared to the income of any group over any period so long as the reference income is different from the counterfactual income. This allows for comparisons of inequality that are accessible, interpretable, and comparable across groups and over time—in a single statistic.

In this paper, we will explore income inequality since 1975, with the goal rate of growth being the growth in real per capita GDP. The rationale for selecting this goal is that it represents incomes keeping pace with the broader economy. Furthermore, this goal rate was roughly matched for the majority of the population prior to 1975, as seen in Figure 1, but fell short afterwards. For a given demographic group, the realized income will be income in 2018, the reference income will be income in 1975 inflated to 2018 dollars using the PCE, and the counterfactual income will be the income had the 1975 level grown at the per capita growth rate

of real GDP. Using time period and comparison, the counterfactual we estimate is what the earnings distribution would have looked like had incomes grown from 1975 to 2018 at the rate of real per capita GDP growth for the same period. Essentially, with this counterfactual, we are estimating what the income distribution would look like if incomes after 1975 had grown with the broader economy as they did in the 1948 to 1974 time period.

## Results

Here we assess the degree to which the benefits of economic growth have been shared across the U.S. population. We first look to the distribution of real taxable income from 1975 to 2018 including the peak year of each business cycle (1979, 1989, 2000, and 2007). We then compare the actual income distributions to a counterfactual in which income growth from 1975 had kept pace with the real per capita GDP growth of 118 percent. We find that the bottom 90 percent of adults would have had an additional \$2.5 trillion in cumulative income over this period, had their income growth kept pace. Finally, we calculate a factor,  $\omega$ , that indicates the degree to which the 2018 value reflects a growth rate more similar to inflation or the real per capita GDP growth rate. We express  $\omega$  as a percentage.

### National Income Distribution

We first examine to what extent the benefits of economic growth have been shared across the income distribution. The results in Table 2.a demonstrate the extent to which the benefits of economic growth have been shared across the income distribution for all adults<sup>21</sup> with nonzero income at the peaks of the business cycle for the last four decades. For example, the median income for all adults with nonzero income, was \$26,000 in 1975, grew to \$36,000 by 2018.<sup>22</sup> Had income for this percentile grown at the same pace as the economy, it would have reached \$57,000. The  $\omega$  factor is thus 30 percent: the rate of income growth at the median of the distribution was less than one third of the rate of growth of real per capita GDP. Compare this to the threshold for the 99<sup>th</sup> percentile, which grew from \$162,000 to \$491,000, well over the counterfactual of \$353,000. This realized income represents a  $\omega$  of 171 percent, i.e., income at the 99<sup>th</sup> percentile grew at 171 percent of the goal rate. Further, due to significant increases in the dispersion of incomes within the 99<sup>th</sup> percentile, the average income growth for the top one percent was substantially higher, at more than 300 percent of the real per capita GDP rate.

Table 2.a: Income Distribution for Adults with Income in 2018 Dollars

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
25 <sup>th</sup> %	\$9,000	\$6,000	\$9,000	\$13,000	\$14,000	\$15,000	\$20,000	62.6%
Median	\$26,000	\$23,000	\$26,000	\$32,000	\$34,000	\$36,000	\$57,000	30.2%
75 <sup>th</sup> %	\$46,000	\$44,000	\$48,000	\$57,000	\$59,000	\$65,000	\$100,000	36.1%
90 <sup>th</sup> %	\$65,000	\$67,000	\$73,000	\$93,000	\$98,000	\$112,000	\$142,000	60.3%
95 <sup>th</sup> %	\$80,000	\$84,000	\$95,000	\$125,000	\$138,000	\$164,000	\$174,000	88.7%
99 <sup>th</sup> %	\$162,000	\$158,000	\$222,000	\$479,000	\$371,000	\$491,000	\$353,000	171.7%
Top 1% Mean	\$252,000	\$272,000	\$431,000	\$1,009,000	\$1,108,000	\$1,160,000	\$549,000	305.4%

<sup>21</sup> We define adults as anyone at or above the age of 20 years.

<sup>22</sup> To avoid false precision, we round all incomes to the nearest thousand dollars.

The results in Table 2.a are for all adults with nonzero income, but the labor force participation of groups within the adult population are not fixed over time. Much of the movement at the bottom of the distribution is driven by an increase in hours not an increase in wages. In Table 2.b, we replicate the analysis for full-time, full-year, prime-aged workers only.<sup>23</sup> These results are important because they control for both the experience and the quantity of labor supplied which are significant drivers of income differences within for the full population.

Table 2.b: Income Distribution for Full-Year, Full-Time, Prime-Aged Workers in 2018 Dollars

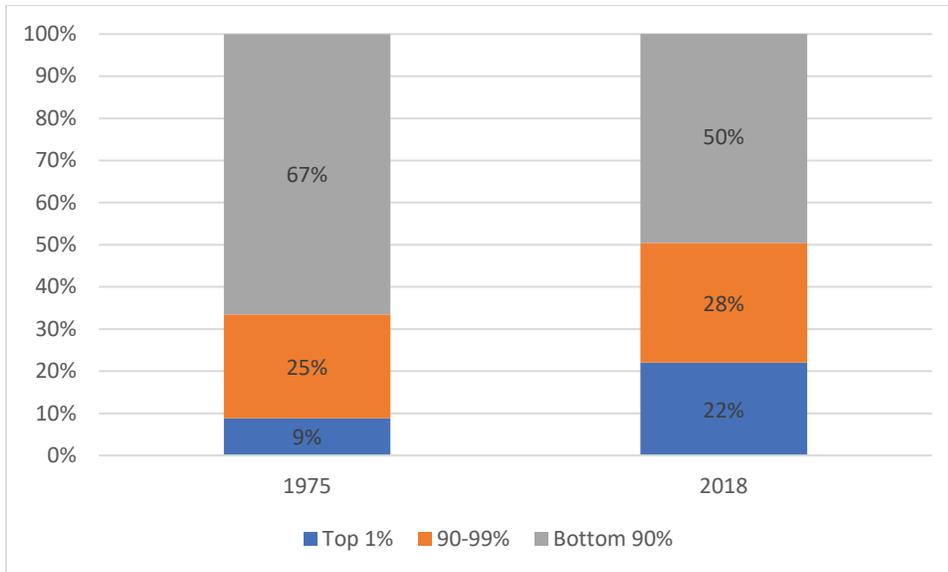
	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
25 <sup>th</sup> %	\$28,000	\$28,000	\$28,000	\$31,000	\$30,000	\$33,000	\$61,000	13.5%
Median	\$42,000	\$42,000	\$43,000	\$47,000	\$46,000	\$50,000	\$92,000	17.4%
75 <sup>th</sup> %	\$58,000	\$60,000	\$62,000	\$72,000	\$72,000	\$81,000	\$126,000	34.1%
90 <sup>th</sup> %	\$77,000	\$82,000	\$88,000	\$109,000	\$115,000	\$133,000	\$168,000	61.2%
95 <sup>th</sup> %	\$91,000	\$101,000	\$109,000	\$145,000	\$160,000	\$191,000	\$198,000	93.1%
99 <sup>th</sup> %	\$257,000	\$226,000	\$349,000	\$830,000	\$1,058,000	\$761,000	\$560,000	165.7%
Top 1%								
Mean	\$289,000	\$292,000	\$467,000	\$1,121,000	\$1,311,000	\$1,384,000	\$630,000	321.6%

In general, the findings from Table 2.b indicate that those incomes at or below the median saw little income growth over the last forty years. Unlike the growth patterns in the 1950s and 1960s (seen in Figure 1), the majority of full-time workers did not share in the economic growth of the last forty years. The third quartile saw some income growth that was primarily concentrated in the 1990s and the 2010s. This was only a third of what would have been expected given the growth in the broader economy. On the other hand, the top of the distribution saw higher and more consistent growth. During this time period, only the very top of the income distribution saw growth that matched or outpaced the real per capita GDP rate of the same timeframe. The growth for the top one percent was well above GDP growth. The threshold to enter the top one percent grew at 166 percent of the per capita GDP and the growth rate of the average income within the top one percent was over 300 percent of GDP growth. Fundamentally, the majority of workers did not share in the benefits of economic growth to any significant degree.

We can quantify the aggregate effect of this growth differential by exploring the broad trends in the shares of taxable income going to different segments of the distribution.

Figure 2. Distribution of Shares of Taxable Income for 1975 to 2018

<sup>23</sup> We define full-time to mean at least 35 hours a week and full-year to be at least 40 weeks in a year. By prime-aged we mean people between the ages of 25 and 54, inclusive.



Source: Author’s calculations from CPS and WID data.

Figure 2 shows the distribution of income going to those below the 90<sup>th</sup> percentile, the 90<sup>th</sup> to the 99<sup>th</sup> percentile, and those above the 99<sup>th</sup> percentile as taxable income for 1975 and 2018, respectively. Over this period, the wages and salary of the top decile have grown from 33 percent of taxable income in 1975 to 50 percent in 2018 (the top one percent grew from 9 percent to 22 percent over the same time period). The share going to the remaining nine deciles has declined from 67 percent to 50 percent. In Appendix C, we detail our approach to calculate a counterfactual where the share of GDP going to those with incomes below the 90<sup>th</sup> percentile remained the same. In this case, aggregate income going to those earning below the 90<sup>th</sup> percentile would have been \$2.5 trillion higher in 2018 and that would have totaled \$47 Trillion based on the PCE (or \$48.6 using the CPI-U-RS).

### Trends for All Adults with Income

The previous section indicated that those with incomes below the 90<sup>th</sup> percentile lost a sizable share of their economic power over the last four decades, as measured by share of Gross Domestic Product. This section looks at how the growth trends have varied across different groups. These analyses provide important context to the widely reported trend of rising inequality by comparing changes in income growth across the distribution for specific demographic subgroups within the labor force.

### Demographic Changes

The United States was not demographically static from 1975 to 2018. Table 3 presents a comparison of the demographic characteristics of adults with nonzero incomes across business cycle peaks between 1975 and 2018. This population was older, more racially diverse, more educated, and more urban in 2018 than in 1975. We are restricting our discussion to adults with positive income because the focus of this work is not on transfer payment policy; transfers (such as Social Security) make up a sizeable share for the excluded adults. The remaining population have incomes that are typically generated by markets—the labor market, capital markets, and business income derived from the market for goods and services.

The number of Black adults grew at more than double the rate of White adults and the growth rate for adults who were neither Black nor White grew at more than fifteen times the rate for White adults. This resulted in a near doubling of the population of adults with income from 1975 to 2018. Asian and Pacific Islanders (API) and American Indian (AI) were not included as race categories until the mid-1980s and so we cannot calculate numbers for those groups in 1975 or 1979.

Table 3.a: Number of Adults with Income (in Millions) by Race-Gender

	1975	1979	1989	2000	2007	2018	% Change
All Groups	137.7	147.9	174.5	199.3	216.8	242.7	76%
White Men	58.0	62.0	71.9	80.2	86.5	92.6	60%
White Women	63.9	68.0	77.7	85.4	90.2	96.5	51%
Black Men	6.1	6.7	8.6	10.0	11.2	13.9	128%
Black Women	7.5	8.4	10.6	12.7	13.9	16.6	121%
Other Men	1.1	1.3	2.8	5.2	7.2	10.9	891%
Other Women	1.2	1.5	3.0	5.7	7.8	12.2	917%
API Men			2.1	4.3	4.9	7.7	
API Women			2.4	4.7	5.5	8.6	
AI Men			0.4	0.9	0.9	1.3	
AI Women			0.5	1.0	1.0	1.3	

The population with less than a high school degree (LTHS) fell by almost half and those with only a high school degree (HS) have grown by only a third. The number of individuals with some college (SCOL) or a college degree (COL) has increased substantially and college graduates are now the modal educational attainment group among adults with an income.

Table 3.b: Number of Adults with Income (in Millions) by Level of Education

	1975	1979	1989	2000	2007	2018	% Change
All Groups	137.7	147.9	174.5	199.3	216.8	242.7	76%
LTHS	44.5	42.2	36.7	30.5	28.0	22.6	-49%
HS	51.4	56.0	67.2	64.1	67.3	68.7	34%
SCOL	21.1	24.9	34.1	54.2	60.3	67.2	218%
COL	19.5	23.6	35.3	49.5	60.4	83.4	328%

The adult population with income declined in rural areas but grew substantially in urban and suburban areas. In 1975 the urban population was roughly equal in size to the rural areas, but by 2018 the urban population was double that for rural areas.

Table 3.c: Number of Adults with Income (in Millions) by Urbanicity

	1975	1979	1989	2000	2007	2018	% Change
All Groups	137.7	147.9	174.5	199.3	216.8	242.7	76%

Urban	40.9	39.7	43.7	48.4	59.0	68.8	68%
Suburban	53.1	54.6	65.1	86.1	92.2	109.6	106%
Rural	43.7	41.4	37.6	37.0	34.0	30.5	-30%

Part-time and full-time work more than doubled from 1975 to 2018. Part-year and part-time grew but part-time growth was also quite high. Much of the growth in part-time work comes from people who are above the traditional retirement age of 65. Thus, more people are working longer in their lives.

Table 3.d: Number of Adults with Earnings (in Millions) by Employment Status

	1975	1979	1989	2000	2007	2018	% Change
All Groups	137.7	147.9	174.5	199.3	216.8	242.7	76%
Part-Year	67.1	66.1	70.8	74.6	83.2	97.5	45%
Part-Time	6.8	7.9	11.4	13.4	15.1	17.3	154%
Full-Time	60.8	70.7	89.1	108.0	114.9	124.1	104%

While there was growth at all segments of the population, the growth was highest among the oldest. This has resulted in an older workforce that is typically associated with higher incomes.

Table 3.e: Number of Adults with Earnings (in Millions) by Age Group

	1975	1979	1989	2000	2007	2018	% Change
All Groups	137.7	147.9	174.5	199.3	216.8	242.7	76%
20-24	18.8	20.0	18.0	18.9	20.5	21.3	13%
25-54	77.4	83.2	105.7	122.2	126.2	126.9	64%
55-64	19.8	20.9	21.2	24.7	33.3	41.8	111%
65 and over	21.7	23.7	29.6	33.6	36.8	52.8	143%

#### Race and Gender

In Table 4.a, we show the incomes of various demographic groups at the first quartile for the adult population with nonzero earnings. This allows us to make two comparisons of the demographics of income inequality: a point-in-time comparison of where the quartile level is for each race-by-gender group and the comparison of observed growth in income over time. For example, in 1975, income at the bottom quartile for White men was \$21,000 and for White women was \$5,000; 25<sup>th</sup> percentile women earned a quarter of what 25<sup>th</sup> percentile men earned. Over time, income at the first quartile for White women increased to \$10,000, while, among White men, it fell to \$20,000. Thus, because White men's wages were stagnant at the 25<sup>th</sup> percentile while White women's wages grew, even if slower than the broader economy, the gender gap was reduced some. The counterfactual incomes for each group reflect the same relative disparity present in 1975.

Among adults with any income, income growth from 1975 to 2018 was roughly one third of the growth in per capita GDP. However, to the extent that workers in the first quartile have had rising incomes, it is largely because women have seen higher incomes. Growth in men's incomes lagged behind that of women and White men saw minimal growth in their real incomes. A

thorough investigation of these trends finds that growth in women’s incomes in the first quartile has resulted from an increase in hours worked rather than from growth in the real hourly wage.

Table 4.a: 25<sup>th</sup> Percentile Income for Adults with Positive Earnings by Race-Gender

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
All Groups	\$10,000	\$6,000	\$9,000	\$13,000	\$14,000	\$15,000	\$22,000	51.3%
White Men	\$19,000	\$18,000	\$17,000	\$21,000	\$21,000	\$20,000	\$41,000	5.2%
White Women	\$5,000	\$2,000	\$4,000	\$7,000	\$9,000	\$10,000	\$11,000	103.2%
Black Men	\$15,000	\$14,000	\$13,000	\$18,000	\$17,000	\$20,000	\$33,000	29.3%
Black Women	\$6,000	\$6,000	\$9,000	\$14,000	\$15,000	\$16,000	\$13,000	153.1%
Other Men	\$14,000	\$16,000	\$16,000	\$22,000	\$21,000	\$24,000	\$31,000	61.7%
Other Women	\$7,000	\$4,000	\$7,000	\$10,000	\$11,000	\$14,000	\$15,000	100.3%
API Men			\$18,000	\$25,000	\$24,000	\$26,000		
API Women			\$7,000	\$11,000	\$14,000	\$15,000		
AI Men			\$11,000	\$16,000	\$15,000	\$18,000		
AI Women			\$4,000	\$8,000	\$10,000	\$11,000		

In Table 4.b, we repeat the analysis from Table 4.a but look at median income. Similar to the first quartile, across race categories, women saw the largest gains while men saw smaller or little gains. The result is that the within-race income differences between men and women fell, racial disparity overall persisted, and no group had realized income in 2018 greater than 90 percent of the counterfactual income level.

Table 4.b: Median Income for Adults with Positive Earnings by Race-Gender

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
All Groups	\$26,000	\$23,000	\$26,000	\$32,000	\$34,000	\$36,000	\$57,000	33.0%
White Men	\$38,000	\$40,000	\$38,000	\$42,000	\$41,000	\$44,000	\$83,000	14.0%
White Women	\$15,000	\$12,000	\$17,000	\$23,000	\$26,000	\$30,000	\$33,000	90.2%
Black Men	\$28,000	\$28,000	\$27,000	\$35,000	\$34,000	\$35,000	\$61,000	24.5%
Black Women	\$15,000	\$17,000	\$20,000	\$27,000	\$28,000	\$30,000	\$33,000	90.2%
Other Men	\$32,000	\$33,000	\$36,000	\$43,000	\$40,000	\$48,000	\$70,000	44.6%
Other Women	\$19,000	\$15,000	\$21,000	\$27,000	\$29,000	\$32,000	\$41,000	63.7%
API Men			\$38,000	\$46,000	\$46,000	\$55,000		
API Women			\$22,000	\$28,000	\$32,000	\$36,000		
AI Men			\$24,000	\$33,000	\$29,000	\$30,000		
AI Women			\$16,000	\$21,000	\$23,000	\$25,000		

Table 4.c presents results for third quartile incomes by demographic group. At the third quartile, women’s income across all racial groupings outpaced men—in the case of Whites by nearly 200 percent. The fastest rate of income growth among men was among non-Black, non-White men, though the income of this group in 2018 was 28 percent below the counterfactual income.

