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DISTRIBUTING PERSONAL INCOME: TRENDS OVER TIME

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ABSTRACT

This paper constructs a distribution of Personal Income for the United States (2007-2016) to investigate the relationship between inequality and macroeconomic growth. We extend a perspective first presented in Fixler and Johnson (2014) and further developed in Fixler et al. (2017) and Fixler, Gindelsky, and Johnson (2018, 2019) to develop a national account-based measure using a decade of publicly available survey, tax, and administrative data. By using (equivalized) households as the base unit of analysis and focusing on a more inclusive definition of income than most inequality studies (i.e., including health, transfers, and financial assets), we improve on existing economic measures of inequality in a meaningful way and bridge the gap between micro data and macro statistics. We produce a wide set of inequality results over the period, drawing a comparison with other studies (including Auten and Splinter (2019) and Piketty, Saez, and Zucman (2018)).

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Distributing Personal Income: Trends Over Time

By Dennis Fixler, Marina Gindelsky, and David Johnson[1]

As GDP has continued to grow post-Great Recession, attention has turned to what is "Beyond GDP" – a concept intended to focus on additional measures of economic and social performance (Stiglitz et al. 2018). Much of the discussion has focused on income distribution. The inferences one makes necessarily depend on the income measures used; there are a variety of views about the proper measure. Some like Piketty, Saez and Zucman (PSZ, 2018) and Auten and Splinter (2019) use Federal Income tax data and focus on individuals. The treatment of the 1986 tax law by the latter significantly affects the results, such that the authors obtain different conclusions. The Census Bureau produces a household distribution of their money income concept, based on data collected in the Current Population Survey (CPS).

In this paper, we extend a perspective first presented in Fixler and Johnson (2014) and further developed in in Fixler, Gindelsky and Johnson (2018, 2019), and Fixler et al. (2017) that produces a distribution of Personal Income, a concept based on the National Income and Product Accounts (NIPA).[2] In our view, if there is to be an evaluation of the distribution of economic growth, such as that measured by the growth in GDP, then it is necessary to have a concept of income that is based on the same accounting principles as GDP.

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[2] Details of the BEA work can be found here.

By constructing this measure from publicly available microdata for 2007-2016, we investigate the relationship between the distribution of aggregate growth and trend in inequality over a volatile period, which includes the Great Recession. PSZ (2018), Auten and Splinter (2019) and Zwijneneburg (2019) focused on the top of the income distribution. Our analysis examines the entire income distribution. We compare our inequality metrics for equivalized personal income to comparable metrics produced by academics and statisticians.

This paper uses publicly available survey data, tax records, and administrative data for 2007-2016 to distribute Personal Income. Section I describes the measurement and definition of income while Section II presents the data and methodology for this exercise. Section III presents the results and Section IV concludes.

I. Measuring Income

As in previous exercises, we first evaluated the source of the gap between the micro and macro data. Fixler and Johnson (2014) demonstrated that the aggregate level of income is much lower than the comparable aggregate income in the NIPA.[3] However, there are a few considerations when using the CPS. First, it is important to assess whether the difference between CPS totals and NIPA totals is likely due to under-reporting in the CPS or "missing" high-income individuals from the CPS. If the source of the gap were entirely due to under-reporting, we could close the gap by substituting tax data for the income components of the CPS. Many researchers have attempted to match household survey data to tax or earnings records (see Burkhauser et al. (2017), Bollinger et al. (2019), Rothbaum (2015)).

[3] Rothbaum (2015) recently provides a detailed comparison for each income source.

In Fixler, Gindelsky and Johnson (2018), we examined the usefulness of matching the CPS to the tax data and compared the universe in each. Following the method of Fixler and Johnson (2014) and Fixler et al. (2017), we showed that the substitution of income tax variables for the CPS income variables is not a panacea for mis-reporting problems. Moreover, we showed that there is little to gain in terms of differences between matched and unmatched files.[4] Accordingly, in this paper we use the public use file of the CPS and an alternative strategy for adjusting the top tail of the distribution using tax data, described in the next section.[5]

Our goal, as described in earlier research, is to create a distribution for the US National Account concept of *Personal Income (PI)*, which is the income received by persons from participation in production, from government and business transfers, and from holding interest-bearing securities and corporate stocks.

It is natural to look at the PI income concept for decision making, especially for consumption, because PI is income accruing to households. Even though PI includes income received by nonprofit institutions serving households, by private non-insured welfare funds, and by private trust funds, household income comprises about 99% of PI. PSZ, however, use National Income (NI) claiming: "[it is] in our view a more meaningful starting point, because it is internationally comparable, it is the aggregate used to compute macroeconomic growth, and it

[4] More specifically we found that the difference between CPS and SOI variables was not unidirectional across income categories; the differences were positive and negative across income categories.

