The Rise of American Wages and Incomes

An examination of worker earnings in a dynamic economy

October 25, 2018

Summary and Introduction

"A rising tide lifts all boats," remarked President John F. Kennedy, articulating that economic growth improves the well-being of all Americans. Critics of tax and regulatory reforms—no longer able to deny the U.S. economy is capable of faster economic growth—now disavow President Kennedy's insight and claim that the benefits of economic growth are not accruing to average American workers and families, and have failed to do so since the 1970s. A September 26, 2018, Joint Economic Committee (JEC) hearing entitled an "Examination of the Rise of American Earnings and Living Standards"[1] explored (1) recent real wage growth trends; (2) longer-term wage growth trends; and (3) income inequality, and discovered that:

> (1) Real wages are growing according to measures that better reflect inflation's actual trend and account for those left behind by Obama Administration policies, who are now able to find work. This is further corroborated by stronger consumer spending and confidence data.

> (2) Including employer-paid benefits, accounting for taxes and government transfers, and using a more reliable inflation measure indicates median worker/household incomes are approximately 50 percent higher than in 1979.

> (3) Following particular individuals over their lifetimes and comparing particular household types over time both show economic progress that has been shared very broadly.

Policymakers must take care not to formulate top-down government interventions based on misinterpreted average wage and income statistics. Doing so risks inadvertently harming all Americans by hindering economic progress, while failing to help those with the greatest needs.

A rising tide has indeed lifted all boats since the 1970s. Though progress was disrupted by the 2008-09 recession and the lackluster recovery that ensued, recent pro-growth regulatory and tax reforms, such as the *Tax Cuts and Jobs Act*, are raising the tide once again.

Key Points

American wages have grown with the economy over time and, more recently, are rising faster again.

➢ *Less accurate inflation measures obscure a rising wage trend.*

➢ *Employer-paid benefits and government taxes and transfers are important components of workers' incomes excluded from commonly cited wage statistics.*

➢ *Workforce composition changes can decrease average and median worker earnings measures, even if hourly wage rates are rising.*

➢ *Frequently cited income measures fail to account for America's changing demography and individual incomes changing over a lifetime.*

➢ *Middle and lower income groups have benefitted substantially from U.S. economic growth.*
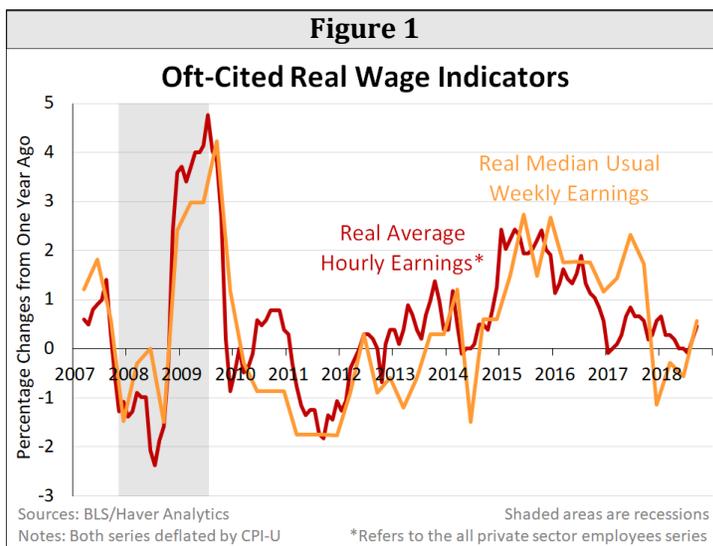
Section 1. Recent Wage Growth Trends

At a September 6, 2018, JEC hearing, Ranking Member Heinrich stated:

> "…wages adjusted for inflation are actually going down, not up…wage growth, the average hourly wage[2] for production and nonsupervisory workers—our best measure of the typical worker's[3] take-home pay—was lower in July 2018 than July 2017, after adjusting for inflation."[4]
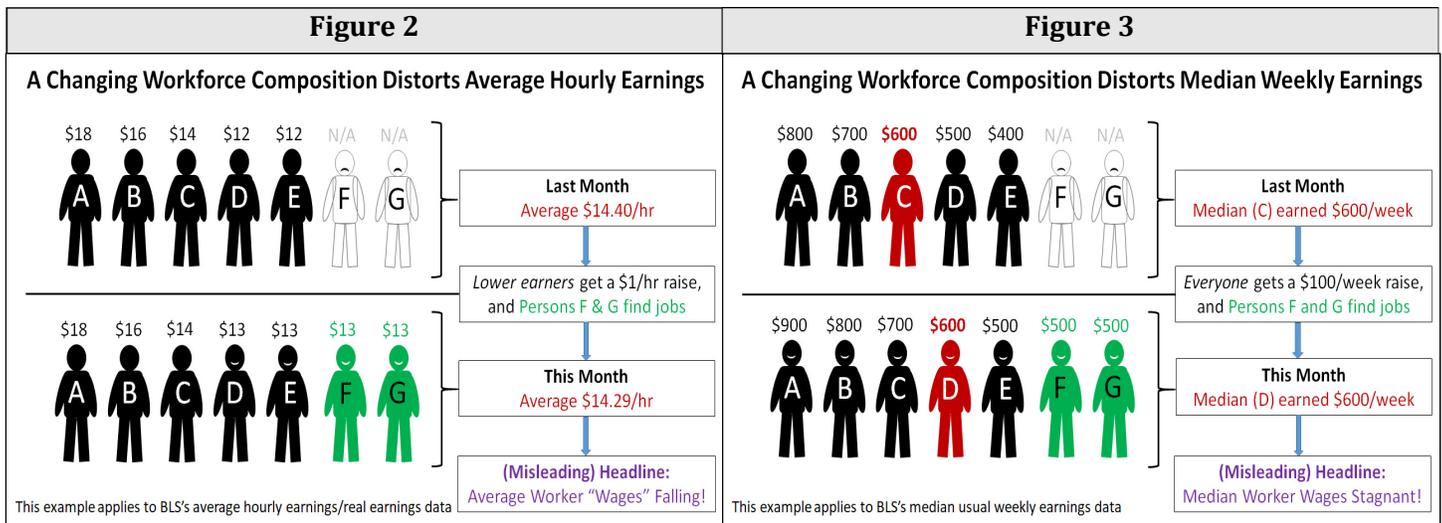
Measures susceptible to sending false signals about actual wage growth are being used to make claims that inflation-adjusted (real) wages are falling.

Such interpretations are typically made from isolated readings of the Bureau of Labor Statistics' (BLS) average hourly earnings[5] and median usual weekly earnings[6] data series, which this study refers to as AHE and MWE. After adjusting for inflation by BLS's consumer price index (CPI), these are formally referred to as real AHE and real MWE.[7]

Figure 1

Oft-Cited Real Wage Indicators

Real Median Usual Weekly Earnings

Real Average Hourly Earnings*

Percentage Changes from One Year Ago

Sources: BLS/Haver Analytics
Notes: Both series deflated by CPI-U

Shaded areas are recessions
*Refers to the all private sector employees series

Unfortunately, these measures can send false signals about actual real wage growth because they are (a) sensitive to workforce composition changes, (b) biased downward by the CPI, which tends to overstate inflation, and (c) sensitive to large fluctuations in the measured prices of some product prices that are volatile. These factors, along with (d) growing consumer confidence and spending, indicate the real AHE and real MWE growth rates, which have trended downward more recently (see Figure 1[8]), are sending false signals.

