

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

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Heterogeneous Agents in Macro Models
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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 + corporate taxes + transfers
- 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, augmented with gov't statistics and IRS SOI data (for the rich)

Main findings

1. Federal income taxes and transfers are progressive
2. On average, state & local tax-transfer systems proportional
3. But substantial heterogeneity
4. Positive correlation between state net tax take & progressivity
5. State tax base impacts progressivity
 - Mostly property & consumption taxes \Rightarrow typically regressive
 - Mostly income taxes \Rightarrow typically progressive

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	14.62	Income	3.74
	FICA (employee+employer)	10.98	Property	2.27
	Corporate Income	2.85	Sales	1.57
	Excise	0.26	Corporate Income	0.49
			Sales + Excise	0.31
Transfers	Medicaid* (cash value)	0.64	Medicaid* (cash value)	0.49
	Social Security Disability and Survivors Benefits	0.42	Unemployment Benefits	0.16
	SNAP	0.35	Worker's Compensation Benefits	0.07
	Veteran's Benefits	0.22	TANF*	0.01
	Disability Benefits	0.19	Alaska Permanent Fund Dividend	0.01
	SSI	0.18		
	Survivor's Benefits	0.16		
	School Lunch	0.11		
	Housing Assistance	0.09		
	TANF*	0.01		
	Social Security Old-Age	3.38		

Taxes and transfers as shares of pre-government household income. 2015/2016.

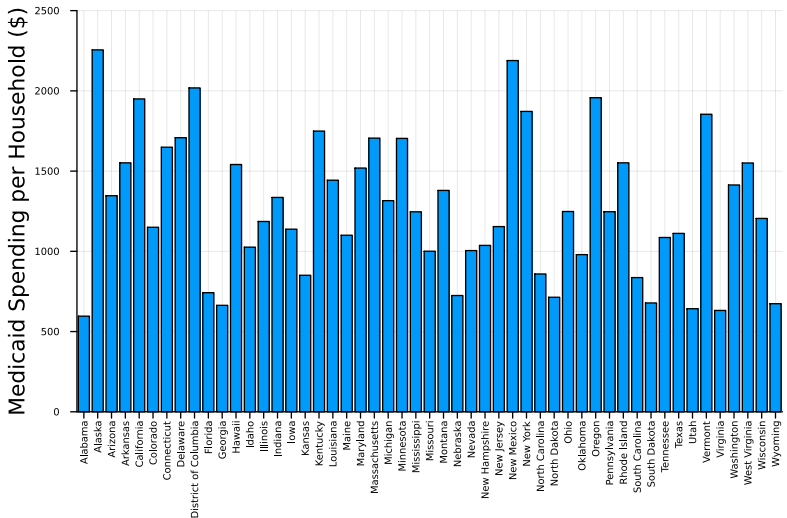
Data Sources for Taxes

- **Income taxes:** Census Bureau tax model (federal + state) + Census of State and Local Governments (local)
- **Property taxes:** Owners: ACS self-reported, Renters: Zillow price/rent estimates + pass-through model
- **Sales and excise taxes:** CEX for spending, Book of the States + other sources for rates
- **Corporate taxes:** Census of S&L gov't's
- **Business Taxes:** In progress

Data Sources for Transfers

- **SSI, SNAP, Housing Assistance:** use CBO imputation procedure to address under-reporting
- **Medicaid:** adapt CBO imputation procedure to replicate state level enrollment & spending data
 - Assume value of Medicaid to recipients is 40% of money spent (Finkelstein et al. 2019)
- **Old-Age Social Security:** Impute value of future benefits as in HSV 2017
- **Alaska Permanent Dividend Fund:** Berman and Ramey (2016)
- **Other transfers:** straight from ASEC

