Tax and Transfer Progressivity at the U.S. State Level

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XXII Banca d'Italia Public Finance Workshop
September, 2024

Views are those of the authors and not necessarily those of the Federal Reserve Bank Minneapolis, the Federal Reserve Board or the Federal Reserve System

Federal vs. State & Local Redistribution

- Federal income tax and transfer system is progressive
  (Guner et al. 2014, Heathcote et al. 2017, Ferriere and Navarro 2020, ...)
- Less research on progressivity at state & local level
  (Suits 1977, Chernick 2005, Cooper et al 2015, Fajgelbaum et al 2019, Fleck and Simpson-Bell 2019; ITEP: "Who pays?")
- State & local tax revenue is large: 8.9% of GDP (2010-2023)
  - Federal personal income taxes: 8.0%
  - Federal payroll taxes: 6.4%
- State & local taxes include sales and property taxes
  - Standard claim: sales and property taxes are *regressive*

This Paper

Goals:

- Estimate how total net tax burden varies with income:
  - income and payroll taxes, sales and excise taxes, property taxes, transfers, corporate taxes, business taxes
- Explore how much redistribution / progressivity is delivered by federal versus state and local taxes and transfers
- Explore extent to which tax rates & tax progressivity vary across U.S. states

Methodology:

- Combine household surveys (ASEC, ACS, CEX), augment with gov't statistics and IRS SOI data (for the rich)

Data Sources and Sample Selection

- Main data source: ASEC ("CPS March Supplement")
  - Unit of observation: household
  - Focus on working households:
    1. Age of household head between 25-60
    2. One spouse has earned income > part-time * min. wage
  - Years: 2005/06, 2010/11, **2015/16**
- Supplement ASEC with IRS SOI data (based on 1040 tax returns) for high-income households

Definitions

- **Pre-government income**: wages & salaries, incl. FICA employer share + business & professional practice + farming + interest + dividends + rents & royalties + private transfers + realized capital gains
- **Post-government income**: Pre-government income + Transfers - Taxes

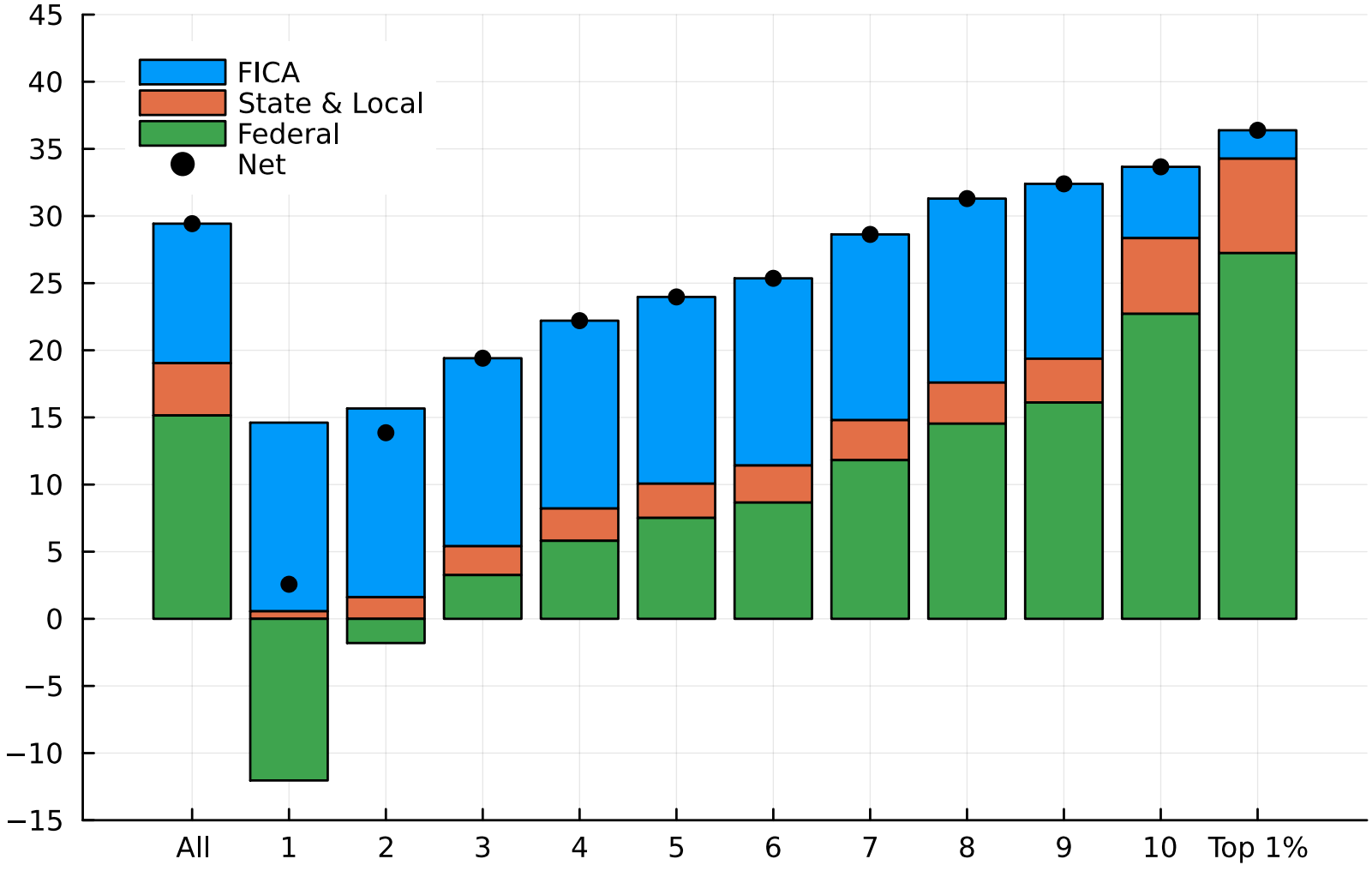
	Federal	% inc	State & Local	% inc
Taxes	Income	15.15	Income	3.99
	FICA (employee+employer)	10.39	Property	2.27
	Excise	0.25	Sales	1.50
			Sales + Excise	0.30
	Corporate Income	2.80	Corporate Income	0.48
			Business	3.37
Transfers	Medicaid* (cash value)	0.61	Medicaid* (cash value)	0.47
	Social Security Disability and Survivors Benefits	0.40	Unemployment Benefits	0.16
	SNAP	0.34	Worker's Compensation Benefits	0.07
	Veteran's Benefits	0.22	TANF*	0.01
	Disability Benefits	0.18	Alaska Permanent Fund Dividend	0.01
	SSI	0.17		
	Survivor's Benefits	0.16		
	School Lunch	0.11		
	Housing Assistance	0.09		
	TANF*	0.01		
	Social Security Old-Age	3.25		

Taxes and transfers as shares of pre-government household income (2015/2016).
*Transfers with * have both federal and state components.*