(a) Even if wage rates remain constant, a changing workforce composition can affect AHE and MWE.[9] During downturns, AHE/MWE can falsely signal rising wages because lower-earning workers tend to be the first to lose their jobs. Conversely, AHE/MWE can falsely signal falling wages as workers with less wage-earning potential regain employment. Figures 2 and 3 illustrate how AHE and MWE numbers can be pushed downward *even if wage rates are rising*. This is relevant of late as the unemployment rate among those with less educational attainment has fallen faster than for those with higher educational attainment.[10] Longer-term demographic changes can also affect AHE and MWE. For example, as older workers tend to have higher earnings, their retirement from the workforce can move the AHE/MWE measures downward.
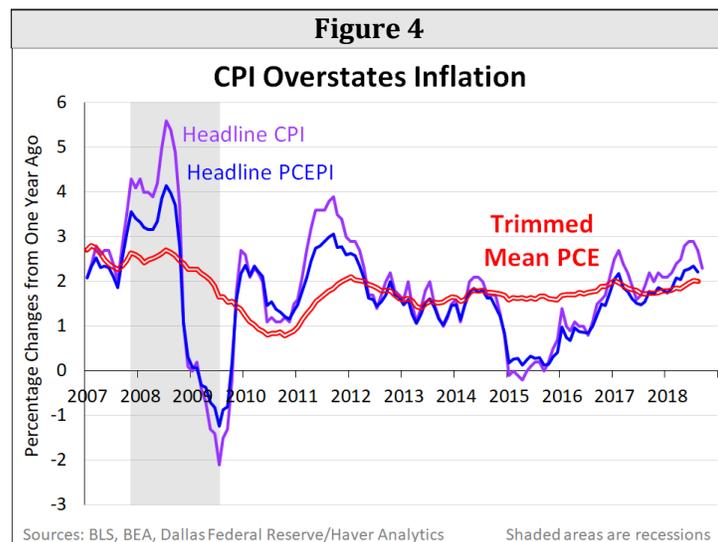
As the composition of the workforce changes, some measures can incorrectly signal stagnant or falling wages, even if hourly pay of workers is rising.

Figure 2	Figure 3
A Changing Workforce Composition Distorts Average Hourly Earnings	**A Changing Workforce Composition Distorts Median Weekly Earnings**

Figure 2 — A Changing Workforce Composition Distorts Average Hourly Earnings

$18 $16 $14 $12 $12 N/A N/A
A B C D E F G

Last Month
Average $14.40/hr

Lower earners get a $1/hr raise, and Persons F & G find jobs

$18 $16 $14 $13 $13 $13 $13
A B C D E F G

This Month
Average $14.29/hr

(Misleading) Headline:
Average Worker "Wages" Falling!

This example applies to BLS's average hourly earnings/real earnings data

Figure 3 — A Changing Workforce Composition Distorts Median Weekly Earnings

$800 $700 **$600** $500 $400 N/A N/A
A B C D E F G

Last Month
Median (C) earned $600/week

Everyone gets a $100/week raise, and Persons F and G find jobs

$900 $800 $700 **$600** $500 $500 $500
A B C D E F G

This Month
Median (D) earned $600/week

(Misleading) Headline:
Median Worker Wages Stagnant!

This example applies to BLS's median usual weekly earnings data

Worker wage measures are often underestimated because the CPI overstates inflation.

(b) The CPI overstates inflation, which biases real AHE/MWE measures downward. According to the Brookings Institution, the CPI overstates inflation by 0.85 percent,[11] which is considerable given that the Federal Reserve's inflation target is 2 percent. The CPI's inherent measurement bias influenced the Federal Reserve to designate the personal consumption expenditures price index (PCEPI) as its preferred inflation gauge.[12] Figure 4 illustrates that the CPI tends to overstate inflation relative to the PCEPI.

The more reliable PCE price index is the Federal Reserve's preferred inflation measure.

Figure 4

CPI Overstates Inflation

Headline CPI
Headline PCEPI
Trimmed Mean PCE

Percentage Changes from One Year Ago

Sources: BLS, BEA, Dallas Federal Reserve/Haver Analytics   Shaded areas are recessions

Transitory price swings in a few goods and services can distort the inflation rate from its actual trend, leading to false signals about the actual path of worker earnings measures.

(c) Transitory price swings in a few goods and services can distort the inflation rate from its actual trend and the real AHE/MWE growth rates by extension. Inflation arises from "too much money chasing too few goods," but headline CPI and PCEPI inflation measures can be affected by unusual price changes in some products. To compensate for this volatility, the Dallas Federal Reserve publishes the Trimmed Mean PCE, which removes the products with the largest upside and downside price swings to better gauge inflation's actual trend. Figure 4 reveals that the headline CPI and PCEPI often deviate far from inflation's underlying trend.

Jared Bernstein, the former chief economist to Vice President Joe Biden, attributes the slowdown in real AHE/real MWE growth rates to "hostile institutions…limiting [workers'] avenues for demanding higher pay."[13] The reality is far simpler. Figure 5 shows the CPI-adjusted AHE growth rates are highly sensitive to large deviations of the CPI from inflation's trend as measured by the Trimmed Mean PCE. High real AHE growth rates were recorded in 2015-2016 when the CPI was below the inflation rate trend. More recently, real AHE growth rates were recorded as the CPI rose above the inflation rate's trend.[14]

Figure 5

Real Average Hourly Earnings is Sensitive to Deviations of CPI from Inflation Trend
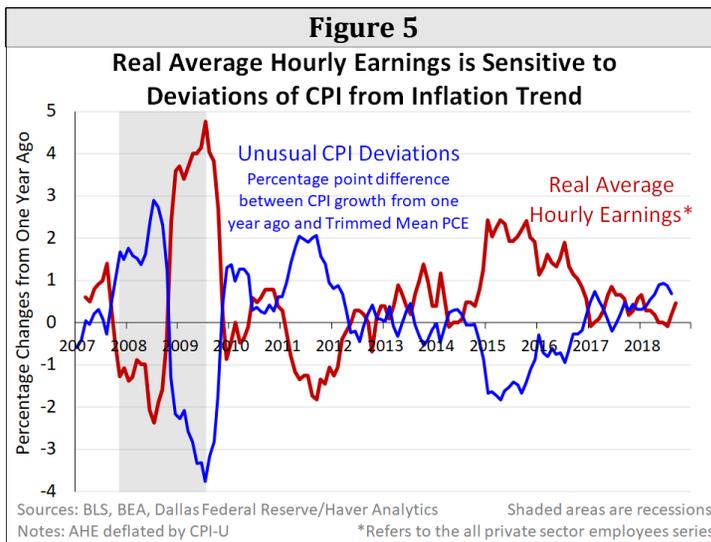
Some transitory price swings obscure workers' real earnings growth.

(d) Strong consumer data suggest strong real wage growth. With the exception of real AHE/MWE data, nearly all economic indicators are currently positive. Inflation-adjusted consumer spending on less essential items, such as full-service restaurants and jewelry, luggage, and leather goods, grew at recovery-high rates in 2018. Figure 6 compares non-essential spending with more essential grocery store spending. The University of Michigan's consumer sentiment index and the Conference Board's consumer confidence index both reached recovery highs in 2018 (see Figure 7).

Strong consumer data contradicts claims that real wages are falling.

