Distributional National Accounts: Methods and Estimates for the United States

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There is a large disconnect today between the study of inequality and macro

Macro: use national accounts, with no distributional information

Inequality: use survey & tax data, inconsistent with macro totals

This gap makes it hard to know **growth is distributed** and to analyze the causes of the rise in inequality

> How does growth of bottom 50%, middle 40%, top 10% adults compare to total growth?
>
> What part of rise in inequality owes to change in factor shares vs. changes in the concentration of labor and capital?
>
> How do taxes and gov spending affect the distribution of growth?

This paper: attempt at constructing Distributional National Accounts (DINA)

We construct a **micro database** of income, wealth, taxes and transfers consistent with national accounts totals in the US:

- First income inequality series covering 100% of national income
- First growth statistics by quantile consistent with macro growth
- First assessment of total redistributive effects of gov. intervention

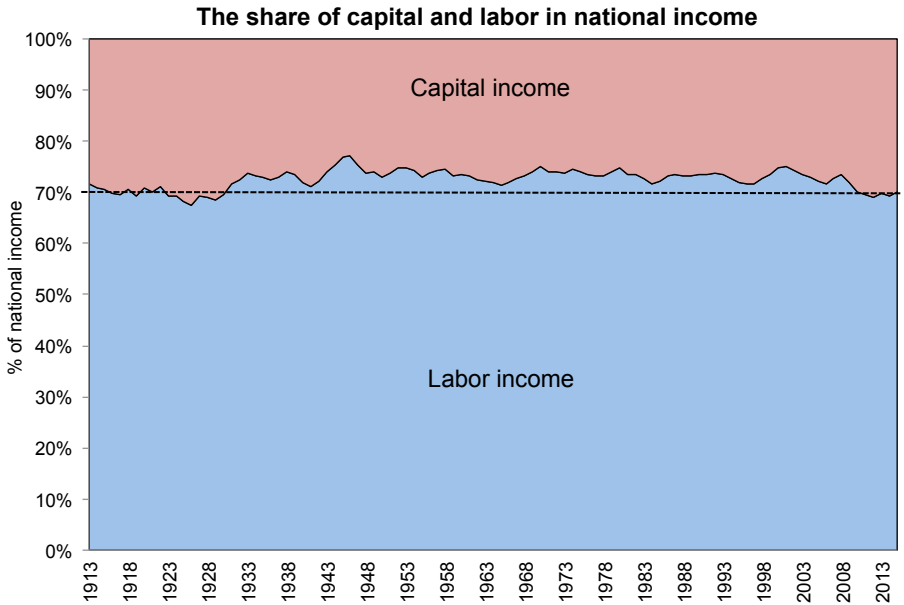
$\rightarrow$ Getting back to Kuznets' original intent to study growth & inequality jointly, but with more and better data

$\rightarrow$ Ultimate goal: being able to better compare ineq. across countries

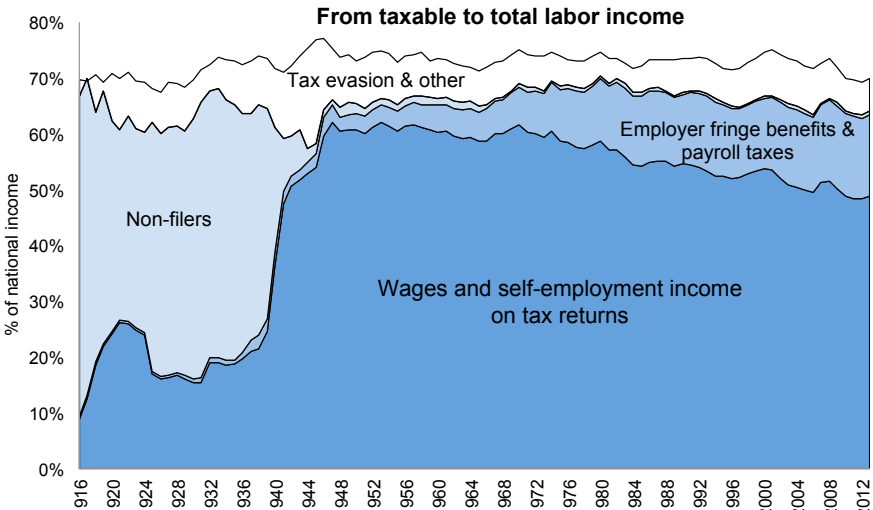
Our objective:

Distribute national income

National income = labor income + capital income

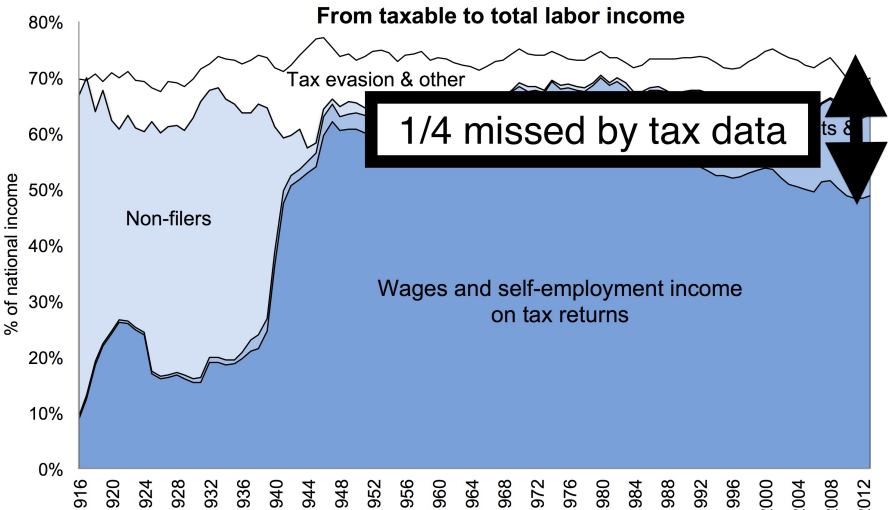


Reconciling national labor income and labor income reported on tax returns



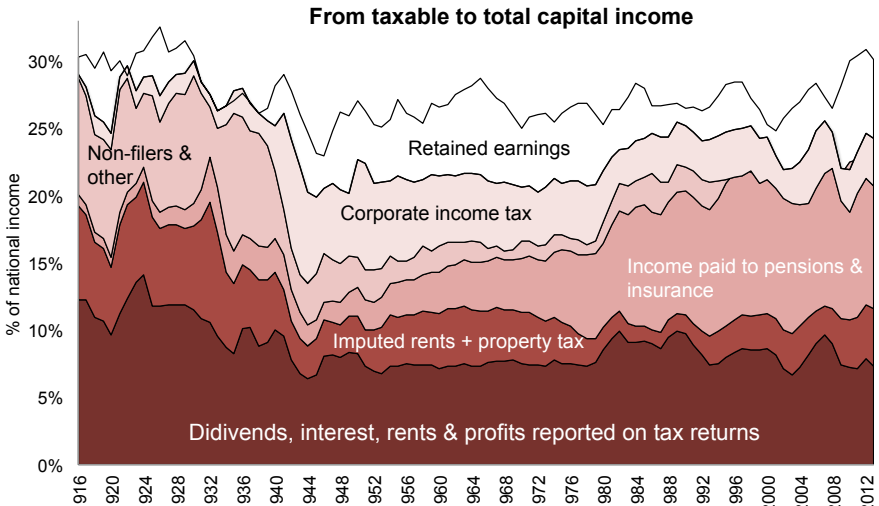
Source: Appendix Table I-S.A8b.

A growing fraction of labor income is missed by tax data



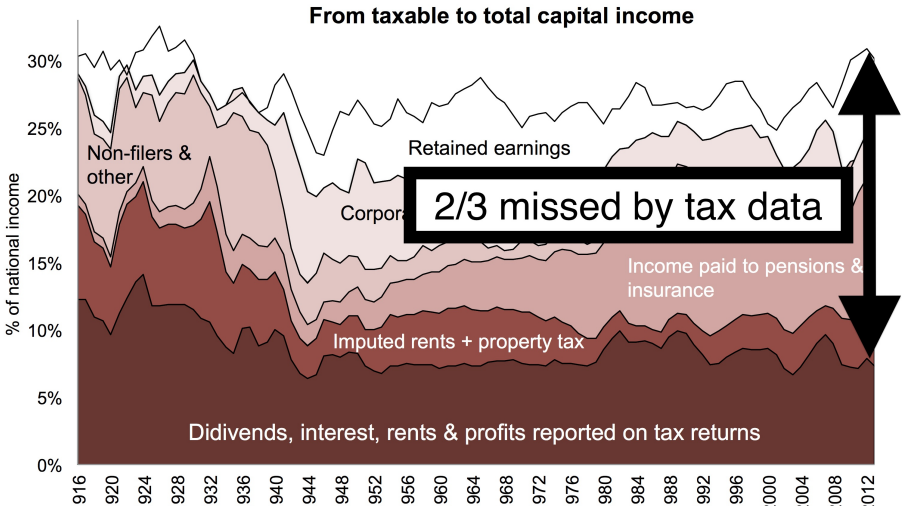
Source: Appendix Table I-S.A8b.

Reconciling national capital income and capital income reported on tax returns



Source: Appendix Table I-S.A8.

Most capital income is missed by tax data



Source: Appendix Table I-S.A8.

