Unpacking Rising Inequality: The Roles of Markups, Taxes, and Asset Prices

S. Auray
CREST-Ensai and RSB

A. Eyquem
HEC Lausanne and CEPR

B. Garbinti
CREST-ENSAE IP Paris and CEPR

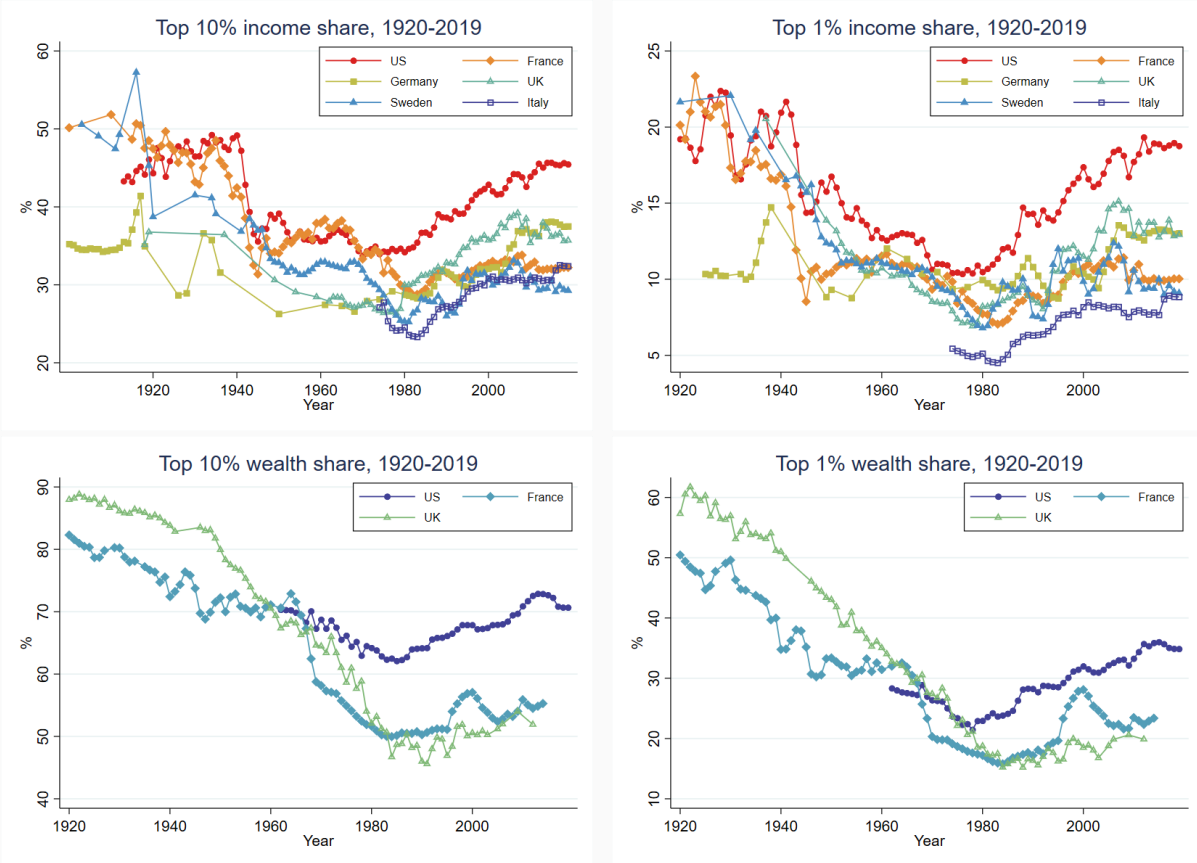
J. Goupille-Lebret
CNRS ENS Lyon and CEPR

JEEA Teaching Slides

Introduction

Rising Inequalities

Rise in inequalities around the world since the early 80s



Sources (income): WID, based on: US: Piketty, Saez & Zucman (2018), UK: Atkinson (2007, France: Garbinti, Goupille-Lebret & Piketty (2021), Germany: Bartels (2017), Blanchet et al. (2020), Sweden: Jesper and Waldenström (2010), Blanchet et al. (2020)
Sources (wealth): WID, based on: US: Saez & Zucman (2016), UK: Alvaredo, Atkinson & Morelli (2016), France: Garbinti, Goupille-Lebret & Piketty (2021)

