A Distribution of Personal Income

Dennis Fixler (BEA), Marina Gindelsky (BEA),
and David Johnson (University of Michigan)

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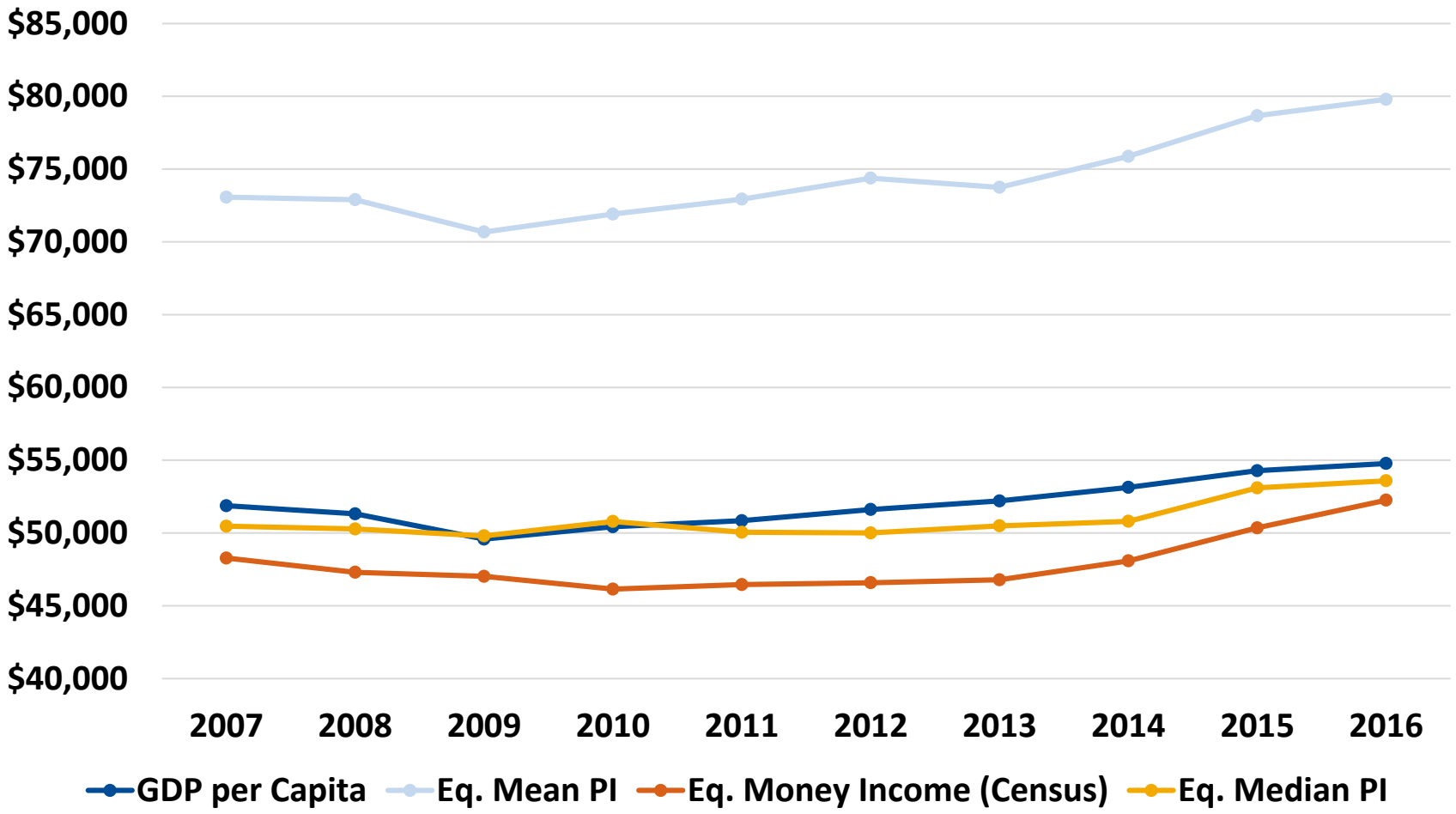
Inequality and Growth

- Popular perception
  - GDP is growing, but so is inequality
  - Household income is decreasing, e.g., well-being is falling
  - Households do not share in economic growth: only the top 1% see growing incomes

- What the data shows (2007-2016)
  - Personal Income is growing for all quintiles
  - 58% of growth in Personal Income accrued to top quintile over period
  - Inequality is virtually unchanged - top shares have not risen

Growth over Time (Real $2012)



Note: Estimates are deflated using PCE. Money income is recalculated according to the census definition.

