
Income Inequality in the United States: Using Tax Data to Measure Long-term Trends

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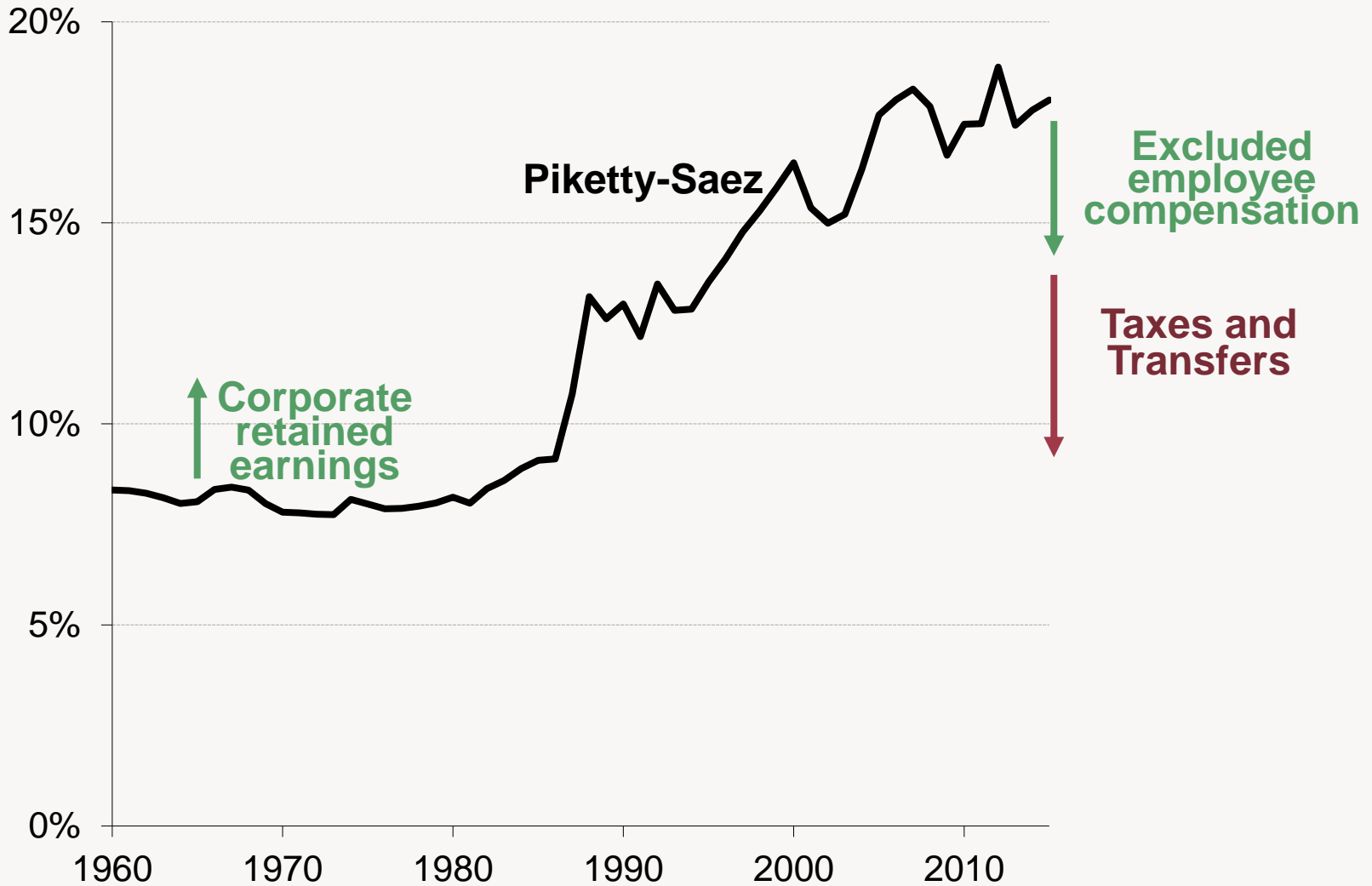
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Joint Committee on Taxation, U.S. Congress

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Indiana University

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Top 1% Fiscal Income

Inconsistent measure, ignores taxes & transfers



Income Inequality Estimate Uses

Inequality caused by?

- Skill-biased tech change, demographics, unions, ↑finance/rents, year-to-year variability

Inequality results in?

- Slow growth, social unrest (Stiglitz, Putnam)

Public Policy

- Tax progressivity
- Distribution of transfers

Measurement Error!

Need consistent income/unit definitions before making conclusions

Previous Studies

Survey Data

- SCF: Bricker, et al. (2016)
- Census: Burkhauser et al. (2012, ReStat & NTJ)
- CPS: Fixler, et al. (various) [BEA estimates in 1950-70s]

Tax Data

- Mitchell et al. (1921), King and Epstein (1930), Copeland (1932)
→ usually fiscal income, Rockoff (2020) reviews
 - Reynolds & Smolenksy (1977)
 - Pechman (1985)
 - Feenberg & Poterba (2000)
 - Piketty & Saez (2003, extended)
 - CBO (annual reports)
 - JCT, OTA, and TPC
 - Auten and Splinter (since 2017)
 - Piketty, Saez & Zucman (2018)
- Net National Product
NI + transfers + other
- Fiscal Income
- Expanded Fiscal Income
- National Accounts

National Income is NOT economic welfare

No accounting for:

- **capital gains** (instead, include retained earnings)
- **unreported offshore income**
- **home production**
- **income from illicit activity**
- **leisure**
- **utility/disutility of work**
- **longer lifespans or decreased pollution**
- **transfers** (we account for govt. transfers)

Tax Return Data Issues

Tax Data

Public Use Files (1960-78) & INSOLE files since 1979
80-360K tax returns, oversampled high incomes: weights adjusted

Issues with Income Reporting

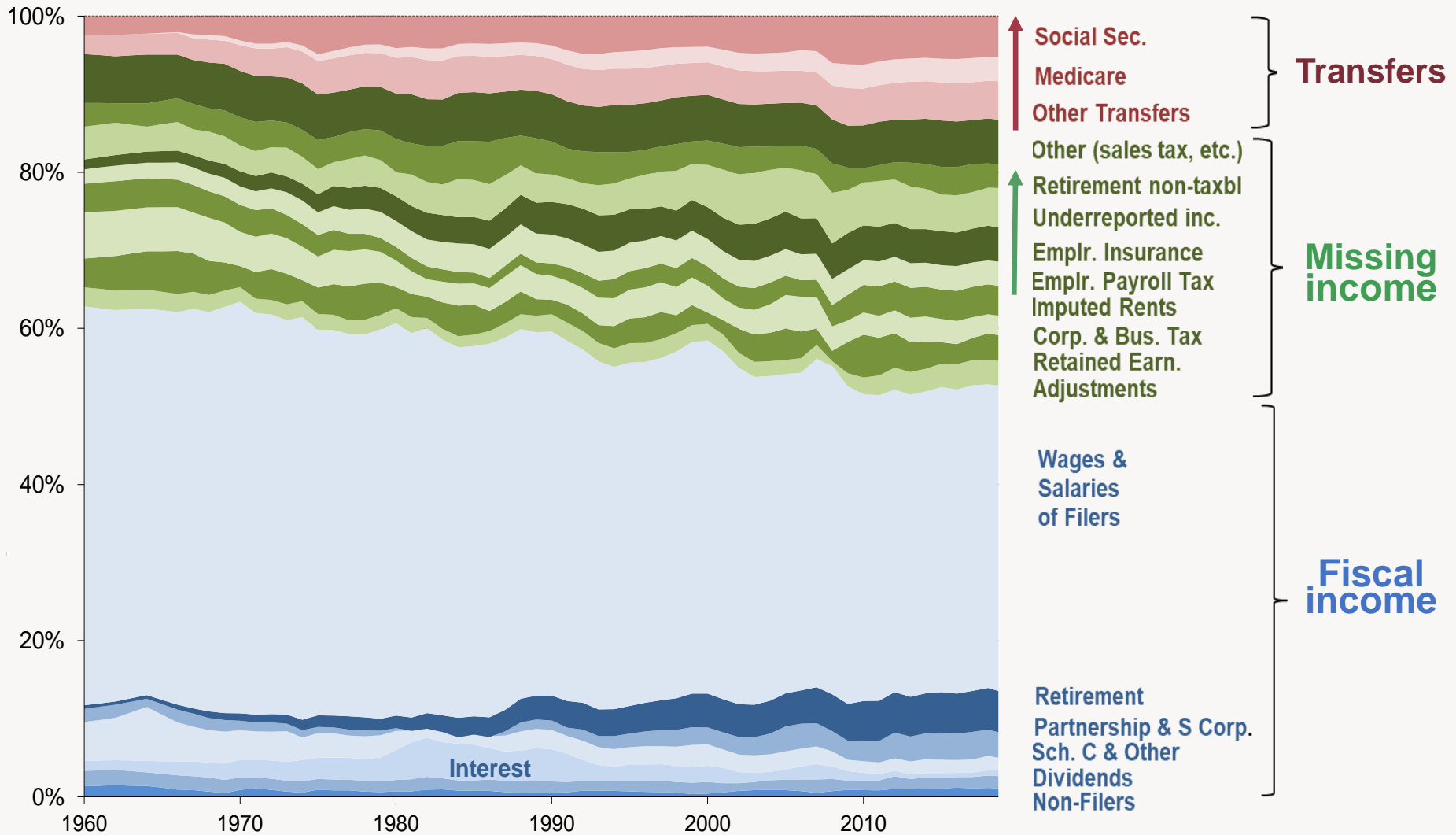
- **Top incomes:** fiscal income inconsistent over time
- **All incomes:** missing sources
→ e.g., employer-paid taxes/benefits & imputed rent
- **Bottom incomes:** missing non-filers

We address each issue:

- **Top incomes:** adjust for tax changes to make consistent
- **All incomes:** include all national income (non-tax data: SCF, CPS, etc.)
- **Bottom incomes:** non-filer admin. data: Forms W-2 & 1099

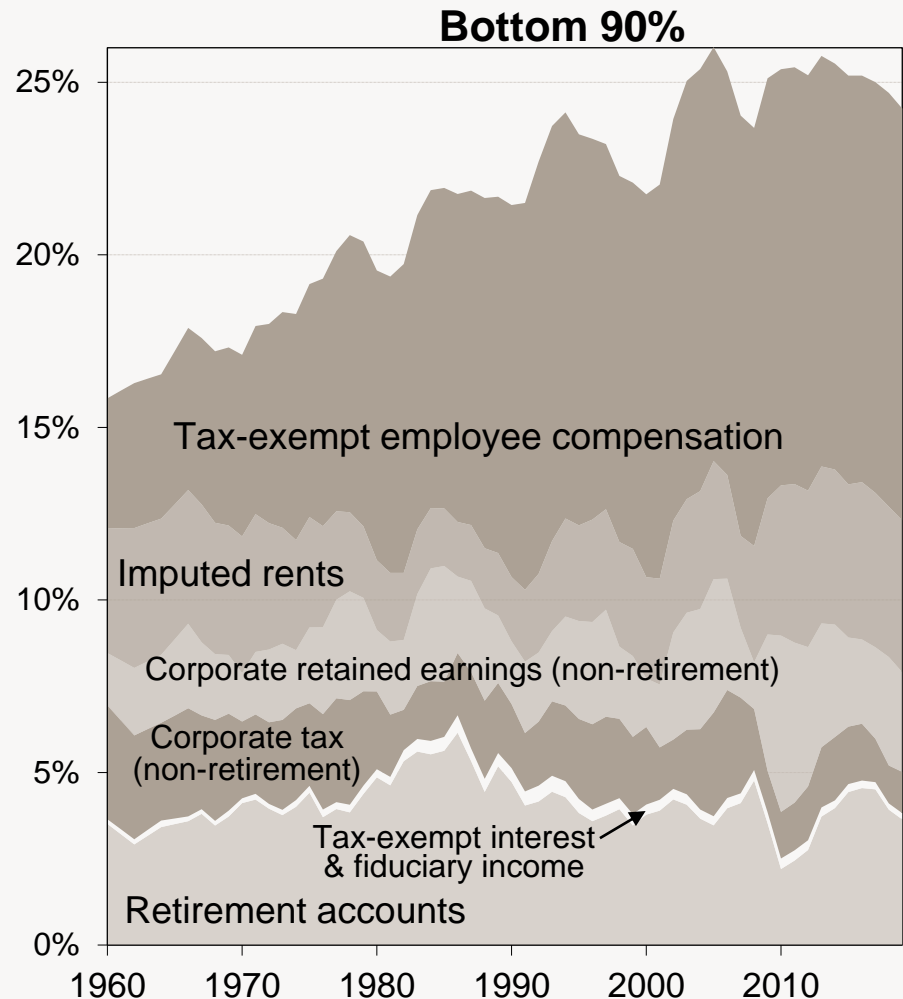
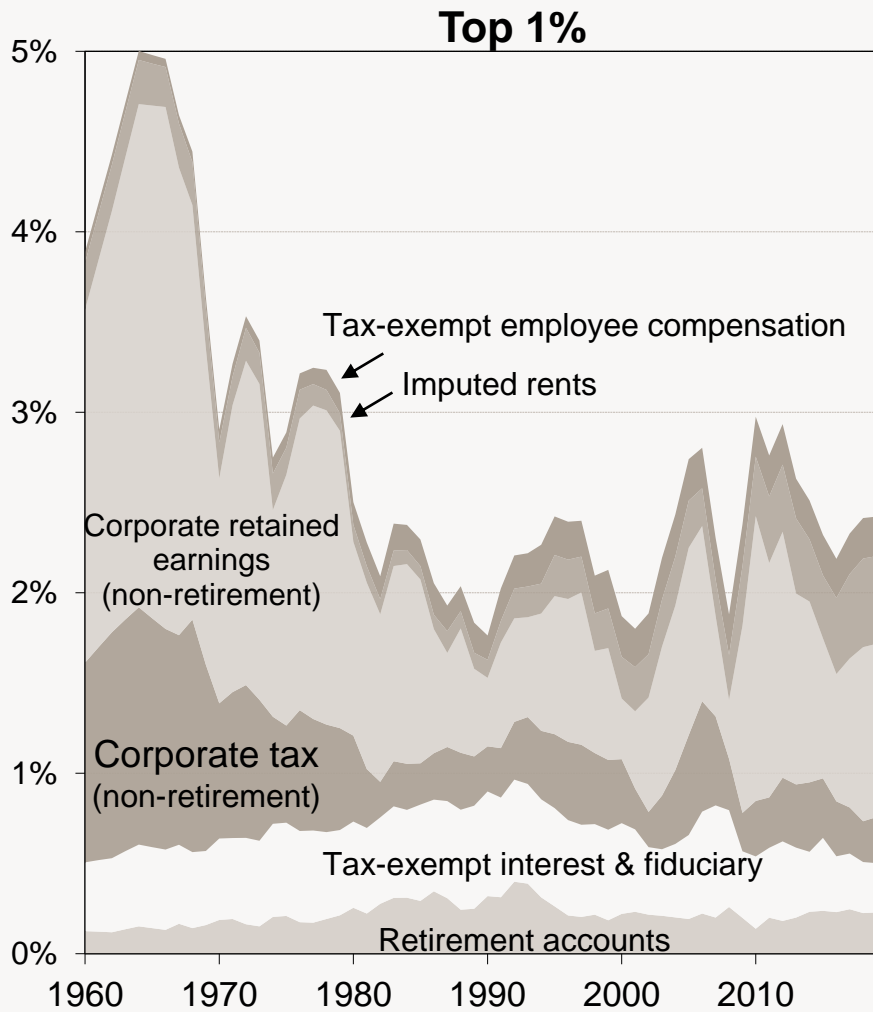
Fiscal inc. excludes transfers/missing income