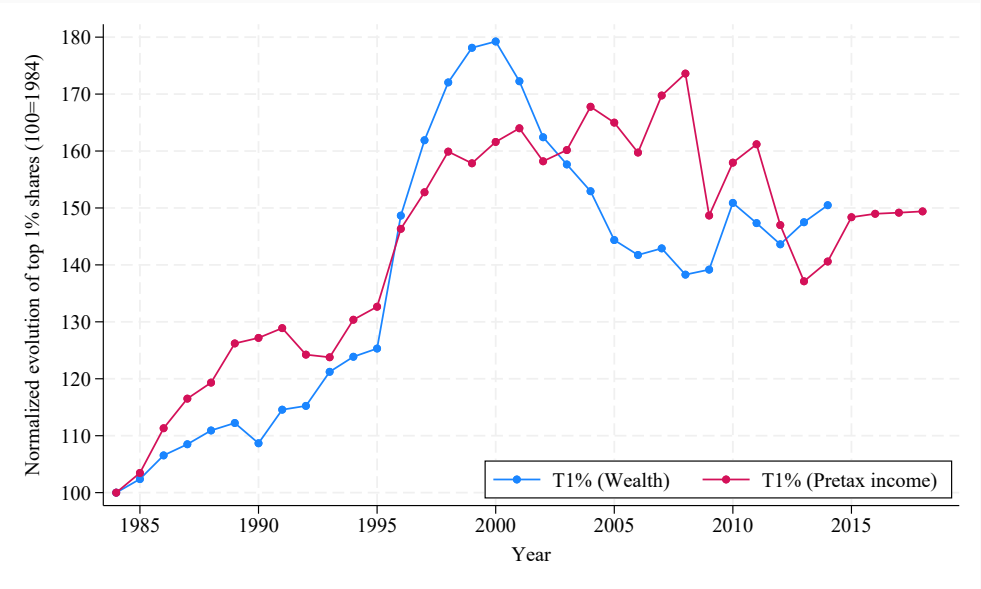
Research question and the prime suspects

- **Research question.** What drives the dynamics of **income** and **wealth** inequality over 1984–2018, and through which mechanisms?

- We focus on France, and document three empirical patterns that motivate the model:
  1. **Asset prices** (housing vs. equity) exhibit large and asymmetric booms/busts.
  2. **Taxation** changes in level, progressivity, and (crucially) **composition** along the pretax income distribution.
  3. **Markups and concentration** rise markedly; reallocation toward large/high-markup firms is a key component.

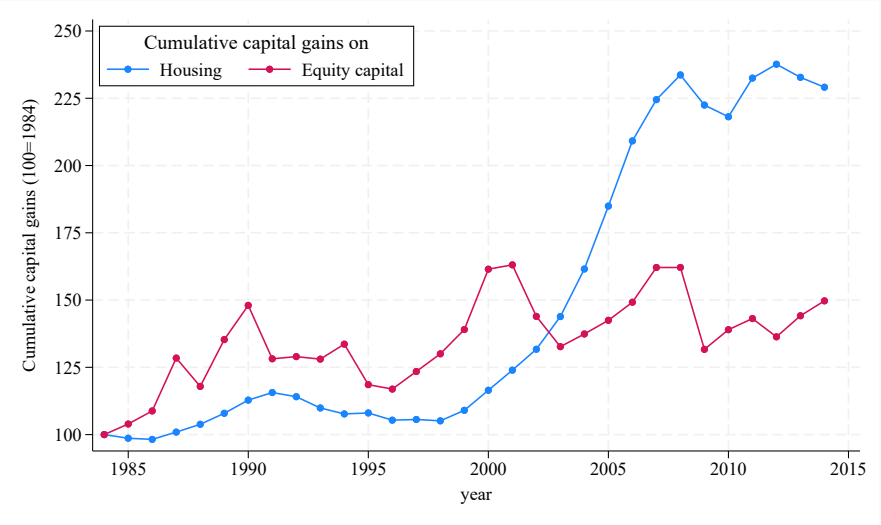
- These forces matter because portfolios and income sources are highly heterogeneous: **capital income dominates** at the top and drives the rise in top incomes.