[5] Note that this strategy differs from the strategy of Fixler, Gindelsky, and Johnson (2019) which involved estimating Pareto coefficients on 1040 data. The results that we obtain using the current adjustment method for top shares closely match those we obtained in our earlier analysis.

is comprehensive, including all forms of income that eventually accrue to individuals." (p. 561) PI and NI are fairly close in aggregate and trend.[6]

II. Data and Methods

Our overall purpose is to move from Census money income in the CPS into the NIPA concept of Personal Income.[7] This entails two fundamental steps: adjusting the Census money income concept to that of PI and then allocating national totals to households. More specifically, the transformation involves 4 broad categories: Adjusted Money Income (AMI), Financial (F), Health (H), and Other Transfers (net) (T). Overall, the strategy used in this exercise was as follows: 1) Identify a NIPA total to be distributed, 2) Identify a CPS variable(s) which can be used to allocate this total, 3) Sum all component NIPA totals to subtotals of interest and Personal Income, and 4) Construct inequality statistics.[8] Consistent with previous analyses, our exercise starts in 2007 due to the availability of our component data sources, particularly Medicare data (per capita expenditures by state).

1. Outside data sources

SOI: Before moving from money income to personal income, we enhance the upper tail of the CPS by adjusting certain income sources**.** We utilize data from the IRS Statistics of Income (SOI) program to adjust the top of the income distribution (or "tail") in order to more accurately

[6] PI=NI –[corp. profits + taxes on production + contributions for gov. soc. ins. + net interest + bus. current transfer + current surplus of gov. enterp.] + [personal income receipts on assets + personal current transfer receipts]. However, PSZ do not use the components used in the NIPA measure of NI (in the formula above).

[7] It is important to note that the income data in the CPS is one year behind the year the CPS is collected ("survey year").

[8] For detail on the distribution of each of these categories, please see Gindelsky (2020) at https://www.bea.gov/data/special-topics/distribution-of-personal-income

reflect true inequality (both in the top and overall), thought to be underestimated in the CPS. There are several reasons we make an adjustment to CPS data. 1) As mentioned in Section I, the CPS is believed to unsuccessfully survey those with very high incomes. 2) There is a perception that there is underreporting by those with top incomes. 3) The CPS has top codes, which vary by year, for those with top incomes so as not to risk identification of those individuals. For example, if an individual reports he/she has $10m annually for example, he/she may be given a value of $1m. For these reasons, it is prudent to adjust CPS incomes (Burkhauser et al. 2018, Bollinger et al. 2019). The total difference between the NIPA aggregate and the CPS aggregate is proportionally allocated for 6 components (Wages, Business Income, Ordinary Dividends, Taxable & Non-taxable Interest Income, Farm Income, and Rents and Royalties) using information available from the SOI regarding the portion of the income source for those whose income is >=$500k and those whose incomes <500k.[9]

CBO: The Congressional Budget Office (CBO) uses an algorithm they developed to assign probabilities of receipt of Supplemental Security Income (SSI), Medicaid, and Supplemental Nutrition Assistance Program (SNAP) to each individual in the CPS for a given survey year. Once the CBO assesses recipiency, they assign values to those households (Habib 2018)**.** We use imputed CBO values available in a crosswalk rather than reported CPS values for these variables in order to correct for underreporting in these important transfer categories.

[9] For example, in 2012, 53% of AGI for Ordinary Dividends in the SOI data is at least 500k. The NIPA total for dividend income is $808b while total weighted CPS dividend income is $123b. That leaves $808b-$123b=$685 to be allocated to CPS households as follows: 53% of $685b=$363b to households in Group 1 (Incomes >=$500k) and 47% of $685b = $322b to households in Group 2 (Incomes <500k). Each household then receives extra dividend income proportional to its share of dividend income in its group such that aggregate weighted household dividend income (original + extra) will sum to $808b.

SCF: We use three asset variables from the Summary Extract Public Dataset of the Survey of Consumer Finances (SCF) in order to distribute the three imputed components of personal income.[10] First, households are placed into before-tax income bins. The share of the total asset variable held by all households in the given bin is calculated. The CPS households are placed into the same income bins by adjusted money income. The NIPA totals are then allocated by the distribution of each of these asset variables (e.g., share of asset variable by income bin) to the CPS households in the respective bins.