Missing income shifted from top to bottom



Fiscal inc. excludes transfers/missing income

Shares of national income missing from fiscal income



Outline

Top 1%: Fiscal income → National income

- Corrections & Demographics
- Add missing income → Pre-tax national income
- Add transfers → Pre-tax/after-transfer income
- Deduct taxes → After-tax national income

Results

- Entire distribution
- Tax progressivity
- Redistribution
- Other studies

Pre-tax Income: Corrections

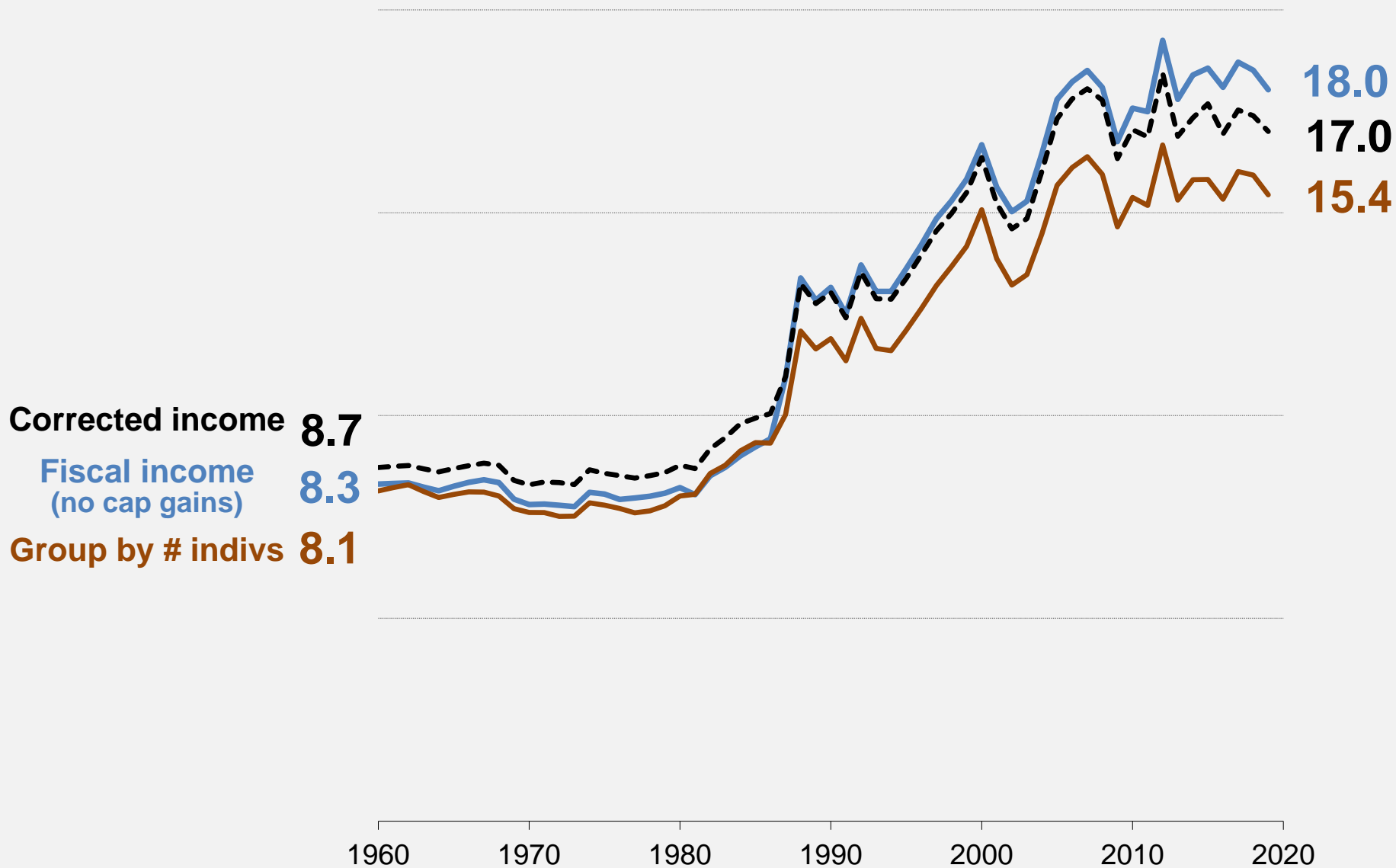
Fiscal income definition: $AGI + adj - CGs/SS/UI$

- Remove NOLs = losses in prior years
- Remove state & local tax refunds = adjust for prior year
- Remove gambling losses (only winning in AGI)
- Add missing alimony receipts and deduct alimony paid
- Add tax-exempt interest & combat pay

Tax Reform/Demographic adjustments

- Correct for post-TRA86 passive loss limits
- Remove dependent, <20 yr old, & non-resident filers
- Control for falling marriage rates: #tax units to #individuals

Top 1% shares: Corrected fiscal income



Top 1% shares: Pre-tax national income

Add C corporation retained earnings

Pre-TRA86: C corporations as potential tax shelter
large issue during 1960s expansion

Post-TRA86: Passthroughs to avoid double tax & low rate

Total retained earnings from NIPA

Retirement fund ownership (54% in 2015): by ownership

Non-profit share (7%): by $\frac{1}{2}$ income $\frac{1}{2}$ per capita

Private share (39%): Allocate by $\frac{3}{4}$ dividends $\frac{1}{4}$ capital gains

Top 1% shares: Pre-tax national income

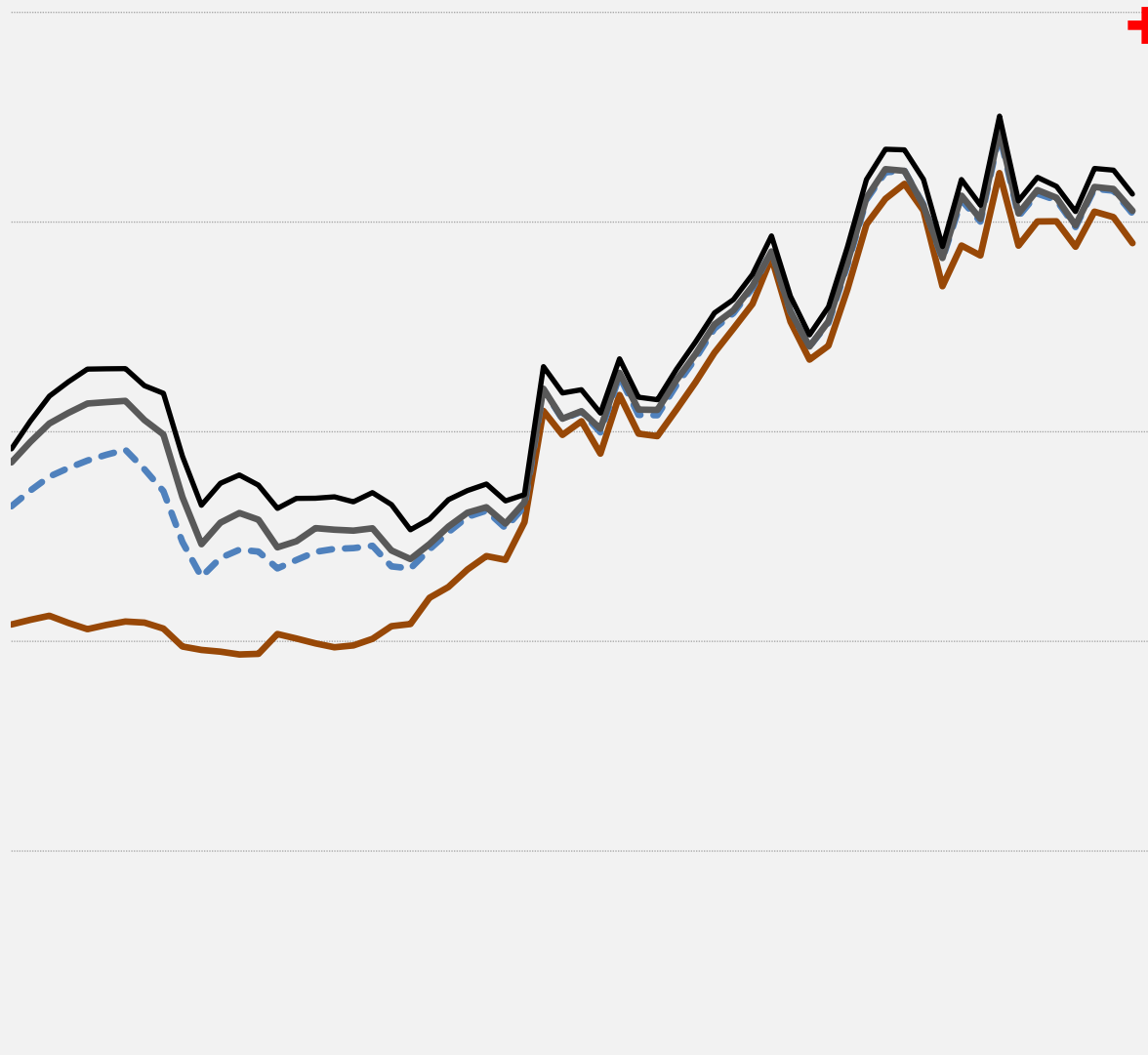
+3.4

+0.9

**Business prop
taxes & inflation** 11.7
C-corp taxes 11.4
**C-corp retained
earnings** 10.6
**Group by # adults
fiduciary ret. earn** 8.3

16.5
16.2
16.2
15.6

1960 1970 1980 1990 2000 2010 2020



Top 1% shares: Pre-tax national income

Add misreported income

Difference between taxable and NIPA totals
5% to non-filers and rest by IRS audit studies

IRS audit studies: Auten and Langetieg (2021)

Panel A: Percent of Returns by Ratio Class, 2010–2011

Rank	-0.5	0.5	1	1-1.1	1.1-1.2	1.2-1.5	1.5-2	2-4	4-8	8+
<-\$50k	4.1	37.0	34.1	3.1	3.5	11.4	1.9	4.2	0.6	---
< \$0	7.0	20.1	29.1	2.8	2.3	5.5	6.3	10.5	9.3	7.2
\$0-P20	---	5.1	66.4	8.6	3.3	5.6	3.4	3.7	1.8	1.9
20-40	---	4.7	70.5	10.6	3.3	5.1	3.0	2.2	0.5	---
40-60	---	4.2	72.5	11.8	3.4	4.5	2.0	1.3	0.2	---
60-80	---	3.6	71.0	17.2	3.4	3.5	0.9	0.5	0.0	---
80-90	---	3.8	74.4	16.4	2.5	2.2	0.6	0.2	0.0	---
90-95	---	3.4	75.2	15.5	3.3	2.1	0.4	0.1	0.0	---
95-99	---	4.6	72.8	18.2	2.7	1.3	0.3	0.1	---	---
99-99.5	---	4.8	74.7	17.7	1.7	0.5	0.4	0.1	---	---
Top 0.5%	---	3.8	77.7	15.4	2.0	0.8	0.2	0.1	---	---
All	0.1	4.5	70.6	13.0	3.2	4.1	2.0	1.6	0.5	0.4

Panel B: Average Ratio of Corrected to Reported Income by Ratio Class

Rank	-0.5	0.5	1	1-1.1	1.1-1.2	1.2-1.5	1.5-2	2-4	4-8	8+
<-\$50k	-1.2	-0.8	1.0	1.1	1.2	1.4	1.7	2.9	4.6	---

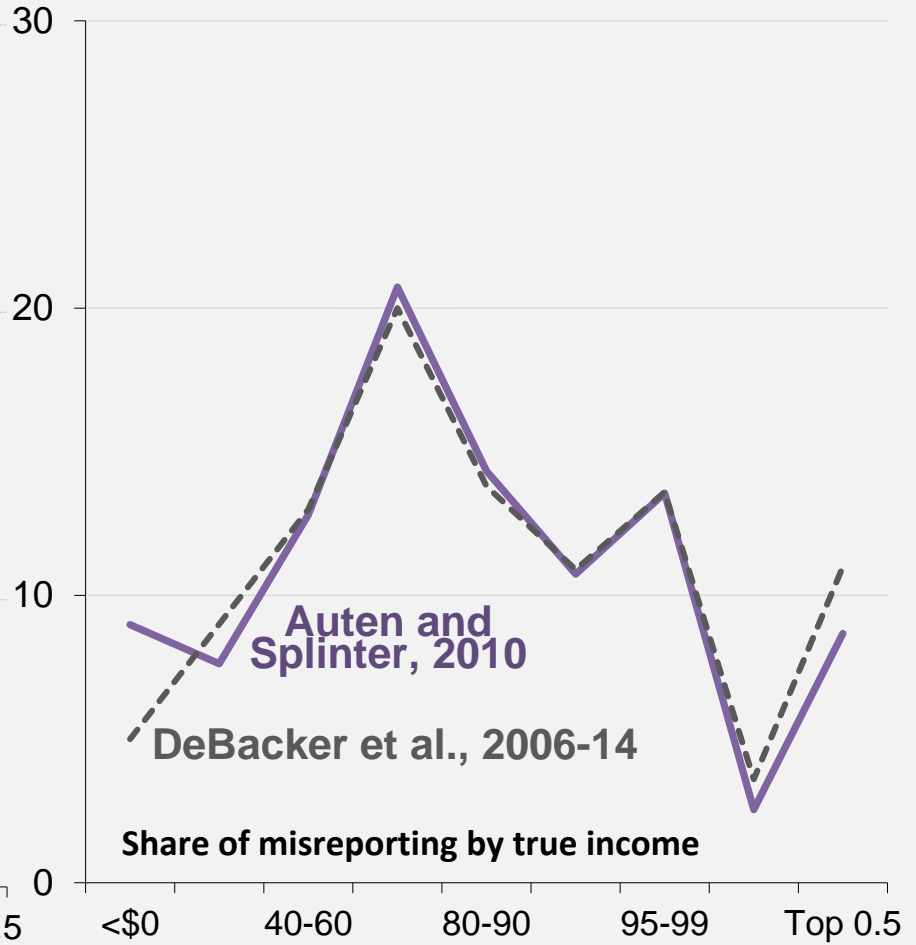
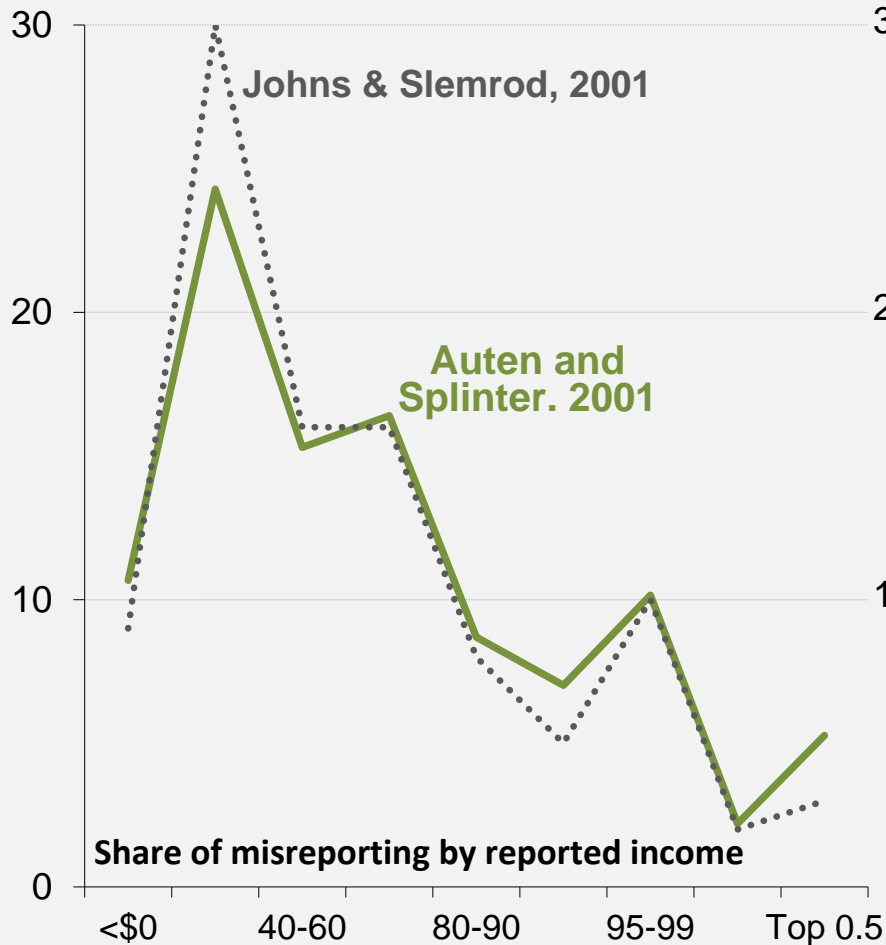
Panel C: Standard Error for Ratio by Ratio Class