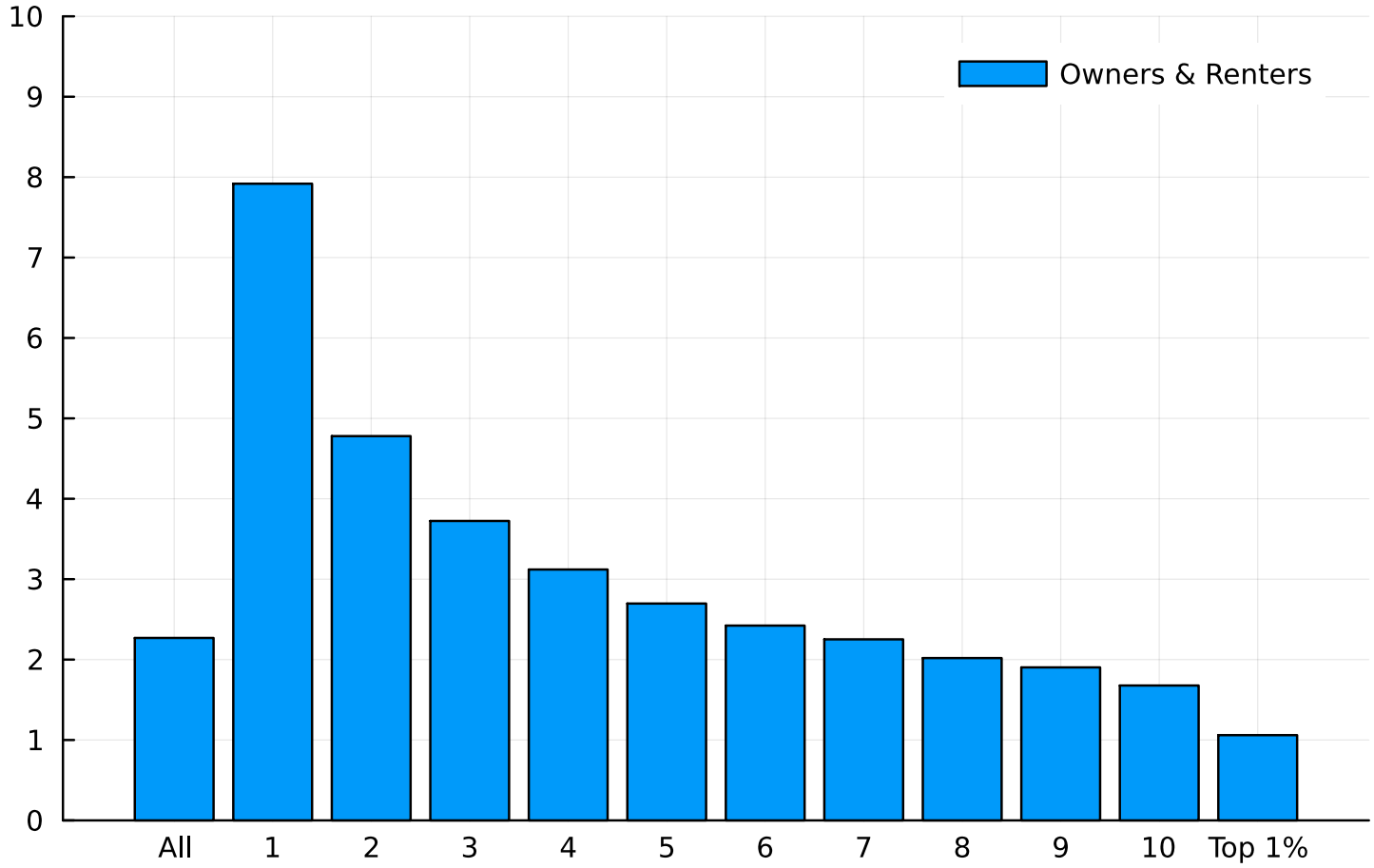
Data Source for Taxes and Transfers

- Income taxes: Census Bureau tax model, SOI (federal + state) + Census of State and Local Governments (local)
- Property taxes: ACS, Zillow, renter pass-through model
- Sales and excise taxes: CEX, BEA, CSLG, Book of States
- Transfers:
  - Mostly self-reported in ASEC
  - For Medicaid, SSI, SNAP, Housing Assistance use CBO imputation procedure (adapt to match state level admin. enrollment & spending data for Medicaid)
  - Impute future value of SS old-age pensions (HSV, 2017)
- Corporate income taxes: ASEC, CSLG, BEA
- Business taxes: BEA, CSLG, Ernst and Young (2016)

Income Taxes are Progressive

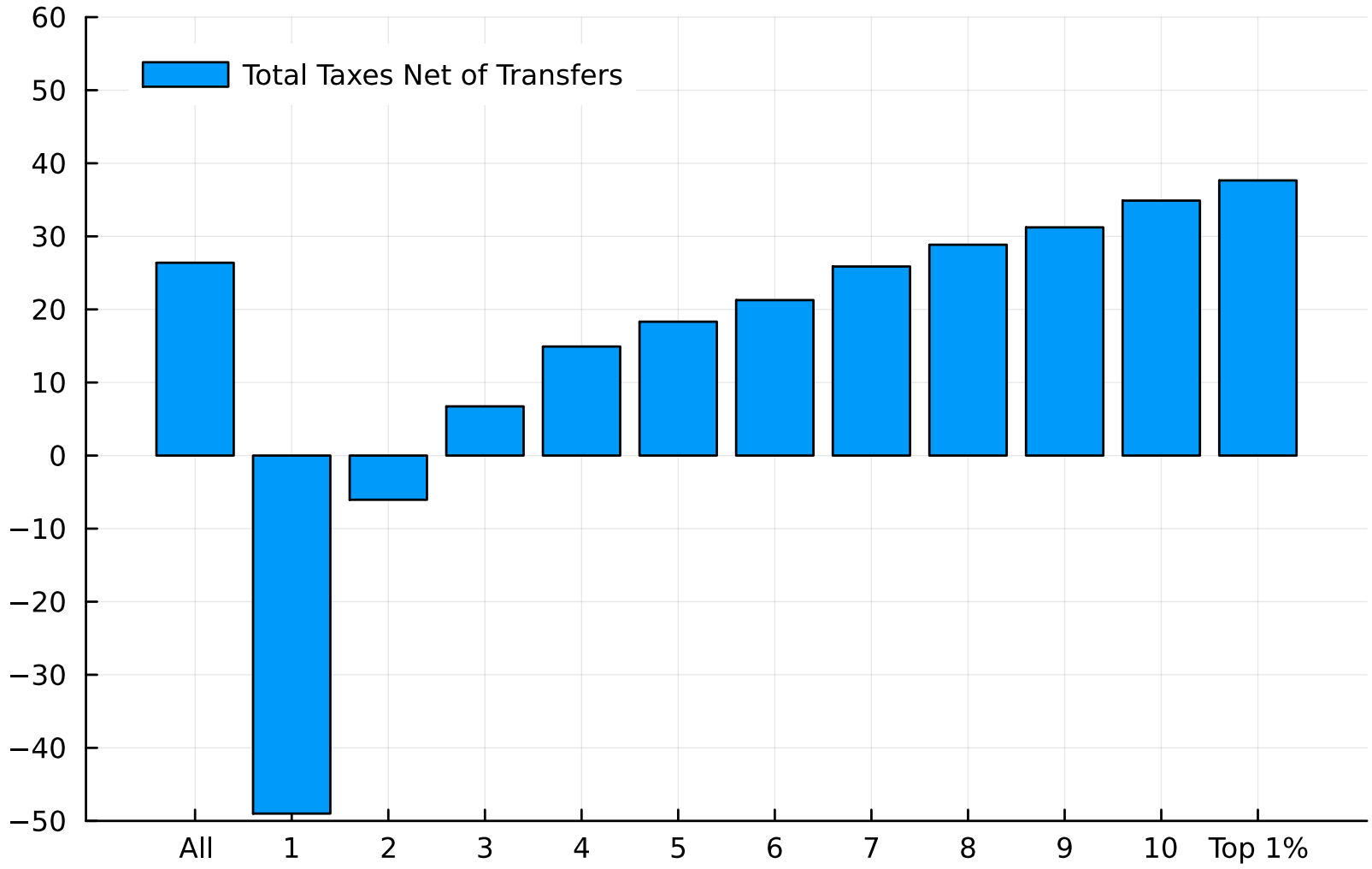


Property Taxes are Regressive



- Self-reported for ACS homeowners $\rightarrow$ nearest-neighbor matching to ASEC
- Partial pass-through to rents for renters (model)

Net Tax Rates



Estimating Progressivity Following Benabou / HSV

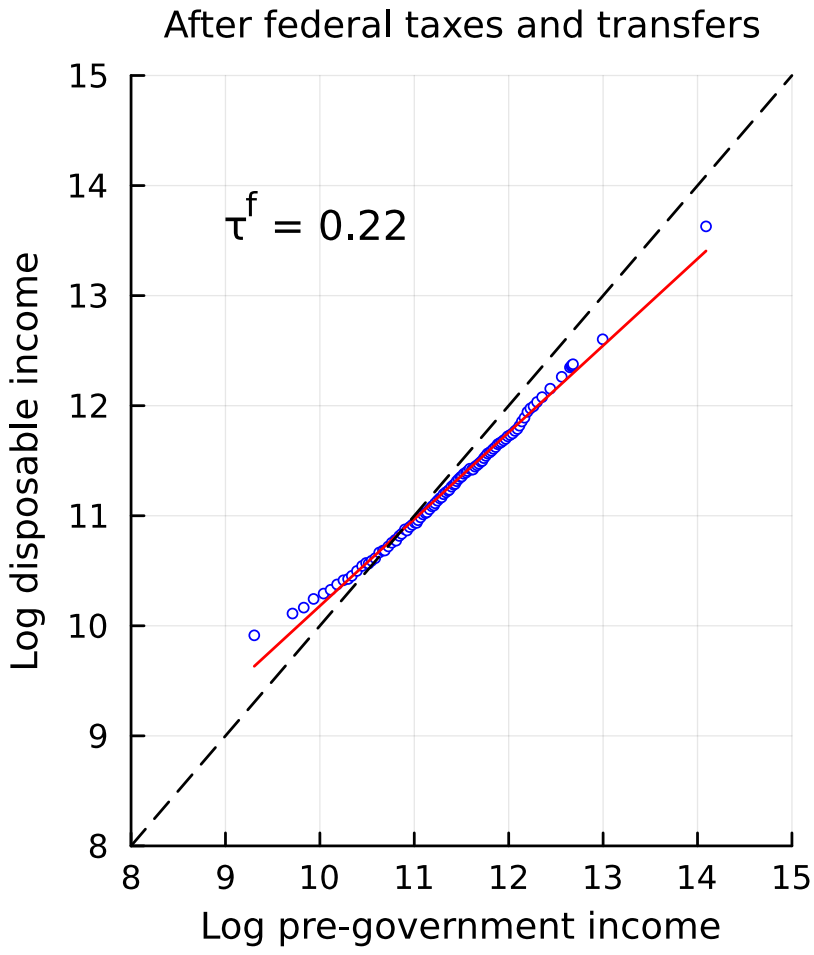
- y_i: pre-government income of household i
- T_i: tax liability net of transfers

