What is Income?

ECON 499: Economics of Inquality

Winter 2018

Armour et al (2014)

- "Levels and Trends in U.S. Income and its Distribution: A Crosswalk from Market Income towards a Comprehensive Haig-Simons Income Approach"
- How do different definitions of income change our measured inequality?

Haig-Simons income

- Income is the amount of consumption plus the change in net worth
- Emphasizes consumption over market income
- A better representation of welfare

Data

- Census Bureau's Current Population Survey, March supplement (March CPS)
- Survey data, asks respondents about **all** sources of income (minus capital gains)
- Health insurance status asked, and source of health insurance
- Health insurance premiums not captured, and are calculated by the Census Bureau
- Incomes are "top-coded", need to be estimated
- Capital gains, tax credits and liabilities predicted using a model

The crosswalk

- Describe income in 4 ways:
  1. Market income (Piketty and Saez)
  2. Add transfer payments (disability, unemployment, social security, etc)
  3. Weight household size, add in kind transfers, add taxes
  4. Add realized capital gains

Table 1. Mean Income Growth by Quintile, 1979–2007

	(1) Tax-Unit Unadjusted Cash Market Income	(2) Household Size–Adjusted Pretax, Post-Transfer Cash Income	(3) Household Size–Adjusted Post-Tax, Post-Transfer Income Plus In-Kind Income	(4) Column (3) Plus Realized Taxable Capital Gains
Bottom quintile	−33.0	9.9	31.8	30.0
Second quintile	0.7	15.6	31.3	31.9
Middle quintile	2.2	22.8	34.4	36.5
Fourth quintile	12.3	29.2	38.8	42.2
Top quintile	32.7	42.0	54.0	79.3
Top 5%	37.9	48.7	68.9	128.5

Table 2. Gini Coefficients and Mean Income Growth by Quintile for Each Business Cycle from 1979 to 2007

	(1) Tax-Unit Unadjusted Cash Market Income	(2) Household Size–Adjusted Pretax, Post-Transfer Cash Income	(3) Household Size–Adjusted Post-Tax, Post-Transfer Income Plus In-Kind Income	(4) Column (3) Plus Realized Taxable Capital Gains
Panel A: 1979–1989				
Bottom quintile	−0.2	0.0	4.3	2.7
Second quintile	−0.2	4.3	7.0	7.0
Middle quintile	0.0	9.1	11.8	11.9
Fourth quintile	4.0	12.9	15.7	15.5
Top quintile	17.6	23.4	29.4	32.5
Top 5%	25.6	32.0	44.6	54.8
Panel B: 1989–2000				
Bottom quintile	17.8	17.2	20.6	22.6
Second quintile	11.7	13.5	16.7	18.1
Middle quintile	7.5	13.1	14.6	16.7
Fourth quintile	10.7	13.3	12.6	15.7
Top quintile	14.7	16.2	13.5	28.3
Top 5%	14.4	16.5	13.9	41.3
Panel C: 2000–2007				
Bottom quintile	−43.0	−6.2	4.8	3.1
Second quintile	−9.8	−2.4	5.2	4.3
Middle quintile	−4.9	−0.4	4.9	4.5
Fourth quintile	−2.5	1.0	6.6	6.4
Top quintile	−1.6	−1.0	4.8	5.5
Top 5%	−4.0	−3.3	2.6	4.5
Panel D: Gini Coefficients				
1979	0.536	0.384	0.301	0.302
1989	0.565	0.423	0.346	0.357
2000	0.571	0.427	0.338	0.375
2007	0.584	0.430	0.338	0.378

Capital gains

- "Realized" capital gains are only observed when assets are sold
- Changes in wealth depend on the capital gains that are not "realized"
- If your portfolio goes up and you don't sell, your "income" has increased (at least in present value)

Table 3. Mean Income Growth by Quintile, 1989–2007

	(1) Tax-Unit Unadjusted Cash Market Income	(2) Household Size–Adjusted Pretax, Post-Transfer Cash Income	(3) Household Size–Adjusted Post-Tax, Post-Transfer Income Plus In-Kind Income	(4) Column (3) Plus Realized Taxable Capital Gains	(5) Column (3) Plus Accrued Capital Gains from Public Investments	(6) Column (3) Plus Accrued Capital Gains, Including Housing	(7) Column (3) Plus Accrued Capital Gains, Including Housing and Privately Held Businesses
Bottom quintile	−32.9	9.9	26.4	26.3	30.4	13.7	16.0
Second quintile	0.8	10.8	22.7	23.3	23.4	9.0	3.6
Middle quintile	2.3	12.6	20.2	22.0	18.6	6.6	0.0
Fourth quintile	8.0	14.4	20.0	23.1	17.6	6.1	0.0
Top quintile	12.9	15.1	19.0	35.3	12.4	0.7	−13.5
Top 5%	9.9	12.7	16.8	47.7	8.7	−2.7	−24.2

Why is the difference so dramatic?