Rank	-0.5	0.5	1	1-1.1	1.1-1.2	1.2-1.5	1.5-2	4-Feb	8-Apr	8+
<-\$50k	0.1	0.0	---	0.0	0.0	0.0	0.0	0.2	0.1	---

Top 1% shares: Pre-tax national income

Add underreported income

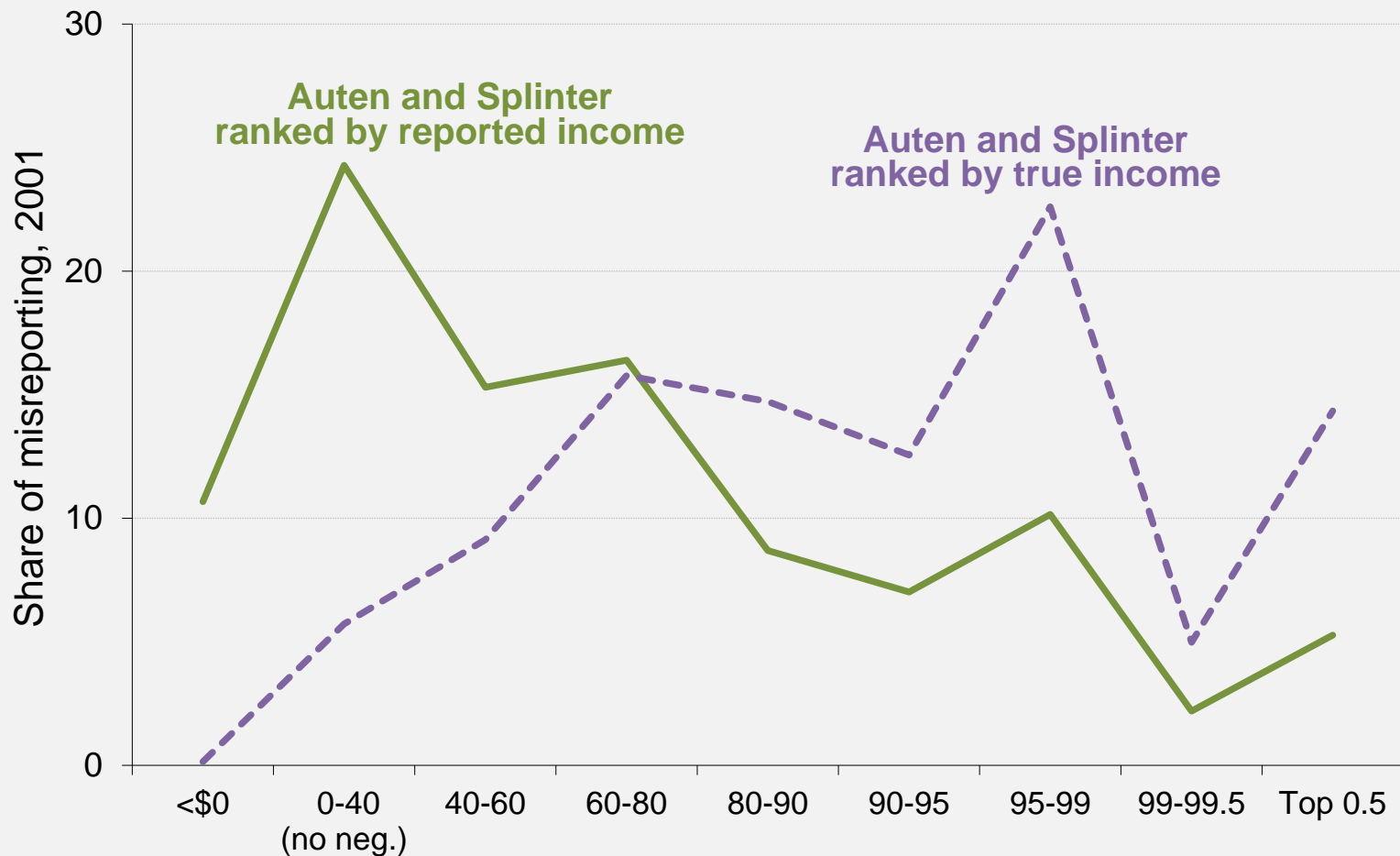
Difference between taxable and NIPA totals
5% to non-filers and rest by IRS audit studies



Top 1% shares: Pre-tax national income

Add underreported income

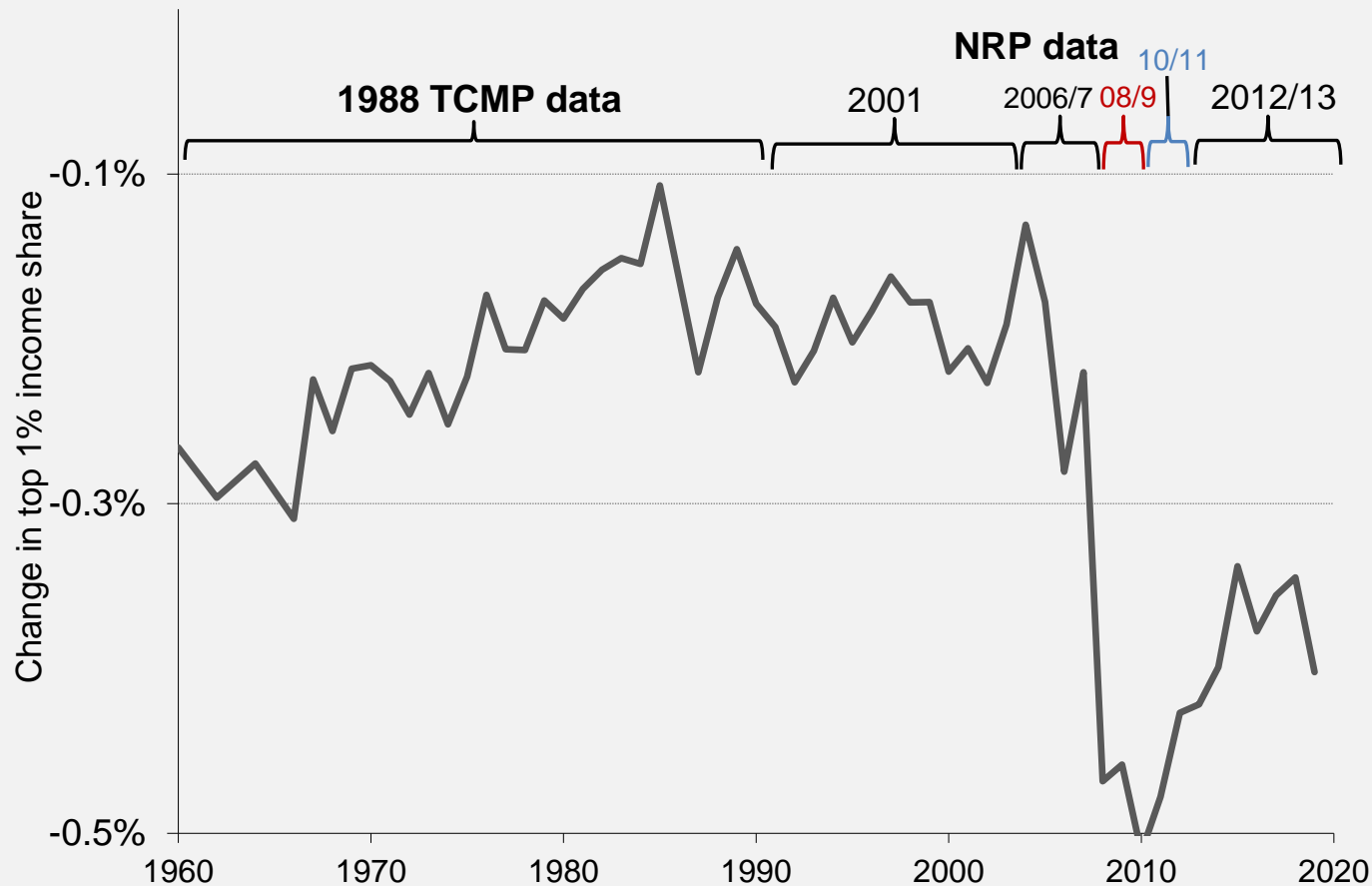
Difference between taxable and NIPA totals
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Top 1% shares: Pre-tax national income

Add underreported income

Difference between taxable and NIPA totals
5% to non-filers and rest by IRS audit studies



Note: Include re-ranking effects and accounts for misreporting and other proprietor income adjustments, such as depreciation.

Top 1% shares: Pre-tax national income

Add misreported income

Difference between taxable and NIPA totals
5% to non-filers and rest by IRS audit studies

Tax depreciation vs. economic depreciation

Allocate gap by expensing and depreciation

Add imputed rent

Distribute by property tax deductions

Add employer payroll taxes & insurance

Assume employees bear burden of payroll tax

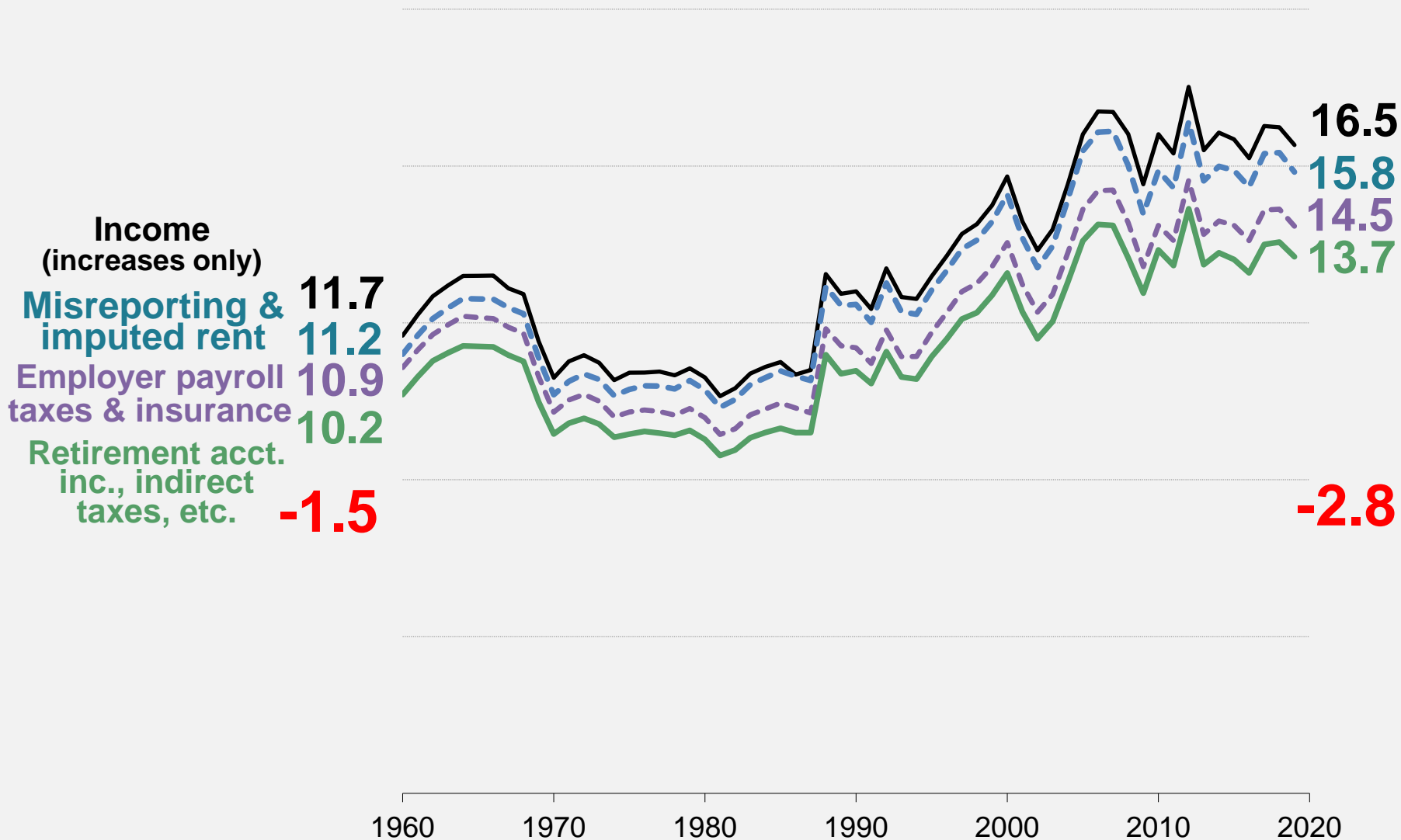
Distribute NIPA insurance totals using 2013 & 2015 W-2 data