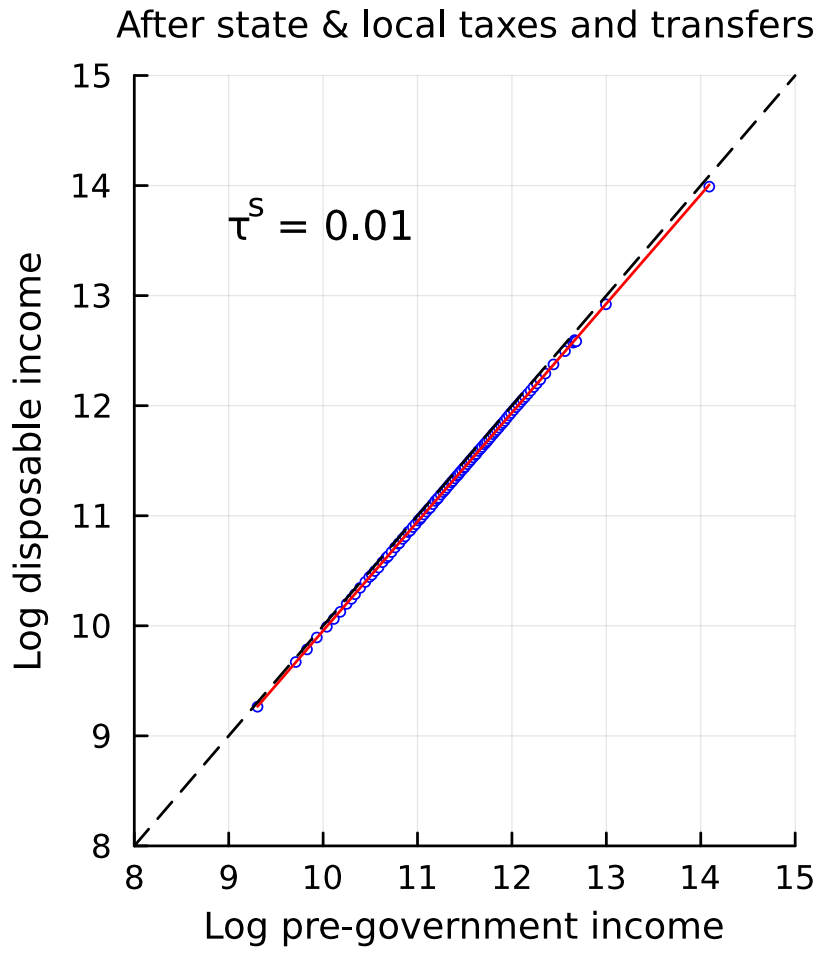
$$y_i - T_i = \lambda y_i^{(1-\tau)}$$

$$\log(y_i - T_i) = \lambda + (1 - \tau)\log(y_i)$$

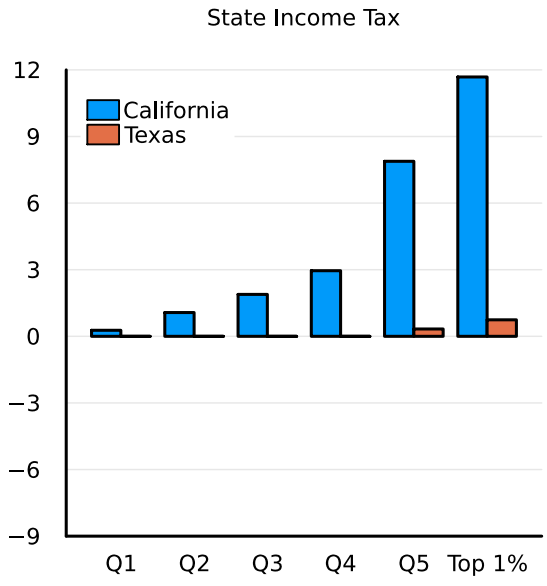
- τ is index of progressivity
- We estimate this equation in different ways:
  1. T_i federal taxes-transfers only $\Rightarrow$ federal progressivity τ^f
  2. T_i state & local taxes-transfers $\Rightarrow$ state progressivity τ^s
- For state level statistics, re-weight households state by state so pre-govt income dist. resembles national dist.
  - τ estimates reflect difference in state tax systems only

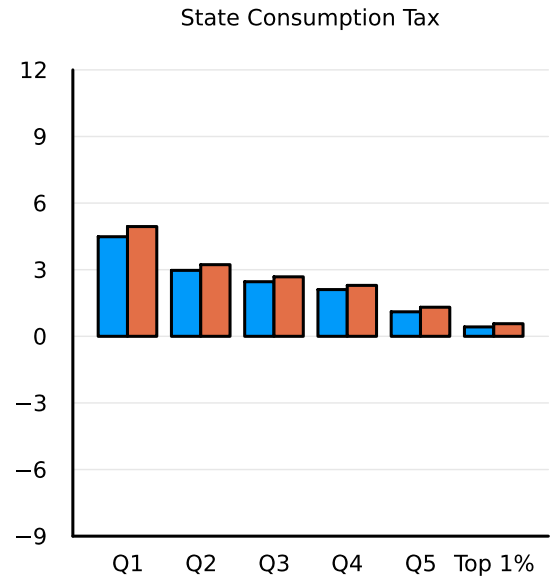
Progressivity: Federal vs. State & Local

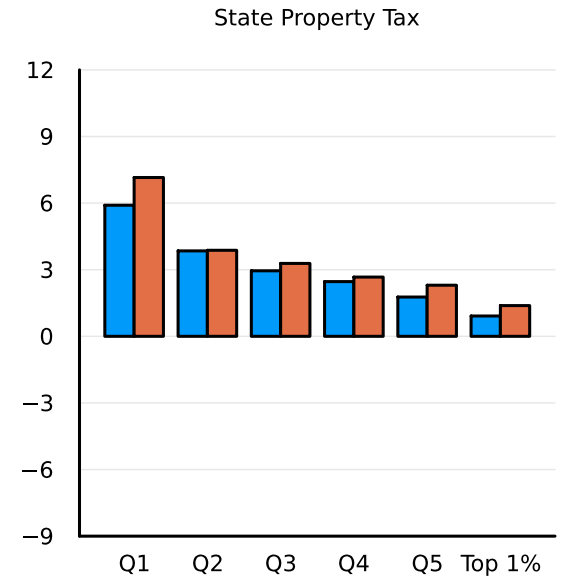


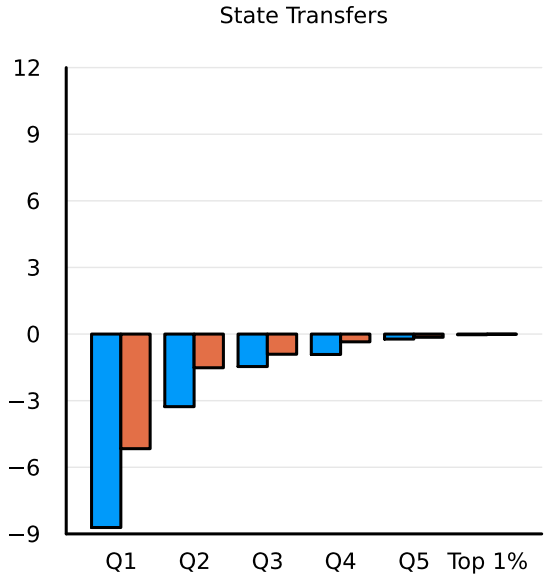


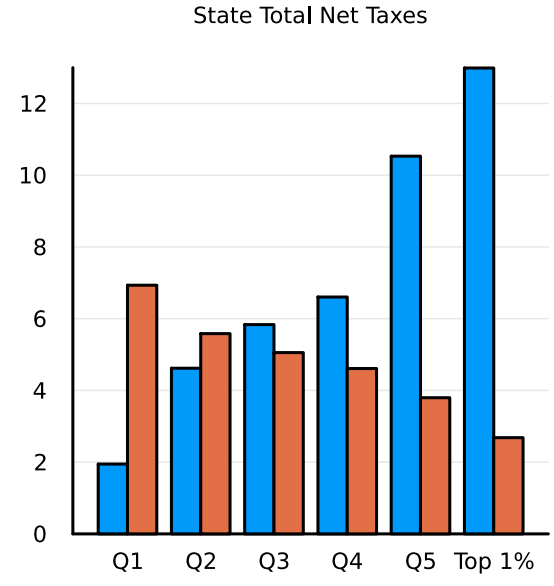
Tax Rates by Income: California vs Texas