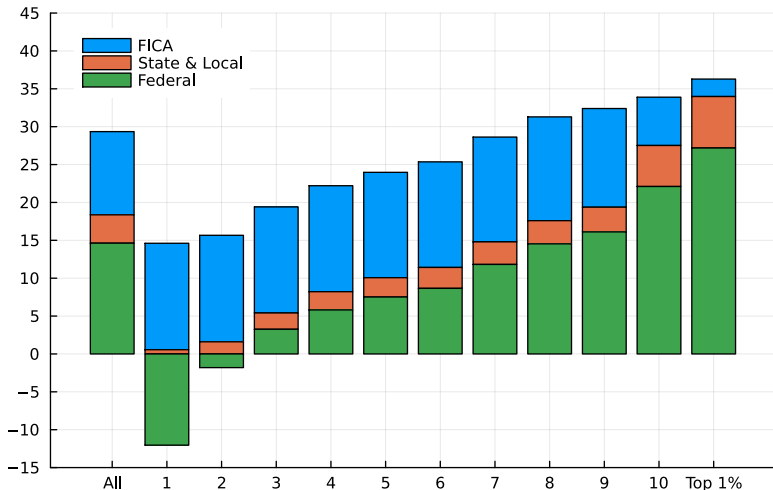
Medicaid Spending Per Household



IRS SOI Data for High Income Households

- Income and taxes top-coded in ASEC \Rightarrow turn to IRS SOI
- Replace income & taxes for ASEC households with income over \$200,000 with state-specific values from SOI tables:
 - broad income measure (includes realized capital gains)
 - actual federal taxes
 - state income taxes & property taxes for itemizers ($> 90\%$)
 - retain ASEC transfer measures

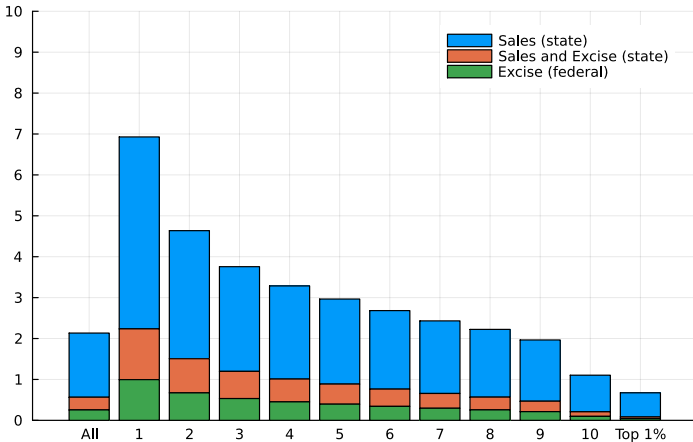
Income Taxes are Progressive



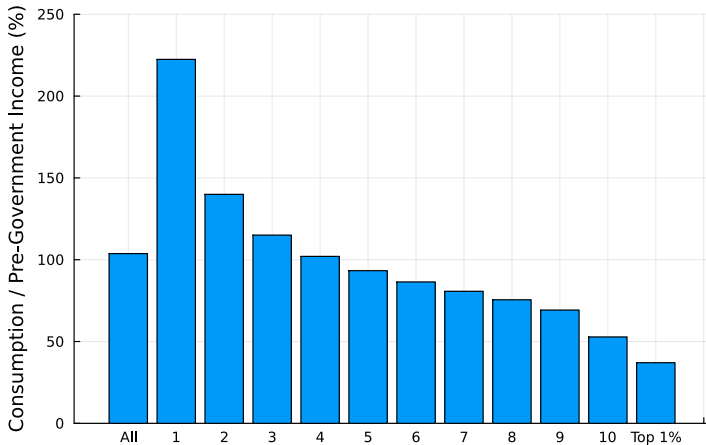
Sales and Excise Taxes

- Estimate tax rates for different consumption categories
 - Goods generally taxed at standard state sales tax rate
 - Food (at home) often taxed at lower rate
 - Wide range of rates for different services
 - Alcohol, tobacco and fuel excise rates estimated from revenue divided by pre-tax spending
- Estimate spending by income on these same categories from the CEX
 - Currently exploring cross-state variation in consumption patterns