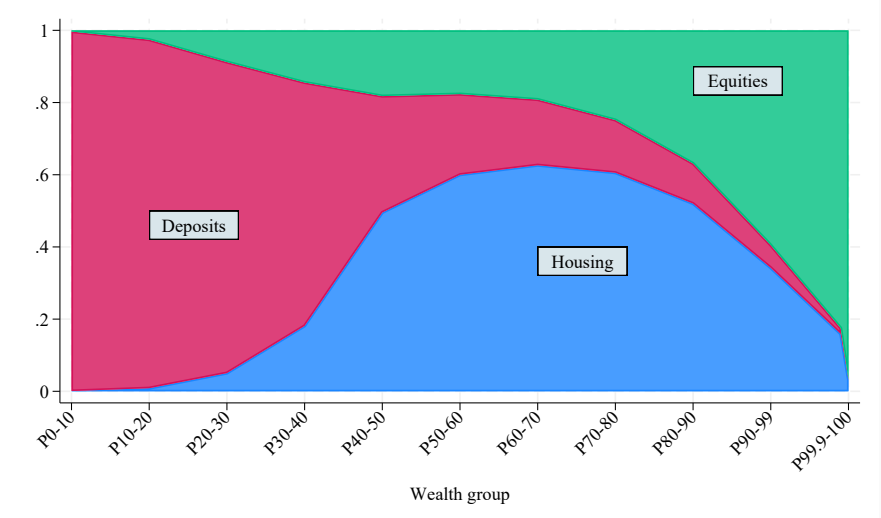
Stylized facts: inequality dynamics (France, 1984–2018)



- Panel (a): Top 1% income and wealth shares increase by $\approx 50\%$ between 1984 and 2018.
- Income inequality rises steadily, peaks around 2008, declines during the global financial crisis, then stabilizes.
- Wealth inequality increases smoothly in the long run, but with large short-run fluctuations (notably 1995–2005).