CE: We use the Consumer Expenditure Survey from the Bureau of Labor Statistics to impute rental income for owner-occupied housing. Using this data source, we first rank "consumer units" (roughly the same as households) by before-tax income, creating deciles. We next construct a share of rental equivalence to before-tax family income. For example, if a household's income is $100,000 and they report that the expected monthly rental value of their home is $4,000, their rent-to-income share would be: 4,000 x 12 / 100,000 = 0.48. The median share is calculated for each income decile. This share is then applied to income deciles in the CPS for households that own their home to impute a value of rental income for owner-occupied housing based on household income.

2. Computations of Subtotals

Adjusted Money Income: In order to move from Money Income (as defined by the Census) to Personal Income, we first adjust Money Income in order to be consistent with the concepts

[10] Because the SCF is triennial, we interpolate the SCF variables for the years in which the SCF is not observed using the Fernandez procedure, which extends the Denton and Chow-Lin approaches. The results of this method very closely match the results of the FRB's interpolation used in their DFAs.

using in the NIPA estimates. Though Census money income in many ways is a narrower definition of income, it does include variables that are not in personal income, such as retirement disbursements. Accordingly, we add up the components of Census money income that are in Personal Income, excluding variables that are not. We call this approximation Adjusted Money Income.[11] It is primarily comprised of income from Wages & Salaries (and supplements), Self-Employment (Farm & Nonfarm), Interest, Dividends, and Social security income, which together sum to 95% of Adjusted Money Income in 2016. The other 5% is comprised of income from additional sources such as rents & royalties, unemployment insurance, and disability income among others.

Financial Items: This category is the sum of allocations for pension and profit sharing, life insurance, rental income from owner-occupied housing, and imputed interest.

Health Items: This category is the sum of allocations for employer contributions for health insurance, Medicare, Medicaid, military medical insurance, and other medical care payment assistance.

Other Transfers (net): This group imputes transfers in the NIPAs that are not contained in Adjusted Money Income or Health to CPS households. These items include employer and

[11] Retirement disbursements are one of the main exclusions, constituting approximately 75% of money income excluded. Adjusted Money Income also excludes potential sources of intrasectoral transfers, which would net out in the sector and are not associated with current period production, such as other financial assistance (*fin-val)*, "other" income (*oi-val)*, alimony (*alm-val)*, child support (*csp-val)* and "other" non-institutional educational assistance (*ed-val)*. We do include incomes from these sources tied to railroad retirement, "other" retirement, worker's compensation, black lung benefits, and state/local government disability. For more details, see Gindelsky (2020).

employee contributions for government social insurance (net): SNAP, WIC, Refundable tax credits, energy assistance, educational assistance, and other transfers.

We then calculate household income as the sum of Adjusted Money Income, Financial, Health, and Other Transfers (net). Finally, to calculate Personal Income from Household Income, *Household Current Transfer Receipts from Nonprofits* and *Nonprofit Institution Transfer Receipts from Households* are deducted, and *Nonprofit Institution Income* is added. This residual is distributed equally to all individuals in the CPS.

After all components have been added together to compute personal income, equivalized personal income is calculated by dividing personal income by the square root of the number of household members.[12] Equivalized personal income is used for all income inequality metrics. There are four strategies which involve imputations derived from external datasets.

III. Results

Our first objective is to create a distribution of NIPA Table 2.9 which decomposes Personal Income into several income components. We will then analyze the levels and trends in inequality which result from the calculation.

[12] There are other equivalence scales that are prevalent in the inequality literature which weight children less than adults including the OECD scale, the similar Census Bureau method. Other methods include calculation of inequality based on individuals. The choice of equivalence scale can significantly affect the subsequent inequality estimates.

1. Decomposing Personal Income

Personal Income can be decomposed into: Compensation of Employees, Proprietors' Income with Inventory Valuation and Capital Consumption Adjustment, Rental Income of Households with Capital Consumption Adjustment, Household Income Receipts, and Household Current Transfer Receipts, less Contributions to government social insurance. Households are ranked by equivalized personal income and each income category is distributed, with results by quintile in Table 1 below.[13]

Table 1: Components of Personal Income by Quintile (2016)

	0-20%	20%-40%	40%-60%	60%-80%	80%-100%
Personal Income	6%	10%	13%	19%	52%
Household Income	6%	10%	13%	19%	52%
Compensation of Employees	3%	7%	13%	24%	52%
Proprietors' income with inventory valuation	1%	1%	4%	10%	85%
Rental Income of Households with Capital Consumption Adjustment	6%	10%	13%	18%	52%
Household Income Receipts on Assets	2%	3%	5%	11%	79%
Household Interest Income	3%	4%	8%	16%	70%
Household Dividend Income	0%	1%	2%	5%	92%
Household Current Transfer Receipts	18%	26%	25%	16%	14%
Government Social Benefits	17%	27%	26%	16%	14%
From Business (net)	18%	19%	20%	21%	22%
From Nonprofit Institutions	30%	13%	16%	19%	22%
Less: Contributions for government social insurance, domestic	4%	7%	13%	25%	50%