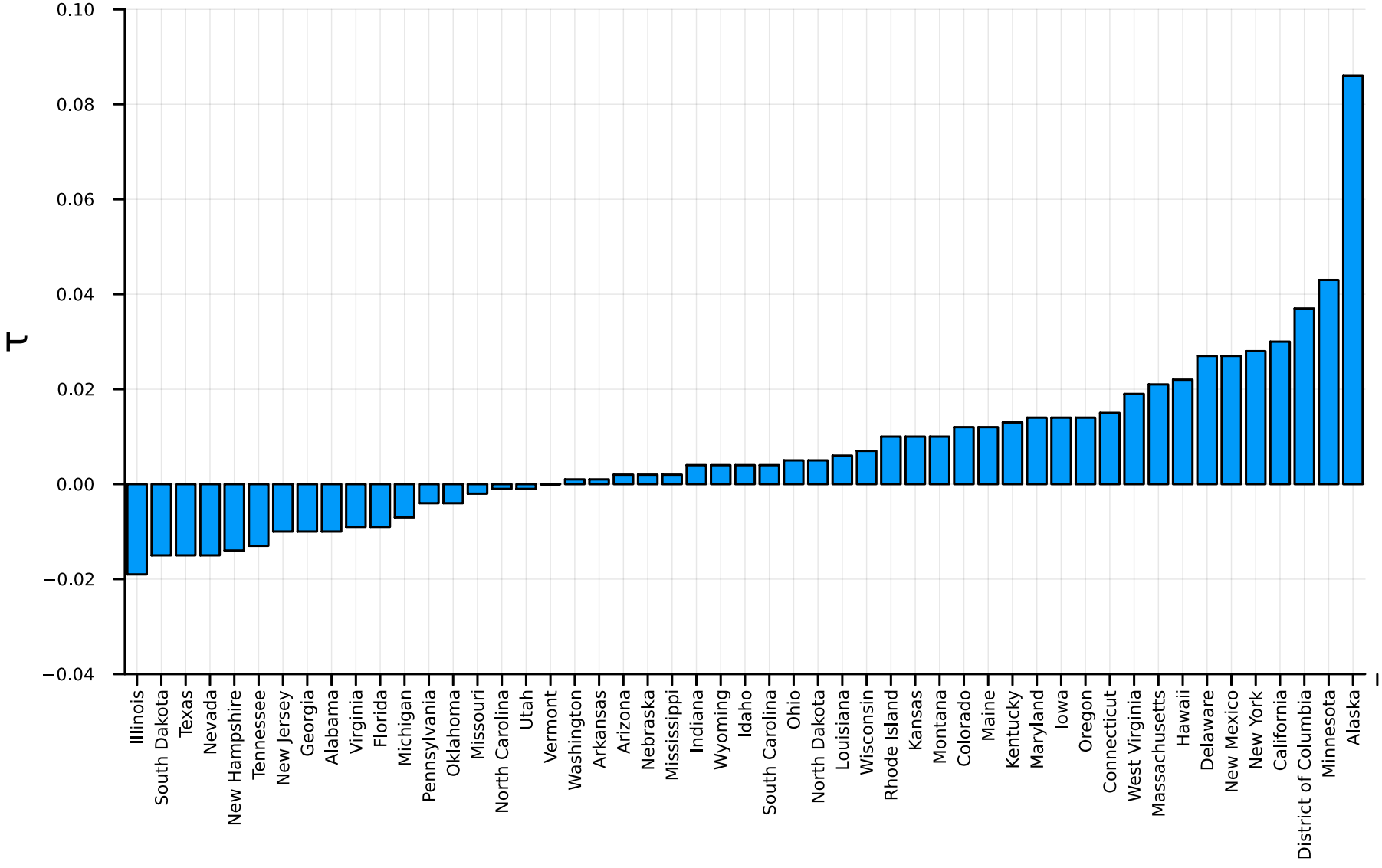




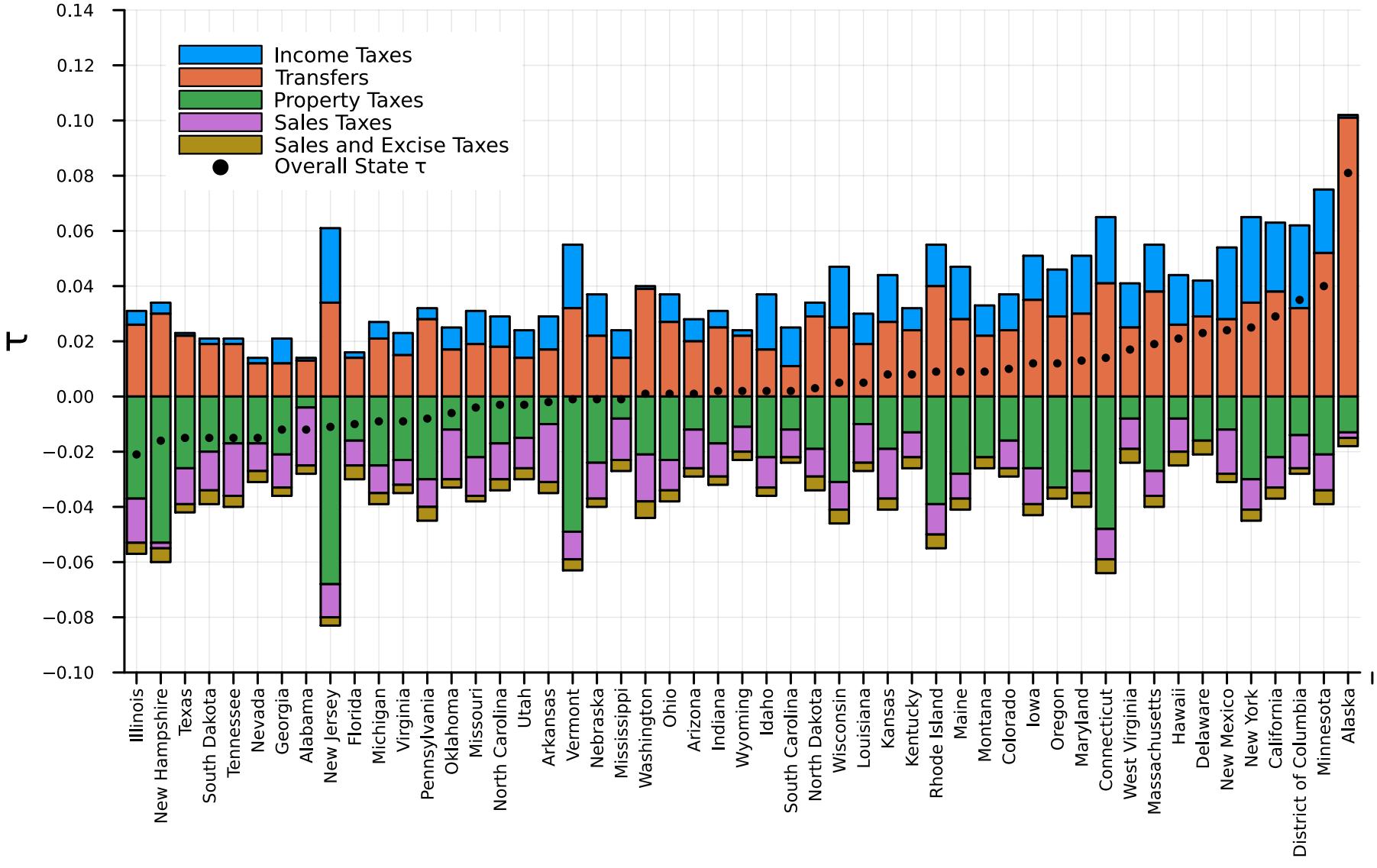




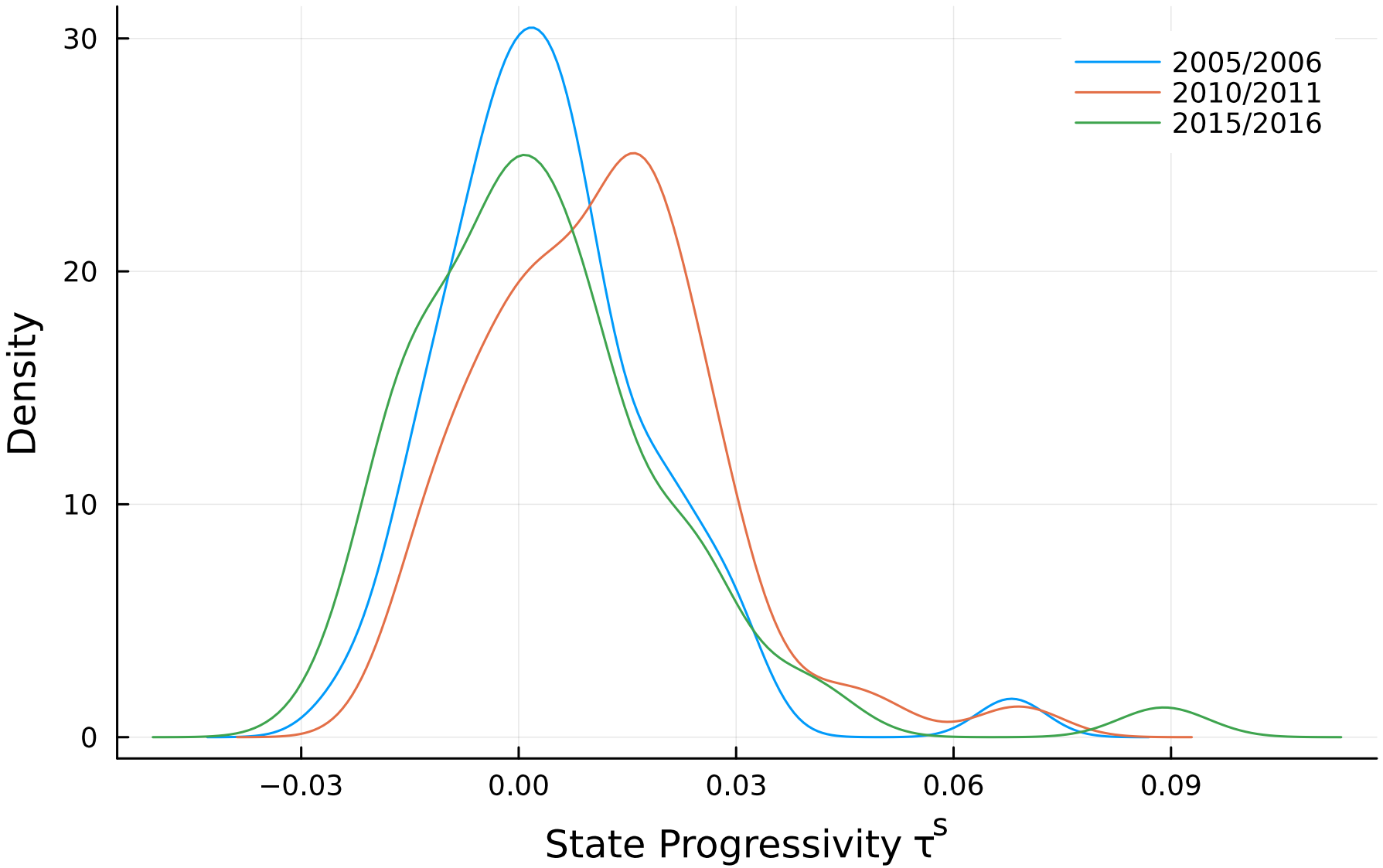
Dispersion in τ^s across States