Methodology:
How we distribute national income

How we move from fiscal income to total national income

1. **Start with public-use samples of tax returns (1962-2010)**

   High quality, oversamples top

2. **Supplement public-use files using additional IRS data**

   Age and gender information since 1979

   Labor split for couples & fringe benefits on W2 since 1999

3. **Impute missing income using SCF and CPS**

   Non-taxable capital income (pension funds, imputed rents): SCF

   Monetary transfers: imputed based on CPS distribution by family income deciles and basic demographics

4. **Distributionally neutral assumptions for public goods**

We consider three main concepts of income matching national income

Factor national income

Sum of all labor income and capital income

Pre-tax national income

Subtracts contributions for pensions and social insurance, adds corresponding benefits (pensions, disability, unemployment)

Post-tax national income

Subtracts all other taxes

Adds back all other forms of government spending (individualized transfers + public goods)

↓

Same national income total for factor, pre-tax and post-tax → gives the broadest view of the redistributive effects of the government

Final product: a new tool for the study of inequality & growth

Annual micro-data set representative of US pop. (1962-present):

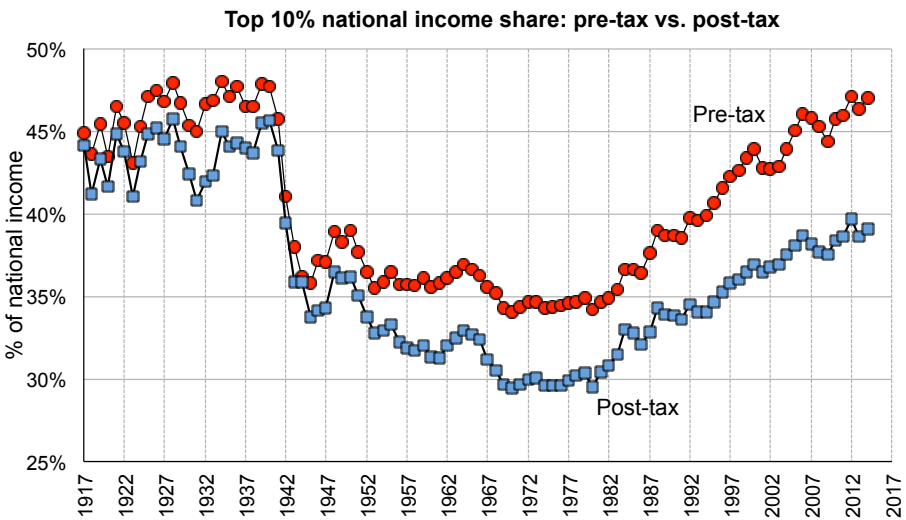
- Detailed income & wealth variables matching national accounts aggregates
- Demographic information: age, gender, marital status, children
- Can be used to compute wide array of growth & inequality stats, and simulate tax and transfer reforms

For 1913-1961: we rely on tabulated tax statistics $\rightarrow$ produce series for specific income fractiles (top 10% and above)

The distribution of US national income and growth:

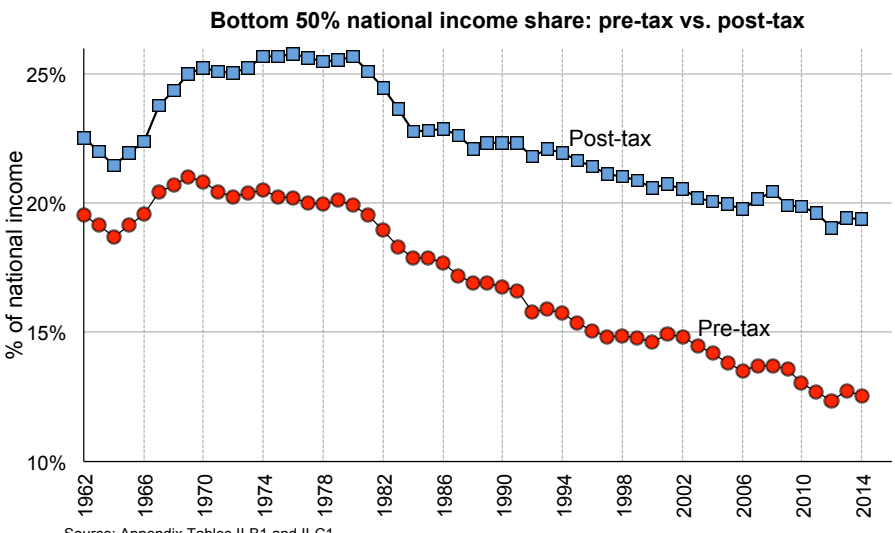
Pre-tax vs. post-tax

DINA confirm the rise of income inequality, but post-tax inequality ↗ less

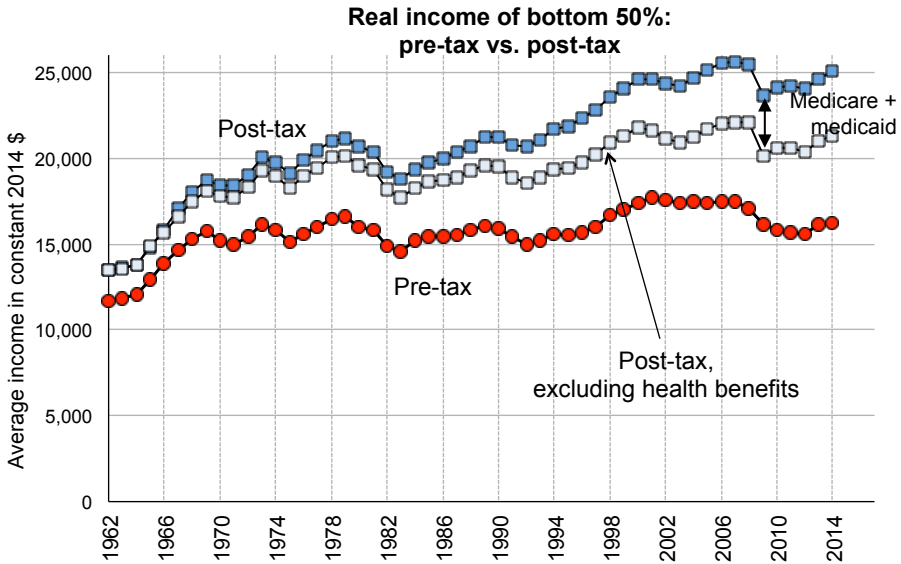


Source: Appendix Tables II-B1 and II-C1

Bottom 50% share has collapsed

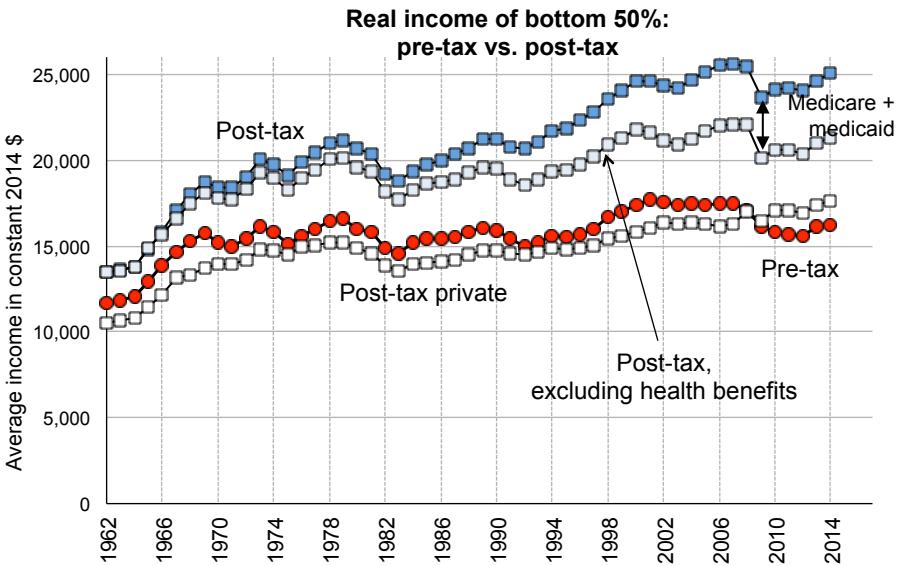


Post-tax growth for bottom 50% has been anemic, and eaten up by health spending



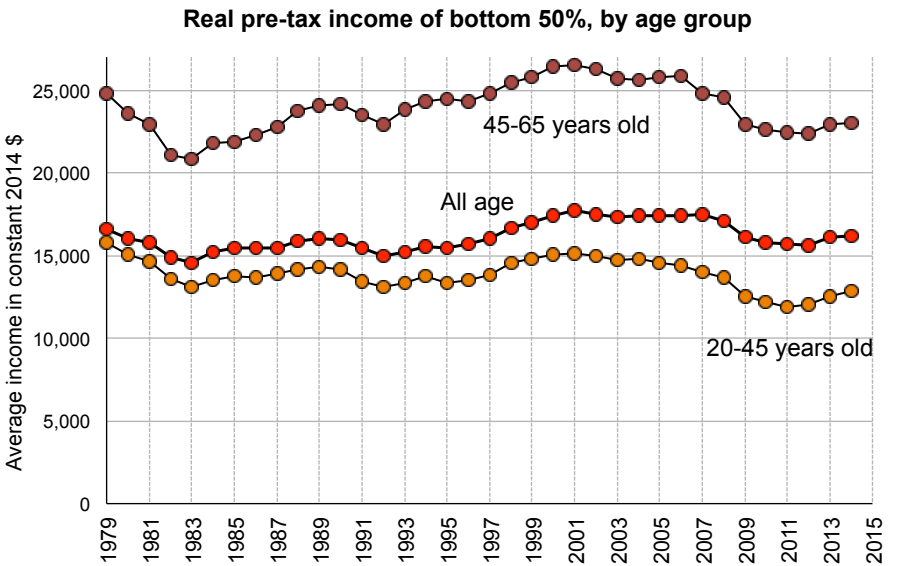
Source: Appendix Tables II-B7, II-C7 and II-C3c.

The bottom 50% does not benefit on net from cash redistribution



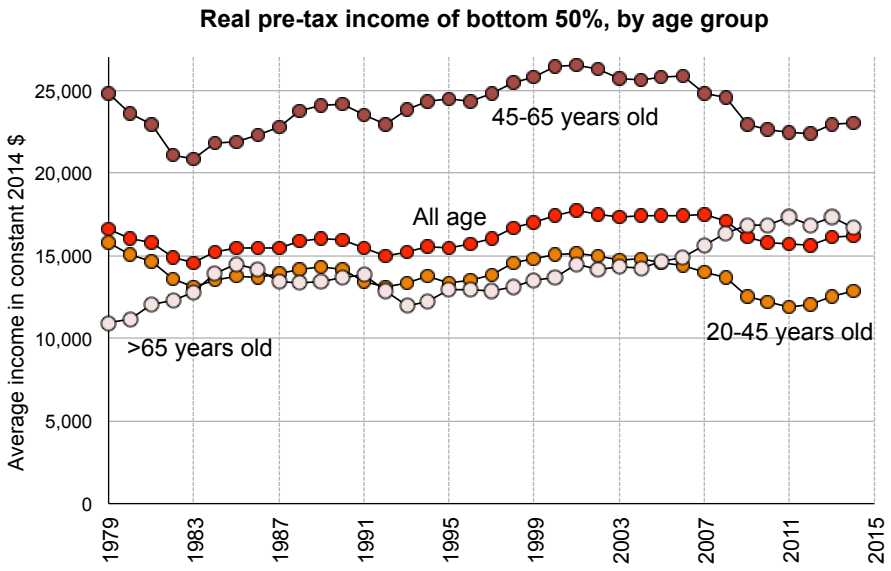
Source: Appendix Tables II-B7, II-C7 and II-C3c.