In Table 1, we can see that household income receipts on assets dominate the top quintile, whereas government social benefits accrue mainly to the bottom quintiles. At least half the group share of *Compensation of Employees, Proprietors' income, Rental Income, Household Income Receipts on Assets*, and *Contributions for Government Social Insurance* is held by the top

[13] Breakouts by decile are available here.

quintile. However, for *Household Current Transfer Receipts*, the share among the quintiles is more equally distributed. The results of that group are dominated by *Government Social Benefits,* which mainly includes Social Security, Medicare, Medicaid, Unemployment insurance, and Veterans Benefits. Business transfer payments is primarily net insurance settlements.

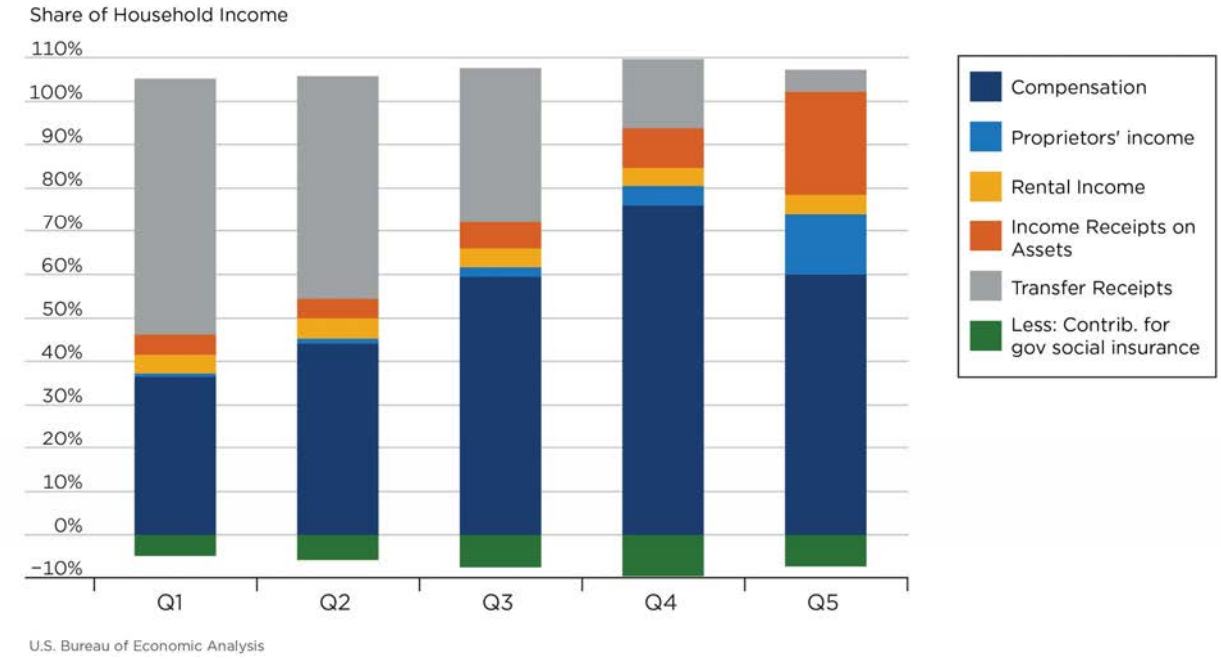
Table 2 shows the real growth for the major components by quintile from 2007-2016. Real personal income grew for every quintile over the period (approx. 15% for the bottom four quintiles and 20% for the top). However, while income in every category grew for the top quintile, household income receipts on assets and proprietors' income fell for the bottom four quintiles. Rental Income grew strongly across all quintiles.

Table 2: Real Growth in Major Components of Personal Income by Quintile 2007-2016

	0-20%	20%-40%	40%-60%	60%-80%	80%-100%	Overall
Personal Income	15.5%	14.0%	15.2%	16.4%	20.3%	17.9%
Compensation of Employees	-3.8%	0.7%	1.6%	10.8%	16.7%	11.1%
Proprietors' income with inventory valuation	-41.3%	-35.9%	-23.6%	-3.4%	37.3%	25.8%
Rental Income of Households with Capital Consumption Adjustment	238.0%	284.5%	264.7%	244.8%	205.1%	228.1%
Household Income Receipts on Assets	-7.4%	-17.7%	-14.1%	-0.8%	4.8%	2.0%
Household Current Transfer Receipts	31.7%	27.6%	49.4%	52.3%	52.4%	40.5%
Less: Contributions for government social insurance, domestic	-0.6%	2.6%	3.4%	12.8%	19.6%	13.3%

Figure 1 below presents an alternative way to examine these categories by quintile. Here we can see that transfer receipts make up the majority of their income. In contrast, compensation and income receipts on assets make up the majority of the income for the top quintiles.