- In 2007, compared to 1989, lower income people owned more:
  - Equity
  - Housing (!)
  - Businesses

Housing since 2007

- Housing a primary source of capital "income"
- The 2007 recession resulted in a sharp decrease in housing
- This decrease was more severe among low-income home owners
- Housing shocks constrain ability to get credit, build wealth

Wolff (2014)

Table 1: Mean and Median Wealth and Income, 1962-2013
(In thousands, 2013 dollars)

Variable	1962	1969	1983	1989	1992	1995	1998	2001	2004	2007	2010	2013
A. Net Worth												
1. Median	55.5	68.0	78.0	83.5	71.3	69.7	86.7	96.7	96.0	115.1	64.6	63.8
2. Mean	207.4	248.4	303.8	348.1	338.4	312.6	386.2	500.0	530.9	602.3	505.7	508.7
3. Percent with zero or Negative net worth	18.2	15.6	15.5	17.9	18.0	18.5	18.0	17.6	17.0	18.6	21.8	21.8
B. Income (CPS)[b]												
1. Median	40.9	53.3	46.4	52.4	49.8	51.7	55.5	55.6	54.7	56.4	52.6	51.9
2. Mean	46.4	60.6	56.5	66.2	63.2	68.2	74.0	76.6	74.6	76.0	72.0	72.6

Wolff (2014)

Table 2. The Size Distribution of Wealth and Income, 1962-2013

		Percentage Share of Wealth or Income held by:								
Year	Gini Coefficient	Top 1.0%	Next 4.0%	Next 5.0%	Next 10.0%	Top 20.0%	4th 20.0%	3rd 20.0%	Bottom 40.0%	All
A. Net worth										
1962	0.803	33.4	21.2	12.4	14.0	81.0	13.4	5.4	0.2	100.0
1969	0.811	34.4	20.3	14.0	12.0	80.7	12.8	4.9	1.5	100.0
1983	0.799	33.8	22.3	12.1	13.1	81.3	12.6	5.2	0.9	100.0
1989	0.832	37.4	21.6	11.6	13.0	83.5	12.3	4.8	-0.7	100.0
1992	0.823	37.2	22.8	11.8	12.0	83.8	11.5	4.4	0.4	100.0
1995	0.828	38.5	21.8	11.5	12.1	83.9	11.4	4.5	0.2	100.0
1998	0.822	38.1	21.3	11.5	12.5	83.4	11.9	4.5	0.2	100.0
2001	0.826	33.4	25.8	12.3	12.9	84.4	11.3	3.9	0.3	100.0
2004	0.829	34.3	24.6	12.3	13.4	84.7	11.3	3.8	0.2	100.0
2007	0.834	34.6	27.3	11.2	12.0	85.0	10.9	4.0	0.2	100.0
2010	0.866	35.1	27.4	13.8	12.3	88.6	9.5	2.7	-0.8	100.0
2013	0.871	36.7	28.2	12.2	11.8	88.9	9.3	2.7	-0.9	100.0

Wolff (2014)

Table 5. Composition of Household Wealth by Wealth Class, 2013
(Percent of gross assets)

Asset	All Households	Top One Percent	Next 19 Percent	Middle 3 Quintiles
Principal residence	28.5	8.7	28.0	62.5
Liquid assets (bank deposits, money market funds, and cash surrender value of life insurance)	7.6	6.1	8.4	8.1
Pension accounts	16.5	9.2	21.7	16.1
Corporate stock, financial securities, mutual funds, and personal trusts	17.4	27.3	16.3	3.4
Unincorporated business equity other real estate	28.5	46.9	24.2	8.6
Miscellaneous assets	1.5	1.9	1.4	1.2
Total assets	100.0	100.0	100.0	100.0

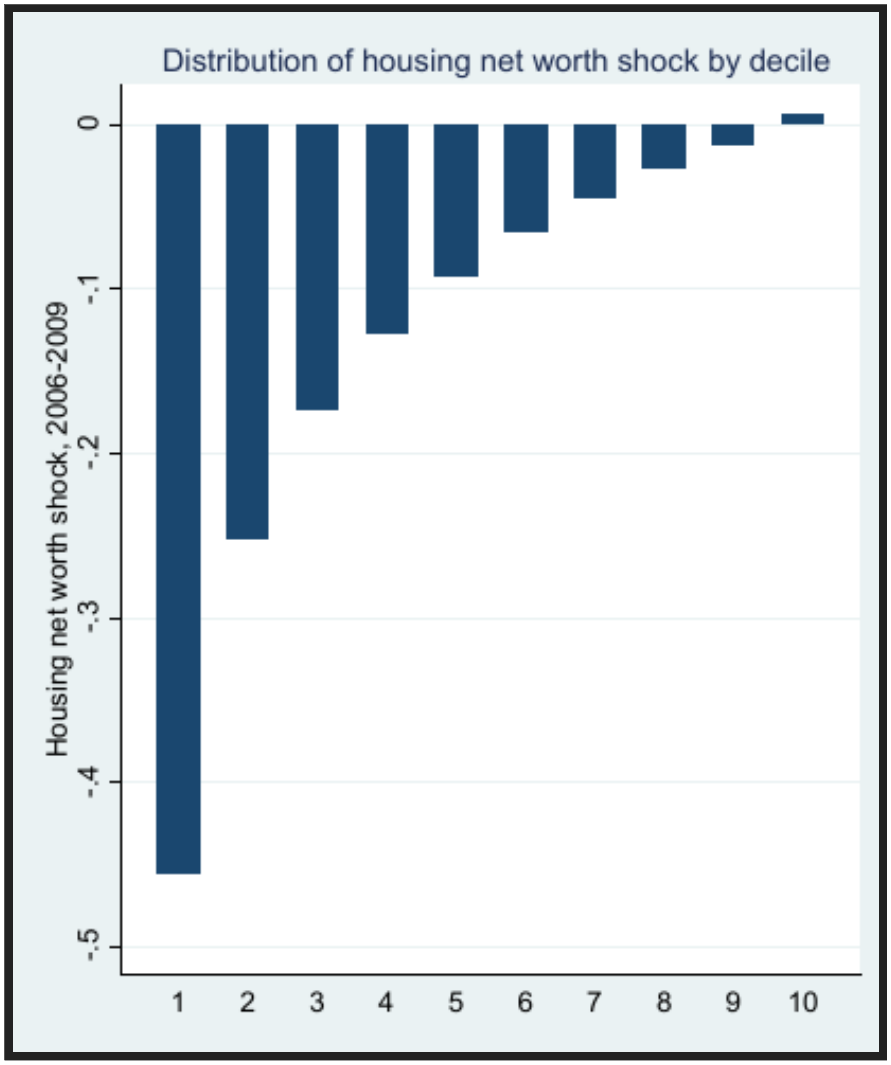
Wolff (2014)