Presentation Plan

- Discussion of existing work
- Outline of methodology
  - Strategy
  - Discussion of challenges
- Presentation of prototype results
- Analysis of inequality trends
- Conclusion

What's Been Done

- A lot!
- Previous work by BEA: Fixler et al. (2014, 2017, 2018, 2019)
- Key studies based on tax data:
  - National income: Piketty, Saez, Zucman (PSZ, 2018), Auten and Splinter (2019)
  - Market Income: CBO
- Key studies based on CPS: Census (money income) metrics, Armour et al. (2016), Bollinger et al. (2019), Rothbaum (2015)
- Important differences between methods
  - Base data set
  - Income definition
  - Unit of Measurement
  - Equivalization methods

What We Do

- Construct a new distribution of Personal Income from publicly available data to provide insight into the income distribution
  - CPS ASEC is base dataset
  - Additional data sources

- Describe our methodology in a technical document and provide context for our estimates in a BEA working paper

Results

- Tables (2007-2016) for each year
  1. Deciles of PI for NIPA Table 2.9
  2. Decomposition of PI (AMI, Health, Finance, other Transfers)
  3. Inequality metrics
- Charts (2007-2016)
  1. Real PI ($2012) by quintile 2007-2016
  2. Annual growth in PI, contributions by income category

Features of Methodology

- Methodology is transparent and can be adapted by data users

- We adjust the "tail" (top incomes) using aggregated tax data from IRS (SOI) – matches Fixler, Gindelsky, and Johnson (2019) using Pareto adjustment on tax data

- We allocate PI, not GDP
  - 87% of GDI (the income counterpart of GDP)
  - Most appropriate national accounts concept for households
  - Distribute Table 2.9 to separate out NPISH
  - Adjust for household size (i.e., "equivalize"): accounts for resource sharing in households

Strategy

All data sources used to allocate components of PI are publicly-available

1. Identify a NIPA total to be distributed: 60 components of PI

2. Identify CPS variable (s) (+ outside data) to allocate component

   - SOI: adjust “tail” (underreported top incomes)
   - CBO: imputations for Medicaid, SNAP, and SSI
   - SCF: imputed interest
   - CE: rental equivalence
   - CMS: Medicare

3. Sum all component NIPA totals to subtotals of interest and PI

- **Adjusted Money Income (AMI)**
  - E.g., wages and business income allocated using CPS var with SOI adjustment
- **Financial (F)**
  - E.g., imputed interest allocated using information from SCF
- **Health (H)**
  - E.g., Medicare using CPS var for recipiency; Medicaid using CBO crosswalk
- **Other Transfers (net) (T)**
  - E.g., WIC using CPS var; SNAP using CBO crosswalk

Household Income = AMI + F + H + T

Personal Income = Household Income - *Household Current Transfer Receipts from Nonprofits - Nonprofit Institution Transfer Receipts from Households + Nonprofit Institution Income*

Data and Measurement Challenges

- Data challenges
  - No access to micro tax data
  - Availability of source data – time lag
  - No corresponding microdata for some macro concepts (e.g., imputed interest)
- Measurement challenges
  - Designing allocation algorithm for each source
  - Extent of underreporting in CPS differs by income source and income group – intensive and extensive margins
  - Consistency of variable definitions over time