Distribution unchanged from 1992 (Warshawsky, 2016)

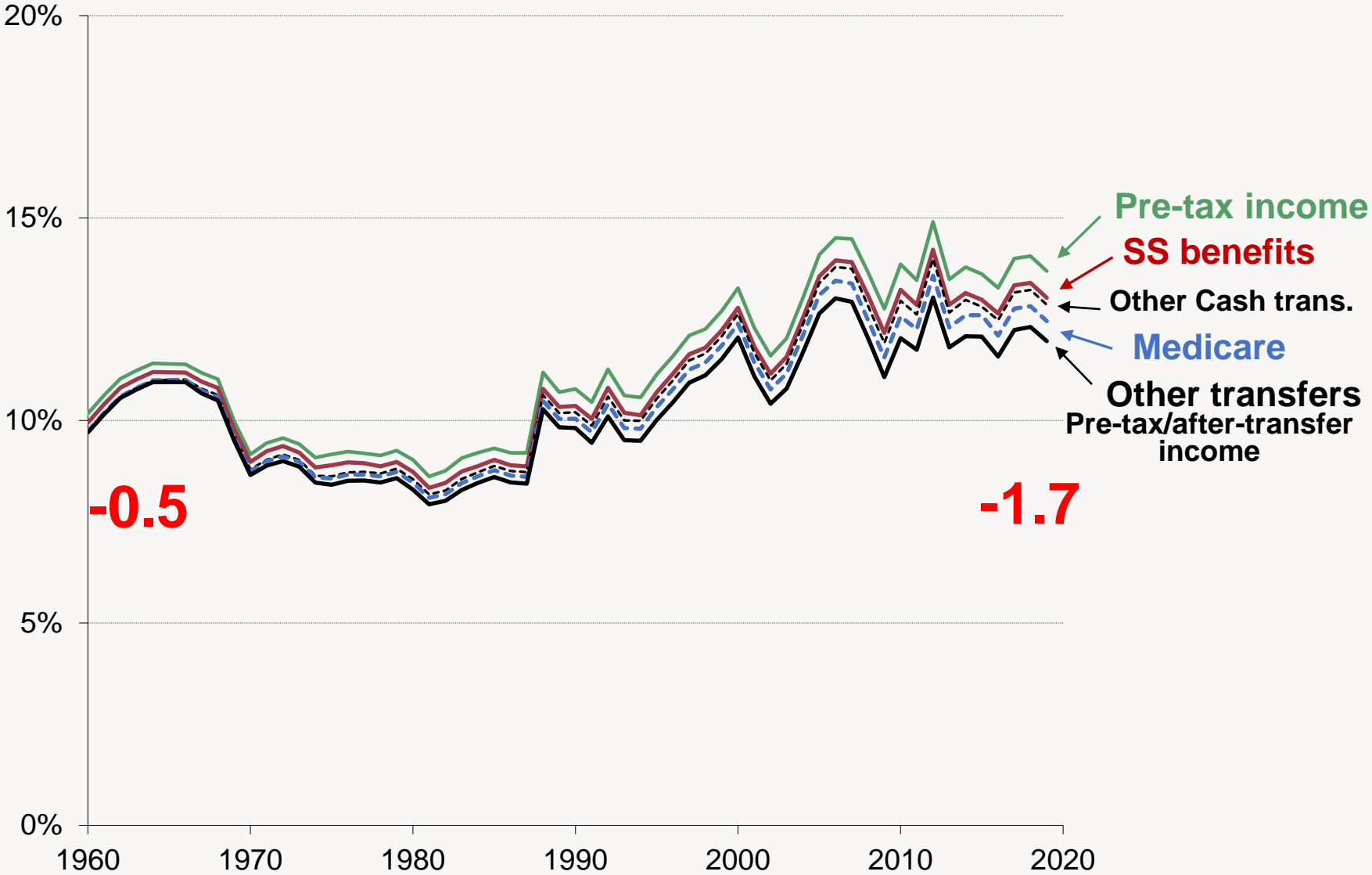
Add retirement account income

Undistributed “inside buildup” allocated by DC/DB ownership

Top 1% shares: Pre-tax national income

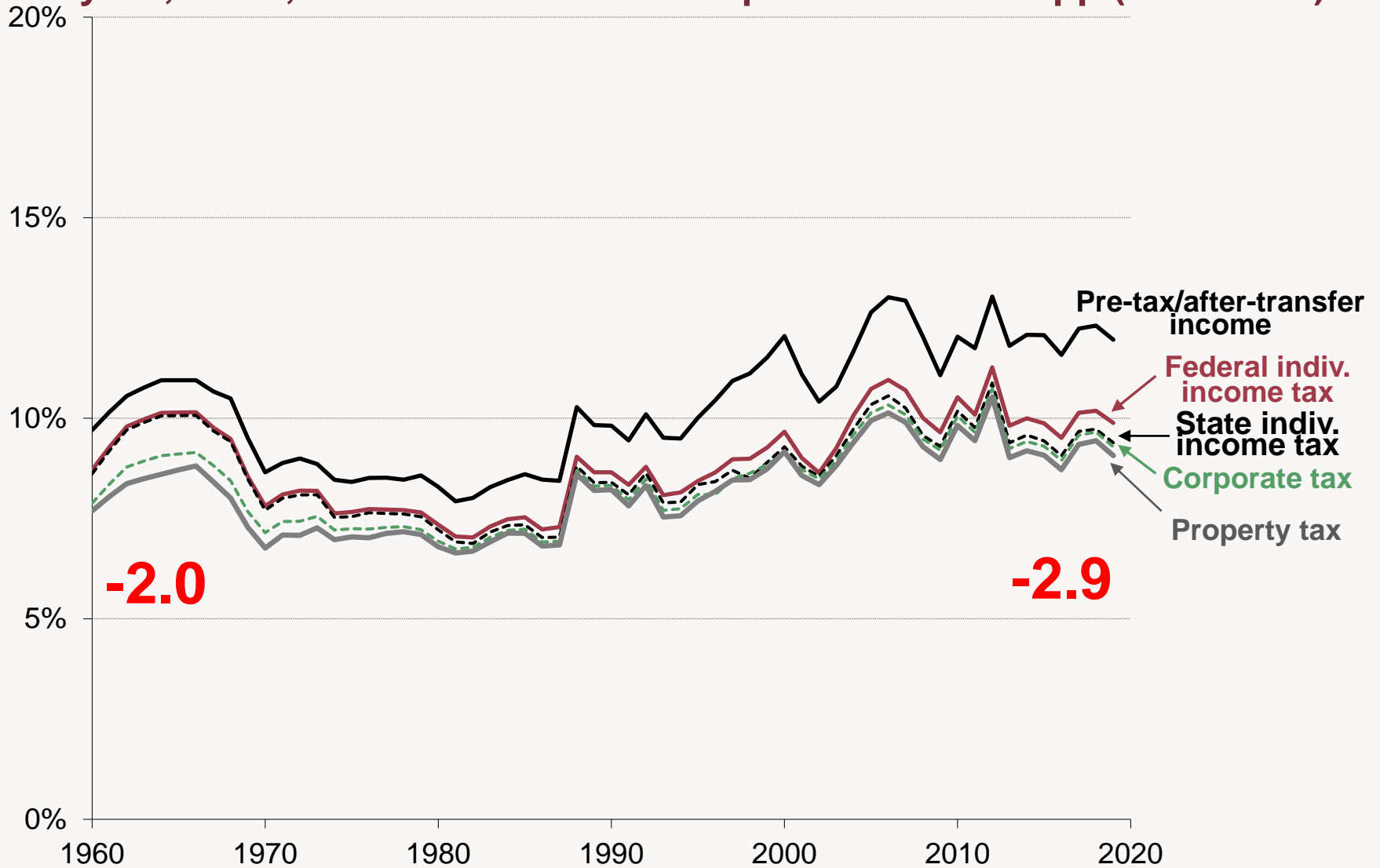


Top 1% income share: Transfers

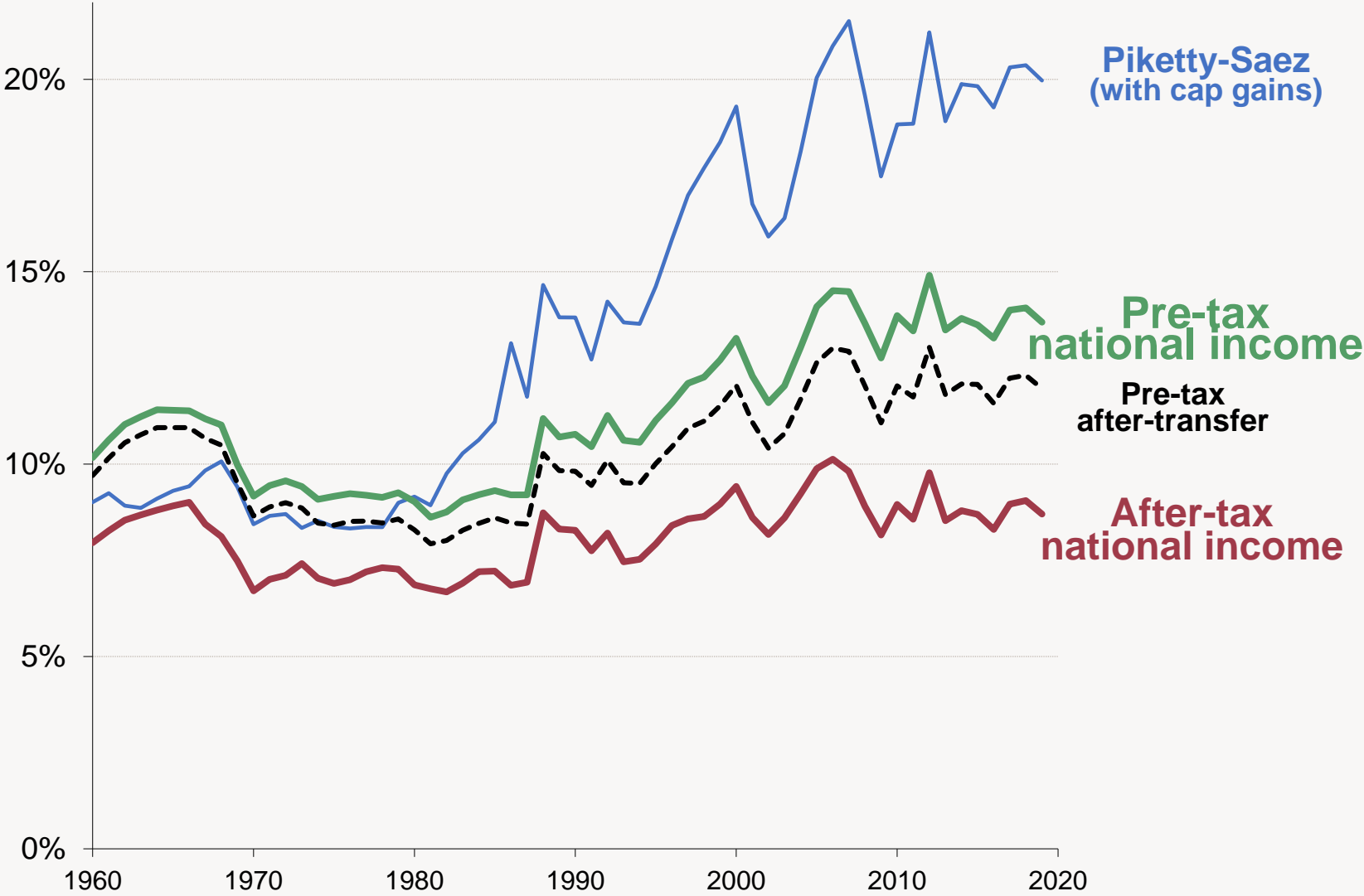


Top 1% Shares: Taxes

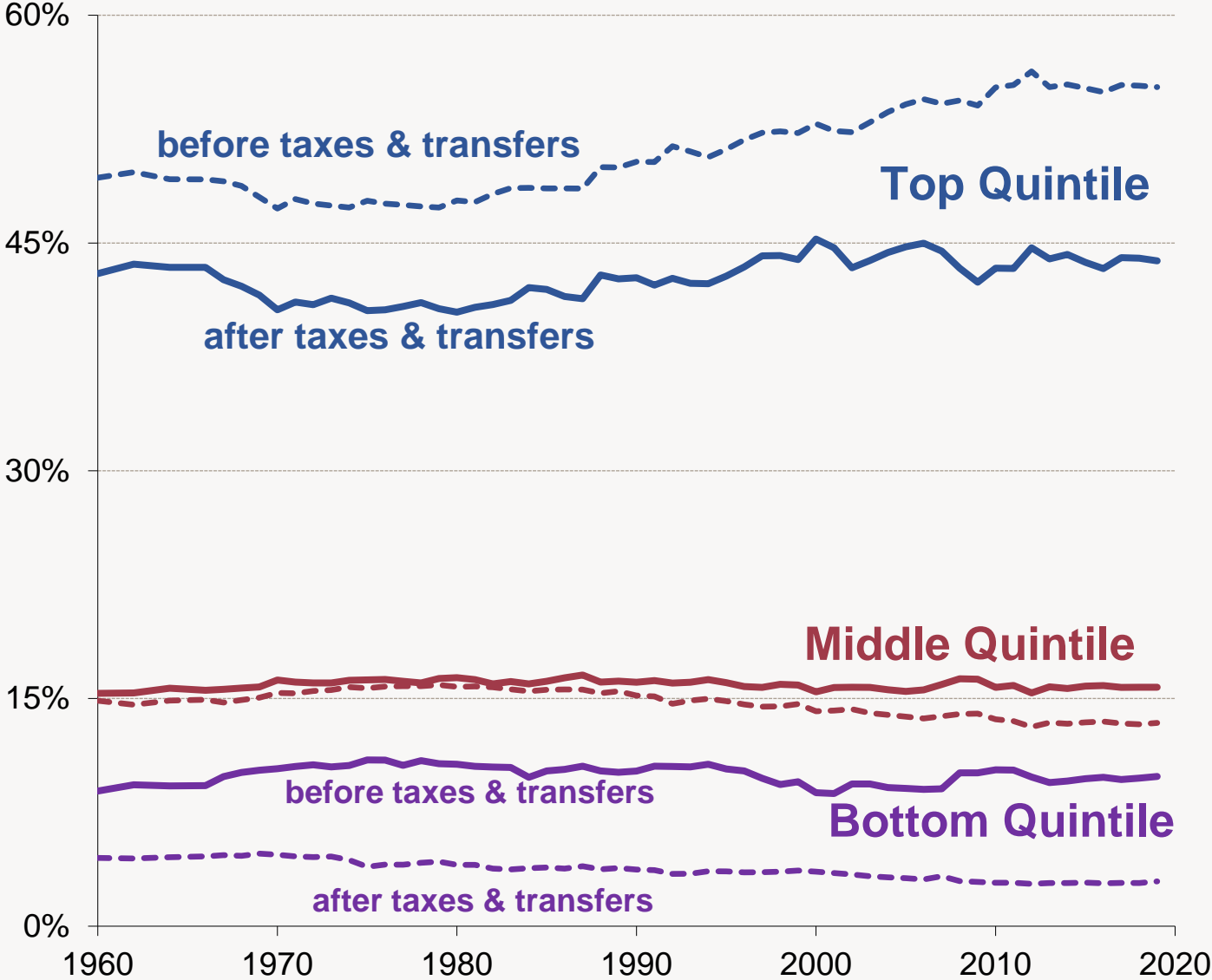
Payroll, sales, other taxes increase top 1% share ~0.5 pp (not shown)