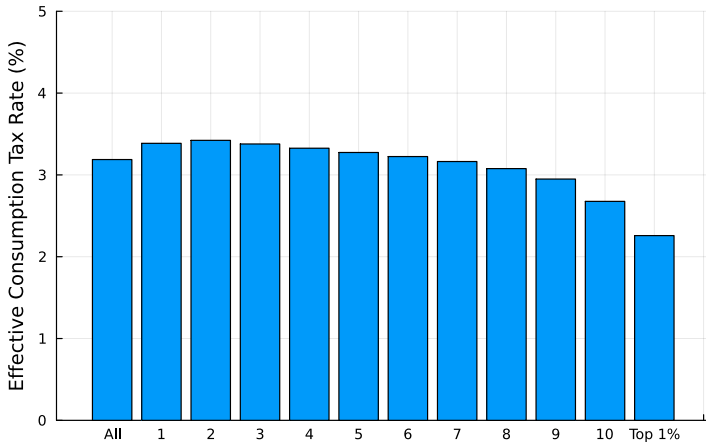
Sales and Excise Taxes are Regressive



Regressivity Driver 1: Spending Rates



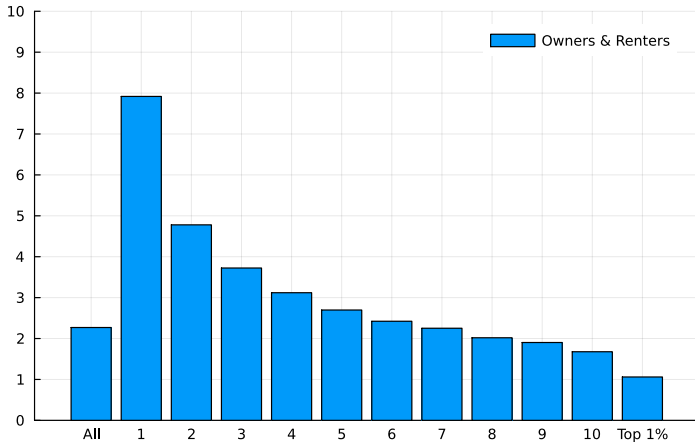
Regressivity Driver 2: Spending Composition



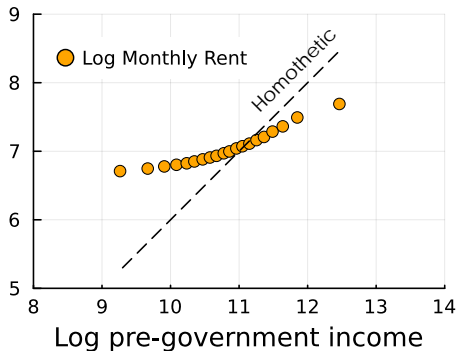
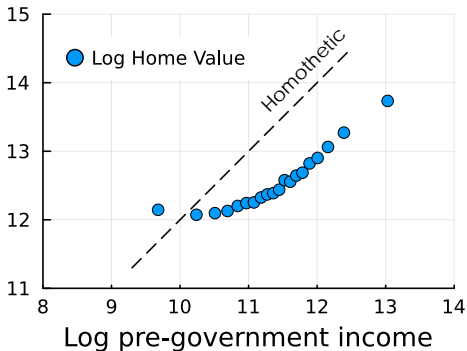
Property Taxes

- Self-reported for ACS homeowners
→ nearest-neighbor matching to ASEC based on county, income, education, units in structure
- Similar matching for renters → estimate rent paid
- + Zillow indexes to translate rents to estimated home value
- + tax rates from owners to estimate property taxes
- + split taxes between owners and renters based on county-level estimates of land's share in home value