For bottom 50% working-age adults, pre-tax income has collapsed since 1979



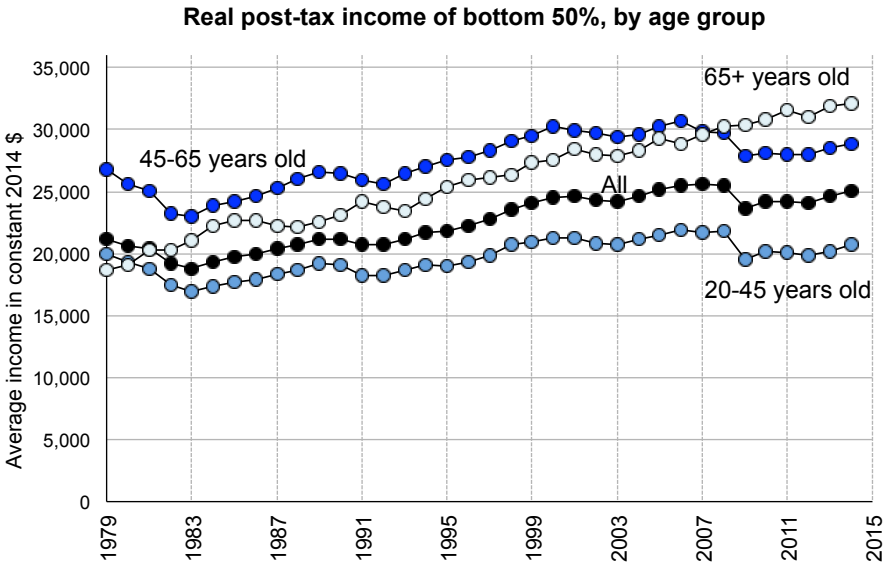
Real values are obtained by using the national income deflator and expressed in $2014. Income is divided equally among spouses.

At the bottom, only retirees' pre-tax income is growing



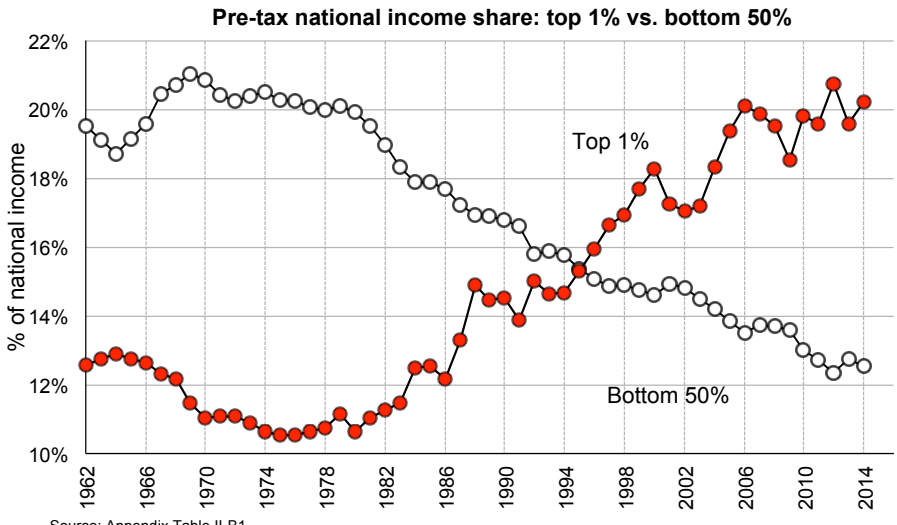
Source: Appendix Tables II-B7 and II-B7b.

Even after transfers, 0 growth in working-age bottom 50% income since 79



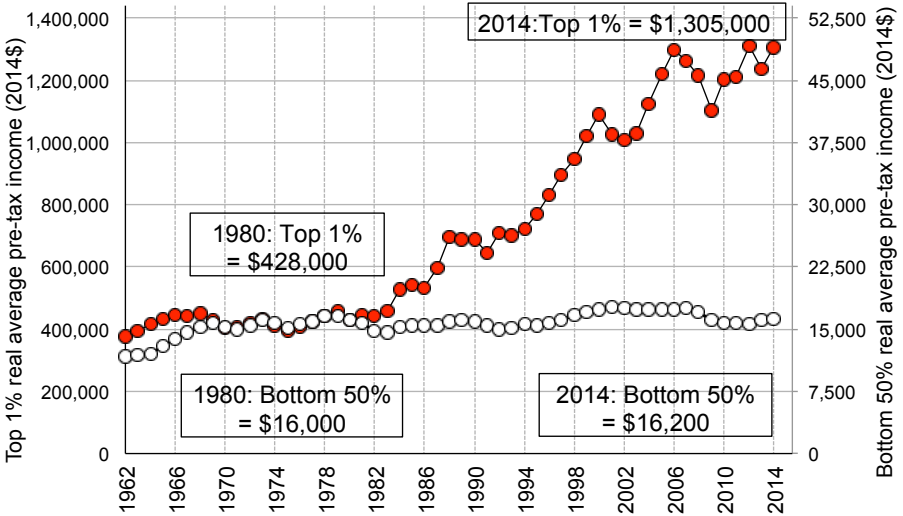
Source: Appendix Tables II-C7 and II-C7b.

The fall of the bottom 50% mirrors the rise of the top 1%



Source: Appendix Table II-B1

1980: Top 1% income = 27 × bottom 50
2014: Top 1% income = 81 × bottom 50



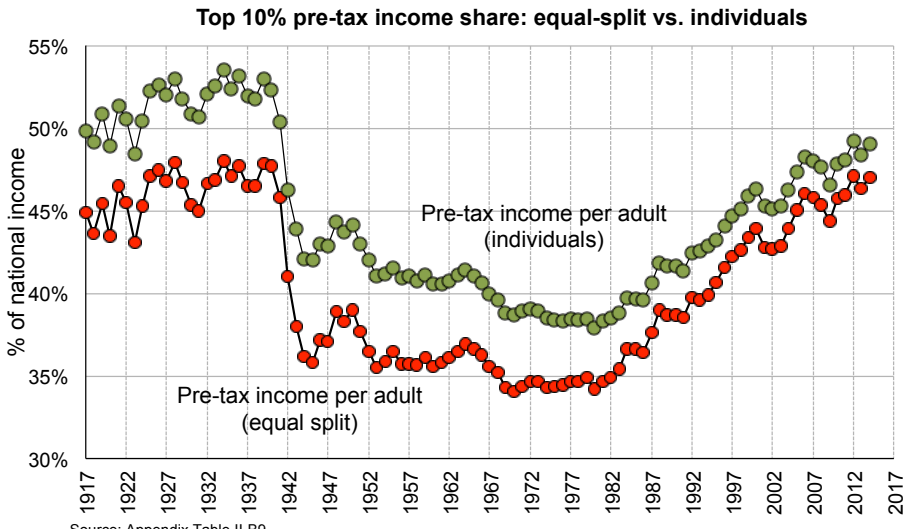
Source: Appendix Tables II-B7 and II-B10

Changes in standards of living in the United States since 1946

	Pre-tax income growth		Post-tax income growth	
Income group	**1980-2014**	**1946-1980**	**1980-2014**	**1946-1980**
Full Population	61%	95%	61%	95%
Bottom 50%	1%	102%	21%	130%
Middle 40%	42%	105%	49%	98%
Top 10%	121%	79%	113%	69%
Top 1%	205%	47%	194%	58%
Top 0.1%	321%	54%	299%	104%
Top 0.01%	454%	75%	424%	201%
Top 0.001%	636%	57%	617%	163%

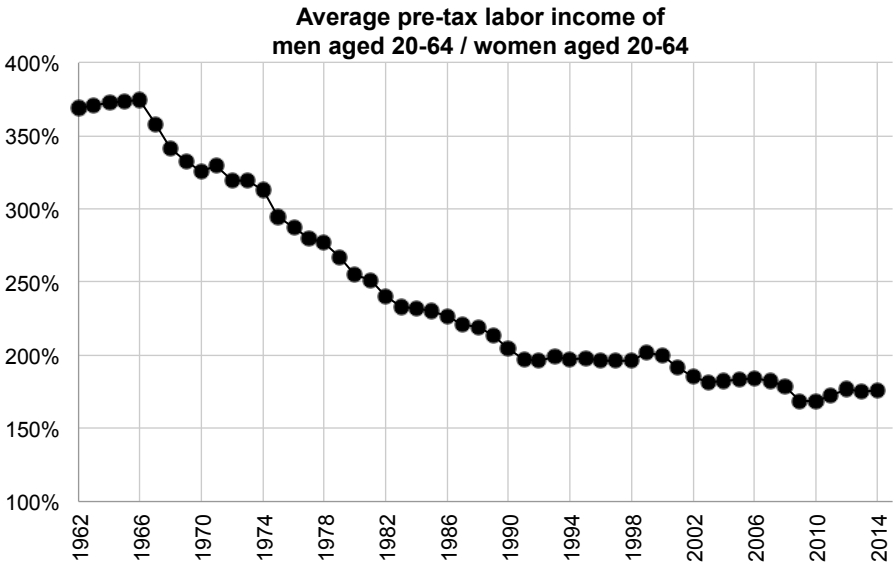
Gender inequality and its effect on individual-level inequality