Figure 1: Share of Household Income for each Contributing Component by Eq. Quintile (2016)



Note: Contributions for government social insurance are a subtraction such that all components sum to 1 for each quintile.

Next, we can examine whether this relationship is stable over time in Table 3 by looking at the percentage point change in quintile from 2007-2016.

Table 3: Percentage Point change in Contributing Components by Quintile 2007-2016

	0-20%	20%-40%	40%-60%	60%-80%	80%-100%
Compensation of Employees	-7.7	-6.0	-8.2	-4.1	-2.0
Proprietors' income with inventory valuation	-0.8	-0.9	-1.2	-0.9	1.8
Rental Income of Households with Capital Consumption Adjustment	2.8	3.3	2.9	2.7	2.6
Household Income Receipts on Assets	-1.2	-1.7	-2.1	-1.5	-3.4
Household Current Transfer Receipts	6.0	4.6	7.6	3.5	1.0
Less: Contributions for government social insurance, domestic	0.9	0.7	0.9	0.3	0.1

There have been substantial changes in the contribution of the components of PI. Compensation has decreased as a share of household income over time, while transfers have

increased proportionally over time. For example, while 44.1% of income for the first quintile is derived from compensation in 2007, only 36.4% is derived from compensation in 2016 (thus a difference of -7.7 percentage points). These trends are especially pronounced for the bottom quintiles. The share of rental income (composed of (1) owner-occupied housing, and (2) rents & royalties) has gone up for every quintile, while the share of income receipts on assets (composed of monetary interest and dividends) has gone down for every quintile. Compensation has declined and transfers have increased (relatively) for the bottom quintiles. Another way of looking at the makeup of personal income is to analyze the transition from Adjusted Money Income to Personal Income in Table 4 below.

Table 4: Decomposition of Personal Income for Households (2016)

	Totals ($Billions)	Equivalized Household Average
Money Income (Census)	10,495	54,392
Adjusted Money Income	11,851	61,214
Transfers	1,299	7,466
Plus Financial	1,963	10,011
Plus Health	1,936	10,138
Transfers	1,244	6,706
Plus Other Transfers (net)*	367	1,665
Equals: Household Income	16,117	83,028
Plus NPISH (net)	…	…
Equals: Personal Income	16,121	83,052

* "Other Transfers (net)" includes the net of all transfers that are not already included above as part of Adjusted Money Income and Health respectively. NPISH (net) represents a statistical aggregate used to move from Household Income to Personal Income.

Table 4 shows that though 65% of Personal Income is composed of Adjusted Money Income, Financial items, Health items, and transfers also play a significant role in the aggregate. Though transfers are smaller in the aggregate, they are significant in the average (19%) and

comprise about 66% of the Health items. These results are consistent with the heavy impact of transfers evident in the previous tables and charts.

2. Inequality

Turning to the results for income inequality, we can examine trends over time, starting with Table 5 below. We calculate numerous metrics including income levels (real mean and median), quintiles, top shares, the 90/10 ratio and the Gini index. Note that we further decompose the top quintile into 80-99% and top 1%. By looking at these measures together, we are able to gain a better understanding of the distribution overall. In real terms, mean (and median) equivalized personal income increased 9.2% over the 2007-2016 period, as compared to 8.2% for equivalized money income (Census).

However, most of that increase takes place over the second half of the period (recovery) after the initial decrease during the Great Recession. Top shares fell slightly during the peak of the recession (2008-2009). Indeed, overall inequality changed little from the beginning of the period to the end, as measured by the Gini and top 1% share. In 2016, the distribution is similar to 2007.

Table 5: Inequality Metrics for Real Equivalized Personal Income (2007-2016) in 2012$