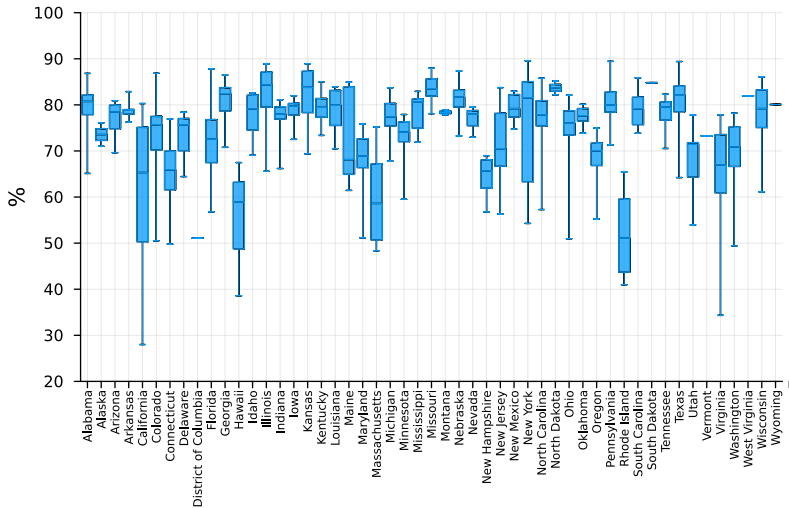
Property Taxes are Regressive



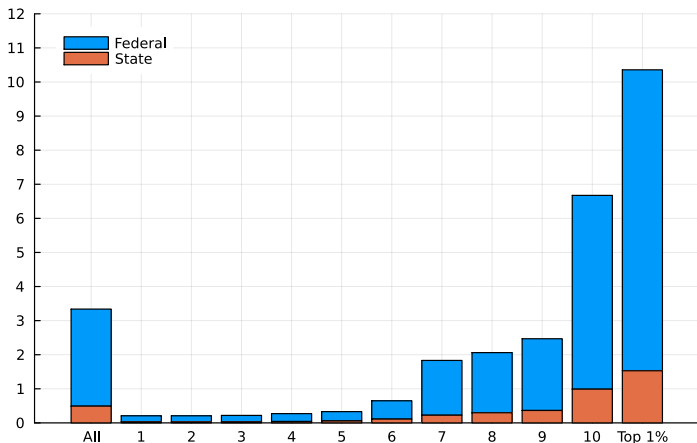
Home Values and Rents by Income



Property Tax Pass-through to Renters

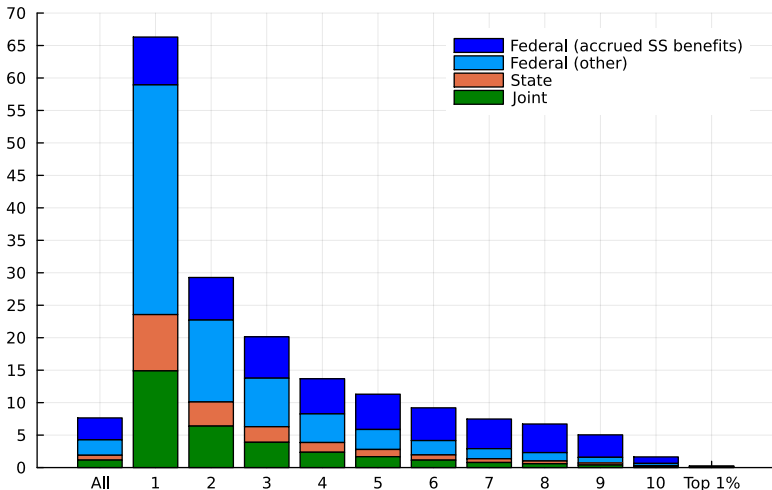


Corporate Income Taxes are Progressive

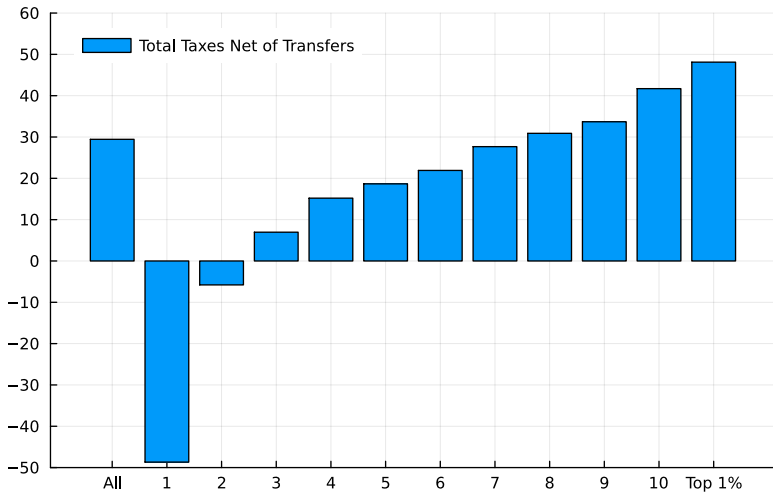


- 60% of incidence on capital, prop. to dividend income
- 40% of incidence on top quartile of labor earnings distribution