Figure 6

Inflation-Adjusted Spending on Non-Essentials Rising

Figure 7
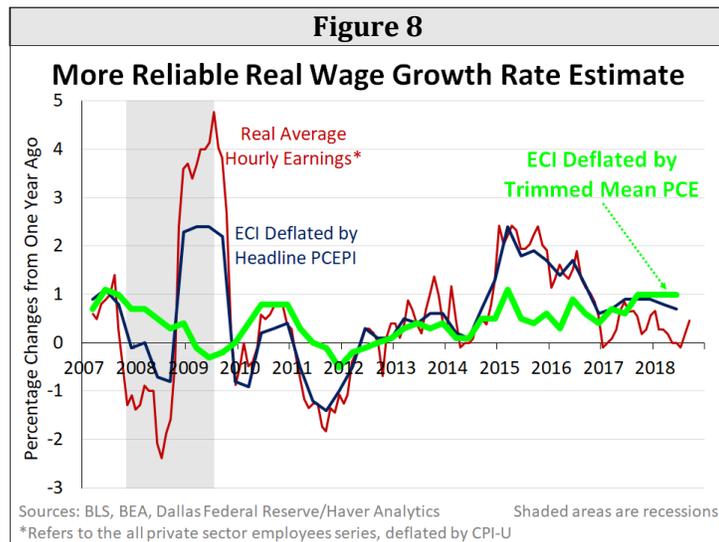
Consumer Confidence and Sentiment
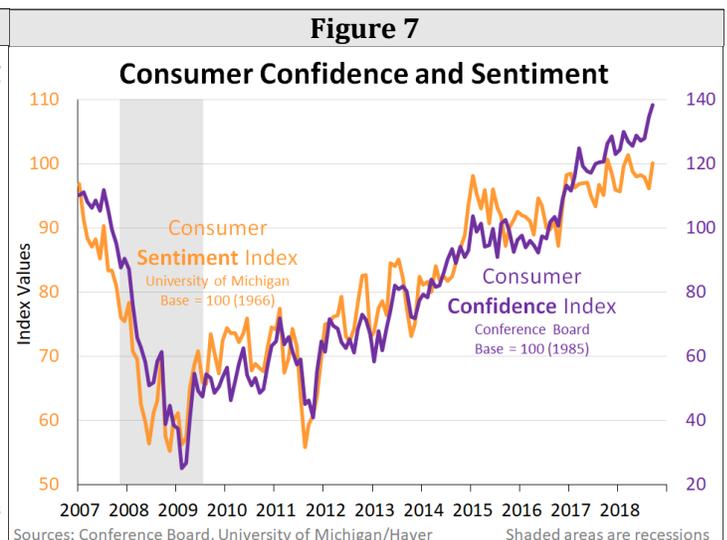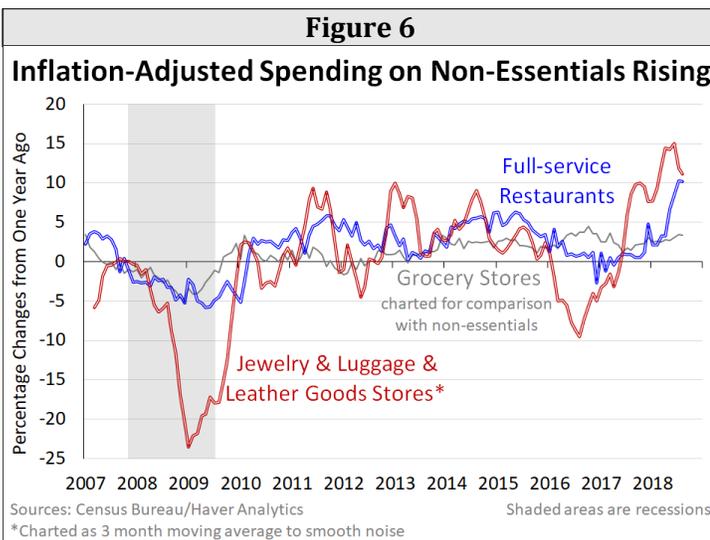
Since all workers are also consumers, this cross-check with consumer data suggest the real AHE/MWE series are not accurately reflecting workers' real wage growth. Meanwhile, household savings rates remain fairly high and stable,[15] suggesting that rising consumption expenditures are being driven by higher incomes.

What is actually happening to real wages? A September 2018 article published by *The Hill* noted:

> "Mark Zandi, chief economist at Moody's Analytics, told *The Hill* in a recent interview that BLS data on average hourly earnings was the worst measure of wage growth because it was skewed by the kinds of jobs that were being created and lost. Zandi argued that the employment cost index [ECI] was a better measure, and that it showed real wages starting to perk up at a rate of roughly 1 percent in real terms."[16]

The Employment Cost Index (ECI) is a more accurate measure of wage and compensation growth.

The ECI is an index of wages for a *particular set* of occupations.[17] Thus, it is much less sensitive to a changing workforce composition than AHE or MWE. Adjusting the ECI for inflation using the PCEPI shows wages in Q2-2018 0.7 percent higher than one year earlier. When ECI is adjusted for inflation with the Trimmed Mean PCE, which more accurately shows inflation's actual trend, the real wage growth rate is trending upward (see Figure 8) and was 1.0 percent in Q2-2018.
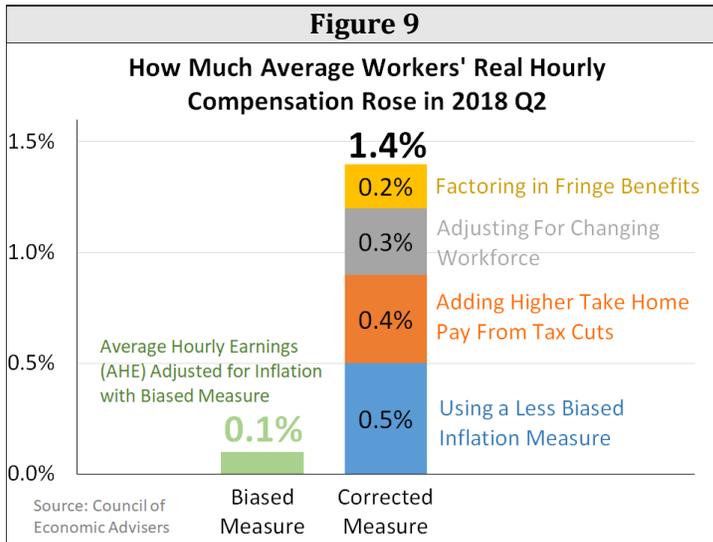

Figure 8

More Reliable Real Wage Growth Rate Estimate

Sources: BLS, BEA, Dallas Federal Reserve/Haver Analytics   Shaded areas are recessions
*Refers to the all private sector employees series, deflated by CPI-U

Workers' inflation-adjusted compensation after taxes are 1.4 percent higher than a year ago, which amounts to $1,000 of additional household income per year, beyond that required to keep up with inflation.

A recent Council of Economic Advisers (CEA) report[18] addressed the aforementioned issues, included fringe benefits, which are not part of the AHE/MWE series, and included the increased take home pay from the Tax Cuts and Jobs Act. The CEA found that workers' real hourly compensation in Q2-2018 was 1.4 percent higher on average than one year ago. This compares with a near-zero percent increase in real AHE using less complete and less reliable measures. In his JEC testimony, CEA chief economist Dr. Casey Mulligan noted:

"When the average real household income grows at 1.4 percent per year, that means an additional $1,000 every year, beyond what is required to

keep up with inflation. The additional income is even greater when we recognize that the average household now has more members with jobs and that each worker is accumulating work experience over time that translates into yet higher pay. None of this is a surprise given that recent Federal policies have been encouraging business formation and removing disincentives to work."[19]
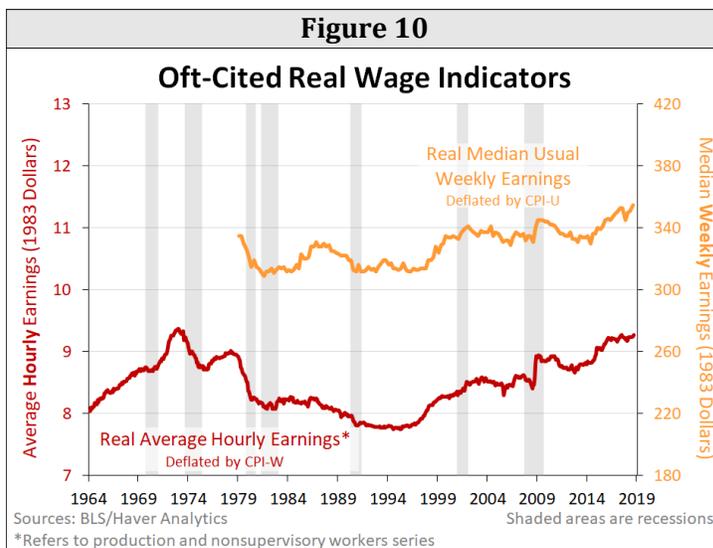
Faster income growth, is not surprising given that recent Federal policies have been encouraging business formation and removing disincentives to work.

Figure 9

How Much Average Workers' Real Hourly Compensation Rose in 2018 Q2

- 0.2% Factoring in Fringe Benefits
- 0.3% Adjusting For Changing Workforce
- 0.4% Adding Higher Take Home Pay From Tax Cuts
- 0.5% Using a Less Biased Inflation Measure

Average Hourly Earnings (AHE) Adjusted for Inflation with Biased Measure **0.1%**

1.4%

Biased Measure   Corrected Measure

Source: Council of Economic Advisers

Section 2. Longer-Run Wage Growth

The CPI-adjusted AHE and MWE data are each only about 6 percent higher than in 1979 (see Figure 10). Moreover, the CPI-adjusted AHE series even suggests that real wages were lower in September 2018 than in 1972. Compared to a more than 50 percent increase in real national income per adult since 1979, this data has led to assertions that a rising tide has not lifted all boats.[20]

Wage stagnation claims are based on before-tax and transfer worker earnings measures that exclude employer-paid benefits and adjust for inflation using the unreliable CPI.