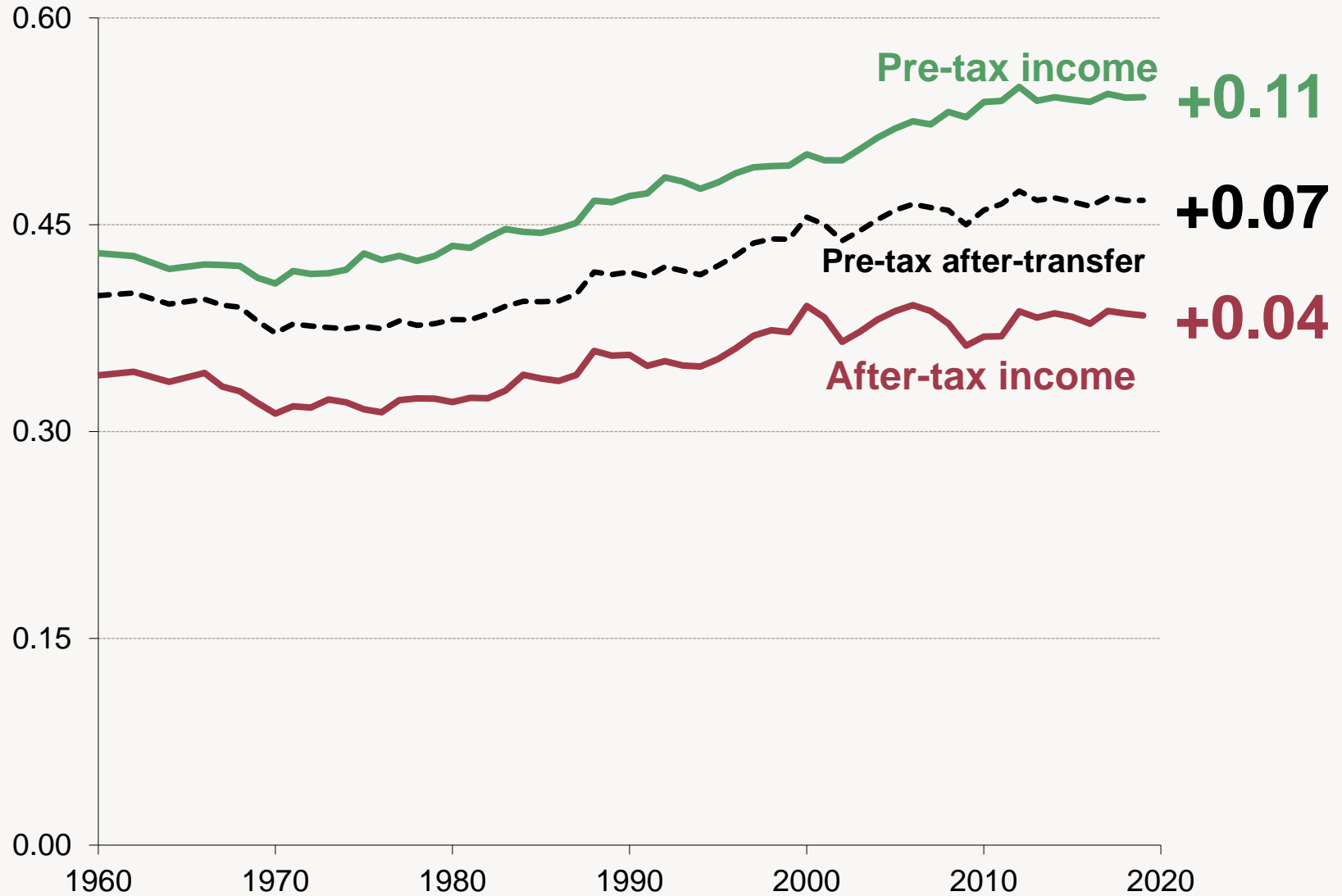
Top 1% Income Shares



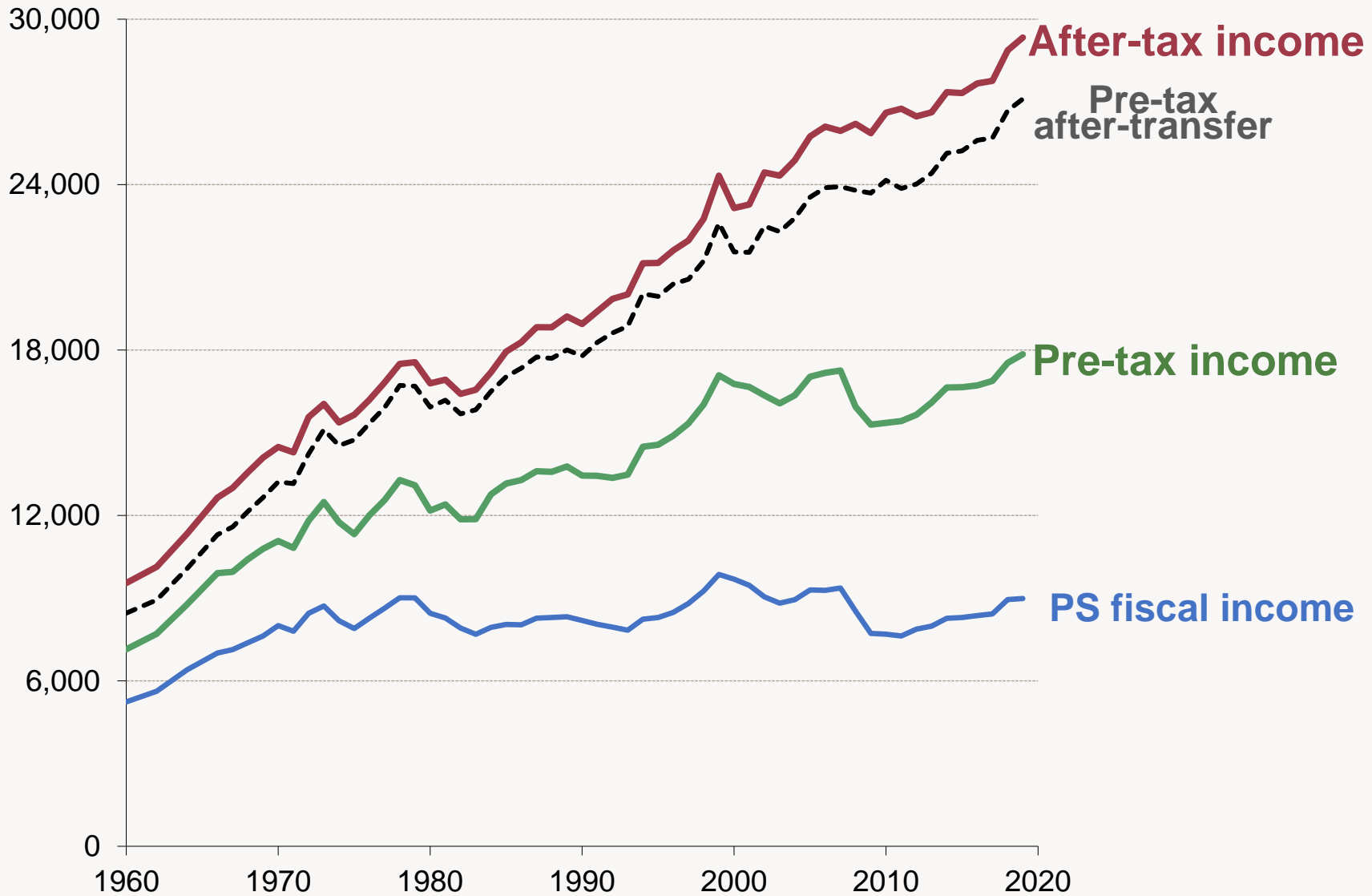
Top-Middle-Bottom Quintile Shares



Gini Coefficients

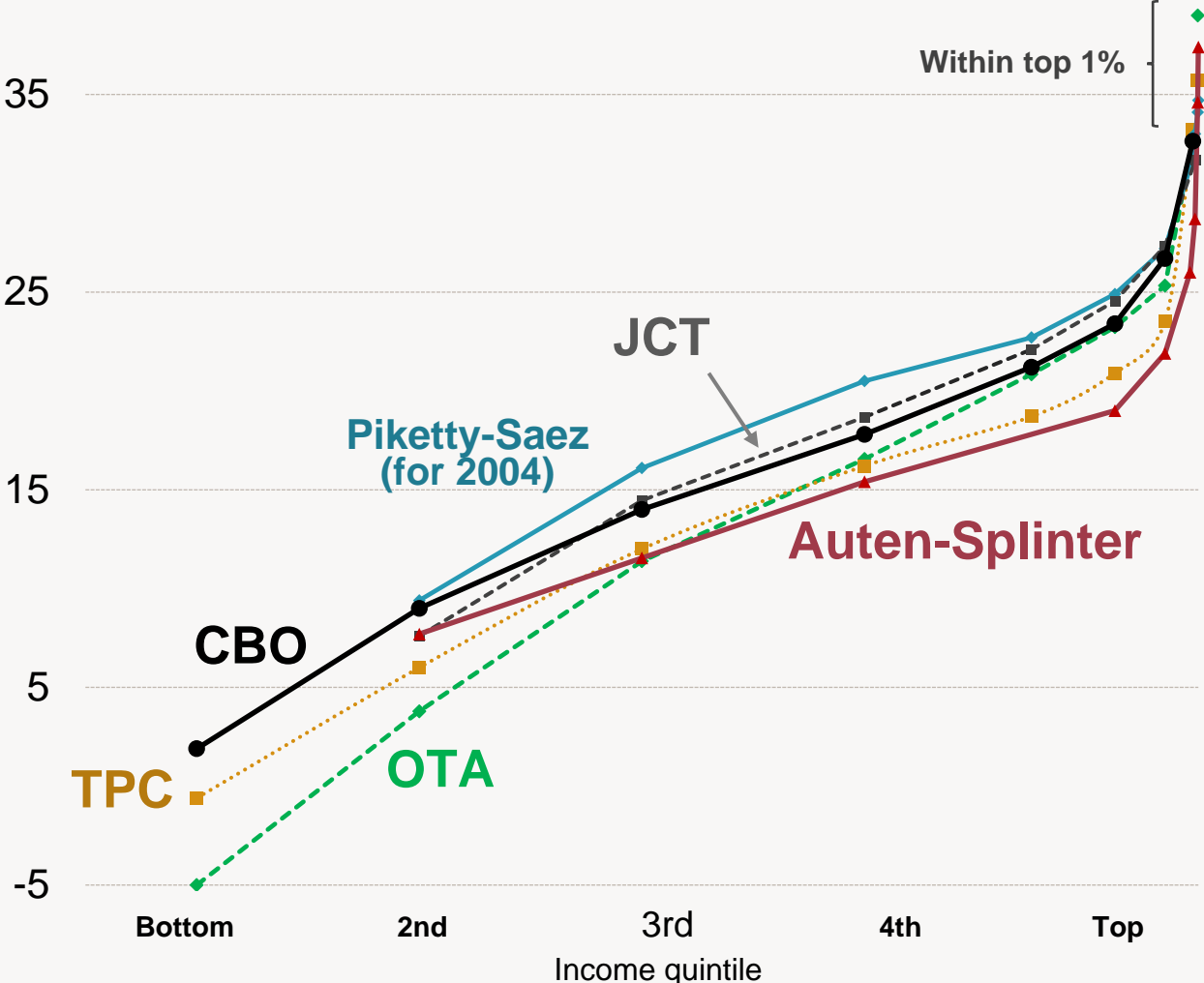


Bottom 50% Real Per Capita Income



Tax Progressivity: Comparing estimates

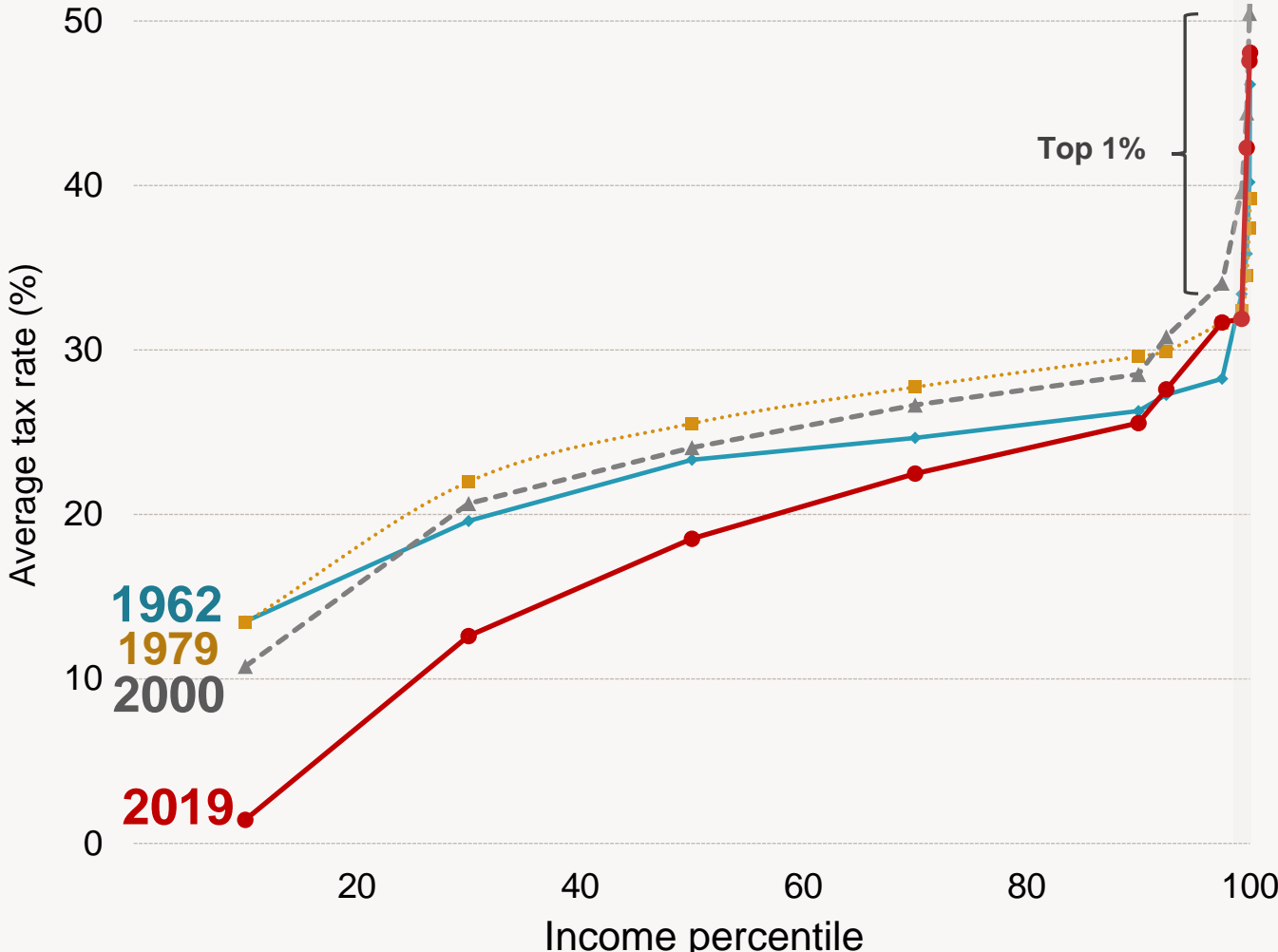
Average federal tax rates, 2014 and other years