Table 6. Composition of Household Wealth of the Middle Three Wealth Quintiles, 1983-2013

(Percent of gross assets)

Asset	1983	1989	1998	2001	2004	2007	2010	2013
Principal residence	61.6	61.7	59.8	59.2	66.1	65.1	64.8	62.5
Liquid assets (bank deposits, money market funds, and cash surrender value of life insurance)	21.4	18.6	11.8	12.1	8.5	7.8	8.0	8.1
Pension accounts	1.2	3.8	12.3	12.7	12.0	12.9	13.9	16.1
Corporate stock, financial securities, mutual funds, and personal trusts	3.1	3.5	5.5	6.2	4.2	3.6	3.1	3.4
Unincorporated business equity other real estate	11.4	9.4	8.8	8.5	7.9	9.3	8.9	8.6
Miscellaneous assets	1.3	2.9	1.8	1.2	1.4	1.3	1.3	1.2
Total assets	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Mian, Rao, Sufi (2013)



Mian, Rao, Sufi (2013)

Implications of financial crisis

- Lowest 50% have most of their wealth stored in their homes
- Recession of 2007-2009 decreased the value of home considerably, decreasing wealth and capital "income" (unrealized capital gains)
- Housing shocks were concentrated among lower income groups
- Capital incomes of lowest 50% decreased much more than top percentiles
- Credit constraints were tightened more for lower-income homeowners as a result of the shock

Consumption

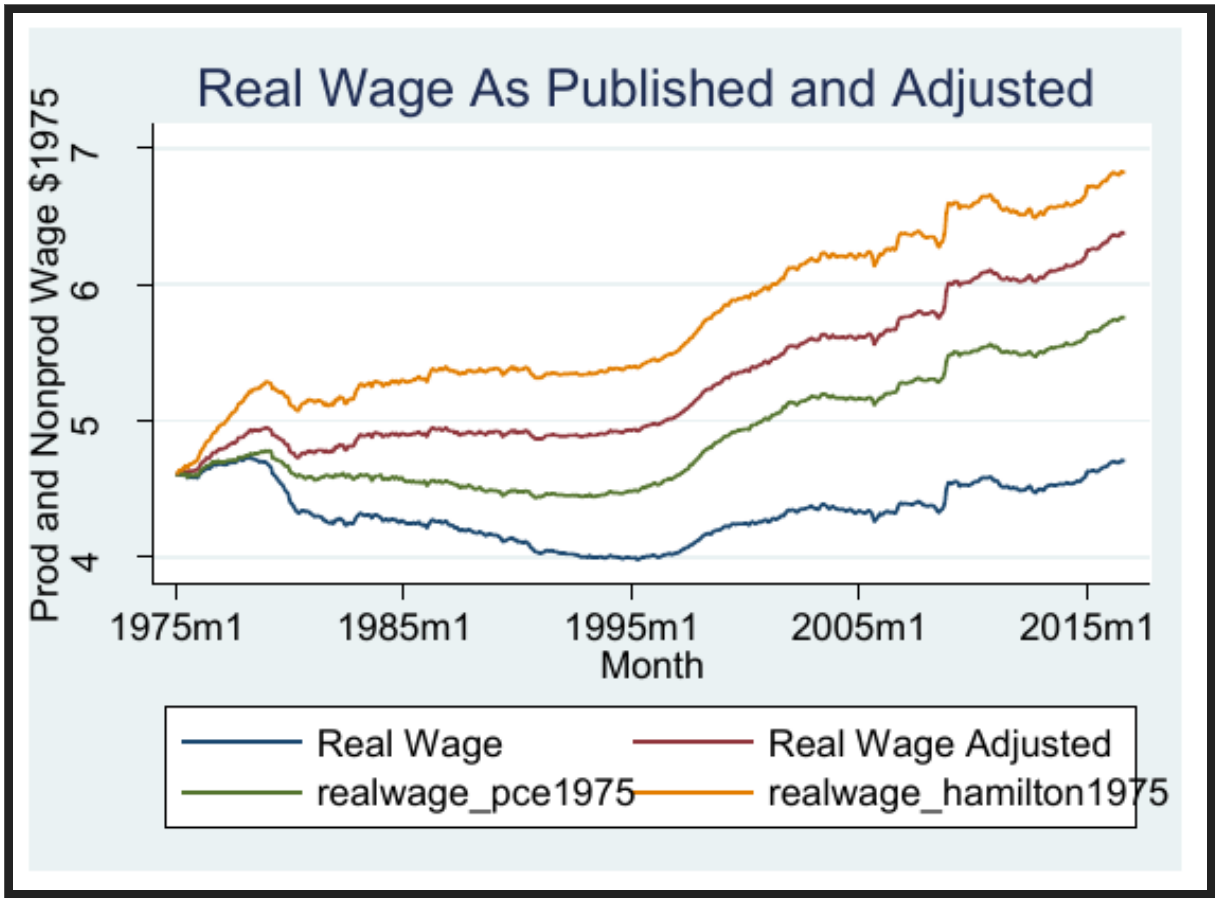
- How do we track inequality across time?
- Dollar in 1970 buys much less than a dollar today
- How do we account for new, cheaper technology, inflation, etc?
- Imagine life at the 10th percentile in 1980 vs 10th percentile today. Can it be true that this person is no better off?