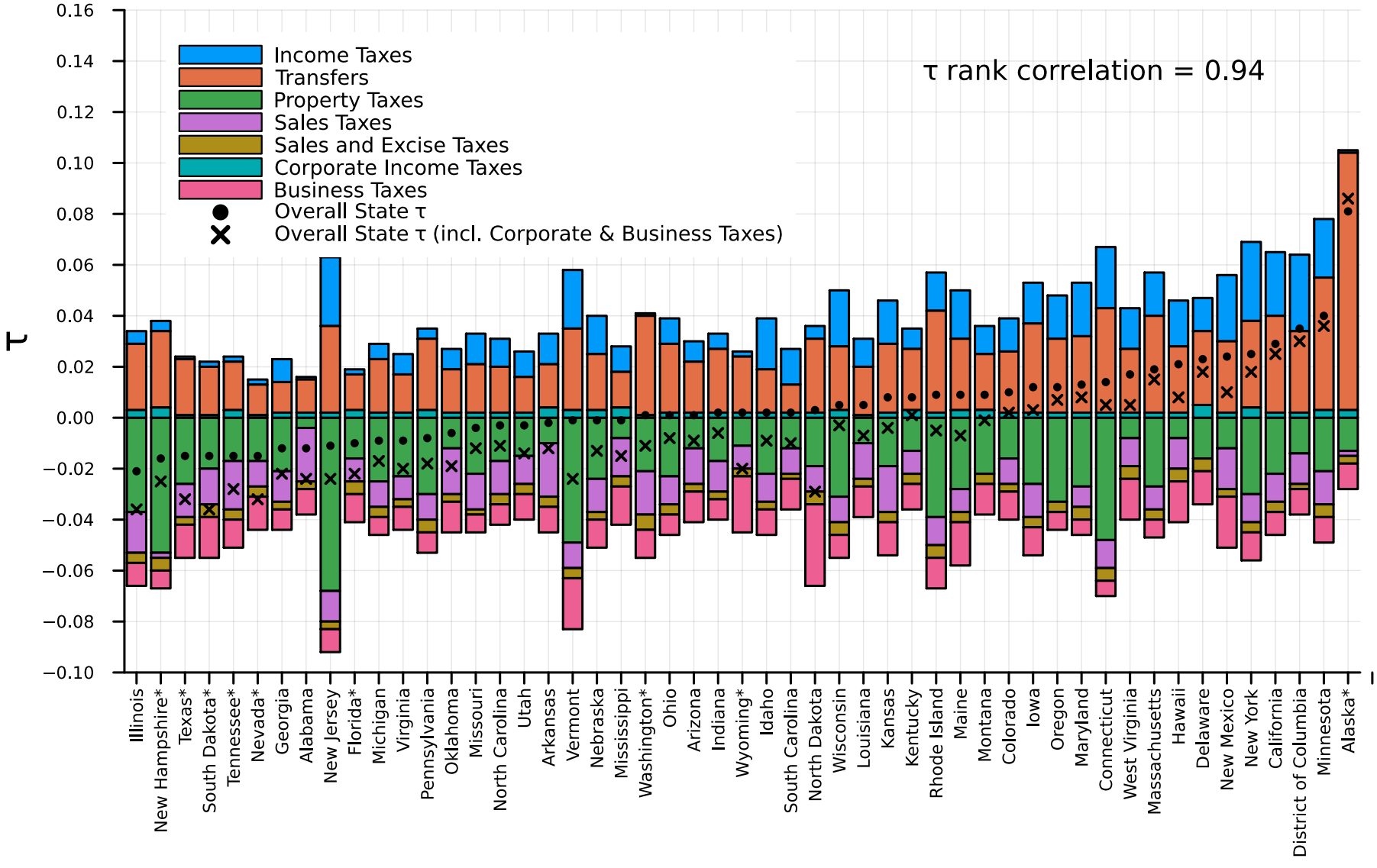
Decomposition of τ^s across States



State progressivity across time



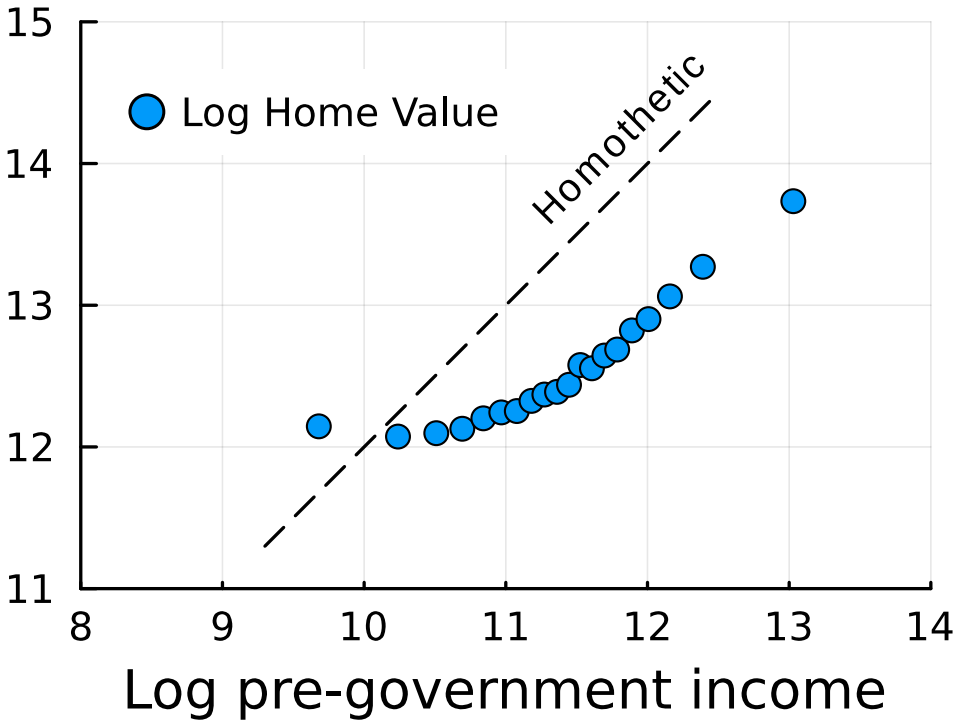
Adding corporate income and business taxes