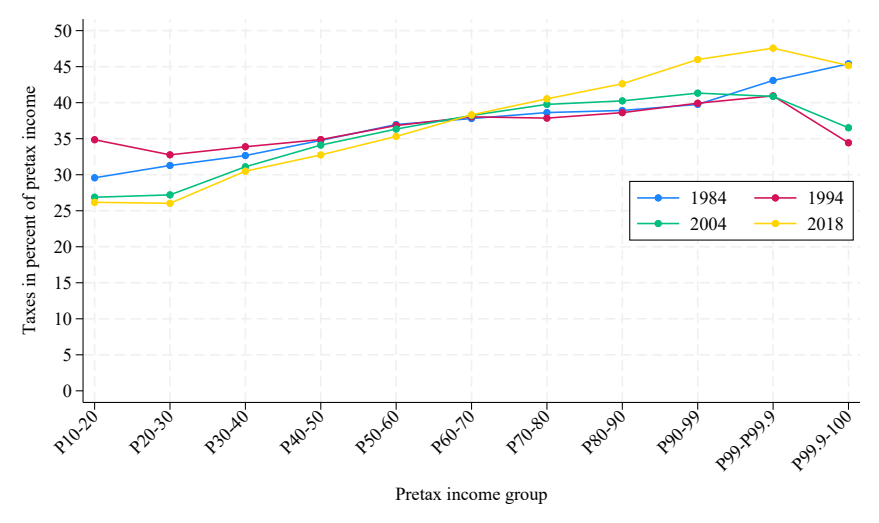
Suspect #1: asset prices & portfolios

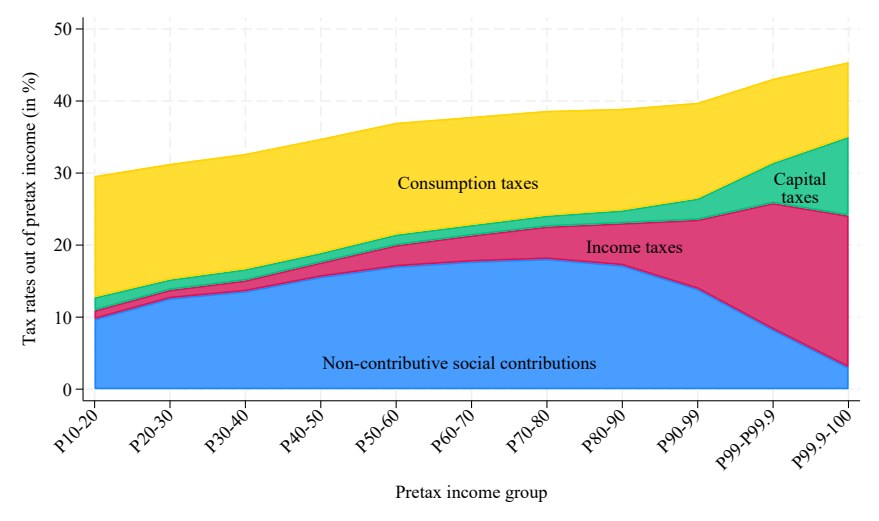




- Panel (b): housing boom in the 2000s (prices roughly double in less than a decade).
- Equity capital gains are sizable but more volatile, with sharp movements around 2000 and 2008.
- Panel (c): portfolios differ starkly across the wealth distribution, implying strong distributional effects of asset-specific price changes.
- The opposing trends in housing vs equity between 1995 and 2005 echo the large short-run fluctuation in top wealth shares.

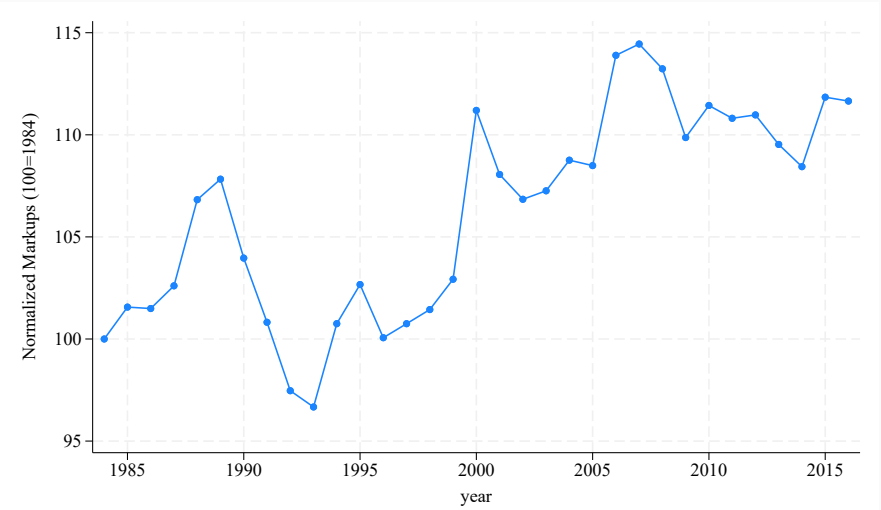
Suspect #2: taxes – progressivity *and* composition

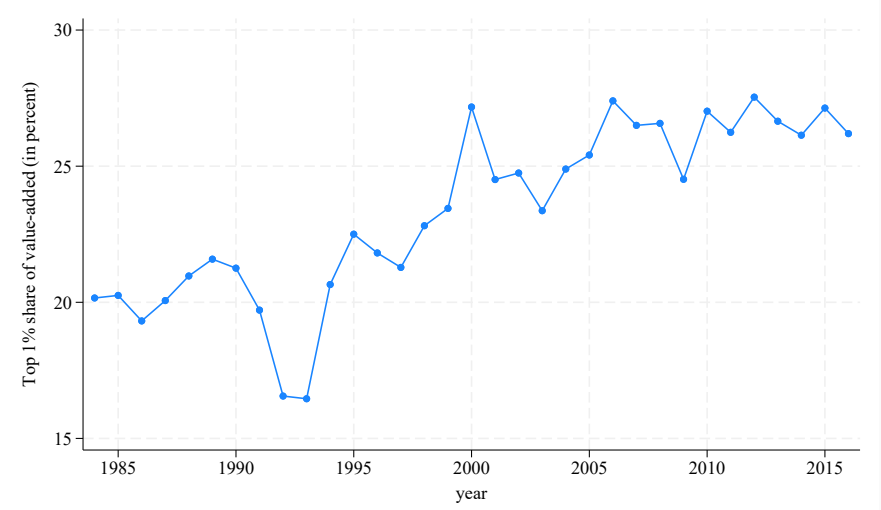




- Panel (d): in 1984, taxation is mildly progressive (roughly 30% at the bottom to about 45% at the top 0.1%).
- 1984–1994: stable overall profile, except sharp declines at the very top (local regressivity).
- 1994 onward: increasing progressivity via cuts at the bottom and increases at the top.
- Panels (e)–(f): tax **composition** varies along the distribution and over time $\Rightarrow$ need to model tax bases and behavioral margins (saving, consumption, labor supply).