Example

Consumer Price Index

- CPI is used to compare income across time
- Weighted average of prices in a "basket" of representative goods
- Tends to overstate inflation, does not account for substitution and improvement very well

Alternative inflation measures

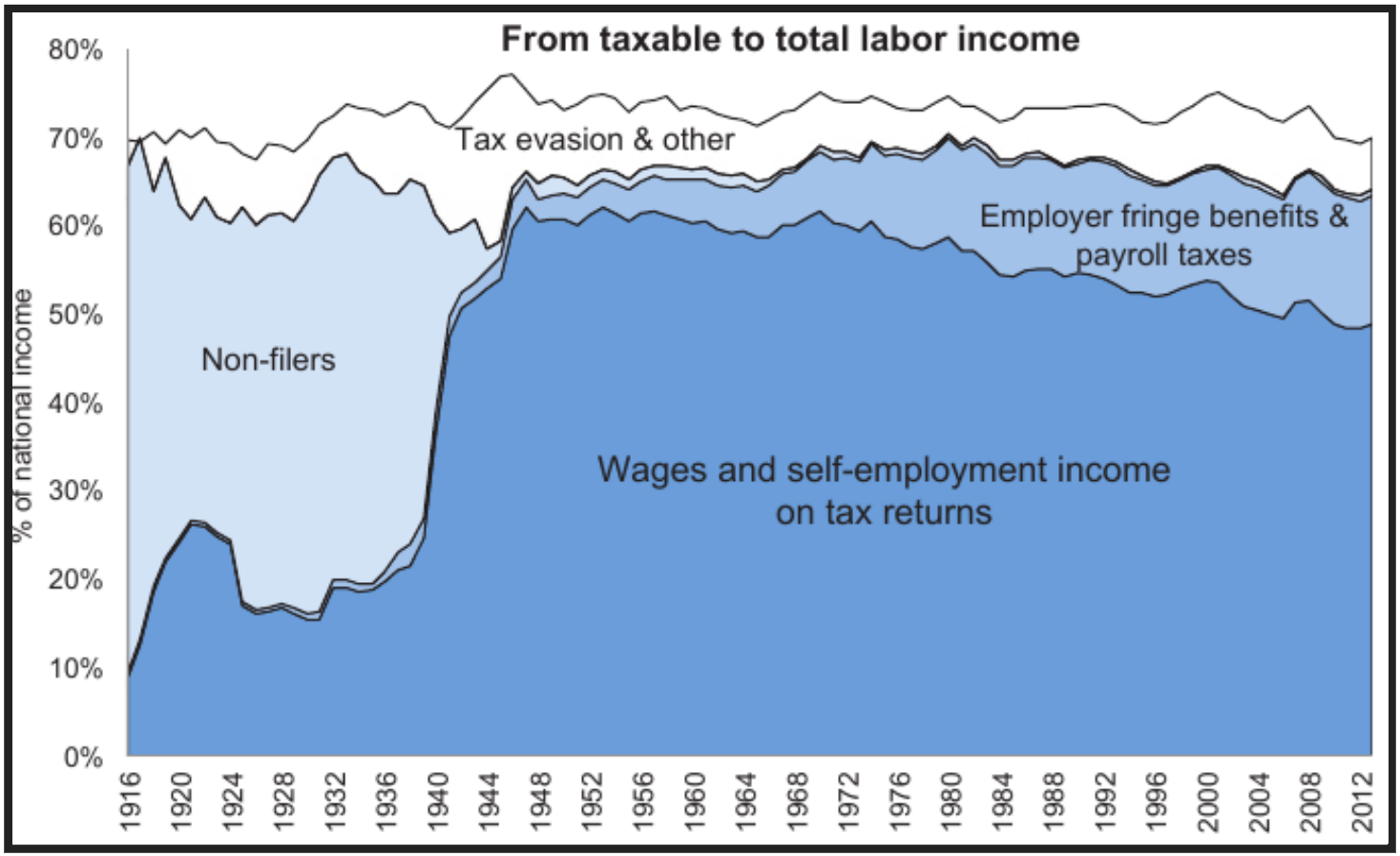


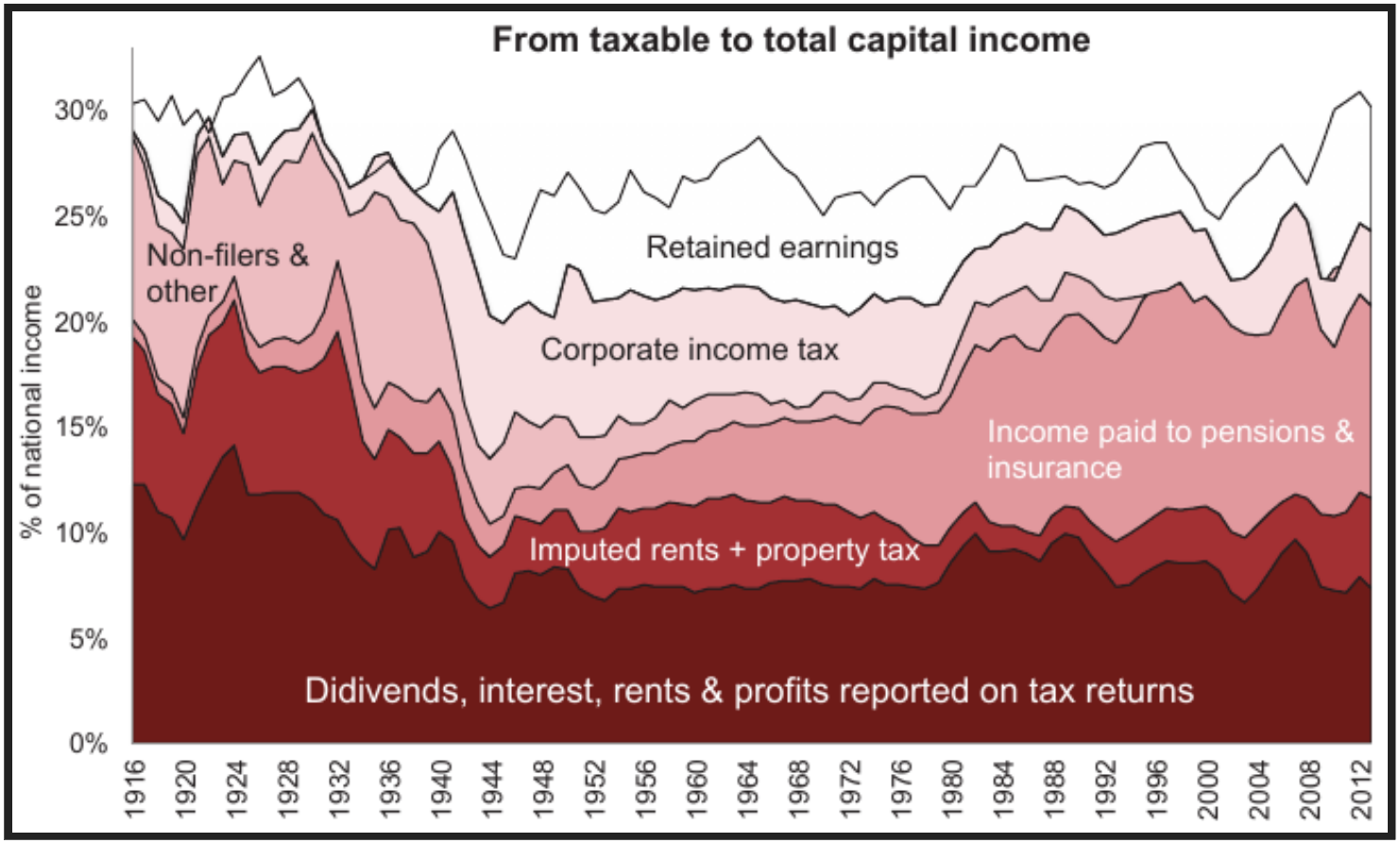
Which income is "right"?