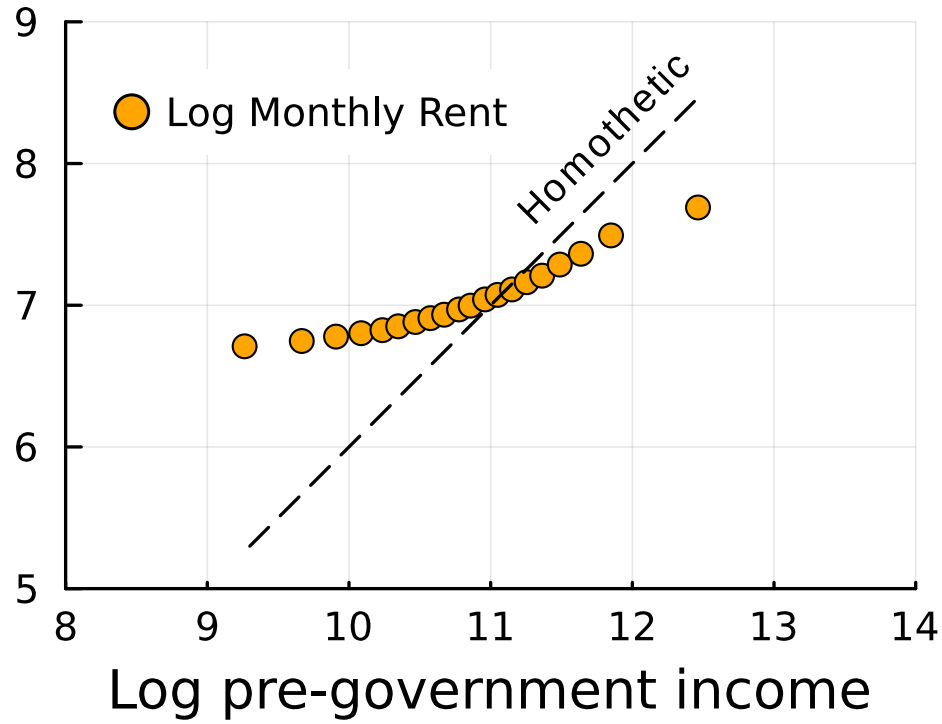


Main findings

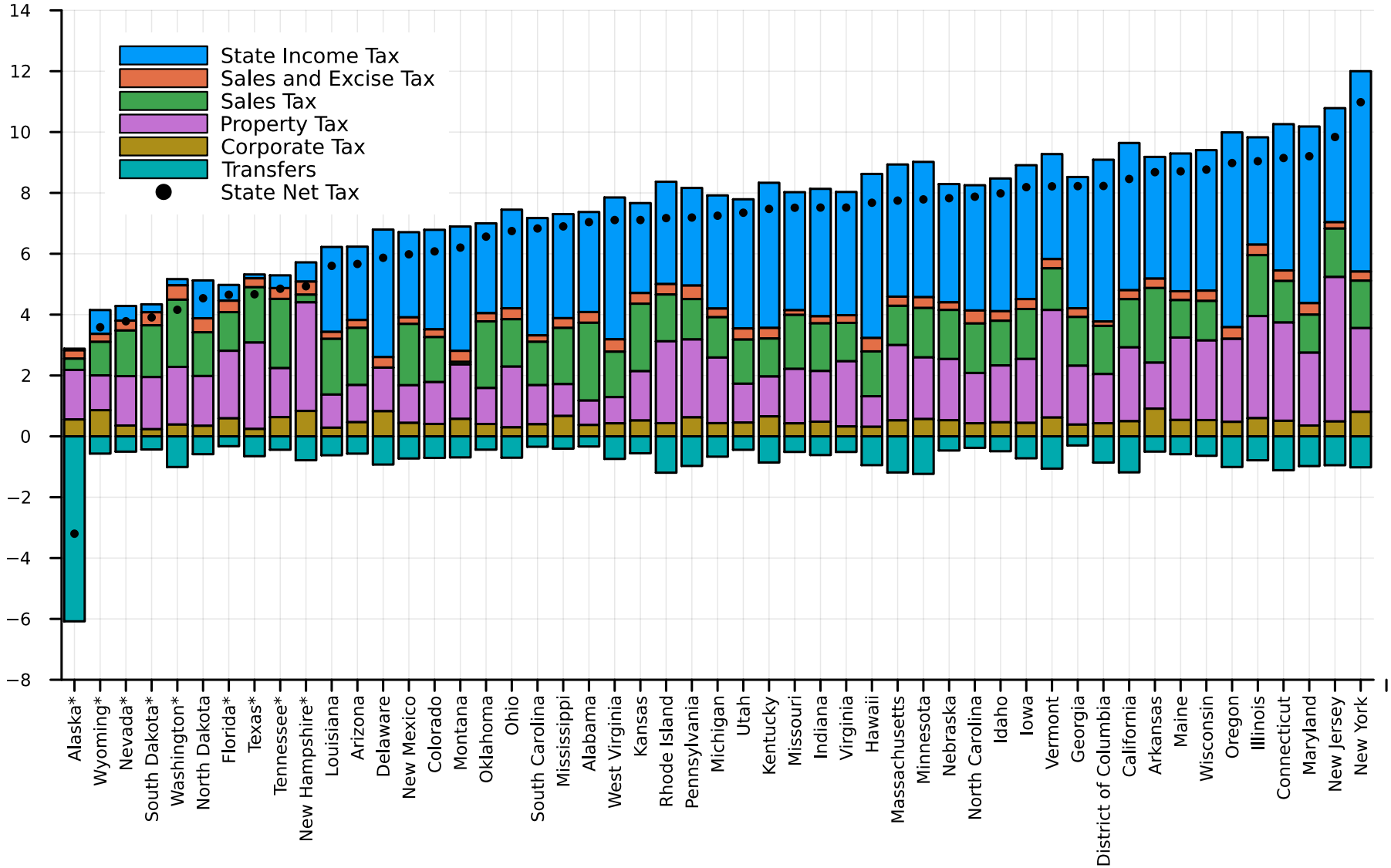
1. Federal income taxes and transfers are progressive
2. On average, state & local tax-transfer systems proportional
3. But substantial cross-state heterogeneity
4. State tax base impacts progressivity
   - Mostly property & consumption taxes $\Rightarrow$ typically regressive
   - Mostly income taxes $\Rightarrow$ typically progressive
5. Progressivity estimates (ranking) stable over time
6. Corporate income & business taxes do not change ranking
7. Positive correlation: state net tax rate & progressivity