Next, we present the prototype results from the BEA website

Table 1: Major Components of Personal Income by Decile, 2016

Bureau of Economic Analysis
U.S. DEPARTMENT OF COMMERCE

Line	Income component	Total (Billions of dollars)	0–10% (percent)	10%–20% (percent)	20%–30% (percent)	30%–40% (percent)	40%–50% (percent)	50%–60% (percent)	60%–70% (percent)	70%–80% (percent)	80%–90% (percent)	90%–100% (percent)
1	Personal income	16,121.2	2.1	3.5	4.4	5.2	6.1	7.2	8.6	10.6	14.6	37.6
2	Household income	16,116.6	2.1	3.5	4.4	5.2	6.1	7.1	8.6	10.7	14.6	37.6
3	Compensation of employees	9,960.3	1.2	2.2	3.1	4.0	5.4	7.7	10.5	13.9	18.6	33.4
4	Proprietors' income with inventory valuation	1,423.7	0.2	0.3	0.6	0.7	1.3	2.2	3.7	6.3	13.5	71.2
5	Rental income of households with capital consumption adjustment	669.1	2.0	3.6	4.8	5.7	6.3	6.9	8.4	10.1	13.7	38.6
6	Household income receipts on assets	2,469.2	0.8	0.9	1.2	1.6	2.1	3.1	4.6	6.6	11.2	67.9
7	Household interest income	1,437.7	1.2	1.5	1.9	2.4	3.2	4.5	6.5	9.2	14.5	55.0
8	Household dividend income	1,031.5	0.1	0.2	0.2	0.4	0.7	1.2	2.0	3.2	6.9	84.9
9	Household current transfer receipts	2,834.2	6.9	11.0	12.5	13.9	13.9	11.4	9.1	7.3	6.9	7.1
10	Government social benefits	2,691.9	6.3	11.2	12.7	14.2	14.1	11.5	9.2	7.1	6.7	6.9
11	From business (net)	40.5	9.0	9.1	9.3	9.8	10.1	10.3	10.5	10.5	10.6	10.9
12	From nonprofit institutions	101.8	21.7	8.5	5.7	7.4	7.8	7.7	7.6	11.6	11.0	11.0
13	*Less*: Contributions for government social insurance, domestic	1,239.9	1.4	2.4	3.3	4.1	5.5	7.9	10.8	14.2	19.2	31.2

Table 2: Decomposition of Personal Income for Households (2016)

Line	Income concept	Totals ($B)	Household average (equivalized)	Real household average (equivalized) (2012=100)
1	Money income (Census)	10,494.6	54,392.1	52,254.4
2	Adjusted money income	11,850.9	61,214.5	58,808.6
3	*Transfers*	1,299.0	7,466.4	7,172.9
4	***Plus:*** Financial	1,963.2	10,010.6	9,617.1
5	***Plus:*** Health	1,935.6	10,137.5	9,739.1
6	*Transfers*	1,243.9	6,705.9	6,442.4
7	***Plus:*** Other transfers (net)	366.9	1,665.4	1,600.0
8	***Equals:*** **Household Income**	16,116.6	83,027.9	79,764.8
	Plus: **NPISH (net)**	...	...	...
9	***Equals:*** **Personal Income**	16,121.2	83,052.2	79,788.1

Table 3: Inequality Metrics (2016)

Line	Inequality metric	Household income	Personal income
1	Mean (2016)	$127,683.2	$127,719.2
2	Mean ($2012)	$122,665.0	$122,699.5
3	Equivalized mean (2016)	$83,027.9	$83,052.2
4	Equivalized mean ($2012)	$79,764.8	$79,788.1
5	Median (2016)	$84,727.2	$85,042.5
6	Median ($2012)	$81,397.3	$81,700.2
7	Equivalized median (2016)	$55,579.5	$55,778.1
8	Equivalized median ($2012)	$53,395.1	$53,585.9
9	0-20%	5.5%	5.6%
10	20%-40%	9.6%	9.6%
11	40%-60%	13.2%	13.3%
12	60%-80%	19.3%	19.3%
13	80%-100%	52.3%	52.2%
14	80%-99%	39.6%	39.5%
15	Top 1%	12.7%	12.6%
16	Top 5%	27.0%	27.0%
17	90/10	5.617	5.559
18	Gini index	0.446	0.445