- Defining an individual's income is difficult, easy to get the results you want
- An alternative: Think of income in terms of macro:

$$Y = C + I + G + NX$$

- Less controversy on how to measure
- Can we describe inquality in a way that is consistent with national income?
- Piketty, Saez, Zucman (2016)


From taxable to total labor income
% of national income
80%
70%
60%
50%
40%
30%
20%
10%
0%
1916
1920
1924
1928
1932
1936
1940
1944
1948
1952
1956
1960
1964
1968
1972
1976
1980
1984
1988
1992
1996
2000
2004
2008
2012
Tax evasion & other
Employer fringe benefits & payroll taxes
Non-filers
Wages and self-employment income on tax returns

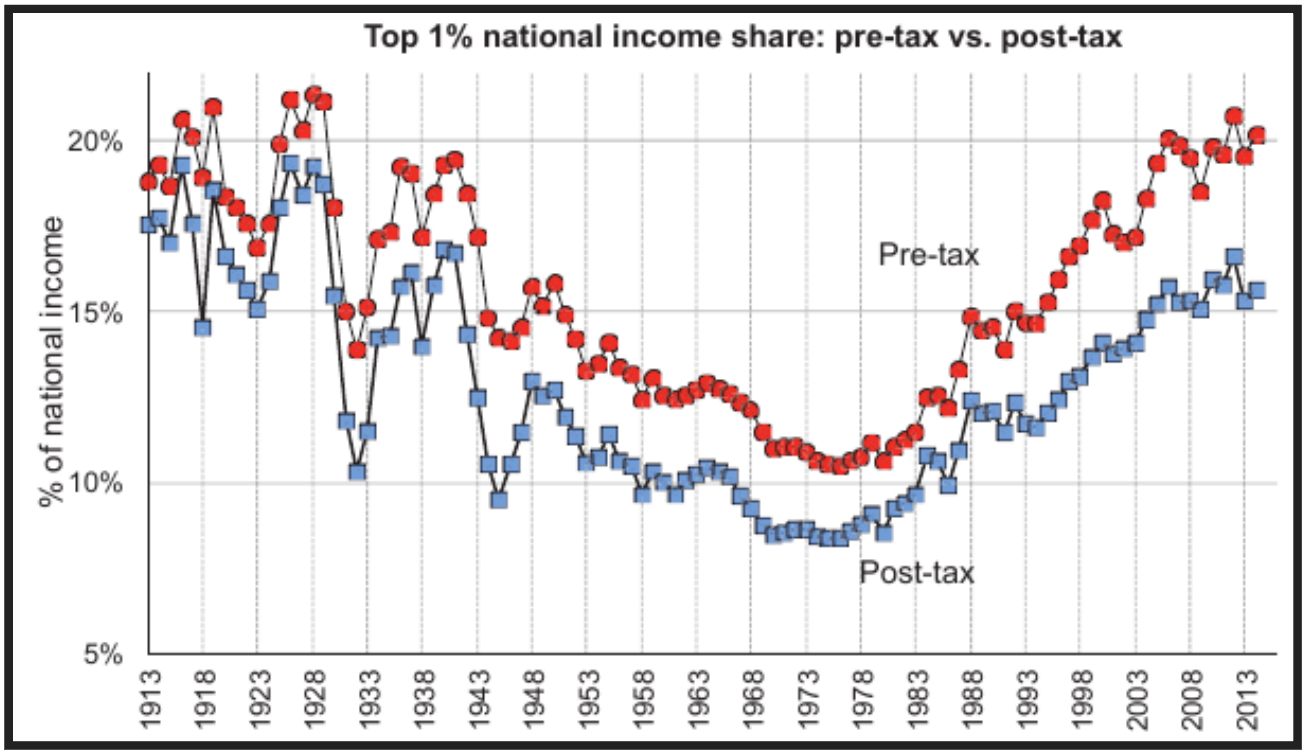

From taxable to total capital income
% of national income
30%
25%
20%
15%
10%
5%
0%
1916
1920
1924
1928
1932
1936
1940
1944
1948
1952
1956
1960
1964
1968
1972
1976
1980
1984
1988
1992
1996
2000
2004
2008
2012
Non-filers & other
Retained earnings
Corporate income tax
Income paid to pensions & insurance
Imputed rents + property tax
Didivends, interest, rents & profits reported on tax returns