Figure 10

Oft-Cited Real Wage Indicators

Real Median Usual Weekly Earnings
Deflated by CPI-U

Real Average Hourly Earnings*
Deflated by CPI-W

Average **Hourly** Earnings (1983 Dollars)

Median **Weekly** Earnings (1983 Dollars)

Sources: BLS/Haver Analytics
Shaded areas are recessions
*Refers to production and nonsupervisory workers series

However, wage stagnation claims are problematic because they (a) suggest people would be indifferent between living and working in the 1970s and today,

(b) are made using data adjusted for inflation using the unreliable CPI, (c) exclude employer-paid benefits, and (d) do not account for taxes and transfers from the federal government.
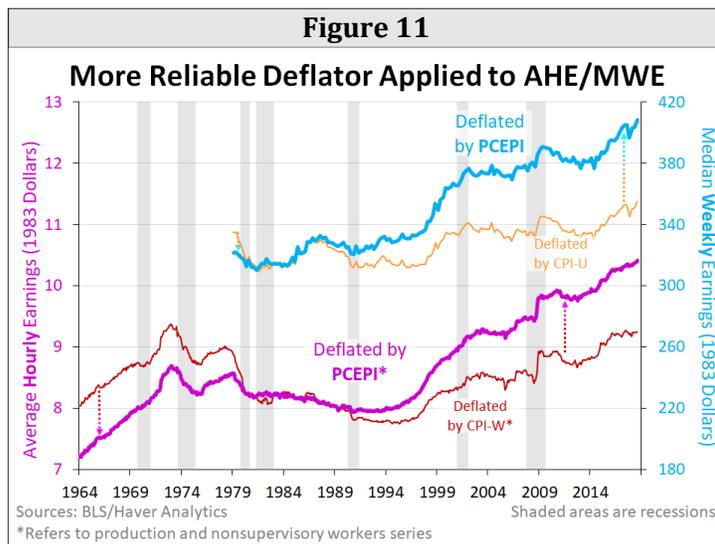
Long-term wage stagnation claims are implausible.

(a) Wage stagnation claims bizarrely imply workers would be willing to live in a world where everything is sold at 1970s prices, but 2018 products are unavailable. A casual comparison of products in the 1970s versus today strongly indicates this suggestion is wrong. The breadth and quality of products have increased tremendously. Furthermore, life expectancy is 5 years longer today than it was in 1979.[21]
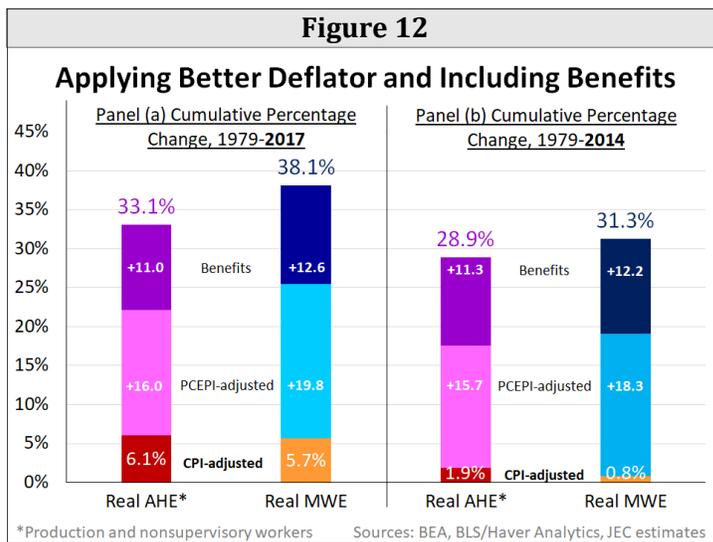

(b) PCEPI-adjusted AHE/MWE measures are 16 to 20 percentage points higher than the CPI-adjusted measures. Respectively, the CPI-adjusted AHE and MWE are a scant 6.1 and 5.7 percent higher in 2017 than in 1979. As the CPI overstates inflation, using the more reliable PCEPI to adjust for inflation changes the picture considerably (see Figure 11). The PCEPI-adjusted AHE and MWE register substantially higher increases of 22.1 and 25.5 percent, respectively.

Worker earnings measures, inflation adjusted by the more reliable PCE price index, are 22 to 26 percent higher than in 1979.

Figure 11

More Reliable Deflator Applied to AHE/MWE

Sources: BLS/Haver Analytics   Shaded areas are recessions
*Refers to production and nonsupervisory workers series

(c) The PCEPI-adjusted AHE/MWE measures are an additional 11 to 13 percentage points higher once employer-paid benefits are counted. Employer-paid benefits have grown over the decades to now constitute over 30 percent of employee compensation. Benefits include paid leave, supplemental pay (such as the bonuses many workers received following the enactment of the *Tax Cuts and Jobs Act*), insurance (e.g., health, life), retirement and savings account contributions, and legally required benefits (e.g., the employer share of payroll taxes). JEC estimates that AHE and MWE measures augmented with benefits and deflated by the PCEPI are a respective 33.1 and 38.1 higher in 2017 than in 1979.[22] These figures are shown in panel (a) of Figure 12 (the 1979-2014 range is shown in panel (b) to facilitate comparison with Congressional Budget Office (CBO) data below).
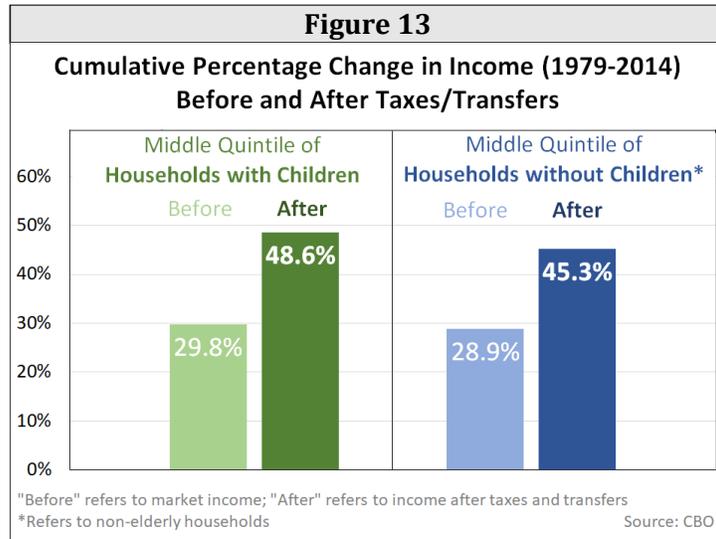
Worker earnings measures augmented by employer-paid benefits and inflation adjusted by the PCE price index are 33 to 38 percent higher than in 1979.

Figure 12

Applying Better Deflator and Including Benefits

Panel (a) Cumulative Percentage Change, 1979-2017

Panel (b) Cumulative Percentage Change, 1979-2014

Production and nonsupervisory workers — Sources: BEA, BLS/Haver Analytics, JEC estimates

(d) Accounting for federal tax and transfer payments adds an additional 16 to 19 percentage points to income growth since 1979. Released in March 2018, CBO's *Distribution of Household Income* report[23] covers the period of 1979 to 2014 (the most recent year that IRS *Statistics on Income* data was available). CBO's data on market incomes (i.e., pre-tax and government-transfers earnings, such as wages and benefits) of the middle quintile of households with and without children are respectively 29.8 and 28.9 percent higher in 2014 than in 1979, which are near JEC's 1979-2014 estimates shown in panel (b) of Figure 12. As Figure 13 shows, *after* federal tax and transfer payments, the incomes of these two household types, are respectively 48.6 and 45.3 percent higher in 2014 than in 1979. (The reason for focusing on particular household types is discussed in Section 3).
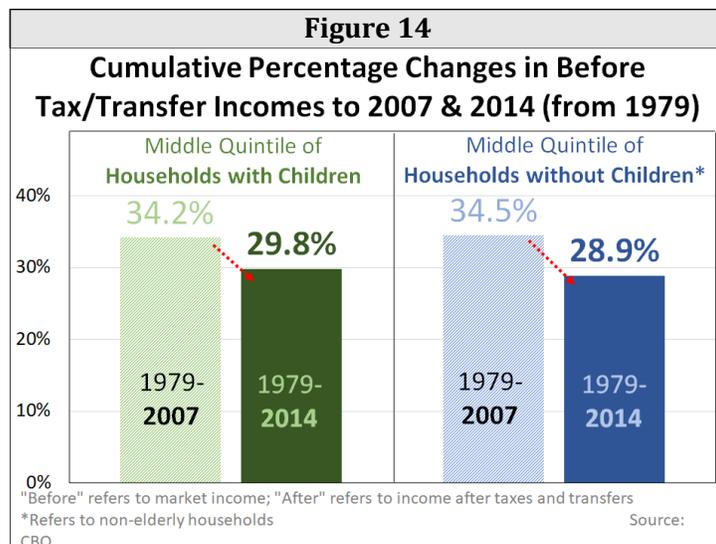
Accounting for federal tax and transfer payments adds an additional 16 to 19 percentage points to income growth.