Notes: Includes income, payroll, corporate, and other federal taxes. Source: Splinter (2020, NTJ)

Tax Progressivity Increased

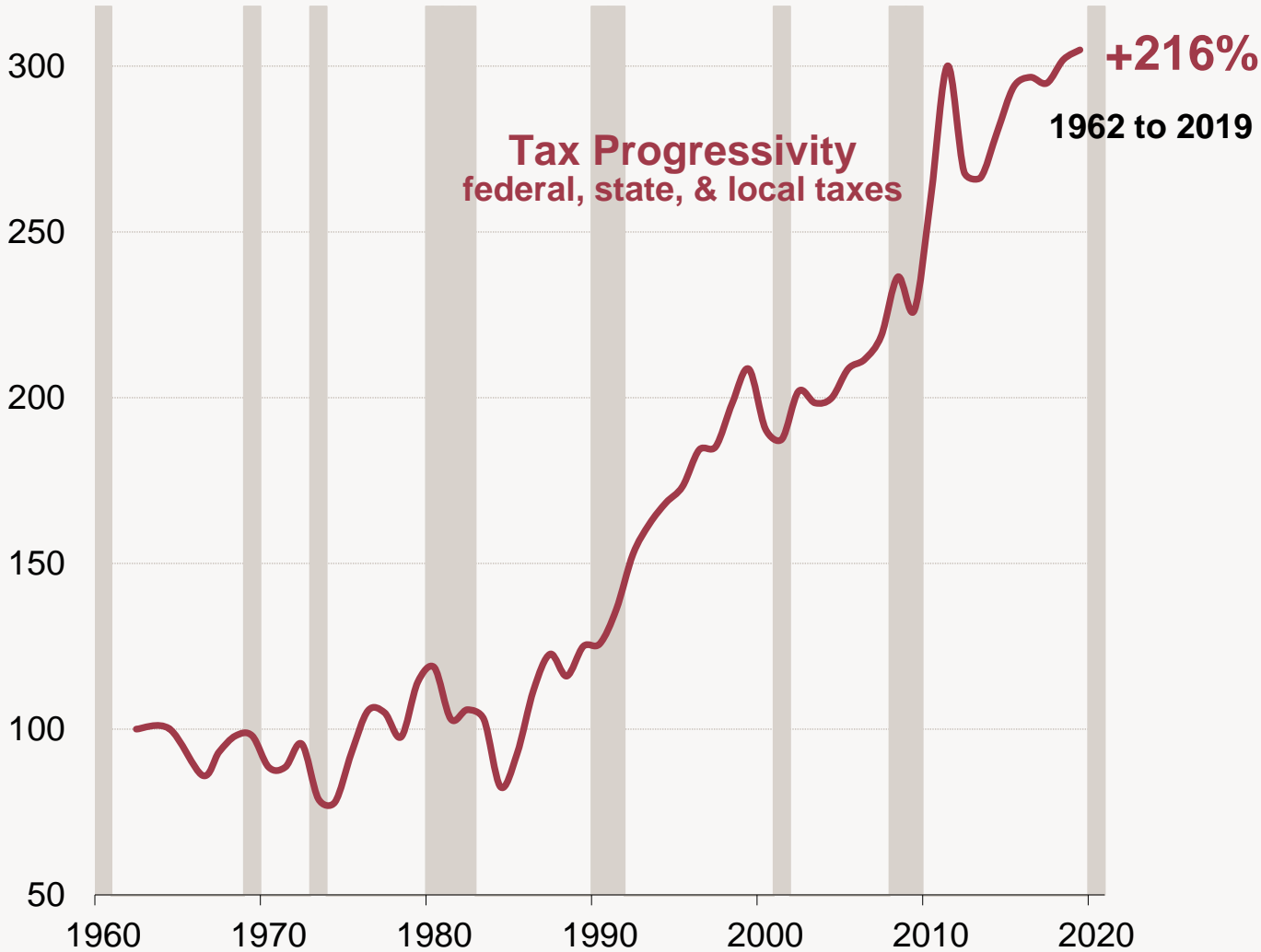
Federal, state, and local tax rates, various years



Note: Tax rates are federal, state, and local taxes (with payroll taxes) divided by pre-tax/after-transfer income.

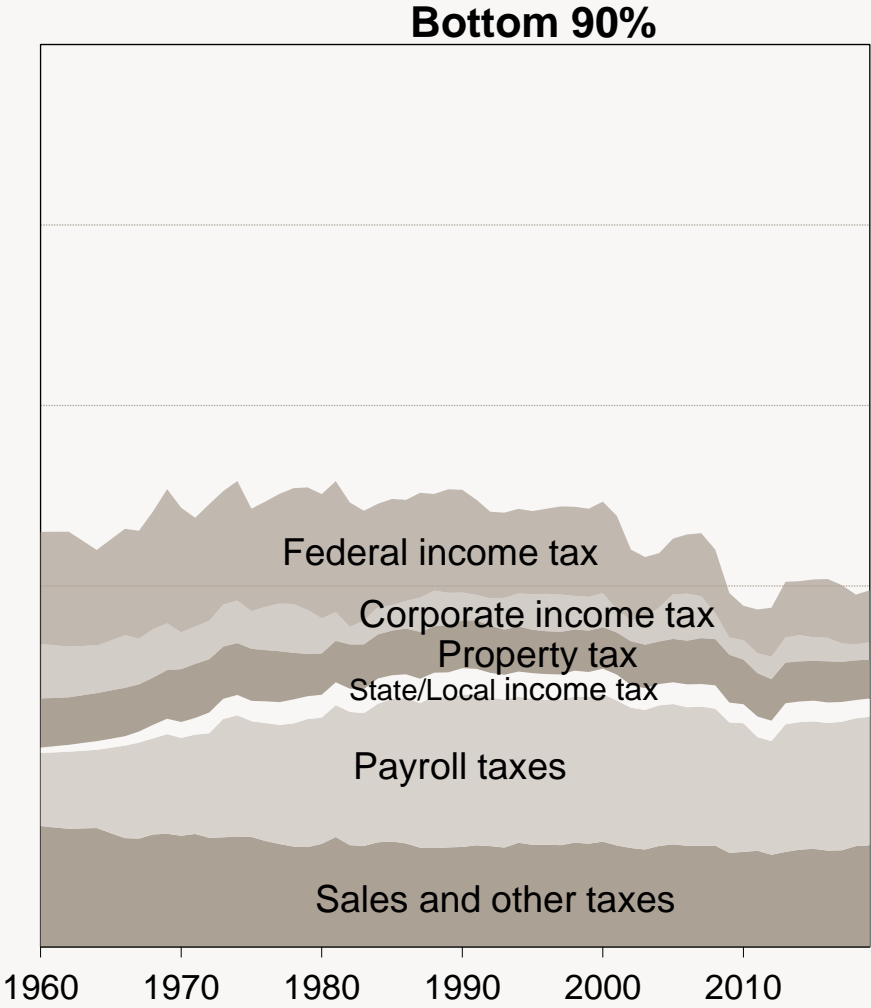
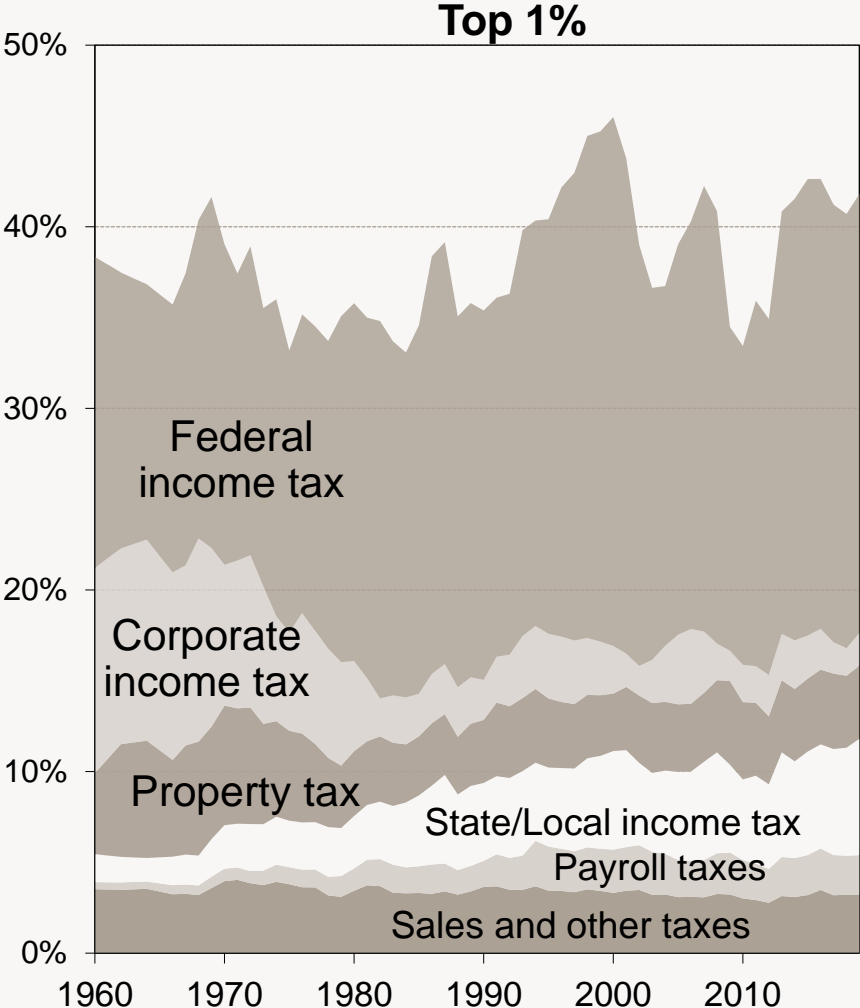
Tax Progressivity Increased

Kakwani tax progressivity index (1962=100)



Tax Progressivity Increased

Average tax rates 1960-2019



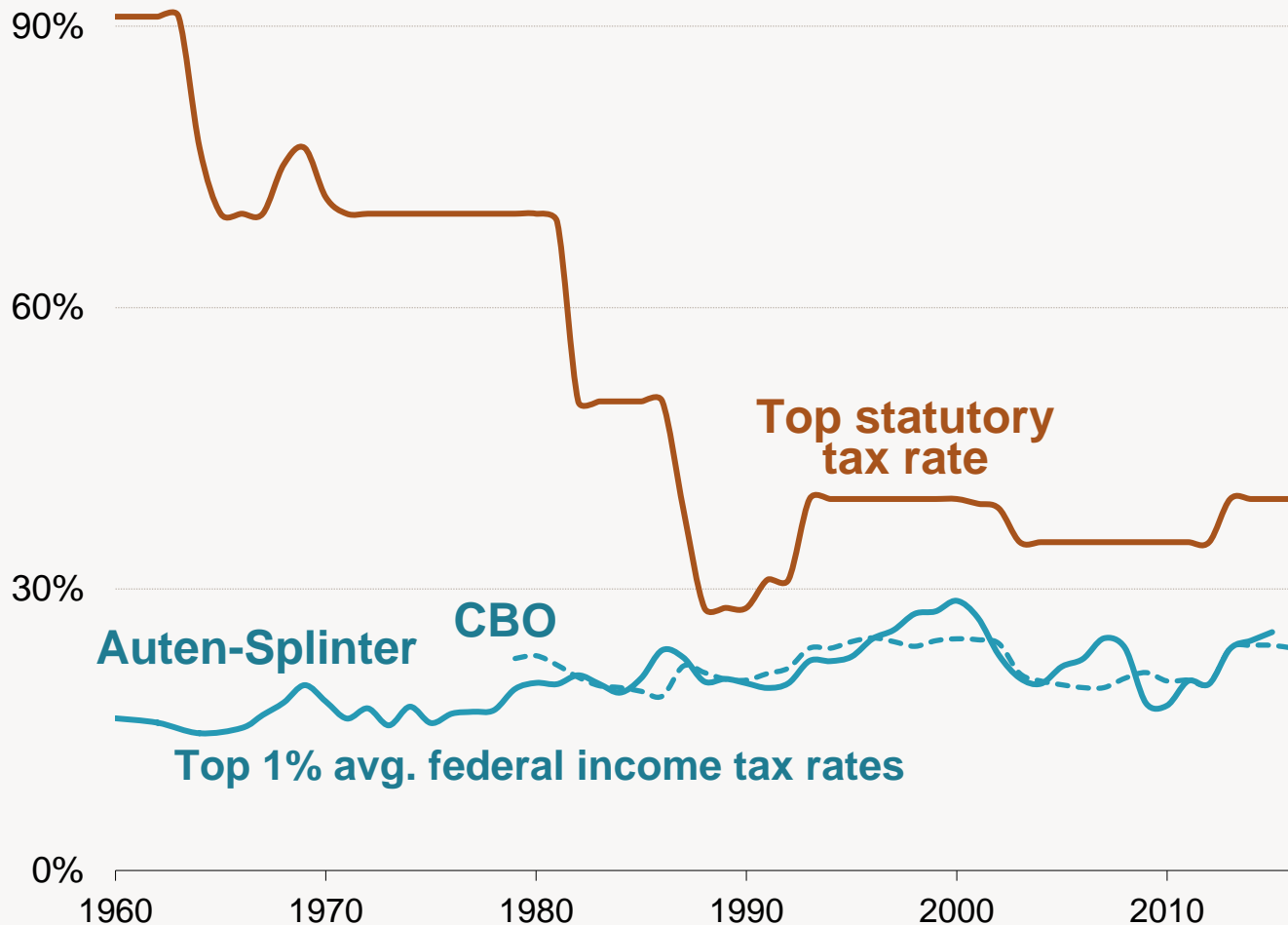
Note: Tax rates are federal, state, and local taxes (with payroll taxes) divided by pre-tax/after-transfer income.