Table 4.c: 75<sup>th</sup> Percentile Income for Adults with Positive Earnings by Race-Gender

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
All Groups	\$46,000	\$44,000	\$48,000	\$57,000	\$59,000	\$65,000	\$100,000	39.5%
White Men	\$57,000	\$60,000	\$62,000	\$72,000	\$72,000	\$79,000	\$124,000	35.6%
White Women	\$27,000	\$27,000	\$34,000	\$44,000	\$48,000	\$54,000	\$59,000	91.6%
Black Men	\$42,000	\$44,000	\$45,000	\$53,000	\$55,000	\$60,000	\$92,000	40.4%
Black Women	\$28,000	\$29,000	\$36,000	\$42,000	\$45,000	\$50,000	\$61,000	72.1%
Other Men	\$53,000	\$54,000	\$62,000	\$79,000	\$74,000	\$89,000	\$116,000	63.2%
Other Women	\$33,000	\$29,000	\$40,000	\$48,000	\$54,000	\$63,000	\$72,000	84.4%
API Men			\$66,000	\$84,000	\$85,000	\$101,000		
API Women			\$43,000	\$50,000	\$59,000	\$73,000		
AI Men			\$45,000	\$55,000	\$46,000	\$51,000		
AI Women			\$29,000	\$36,000	\$38,000	\$38,000		

The top ten percent by demographic group is presented in Table 4.d. The patterns are generally similar to those at the third quartile, though incomes are, in general, closer to the counterfactual. This is particularly true among women; across racial categories, women's income was roughly between 100 and 120 percent of the counterfactual income in 2018. White and Black men had 2018 income growth that was 72 and 61 percent of the counterfactual level, respectively.

Table 4.d: 90<sup>th</sup> Percentile Income for Adults with Positive Earnings<sup>24</sup> by Race-Gender

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
All Groups	\$65,000	\$67,000	\$73,000	\$93,000	\$98,000	\$112,000	\$142,000	65.9%
White Men	\$78,000	\$83,000	\$90,000	\$114,000	\$120,000	\$138,000	\$170,000	71.5%
White Women	\$39,000	\$40,000	\$52,000	\$70,000	\$77,000	\$90,000	\$85,000	121.5%
Black Men	\$55,000	\$58,000	\$63,000	\$83,000	\$80,000	\$91,000	\$120,000	61.0%
Black Women	\$38,000	\$41,000	\$50,000	\$62,000	\$69,000	\$79,000	\$83,000	98.8%
Other Men	\$72,000	\$76,000	\$90,000	\$122,000	\$121,000	\$155,000	\$157,000	105.7%
Other Women	\$46,000	\$42,000	\$63,000	\$77,000	\$92,000	\$107,000	\$100,000	121.4%
API Men			\$95,000	\$127,000	\$137,000	\$173,000		
API Women			\$69,000	\$83,000	\$103,000	\$120,000		
AI Men			*	*	*	*		
AI Women			*	*	*	*		

Table 4.e has the 95<sup>th</sup> percentile of income by demographic group. The patterns between demographic groups are similar to the third quartile and ninetieth percentile, except that the growth is much closer to the counterfactual for all groups and higher than the counterfactual for all of these groups except Black men. In particular, the incomes of women grew above the counterfactual rate and while this reduced the gap between men and women's earning to some extent, this reduction was less for individuals at the 90<sup>th</sup> percentile than at lower income levels.

<sup>24</sup> The sample size for American Indian men and women was too small to reliably produce estimates.

Table 4.e: 95<sup>th</sup> Percentile Income for Adults with Positive Earnings by Race-Gender

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
All Groups	\$80,000	\$84,000	\$95,000	\$125,000	\$138,000	\$164,000	\$174,000	96.9%
White Men	\$95,000	\$104,000	\$117,000	\$156,000	\$177,000	\$204,000	\$207,000	107.6%
White Women	\$48,000	\$50,000	\$67,000	\$94,000	\$106,000	\$126,000	\$105,000	149.9%
Black Men	\$63,000	\$69,000	\$76,000	\$105,000	\$105,000	\$120,000	\$137,000	84.7%
Black Women	\$44,000	\$50,000	\$62,000	\$77,000	\$86,000	\$104,000	\$96,000	128.1%
Other Men	\$83,000	\$103,000	\$128,000	\$161,000	\$171,000	\$220,000	\$181,000	152.2%
Other Women	\$59,000	\$55,000	\$86,000	\$106,000	\$123,000	\$153,000	\$129,000	149.6%
API Men			\$147,000	\$175,000	\$186,000	\$244,000		
API Women			\$94,000	\$112,000	\$140,000	\$164,000		
AI Men			*	*	*	*		
AI Women			*	*	*	*		

The deep racial and gender inequality present in the U.S. is also manifested in income inequality. Over time, we would expect women and people of color to see higher income growth as racial and gender discrimination declines. Across the income distribution and for each racial group, women saw higher income growth than men. Similarly, for the first three quartiles, the gap between Black men and White men declined. But for higher incomes the gap remained or even grew over time. Thus, the gaps between racial and gender groups remain at the top of the distribution.

### Education

In general, education has been seen as the key pathway to higher incomes. Thus, in this section, we look at the growth rates for different education levels at different points in the income distribution.

We begin by assessing income growth by educational attainment at the 25<sup>th</sup> percentile. As seen in Table 5.a, there was a general flattening of wages among non-college graduates. Those with less than a high school degree saw substantial growth in income. However, a careful investigation of the factors leading to the growth in income for this population finds that this was driven primarily by an increase in hours rather than growth in real wages. Additionally, because educational attainment has increased over time, this population was disproportionately older in 2018 compared to the population in 1975. While those with a college degree had incomes double those of other education levels in 2018, this gap was virtually identical in 1975.

Table 5.a: 25<sup>th</sup> Percentile Income for Adults with Positive Income by Level of Education

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
All Groups	\$10,000	\$6,000	\$9,000	\$13,000	\$14,000	\$15,000	\$22,000	51.3%
LTHS	\$5,000	\$2,000	\$2,000	\$5,000	\$8,000	\$12,000	\$11,000	121.2%
HS	\$12,000	\$8,000	\$9,000	\$11,000	\$12,000	\$13,000	\$26,000	9.2%
SCOL	\$9,000	\$8,000	\$10,000	\$14,000	\$14,000	\$12,000	\$20,000	28.9%

COL	\$20,000	\$18,000	\$22,000	\$28,000	\$27,000	\$25,000	\$44,000	22.6%
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Median income by education has been a similar story to that of the 25<sup>th</sup> percentile. By 2018, high school graduates and those with some college had essentially the same income level as each other and as in 1975. Those with a college degree had substantially higher incomes than other education levels, this gap didn't change much since 1975.

Table 5.b: Median Income for Adults with Positive Income

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
All Groups	\$26,000	\$23,000	\$26,000	\$32,000	\$34,000	\$36,000	\$57,000	33.0%
LTHS	\$17,000	\$13,000	\$12,000	\$17,000	\$18,000	\$23,000	\$37,000	28.6%
HS	\$27,000	\$23,000	\$23,000	\$27,000	\$27,000	\$29,000	\$59,000	8.4%
SCOL	\$27,000	\$25,000	\$28,000	\$33,000	\$32,000	\$30,000	\$59,000	12.6%
COL	\$42,000	\$41,000	\$46,000	\$55,000	\$55,000	\$55,000	\$92,000	28.3%

Incomes for the third quartile of college graduates grew by a 40 percent of the rate of per capita GDP but were essentially flat for other groups. At this point in the income distribution, there is some evidence of differential growth between each of the education levels. Those with some college have higher incomes than those with only a high school degree despite starting from a similar level. That said, the magnitude of differential income growth was modest.

Table 5.c: 75<sup>th</sup> Percentile Income for Adults with Positive Income

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
All Groups	\$46,000	\$44,000	\$48,000	\$57,000	\$59,000	\$65,000	\$100,000	39.5%
LTHS	\$34,000	\$30,000	\$27,000	\$30,000	\$31,000	\$35,000	\$74,000	2.3%
HS	\$43,000	\$42,000	\$41,000	\$44,000	\$46,000	\$47,000	\$94,000	7.9%
SCOL	\$46,000	\$46,000	\$48,000	\$54,000	\$53,000	\$54,000	\$100,000	16.3%
COL	\$68,000	\$68,000	\$74,000	\$92,000	\$92,000	\$98,000	\$148,000	40.4%

Those among top ten percent of the income distribution saw slow growth in incomes if they lacked a college degree. While those with a college degree saw growth at 70 percent the counterfactual rate. By 2018, this differential growth resulted in college graduates with incomes more than double that of those with only some college for those at the 90<sup>th</sup> percentile.

Table 5.d: 90<sup>th</sup> Percentile Income for Adults with Positive Income

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
All Groups	\$65,000	\$67,000	\$73,000	\$93,000	\$98,000	\$112,000	\$142,000	65.9%
LTHS	\$50,000	\$50,000	\$45,000	\$47,000	\$47,000	\$52,000	\$109,000	3.9%
HS	\$60,000	\$61,000	\$61,000	\$67,000	\$67,000	\$70,000	\$131,000	16.0%
SCOL	\$66,000	\$67,000	\$71,000	\$81,000	\$80,000	\$82,000	\$144,000	21.9%
COL	\$96,000	\$104,000	\$110,000	\$141,000	\$153,000	\$169,000	\$209,000	70.2%

For the top five percent, those with less than a college degree had very little growth in incomes. College degree holders had higher incomes, but, similarly to the 90<sup>th</sup> percentile and above group, their incomes were only slightly better than three-quarters of the rate of the counterfactual.

Table 5.e: 95<sup>th</sup> Percentile Income for Adults with Positive Incomes

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
All Groups	\$80,000	\$84,000	\$95,000	\$125,000	\$138,000	\$164,000	\$174,000	96.9%
LTHS	\$60,000	\$61,000	\$57,000	\$62,000	\$63,000	\$68,000	\$131,000	11.7%
HS	\$71,000	\$73,000	\$74,000	\$84,000	\$86,000	\$91,000	\$155,000	25.9%
SCOL	\$79,000	\$82,000	\$88,000	\$103,000	\$104,000	\$107,000	\$172,000	33.1%
COL	\$140,000	\$150,000	\$183,000	\$212,000	\$221,000	\$256,000	\$305,000	76.7%

### Urbanicity

In this section, we look at the growth rates for groups defined by an individual's residential area type (urban, suburban, rural) at different points of the income distribution.

At the first quartile, there was some growth in each category, but as with other perspectives on the first quartile, much of this was driven by a change in hours rather than in real wages. The gap between rural areas and urban areas grew by 2018. The pattern indicates that low-income peoplerrural areas fared very poorly in the 1975 to 1979 period and it wasn't until 2000 that the previous income levels were surpassed.

Table 6.a: 25<sup>th</sup> Percentile Income for Adults with Positive Income

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
All Groups	\$10,000	\$6,000	\$9,000	\$13,000	\$14,000	\$15,000	\$22,000	51.3%
Urban	\$10,000	\$7,000	\$9,000	\$14,000	\$16,000	\$18,000	\$22,000	74.6%
Suburban	\$11,000	\$7,000	\$10,000	\$14,000	\$16,000	\$16,000	\$24,000	37.5%
Rural	\$8,000	\$6,000	\$6,000	\$9,000	\$11,000	\$12,000	\$17,000	46.3%

For urban and rural areas, incomes at the median grew at nearly a third the rate of the per capita GDP. The majority of the growth in income appears to have been largely due to the economic boom of the 1990s.

Table 6.b: Median Income for Adults with Positive Income

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
All Groups	\$26,000	\$23,000	\$26,000	\$32,000	\$34,000	\$36,000	\$57,000	33.0%
Urban	\$26,000	\$24,000	\$26,000	\$32,000	\$33,000	\$37,000	\$57,000	38.4%
Suburban	\$30,000	\$27,000	\$30,000	\$36,000	\$37,000	\$39,000	\$65,000	27.6%
Rural	\$21,000	\$20,000	\$20,000	\$26,000	\$28,000	\$30,000	\$46,000	38.0%

At the third quartile, those in urban areas saw some growth in income as did those in suburbs but none of these groups saw much more than half of the counterfactual growth rate. Rural residents saw slow growth except in the 1990s.

Table 6.c: 75<sup>th</sup> Percentile Income for Adults with Positive Income

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
All Groups	\$46,000	\$44,000	\$48,000	\$57,000	\$59,000	\$65,000	\$100,000	39.5%
Urban	\$44,000	\$44,000	\$46,000	\$55,000	\$57,000	\$69,000	\$96,000	52.8%
Suburban	\$51,000	\$51,000	\$54,000	\$66,000	\$66,000	\$71,000	\$111,000	36.7%
Rural	\$38,000	\$39,000	\$37,000	\$46,000	\$47,000	\$51,000	\$83,000	30.6%

Growth for the top ten percent of the income distribution in urban areas was faster than suburban areas and growth in suburban areas was much faster than in rural areas. Furthermore, this growth was sufficiently high to essentially close the gap between high income urban residents and their suburban counterparts. Only urban residents were close to the income growth rate of the counterfactual.

Table 6.d: 90<sup>th</sup> Percentile Income for Adults with Positive Income

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
All Groups	\$65,000	\$67,000	\$73,000	\$93,000	\$98,000	\$112,000	\$142,000	65.9%
Urban	\$62,000	\$64,000	\$72,000	\$92,000	\$97,000	\$122,000	\$135,000	87.5%
Suburban	\$73,000	\$74,000	\$83,000	\$105,000	\$112,000	\$122,000	\$159,000	62.1%
Rural	\$57,000	\$60,000	\$58,000	\$69,000	\$74,000	\$80,000	\$124,000	36.9%

For the 95<sup>th</sup> percentile, residents of urban areas had income growth essentially equal to the counterfactual. This is consistent with a substantial compositional change in this population (e.g., gentrification). There was also high growth, though not at the counterfactual rate, among suburban residents. Meanwhile, high income individuals among the rural population lagged behind, though still had a higher than their lower income counterparts.

Table 6.e: 95<sup>th</sup> Percentile Income for Adults with Positive Income

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
All Groups	\$80,000	\$84,000	\$95,000	\$125,000	\$138,000	\$164,000	\$174,000	96.9%
Urban	\$86,386	\$90,266	\$103,510	\$130,293	\$147,544	\$178,696	\$188,000	122.0%
Suburban	\$92,612	\$99,398	\$114,527	\$149,857	\$162,148	\$177,849	\$202,000	106.6%
Rural	\$80,854	\$83,001	\$80,331	\$94,786	\$103,530	\$107,018	\$176,000	44.7%

### Prime Aged Workers

Because many of the patterns described above could be attributed to an increase in hours worked or from an older workforce, we also performed the analysis for prime-aged, full-time, full-year

workers. By focusing on this population, we have effectively controlled for increases in hours worked and in labor market experience.

### Demographic Changes

As can be seen in Table 7, demographics have changed more for the full-time, full-year, prime-aged subpopulation of workers than for the full population of workers. The number of prime-aged White men working increased by just over 40 percent and their share of the prime-aged workforce fell from just over 60 percent in 1975 to less than 45 percent by 2018. Full-time working women became much more common in this timeframe. In particular, the number of Black women working full-time surpassed the number of working Black men beginning in the 1990s. Additionally, there was a large growth in the prime-aged, “other,” Asian and Pacific Islander population working full-time.

Table 7.a: Number of Full-Year, Full-Time, Prime-Aged Workers (in Millions) by Race-Gender

	1975	1979	1989	2000	2007	2018	% Change
All Groups	43.3	50.8	70.2	85.5	85.7	86.9	101%
White Men	27.0	29.9	37.3	42.3	41.2	38.7	43%
White Women	11.5	14.8	22.9	28.2	28.0	27.7	141%
Black Men	2.3	2.8	3.8	4.7	4.8	5.5	139%
Black Women	1.8	2.3	3.7	5.3	5.3	5.7	217%
Other Men	0.5	0.6	1.4	2.9	3.7	5.2	940%
Other Women	0.3	0.4	1.0	2.1	2.8	4.1	1267%
API Men			1.1	2.5	2.7	3.8	
API Women			0.8	1.8	2.0	2.9	
AI Men			0.2	0.4	0.4	0.5	
AI Women			0.1	0.3	0.3	0.4	

The change in education distribution for prime-aged workers was similar to that of the full adult working population but more extreme. The subpopulation with a college degree nearly quadrupled and the subpopulation with some college more than tripled.

Table 7.b: Number of Full-Year, Full-Time, Prime-Aged Workers (in Millions) by Level of Education

	1975	1979	1989	2000	2007	2018	% Change
LTHS	9.1	8.8	7.3	7.5	7.1	5.3	-42%
HS	17.2	20.0	27.2	26.0	24.5	20.8	21%
SCOL	7.0	9.4	15.2	24.7	23.9	22.4	220%
COL	9.9	12.6	20.2	27.2	30.1	38.2	286%

The full-time, full-year, prime-aged subpopulation in urban and suburban areas more than doubled, while those in rural areas declined by nearly a third. Thus, the growth rate for urban and suburban areas was faster than for all the entire working population.

Table 7.c: Number of Full-Year, Full-Time, Prime-Aged Workers (in Millions) by Urbanicity

	1975	1979	1989	2000	2007	2018	% Change
Urban	12.3	13.1	17.1	20.6	23.9	26.6	116%
Suburban	18.2	20.1	28.1	39.1	37.8	40.1	120%
Rural	12.7	13.5	13.7	14.4	12.0	9.0	-29%

At a per person level, the full-time, full-year, prime-aged subpopulation was also employed full-time at a substantially higher rate over time (57 percent in 1975 and 69 percent in 2018) than that of the entire working population (45 percent in 1975 and 52 percent in 2018).