Where Do Adjusted Incomes Fall in the Quintiles?	
Bottom 20%	$0 to $34,125
20%-40%	$34,125 to $47,234
40%-60%	$47,234 to $65,520
60%-80%	$65,520 to $100,544
80%-100%	$100,544+

Chart 1: Real Personal Income by Category (2012=100)

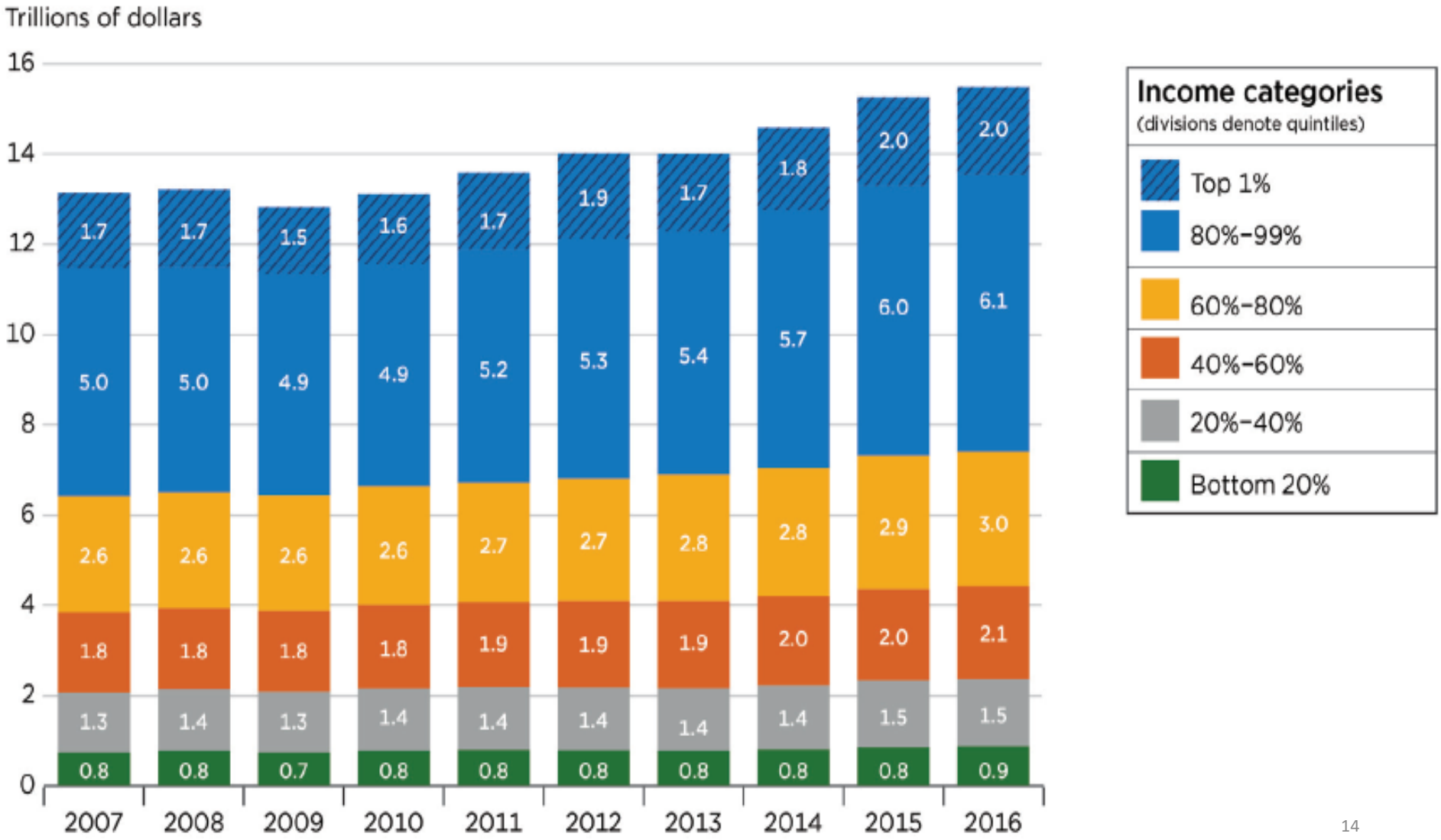
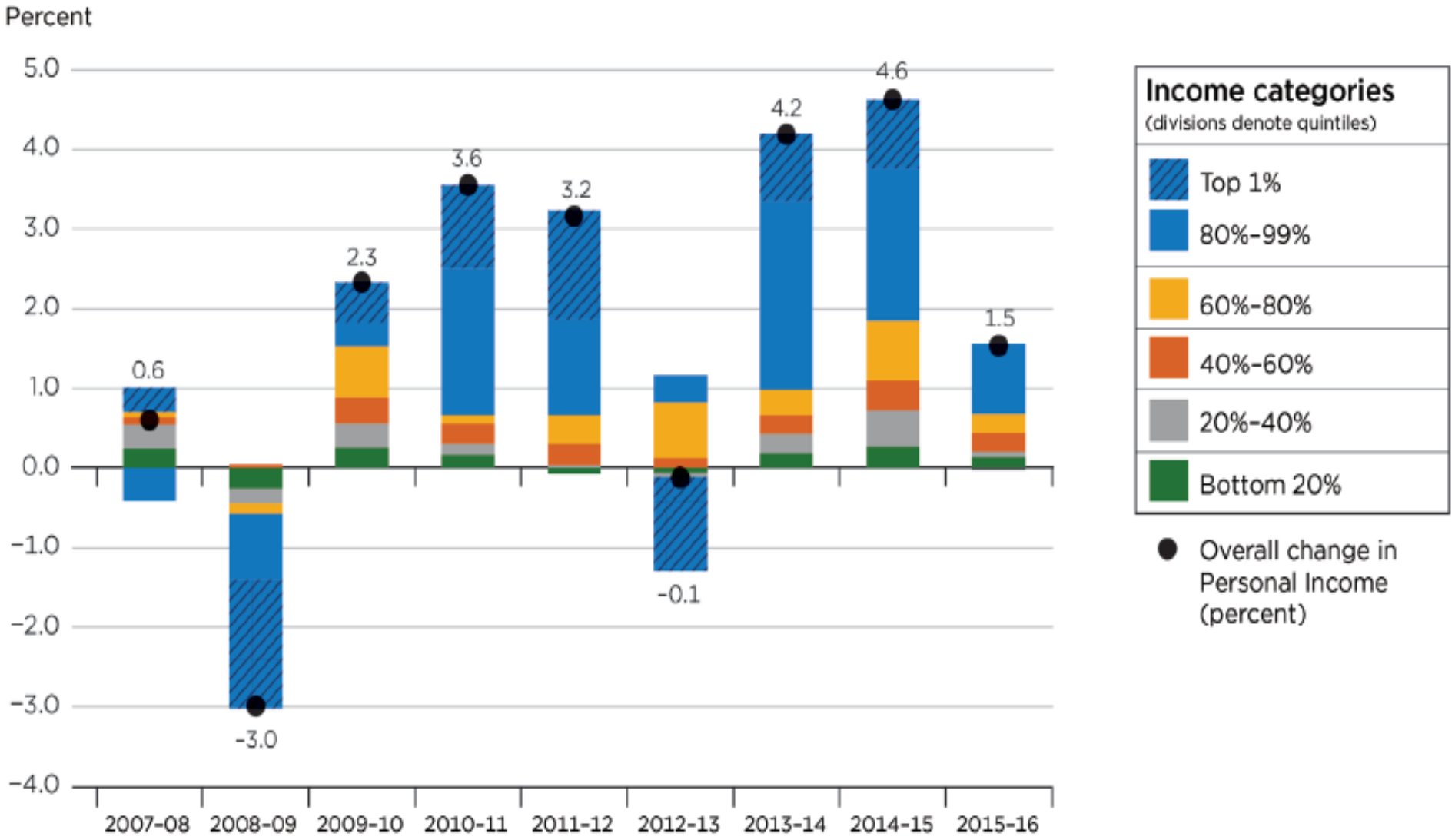