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*	*2016*
Mean ($2012)	73,072	72,892	70,678	71,909	72,932	74,378	73,743	75,873	78,663	79,788
Median ($2012)	50,467	50,278	49,802	50,790	50,051	50,002	50,492	50,802	53,101	53,586
0-20%	5.7%	5.9%	5.8%	5.9%	5.9%	5.6%	5.6%	5.5%	5.6%	5.6%
20%-40%	10.0%	10.2%	10.4%	10.4%	10.2%	9.9%	9.9%	9.7%	9.7%	9.6%
40%-60%	13.6%	13.6%	14.1%	14.1%	13.9%	13.7%	13.8%	13.5%	13.3%	13.3%
60%-80%	19.5%	19.5%	19.9%	20.1%	19.5%	19.3%	20.0%	19.5%	19.3%	19.3%
80%-100%	51.2%	50.7%	49.8%	49.4%	50.5%	51.5%	50.7%	51.8%	52.1%	52.2%
80%-99%	38.5%	37.8%	38.1%	37.5%	38.0%	38.0%	38.4%	39.2%	39.3%	39.5%
Top 1%	12.7%	12.9%	11.7%	11.9%	12.5%	13.4%	12.3%	12.6%	12.9%	12.6%
Top 5%	26.2%	26.4%	24.9%	24.8%	25.9%	27.0%	25.8%	26.5%	26.8%	27.0%
90/10	5.762	5.505	5.522	5.480	5.625	5.854	5.789	5.922	5.635	5.559
Gini	0.442	0.440	0.427	0.427	0.441	0.453	0.444	0.451	0.445	0.445

Though there are small shifts year to year due to economic conditions and the impacts of tax law change on income reporting (see 2012-2014 in particular).[14] For example, between 2010 and 2011, the share received by the top quintile increased from 49.4 to 50.5 percent. This translates into a large share of the growth 2010-2011 for the top quintile (80% as shown in Figure 4).

Of the overall growth of Personal Income of 17.9% over the 2007-2016 period, 2% went to the top 1% and 8% went to the 80-99% such that the share of the top quintile increased from 51.2 to 52.2. The net effect was a 1 percentage point increase in the share of the top quintile (though not driven by the top 1%) accompanied by a slight decrease in the share of the middle quintiles. In 2016, those in the top quintile have real ($2012) equivalized personal income of at least $97k, while those in the bottom quintile have at most $33k.

To put these metrics into context, we can compare the top 1% share of Equivalized Personal Income to similarly calculated top shares from other studies in Table 6 below, including both the Before-tax-and-transfer and After-tax-and-transfer measures from PSZ, the Auten and Splinter (A&S) before-tax-and-after-transfer measure, and the After-tax-and-transfer measure from CBO (which also included capital gains). Although we utilize some different data sources and methodology (by construction) than A&S, the top 1% shares are similar.

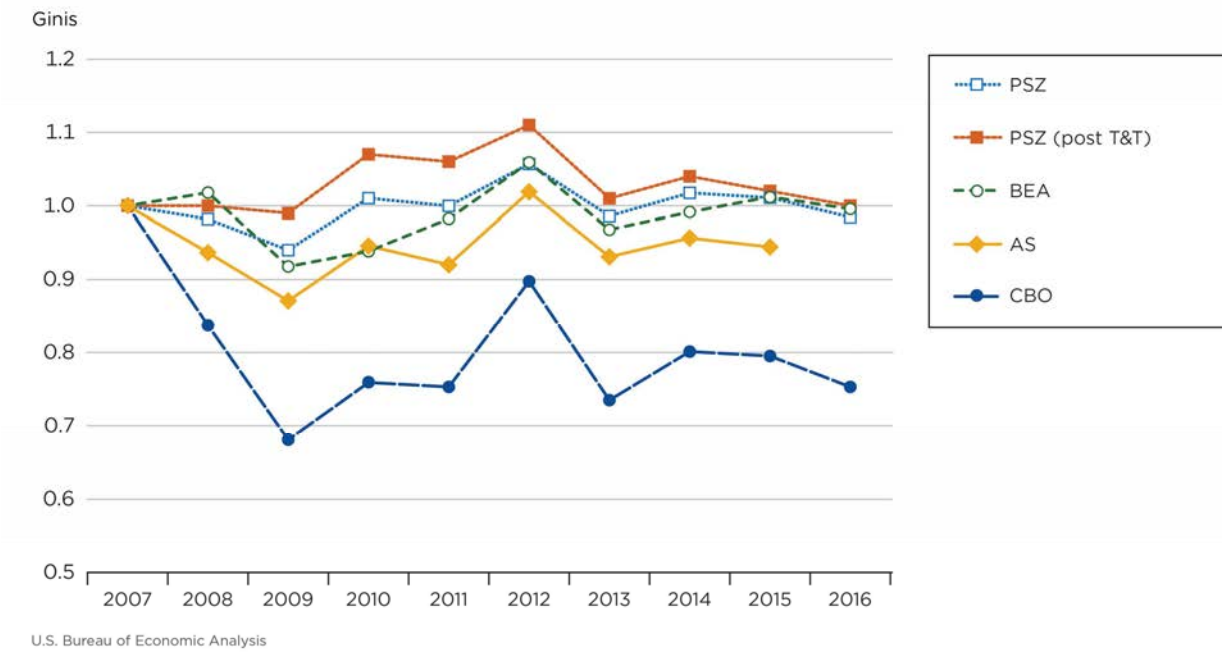
[14] The American Taxpayer Relief Act of 2012 changed how capital gains were taxed. This led to a change in reporting – some high-income households shifted the realization of some capital gains into the prior tax year to avoid the higher rates, causing income inequality to rise (particularly top shares) in 2012 and subsequently fall in 2013 (CBO 2018).