Why Property Taxes Are Regressive

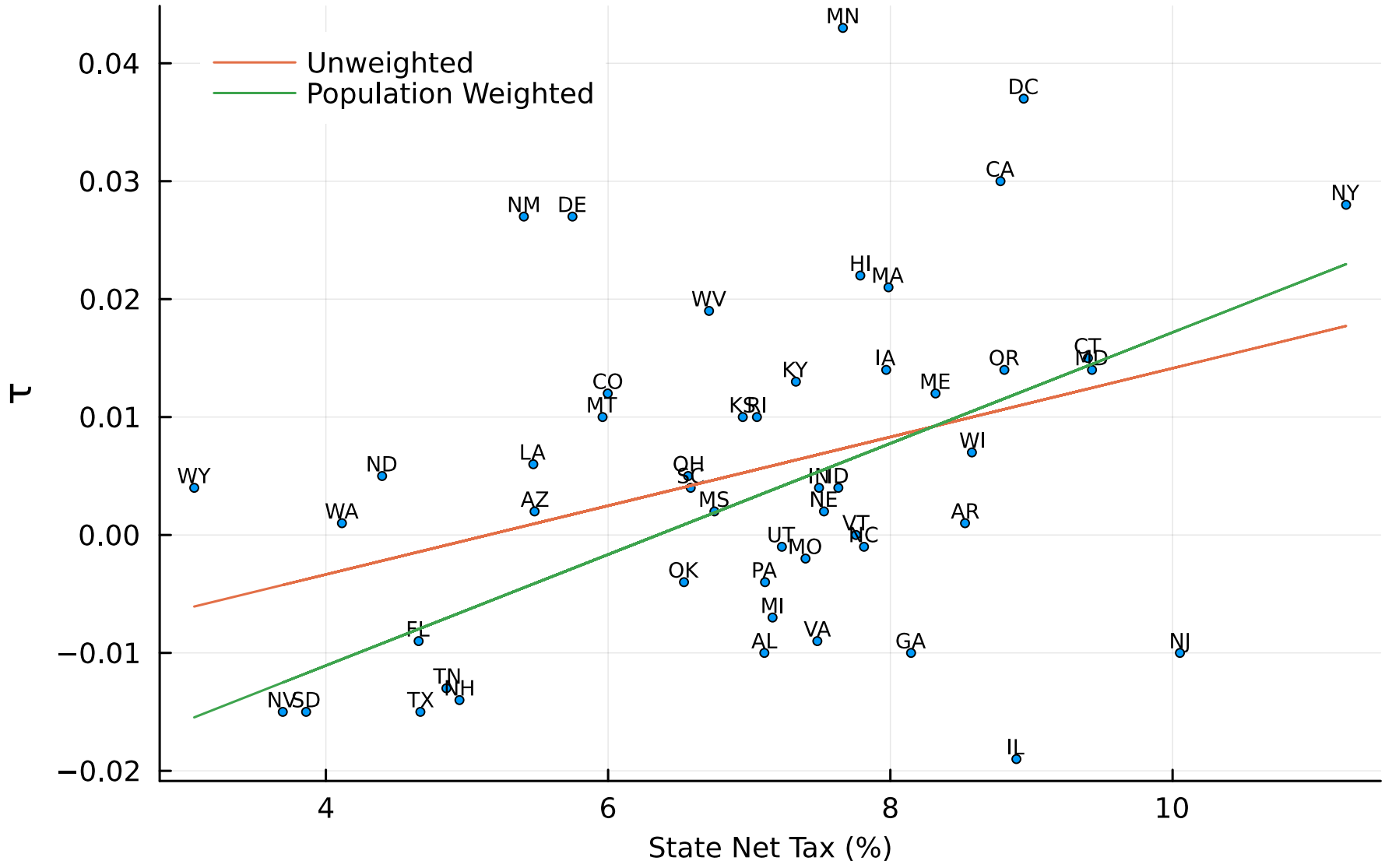




State Average Tax and Transfer Rates

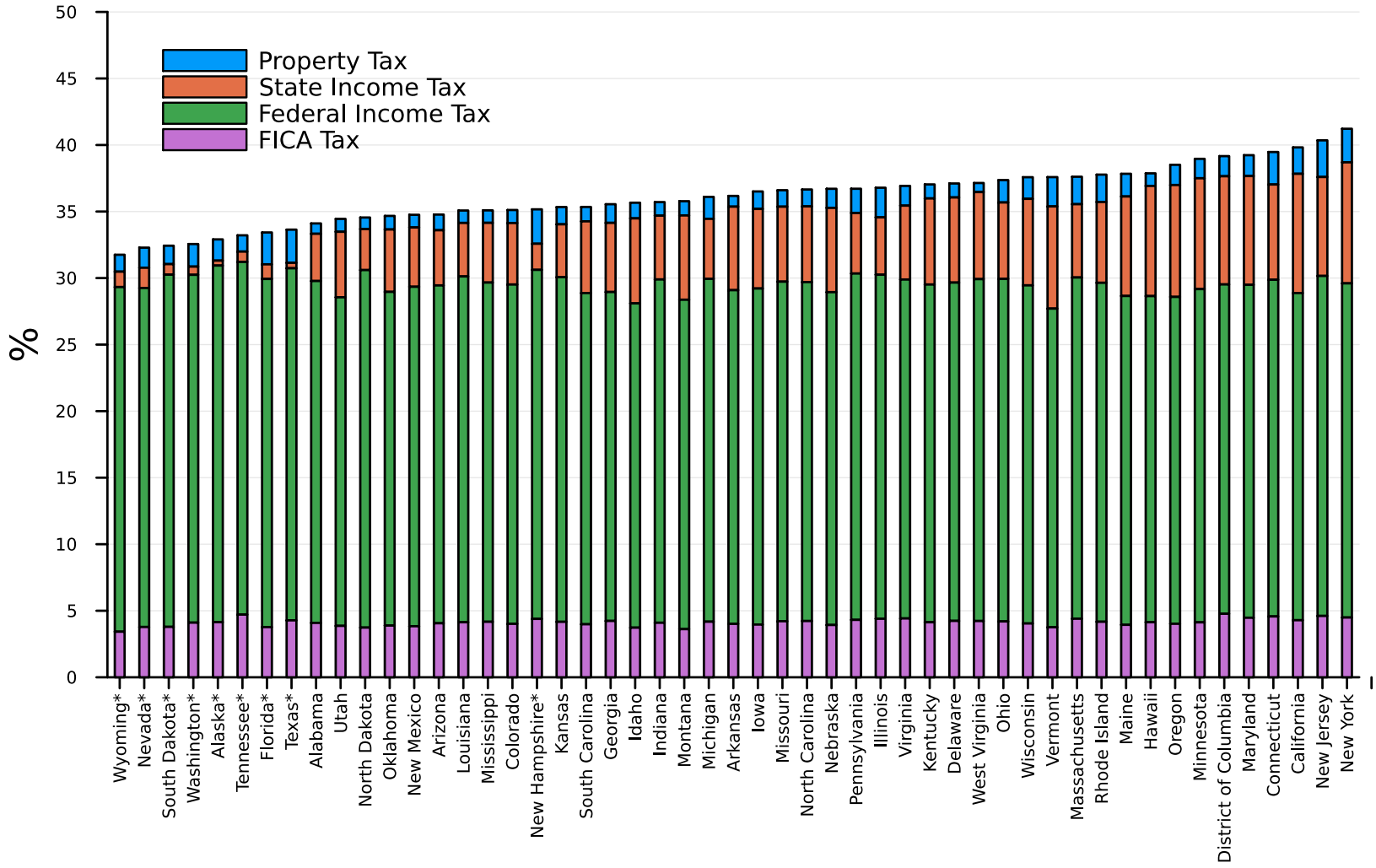


Correlation between Tax Rates and Progressivity

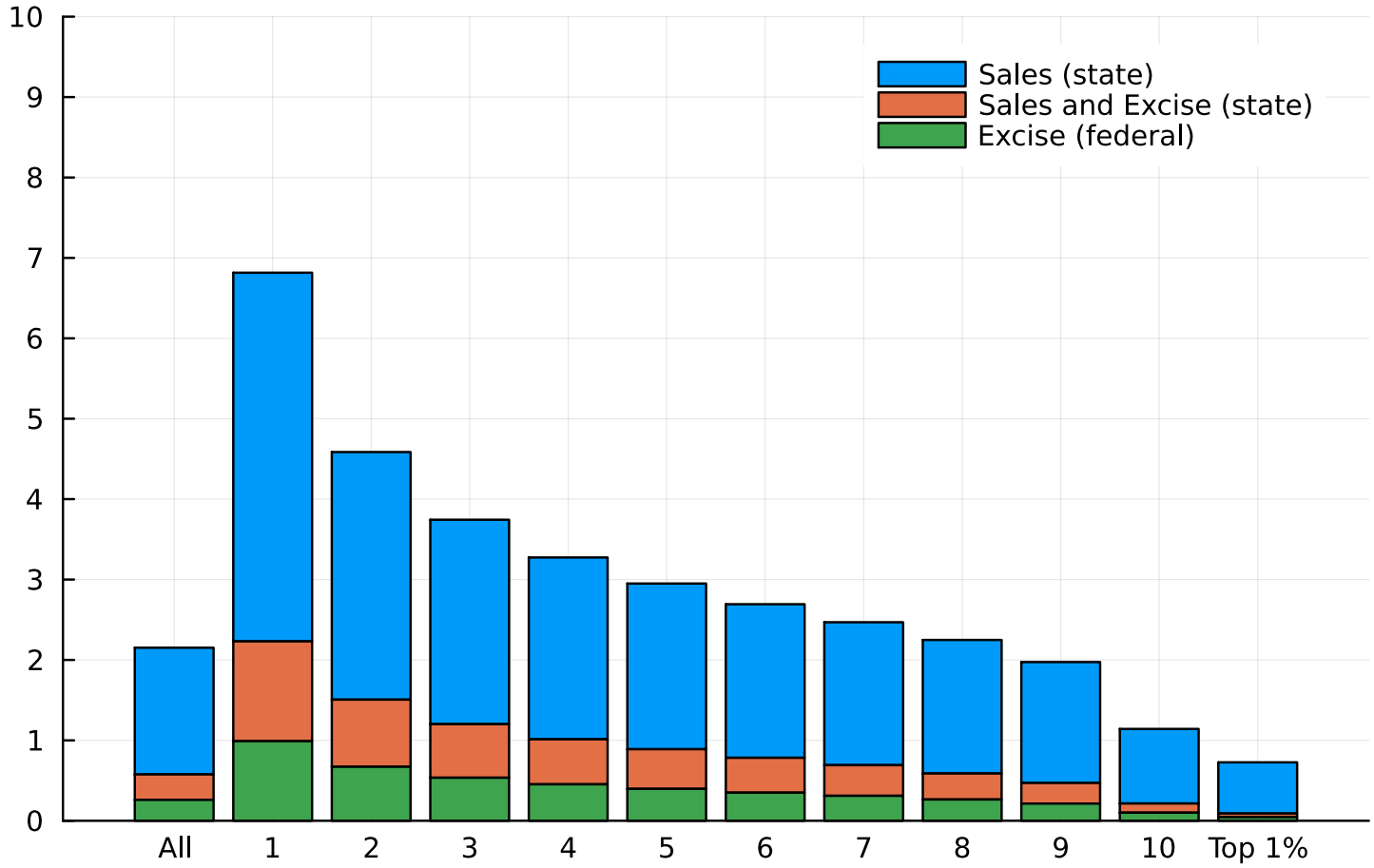


Income and taxes are top-coded in ASEC

- Replace income & taxes for ASEC households with income over $200,000 with state-specific values from SOI tables