Table 7.d: Number of Prime-Aged Workers (in Millions) by Employment Status

	1975	1979	1989	2000	2007	2018	% Change
Part-Year	29.0	26.5	27.3	27.4	30.7	30.2	4%
Part-Time	3.7	4.3	6.7	7.7	8.3	8.5	130%
Full-Time	43.3	50.8	70.2	85.5	85.7	86.9	101%

Many of these demographic trends are associated with higher incomes: those with a college degree will typically have higher incomes than those without and those in more population dense areas will have higher incomes than in rural areas. Given that these trends are present in the data, at least some portion of the income growth described in Table 1 may be due to compositional effects. In the next section, we repeat the above analyses by various demographic characteristics for the full-time, full-year, prime-aged members of these subgroups. Doing so controls for changes in the income of these various groupings that result from multiple types of compositional changes. For example, estimating the income growth for full-time, full-year, prime-aged Black women controls for the fact that many more of these women began working full-time, full-year over time, changing their incomes in a way that is not reflective of changes in their wage rates. Relatedly, increased educational requirements across many occupations variously required or incentivized greater educational attainment in order to hold many jobs, likely moving many workers with greater attachment to the labor force into the high school degree or higher categories. Focusing on this subgroup of workers allows us to decompose the wage changes related more directly to educational attainment from those related to changes in the level of labor force participation within this group over time.

#### Race and Gender

In this section, we look at the growth rates for different race-by-gender subgroups of full-time, full-year, prime-aged workers at different points of the income distribution.

In Table 8.a, we show the incomes of various demographic groups at the first quartile for this subpopulation. In general, women saw gains in income while men did not, but women still earn less regardless. The net effect of these trends was, in some sense, a reversion to the mean with the first quartile of incomes for different demographic groups closer to each other in 2018 than in 1975. Asian and Pacific Islanders are one group that have incomes at or above those for their White counterparts. No group came close to the counterfactual where incomes in 1975 grew at the rate of real per capita GDP.

Table 8.a: 25<sup>th</sup> Percentile Income for Full-Year, Full-Time, Prime-Aged Workers

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
All Groups	\$28,000	\$28,000	\$28,000	\$31,000	\$30,000	\$33,000	\$61,000	13.5%
White Men	\$38,000	\$37,000	\$35,000	\$36,000	\$34,000	\$36,000	\$83,000	-4.4%
White Women	\$20,000	\$22,000	\$23,000	\$28,000	\$29,000	\$30,000	\$44,000	44.0%
Black Men	\$27,000	\$26,000	\$25,000	\$29,000	\$29,000	\$30,000	\$59,000	10.9%
Black Women	\$19,000	\$20,000	\$21,000	\$25,000	\$24,000	\$27,000	\$41,000	35.7%
Other Men	\$34,000	\$31,000	\$33,000	\$35,000	\$34,000	\$38,000	\$74,000	10.7%
Other Women	\$25,000	\$21,000	\$23,000	\$27,000	\$28,000	\$30,000	\$55,000	19.6%
API Men			\$36,000	\$37,000	\$34,000	\$43,000		
API Women			\$25,000	\$28,000	\$29,000	\$35,000		
AI Men			\$25,000	\$28,000	\$23,000	\$28,000		
AI Women			\$18,000	\$21,000	\$23,000	\$25,000		

In Table 8.b, we repeat the exercise from Table 8.a, but look at the median full-time, full-year, prime-aged worker. Similar to the first quartile, women of each race saw the largest gains while men saw smaller or little gains. The result is that the within-race income differences between men and women fell, racial disparity overall persisted, and no group was close to the counterfactual income level.

Table 8.b: Median Income for Full-Year, Full-Time, Prime-Aged Workers

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
All Groups	\$42,000	\$42,000	\$43,000	\$47,000	\$46,000	\$50,000	\$92,000	17.4%
White Men	\$50,000	\$52,000	\$52,000	\$55,000	\$53,000	\$57,000	\$109,000	12.4%
White Women	\$28,000	\$29,000	\$34,000	\$41,000	\$41,000	\$47,000	\$61,000	56.9%
Black Men	\$38,000	\$38,000	\$36,000	\$41,000	\$42,000	\$45,000	\$83,000	16.3%
Black Women	\$27,000	\$27,000	\$31,000	\$35,000	\$34,000	\$40,000	\$59,000	40.9%
Other Men	\$46,000	\$47,000	\$49,000	\$55,000	\$54,000	\$62,000	\$100,000	30.1%
Other Women	\$33,000	\$29,000	\$36,000	\$41,000	\$43,000	\$51,000	\$72,000	45.9%
API Men			\$53,000	\$57,000	\$57,000	\$72,000		
API Women			\$38,000	\$42,000	\$47,000	\$58,000		
AI Men			\$37,000	\$44,000	\$40,000	\$39,000		
AI Women			\$29,000	\$32,000	\$33,000	\$34,000		

Table 8.c has the third quartile incomes by demographic group. At the third quartile, women's incomes (except for American Indian women) grew close to the counterfactual, particularly in the 80s, 90s, and 2010s. Though there is still an income gap between White men and both Black and White women. Black male income grew at one third of the counterfactual rate, only slightly faster than the growth rate for White men. Asian and Pacific Islander men and women have higher incomes, at the third quartile, than any of the other demographic groups of their gender and, for males, higher than any other group overall. Both these groups saw the most substantial growth during the 1990s and 2010s.

Table 8.c: 75<sup>th</sup> Percentile Income for Full-Year, Full-Time, Prime-Aged Workers

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
All Groups	\$58,000	\$60,000	\$62,000	\$72,000	\$72,000	\$81,000	\$126,000	34.1%
White Men	\$66,000	\$70,000	\$72,000	\$83,000	\$83,000	\$91,000	\$144,000	30.9%
White Women	\$38,000	\$40,000	\$48,000	\$60,000	\$63,000	\$71,000	\$83,000	74.4%
Black Men	\$49,000	\$52,000	\$53,000	\$62,000	\$63,000	\$68,000	\$107,000	33.9%
Black Women	\$35,000	\$38,000	\$44,000	\$50,000	\$52,000	\$60,000	\$76,000	59.2%
Other Men	\$65,000	\$64,000	\$74,000	\$92,000	\$87,000	\$105,000	\$142,000	51.7%
Other Women	\$45,000	\$39,000	\$53,000	\$60,000	\$72,000	\$84,000	\$98,000	73.0%
API Men			\$78,000	\$97,000	\$97,000	\$120,000		
API Women			\$56,000	\$64,000	\$80,000	\$94,000		
AI Men			\$62,000	\$66,000	\$55,000	\$61,000		
AI Women			\$43,000	\$47,000	\$45,000	\$48,000		

The top ten percent by demographic group is presented in Table 8.d. The patterns are generally similar to those at the third quartile, though income growth across groups is closer to the counterfactual. One notable difference, though, is among Black men, who here have a rate of income growth was below that of White men. The sample size for American Indian men and women was too small to reliably produce estimates.

Table 8.d: 90<sup>th</sup> Percentile Income for Full-Year, Full-Time, Prime-Aged Workers

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
All Groups	\$77,000	\$82,000	\$88,000	\$109,000	\$115,000	\$133,000	\$168,000	61.2%
White Men	\$82,000	\$88,000	\$99,000	\$127,000	\$132,000	\$154,000	\$179,000	75.6%
White Women	\$49,000	\$53,000	\$67,000	\$87,000	\$95,000	\$112,000	\$107,000	108.2%
Black Men	\$61,000	\$64,000	\$69,000	\$92,000	\$87,000	\$100,000	\$133,000	54.9%
Black Women	\$43,000	\$49,000	\$58,000	\$69,000	\$75,000	\$89,000	\$94,000	91.7%
Other Men	\$80,000	\$86,000	\$100,000	\$132,000	\$138,000	\$173,000	\$174,000	98.5%
Other Women	\$59,000	\$57,000	\$80,000	\$95,000	\$111,000	\$139,000	\$129,000	116.1%
API Men			\$106,000	\$134,000	\$145,000	\$190,000		
API Women			\$83,000	\$98,000	\$122,000	\$151,000		
AI Men			\$73,000	\$87,000	\$74,000	\$101,000		
AI Women			\$56,000	\$68,000	\$68,000	\$64,000		

Table 8.e has the 95<sup>th</sup> percentile of income by demographic group. The patterns between demographic groups are similar to the third quartile and ninetieth percentile, except that realized incomes are much closer to the counterfactual for all groups and higher than the counterfactual for White and “other” women. Despite income growth at or above the counterfactual rate for both White and Black women, a smaller, but substantial gap with White men remains. And similar to the 90<sup>th</sup> percentile estimates, the growth of Black male incomes did not outpace the growth of White male incomes.

Table 8.e: 95<sup>th</sup> Percentile Income for Full-Year, Full-Time, Prime-Aged Workers

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
All Groups	\$91,000	\$101,000	\$109,000	\$145,000	\$160,000	\$191,000	\$198,000	93.1%
White Men	\$112,000	\$125,000	\$138,000	\$177,000	\$189,000	\$224,000	\$244,000	85.0%
White Women	\$58,000	\$66,000	\$86,000	\$115,000	\$131,000	\$161,000	\$126,000	150.0%
Black Men	\$65,000	\$75,000	\$80,000	\$114,000	\$114,000	\$128,000	\$142,000	82.5%
Black Women	\$49,000	\$59,000	\$70,000	\$86,000	\$95,000	\$117,000	\$107,000	116.4%
Other Men	\$122,000	\$149,000	\$168,000	\$183,000	\$186,000	\$246,000	\$266,000	86.7%
Other Women	\$67,000	\$98,000	\$112,000	\$128,000	\$152,000	\$193,000	\$146,000	158.8%
API Men			\$183,000	\$197,000	\$200,000	\$291,000		
API Women			\$127,000	\$132,000	\$163,000	\$221,000		
AI Men			*	*	*	*		
AI Women			*	*	*	*		

### Education

In this section, we look at the growth rates for different demographic groups at different points of the income distribution.

As seen in Table 9.a, among the first quartile, only college graduates saw any real income growth, though this was closer to zero than to the counterfactual. Further, those with less than a college degree had lower incomes in real terms. For the lowest fourth of college graduates, income at the bottom was higher, even as the number of college graduates in the work force increased four-fold.

Table 9.a: 25<sup>th</sup> Percentile Income for Full-Year, Full-Time, Prime-Aged Workers

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
All Groups	\$28,000	\$28,000	\$28,000	\$31,000	\$30,000	\$33,000	\$61,000	13.5%
LTHS	\$21,000	\$21,000	\$19,000	\$19,000	\$18,000	\$20,000	\$46,000	-5.1%
HS	\$27,000	\$26,000	\$25,000	\$27,000	\$26,000	\$26,000	\$59,000	-0.5%
SCOL	\$32,000	\$30,000	\$30,000	\$32,000	\$31,000	\$30,000	\$70,000	-4.3%
COL	\$38,000	\$38,000	\$41,000	\$48,000	\$46,000	\$48,000	\$83,000	21.5%

Median income by education has been a similar story to that of the first quartile: only college graduates saw a real growth in income at the median, but even their realized income failed to come close to the counterfactual.

Table 9.b: Median Income for Full-Year, Full-Time, Prime-Aged Workers

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
All Groups	42000	42000	43000	47000	46000	50000	92000	0.1737
LTHS	\$32,000	\$32,000	\$28,000	\$28,000	\$26,000	\$30,000	\$70,000	-6.0%
HS	\$39,000	\$38,000	\$36,000	\$39,000	\$37,000	\$38,000	\$85,000	-1.5%

SCOL	\$46,000	\$44,000	\$44,000	\$46,000	\$45,000	\$45,000	\$100,000	-0.7%
COL	\$55,000	\$55,000	\$59,000	\$69,000	\$69,000	\$72,000	\$120,000	25.6%

Incomes for the third quartile of college graduates grew by more than forty percent, while they were flat for other groups. In particular, those without a high school degree saw a significant decline.

Table 9.c: 75<sup>th</sup> Percentile Income for Full-Year, Full-Time, Prime-Aged Workers

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
All Groups	58000	60000	62000	72000	72000	81000	126000	0.3415
LTHS	\$46,000	\$48,000	\$41,000	\$39,000	\$37,000	\$40,000	\$100,000	-10.7%
HS	\$54,000	\$55,000	\$53,000	\$55,000	\$54,000	\$56,000	\$118,000	3.1%
SCOL	\$61,000	\$60,000	\$61,000	\$67,000	\$65,000	\$65,000	\$133,000	6.1%
COL	\$77,000	\$79,000	\$85,000	\$105,000	\$107,000	\$114,000	\$168,000	41.0%

The top ten percent of the income distribution for those without a college degree was at best flat since 1975. While those with a college degree saw growth at sixty percent of the counterfactual rate.

Table 9.d: 90<sup>th</sup> Percentile Income for Full-Year, Full-Time, Prime-Aged Workers

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
All Groups	77000	82000	88000	109000	115000	133000	168000	0.6121
LTHS	\$59,000	\$63,000	\$57,000	\$55,000	\$57,000	\$59,000	\$129,000	-0.3%
HS	\$68,000	\$72,000	\$71,000	\$77,000	\$75,000	\$80,000	\$148,000	14.4%
SCOL	\$76,000	\$79,000	\$81,000	\$92,000	\$92,000	\$95,000	\$166,000	20.3%
COL	\$112,000	\$126,000	\$130,000	\$160,000	\$172,000	\$191,000	\$244,000	60.3%

At the top five percent, those with some college had some growth in incomes. The high school graduate population also saw small gains in income, primarily in the 1990s. Incomes for those without a high school degree were essentially flat. College degree holders had higher incomes, but, as with the top 90<sup>th</sup> percentile, were only two thirds the rate of the counterfactual.

Table 9.e: 95<sup>th</sup> Percentile Income for Full-Year, Full-Time, Prime-Aged Workers

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
All Groups	\$91,000	\$101,000	\$109,000	\$145,000	\$160,000	\$191,000	\$198,000	93.1%
LTHS	\$69,000	\$73,000	\$70,000	\$69,000	\$69,000	\$76,000	\$150,000	8.4%
HS	\$79,000	\$83,000	\$84,000	\$95,000	\$94,000	\$102,000	\$172,000	24.0%
SCOL	\$83,000	\$89,000	\$98,000	\$116,000	\$116,000	\$121,000	\$181,000	39.2%
COL	\$164,000	\$155,000	\$191,000	\$244,000	\$249,000	\$290,000	\$358,000	65.5%

Across the income distribution of full-time, full-year, prime-aged workers, those without a high school degree saw declining incomes in real terms. Similarly, incomes for those without a college degree were flat, at best, for the first three quartiles. Even at the top of the distribution

those without a college degree saw growth well below that of the broader economy. College graduates saw some real income growth across the income distribution, but even at the 95<sup>th</sup> percentile, their rate of income growth did not match the growth rate of the broader economy. So, while income growth at the 95<sup>th</sup> percentile of all earners was 93 percent of the per capita GDP growth, for college graduates it was just 66 percent due to the large growth in the population of college graduates. But the primary takeaway is that, in each period and at each part of the distribution, those with more education have higher incomes and this gap has been growing over time.

#### Urbanicity

In this section, we look at the growth rates for groups defined by an individual's residential area type (urban, suburban, rural) at different points of the income distribution.

At the first quartile, rural residents saw some income growth, but other groups were only about ten percent higher in real terms after 43 years, and no group was close to the counterfactual growth rate.

Table 10.a: 25<sup>th</sup> Percentile Income for Full-Year, Full-Time, Prime-Aged Workers

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
All Groups	28000	28000	28000	31000	30000	33000	61000	0.1354
Urban	\$28,000	\$27,000	\$27,000	\$29,000	\$29,000	\$32,000	\$61,000	10.5%
Suburban	\$32,000	\$32,000	\$32,000	\$35,000	\$34,000	\$35,000	\$70,000	8.2%
Rural	\$23,000	\$24,000	\$22,000	\$26,000	\$27,000	\$30,000	\$50,000	25.1%

Those in urban areas saw the highest income growth at the median, but incomes were only slightly higher for each of the urbanicity types and no group was near the counterfactual growth rate.

Table 10.b: Median Income for Full-Year, Full-Time, Prime-Aged Workers

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
All Groups	\$42,000	\$42,000	\$43,000	\$47,000	\$46,000	\$50,000	\$92,000	17.4%
Urban	\$40,000	\$41,000	\$41,000	\$44,000	\$45,000	\$50,000	\$87,000	22.0%
Suburban	\$46,000	\$48,000	\$48,000	\$53,000	\$52,000	\$55,000	\$100,000	15.8%
Rural	\$36,000	\$36,000	\$34,000	\$39,000	\$40,000	\$43,000	\$78,000	16.4%

For the 75<sup>th</sup> percentile, those in urban areas saw a sizeable growth in income as did those in suburbs but these groups only saw a fraction of the counterfactual growth rate. Rural residents saw much lower levels of growth than other areas.

Table 10.c: 75<sup>th</sup> Percentile Income for Full-Year, Full-Time, Prime-Aged Workers

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
All Groups	\$58,000	\$60,000	\$62,000	\$72,000	\$72,000	\$81,000	\$126,000	34.2%
Urban	\$56,000	\$58,000	\$61,000	\$69,000	\$69,000	\$82,000	\$122,000	40.3%
Suburban	\$64,000	\$67,000	\$70,000	\$82,000	\$81,000	\$88,000	\$140,000	31.3%

Rural	\$52,000	\$54,000	\$50,000	\$56,000	\$57,000	\$62,000	\$113,000	17.4%
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Growth for the top ten percent of the income distribution in urban areas was faster than suburban areas and growth in suburban areas was much faster than in rural areas. Furthermore, this growth was sufficiently high to essentially close the gap between high income urban residents and their suburban counterparts. However, even at this level, the growth rate was only 80 percent of the counterfactual.

Table 10.d: 90<sup>th</sup> Percentile Income for Full-Year, Full-Time, Prime-Aged Workers

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
All Groups	77000	82000	88000	109000	115000	133000	168000	0.6121
Urban	\$73,000	\$77,000	\$87,000	\$106,000	\$114,000	\$142,000	\$159,000	80.5%
Suburban	\$81,000	\$87,000	\$98,000	\$123,000	\$128,000	\$145,000	\$177,000	67.9%
Rural	\$69,000	\$73,000	\$70,000	\$82,000	\$85,000	\$92,000	\$150,000	28.3%

Residents of urban areas had higher income growth than the counterfactual at the 95<sup>th</sup> percentile. This is consistent with a substantial compositional change in this population (e.g., gentrification).<sup>25</sup> There was also high growth, though not at the counterfactual rate, among suburban residents. Meanwhile, high earners among the rural population lagged behind.