Table 6: Comparison of Top 1% Share

	2007	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*	*2014*	*2015*
BEA	12.7%	12.9%	11.7%	11.9%	12.5%	13.4%	12.3%	12.6%	12.9%
A&S Before-tax, After-transfer	12.9%	12.1%	11.3%	12.2%	11.9%	13.2%	12.1%	12.4%	12.2%
PSZ After taxes and transfers	15.3%	15.2%	15.1%	16.3%	16.2%	17.0%	15.5%	15.8%	15.6%
CBO (post tax and transfer)	16.6	13.9	11.3	12.6	12.5	14.9	12.2	13.3	13.2

In addition, Figure 2 shows that the overall trends in the PSZ measures are similar to the BEA trends.[15] We can also plot these trends over time (relative to 2007) in Figure 2 below. BEA estimates generally follow the same trend.

Figure 2: Relative Movements in Top 1% over Time: Comparing Across Measures (2007=1)



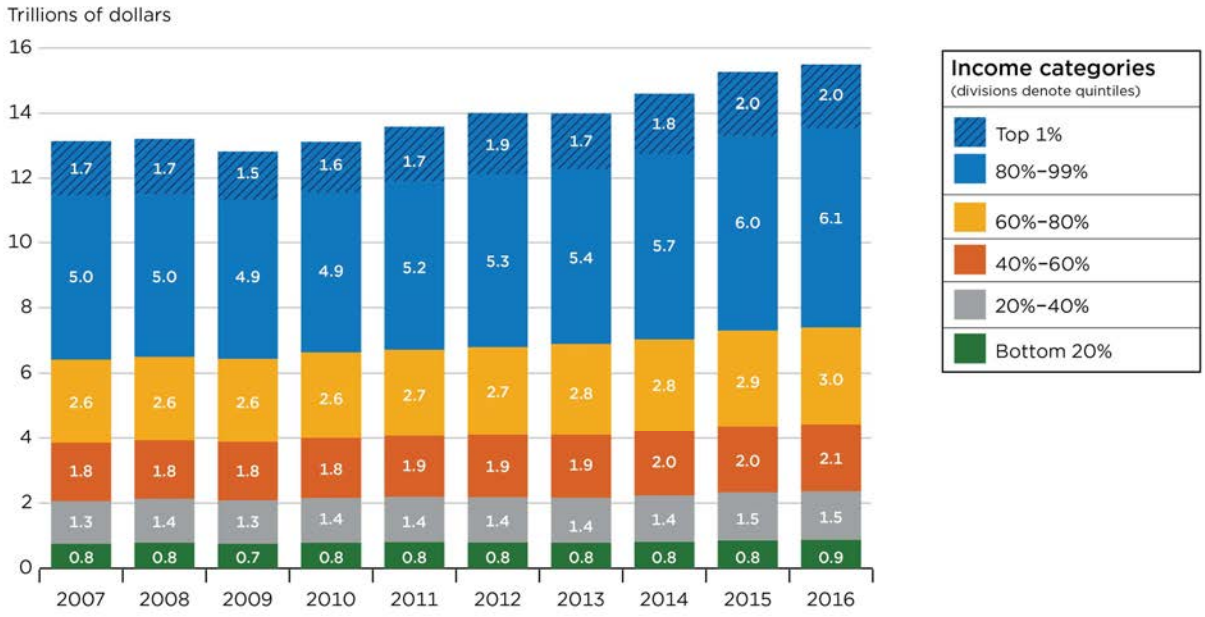
In Figures 3 and 4 below we can see how each income category (quintiles and top 1%) of BEA personal income grew over the period. A distinction must be made between the share of a

[15] For additional comparisons see Gindelsky, et al. (2020)

group as a whole (e.g., total income of those in the 3rd quintile/total income) and total income of the group. Although the lowest three quintiles grew very little over the period, all income groups did grow from 2010 onwards as seen in Figure 3 below.

In Figure 4, the height of each stacked bar shows the growth in real personal income over one year. Each portion is the contribution of each quintile (or top 1%) from for a given year. For example, the contribution of the top 1% to overall growth in Real PI ($2012) from 2009-2010 = $Top\ 1\%\ Share_{2010} * \frac{Real\ PI_{2010}}{Real\ PI_{2009}} - Top\ 1\%\ Share_{2009}$. Of the 2.3% growth in PI from 2009-2010, 0.5% accrues to the top 1%. This means that the top 1% receives 0.5/2.3 = 21.7% of the growth.