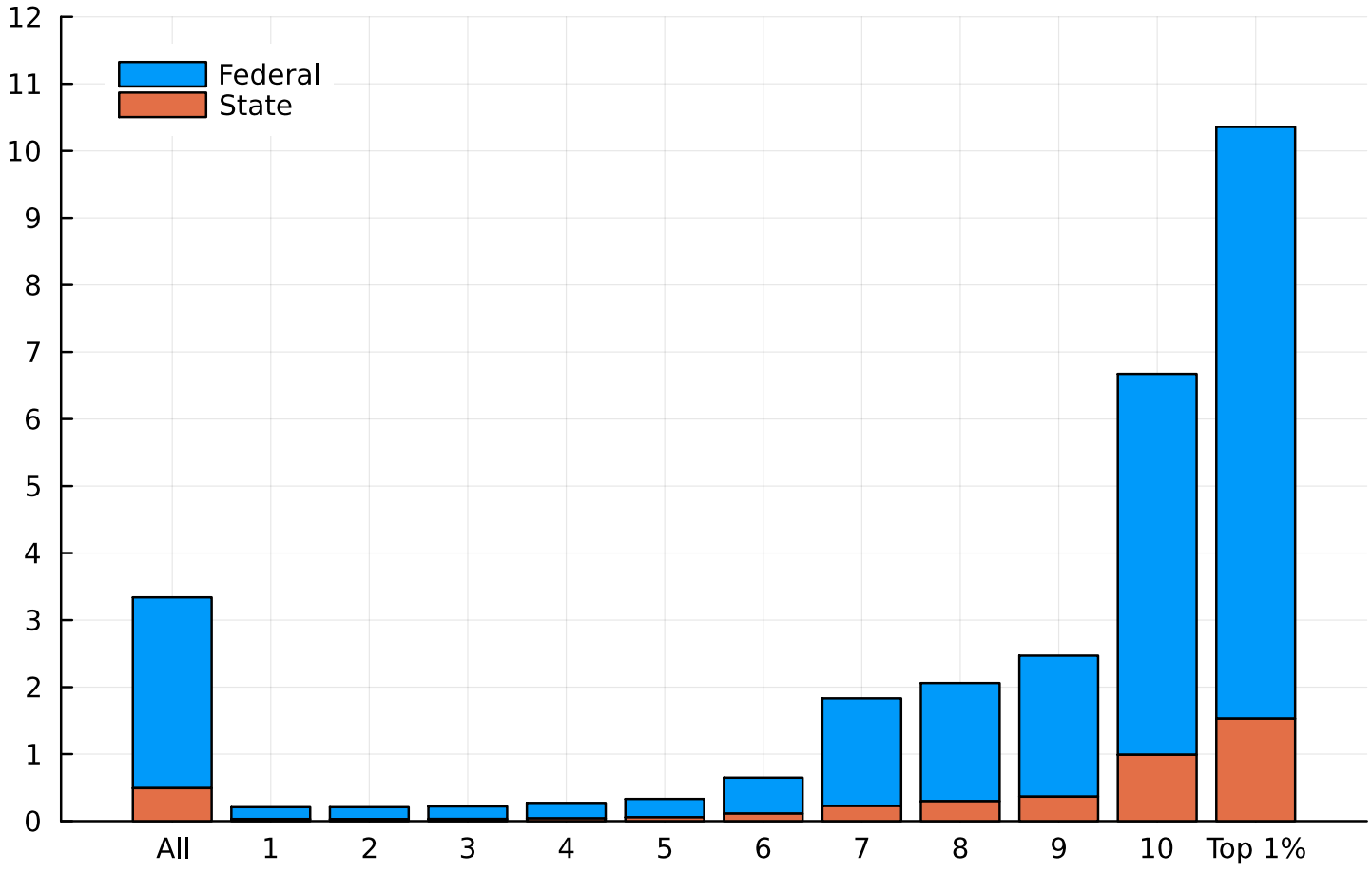


Sales and Excise Taxes are Regressive



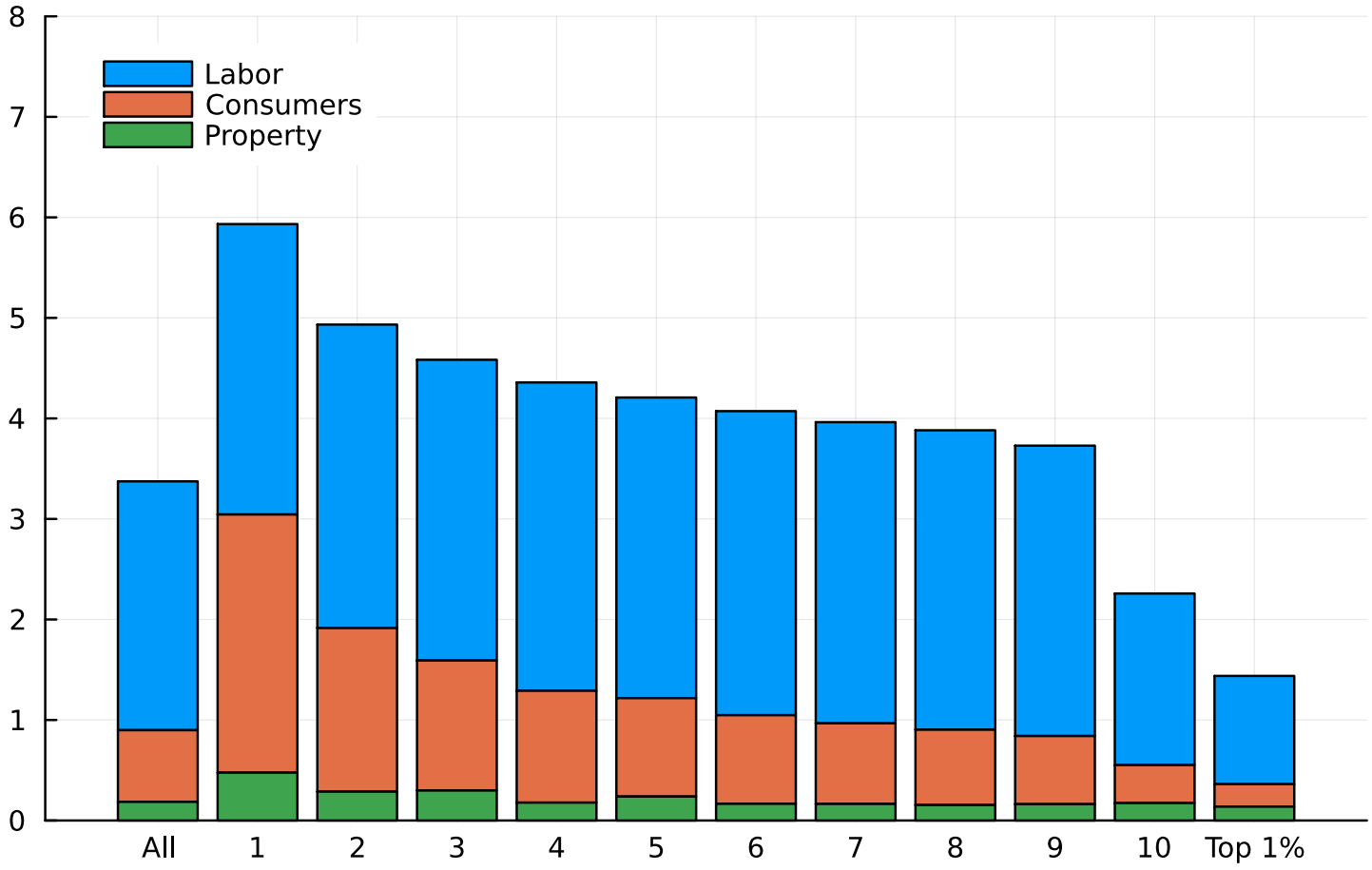
- Estimate tax rates for different consumption categories
- Estimate spending by income on these same categories from the CEX

Corporate Income Taxes are Progressive



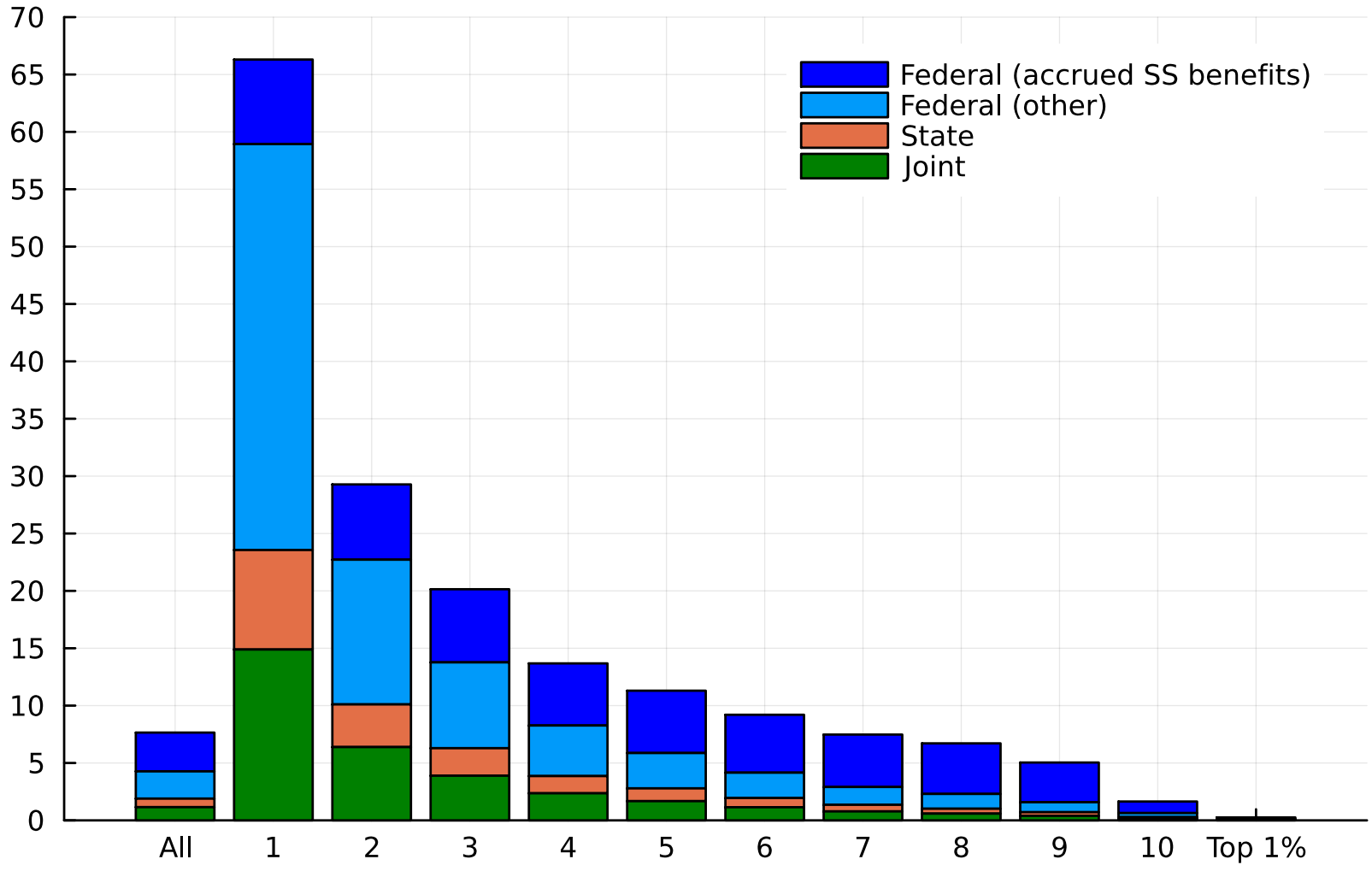
- 60% of incidence on capital (prop. to dividend income)
- 40% on top quartile of labor earnings distribution

Business Taxes are Regressive



- tradeables: tax passed to labor (lower wages)
- non-tradeables: tax passed to consumers (higher prices)
- property tax falls on owners ($\propto$ to business income)

Transfers are Progressive



Aggregate estimates of τ

		tau	N unweighted (%)	N weighted (%)
Federal	Income Taxes	0.105	99.97	99.96
	+ Transfers	0.196	99.99	99.98
	- Excise Taxes	0.194	99.99	99.98
State	Income Taxes	0.013	100	100
	+ Transfers	0.038	100	100
	- Property Taxes	0.022	100	100
	- Sales Taxes	0.011	100	100
	- Sales and Excise Taxes	0.008	100	100
Federal & State		0.21	99.98	99.96