Transfers are Progressive



Net Tax Rates



Estimating Progressivity Following Benabou / HSV

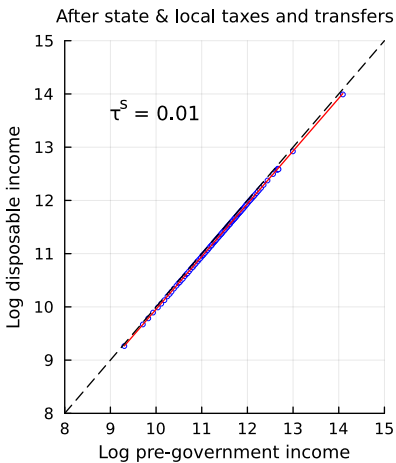
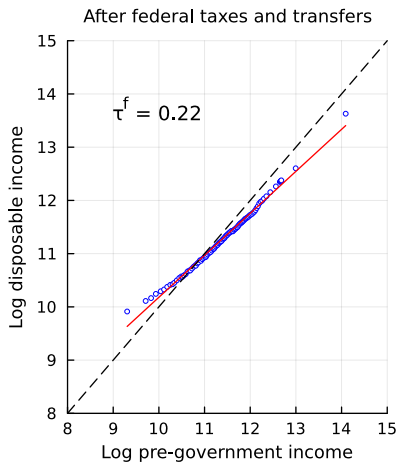
- y_i : pre-government income of household i
- T_i : tax liability net of transfers

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

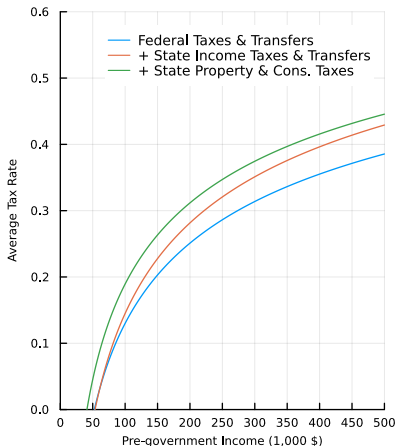
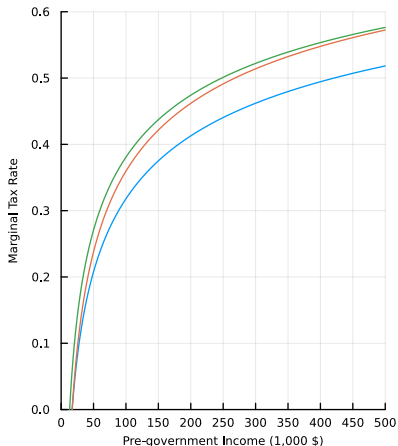
$$\log(y_i - T_i) = \lambda + (1 - \tau) \log(y_i)$$

- 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

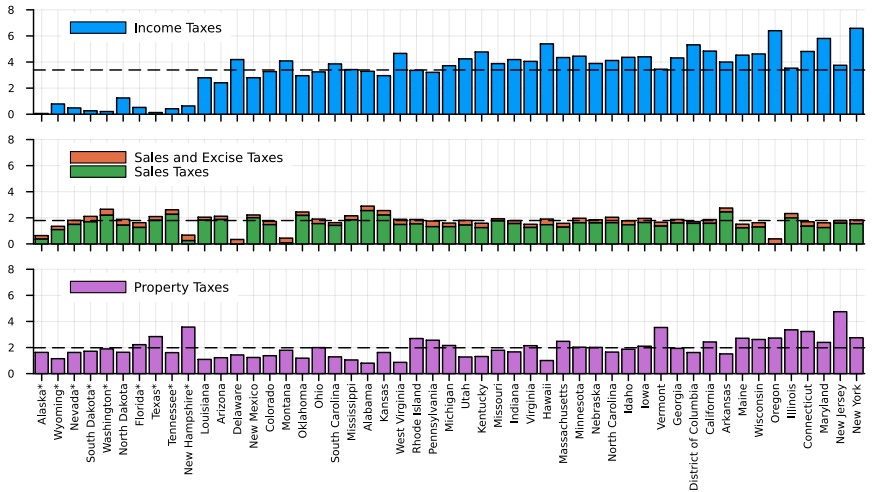
Progressivity: Federal vs. State & Local for 2015/16