Table 10.e: 95<sup>th</sup> Percentile Income for Full-Year, Full-Time, Prime-Aged Workers

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
All Groups	91000	101000	109000	145000	160000	191000	198000	0.9307
Urban	\$82,000	\$89,000	\$105,000	\$139,000	\$164,000	\$213,000	\$179,000	135.8%
Suburban	\$107,000	\$122,000	\$136,000	\$171,000	\$178,000	\$210,000	\$233,000	82.4%
Rural	\$80,000	\$86,000	\$86,000	\$104,000	\$108,000	\$120,000	\$174,000	42.0%

Overall, there was limited variation by urbanicity for those at or below the median, but for higher incomes, the growth in rural incomes lagged those of other areas and was only a small fraction of the growth in the broader economy. Fundamentally, rural areas did not substantially share in the growth of the broader economy even among the top of the income distribution. On the other hand, high income, urban dwellers saw income levels higher than per capita GDP growth from 1975.

## Discussion

In this paper, we introduced a new measure to assess the degree of equity in income growth and showed that the bottom 90 percent of workers generally had anemic income growth compared to the top percentile earners. Further, we quantified the cumulative effect of this inequity and found that the bottom 90 percent would be earning an additional \$2.5 trillion had the income growth reflected growth in the per capita GDP.

<sup>25</sup> Couture, Victor, and Jessie Hanbury “Urban Revival in America, 2000 to 2010.” NBER Working Paper No. 24084 2017 (Revised 2019).

This large gap does not tell the full story of rising inequality. We produced a demographic breakdown of trends in income growth to provide additional texture to narratives about education, race, gender, and the urban-rural divide. Theories that seek to explain rising inequality should be at least consistent with these trends.

Racial income disparities below the median have declined over the last four decades. This has primarily occurred because White men in the bottom half of the income distribution are earning the same or less than in 1975; other demographic groups did not see income gains close to the growth in the broader economy.

In the 1980s, 1990s, and 2010s, women, as a group, saw substantial income growth which coincided with their increased labor force participation. However, restricting the comparison to full-time, full-year, prime-aged workers, there was some closing of the income gap between men and women across the income distribution. Despite these gains within racial groups, there remains a significant gap between men and women of the same racial group.

The data sources do not allow us to go back the full four decades, but the API population saw relatively high growth for the periods with available data. Given the simultaneous growth in the API population, in part due to immigration, there is a question about what additional dimensions are relevant to explain these trends. Furthermore, because this population is highly heterogeneous<sup>26</sup>, there is further work needed to explore these trends.

Because incomes for those without a college degree have not increased more than inflation over the last forty years, education is frequently touted as a solution to rising income inequality. However, even for college graduates, incomes failed to grow at the rate of the overall growth of the economy. Thus, the economic value of a college degree may largely be in avoiding the negative outcomes felt by those who do not have one and, notably, our estimates do not factor in the large increases in the cost of attending college over this period.

Incomes in rural areas have neither kept pace with the growth in broader economy nor with urban and suburban areas. This lack of income growth corresponds to a decline in rural populations. Together, these trends point toward a decline in the economic health of rural areas. On the other hand, income growth among high earners in urban areas were near or above the growth of per capita GDP which led to a decline in the income differences between suburban and urban areas for earners above the median. However, given the anemic income growth for the bulk of the population in urban and suburban areas, this pattern may be more consistent with a rise in income segregation and gentrification rather than a general improvement of economic conditions in urban areas.

This work in part seeks to bridge the gap between studies that treat economic inequality as a single number such as a Gini coefficient or a share of income and those that focus on single aspects of inequality such as the race/gender pay gap or educational attainment. While this study can serve as a starting point to identify groups that have seen lower income growth, additional

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<sup>26</sup> Vaghul, Kavya, and Christian Edlagan. "How Data Disaggregation Matters for Asian Americans and Pacific Islanders." *Equitable Growth*, December 14, 2016. <https://equitablegrowth.org/how-data-disaggregation-matters-for-asian-americans-and-pacific-islanders/>.

work is needed to quantify the role of each of these trends on the overall rise in income inequality. Additional work is also needed to explain to the causes of these trends. Policy research is needed to identify interventions that can help the full population benefit from economic growth rather than strictly those at the top.

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## Appendix A: Pre-Tax and Post-Tax Income for Families

This section looks at the pre-tax and post-tax incomes for families by composition. As with the analysis of individuals above, we compute the counterfactual income had incomes grown at the rate of growth for real GDP per capita. We first present this for all families with nonzero earnings, then describe the changes in family composition, and finally, present the income trends for each of the family types considered.

As seen in Table A.1.a, when looking at the taxable family income, the patterns are similar to those of individuals, but complicated by the fact that families can have one or two adult earners. Further, through most of the history of the CPS only opposite sex couples were flagged as being married. Thus, as seen above, married couples will generally benefit from the growth in women's earnings and increased labor force participation. Families below the 90<sup>th</sup> percentile have not seen growth close to the counterfactual while those at or above the 95<sup>th</sup> percentile have had growth rates well above the counterfactual and also the *w* value for individuals above the 95<sup>th</sup> percentile (as seen in Table 2.a). In part, this is due to families at the top of the income distribution having more workers than in the past but may also be related to assortative mating.

A.1.a: Income Distribution for Families with Income in 2018 Dollars

	1975	1979	1989	2000	2007	2018	Counterfactual	<i>w</i>
25 <sup>th</sup> Percentile Family Income	\$11,000	\$12,000	\$13,000	\$17,000	\$17,000	\$20,000	\$25,000	61.0%
Median Family Income	\$33,000	\$33,000	\$34,000	\$39,000	\$39,000	\$42,000	\$71,000	24.6%
75 <sup>th</sup> Percentile Family Income	\$58,000	\$61,000	\$66,000	\$79,000	\$77,000	\$85,000	\$127,000	39.3%
90 <sup>th</sup> Percentile Family Income	\$80,000	\$86,000	\$100,000	\$127,000	\$128,000	\$155,000	\$175,000	79.6%
95 <sup>th</sup> Percentile Family Income	\$93,000	\$103,000	\$122,000	\$171,000	\$186,000	\$233,000	\$203,000	127.7%
99 <sup>th</sup> Percentile Family Income	\$208,000	\$217,000	\$325,000	\$730,000	\$816,000	\$874,000	\$454,000	270.9%

Table A.1.b has the post-tax income distribution for families with nonzero incomes. The tax calculations here were done using the NBER TAXSIM version 32.<sup>27</sup> This should be considered a lower bound because it does not include state taxes and we only included the standard deduction. Thus, particularly for the highest incomes, the post-tax incomes will very likely be higher because they are likely to itemize their deductions. The general shape of the post-tax income distribution looks similar to the pre-tax distribution, though progressive taxation mitigates the difference between the levels to some degree. In this timeframe, the top marginal rate for federal income tax fell from 70 percent in 1975 to 37 percent in 2018 but the average rate at the 99<sup>th</sup> percentile remained about the same at 37 percent.<sup>28,29</sup>

<sup>27</sup> Feenberg, Daniel Richard, and Elizabeth Coutts, An Introduction to the TAXSIM Model, Journal of Policy Analysis and Management vol 12 no 1, Winter 1993, pages 189-194.

<sup>28</sup> Eugene Steuerle, The Urban Institute; Joseph Pechman, Federal Tax Policy ; Joint Committee on Taxation, Summary of Conference Agreement on the Jobs and Growth Tax Relief Reconciliation Act of 2003, JCX-54-03, May 22, 2003. <https://www.taxpolicycenter.org/statistics/historical-highest-marginal-income-tax-rates>

<sup>29</sup> For the 99<sup>th</sup> percentile in 2018, the average rate is very close to the top marginal rate because of payroll taxes.

### A.1.b: Post-tax Income Distribution for Families with Income in 2018 Dollars

	1975	1979	1989	2000	2007	2018	Counterfactual	w
25 <sup>th</sup> Percentile Family Income	\$11,000	\$12,000	\$11,000	\$14,000	\$14,000	\$17,000	\$24,000	40.9%
Median Family Income	\$26,000	\$25,000	\$26,000	\$31,000	\$30,000	\$34,000	\$56,000	26.0%
75 <sup>th</sup> Percentile Family Income	\$43,000	\$43,000	\$48,000	\$57,000	\$56,000	\$63,000	\$94,000	39.4%
90 <sup>th</sup> Percentile Family Income	\$59,000	\$58,000	\$68,000	\$86,000	\$88,000	\$109,000	\$129,000	71.7%
95 <sup>th</sup> Percentile Family Income	\$68,000	\$68,000	\$84,000	\$116,000	\$127,000	\$161,000	\$148,000	115.8%
99 <sup>th</sup> Percentile Family Income	\$131,000	\$127,000	\$222,000	\$450,000	\$525,000	\$546,000	\$286,000	268.2%

As with the individual results presented above, the composition of families has changed substantially in ways that make a fair comparison challenging. The next section presents details on the changes in family composition. We then assess the income trends for families with different numbers of workers.

### Family Composition

Just as the United States was not demographically static from 1975 to 2018, there were substantial changes in family composition. We present the number of workers per family between single and married families in Table A.2.a. There has been substantial growth among the share of the population that is single due to people marrying later and living longer. The increase in the population not working is primarily due to the growth in the elderly population. There was a decline in single worker households among the married with a particular increase in the population that has two full-time workers.

### A.2.a: Family Composition by Number of Workers

	1975	1979	1989	2000	2007	2018	% Change
Single	51.0	59.6	76.0	93.4	107.0	125.2	145%
Single, Not Working	12.8	11.9	14.5	19.8	27.5	36.3	182%
Single, Part-time	21.8	25.5	29.0	30.1	31.3	33.4	53%
Single, Full-time	16.4	22.2	32.5	43.5	48.2	55.5	237%
Married	47.3	48.2	52.3	56.7	58.3	62.0	31%
Married, No Workers	2.4	1.9	2.3	3.3	4.1	4.4	81%
Married, One Part-time	6.3	2.3	1.9	2.3	2.8	4.5	-29%
Married, One Full-time	13.9	6.4	4.8	6.5	8.5	9.7	-30%
Married, Two Part-time	3.4	7.2	8.4	7.2	6.3	7.2	112%
Married, One Full-time and One Part-time	12.2	18.8	18.5	17.1	15.7	14.4	18%
Married, Two Full-time	9.1	11.6	16.4	20.3	20.9	21.8	140%

Table A.2.b presents the composition of families by the presences of children. A family is labeled as having kids if there are children present in the household. Thus, empty-nesters would

fall into the no kids category. There was a sharp rise in the number of single parent households to the point that there are almost as many families that are single parents as there are married parents.

#### A.2.b: Family Composition by the Presence of Children

	1975	1979	1989	2000	2007	2018	% Change
Single, No Kids	42.3	49.0	60.4	71.6	82.1	97.3	130%
Single, Kids	8.7	10.6	15.5	21.8	24.9	28.0	220%
Married, No Kids	17.9	18.9	21.5	24.9	26.7	30.7	71%
Married, Kids	29.4	29.3	30.8	31.7	31.7	31.3	7%

#### Trends in Family Income by Family Composition and the Number of Workers

In this section we assess the pre-tax and post-tax income trends by the family composition. In general the post-tax trends will mirror the pre-tax trends. Where there is variation between the pre-tax and post-tax income trends, the deviation can largely be attributed to the decline in the highest marginal tax rates. However, because the highest marginal rates only applied to the very highest incomes, for those below the 90<sup>th</sup> percentile there was little change and even the change for those at the 95<sup>th</sup> percentile, the change was relatively small.

Table A.3.a has the pre-tax income trend of single people who work part time. This population has lower incomes than other segments and has seen very little growth. Essentially, incomes are flat after 2000 across the distribution.

#### A.3.a: Pre-tax Income Trends for Unmarried Adult, part-time worker

	1975	1979	1989	2000	2007	2018	Counterfactual	w
25 <sup>th</sup> Percentile Family Income	\$2,000	\$3,000	\$3,000	\$3,000	\$3,000	\$3,000	\$5,000	25.8%
Median Family Income	\$6,000	\$7,000	\$7,000	\$8,000	\$8,000	\$10,000	\$14,000	46.0%
75 <sup>th</sup> Percentile Family Income	\$13,000	\$15,000	\$15,000	\$17,000	\$17,000	\$20,000	\$29,000	42.7%
90 <sup>th</sup> Percentile Family Income	\$23,000	\$25,000	\$28,000	\$32,000	\$33,000	\$35,000	\$50,000	46.9%
95 <sup>th</sup> Percentile Family Income	\$31,000	\$35,000	\$41,000	\$50,000	\$50,000	\$55,000	\$68,000	64.9%

The trends for the after-tax distribution are essentially the same as with pre-tax income. Even at the top of the distribution, no segment grew near the counterfactual rate.

#### A.3.b: Post-tax Income Trends for Unmarried Adult, part-time worker

	1975	1979	1989	2000	2007	2018	Counterfactual	w
25 <sup>th</sup> Percentile Family Income	\$2,000	\$3,000	\$2,000	\$3,000	\$3,000	\$3,000	\$5,000	19.1%
Median Family Income	\$6,000	\$7,000	\$6,000	\$8,000	\$7,000	\$9,000	\$14,000	33.5%
75 <sup>th</sup> Percentile Family Income	\$13,000	\$14,000	\$12,000	\$14,000	\$14,000	\$17,000	\$28,000	25.1%

90 <sup>th</sup> Percentile Family Income	\$19,000	\$21,000	\$22,000	\$25,000	\$26,000	\$29,000	\$42,000	40.3%
95 <sup>th</sup> Percentile Family Income	\$25,000	\$27,000	\$31,000	\$38,000	\$38,000	\$43,000	\$54,000	63.0%

Full-time single families have higher incomes than those who only work part-time, but for those below the 90<sup>th</sup> percentile have seen lower growth than their part-time counterparts. Those at or below the median have seen low income growth while those above the median have seen at best modest growth that was well below the rate of per capita GDP.

#### A.4.a Pre-tax Income Trends for Unmarried Adult, Full-time Worker

	1975	1979	1989	2000	2007	2018	Counterfactual	w
25 <sup>th</sup> Percentile Family Income	\$22,000	\$23,000	\$23,000	\$25,000	\$23,000	\$27,000	\$48,000	19.9%
Median Family Income	\$31,000	\$32,000	\$35,000	\$38,000	\$35,000	\$41,000	\$68,000	24.8%
75 <sup>th</sup> Percentile Family Income	\$46,000	\$47,000	\$52,000	\$57,000	\$55,000	\$63,000	\$99,000	32.4%
90 <sup>th</sup> Percentile Family Income	\$59,000	\$64,000	\$73,000	\$87,000	\$83,000	\$99,000	\$130,000	56.0%
95 <sup>th</sup> Percentile Family Income	\$72,000	\$78,000	\$91,000	\$113,000	\$111,000	\$130,000	\$157,000	68.4%

The after-tax incomes trends are similar to the pre-tax trends with no segment growing near the counterfactual rate and most of the growth across the distribution was essentially flat.

#### A.4.b: Post-tax Income Trends for Unmarried Adult, Full-time Worker

	1975	1979	1989	2000	2007	2018	Counterfactual	w
25 <sup>th</sup> Percentile Family Income	\$19,000	\$20,000	\$19,000	\$20,000	\$19,000	\$23,000	\$42,000	16.4%
Median Family Income	\$25,000	\$25,000	\$27,000	\$30,000	\$28,000	\$32,000	\$54,000	26.1%
75 <sup>th</sup> Percentile Family Income	\$35,000	\$34,000	\$39,000	\$43,000	\$42,000	\$49,000	\$76,000	34.1%
90 <sup>th</sup> Percentile Family Income	\$44,000	\$45,000	\$52,000	\$62,000	\$59,000	\$72,000	\$97,000	53.0%
95 <sup>th</sup> Percentile Family Income	\$54,000	\$53,000	\$62,000	\$77,000	\$76,000	\$91,000	\$117,000	59.7%

The pre-tax income trends for married adults where one is working part-time and the other is not working are presented in Table A.5.a. As seen in Table A.1.a, this arrangement is less common in 2018 than in 1975 and, for most of this population, the incomes were lower in 2018 than they were in 1975.

#### A.5.a: Pre-tax Income Trends for Married Adults, One Part-time Worker and One Not Working

	1975	1979	1989	2000	2007	2018	Counterfactual	w
25 <sup>th</sup> Percentile Family Income	\$4,000	\$3,000	\$3,000	\$3,000	\$2,000	\$2,000	\$8,000	-47.8%
Median Family Income	\$10,000	\$10,000	\$8,000	\$10,000	\$9,000	\$9,000	\$23,000	-11.1%

75 <sup>th</sup> Percentile Family Income	\$26,000	\$22,000	\$16,000	\$21,000	\$20,000	\$20,000	\$56,000	-19.0%
90 <sup>th</sup> Percentile Family Income	\$44,000	\$39,000	\$33,000	\$41,000	\$42,000	\$47,000	\$95,000	5.6%
95 <sup>th</sup> Percentile Family Income	\$58,000	\$55,000	\$46,000	\$64,000	\$62,000	\$74,000	\$126,000	22.9%

As with the pre-tax income trends for this population, the after-tax incomes for married couples with one person working part-time and the other not employed declined from 1975 to 2018 for nearly the full distribution.

#### A.5.b: Pre-tax Income Trends for Married Adults, One Part-time Worker and One Not Working

	1975	1979	1989	2000	2007	2018	Counterfactual	w
25 <sup>th</sup> Percentile Family Income	\$4,000	\$3,000	\$2,000	\$3,000	\$2,000	\$1,000	\$8,000	-50.0%
Median Family Income	\$10,000	\$10,000	\$6,000	\$9,000	\$8,000	\$8,000	\$22,000	-17.1%
75 <sup>th</sup> Percentile Family Income	\$22,000	\$19,000	\$13,000	\$18,000	\$17,000	\$17,000	\$48,000	-19.2%
90 <sup>th</sup> Percentile Family Income	\$34,000	\$30,000	\$26,000	\$33,000	\$33,000	\$37,000	\$74,000	8.3%
95 <sup>th</sup> Percentile Family Income	\$44,000	\$40,000	\$35,000	\$49,000	\$47,000	\$57,000	\$96,000	24.8%

The number of married couples with two part-time workers more than doubled from 1975 to 2018, but the incomes for this population are lower for those at or below the third quartile. Those at or above the 90<sup>th</sup> percentile saw some real growth in income, but it was well below the counterfactual level.