When assigning each spouse her own labor income, inequality has increased less



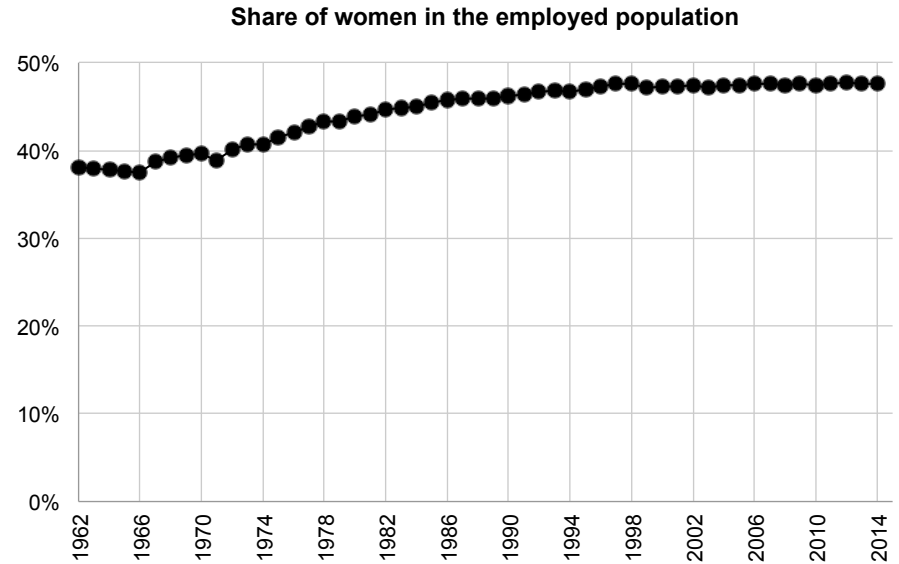
Source: Appendix Table II-B9.

This is due to the decline in the inequality of labor income between genders



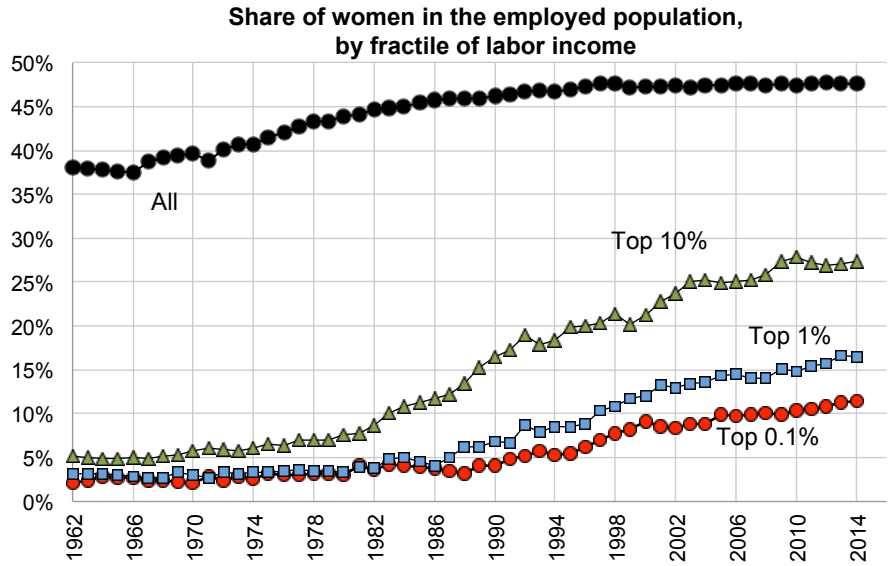
Source: Appendix Table II-F1.

Part of the decline in gender inequality owes to rising female labor force particip.



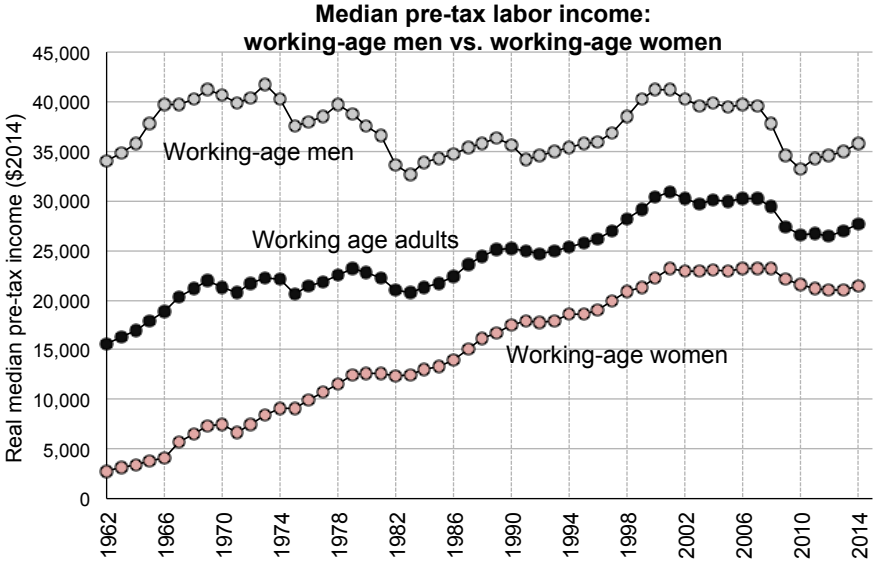
Source: Appendix Table II-F1.

Men still make 85% of the top 1% of the labor income distribution



Source: Appendix Table II-F1.

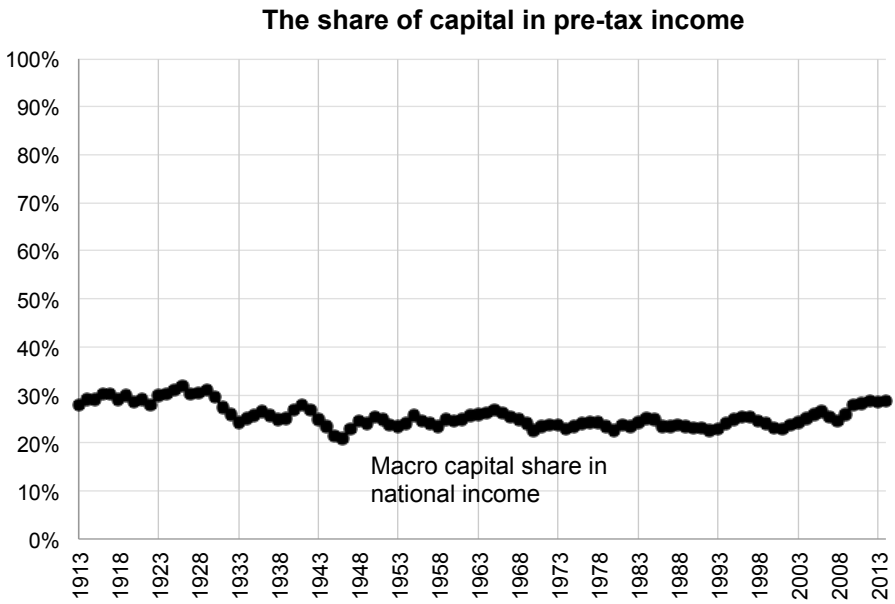
At the median, no growth for working-age men over half a century



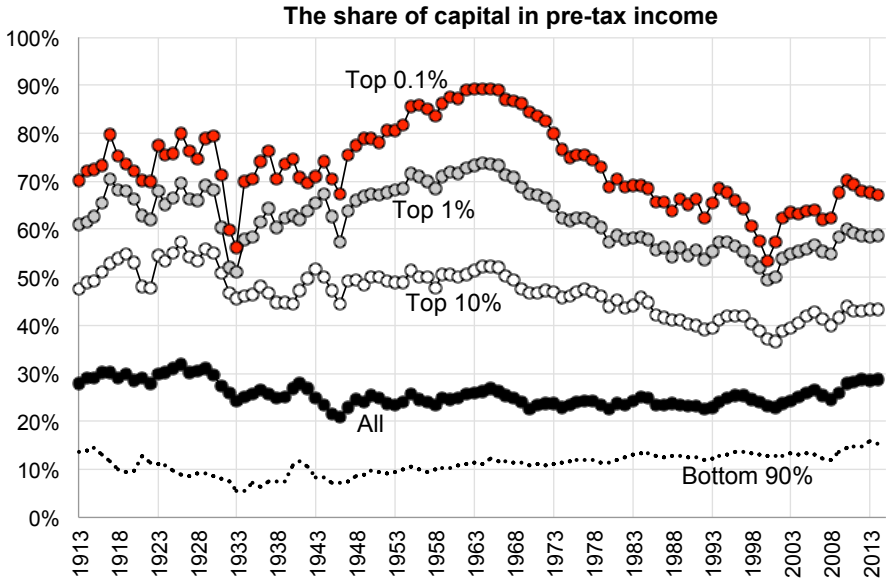
Source: Appendix Table II-B13.