Figure 13

Cumulative Percentage Change in Income (1979-2014) Before and After Taxes/Transfers

A more reliable inflation measure, including benefits, and accounting for federal taxes and transfers reveals middle quintile households realized nearly 50 percent income growth from 1979 to 2014.

	Middle Quintile of **Households with Children**		Middle Quintile of **Households without Children***	
	Before	**After**	Before	**After**
	29.8%	**48.6%**	28.9%	**45.3%**

"Before" refers to market income; "After" refers to income after taxes and transfers
*Refers to non-elderly households   Source: CBO

Thus, a more reliable deflator, including benefits, and accounting for federal taxes and transfers reveals middle quintile households realized nearly 50 percent income growth from 1979 to 2014, substantially more than the 6 percent growth implied by the CPI-adjusted AHE and MWE, and much closer to the 56.5 percent increase in real national income per adult from 1979 to 2014. However, though economic growth has broadly benefited American workers and families, the cumulative gain in *before*-tax/transfer incomes of the middle quintile of households had not recovered to its pre-recession level by as late as 2014 (see Figure 14).

Figure 14

Cumulative Percentage Changes in Before Tax/Transfer Incomes to 2007 & 2014 (from 1979)

However, pre-tax/transfer incomes of households in the middle-quintile had not recovered to its pre-recession level by as late as 2014.

	Middle Quintile of **Households with Children**		Middle Quintile of **Households without Children***	
	34.2%	**29.8%**	34.5%	**28.9%**
	1979-**2007**	1979-**2014**	1979-**2007**	1979-**2014**

"Before" refers to market income; "After" refers to income after taxes and transfers
*Refers to non-elderly households   Source: CBO

Section 3. Income Inequality

After the last recession, Obama Administration economists projected that their policies would facilitate a robust recovery similar to what typically follows recessions. When this did not materialize—unwilling to admit that their policies failed—they resorted to claiming that slower U.S. economic growth was the "new normal." However, since tax and regulatory reforms began, economic

growth has undeniably accelerated. Now, critics are claiming that the benefits of economic growth are only going to the rich. Such claims are typically based on the research of coauthors Thomas Piketty, Emmanuel Saez, and Gabriel Zucman (PSZ hereafter). Along with Figure 15,[24] the following passage succinctly summarizes their findings:

> "The average pretax income of the bottom 50% of adults has stagnated at about $16,000 per adult (in constant 2014 dollars, using the national income deflator) since 1980, while average national income per adult has grown by 60% to $64,500 in 2014. As a result, the bottom 50% income share has collapsed from about 20% in 1980 to 12% in 2014. In the meantime, the average pretax income of top 1% adults rose from $420,000 to about $1.3 million, and their income share increased from about 12% in the early 1980s to 20% in 2014."[25]

Tax and regulatory reform critics, no longer able to say faster U.S. economic growth is impossible, are now claiming that the benefits are only going to the rich.

Figure 15

Average annual growth by percentile, 1980-2014

Piketty, Saez and Zucman (2017)
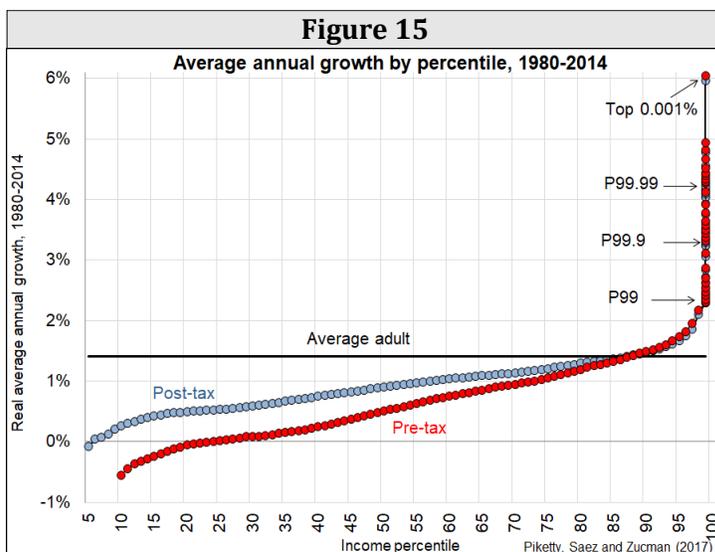
The inferences drawn from this research are misleading because it (a) tacitly assumes people are tethered to their income percentile over their entire lives (i.e., no upward economic mobility), (b) fails to accurately account for the changing demography of American households (i.e., smaller households), and (c) uses income data that is sensitive to the incentives created by a tax regime (i.e., sheltering income from taxation when tax rates are high).

(a) People move through different income percentiles over their lifetimes. David Splinter, an economist currently with the Joint Committee on Taxation, found results similar to PSZ (compare "Cross-section approach" line in Figure 16 to Figure 15),[26] but also looked at how each person who filed income tax returns in 1980 and 2014 progressed over that time. Those in lower income deciles in the 1980s experienced the largest annual real income growth rates over the 1980-2014 period, while those who started in the top in 1980 saw their incomes shrink (see "Panel approach" line).

Lower income groups experienced the largest annual real income growth rates from 1980 to 2014, while those at the top in 1980 saw their incomes shrink.
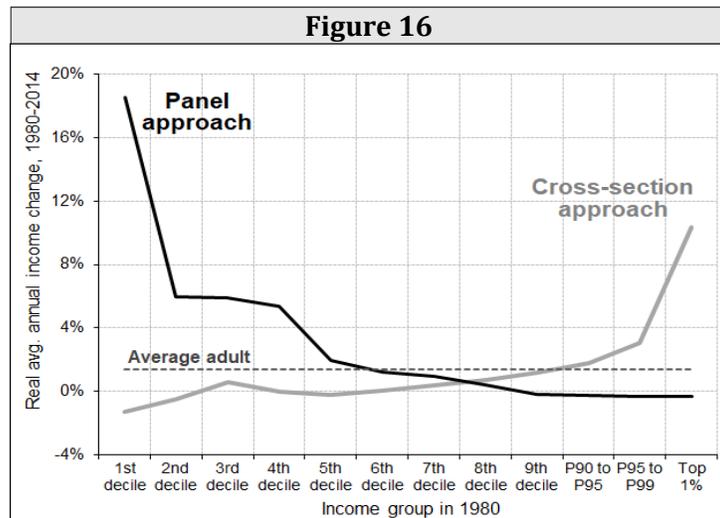
Figure 16

Analogously, as people move through different stages in life, their incomes move into different percentiles. Figure 17, based on Census Bureau data, illustrates that income at the beginning of the average person's working age falls into the second quintile of income earners, then progresses into the middle quintile, and later to the fourth quintile. At retirement age, incomes fall again into lower quintiles as retirees draw down their savings. This pattern repeats itself for each generation.
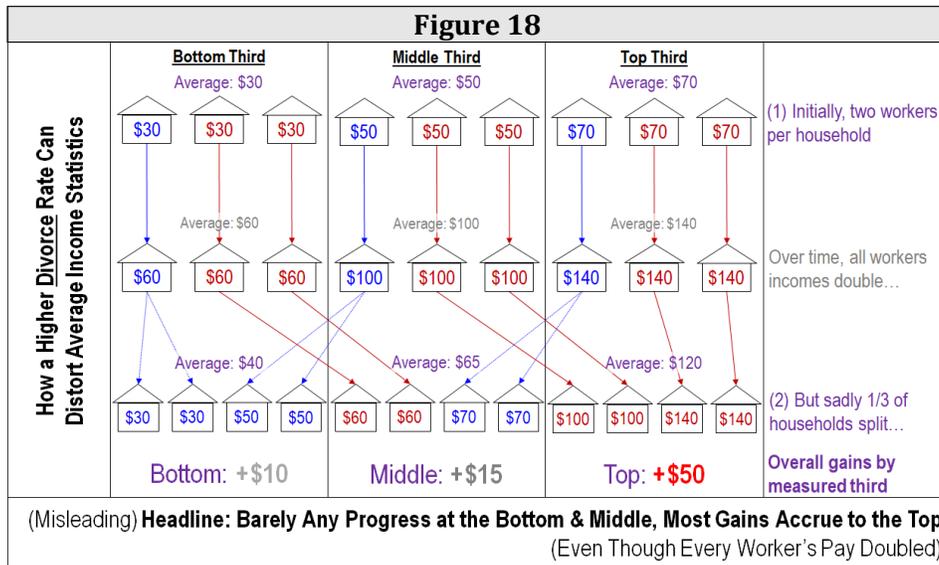
Studies that follow the same people over time consistently find that the largest income gains accrue to the poorest workers and that the richest receive very small income gains.