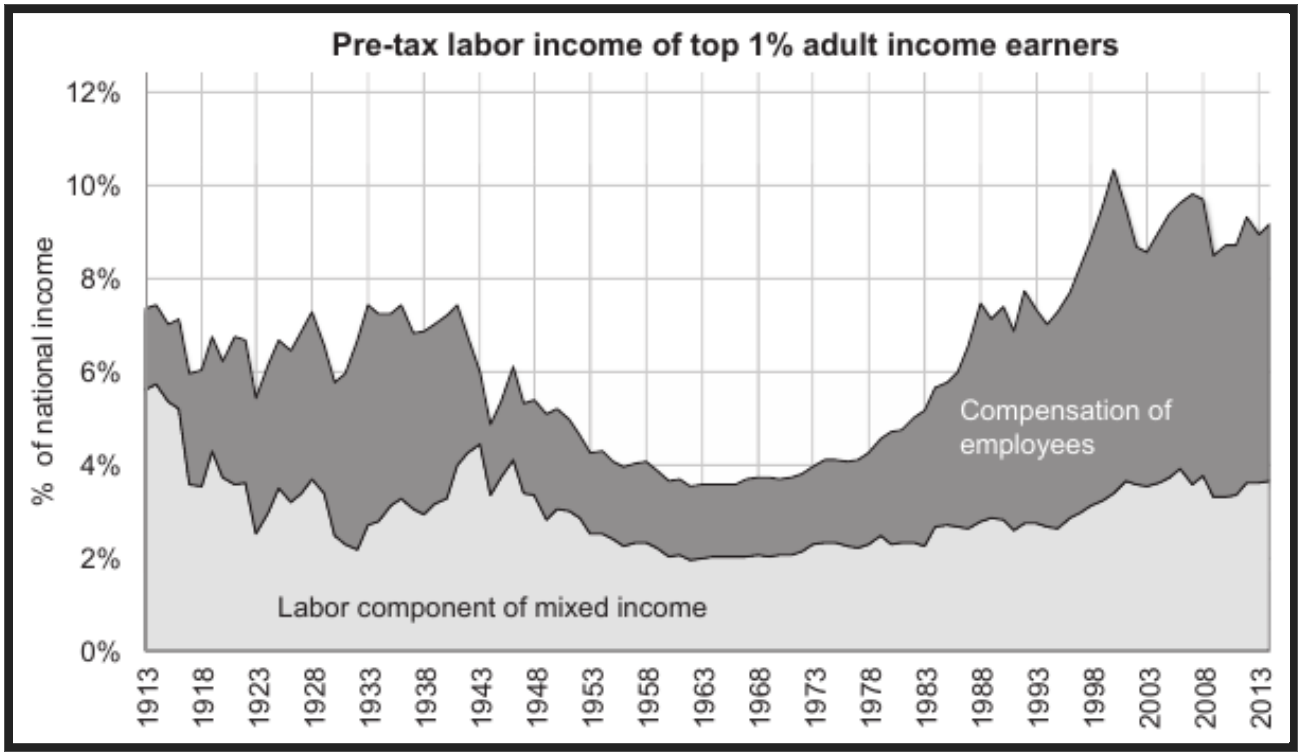
Pre-tax income

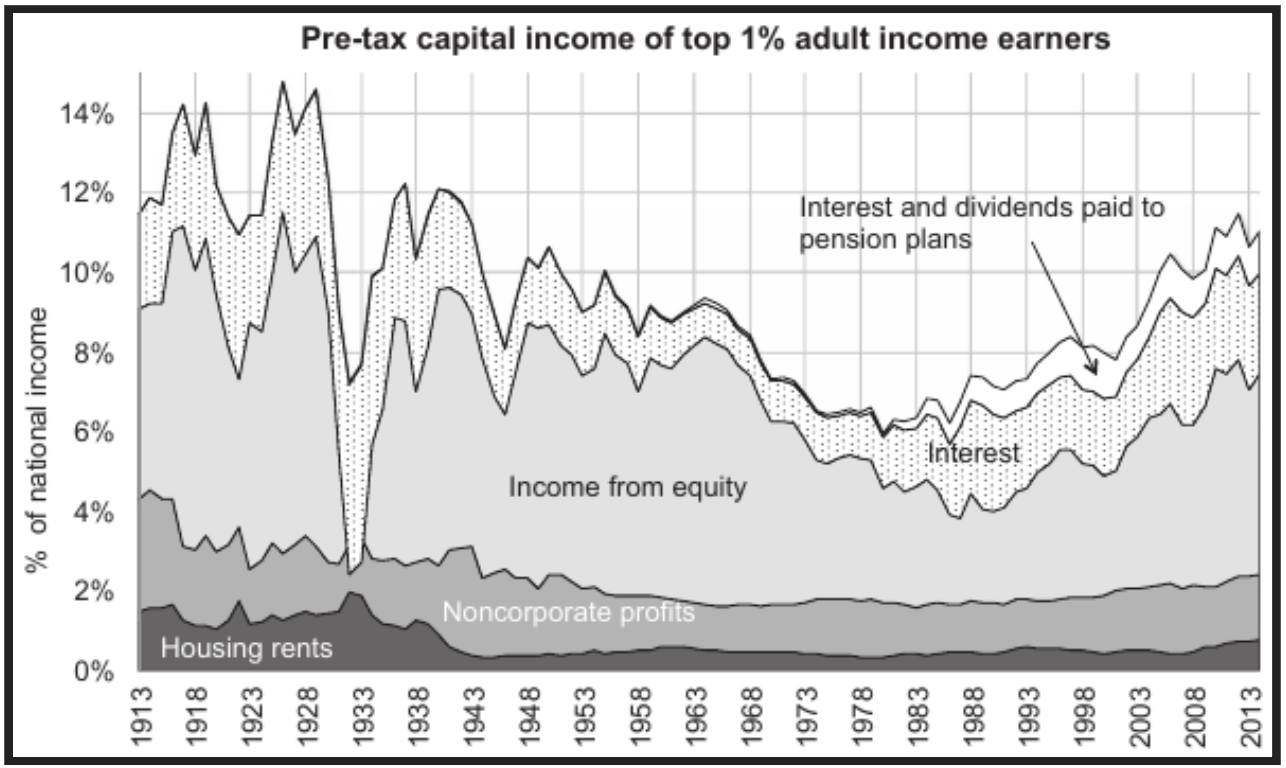
Pre-tax national income…is our benchmark concept to study the distribution of income before government intervention. Pre-tax income is equal to the sum of all income flows going to labor and capital, after taking into account the operation of private and public pensions, as well as disability and unemployment insurance, but before taking into account other taxes and transfers…we deduct the contributions to private and public pensions including Social Security—old age, survivors and disability—and unemployment insurance from incomes, and add back the corresponding benefits.