#### A.6.a: Pre-tax Income Trends for Married Adults, Two Part-time Workers

	1975	1979	1989	2000	2007	2018	Counterfactual	w
25 <sup>th</sup> Percentile Family Income	\$13,000	\$4,000	\$4,000	\$4,000	\$4,000	\$3,000	\$27,000	-62.0%
Median Family Income	\$24,000	\$14,000	\$14,000	\$14,000	\$16,000	\$16,000	\$52,000	-28.7%
75 <sup>th</sup> Percentile Family Income	\$38,000	\$31,000	\$30,000	\$35,000	\$46,000	\$41,000	\$83,000	5.5%
90 <sup>th</sup> Percentile Family Income	\$56,000	\$56,000	\$59,000	\$84,000	\$102,000	\$89,000	\$121,000	50.5%
95 <sup>th</sup> Percentile Family Income	\$72,000	\$73,000	\$88,000	\$127,000	\$138,000	\$128,000	\$156,000	67.0%

Changes to the tax code did not have a large differential effect on this population and so the pre-tax and post-tax trends are broadly similar.

#### A.6.b: Post-tax Income Trends for Married Adults, Two Part-time Workers

	1975	1979	1989	2000	2007	2018	Counterfactual	w
25 <sup>th</sup> Percentile Family Income	\$12,000	\$4,000	\$4,000	\$3,000	\$4,000	\$3,000	\$27,000	-63.4%
Median Family Income	\$22,000	\$13,000	\$12,000	\$12,000	\$14,000	\$14,000	\$47,000	-30.7%

75 <sup>th</sup> Percentile Family Income	\$31,000	\$26,000	\$25,000	\$29,000	\$37,000	\$34,000	\$68,000	7.0%
90 <sup>th</sup> Percentile Family Income	\$43,000	\$43,000	\$45,000	\$63,000	\$76,000	\$69,000	\$95,000	49.5%
95 <sup>th</sup> Percentile Family Income	\$54,000	\$54,000	\$64,000	\$89,000	\$97,000	\$95,000	\$118,000	63.5%

There were fewer married couples with a single full-time worker in 2018 than in 1975. Further, the incomes for this family type were flat or declined up to the third quartile and gains for the top of the distribution were well below the counterfactual.

#### A.7.a: Pre-tax Income Trends for Married Adults, One Full-time Worker

	1975	1979	1989	2000	2007	2018	Counterfactual	w
25 <sup>th</sup> Percentile Family Income	\$38,000	\$30,000	\$25,000	\$28,000	\$28,000	\$32,000	\$82,000	-11.5%
Median Family Income	\$53,000	\$46,000	\$39,000	\$43,000	\$44,000	\$50,000	\$116,000	-4.8%
75 <sup>th</sup> Percentile Family Income	\$72,000	\$63,000	\$59,000	\$67,000	\$68,000	\$83,000	\$157,000	12.7%
90 <sup>th</sup> Percentile Family Income	\$83,000	\$85,000	\$84,000	\$101,000	\$108,000	\$130,000	\$182,000	47.6%
95 <sup>th</sup> Percentile Family Income	\$133,000	\$90,000	\$100,000	\$134,000	\$139,000	\$191,000	\$290,000	37.3%

Because incomes fell for the bottom of the distribution for married adults with one full-time worker, the average tax rate fell from about twenty percent of income for the first quartile to about fifteen percent. Otherwise, the trends for post-tax income mirror those for pre-tax income.

#### A.7.b: Post-tax Income Trends for Married Adults, One Full-time Worker

	1975	1979	1989	2000	2007	2018	Counterfactual	w
25 <sup>th</sup> Percentile Family Income	\$30,000	\$24,000	\$21,000	\$23,000	\$23,000	\$27,000	\$65,000	-7.5%
Median Family Income	\$41,000	\$35,000	\$30,000	\$34,000	\$34,000	\$40,000	\$88,000	-1.5%
75 <sup>th</sup> Percentile Family Income	\$54,000	\$45,000	\$44,000	\$51,000	\$51,000	\$63,000	\$119,000	12.9%
90 <sup>th</sup> Percentile Family Income	\$62,000	\$58,000	\$59,000	\$70,000	\$75,000	\$92,000	\$136,000	40.0%
95 <sup>th</sup> Percentile Family Income	\$93,000	\$62,000	\$69,000	\$92,000	\$97,000	\$135,000	\$204,000	37.8%

Married couples with one full-time worker and one part-time worker have made up about a quarter of the married population for the last four decades. At or below the median, the income growth for this population has been low in both real terms and relative to per capita GDP growth. Income at the third quartile grew at about two thirds the rate of per capita GDP. The top of this distribution saw real growth about forty percent higher than the rate of per capita GDP. Thus, the top ten percent of families with a full-time worker and a part-time worker saw their incomes rise faster than the rest of the economy.

A.8.a: Pre-tax Income Trends for Married Adults, One Full-time worker and One Part-time Worker

	1975	1979	1989	2000	2007	2018	Counterfactual	w
25 <sup>th</sup> Percentile Family Income	\$41,000	\$45,000	\$46,000	\$52,000	\$53,000	\$58,000	\$90,000	34.0%
Median Family Income	\$57,000	\$63,000	\$68,000	\$83,000	\$82,000	\$91,000	\$124,000	50.6%
75 <sup>th</sup> Percentile Family Income	\$76,000	\$85,000	\$97,000	\$123,000	\$125,000	\$151,000	\$166,000	82.9%
90 <sup>th</sup> Percentile Family Income	\$87,000	\$111,000	\$131,000	\$199,000	\$217,000	\$261,000	\$191,000	167.9%
95 <sup>th</sup> Percentile Family Income	\$123,000	\$150,000	\$187,000	\$417,000	\$311,000	\$366,000	\$268,000	167.3%

The after-tax income trends for most families with one full-time worker and one part-time worker have been very similar to the pre-tax trends. However, among the top earners, the rise in incomes pushed their average tax rates higher, despite the fact that tax changes between 2007 and 2018 led to a decline in the marginal rates for that period.

A.8.b: Post-tax Income Trends for Married Adults, One Full-time worker and One Part-time Worker

	1975	1979	1989	2000	2007	2018	Counterfactual	w
25 <sup>th</sup> Percentile Family Income	\$35,000	\$37,000	\$37,000	\$44,000	\$45,000	\$50,000	\$76,000	38.3%
Median Family Income	\$46,000	\$49,000	\$52,000	\$65,000	\$65,000	\$74,000	\$100,000	53.1%
75 <sup>th</sup> Percentile Family Income	\$59,000	\$63,000	\$71,000	\$90,000	\$94,000	\$113,000	\$128,000	78.4%
90 <sup>th</sup> Percentile Family Income	\$66,000	\$77,000	\$91,000	\$134,000	\$148,000	\$185,000	\$144,000	153.4%
95 <sup>th</sup> Percentile Family Income	\$89,000	\$98,000	\$126,000	\$260,000	\$203,000	\$255,000	\$194,000	158.0%

For families with two full-time workers, the income distribution is substantially higher than for other groups. The income growth for those at or below the third quartile have been below the real per capita GDP growth. Alternatively, those at the top of the distribution have seen income growth above the real per capita GDP growth.

A.9.a: Pre-tax Income Trends for Married Adults, Two Full-time Workers

	1975	1979	1989	2000	2007	2018	Counterfactual	w
25 <sup>th</sup> Percentile Family Income	\$57,000	\$60,000	\$63,000	\$73,000	\$73,000	\$85,000	\$124,000	41.8%
Median Family Income	\$74,000	\$79,000	\$87,000	\$101,000	\$101,000	\$121,000	\$161,000	54.1%
75 <sup>th</sup> Percentile Family Income	\$82,000	\$88,000	\$103,000	\$136,000	\$145,000	\$189,000	\$178,000	111.0%
90 <sup>th</sup> Percentile Family Income	\$113,000	\$123,000	\$153,000	\$201,000	\$237,000	\$306,000	\$246,000	144.7%
95 <sup>th</sup> Percentile Family Income	\$137,000	\$158,000	\$201,000	\$265,000	\$304,000	\$401,000	\$300,000	162.3%

The post-tax trends indicate that, for the highest earners, the rapid growth in real income resulted in more income being taxed at higher marginal rates but the decline in marginal rates offset this trend. Thus, the average tax rate for the 90<sup>th</sup> and 95<sup>th</sup> percentiles was very nearly the same in 2018 as it was in 1975. Essentially, while the tax code is, and was, progressive, the tax reforms since 1975 have eroded the level of progressivity.

#### A.9.b: Post-tax Income Trends for Married Adults, Two Full-time Workers

	1975	1979	1989	2000	2007	2018	Counterfactual	w
25 <sup>th</sup> Percentile Family Income	\$46,000	\$47,000	\$49,000	\$59,000	\$59,000	\$70,000	\$100,000	45.2%
Median Family Income	\$57,000	\$59,000	\$66,000	\$78,000	\$79,000	\$95,000	\$125,000	55.0%
75 <sup>th</sup> Percentile Family Income	\$62,000	\$65,000	\$75,000	\$97,000	\$105,000	\$137,000	\$136,000	101.7%
90 <sup>th</sup> Percentile Family Income	\$83,000	\$83,000	\$104,000	\$135,000	\$160,000	\$216,000	\$181,000	136.3%
95 <sup>th</sup> Percentile Family Income	\$98,000	\$101,000	\$135,000	\$175,000	\$199,000	\$277,000	\$213,000	155.6%

#### Conclusions

As with individuals, families below the 90<sup>th</sup> percentile have seen, at best, incomes that grew well below real per capita GDP. For the 95<sup>th</sup> percentile, incomes grew at more than double the rate of per capita GDP. The comparison of pre-tax and post-tax incomes for families does not find trends that are distinctly different, however, this is notable because of the decline in the top marginal tax rates.

## Appendix B: Aggregate and Cumulative Calculations

The exact size of the wedge between what a segment of the population currently earns versus what they would have earned had incomes grown with the broader economy will depend on the selection of the target growth rate, the timeframe analyzed, the segment of the population considered, and the deflators applied to the factors over time. Furthermore, the data captured in the surveys and quality of this data has varied over time. In this appendix, we present a calculation of the aggregate gap between the income those earning below the bottom 90<sup>th</sup> percentile earned in 2018 and what they would have earned had income growth kept their share of the economy the same as in 1975. Additionally, we estimate the cumulative amount of this gap over the course of 1975 to 2018.

To produce these estimates, we first calculated the share of the economy going to the bottom 90<sup>th</sup> percent of the income distribution by year using data from the World Inequality Database<sup>30</sup> and National Income Product Accounts data from the Bureau of Economic Analysis.<sup>31</sup> We then applied the share of the economy for those earning below the 90<sup>th</sup> percentile from 1975 to the size of the economy as measured by the Gross Domestic Income<sup>32</sup> for each year and actual size of the economy going to that population. The difference between these values amounts to \$2.457 trillion in 2018. In real terms, the cumulative difference between these values will depend on the preference for deflator but would total \$47 Trillion with the PCE or \$48.6 Trillion with the CPI-U-RS. This analysis produces results that are consistent with an estimate based on the modification to the CPS described in the body of the document.

Table B.1 Aggregate Effects of

	Share of the Economy for the Bottom 90 Percent	Gap between Target and Actual using PCE (Trillions of 2018 Dollars)	Gap between Target and Actual Using CPI (Trillions of 2018 Dollars)
1975	0.4605	0	0
1976	0.4568	0.025	0.028
1977	0.4528	0.054	0.06
1978	0.4539	0.048	0.054
1979	0.4525	0.06	0.067
1980	0.4557	0.035	0.039
1981	0.4546	0.045	0.05
1982	0.4537	0.052	0.057
1983	0.4424	0.141	0.155
1984	0.4399	0.173	0.19
1985	0.4337	0.234	0.256
1986	0.415	0.408	0.449
1987	0.43	0.283	0.311
1988	0.4129	0.464	0.51

<sup>30</sup> This is series afilein992t from the World Inequality Database

<sup>31</sup> Specifically, we use National Accounts, Section 2: Personal Income and Outlays and U.S. Bureau of Economic Analysis, Gross Domestic Income [GDI], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/GDI>, July 18, 2020.

<sup>32</sup> U.S. Bureau of Economic Analysis, Gross Domestic Income [GDI], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/GDI>, July 18, 2020.

1989	0.4203	0.399	0.439
1990	0.4223	0.383	0.419
1991	0.4197	0.408	0.446
1992	0.4089	0.532	0.581
1993	0.4075	0.558	0.61
1994	0.4024	0.638	0.698
1995	0.3958	0.735	0.801
1996	0.3881	0.856	0.928
1997	0.3808	0.989	1.068
1998	0.3808	1.045	1.122
1999	0.3707	1.229	1.312
2000	0.367	1.338	1.415
2001	0.3849	1.096	1.149
2002	0.382	1.156	1.209
2003	0.3725	1.325	1.381
2004	0.3568	1.626	1.691
2005	0.3386	1.988	2.057
2006	0.3349	2.135	2.198
2007	0.3398	2.06	2.115
2008	0.3546	1.766	1.798
2009	0.3515	1.786	1.823
2010	0.3361	2.099	2.144
2011	0.3421	2.035	2.066
2012	0.3293	2.332	2.363
2013	0.3377	2.22	2.247
2014	0.3322	2.403	2.426
2015	0.3323	2.487	2.512
2016	0.3343	2.467	2.485
2017	0.3383	2.443	2.451
2018	0.341	2.457	2.457
Total	--	47.013	48.637

## Appendix C: Aggregate and Cumulative Calculations

In this appendix, we reproduce the Tables 2, 4-6, and 7-9 applying the CPI-U-RS as the inflation measure instead of the PCE.

Table C.1.a: Income Distribution for Adults with Income in 2018 Dollars

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
25 <sup>th</sup> %	\$11,000	\$7,000	\$10,000	\$14,000	\$15,000	\$15,000	\$24,000	32.7%
Median	\$29,000	\$26,000	\$28,000	\$34,000	\$36,000	\$36,000	\$64,000	17.9%
75 <sup>th</sup> %	\$51,000	\$49,000	\$53,000	\$60,000	\$62,000	\$65,000	\$111,000	23.1%
90 <sup>th</sup> %	\$73,000	\$75,000	\$81,000	\$99,000	\$104,000	\$112,000	\$160,000	44.7%
95 <sup>th</sup> %	\$90,000	\$94,000	\$105,000	\$133,000	\$147,000	\$164,000	\$195,000	70.0%
99 <sup>th</sup> %	\$182,000	\$176,000	\$245,000	\$507,000	\$393,000	\$491,000	\$396,000	144.2%

Table C.1.b: Income Distribution for Full-Year, Full-Time, Prime-Aged Workers in 2018 Dollars

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
25 <sup>th</sup> %	\$31,000	\$32,000	\$31,000	\$32,000	\$32,000	\$33,000	\$69,000	3.0%
Median	\$47,000	\$47,000	\$47,000	\$50,000	\$49,000	\$50,000	\$102,000	6.4%
75 <sup>th</sup> %	\$65,000	\$66,000	\$69,000	\$76,000	\$76,000	\$81,000	\$141,000	21.4%
90 <sup>th</sup> %	\$87,000	\$91,000	\$97,000	\$116,000	\$122,000	\$133,000	\$189,000	45.5%
95 <sup>th</sup> %	\$102,000	\$112,000	\$120,000	\$153,000	\$169,000	\$191,000	\$223,000	74.0%
99 <sup>th</sup> %	\$288,000	\$252,000	\$384,000	\$878,000	\$1,123,000	\$761,000	\$629,000	138.8%

Table C.2.a: 25<sup>th</sup> Percentile Income for Adults with Positive Earnings

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
All Groups	\$11,000	\$7,000	\$10,000	\$14,000	\$15,000	\$15,000	\$23,000	35.8%
White Men	\$21,000	\$21,000	\$19,000	\$22,000	\$22,000	\$20,000	\$44,000	-5.3%
White Women	\$5,000	\$3,000	\$5,000	\$7,000	\$10,000	\$10,000	\$11,000	82.2%
Black Men	\$17,000	\$16,000	\$14,000	\$19,000	\$18,000	\$20,000	\$35,000	16.2%
Black Women	\$7,000	\$6,000	\$9,000	\$15,000	\$16,000	\$16,000	\$14,000	126.7%
Other Men	\$16,000	\$18,000	\$18,000	\$23,000	\$23,000	\$24,000	\$34,000	45.1%
Other Women	\$8,000	\$4,000	\$8,000	\$11,000	\$12,000	\$14,000	\$16,000	79.6%
API Men			\$20,000	\$26,000	\$25,000	\$26,000		
API Women			\$8,000	\$11,000	\$14,000	\$15,000		
AI Men			\$12,000	\$17,000	\$15,000	\$18,000		
AI Women			\$5,000	\$8,000	\$10,000	\$11,000		

Table C.2.b: Median Income for Adults with Positive Earnings

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
All Groups	\$29,000	\$26,000	\$28,000	\$34,000	\$36,000	\$36,000	\$61,000	19.5%

White Men	\$43,000	\$45,000	\$42,000	\$45,000	\$44,000	\$44,000	\$90,000	2.6%
White Women	\$17,000	\$13,000	\$19,000	\$25,000	\$28,000	\$30,000	\$35,000	70.6%
Black Men	\$31,000	\$31,000	\$30,000	\$37,000	\$36,000	\$35,000	\$65,000	11.9%
Black Women	\$17,000	\$19,000	\$22,000	\$29,000	\$30,000	\$30,000	\$35,000	70.6%
Other Men	\$36,000	\$36,000	\$39,000	\$45,000	\$43,000	\$48,000	\$75,000	29.9%
Other Women	\$21,000	\$17,000	\$23,000	\$28,000	\$30,000	\$32,000	\$44,000	46.9%
API Men			\$42,000	\$48,000	\$49,000	\$55,000		
API Women			\$24,000	\$29,000	\$34,000	\$36,000		
AI Men			\$26,000	\$35,000	\$30,000	\$30,000		
AI Women			\$18,000	\$22,000	\$24,000	\$25,000		