Figure 17
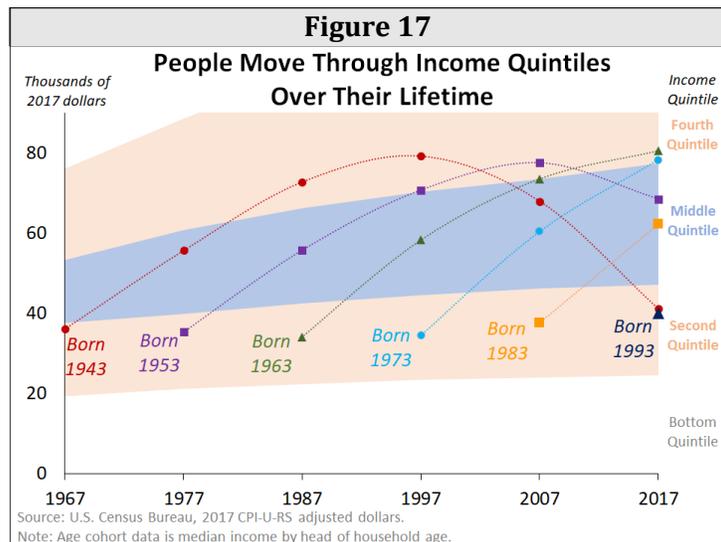
As Dr. Russell Roberts with Stanford University's Hoover Institution noted in his JEC testimony:

> "Studies that use panel data—data that is generated from following the same people over time—consistently find that the largest gains over time accrue to the poorest workers and that the richest workers get very little of the gains. This is true in survey data. It is true in data gathered from tax returns."[27]

(b) Underlying demographic changes are distorting median income statistics downward. A higher divorce rate and an increasing share of the population that is retired can make it appear as if rising income gains are concentrated among higher-earning households. Figures 18 and 19 illustrate how average/median income statistics are skewed by demographic changes, even when everyone's income has doubled.

Figure 18

How a Higher Divorce Rate Can Distort Average Income Statistics

Bottom Third	Middle Third	Top Third	
Average: $30	Average: $50	Average: $70	(1) Initially, two workers per household
$30 $30 $30	$50 $50 $50	$70 $70 $70	
Average: $60	Average: $100	Average: $140	Over time, all workers incomes double…
$60 $60 $60	$100 $100 $100	$140 $140 $140	
Average: $40	Average: $65	Average: $120	(2) But sadly 1/3 of households split…
$30 $30 $50 $50	$60 $60 $70 $70	$100 $100 $140 $140	
Bottom: +$10	Middle: +$15	Top: **+$50**	**Overall gains by measured third**

(Misleading) **Headline: Barely Any Progress at the Bottom & Middle, Most Gains Accrue to the Top**
(Even Though Every Worker's Pay Doubled)

Figure 19

How a Growing Share of Retiring Workers Can Distort Average Income Statistics

Bottom Third	Middle Third	Top Third	
Average: $30	Average: $50	Average: $70	(1) Initially, all households are employed
$30 $30 $30	$50 $50 $50	$70 $70 $70	
Average: $60	Average: $100	Average: $140	Over time, all workers incomes double…
$60 $60 $60	$100 $100 $100	$140 $140 $140	
Average: $0	Average: $73	Average: $127	(2) Then 1/3 of households retire…
$0 $0 $0	$60 $60 $100	$100 $140 $140	
Bottom: -$30	Middle: +$23	Top: **+$57**	**Overall gains by measured third**

(Misleading) **Headline: Bottom Regresses & Middle Sees Few Gains, Most Gains Accrue to the Top**
(Even Though Every Worker's Pay Had Doubled)

U.S. household demographics have changed considerably since 1979, which create an illusion of median income stagnation.
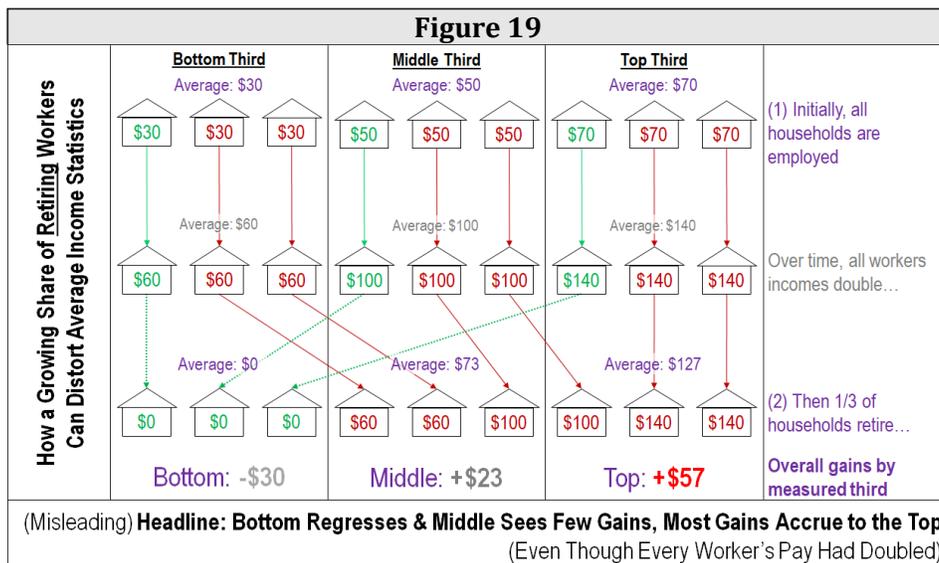
U.S. household demographics have changed considerably since 1979. More single-income earning households are forming as people spend more time in school and earn less income during their formative years, and the age at which people marry is five years later than it was in 1979.[28] A greater share of the population is retired and therefore has little measured market income (e.g., income from employment).[29] The divorce rate is substantially higher[30]—especially among lower-income earners[31]—creating more new households with less combined earnings than those of married couples. Additionally, immigration, which in itself shows that America remains a land of opportunity, is leading to the formation of households that start out with lower incomes.[32]

To better gauge progress, it is essential to disaggregate households into more specific types and compare the performance of similar household types over time, because the median household of 1979 is nothing like the median household today.

When households are aggregated together indiscriminately, the average market income of households in the middle-income quintile registers a cumulative percentage increase of only 9.1 percent since 1979. As Figure 20 shows using CBO data, separating households into more discrete categories yields results that match those found in Section 2: the average market income of the middle quintile of households with no children is nearly 30 percent higher than in 1979, as are the incomes of households with children. While the average market income of the middle quintile of elderly households is 6.8 percent lower than in 1979, this is likely occurring because fewer elderly people need to continue working once they reach retirement age.

It is essential to compare the incomes of more discrete categories of household to better gauge progress over time.

Doing so reveals before-tax/transfer income growth of 30 percent for middle-quintile households, rather than only 9 percent that haphazard aggregation suggests.

Figure 20

Cumulative Percentage Changes in Market Incomes Among Middle Quintiles from 1979 to 2014, by Household Type

Middle Quintile of Households...