Falling top statutory tax rates / Rising top pre-tax inc. shares

Top 1% AVERAGE tax rates increased

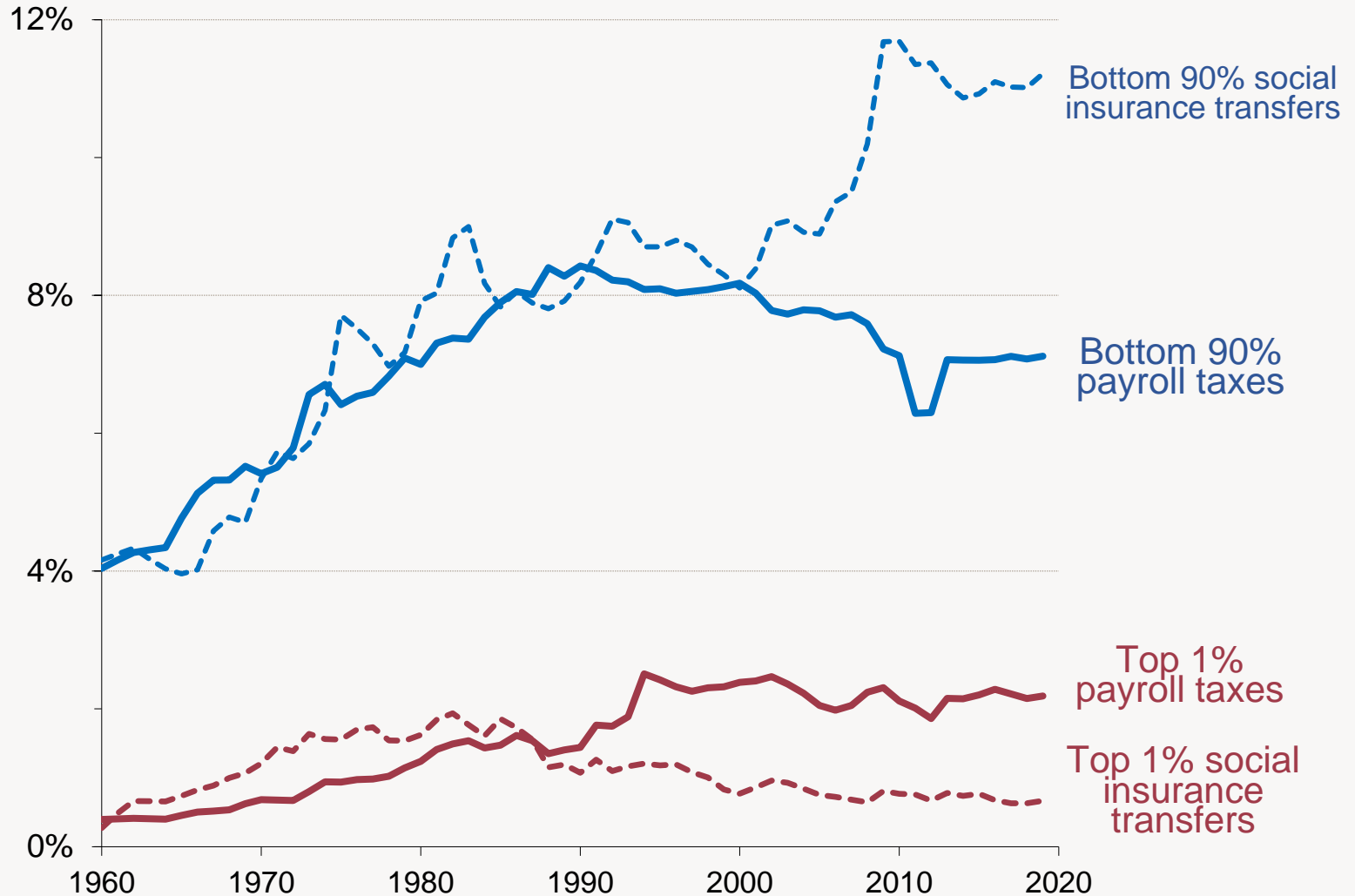
in 1962, < 500 (0.001%) subject to top rate

in 2015, > 1,000,000 (0.600%)



Payroll Taxes & Social Insurance Transfers

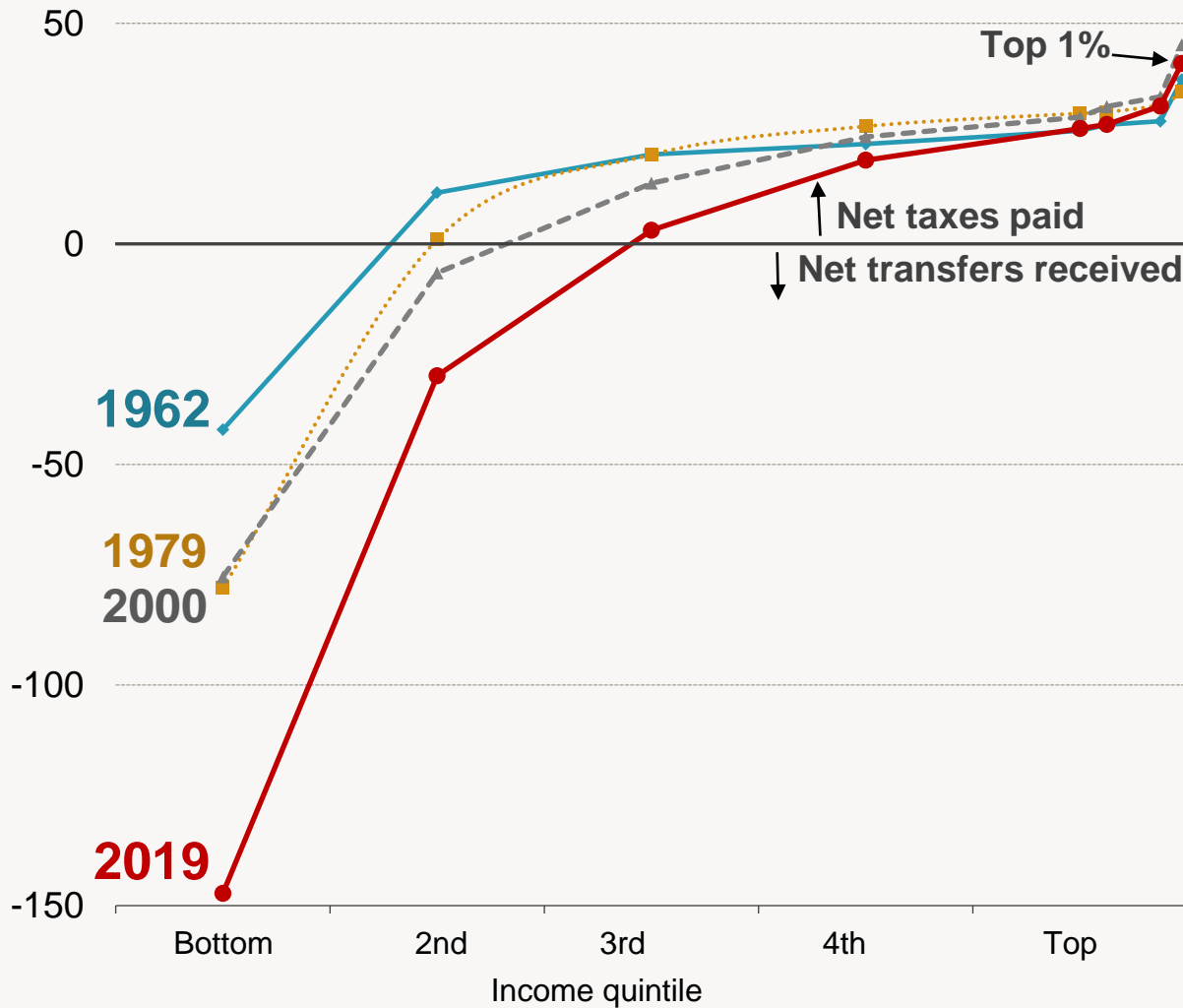
Top 1% & Bottom 90% tax and transfer rates



Note: Average tax and transfer rates are taxes or social insur. transfers divided by pre-tax/after-transfer income.

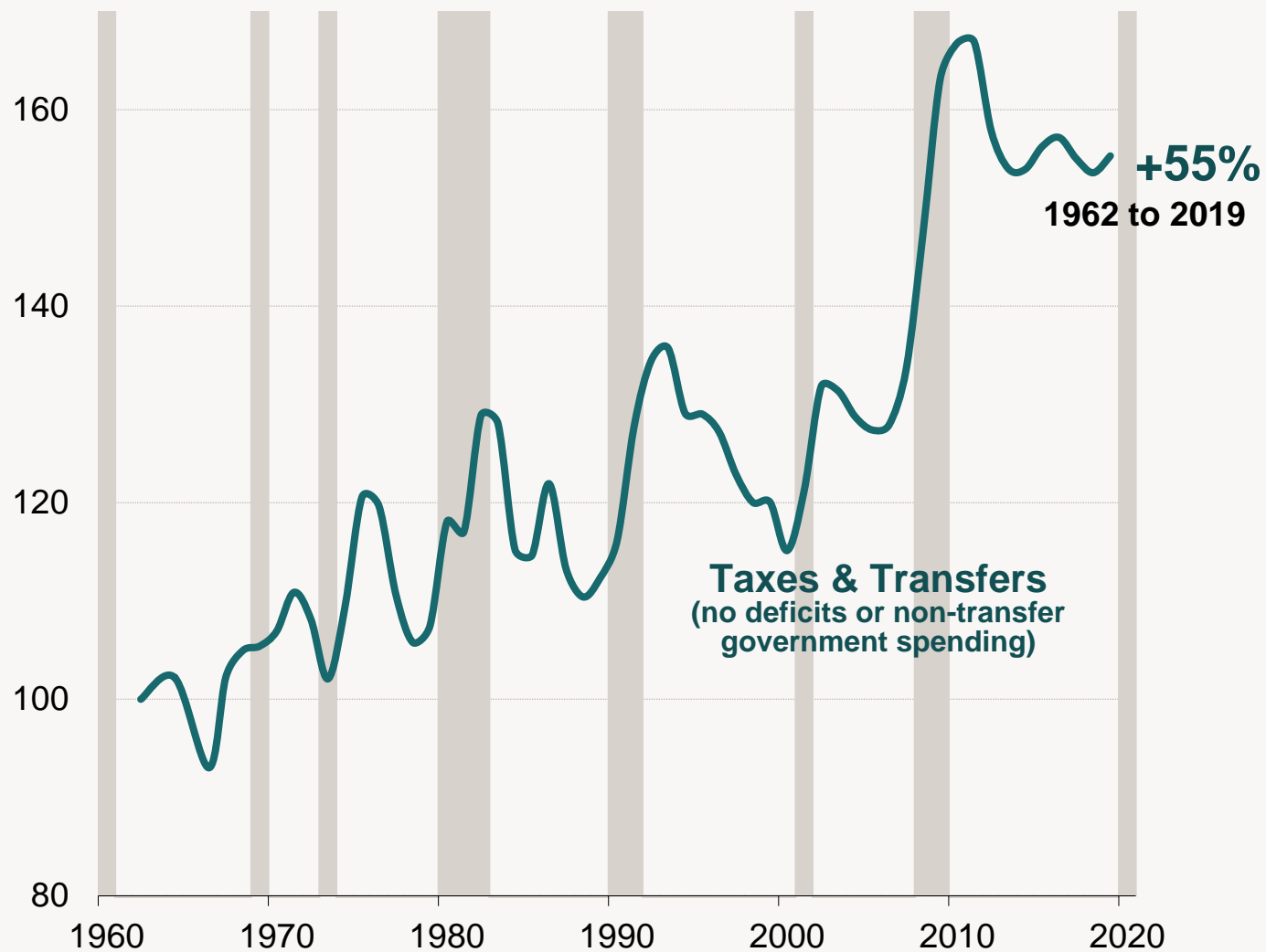
Redistribution Increased

taxes less transfers as share of pre-tax income



Redistribution Increased

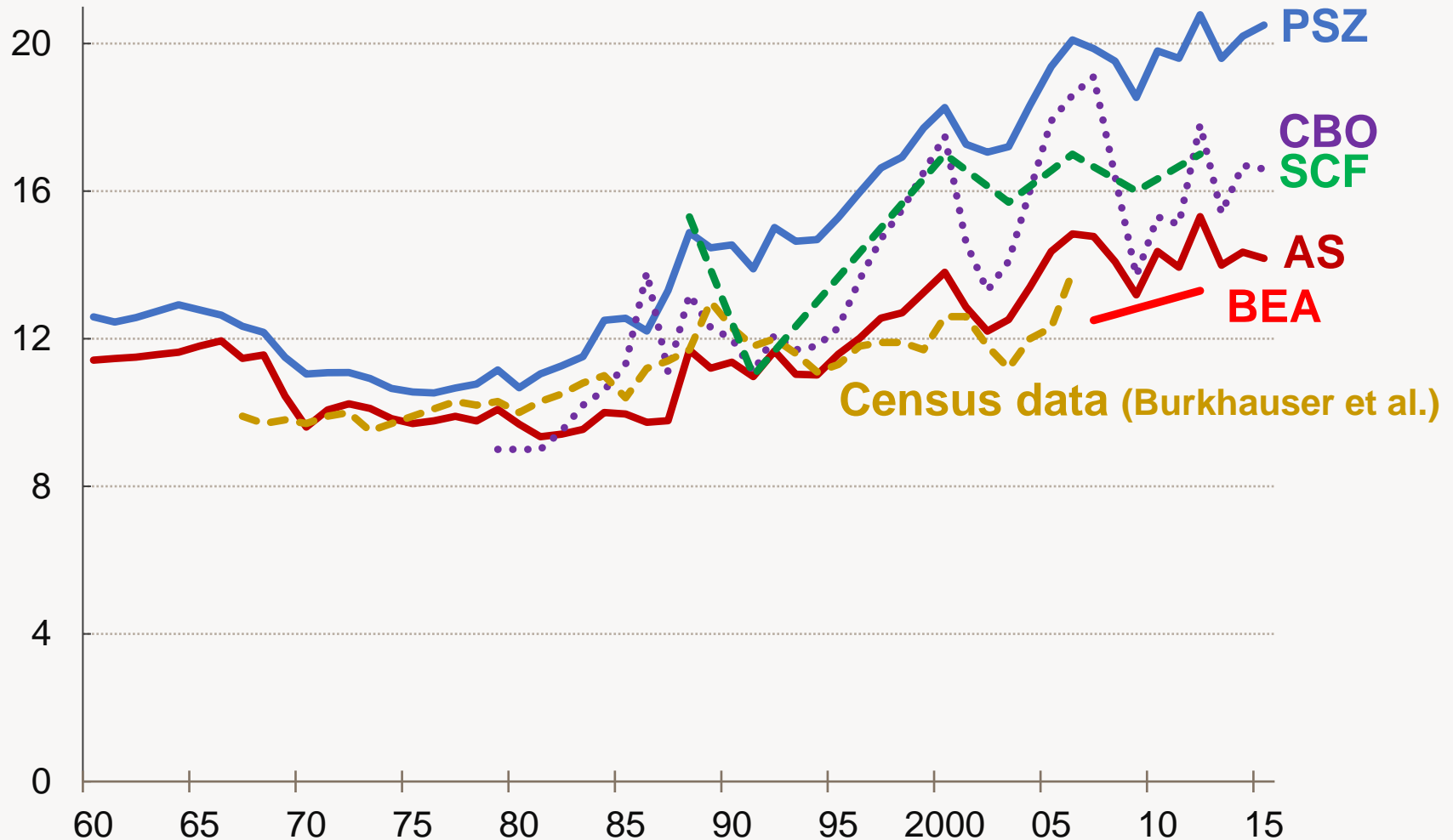
Reynolds-Smolensky redistribution index (1962=100)