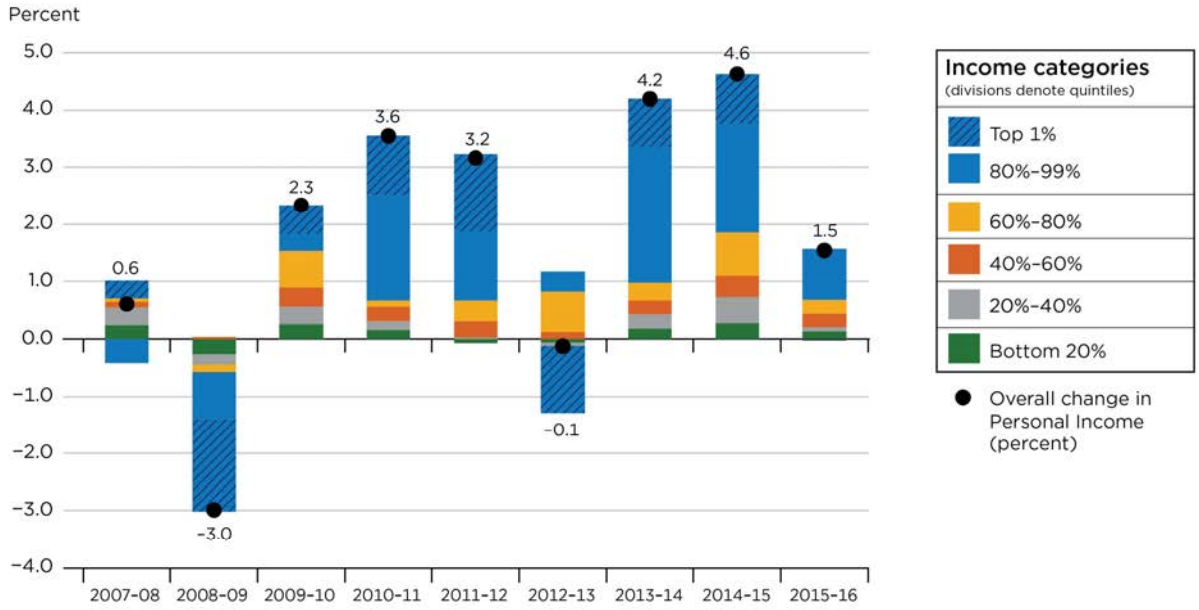
Figure 3: Real Personal Income (Trillions of Dollars) by Income Category (2012=100)



As Figures 3 and 4 show, in addition to Table 5, there is minimal change in the distribution over this period. As such, over the entire period, the distribution of growth is similar to the distribution in 2007. The overall growth of 17.9 percent for the entire period yields 58 percent for the top

quintile; the top quintile share increases from 51.2 percent to 52.2 percent. Across the period, there was some growth for the top quintile during the recovery (1-2% annually), for both the 80-99% and the top 1%. Note that the growth in top 20% is not due to the growth in the top 1%.

Figure 4: Annual Growth in Real Personal Income by Income Category



IV. Conclusion

The aim of this paper is to describe BEA's new measure introduce a new measure, the Distribution of Personal Income, and provide an analysis of inequality levels and trends for 2007-2016. In doing so, we have built on several previous works (Fixler, Gindelsky and Johnson (2018, 2019); Fixler et al. (2017); Fixler and Johnson (2014)). The current methodology extends the time series and allocates NIPA totals to households using publicly available microdata, with the CPS as the base dataset for distribution to households. In doing so, we provide new insights into inequality trends while facilitating transparency and replicability.

Several key results emerge from our analysis. First, inequality has changed little over the 2007-2016 period; the slight increase derives from growth in the share of the top quintile. Second, BEA's estimates are in line with other prominent inequality estimates both in level and trend when the definition of "income" is close, even with different methodology and data used. Third, there has been some substantial change in the composition of Personal Income across the period. Over the period, compensation has decreased as a share of household income over time, while transfers have increased proportionally. These trends are seen most strongly in the bottom quintiles. Fourth, real mean and median income have increased over the period, with gains made by every income quintile. Finally, the effects of the Great Recession and subsequent gradual recovery can be seen very clearly to be affecting all income categories.

We view this exercise as an important step in furthering the discussion not only on inequality statistics, but also on working to close the often-cited "macro-micro" gap which exists in estimates of income distributions. While this is an important first step, there remains much more work that can be done in this area.

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