Decomposing inequality: Labor vs. capital

Capital is making a comeback in the US

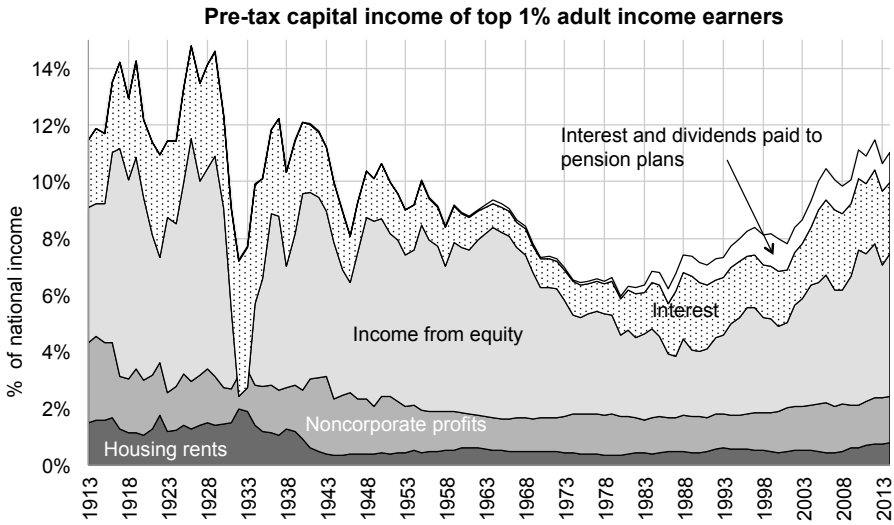


Capital is making a comeback at the top



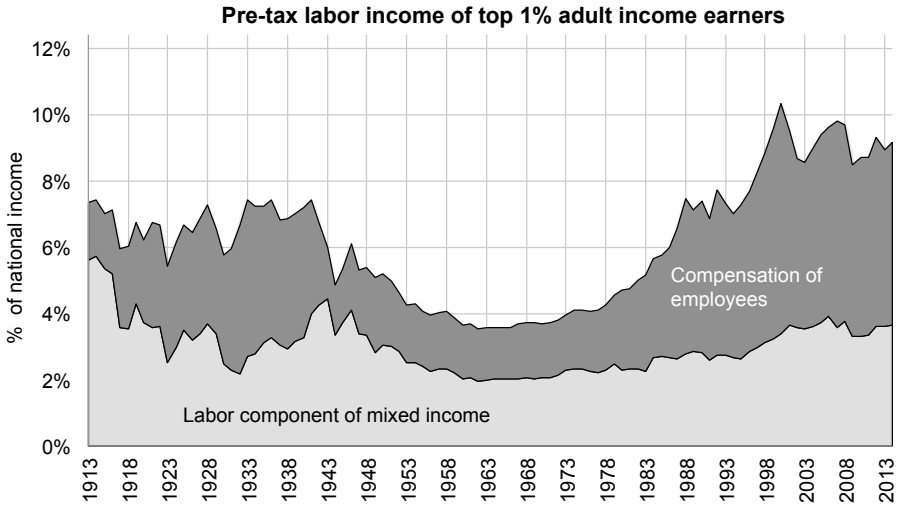
Source: Appendix Table II-B2d.

Since the 1990s, top 1% rises because of capital income



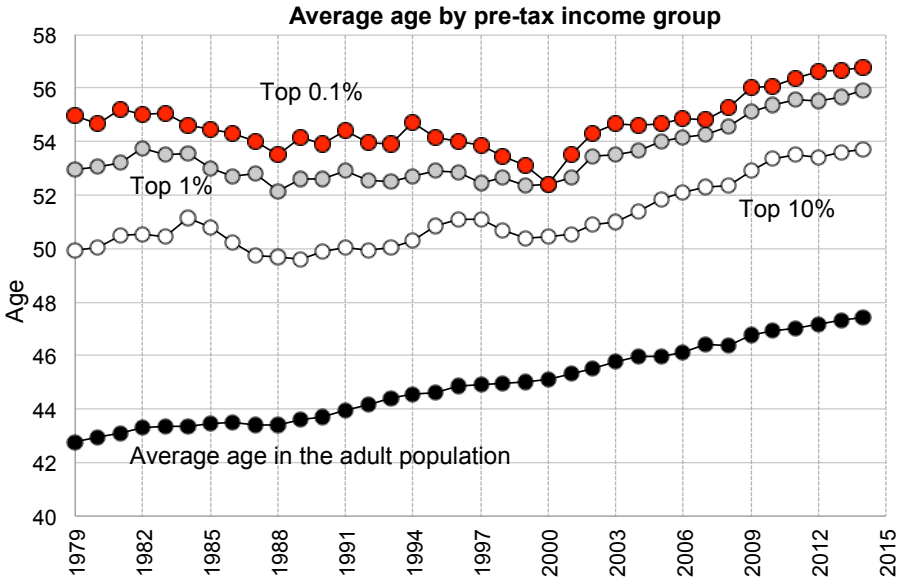
Source: Appendix Table II-B2b

Labor income concentration has stopped rising since the late 1990s



Source: Appendix Table II-B2b.

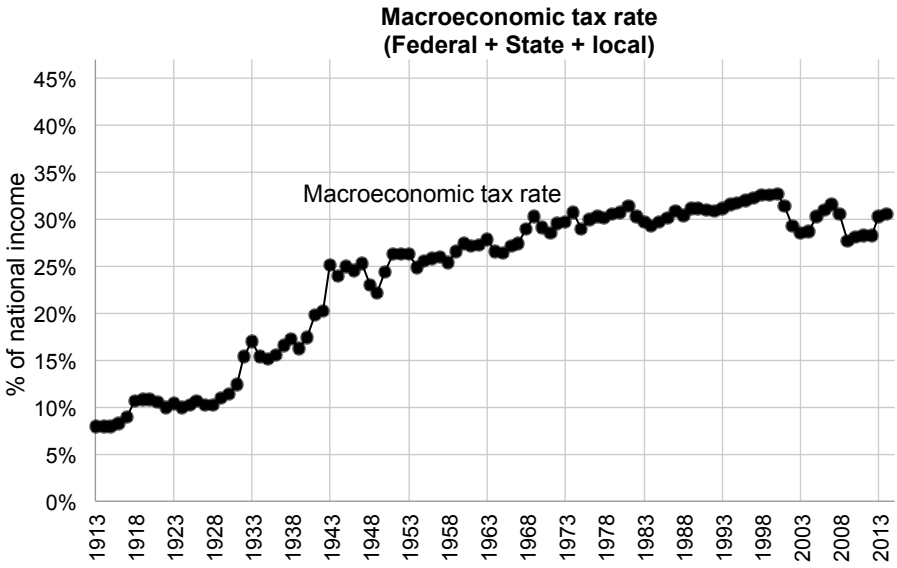
The top became younger in the 1980s and 1990s, since the 2000s is growing older



Source: Appendix Table II-F2.

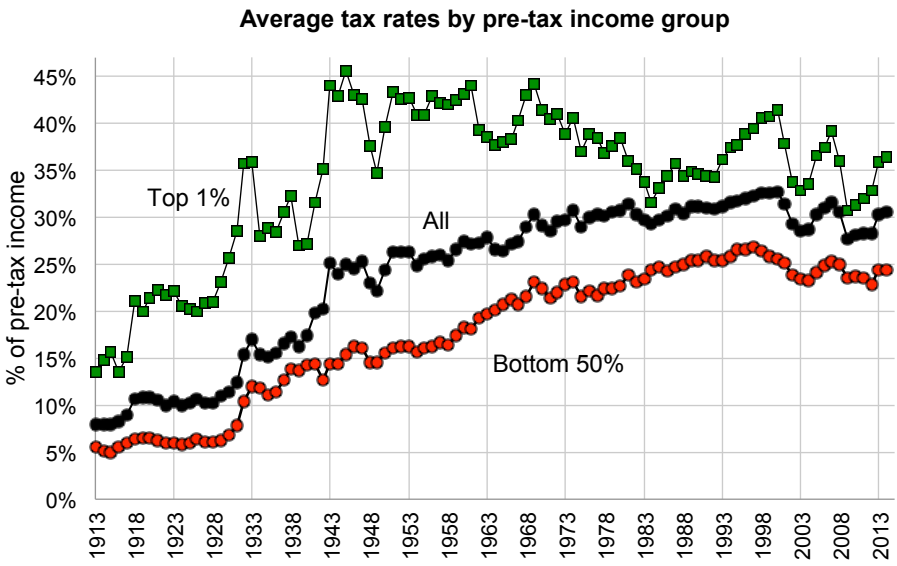
Decomposing inequality: the role of taxes and transfers

The macro rate of tax rose until the 1960s and has been constant since then



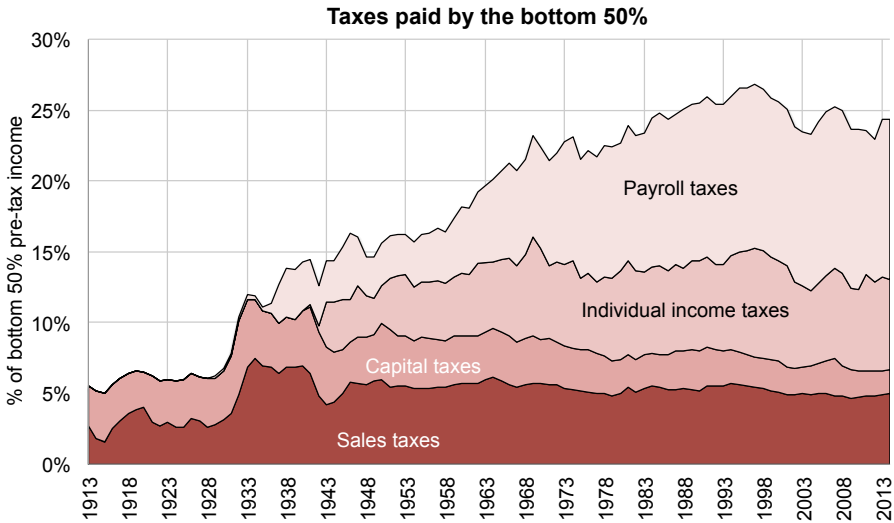
Source: Appendix Table II-G1.

Tax progressivity has declined since the 1960s



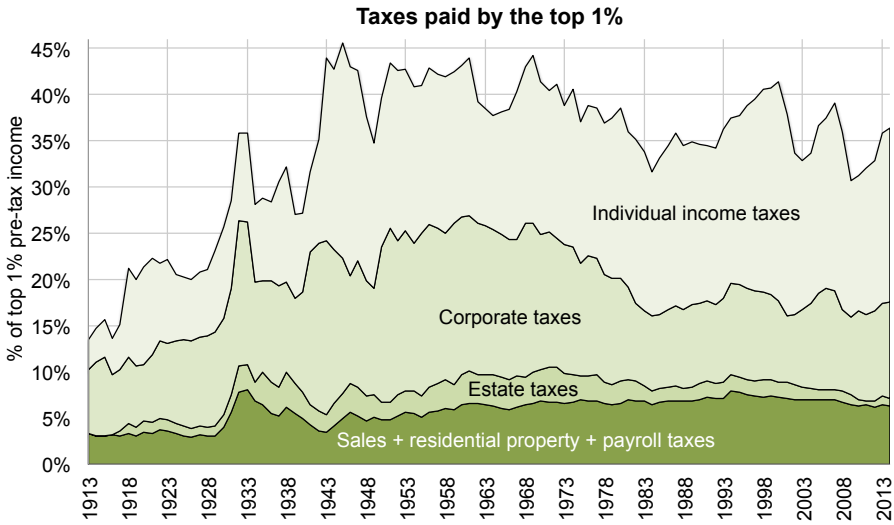
Source: Appendix Table II-G1.