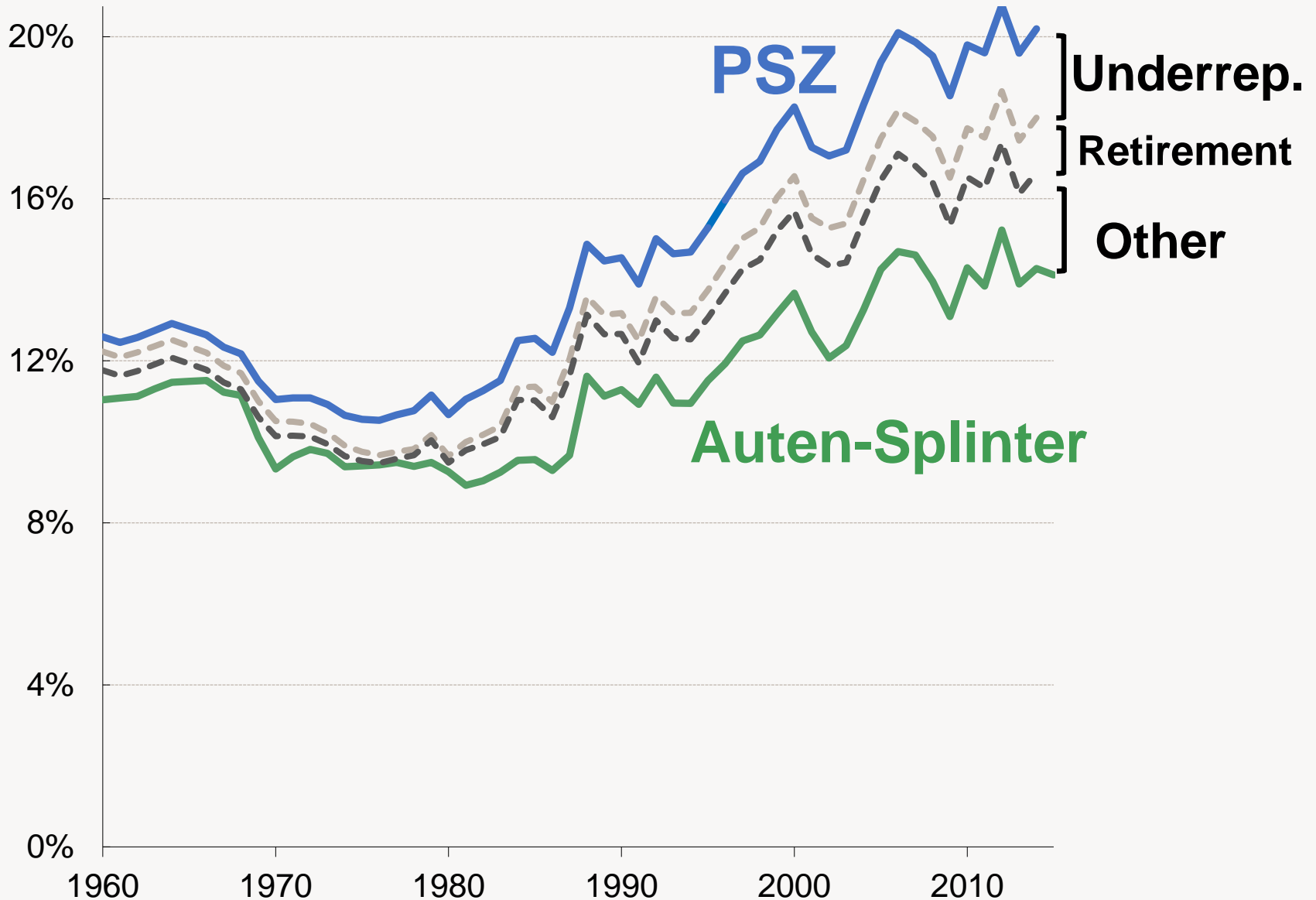
Comparison of Top 1% pre-tax shares

AS, BEA, Census similar. All lower than PSZ (2018)

CBO & SCF cyclical: include realized capital gains



Top 1% Pre-tax Inc. Shares: 2014 differences



Top 1% Pre-tax Inc. Shares: 2014 differences

Auten-Splinter approach	PSZ approach	Percentage point level difference
<i>Pre-tax income</i>		
Underreported income by IRS audit data	Underreported income by reported inc.	1.9
Include distributed & other retirement income	PSZ by taxable retirement distributions	1.2
Other taxes by disposable inc. less savings	Other taxes by factor income less savings	0.7
Non-retirement pre-tax corporate income	PSZ non-retirement pre-tax corp. income	0.7
Various corrections to tax income definition	Use uncorrected tax return market income	0.4
Imputed rent by property tax deductions	Imputed rent by housing wealth estimates	0.3
Limit returns to non-dependent U.S. residents	No adjustment	0.2
Groups by individuals/size-adjusted incomes	Groups by adults/equal-split married inc.	0.4
Non-profits/govt. income half per capita	Non-profits/govt. income all by income	*
Inflation correction	No correction	*
Social insurance benefits/deficit excluded	Social insur. ben./def. incl., taxes deducted	-0.1
Subtotal: Pre-tax differences (PSZ less AS)		6.4
<i>After-tax income</i>		
Govt. consumption allocated half per capita	Govt. consumption all by after-tax income	1.4
Non-SS deficits by federal income taxes	Non-SS deficits by half transfers, half taxes	0.4
Estate tax by prior decade decedent income	Estate tax by wealth distribution	*
Government transfers as described in text	PSZ transfers distribution	*
Corporate taxes by wages/corp. ownership	Corporate taxes by capital ownership	-0.2
Other taxes by disposable inc. less savings	Other taxes by factor income less savings	-0.3
Subtotal: Differences from taxes and government consumption		0.5

Underreported Income: AS-PSZ Difference

AS allocate underreported income by audit data

PSZ allocate by positive reported business income

But: Business losses important

& under-rep. rates highest at bottom of distribution

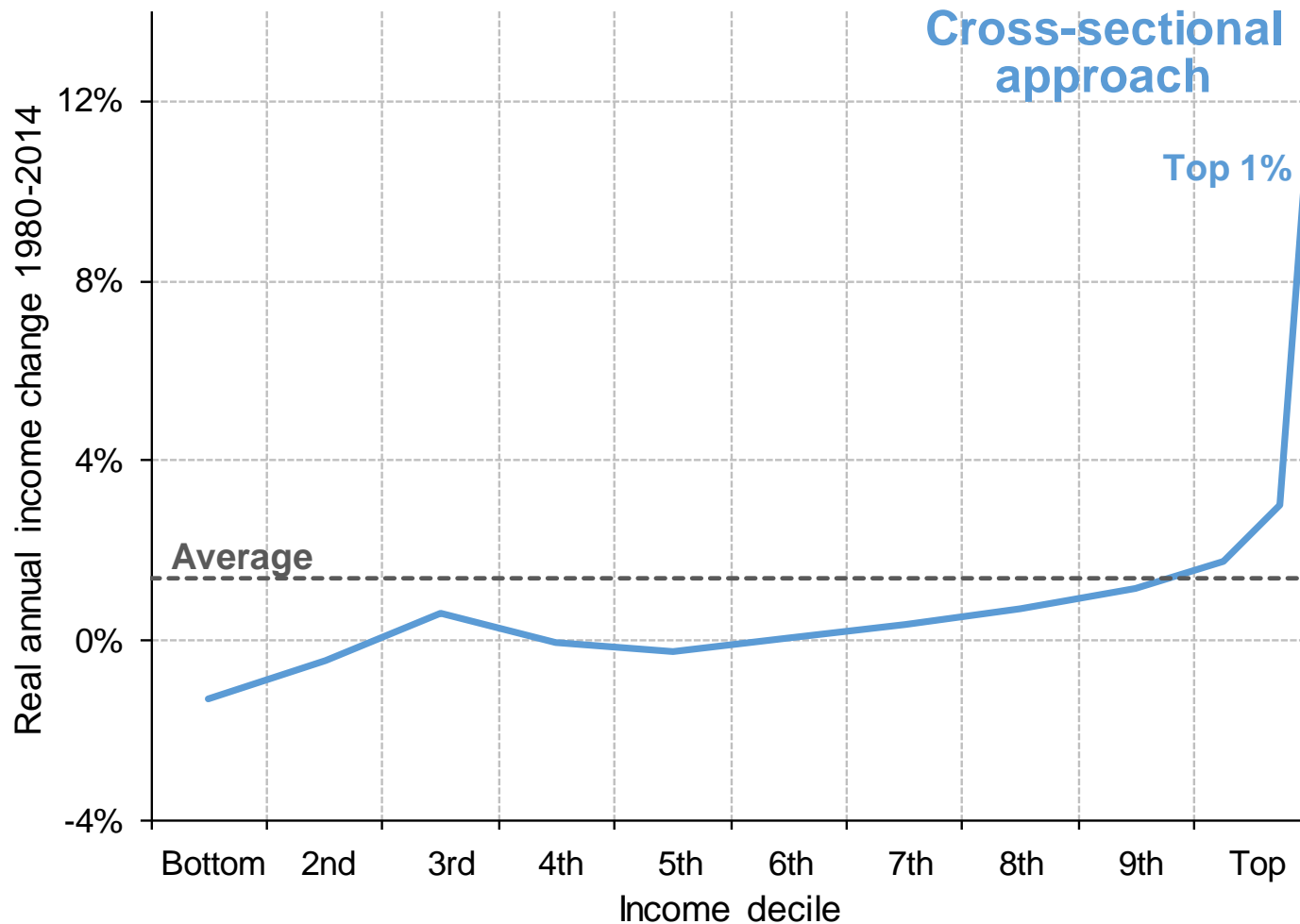
Reported AGI group	Reported bus. income (\$B)	AS (2019) %underrep. bus. income	PSZ % of pos. bus. income
\$ <0	-10	13%	~0%
0-40	9	27%	6%
40-80	34	32%	19%
80-95	32	16%	16%
95-99	40	7%	20%
Top 1%	77	5%	38%
Total	183	100%	100%

1988 TCMP audit data (sole prop, part., S-corps)

Annual vs. Multi-Year Incomes

Comparing cross-sectional changes suggests all growth to top 10%

Real average annual fiscal income change, 1980-2014 (Splinter, 2019)

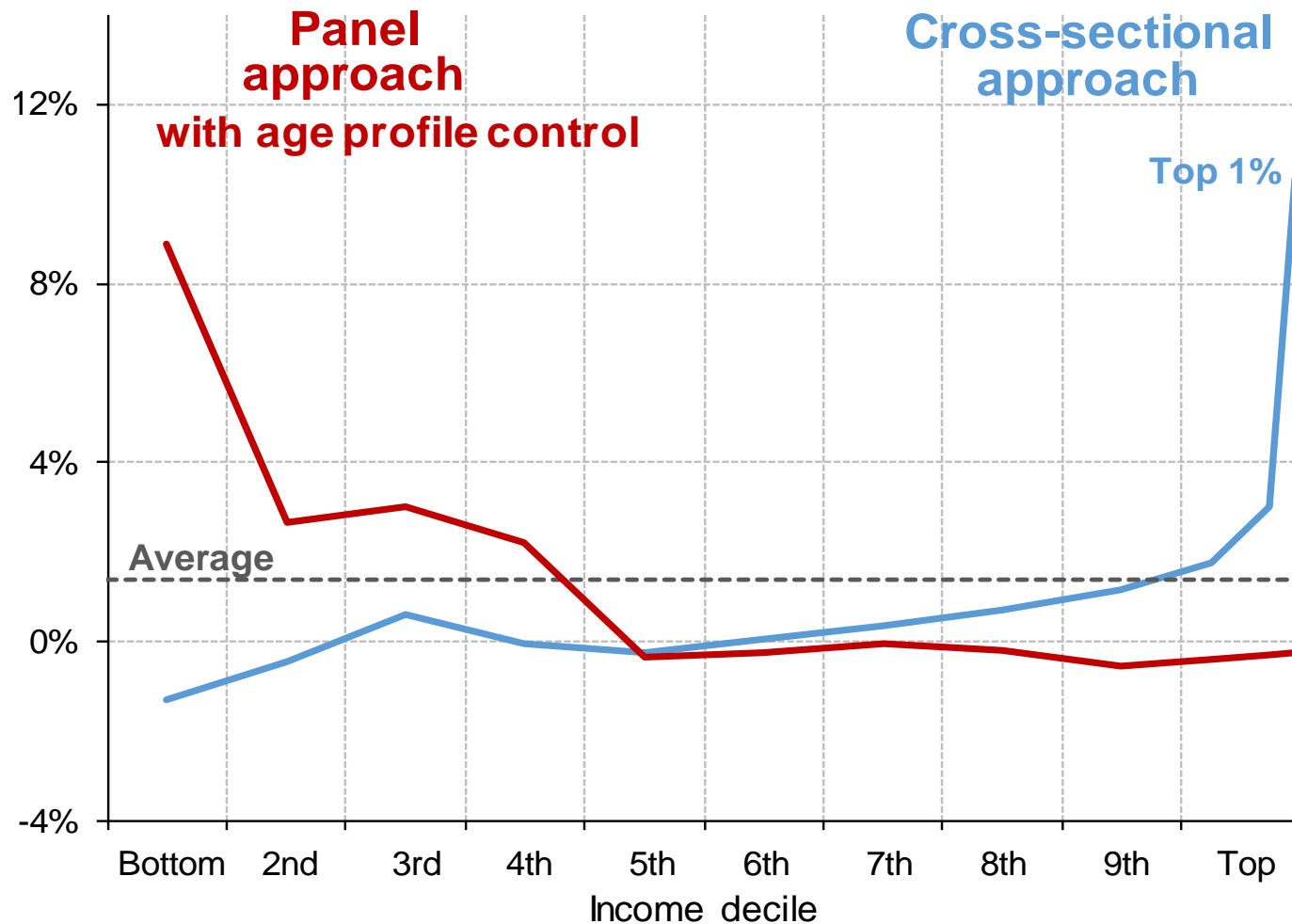


Annual vs. Multi-Year Incomes

Comparing cross-sectional changes suggests all growth to top 10%

But it's different people in cross-sections. Economic growth is progressive.

Real annual fiscal income change, 1980-2014 (Splinter, 2019)



Conclusions

Tax data: inconsistent income measure

- Adjust for tax reforms
- Care needed to impute missing sources of income

Find moderate increase in pre-tax top 1% shares

- Consistent with other recent estimates

Taxes and transfers smooth most inequality changes

- Transfers have grown
- Taxes are more progressive

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