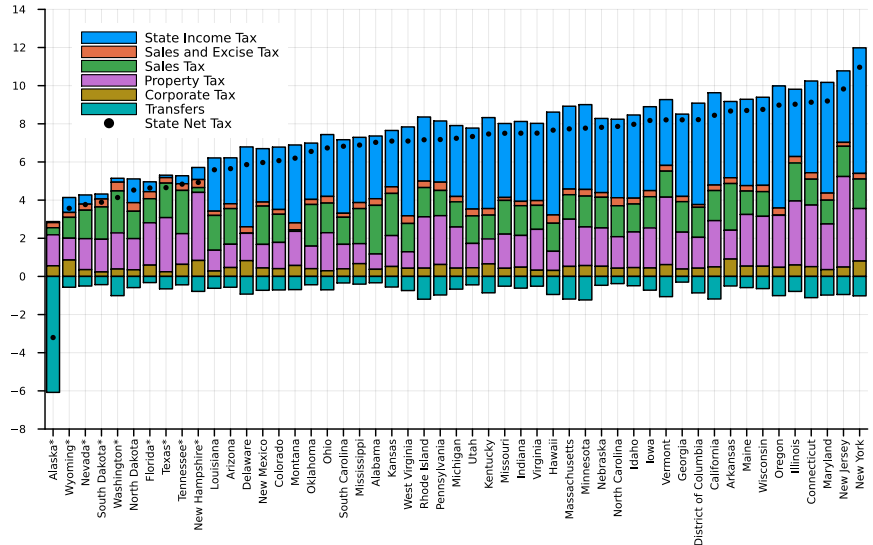
Federal vs. State & Local for 2015/16



State Average Tax Rates

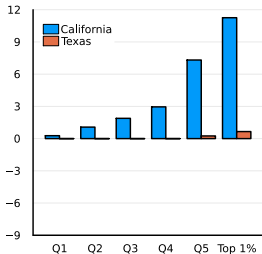


State Average Tax and Transfer Rates

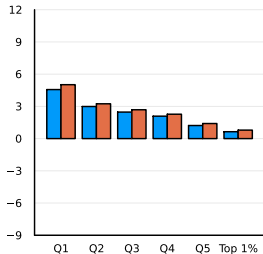


Tax Rates by Income: California vs Texas

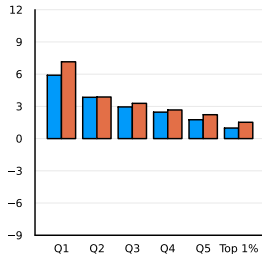
State Income Tax



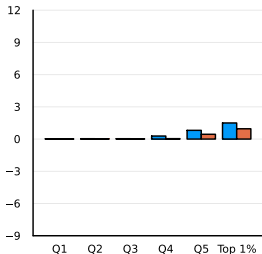
State Consumption Tax



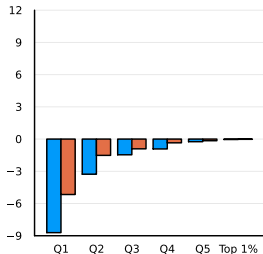
State Property Tax



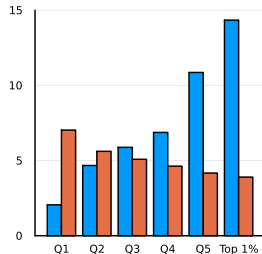
State Corporate Tax



State Transfers

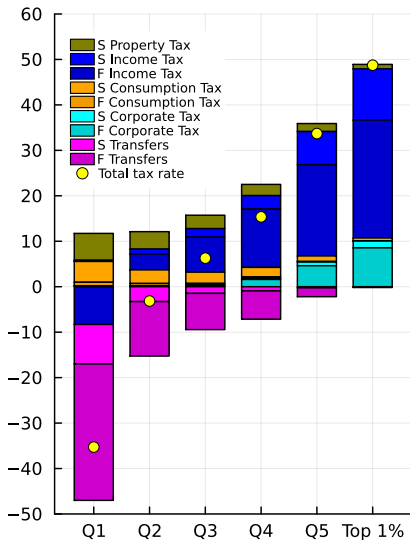