Market income refers to wages/salaries, benefits, and income from savings
*Refers to non-elderly households
Source: CBO

It further reveals that middle-quintile household progress was the result of higher incomes from work, not government tax/transfer policies.
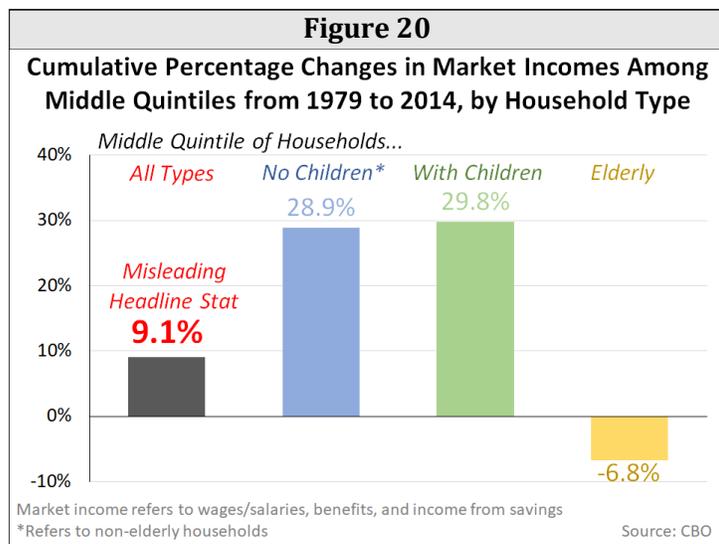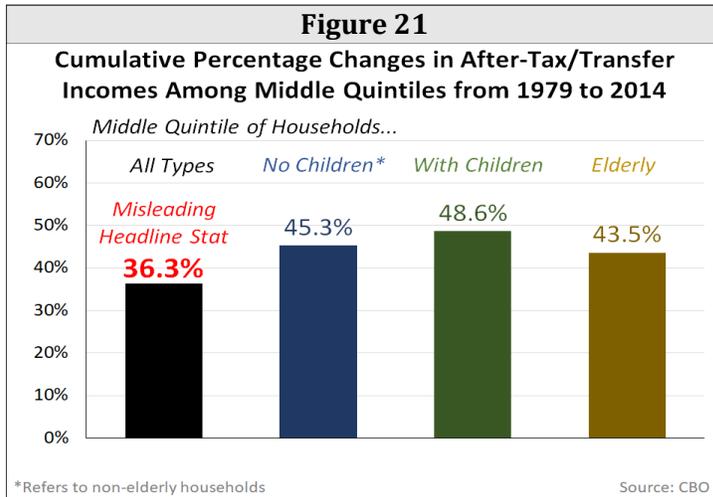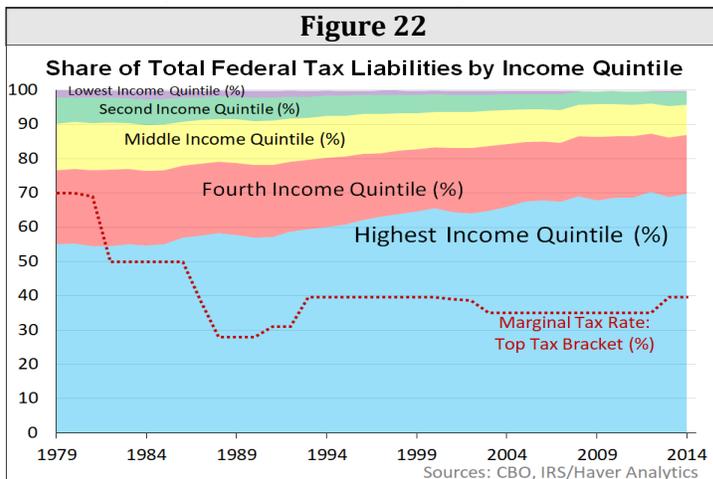
Figure 21 shows the cumulative percentage change in average incomes *after* tax and government transfers among middle quintile households of different types since 1979. Haphazardly aggregating all households together leads to a misleading inference that most of the middle-income quintile growth was due to tax/transfer policies that boosted measured market income growth of just 9.1 percent to a 36.3 percent increase after taxes and transfers (a 26.2 percentage point difference). However, disaggregating households into those with no children and those with children reveals that underlying income growth (i.e., market income) was the relatively stronger driver of overall income growth: For households with no children market income growth is 28.9 percent, but after including taxes/transfer it is 45.3 percent higher, a net increase of 16.4 percentage points. A similar result appears for households with children. The large gain in the middle quintile of elderly households after taxes/transfers suggest that these have allowed the elderly to rely less on being employed, which may help explain the measured decline in their market incomes since 1979.

Figure 21

Cumulative Percentage Changes in After-Tax/Transfer Incomes Among Middle Quintiles from 1979 to 2014

Middle Quintile of Households...

All Types — *Misleading Headline Stat* **36.3%**
No Children* — 45.3%
With Children — 48.6%
Elderly — 43.5%

*Refers to non-elderly households
Source: CBO

This phenomenon of aggregated statistical data contradicting the disaggregated statistical data, is known as "Simpson's paradox." In medical statistics, for example, Simpson's paradox is observed when the use of a drug appears to help treat a disease for *all* treated subjects, but—with the same data—when broken out into small categories (e.g., men and women), actually shows the drug makes the disease worse for each category. In the context of income statistics, the aggregated data suggests stagnating incomes, while the disaggregated data suggests otherwise. The primary takeaway is that it is a mistake to base policy on headline statistics that haphazardly aggregate all household types (and also workers in the case of wage data) together.

Policymakers must beware of "Simpson's paradox," which arises when haphazardly aggregated data falsely contradicts the disaggregated data.

(c) Lower tax rates reduce incentives for tax avoidance, which can cause an increase in *reported* income of higher-earning households. When tax rates are extremely high, such as before the Reagan-era tax reform of the 1980s, those with the highest incomes have relatively stronger incentives to invest differently so as to re-characterize or defer income and avoid reporting it as taxable. When tax rates fall, tax avoidance diminishes, more income is reported among higher earners, and the published data will purport to show more income accruing to them. Figure 22 shows that as the top marginal tax rate fell from 70 to less than 40 percent, the share of federal tax liabilities borne by the highest income quintile rose from 55.1 percent in 1979 to 69.8 percent in 2014.

Figure 22

Share of Total Federal Tax Liabilities by Income Quintile

Lowest Income Quintile (%)
Second Income Quintile (%)
Middle Income Quintile (%)
Fourth Income Quintile (%)
Highest Income Quintile (%)
Marginal Tax Rate: Top Tax Bracket (%)

Sources: CBO, IRS/Haver Analytics

Lower tax rates reduce incentives for tax avoidance, which can cause an increase in reported income of higher-earning households.

Conclusion: It Takes Care to Measure a Dynamic Economy

It is clear that economic growth has, in fact, "lifted all boats" since the 1970s. Unfortunately, some headline statistics do not portray the major changes the economy, labor market, and society have undergone over the last several decades. The market economy broadly facilitates adaption of these changes rather than favoring particular income groups. The prevalence of three-generation households to reduce the cost of living are becoming rarer as increasing prosperity from productivity growth has enabled more people to live independently, while affording the young and the old more freedom to choose whether and when to work. The young go to school longer and more Americans are retiring, which tends to transfer resources to those who do not work from those who do.

Tens of millions of women have gained jobs and advanced from entry-level wages over time. Census Bureau data shows that the 2017 inflation-adjusted median income among women was 82.4 percent higher than in 1980, compared with 13.5 percent among men that tends to receive more attention.

Technology and the skills required of the modern workforce have substantially transformed from those 30 or 40 years ago. Accordingly, wage differentials signal that people may need retraining, relocation, or more technical education. Highly trained professionals may earn large wage premiums and if two form a household, the difference in income compared with households of lower-paid workers can become very large.

This is neither harmful to our society nor a fault of our market economy. As people pursue their best opportunities, their living standards rise and inequality lessens. Upward income mobility is still strong in America. Labor mobility, both geographically and occupationally, remains a hallmark of the American economy. People's earnings continue to rise over their working life, and the flow of immigrants who arrive poor and rise to the middle class or further remains strong. If the stagnation story were true, immigrants would likely stop coming here in large numbers.

Large gains in the quality and variety of products coupled with declining prices make accurately measuring rising living standards virtually impossible. As value is recorded at market prices, a large amount of consumer utility remains uncounted, especially for new products and services available at very low prices or for free (e.g., Facebook, Google). Features, such as the cameras that cost very little on modern cell phones, have all but displaced the entire photography industry.