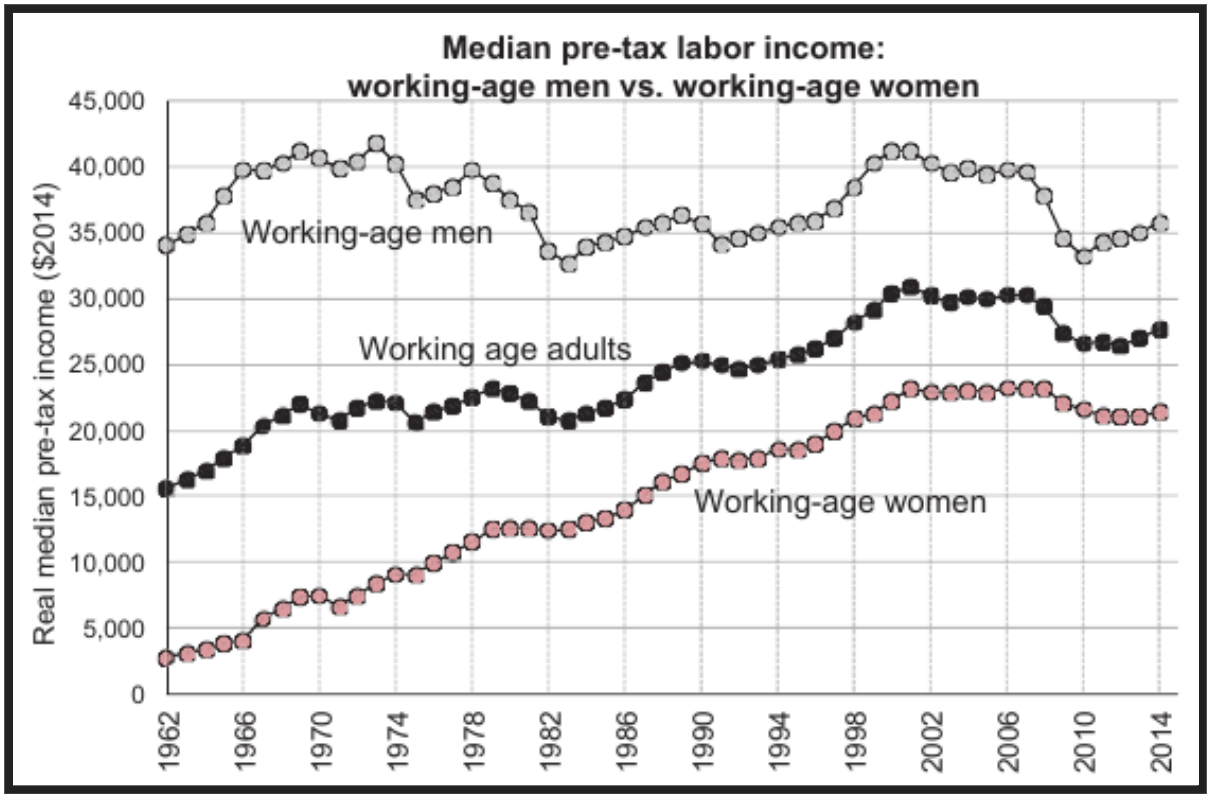
Distribution of total income

- Combine surveys, tax data, models, other empirical results, assumptions to distribute total pre-tax income to different percentiles
- Each step is carefully considered and explained
- Expect criticism here in the future!


Top 1% national income share: pre-tax vs. post-tax
% of national income
20%
15%
10%
5%
Pre-tax
Post-tax
1913
1918
1923
1928
1933
1938
1943
1948
1953
1958
1963
1968
1973
1978
1983
1988
1993
1998
2003
2008
2013


Pre-tax labor income of top 1% adult income earners
% of national income
12%
10%
8%
6%
4%
2%
0%
1913
1918
1923
1928
1933
1938
1943
1948
1953
1958
1963
1968
1973
1978
1983
1988
1993
1998
2003
2008
2013
Compensation of employees
Labor component of mixed income


Pre-tax capital income of top 1% adult income earners
% of national income
14%
12%
10%
8%
6%
4%
2%
0%
1913
1918
1923
1928
1933
1938
1943
1948
1953
1958
1963
1968
1973
1978
1983
1988
1993
1998
2003
2008
2013
Interest and dividends paid to pension plans
Interest
Income from equity
Noncorporate profits
Housing rents


Median pre-tax labor income:
working-age men vs. working-age women
Real median pre-tax income ($2014)
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
Working-age men
Working age adults
Working-age women
1962
1966
1970
1974
1978
1982
1986
1990
1994
1998
2002
2006
2010
2014