State Total Net Taxes

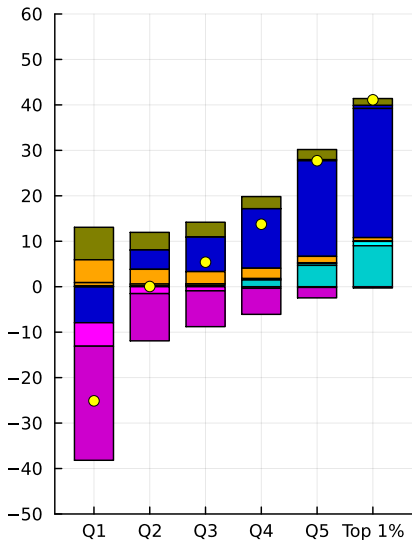


Tax Rates by Income: California vs Texas

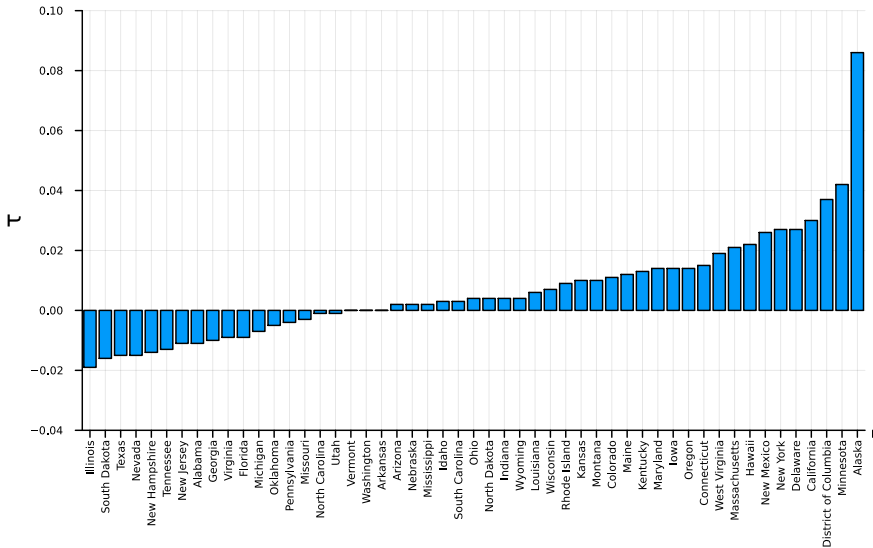
California



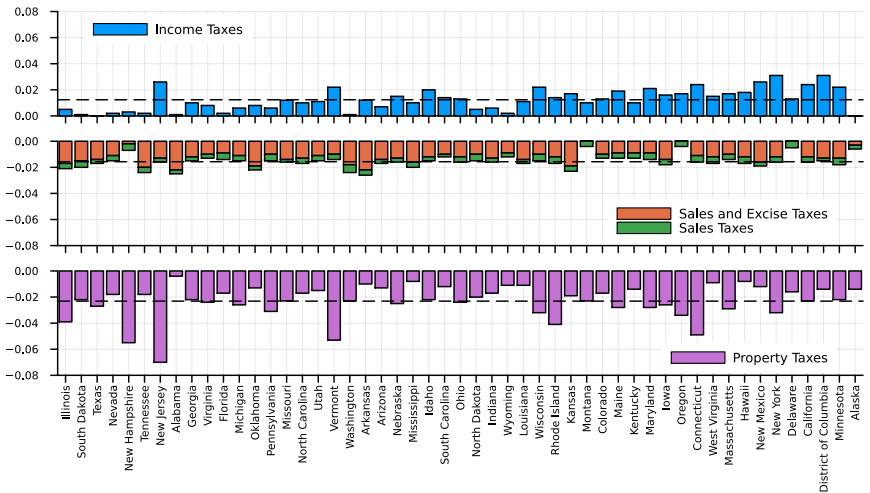
Texas



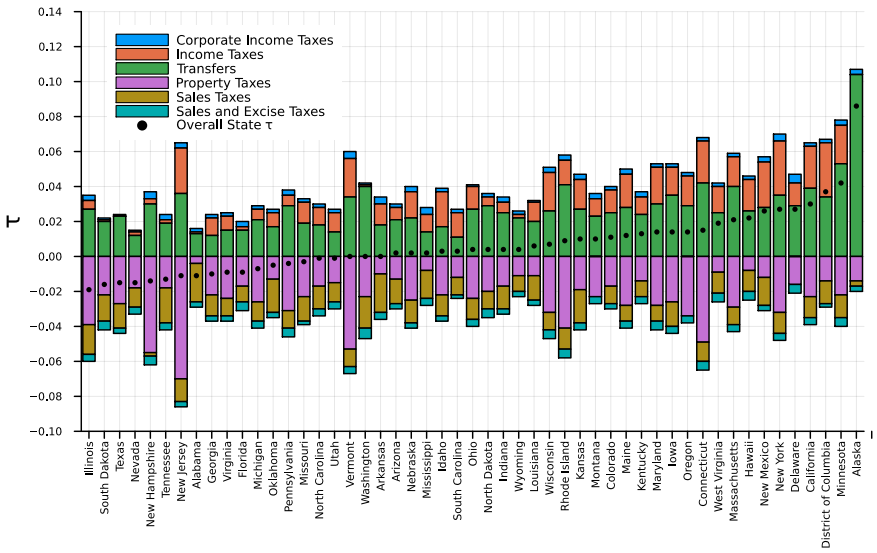
Dispersion in τ^S across States



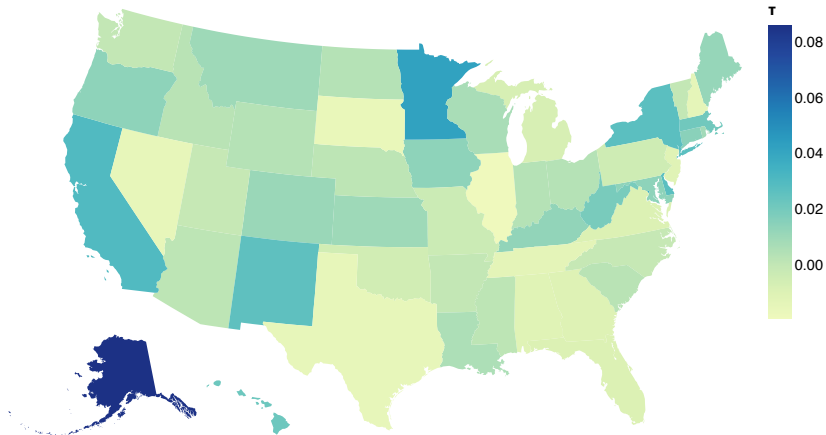
Decomposition of τ^S across States



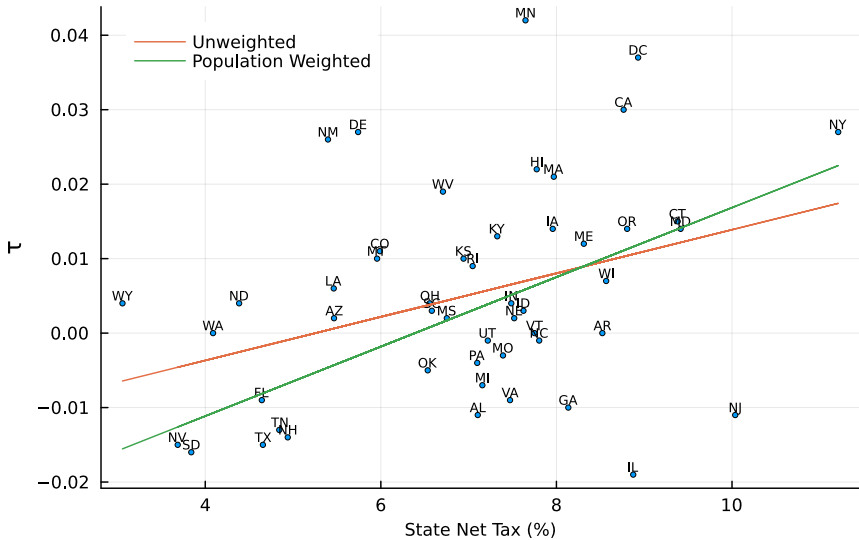
Decomposition of τ^S across States



Progressivity Map



Correlation between Tax Rates and Progressivity



Conclusions

1. Federal income taxes and transfers are progressive
2. On average, state & local tax-transfer systems are close to proportional
 - But substantial heterogeneity
3. State tax base impacts progressivity
 - Mostly property & consumption taxes \Rightarrow typically regressive
 - Mostly income taxes \Rightarrow typically progressive

To Do List

1. Add other business taxes
2. Address under-reporting of business income
3. Consider narrower (exclude Medicaid) and broader measures of transfers
4. Measure persistence of progressivity over time
5. Explore correlates of average tax rates and progressivity
 - Especially net migration