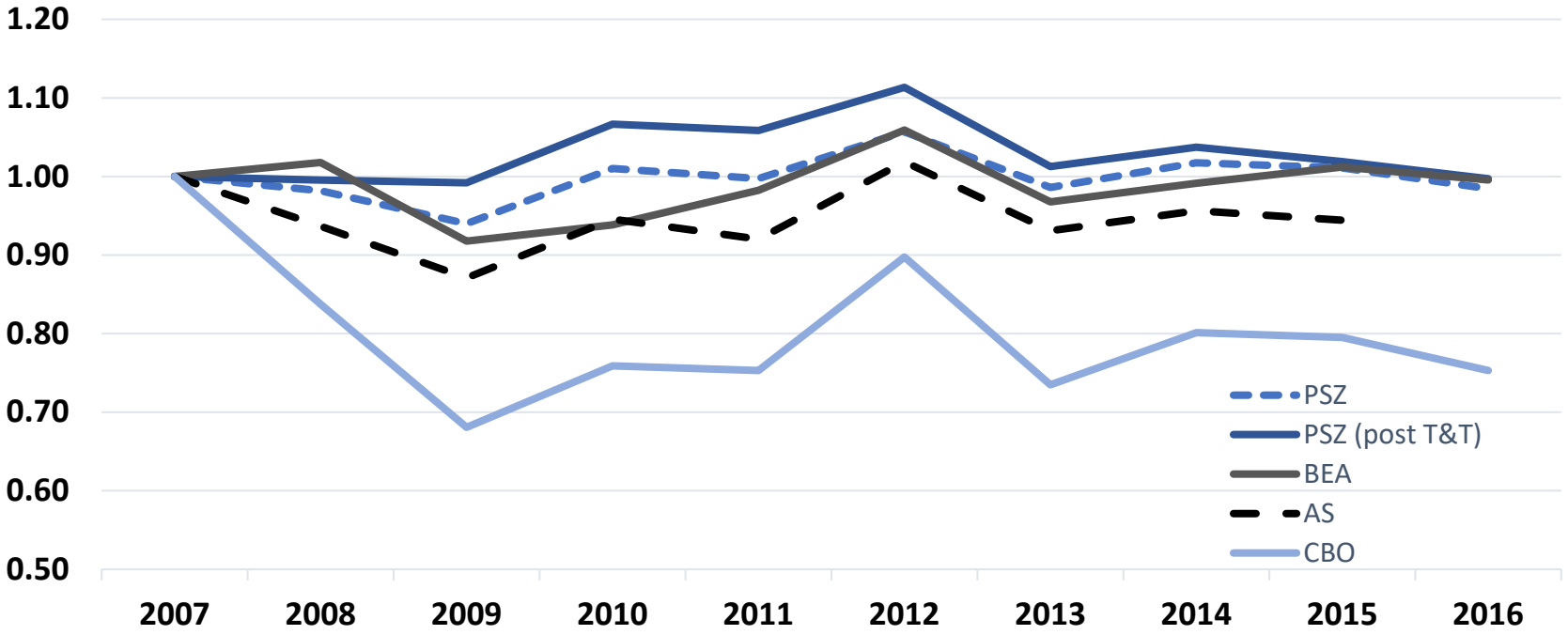
Chart 2: Annual Growth in Real Personal Income by Income Category (2012=100)