Taxes have increased for the bottom 50% because of payroll taxes



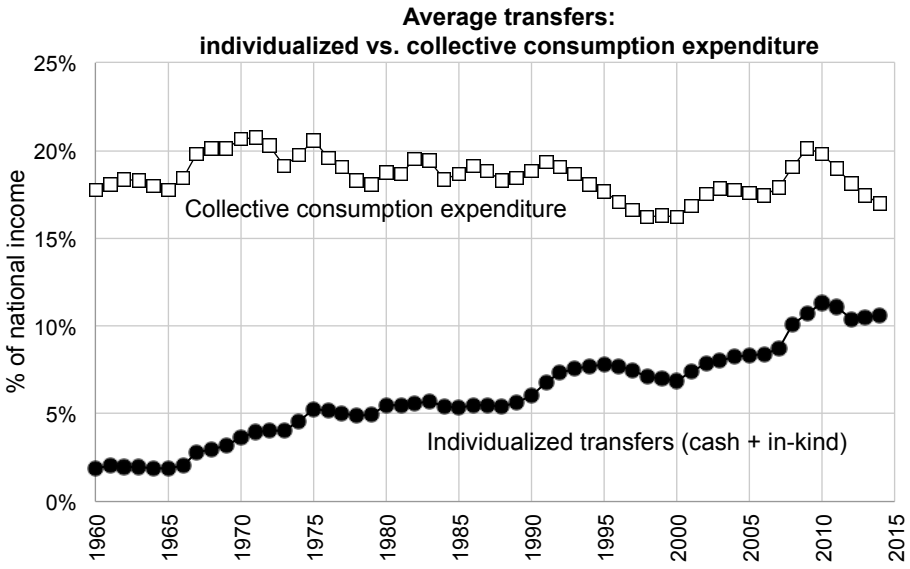
Source: Appendix Table II-G2

Taxes have fallen at the top because of the decline of corporate and estate taxes



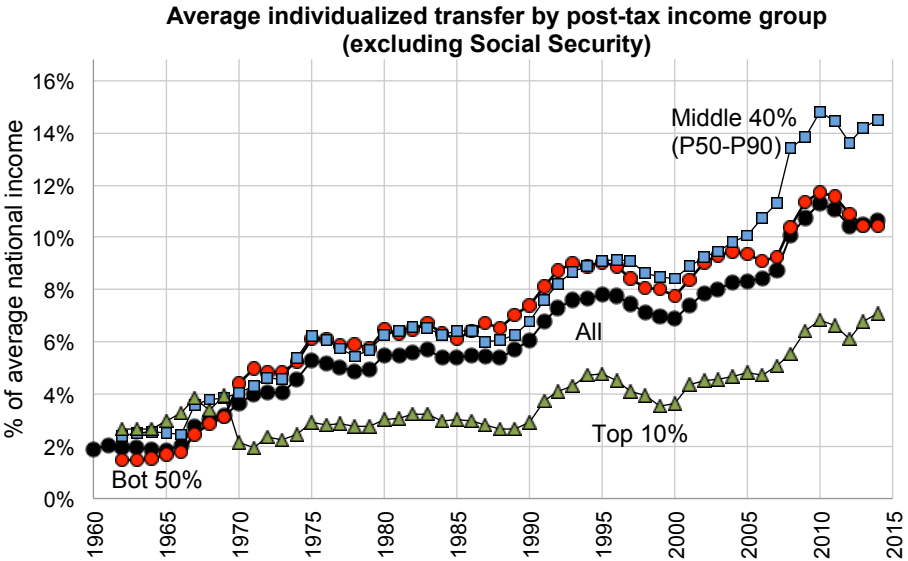
Source: Appendix Table II-G2

Individualized transfers have increased since the 1960s



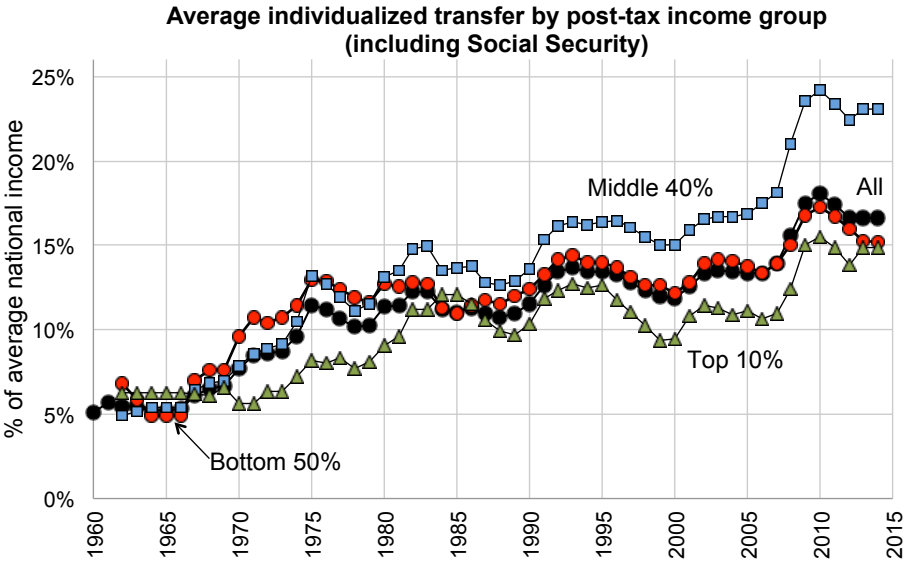
Source: Appendix Table G4

More transfers go to the middle class than to bottom 50%



Source: Appendix Table II-G4.

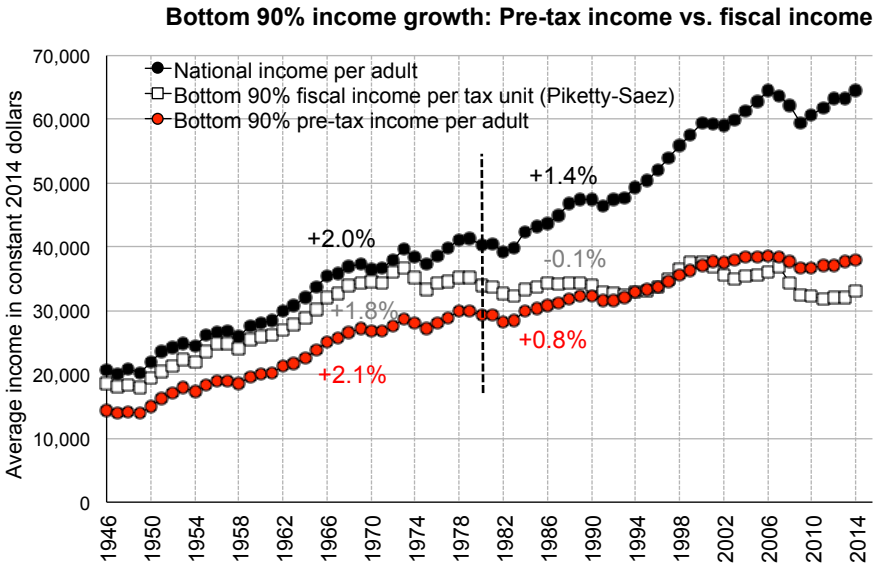
More transfers go to the middle class than to bottom 50%, even incl. Social Security



Source: Appendix Table II-G4b.

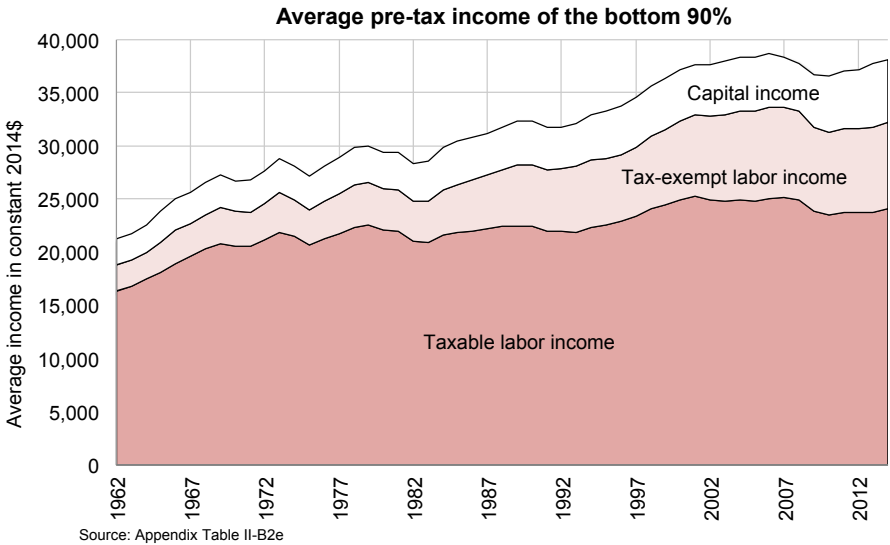
Comparison with fiscal incomes

Bottom 90% has grown more than in tax data



Source: Appendix Table II-B3 and Piketty and Saez (2003, updated to 2014)

Without fringe benefits, 0 growth for bottom 90% since 1970s



Source: Appendix Table II-B2e

Conclusion

Combining tax, survey, and national accounts data

The DINA agenda:

Construct new series on the distribution pre- and post-tax income consistent with macro totals

Hope will be adopted by govt agencies down the road

Results for the United States:

Collapse of working-age bottom 50% pre-tax income, 0 growth post transfer

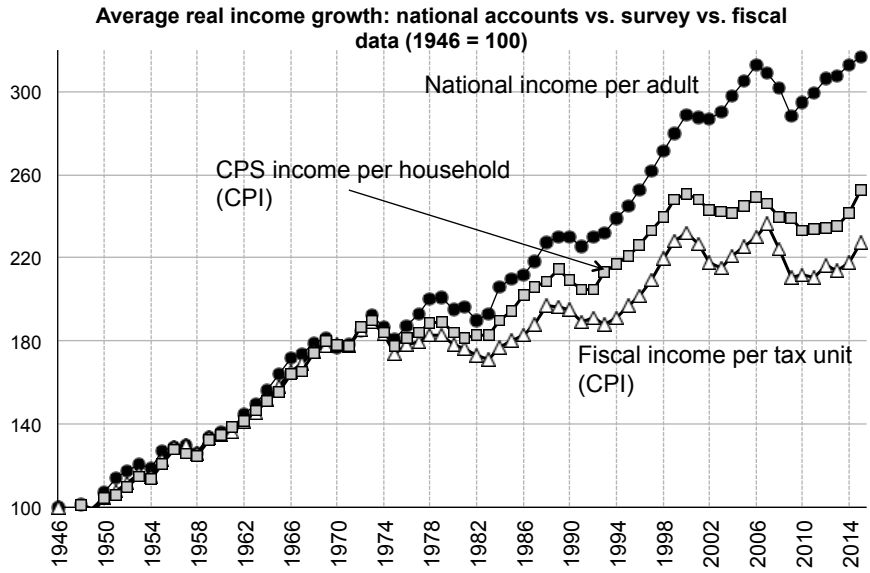
Boom of top-end inequality since late 1990s due to capital

Spectacular gender gap at the top, not shrinking anymore

Gov. has offset only small fraction of the $\nearrow$ in pre-tax inequality, due to $\searrow$ in tax progressivity & limited transfers to bottom 50%

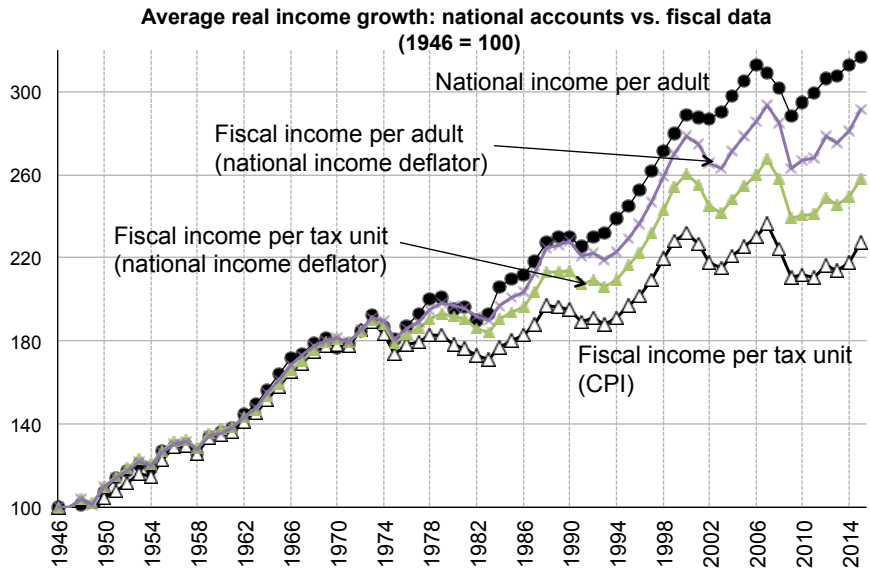
Supplementary Slides

Average income is growing less in tax and survey data than in the economy



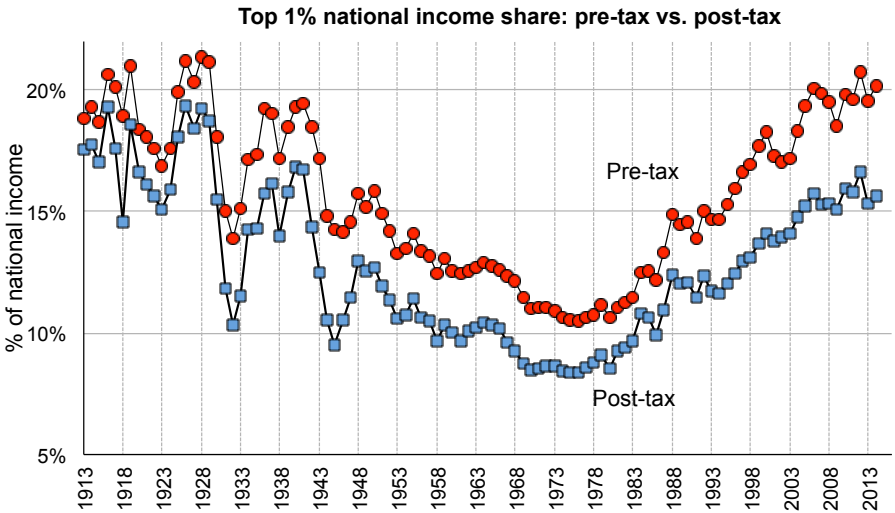
Source: Appendix Table A0 and Census Bureau.

Three culprits: inflation, fewer marriages, rising non-taxable income



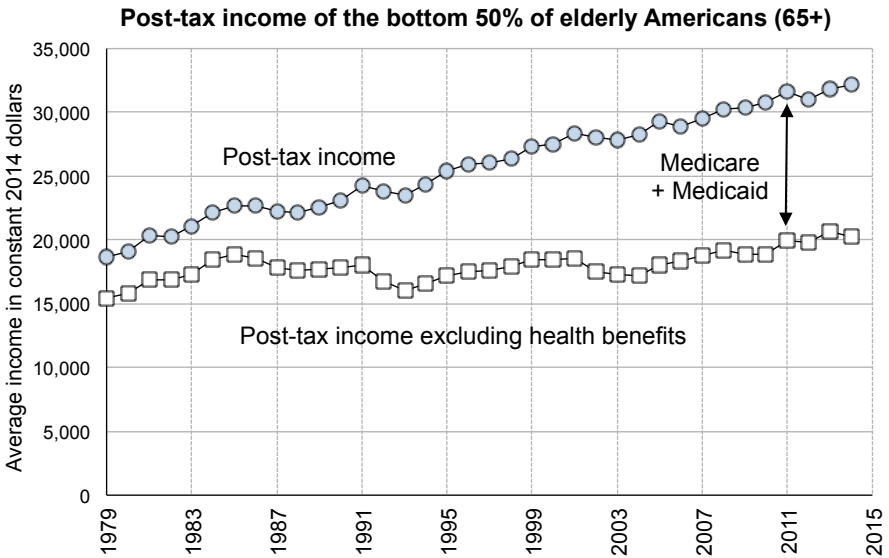
Source: Appendix Table A0.

Top 1% income share: pre-tax vs. post-tax



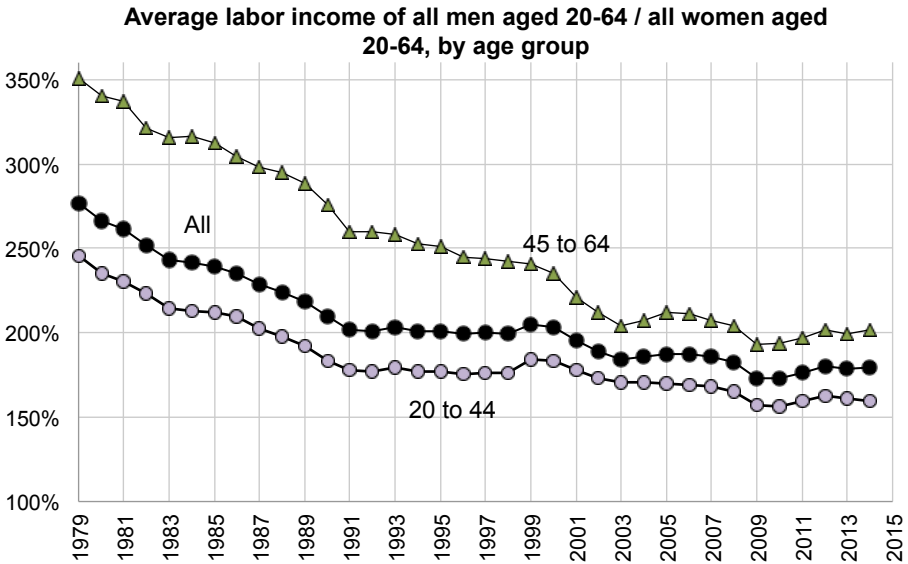
Source: Appendix Tables II-B1 and II-C1

For bottom 50% elderly, all the growth comes from health transfers



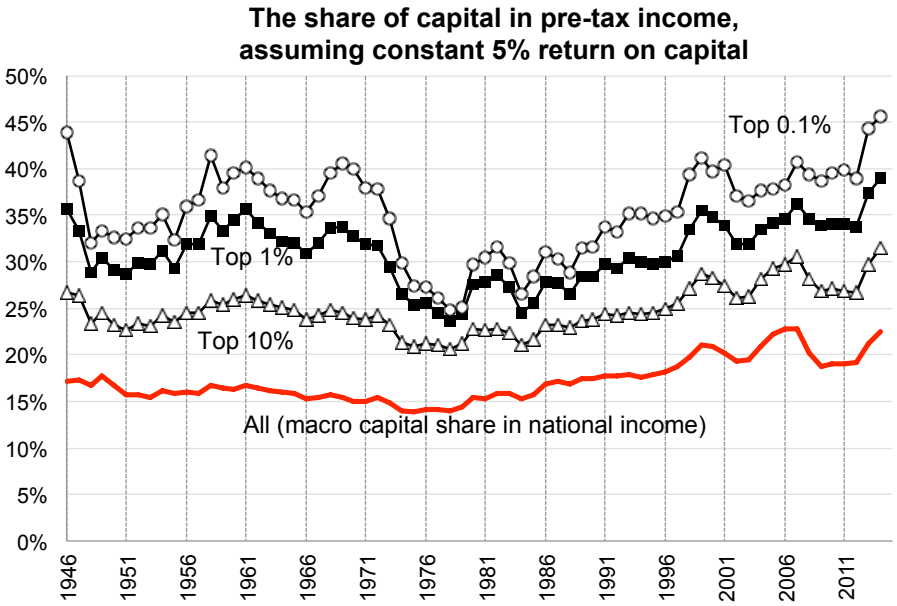
Source: Appendix Table II-C7c.