Table C.2.c: 75<sup>th</sup> Percentile Income for Adults with Positive Earnings

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
All Groups	\$51,000	\$49,000	\$53,000	\$60,000	\$62,000	\$65,000	\$106,000	25.3%
White Men	\$64,000	\$67,000	\$69,000	\$76,000	\$76,000	\$79,000	\$133,000	21.8%
White Women	\$31,000	\$30,000	\$37,000	\$47,000	\$51,000	\$54,000	\$63,000	71.8%
Black Men	\$47,000	\$49,000	\$49,000	\$56,000	\$59,000	\$60,000	\$97,000	26.1%
Black Women	\$31,000	\$32,000	\$39,000	\$44,000	\$48,000	\$50,000	\$65,000	54.4%
Other Men	\$59,000	\$60,000	\$69,000	\$83,000	\$79,000	\$89,000	\$123,000	46.5%
Other Women	\$37,000	\$32,000	\$44,000	\$51,000	\$57,000	\$63,000	\$77,000	65.4%
API Men			\$73,000	\$89,000	\$90,000	\$101,000		
API Women			\$47,000	\$53,000	\$62,000	\$73,000		
AI Men			\$50,000	\$58,000	\$49,000	\$51,000		
AI Women			\$31,000	\$38,000	\$40,000	\$38,000		

Table C.2.d: 90<sup>th</sup> Percentile Income for Adults with Positive Earnings<sup>33</sup>

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
All Groups	\$73,000	\$75,000	\$81,000	\$99,000	\$104,000	\$112,000	\$153,000	48.9%
White Men	\$87,000	\$92,000	\$99,000	\$121,000	\$128,000	\$138,000	\$182,000	53.9%
White Women	\$44,000	\$45,000	\$57,000	\$75,000	\$81,000	\$90,000	\$91,000	98.5%
Black Men	\$61,000	\$65,000	\$69,000	\$87,000	\$85,000	\$91,000	\$127,000	44.5%
Black Women	\$43,000	\$46,000	\$56,000	\$66,000	\$73,000	\$79,000	\$89,000	78.3%
Other Men	\$81,000	\$84,000	\$99,000	\$129,000	\$129,000	\$155,000	\$168,000	84.4%
Other Women	\$52,000	\$47,000	\$69,000	\$81,000	\$98,000	\$107,000	\$108,000	98.5%
API Men			\$105,000	\$135,000	\$145,000	\$173,000		
API Women			\$76,000	\$88,000	\$109,000	\$120,000		
AI Men			*	*	*	*		
AI Women			*	*	*	*		

<sup>33</sup> The sample size for American Indian men and women was too small to reliably produce estimates.

Table C.2.e: 95<sup>th</sup> Percentile Income for Adults with Positive Earnings

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
All Groups	\$90,000	\$94,000	\$105,000	\$133,000	\$147,000	\$164,000	\$186,000	76.5%
White Men	\$106,000	\$116,000	\$129,000	\$165,000	\$187,000	\$204,000	\$220,000	86.1%
White Women	\$54,000	\$56,000	\$74,000	\$99,000	\$112,000	\$126,000	\$112,000	123.9%
Black Men	\$70,000	\$77,000	\$84,000	\$111,000	\$112,000	\$120,000	\$146,000	65.7%
Black Women	\$49,000	\$55,000	\$69,000	\$82,000	\$91,000	\$104,000	\$102,000	104.4%
Other Men	\$93,000	\$115,000	\$141,000	\$170,000	\$182,000	\$220,000	\$193,000	125.9%
Other Women	\$66,000	\$61,000	\$95,000	\$112,000	\$130,000	\$153,000	\$137,000	123.6%
API Men			\$162,000	\$185,000	\$197,000	\$244,000		
API Women			\$103,000	\$119,000	\$149,000	\$164,000		
AI Men			*	*	*	*		
AI Women			*	*	*	*		

Table C.3.a: 25<sup>th</sup> Percentile Income for Adults with Positive Income

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
LTHS	\$6,000	\$3,000	\$3,000	\$5,000	\$8,000	\$12,000	\$12,000	98.3%
HS	\$13,000	\$8,000	\$10,000	\$11,000	\$13,000	\$13,000	\$27,000	-1.8%
SCOL	\$10,000	\$9,000	\$11,000	\$15,000	\$15,000	\$12,000	\$22,000	15.9%
COL	\$23,000	\$20,000	\$25,000	\$29,000	\$29,000	\$25,000	\$47,000	10.3%

Table C.3.b: Median Income for Adults with Positive Income

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
LTHS	\$19,000	\$15,000	\$13,000	\$18,000	\$19,000	\$23,000	\$40,000	15.6%
HS	\$30,000	\$26,000	\$25,000	\$29,000	\$29,000	\$29,000	\$62,000	-2.5%
SCOL	\$30,000	\$28,000	\$30,000	\$34,000	\$34,000	\$30,000	\$62,000	1.3%
COL	\$47,000	\$46,000	\$51,000	\$58,000	\$58,000	\$55,000	\$98,000	15.3%

Table C.3.c: 75<sup>th</sup> Percentile Income for Adults with Positive Income

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
LTHS	\$38,000	\$34,000	\$29,000	\$32,000	\$33,000	\$35,000	\$80,000	-7.9%
HS	\$49,000	\$47,000	\$45,000	\$47,000	\$49,000	\$47,000	\$101,000	-2.9%
SCOL	\$51,000	\$51,000	\$53,000	\$57,000	\$56,000	\$54,000	\$107,000	4.6%
COL	\$77,000	\$76,000	\$82,000	\$97,000	\$98,000	\$98,000	\$159,000	26.1%

Table C.3.d: 90<sup>th</sup> Percentile Income for Adults with Positive Income

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
LTHS	\$56,000	\$55,000	\$49,000	\$50,000	\$50,000	\$52,000	\$116,000	-6.5%
HS	\$67,000	\$68,000	\$67,000	\$71,000	\$71,000	\$70,000	\$140,000	4.4%
SCOL	\$74,000	\$74,000	\$78,000	\$86,000	\$85,000	\$82,000	\$155,000	9.6%
COL	\$108,000	\$115,000	\$121,000	\$149,000	\$162,000	\$169,000	\$225,000	52.7%

Table C.3.e: 95<sup>th</sup> Percentile Income for Adults with Positive Incomes

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
LTHS	\$67,000	\$68,000	\$62,000	\$66,000	\$67,000	\$68,000	\$140,000	0.5%
HS	\$80,000	\$81,000	\$82,000	\$89,000	\$91,000	\$91,000	\$167,000	13.2%
SCOL	\$89,000	\$91,000	\$97,000	\$109,000	\$110,000	\$107,000	\$184,000	19.6%
COL	\$157,000	\$167,000	\$202,000	\$224,000	\$234,000	\$256,000	\$326,000	58.5%

Table C.4.a: 25<sup>th</sup> Percentile Income for Adults with Positive Income

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
Urban	\$11,000	\$8,000	\$10,000	\$15,000	\$17,000	\$18,000	\$23,000	56.6%
Suburban	\$13,000	\$8,000	\$11,000	\$15,000	\$17,000	\$16,000	\$27,000	23.5%
Rural	\$9,000	\$6,000	\$7,000	\$10,000	\$12,000	\$12,000	\$18,000	31.4%

Table C.4.b: Median Income for Adults with Positive Income

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
Urban	\$29,000	\$26,000	\$29,000	\$34,000	\$35,000	\$37,000	\$61,000	24.3%
Suburban	\$34,000	\$30,000	\$33,000	\$38,000	\$39,000	\$39,000	\$70,000	14.7%
Rural	\$24,000	\$23,000	\$22,000	\$28,000	\$29,000	\$30,000	\$50,000	24.0%

Table C.4.c: 75<sup>th</sup> Percentile Income for Adults with Positive Income

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
Urban	\$49,000	\$49,000	\$51,000	\$58,000	\$61,000	\$69,000	\$102,000	37.2%
Suburban	\$57,000	\$56,000	\$59,000	\$70,000	\$70,000	\$71,000	\$118,000	22.9%
Rural	\$43,000	\$44,000	\$41,000	\$48,000	\$50,000	\$51,000	\$89,000	17.4%

Table C.4.d: 90<sup>th</sup> Percentile Income for Adults with Positive Income

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
Urban	\$70,000	\$71,000	\$79,000	\$97,000	\$103,000	\$122,000	\$146,000	68.1%
Suburban	\$82,000	\$82,000	\$91,000	\$111,000	\$119,000	\$122,000	\$170,000	45.5%
Rural	\$64,000	\$67,000	\$63,000	\$73,000	\$79,000	\$80,000	\$134,000	23.0%

Table C.4.e: 95<sup>th</sup> Percentile Income for Adults with Positive Income

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
Urban	\$86,000	\$90,000	\$104,000	\$130,000	\$148,000	\$179,000	\$180,000	98.9%
Suburban	\$93,000	\$99,000	\$115,000	\$150,000	\$162,000	\$178,000	\$193,000	85.2%
Rural	\$81,000	\$83,000	\$80,000	\$95,000	\$104,000	\$107,000	\$168,000	30.0%

Table C.5.a: 25<sup>th</sup> Percentile Income for Full-Year, Full-Time, Prime-Aged Workers

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
All Groups	\$31,000	\$32,000	\$31,000	\$32,000	\$32,000	\$33,000	\$69,000	3.0%
White Men	\$43,000	\$41,000	\$38,000	\$38,000	\$36,000	\$36,000	\$93,000	-13.0%
White Women	\$22,000	\$24,000	\$26,000	\$29,000	\$30,000	\$30,000	\$48,000	30.2%
Black Men	\$30,000	\$29,000	\$27,000	\$30,000	\$30,000	\$30,000	\$65,000	0.6%
Black Women	\$21,000	\$22,000	\$24,000	\$26,000	\$25,000	\$27,000	\$46,000	22.8%
Other Men	\$38,000	\$35,000	\$36,000	\$37,000	\$36,000	\$38,000	\$82,000	0.4%
Other Women	\$28,000	\$23,000	\$26,000	\$29,000	\$30,000	\$30,000	\$60,000	8.4%
API Men			\$39,000	\$39,000	\$37,000	\$43,000		
API Women			\$27,000	\$29,000	\$31,000	\$35,000		
AI Men			\$27,000	\$29,000	\$24,000	\$28,000		
AI Women			\$20,000	\$22,000	\$24,000	\$25,000		

Table C.5.b: Median Income for Full-Year, Full-Time, Prime-Aged Workers

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
All Groups	\$47,000	\$47,000	\$47,000	\$50,000	\$49,000	\$50,000	\$102,000	6.4%
White Men	\$56,000	\$58,000	\$57,000	\$58,000	\$56,000	\$57,000	\$122,000	2.0%
White Women	\$31,000	\$33,000	\$38,000	\$44,000	\$44,000	\$47,000	\$68,000	41.7%
Black Men	\$42,000	\$42,000	\$39,000	\$44,000	\$45,000	\$45,000	\$92,000	5.4%
Black Women	\$30,000	\$30,000	\$34,000	\$37,000	\$37,000	\$40,000	\$66,000	27.4%
Other Men	\$51,000	\$53,000	\$54,000	\$58,000	\$57,000	\$62,000	\$112,000	17.8%
Other Women	\$37,000	\$32,000	\$39,000	\$43,000	\$46,000	\$51,000	\$81,000	31.9%
API Men			\$58,000	\$60,000	\$61,000	\$72,000		
API Women			\$42,000	\$44,000	\$50,000	\$58,000		
AI Men			\$41,000	\$47,000	\$42,000	\$39,000		
AI Women			\$31,000	\$34,000	\$35,000	\$34,000		

Table C.5.c: 75<sup>th</sup> Percentile Income for Full-Year, Full-Time, Prime-Aged Workers

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
All Groups	\$65,000	\$66,000	\$69,000	\$76,000	\$76,000	\$81,000	\$141,000	21.4%
White Men	\$74,000	\$78,000	\$79,000	\$88,000	\$88,000	\$91,000	\$162,000	18.5%
White Women	\$43,000	\$45,000	\$53,000	\$63,000	\$66,000	\$71,000	\$93,000	57.3%
Black Men	\$55,000	\$58,000	\$59,000	\$66,000	\$67,000	\$68,000	\$119,000	21.1%
Black Women	\$40,000	\$42,000	\$49,000	\$53,000	\$55,000	\$60,000	\$86,000	43.7%
Other Men	\$73,000	\$71,000	\$81,000	\$97,000	\$92,000	\$105,000	\$159,000	37.0%
Other Women	\$51,000	\$43,000	\$59,000	\$63,000	\$76,000	\$84,000	\$111,000	56.1%
API Men			\$85,000	\$103,000	\$103,000	\$120,000		
API Women			\$62,000	\$67,000	\$85,000	\$94,000		
AI Men			\$68,000	\$70,000	\$59,000	\$61,000		
AI Women			\$48,000	\$50,000	\$48,000	\$48,000		

Table C.5.d: 90<sup>th</sup> Percentile Income for Full-Year, Full-Time, Prime-Aged Workers

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
All Groups	\$87,000	\$91,000	\$97,000	\$116,000	\$122,000	\$133,000	\$189,000	45.5%
White Men	\$91,000	\$98,000	\$109,000	\$134,000	\$140,000	\$154,000	\$199,000	58.3%
White Women	\$55,000	\$59,000	\$74,000	\$92,000	\$101,000	\$112,000	\$121,000	87.5%
Black Men	\$68,000	\$71,000	\$76,000	\$97,000	\$92,000	\$100,000	\$148,000	39.9%
Black Women	\$48,000	\$55,000	\$64,000	\$73,000	\$79,000	\$89,000	\$104,000	72.7%
Other Men	\$90,000	\$96,000	\$110,000	\$140,000	\$147,000	\$173,000	\$196,000	78.8%
Other Women	\$66,000	\$64,000	\$88,000	\$101,000	\$118,000	\$139,000	\$143,000	94.5%
API Men			\$117,000	\$142,000	\$154,000	\$190,000		
API Women			\$92,000	\$103,000	\$129,000	\$151,000		
AI Men			*	*	*	*		
AI Women			*	*	*	*		

Table C.5.e: 95<sup>th</sup> Percentile Income for Full-Year, Full-Time, Prime-Aged Workers

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
All Groups	\$102,000	\$112,000	\$120,000	\$153,000	\$169,000	\$191,000	\$223,000	74.0%
White Men	\$125,000	\$139,000	\$151,000	\$188,000	\$201,000	\$224,000	\$273,000	66.8%
White Women	\$65,000	\$73,000	\$94,000	\$122,000	\$139,000	\$161,000	\$142,000	124.8%
Black Men	\$73,000	\$84,000	\$88,000	\$120,000	\$121,000	\$128,000	\$158,000	64.5%
Black Women	\$55,000	\$66,000	\$77,000	\$91,000	\$100,000	\$117,000	\$121,000	94.8%
Other Men	\$136,000	\$166,000	\$185,000	\$194,000	\$197,000	\$246,000	\$297,000	68.3%
Other Women	\$75,000	\$109,000	\$123,000	\$136,000	\$161,000	\$193,000	\$164,000	132.6%
API Men			\$201,000	\$208,000	\$212,000	\$291,000		
API Women			\$140,000	\$140,000	\$173,000	\$221,000		
AI Men			*	*	*	*		
AI Women			*	*	*	*		

Table C.6.a: 25<sup>th</sup> Percentile Income for Full-Year, Full-Time, Prime-Aged Workers

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
LTHS	\$24,000	\$23,000	\$21,000	\$20,000	\$19,000	\$20,000	\$52,000	-13.6%
HS	\$30,000	\$29,000	\$27,000	\$29,000	\$27,000	\$26,000	\$65,000	-9.6%
SCOL	\$36,000	\$33,000	\$33,000	\$34,000	\$33,000	\$30,000	\$77,000	-13.0%
COL	\$43,000	\$42,000	\$45,000	\$50,000	\$49,000	\$48,000	\$94,000	10.1%

Table C.6.b: Median Income for Full-Year, Full-Time, Prime-Aged Workers

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
LTHS	\$36,000	\$36,000	\$31,000	\$29,000	\$28,000	\$30,000	\$79,000	-14.5%
HS	\$43,000	\$43,000	\$40,000	\$41,000	\$39,000	\$38,000	\$95,000	-10.4%
SCOL	\$51,000	\$49,000	\$48,000	\$49,000	\$48,000	\$45,000	\$111,000	-9.7%

COL	\$62,000	\$61,000	\$65,000	\$73,000	\$73,000	\$72,000	\$135,000	13.8%
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Table C.6.c: 75<sup>th</sup> Percentile Income for Full-Year, Full-Time, Prime-Aged Workers

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
LTHS	\$51,000	\$53,000	\$45,000	\$41,000	\$39,000	\$40,000	\$112,000	-18.6%
HS	\$60,000	\$62,000	\$59,000	\$58,000	\$57,000	\$56,000	\$131,000	-6.4%
SCOL	\$68,000	\$67,000	\$67,000	\$70,000	\$69,000	\$65,000	\$148,000	-3.7%
COL	\$86,000	\$88,000	\$94,000	\$111,000	\$113,000	\$114,000	\$188,000	27.5%

Table C.6.d: 90<sup>th</sup> Percentile Income for Full-Year, Full-Time, Prime-Aged Workers

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
LTHS	\$67,000	\$70,000	\$63,000	\$58,000	\$60,000	\$59,000	\$145,000	-9.3%
HS	\$77,000	\$80,000	\$78,000	\$82,000	\$80,000	\$80,000	\$167,000	3.8%
SCOL	\$86,000	\$88,000	\$89,000	\$97,000	\$98,000	\$95,000	\$186,000	9.0%
COL	\$125,000	\$141,000	\$143,000	\$169,000	\$182,000	\$191,000	\$273,000	44.7%

Table C.6.e: 95<sup>th</sup> Percentile Income for Full-Year, Full-Time, Prime-Aged Workers