Key Takeaways

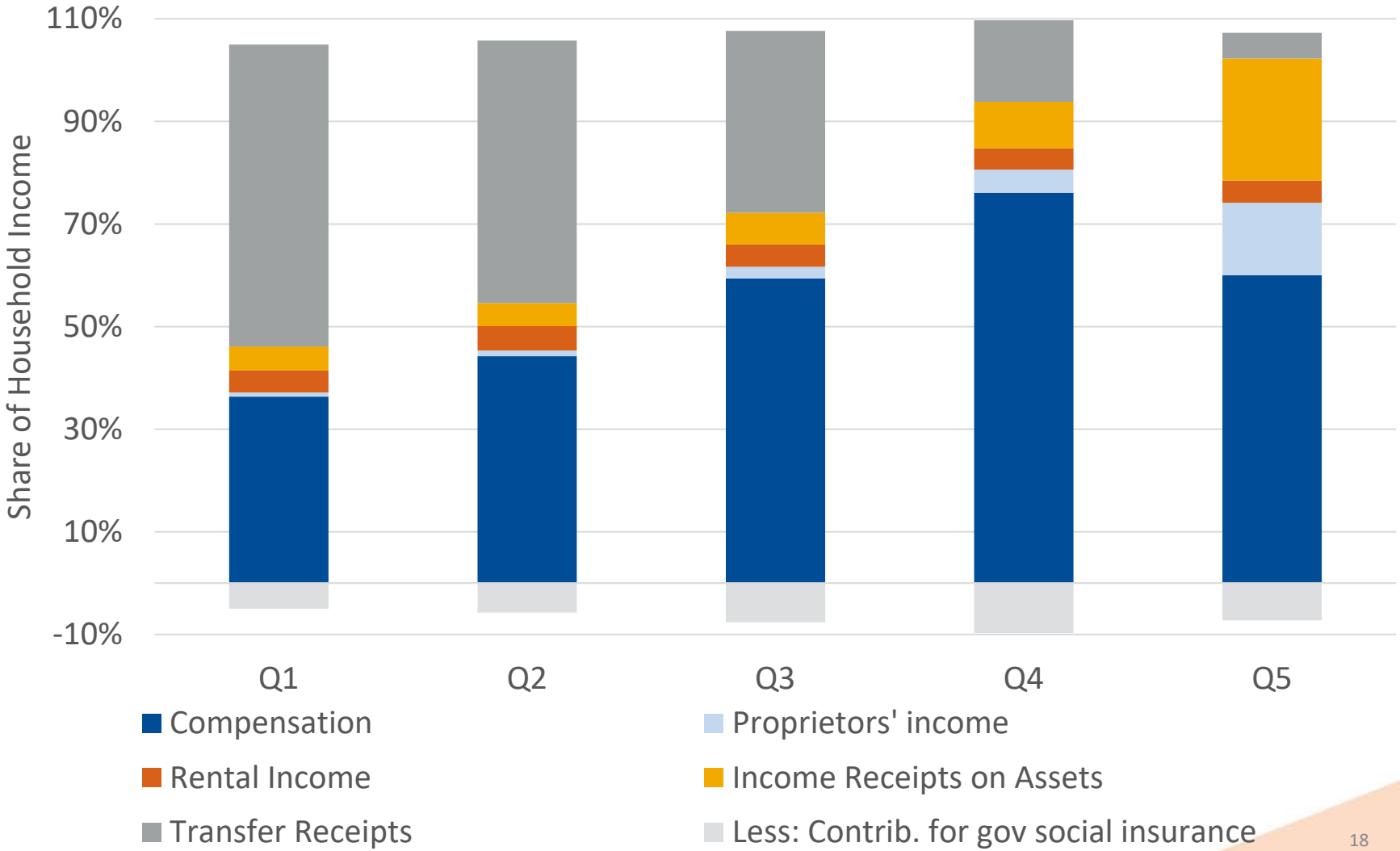
- Real Personal Income grew 17.9% overall from 2007-2016, and for every quintile.
- Most of the growth in Real PI (58%) went to the top quintile (particularly the 80-99%)
- Eq. Mean PI grew faster (9.2%) than Eq. Median PI (6.2%)
- Inequality (as measured by Gini and top shares) increased very little over the period
- Share of income components is very different across quintiles and over time
- Additional analysis in NBER working paper

Various Estimated Movements in Top 1% over Time



	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 (post tax and transfer)	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%

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



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	-0.8	-0.9	-1.2	-0.9	1.8
Rental Income of Households	2.8	3.3	2.9	2.7	2.6
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	0.9	0.7	0.9	0.3	0.1

Conclusions

- The definition of income is very important in comparing results for growth and inequality
- BEA top shares are very close to those of Auten and Splinter in level and PSZ (post-transfer) in trend. They are reasonably close to CBO, holding income definition constant.
- Importance of income components differs across quintiles
- Great recession had differential effect on income categories.