Still a lot of inequality between genders, especially for older workers

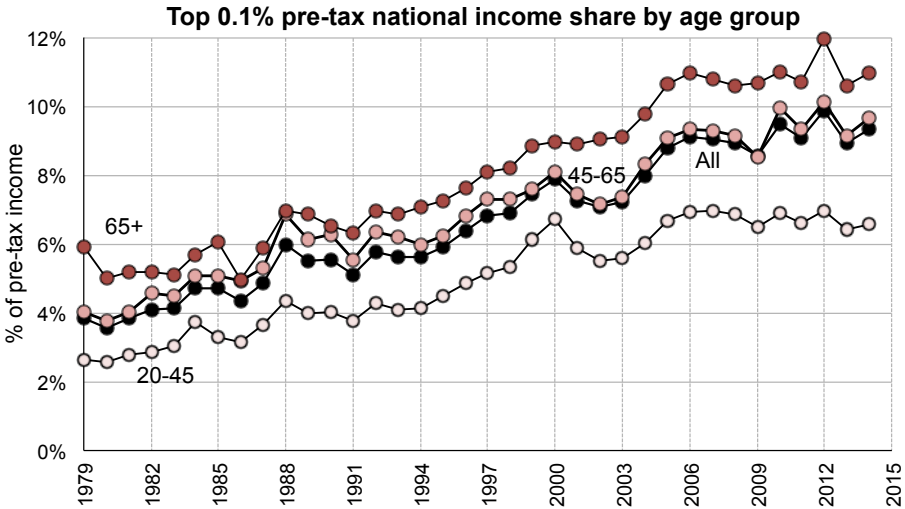


Source: Appendix Table F1.

Capital is making a comeback in the US: robust to assuming fixed return on capital

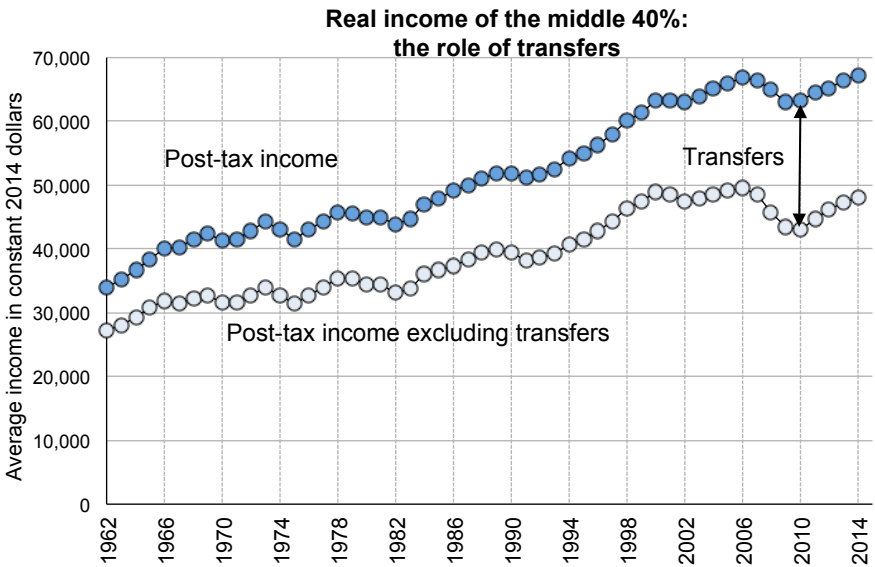


Top-end inequality is high and growing at all ages



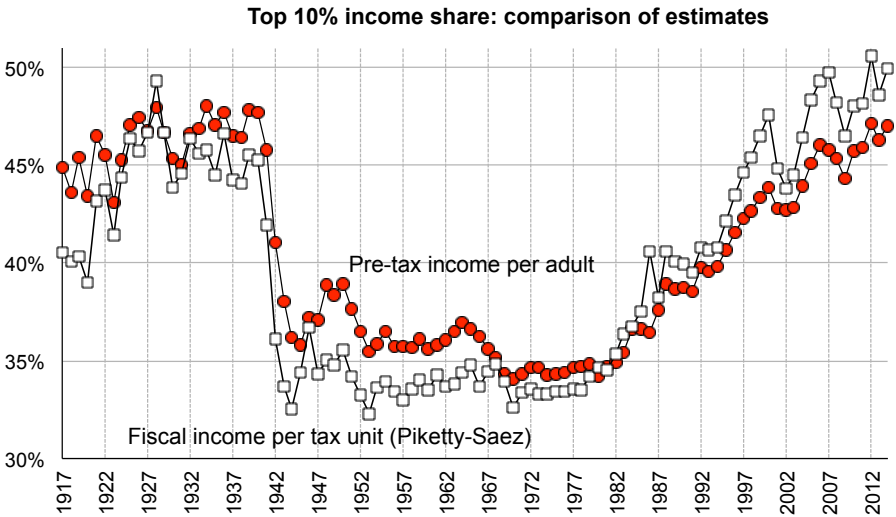
Source: Appendix Table II-B11b.

Transfers have softened blow to the middle-class during Great Recession



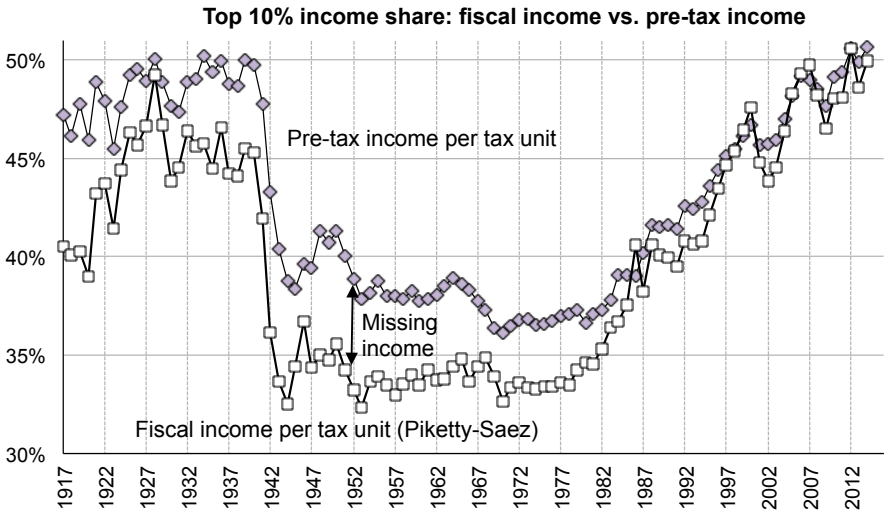
Source: Appendix Table II-C3b.

Pre-tax national income inequality has risen less than fiscal income inequality



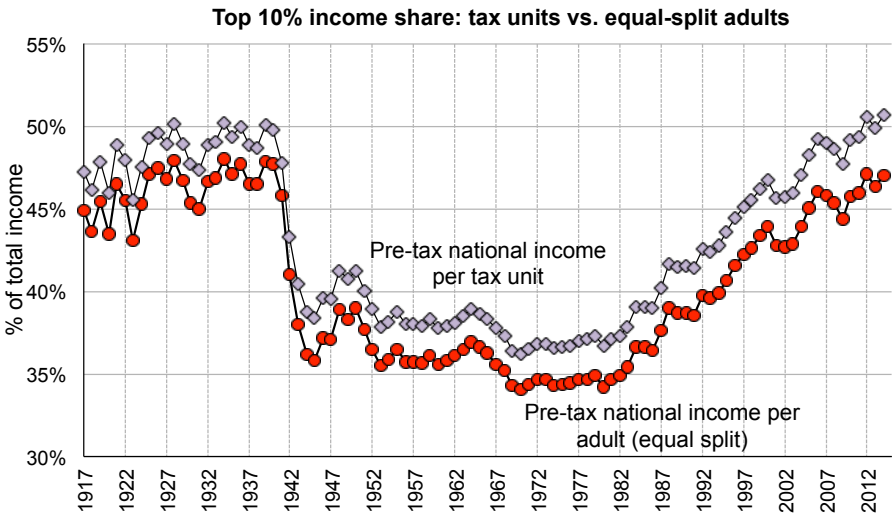
Source: Appendix Table II-B1 and Piketty and Saez (2003, updated to 2014).

Part of the difference owes to income missing from tax returns in 1950s-1970s



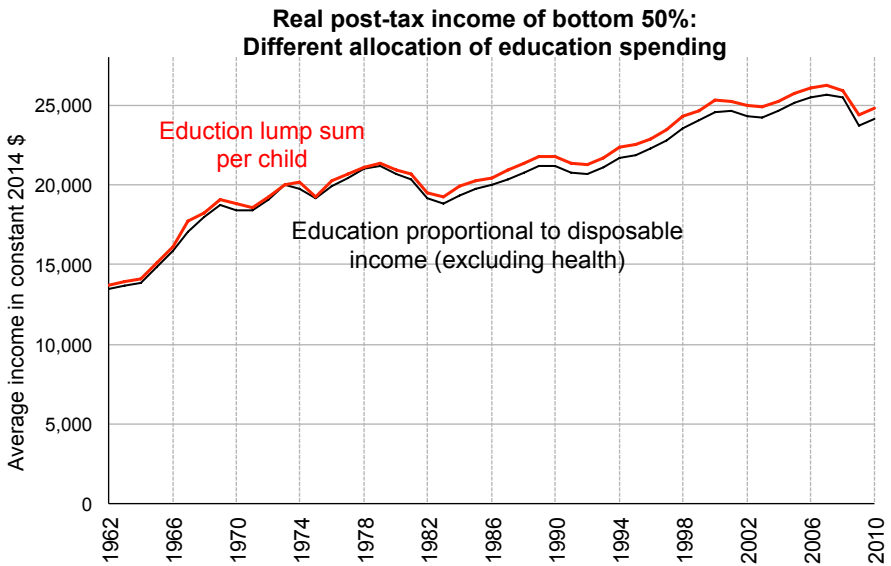
Source: Appendix Tables II-B9 and Piketty and Saez (2003, updated to 2014)

Rest of the difference owes to adults vs. tax units



Source: Appendix TablesII- B1 and II-D1.

Bottom 50% income with different treatment of education spending



Source: Appendix Tables II-C3d.