	1975	1979	1989	2000	2007	2018	Counterfactual	$\omega$
LTHS	\$77,000	\$81,000	\$77,000	\$73,000	\$73,000	\$76,000	\$169,000	-1.6%
HS	\$89,000	\$92,000	\$92,000	\$100,000	\$100,000	\$102,000	\$193,000	12.3%
SCOL	\$93,000	\$99,000	\$108,000	\$123,000	\$123,000	\$121,000	\$202,000	25.9%
COL	\$183,000	\$172,000	\$210,000	\$258,000	\$264,000	\$290,000	\$399,000	49.4%

## Appendix D: State Results

Alabama	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$32,000	\$30,000	\$35,000	\$33,000	\$30,000	\$67,000	-6.8%
Median	\$52,000	\$51,000	\$58,000	\$57,000	\$52,000	\$108,000	0.4%
75th Percentile	\$79,000	\$81,000	\$95,000	\$101,000	\$91,000	\$165,000	13.3%
90th Percentile	\$97,000	\$110,000	\$135,000	\$155,000	\$156,000	\$201,000	57.2%
95th Percentile	\$116,000	\$117,000	\$161,000	\$224,000	\$227,000	\$242,000	88.3%
99th Percentile	\$219,000	\$443,000	\$332,000	\$1,779,000	\$457,000	\$455,000	101.0%

Alaska	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$52,000	\$48,000	\$44,000	\$44,000	\$40,000	\$108,000	-20.9%
Median	\$83,000	\$75,000	\$72,000	\$74,000	\$67,000	\$173,000	-18.1%
75th Percentile	\$114,000	\$110,000	\$113,000	\$122,000	\$110,000	\$237,000	-3.3%
90th Percentile	\$167,000	\$160,000	\$160,000	\$165,000	\$171,000	\$346,000	2.5%
95th Percentile	\$335,000	\$214,000	\$220,000	\$239,000	\$241,000	\$696,000	-26.1%
99th Percentile	\$538,000	\$661,000	\$630,000	\$505,000	\$704,000	\$1,119,000	28.6%

Arizona	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$37,000	\$35,000	\$35,000	\$35,000	\$38,000	\$78,000	1.7%
Median	\$58,000	\$57,000	\$58,000	\$55,000	\$62,000	\$122,000	5.6%
75th Percentile	\$86,000	\$83,000	\$102,000	\$95,000	\$108,000	\$179,000	23.6%
90th Percentile	\$112,000	\$111,000	\$146,000	\$151,000	\$201,000	\$234,000	72.8%
95th Percentile	\$148,000	\$157,000	\$229,000	\$207,000	\$284,000	\$309,000	84.4%
99th Percentile	\$335,000	\$901,000	\$505,000	\$334,000	\$1,209,000	\$696,000	242.1%

Arkansas	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$32,000	\$30,000	\$31,000	\$33,000	\$31,000	\$66,000	-2.1%
Median	\$49,000	\$47,000	\$50,000	\$53,000	\$53,000	\$102,000	7.3%
75th Percentile	\$74,000	\$78,000	\$91,000	\$84,000	\$92,000	\$155,000	22.0%
90th Percentile	\$96,000	\$102,000	\$140,000	\$135,000	\$139,000	\$200,000	41.1%
95th Percentile	\$101,000	\$113,000	\$162,000	\$161,000	\$202,000	\$211,000	92.0%
99th Percentile	\$262,000	\$211,000	\$764,000	\$1,212,000	\$355,000	\$546,000	32.7%

California	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$42,000	\$39,000	\$37,000	\$36,000	\$35,000	\$87,000	-15.7%
Median	\$65,000	\$64,000	\$64,000	\$61,000	\$60,000	\$135,000	-6.7%
75th Percentile	\$95,000	\$101,000	\$110,000	\$109,000	\$105,000	\$198,000	9.6%

90th Percentile	\$127,000	\$135,000	\$166,000	\$185,000	\$213,000	\$264,000	63.0%
95th Percentile	\$168,000	\$193,000	\$238,000	\$273,000	\$305,000	\$350,000	75.4%
99th Percentile	\$438,000	\$798,000	\$1,156,000	\$1,712,000	\$1,516,000	\$911,000	227.9%

Colorado	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$45,000	\$40,000	\$41,000	\$42,000	\$40,000	\$94,000	-10.2%
Median	\$67,000	\$66,000	\$67,000	\$73,000	\$70,000	\$139,000	4.5%
75th Percentile	\$95,000	\$97,000	\$113,000	\$118,000	\$120,000	\$198,000	24.2%
90th Percentile	\$121,000	\$121,000	\$167,000	\$173,000	\$229,000	\$252,000	82.8%
95th Percentile	\$159,000	\$150,000	\$239,000	\$267,000	\$296,000	\$330,000	80.2%
99th Percentile	\$497,000	\$452,000	\$1,214,000	\$1,541,000	\$1,119,000	\$1,034,000	115.9%

Connecticut	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$44,000	\$48,000	\$44,000	\$44,000	\$40,000	\$91,000	-8.0%
Median	\$65,000	\$76,000	\$78,000	\$77,000	\$68,000	\$135,000	4.6%
75th Percentile	\$92,000	\$110,000	\$127,000	\$133,000	\$126,000	\$192,000	33.9%
90th Percentile	\$113,000	\$158,000	\$182,000	\$226,000	\$223,000	\$235,000	89.8%
95th Percentile	\$166,000	\$210,000	\$256,000	\$305,000	\$300,000	\$345,000	74.8%
99th Percentile	\$466,000	\$752,000	\$1,360,000	\$2,126,000	\$2,465,000	\$970,000	397.0%

Delaware	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$43,000	\$39,000	\$42,000	\$36,000	\$33,000	\$90,000	-21.2%
Median	\$62,000	\$61,000	\$67,000	\$61,000	\$55,000	\$129,000	-10.7%
75th Percentile	\$91,000	\$95,000	\$112,000	\$104,000	\$104,000	\$189,000	13.4%
90th Percentile	\$112,000	\$113,000	\$148,000	\$164,000	\$178,000	\$232,000	55.0%
95th Percentile	\$151,000	\$141,000	\$228,000	\$230,000	\$227,000	\$315,000	46.4%
99th Percentile	\$380,000	\$206,000	\$1,339,000	\$900,000	\$1,216,000	\$790,000	203.8%

District of Columbia	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$34,000	\$35,000	\$37,000	\$41,000	\$52,000	\$71,000	48.7%
Median	\$54,000	\$51,000	\$58,000	\$61,000	\$86,000	\$112,000	54.3%
75th Percentile	\$83,000	\$79,000	\$95,000	\$103,000	\$159,000	\$174,000	83.6%
90th Percentile	\$105,000	\$115,000	\$160,000	\$206,000	\$293,000	\$219,000	165.4%
95th Percentile	\$179,000	\$200,000	\$257,000	\$325,000	\$385,000	\$373,000	106.1%
99th Percentile	\$547,000	\$835,000	\$1,453,000	\$2,340,000	\$1,944,000	\$1,138,000	236.5%

Florida	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$30,000	\$33,000	\$35,000	\$35,000	\$30,000	\$63,000	-1.0%
Median	\$51,000	\$54,000	\$57,000	\$57,000	\$51,000	\$105,000	0.6%

75th Percentile	\$79,000	\$84,000	\$95,000	\$95,000	\$92,000	\$164,000	15.6%
90th Percentile	\$96,000	\$112,000	\$142,000	\$151,000	\$159,000	\$200,000	60.6%
95th Percentile	\$110,000	\$129,000	\$199,000	\$214,000	\$237,000	\$228,000	107.7%
99th Percentile	\$184,000	\$219,000	\$1,288,000	\$1,165,000	\$427,000	\$383,000	121.9%

Georgia	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$36,000	\$37,000	\$38,000	\$36,000	\$30,000	\$74,000	-14.5%
Median	\$61,000	\$59,000	\$62,000	\$61,000	\$50,000	\$127,000	-16.3%
75th Percentile	\$85,000	\$96,000	\$101,000	\$105,000	\$94,000	\$177,000	10.2%
90th Percentile	\$102,000	\$119,000	\$142,000	\$163,000	\$181,000	\$213,000	71.3%
95th Percentile	\$138,000	\$172,000	\$202,000	\$247,000	\$256,000	\$287,000	79.4%
99th Percentile	\$425,000	\$520,000	\$961,000	\$1,090,000	\$956,000	\$884,000	115.7%

Hawaii	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$36,000	\$41,000	\$37,000	\$36,000	\$38,000	\$75,000	4.7%
Median	\$63,000	\$62,000	\$60,000	\$59,000	\$65,000	\$132,000	2.3%
75th Percentile	\$87,000	\$96,000	\$98,000	\$97,000	\$108,000	\$182,000	21.8%
90th Percentile	\$102,000	\$119,000	\$142,000	\$147,000	\$175,000	\$212,000	66.5%
95th Percentile	\$125,000	\$177,000	\$169,000	\$192,000	\$245,000	\$261,000	88.5%
99th Percentile	\$258,000	\$449,000	\$288,000	\$356,000	\$1,316,000	\$537,000	379.7%

Idaho	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$39,000	\$35,000	\$36,000	\$39,000	\$34,000	\$82,000	-12.6%
Median	\$60,000	\$55,000	\$60,000	\$61,000	\$56,000	\$125,000	-5.8%
75th Percentile	\$82,000	\$84,000	\$98,000	\$101,000	\$101,000	\$171,000	21.2%
90th Percentile	\$97,000	\$110,000	\$144,000	\$158,000	\$164,000	\$202,000	64.1%
95th Percentile	\$104,000	\$133,000	\$189,000	\$230,000	\$213,000	\$215,000	98.1%
99th Percentile	\$177,000	\$217,000	\$540,000	\$1,190,000	\$927,000	\$369,000	390.8%

Illinois	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$45,000	\$41,000	\$40,000	\$36,000	\$38,000	\$94,000	-13.4%
Median	\$67,000	\$67,000	\$67,000	\$64,000	\$66,000	\$140,000	-1.6%
75th Percentile	\$94,000	\$98,000	\$108,000	\$109,000	\$120,000	\$196,000	25.4%
90th Percentile	\$112,000	\$118,000	\$157,000	\$184,000	\$224,000	\$233,000	92.5%
95th Percentile	\$160,000	\$184,000	\$213,000	\$289,000	\$314,000	\$333,000	88.9%
99th Percentile	\$413,000	\$711,000	\$1,014,000	\$1,431,000	\$1,732,000	\$860,000	295.2%

Indiana	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$41,000	\$37,000	\$40,000	\$36,000	\$35,000	\$85,000	-13.9%
Median	\$61,000	\$55,000	\$64,000	\$61,000	\$60,000	\$128,000	-2.2%

75th Percentile	\$86,000	\$83,000	\$101,000	\$100,000	\$96,000	\$180,000	10.7%
90th Percentile	\$97,000	\$110,000	\$148,000	\$147,000	\$162,000	\$202,000	61.5%
95th Percentile	\$110,000	\$143,000	\$207,000	\$198,000	\$220,000	\$229,000	92.3%
99th Percentile	\$168,000	\$227,000	\$773,000	\$711,000	\$376,000	\$349,000	114.7%

Iowa	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$44,000	\$36,000	\$40,000	\$40,000	\$36,000	\$92,000	-17.0%
Median	\$65,000	\$60,000	\$67,000	\$62,000	\$67,000	\$135,000	2.6%
75th Percentile	\$89,000	\$82,000	\$102,000	\$104,000	\$103,000	\$186,000	14.2%
90th Percentile	\$101,000	\$109,000	\$150,000	\$147,000	\$165,000	\$210,000	59.2%
95th Percentile	\$129,000	\$113,000	\$221,000	\$196,000	\$251,000	\$269,000	86.8%
99th Percentile	\$249,000	\$213,000	\$505,000	\$1,093,000	\$604,000	\$518,000	132.1%

Kansas	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$40,000	\$37,000	\$41,000	\$36,000	\$40,000	\$83,000	0.1%
Median	\$60,000	\$60,000	\$70,000	\$61,000	\$68,000	\$124,000	12.2%
75th Percentile	\$84,000	\$96,000	\$110,000	\$103,000	\$118,000	\$175,000	37.7%
90th Percentile	\$100,000	\$114,000	\$149,000	\$146,000	\$196,000	\$208,000	89.2%
95th Percentile	\$135,000	\$166,000	\$211,000	\$180,000	\$268,000	\$281,000	91.1%
99th Percentile	\$366,000	\$497,000	\$921,000	\$339,000	\$1,096,000	\$761,000	184.8%

Kentucky	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$39,000	\$34,000	\$37,000	\$34,000	\$35,000	\$81,000	-8.2%
Median	\$60,000	\$57,000	\$59,000	\$56,000	\$60,000	\$126,000	-0.3%
75th Percentile	\$82,000	\$85,000	\$97,000	\$92,000	\$104,000	\$171,000	24.7%
90th Percentile	\$97,000	\$110,000	\$143,000	\$148,000	\$198,000	\$202,000	96.2%
95th Percentile	\$120,000	\$128,000	\$189,000	\$208,000	\$279,000	\$250,000	122.3%
99th Percentile	\$179,000	\$209,000	\$855,000	\$544,000	\$2,532,000	\$373,000	1214.2%

Louisiana	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$36,000	\$37,000	\$30,000	\$32,000	\$30,000	\$74,000	-14.5%
Median	\$55,000	\$57,000	\$51,000	\$55,000	\$54,000	\$115,000	-2.5%
75th Percentile	\$85,000	\$92,000	\$94,000	\$106,000	\$95,000	\$176,000	11.5%
90th Percentile	\$103,000	\$115,000	\$131,000	\$158,000	\$160,000	\$213,000	52.1%
95th Percentile	\$154,000	\$176,000	\$168,000	\$224,000	\$226,000	\$320,000	43.2%
99th Percentile	\$306,000	\$746,000	\$506,000	\$1,157,000	\$416,000	\$637,000	33.2%

Maine	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$34,000	\$38,000	\$38,000	\$36,000	\$41,000	\$70,000	20.5%
Median	\$52,000	\$59,000	\$60,000	\$61,000	\$65,000	\$107,000	24.7%

75th Percentile	\$70,000	\$91,000	\$92,000	\$97,000	\$101,000	\$146,000	40.1%
90th Percentile	\$93,000	\$113,000	\$136,000	\$141,000	\$155,000	\$194,000	60.8%
95th Percentile	\$98,000	\$142,000	\$166,000	\$197,000	\$199,000	\$205,000	94.0%
99th Percentile	\$156,000	\$230,000	\$506,000	\$358,000	\$347,000	\$324,000	113.9%

Maryland	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$44,000	\$41,000	\$44,000	\$42,000	\$40,000	\$92,000	-9.1%
Median	\$67,000	\$63,000	\$75,000	\$70,000	\$70,000	\$140,000	3.7%
75th Percentile	\$96,000	\$103,000	\$126,000	\$121,000	\$127,000	\$201,000	29.3%
90th Percentile	\$139,000	\$132,000	\$193,000	\$189,000	\$227,000	\$290,000	58.3%
95th Percentile	\$172,000	\$178,000	\$275,000	\$277,000	\$307,000	\$358,000	72.4%
99th Percentile	\$502,000	\$478,000	\$1,741,000	\$1,966,000	\$1,088,000	\$1,044,000	108.1%

Massachusetts	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$39,000	\$43,000	\$42,000	\$45,000	\$43,000	\$82,000	8.5%
Median	\$61,000	\$69,000	\$66,000	\$77,000	\$75,000	\$128,000	20.4%
75th Percentile	\$87,000	\$106,000	\$112,000	\$137,000	\$154,000	\$182,000	70.1%
90th Percentile	\$103,000	\$142,000	\$178,000	\$228,000	\$274,000	\$214,000	154.4%
95th Percentile	\$147,000	\$204,000	\$271,000	\$331,000	\$360,000	\$306,000	134.0%
99th Percentile	\$318,000	\$700,000	\$1,647,000	\$1,968,000	\$1,685,000	\$660,000	399.2%

Michigan	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$49,000	\$41,000	\$42,000	\$39,000	\$38,000	\$101,000	-20.1%
Median	\$70,000	\$68,000	\$72,000	\$67,000	\$65,000	\$145,000	-6.5%
75th Percentile	\$96,000	\$98,000	\$118,000	\$110,000	\$110,000	\$199,000	13.7%
90th Percentile	\$108,000	\$117,000	\$164,000	\$162,000	\$185,000	\$226,000	64.9%
95th Percentile	\$147,000	\$161,000	\$232,000	\$228,000	\$250,000	\$305,000	65.6%
99th Percentile	\$324,000	\$367,000	\$693,000	\$1,185,000	\$415,000	\$674,000	26.0%

Minnesota	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$42,000	\$37,000	\$51,000	\$42,000	\$43,000	\$88,000	0.9%
Median	\$66,000	\$59,000	\$80,000	\$75,000	\$79,000	\$137,000	18.3%
75th Percentile	\$91,000	\$97,000	\$121,000	\$121,000	\$138,000	\$190,000	47.4%
90th Percentile	\$104,000	\$114,000	\$168,000	\$173,000	\$219,000	\$215,000	103.9%
95th Percentile	\$164,000	\$139,000	\$239,000	\$272,000	\$287,000	\$340,000	70.2%
99th Percentile	\$331,000	\$699,000	\$1,368,000	\$1,773,000	\$1,405,000	\$689,000	300.2%

Mississippi	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$32,000	\$27,000	\$31,000	\$28,000	\$30,000	\$67,000	-6.8%
Median	\$55,000	\$49,000	\$58,000	\$53,000	\$50,000	\$114,000	-8.3%

75th Percentile	\$78,000	\$73,000	\$90,000	\$96,000	\$90,000	\$162,000	14.6%
90th Percentile	\$96,000	\$100,000	\$130,000	\$147,000	\$136,000	\$201,000	38.3%
95th Percentile	\$120,000	\$112,000	\$152,000	\$252,000	\$174,000	\$250,000	41.2%
99th Percentile	\$178,000	\$225,000	\$506,000	\$1,695,000	\$385,000	\$371,000	107.2%