These dynamics deserve recognition and a dose of humility about what can be reliably measured. Some researchers make strident pronouncements about how most people are worse off or treated extremely unfairly. However, a closer look reveals that such claims are based on data with critical definitional and measurement challenges. Much of this study deals with misconceptions about the lack of growth in incomes and living standards that stem from the exclusion

Economic growth has, in fact, "lifted all boats" since the 1970s.

If the stagnation story were true, immigrants would likely stop coming here in large numbers.

of employee benefits, government transfer payments and taxes, over adjustment for inflation, the declining size of households, lower-paid workers finally finding jobs and higher-paid workers retiring, and related developments.

Progress was disrupted by the 2008-09 recession and the lackluster recovery, but pro-growth regulatory and tax reforms are now "lifting all boats" once again.

Though progress was disrupted by the 2008-09 recession and the lackluster recovery that ensued, recent pro-growth tax and regulatory reforms are "lifting all boats" once again. To avoid forming misguided top-down government policies, policymakers must be careful to not misinterpret headline statistics on average incomes and wages.

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[1] <https://www.jec.senate.gov/public/index.cfm/2018/9/examining-the-rise-of-american-earnings-and-living-standards>.

[2] JEC-Majority note: This is incorrect. It is average hourly *earnings*, not wages. According to BLS: "Averages of hourly earnings differ from wage rates. Earnings are the actual return to the worker for a stated period; rates are the amount stipulated for a given unit of work or time." (https://www.bls.gov/opub/hom/pdf/ces-20110307.pdf, p. 3).

[3] JEC-Majority note: According to BLS: "The series are the average earnings of all employees or all production and nonsupervisory jobs, not the earnings average of 'typical' jobs or jobs held by 'typical' workers. Specifically, there are no adjustments for occupational, age, or schooling variations or for household type or location. Many studies have established the significance of these factors and that their impact varies over time." (https://www.bls.gov/news.release/realer.htm).

[4]<https://www.jec.senate.gov/public/index.cfm/democrats/2018/9/heinrich-opening-statement>.

[5] Published in nominal terms in BLS's monthly *Employment Situation* reports, one series measures AHE of all (private-sector) employees (coverage begins 2007) and AHE of production and nonsupervisory workers (coverage begins 1964). The latter represent over 80 percent of all private-sector employees.

[6] MWE is published quarterly by Haver Analytics from the Census Bureau's *Current Population Survey* (CPS). It is based on what household survey respondents report as their "usual" earnings. CPS is also the survey BLS uses to compute the unemployment rate in its *Employment Situation* releases.

[7] When the CPI series is released monthly, BLS also releases its *"Real Earnings"* report, which deflates the all private industry employees AHE using the CPI-U and the production and nonsupervisory employees AHE using the CPI-W. MWE is deflated by the CPI-U.

[8] Though Ranking Member Heinrich is referencing the production and nonsupervisory variant of the real AHE series, the all private-sector employees AHE series shown in Figure 1 is 98 percent correlated with it (in terms of year-over-year percentage changes).

[9] According to BLS "fluctuations and varying trends in employment in high-wage versus low-wage industries as well as wage rate changes influence the earnings averages" (https://www.bls.gov/news.release/realer.htm).

[10] <https://www.jec.senate.gov/public/index.cfm/republicans/2018/8/pro-growth-policies-benefit-workers-left-behind-in-the-obama-recovery>.

[11] <https://www.brookings.edu/wp-content/uploads/2018/07/Moulton-report-v2.pdf>, p. 6.

[12] <https://www.federalreserve.gov/faqs/economy_14400.htm>.

[13] <https://www.nytimes.com/2018/07/18/opinion/wage-stagnation-unemployment-economic-growth.html>.

[14] JEC estimates that 94.6 percent of the variations in the CPI-adjusted AHE growth rates are explained by the deviation of the CPI from inflation's trend rate (as measured by Dallas Federal Reserve's Trimmed Mean PCE).

[15] According to BEA data retrieved from Haver Analytics, between January 2017 and August 2018 the personal saving rate (personal saving as a percentage of disposable personal income) averaged 6.8 percent with a range of 6.2 to 7.4 percent.

[16] <https://thehill.com/policy/finance/405167-white-house-contests-wage-data-compiled-by-federal-agency>.

[17] To maintain comparability with AHE, only the private-sector wage/salary component was used here.

[18] <https://www.whitehouse.gov/wp-content/uploads/2018/09/How-Much-Are-Workers-Getting-Paid-A-Primer-on-Wage-Measurement-Sept-2018.pdf>.

[19] <https://www.jec.senate.gov/public/_cache/files/54573072-71d9-491e-9532-6d7b04f338d7/180926mulligan.pdf>, p. 2.

[20] JEC calculated this number by subtracting inflation-adjusted consumption of fixed capital from real gross national income (BEA), and dividing by the number of adults ages 20 and over. Between 1979 and 2014 this value is 56.5 percent, while fore 1979-2017, it is 59.7 percent. This method was adopted to approximate Piketty, Saez, and Zucman (2018)'s findings that national income per adult ages 20 and over was 60 percent higher than in 1980.
Piketty, Saez, and Zucman (May 2018). "Distributional National Accounts: Methods and Estimates for the United States." *Quarterly Journal of Economics*, Vol. 133, Issue 2, p. 557. (http://gabriel-zucman.eu/files/PSZ2018QJE.pdf).

[21] National Center for Health Statistics data retrieved from Haver Analytics.

[22] To estimate total compensation, *C*, (wages, *W*, plus benefits, *B*) JEC used the following procedure: The BLS Employer Cost for Employee Compensation (ECEC) report's 2012 average hourly wage/salary and average benefits earned per hour worked was used as a base. The growth rates of the ECI wage index and benefits index was used to extrapolate the 2012 ECEC data back to the early 1980s and forward to 2017 in dollars per hour terms, and the ratio of benefits to wages (*B/W*) was derived from these values. A regression of *B/W* over time yielded its

annual trend growth rate, which was used to extrapolate B/W back to 1979. Since $C = W + B$, and $C = W + (B/W)*W$, total compensation measures were derived applying AHE and MWE as proxies for W and B/W estimates. Since AHE only covers private-sector employees the ECEC/ECI's private-sector wage and benefit indices were used to calculate the B/W applied to AHE. The MWE samples all civilian workers, therefore, the ECEC/ECI civilian data was used to estimate the B/W ratio applied to MWE.

[23] <https://www.cbo.gov/publication/53597>.

[24] http://gabriel-zucman.eu/files/PSZ2017MainData.xlsx, sheet "F2a", retrieved from <http://gabriel-zucman.eu/usdina/>.

[25] Piketty, Saez, and Zucman (May 2018). "Distributional National Accounts: Methods and Estimates for the United States." *Quarterly Journal of Economics*, Vol. 133, Issue 2, p. 557. (http://gabriel-zucman.eu/files/PSZ2018QJE.pdf).

[26] <http://davidsplinter.com/Splinter-Mobility_and_Inequalitya.xlsx>, sheet "F1", retrieved from <http://davidsplinter.com/>.

[27] <https://www.jec.senate.gov/public/_cache/files/28ce882c-7ea8-4ff1-b8e1-7fd1cd3011c3/180926roberts.pdf>, p. 2.

[28] In 1979, 3.1 percent of the U.S. resident population was enrolled in college full time, as of 2016, it was 4.5 percent (Census Bureau, retrieved from Haver Analytics).

[29] The median age at first marriage for men/women in 1979 was 24.4/22.1 years, rising to 29.5/27.4 years by 2017 (Census Bureau, retrieved from Haver Analytics).

[30] <https://www.washingtonpost.com/news/wonk/wp/2015/06/23/144-years-of-marriage-and-divorce-in-the-united-states-in-one-chart/?noredirect=on&utm_term=.4b7ddd39a4b0>.

[31] <https://ifstudies.org/blog/a-closer-look-at-the-jobs-with-the-highest-and-lowest-divorce-rates>.

[32] The rate of which green cards are conferred per year relative to the U.S. population's size has risen from 0.176 percent in 1979 to 0.366 percent as of 2016 (Department of Homeland Security, retrieved from Haver Analytics).