Missouri	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$39,000	\$39,000	\$39,000	\$35,000	\$38,000	\$82,000	-4.4%
Median	\$60,000	\$61,000	\$66,000	\$57,000	\$63,000	\$124,000	5.6%
75th Percentile	\$86,000	\$89,000	\$103,000	\$95,000	\$100,000	\$178,000	15.5%
90th Percentile	\$101,000	\$113,000	\$149,000	\$148,000	\$163,000	\$210,000	57.3%
95th Percentile	\$138,000	\$154,000	\$194,000	\$192,000	\$225,000	\$288,000	57.7%
99th Percentile	\$353,000	\$453,000	\$1,429,000	\$389,000	\$418,000	\$734,000	17.1%

Montana	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$32,000	\$30,000	\$31,000	\$35,000	\$35,000	\$67,000	7.6%
Median	\$55,000	\$57,000	\$52,000	\$61,000	\$59,000	\$115,000	6.1%
75th Percentile	\$81,000	\$83,000	\$85,000	\$95,000	\$95,000	\$168,000	16.2%
90th Percentile	\$100,000	\$109,000	\$124,000	\$134,000	\$158,000	\$207,000	54.5%
95th Percentile	\$117,000	\$115,000	\$150,000	\$164,000	\$200,000	\$244,000	65.0%
99th Percentile	\$404,000	\$211,000	\$506,000	\$330,000	\$695,000	\$841,000	66.7%

Oklahoma	0	0	0	0	0	Counterfactual	w
25th Percentile	\$40,000	\$34,000	\$38,000	\$37,000	\$36,000	\$83,000	-9.0%
Median	\$60,000	\$57,000	\$65,000	\$61,000	\$65,000	\$124,000	8.0%
75th Percentile	\$83,000	\$80,000	\$101,000	\$101,000	\$113,000	\$172,000	34.3%
90th Percentile	\$99,000	\$109,000	\$143,000	\$148,000	\$192,000	\$206,000	86.9%
95th Percentile	\$124,000	\$121,000	\$192,000	\$225,000	\$279,000	\$258,000	115.8%
99th Percentile	\$167,000	\$548,000	\$429,000	\$933,000	\$903,000	\$348,000	406.8%

Oregon	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$37,000	\$37,000	\$36,000	\$36,000	\$33,000	\$77,000	-10.7%
Median	\$61,000	\$55,000	\$56,000	\$61,000	\$56,000	\$126,000	-7.1%
75th Percentile	\$87,000	\$84,000	\$94,000	\$97,000	\$90,000	\$182,000	3.0%
90th Percentile	\$107,000	\$111,000	\$141,000	\$141,000	\$159,000	\$223,000	45.0%
95th Percentile	\$148,000	\$144,000	\$203,000	\$194,000	\$229,000	\$308,000	50.6%
99th Percentile	\$412,000	\$237,000	\$932,000	\$1,065,000	\$740,000	\$858,000	73.6%

Pennsylvania	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$43,000	\$43,000	\$46,000	\$45,000	\$42,000	\$89,000	-1.2%
Median	\$62,000	\$69,000	\$74,000	\$80,000	\$70,000	\$130,000	11.8%

75th Percentile	\$85,000	\$102,000	\$120,000	\$122,000	\$120,000	\$177,000	37.9%
90th Percentile	\$100,000	\$118,000	\$178,000	\$187,000	\$220,000	\$208,000	111.5%
95th Percentile	\$122,000	\$178,000	\$259,000	\$244,000	\$264,000	\$254,000	107.4%
99th Percentile	\$361,000	\$695,000	\$1,535,000	\$863,000	\$982,000	\$751,000	159.1%

Rhode Island	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$41,000	\$43,000	\$42,000	\$39,000	\$45,000	\$84,000	10.3%
Median	\$65,000	\$73,000	\$73,000	\$70,000	\$70,000	\$136,000	6.8%
75th Percentile	\$94,000	\$110,000	\$123,000	\$129,000	\$144,000	\$196,000	48.5%
90th Percentile	\$117,000	\$163,000	\$197,000	\$229,000	\$276,000	\$243,000	126.3%
95th Percentile	\$150,000	\$220,000	\$271,000	\$300,000	\$380,000	\$313,000	141.2%
99th Percentile	\$423,000	\$897,000	\$1,526,000	\$2,107,000	\$2,090,000	\$880,000	364.9%

South Carolina	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$0	\$0	\$0	\$0	\$0	\$0	#DIV/0!
Median	\$56,000	\$51,000	\$53,000	\$55,000	\$49,000	\$117,000	-11.7%
75th Percentile	\$88,000	\$82,000	\$85,000	\$96,000	\$78,000	\$184,000	-10.6%
90th Percentile	\$100,000	\$110,000	\$119,000	\$159,000	\$123,000	\$208,000	21.3%
95th Percentile	\$121,000	\$143,000	\$141,000	\$249,000	\$187,000	\$252,000	50.5%
99th Percentile	\$210,000	\$296,000	\$286,000	\$393,000	\$2,585,000	\$437,000	1046.4%

New York	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$39,000	\$40,000	\$38,000	\$36,000	\$35,000	\$81,000	-8.7%
Median	\$60,000	\$67,000	\$63,000	\$61,000	\$62,000	\$125,000	3.9%
75th Percentile	\$86,000	\$103,000	\$107,000	\$103,000	\$115,000	\$179,000	31.1%
90th Percentile	\$102,000	\$133,000	\$161,000	\$175,000	\$228,000	\$211,000	115.6%
95th Percentile	\$146,000	\$199,000	\$226,000	\$269,000	\$353,000	\$304,000	130.8%
99th Percentile	\$451,000	\$706,000	\$1,357,000	\$1,717,000	\$1,574,000	\$939,000	230.3%

North Carolina	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$34,000	\$33,000	\$35,000	\$33,000	\$32,000	\$70,000	-3.8%
Median	\$53,000	\$54,000	\$56,000	\$55,000	\$59,000	\$111,000	9.8%
75th Percentile	\$78,000	\$85,000	\$89,000	\$90,000	\$99,000	\$162,000	24.5%
90th Percentile	\$97,000	\$110,000	\$137,000	\$154,000	\$162,000	\$202,000	62.1%
95th Percentile	\$129,000	\$126,000	\$177,000	\$202,000	\$242,000	\$269,000	80.7%
99th Percentile	\$364,000	\$347,000	\$646,000	\$1,055,000	\$824,000	\$756,000	117.3%

North Dakota	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$36,000	\$34,000	\$35,000	\$36,000	\$39,000	\$74,000	8.9%
Median	\$58,000	\$55,000	\$58,000	\$61,000	\$66,000	\$120,000	13.4%

75th Percentile	\$81,000	\$80,000	\$90,000	\$95,000	\$103,000	\$169,000	24.2%
90th Percentile	\$100,000	\$108,000	\$124,000	\$137,000	\$157,000	\$207,000	53.7%
95th Percentile	\$125,000	\$113,000	\$149,000	\$194,000	\$231,000	\$259,000	79.4%
99th Percentile	\$338,000	\$228,000	\$363,000	\$1,048,000	\$1,408,000	\$704,000	292.5%

Ohio	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$45,000	\$40,000	\$41,000	\$38,000	\$35,000	\$94,000	-21.1%
Median	\$65,000	\$65,000	\$69,000	\$64,000	\$63,000	\$135,000	-2.4%
75th Percentile	\$91,000	\$96,000	\$108,000	\$103,000	\$110,000	\$189,000	19.6%
90th Percentile	\$102,000	\$113,000	\$151,000	\$150,000	\$175,000	\$213,000	65.7%
95th Percentile	\$143,000	\$156,000	\$197,000	\$201,000	\$251,000	\$297,000	70.4%
99th Percentile	\$235,000	\$556,000	\$849,000	\$1,420,000	\$1,222,000	\$488,000	389.6%

Oklahoma	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$36,000	\$33,000	\$33,000	\$36,000	\$33,000	\$75,000	-8.0%
Median	\$58,000	\$56,000	\$58,000	\$58,000	\$54,000	\$121,000	-6.9%
75th Percentile	\$85,000	\$90,000	\$95,000	\$92,000	\$95,000	\$177,000	10.8%
90th Percentile	\$98,000	\$114,000	\$133,000	\$150,000	\$165,000	\$204,000	63.3%
95th Percentile	\$141,000	\$148,000	\$164,000	\$230,000	\$220,000	\$294,000	51.4%
99th Percentile	\$441,000	\$554,000	\$1,356,000	\$1,735,000	\$500,000	\$917,000	12.4%

Oregon	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$41,000	\$43,000	\$39,000	\$36,000	\$39,000	\$85,000	-4.0%
Median	\$63,000	\$65,000	\$63,000	\$61,000	\$70,000	\$130,000	10.9%
75th Percentile	\$84,000	\$92,000	\$104,000	\$97,000	\$114,000	\$175,000	32.4%
90th Percentile	\$99,000	\$114,000	\$150,000	\$152,000	\$204,000	\$206,000	97.8%
95th Percentile	\$117,000	\$173,000	\$214,000	\$213,000	\$265,000	\$244,000	116.8%
99th Percentile	\$364,000	\$595,000	\$1,552,000	\$1,518,000	\$877,000	\$757,000	130.5%

Pennsylvania	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$42,000	\$39,000	\$39,000	\$39,000	\$37,000	\$87,000	-11.0%
Median	\$64,000	\$61,000	\$69,000	\$64,000	\$60,000	\$133,000	-4.9%
75th Percentile	\$87,000	\$94,000	\$111,000	\$108,000	\$108,000	\$182,000	22.2%
90th Percentile	\$100,000	\$114,000	\$158,000	\$156,000	\$187,000	\$207,000	81.7%
95th Percentile	\$131,000	\$168,000	\$227,000	\$224,000	\$263,000	\$272,000	93.9%
99th Percentile	\$178,000	\$440,000	\$1,275,000	\$404,000	\$882,000	\$370,000	366.6%

Rhode Island	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$39,000	\$38,000	\$41,000	\$41,000	\$35,000	\$81,000	-9.1%
Median	\$59,000	\$62,000	\$67,000	\$68,000	\$62,000	\$123,000	5.0%

75th Percentile	\$83,000	\$93,000	\$109,000	\$117,000	\$105,000	\$172,000	25.1%
90th Percentile	\$97,000	\$112,000	\$154,000	\$178,000	\$183,000	\$202,000	82.2%
95th Percentile	\$118,000	\$131,000	\$206,000	\$292,000	\$272,000	\$245,000	120.9%
99th Percentile	\$180,000	\$235,000	\$1,689,000	\$1,697,000	\$1,054,000	\$375,000	448.1%

South Carolina	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$31,000	\$30,000	\$35,000	\$33,000	\$34,000	\$64,000	9.9%
Median	\$50,000	\$49,000	\$56,000	\$55,000	\$57,000	\$105,000	12.0%
75th Percentile	\$78,000	\$83,000	\$98,000	\$91,000	\$95,000	\$161,000	20.9%
90th Percentile	\$96,000	\$110,000	\$137,000	\$131,000	\$164,000	\$201,000	64.9%
95th Percentile	\$105,000	\$125,000	\$163,000	\$165,000	\$246,000	\$219,000	123.4%
99th Percentile	\$174,000	\$237,000	\$1,237,000	\$401,000	\$665,000	\$363,000	260.0%

South Dakota	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$31,000	\$31,000	\$37,000	\$36,000	\$37,000	\$64,000	18.8%
Median	\$52,000	\$51,000	\$61,000	\$59,000	\$68,000	\$109,000	27.5%
75th Percentile	\$76,000	\$74,000	\$96,000	\$95,000	\$110,000	\$158,000	41.5%
90th Percentile	\$97,000	\$108,000	\$141,000	\$148,000	\$186,000	\$201,000	85.2%
95th Percentile	\$118,000	\$113,000	\$179,000	\$227,000	\$260,000	\$246,000	111.3%
99th Percentile	\$182,000	\$234,000	\$690,000	\$1,527,000	\$1,161,000	\$378,000	498.5%

Tennessee	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$35,000	\$31,000	\$33,000	\$32,000	\$35,000	\$73,000	-0.5%
Median	\$52,000	\$55,000	\$55,000	\$55,000	\$55,000	\$108,000	4.7%
75th Percentile	\$77,000	\$84,000	\$95,000	\$93,000	\$93,000	\$161,000	18.7%
90th Percentile	\$96,000	\$111,000	\$141,000	\$144,000	\$149,000	\$201,000	49.8%
95th Percentile	\$113,000	\$129,000	\$198,000	\$203,000	\$223,000	\$234,000	91.1%
99th Percentile	\$177,000	\$240,000	\$1,100,000	\$626,000	\$405,000	\$368,000	119.4%

Texas	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$39,000	\$33,000	\$34,000	\$32,000	\$34,000	\$81,000	-11.4%
Median	\$62,000	\$55,000	\$56,000	\$55,000	\$55,000	\$129,000	-10.6%
75th Percentile	\$91,000	\$90,000	\$100,000	\$96,000	\$99,000	\$190,000	8.0%
90th Percentile	\$115,000	\$114,000	\$151,000	\$153,000	\$171,000	\$240,000	44.6%
95th Percentile	\$164,000	\$159,000	\$224,000	\$222,000	\$252,000	\$340,000	50.1%
99th Percentile	\$521,000	\$386,000	\$1,406,000	\$1,121,000	\$961,000	\$1,083,000	78.3%

Utah	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$44,000	\$40,000	\$43,000	\$37,000	\$42,000	\$91,000	-3.6%
Median	\$61,000	\$62,000	\$69,000	\$61,000	\$70,000	\$127,000	13.6%

75th Percentile	\$84,000	\$88,000	\$103,000	\$101,000	\$111,000	\$175,000	29.6%
90th Percentile	\$99,000	\$113,000	\$138,000	\$154,000	\$174,000	\$205,000	70.5%
95th Percentile	\$124,000	\$149,000	\$181,000	\$229,000	\$249,000	\$259,000	92.4%
99th Percentile	\$183,000	\$333,000	\$566,000	\$1,141,000	\$1,514,000	\$381,000	673.0%

Vermont	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$34,000	\$39,000	\$41,000	\$36,000	\$38,000	\$71,000	11.0%
Median	\$52,000	\$59,000	\$61,000	\$60,000	\$60,000	\$108,000	14.6%
75th Percentile	\$74,000	\$92,000	\$99,000	\$95,000	\$105,000	\$153,000	40.0%
90th Percentile	\$96,000	\$114,000	\$143,000	\$148,000	\$160,000	\$201,000	60.8%
95th Percentile	\$101,000	\$177,000	\$217,000	\$207,000	\$212,000	\$211,000	101.3%
99th Percentile	\$169,000	\$499,000	\$507,000	\$305,000	\$423,000	\$351,000	139.6%

Virginia	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$39,000	\$40,000	\$42,000	\$42,000	\$39,000	\$81,000	0.4%
Median	\$58,000	\$68,000	\$70,000	\$71,000	\$71,000	\$121,000	19.9%
75th Percentile	\$87,000	\$109,000	\$118,000	\$119,000	\$126,000	\$181,000	41.5%
90th Percentile	\$100,000	\$133,000	\$175,000	\$189,000	\$233,000	\$207,000	124.5%
95th Percentile	\$136,000	\$183,000	\$242,000	\$282,000	\$302,000	\$282,000	113.5%
99th Percentile	\$200,000	\$759,000	\$1,281,000	\$1,521,000	\$1,474,000	\$417,000	587.9%

Washington	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$42,000	\$39,000	\$39,000	\$39,000	\$42,000	\$87,000	-0.1%
Median	\$68,000	\$61,000	\$66,000	\$69,000	\$75,000	\$141,000	9.7%
75th Percentile	\$93,000	\$94,000	\$108,000	\$113,000	\$125,000	\$193,000	32.2%
90th Percentile	\$112,000	\$114,000	\$153,000	\$172,000	\$223,000	\$234,000	91.0%
95th Percentile	\$153,000	\$143,000	\$236,000	\$244,000	\$301,000	\$318,000	89.8%
99th Percentile	\$480,000	\$370,000	\$1,257,000	\$1,475,000	\$1,471,000	\$998,000	191.2%

West Virginia	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$36,000	\$35,000	\$32,000	\$36,000	\$35,000	\$75,000	-2.5%
Median	\$56,000	\$56,000	\$56,000	\$60,000	\$52,000	\$117,000	-6.7%
75th Percentile	\$80,000	\$80,000	\$88,000	\$91,000	\$90,000	\$166,000	11.8%
90th Percentile	\$96,000	\$110,000	\$121,000	\$129,000	\$138,000	\$200,000	40.2%
95th Percentile	\$100,000	\$113,000	\$145,000	\$173,000	\$180,000	\$209,000	73.6%
99th Percentile	\$197,000	\$212,000	\$274,000	\$497,000	\$375,000	\$410,000	83.7%

Wisconsin	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$44,000	\$37,000	\$38,000	\$39,000	\$36,000	\$92,000	-17.1%
Median	\$67,000	\$60,000	\$69,000	\$68,000	\$59,000	\$139,000	-10.4%

75th Percentile	\$91,000	\$92,000	\$109,000	\$112,000	\$102,000	\$189,000	11.6%
90th Percentile	\$100,000	\$113,000	\$149,000	\$161,000	\$165,000	\$207,000	61.1%
95th Percentile	\$135,000	\$130,000	\$233,000	\$223,000	\$236,000	\$280,000	69.5%
99th Percentile	\$277,000	\$240,000	\$1,420,000	\$928,000	\$415,000	\$575,000	46.3%

Wyoming	1979	1989	2000	2007	2018	Counterfactual	w
25th Percentile	\$47,000	\$39,000	\$39,000	\$36,000	\$36,000	\$98,000	-22.0%
Median	\$65,000	\$64,000	\$63,000	\$65,000	\$63,000	\$135,000	-2.1%
75th Percentile	\$91,000	\$90,000	\$95,000	\$100,000	\$104,000	\$189,000	13.1%
90th Percentile	\$103,000	\$110,000	\$129,000	\$150,000	\$159,000	\$213,000	51.3%
95th Percentile	\$148,000	\$140,000	\$150,000	\$190,000	\$198,000	\$308,000	31.0%
99th Percentile	\$451,000	\$217,000	\$271,000	\$1,203,000	\$328,000	\$937,000	-25.1%