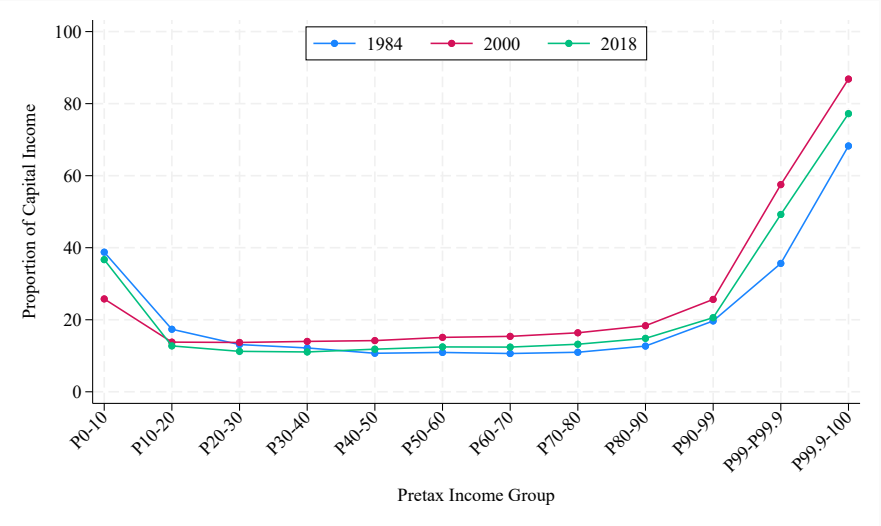
Suspect #3: markups, concentration

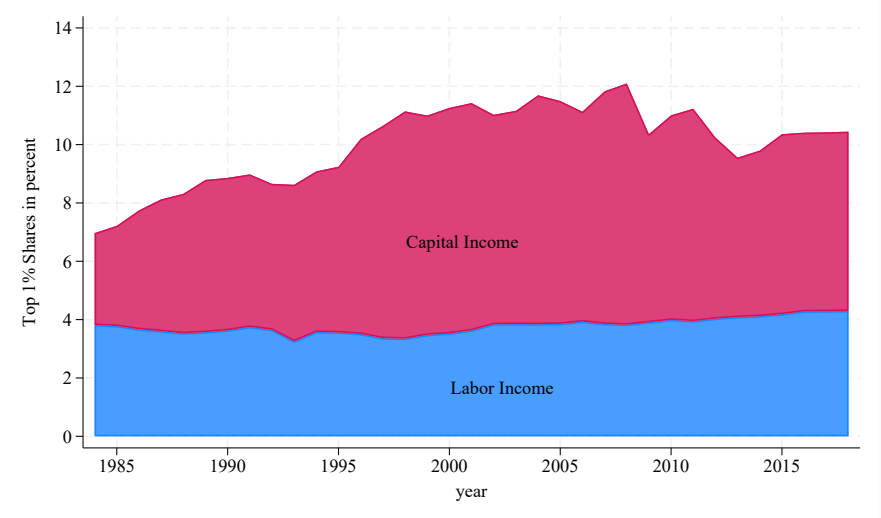




- Panel (g): markups rise steadily until 2008, then stabilize; the trajectory mirrors the top 1% income share.
- Panel (h): rising aggregate markups reflect reallocation toward large/high-markup firms $\Rightarrow$ higher concentration.
- This pattern echoes evidence on "superstar" firms and rising concentration/markups (US and Europe).

Suspect #3: the capital-income channel (labor vs. capital)





- Panel (i): capital income represents more than 50% of total pretax income at the top of the income distribution (top 1% and above).
- Panel (j): the rise in the top 1% income share is entirely driven by capital income (which includes business income).
- Working assumption: rising markups and the concentration of value-added raise capital (incl. business) income and thus the top 1% income share over time.

Contributions

1. Contribution 1: Original model with
   - Explicit link between firms' markups, concentration, and top income shares
   - 3 assets (deposits, housing, equity) with endogenous portfolio decisions
   - Granular representation of the tax and transfer system
2. Contribution 2: Fit the level and dynamics of inequality
   - Pretax, post-tax, wealth
   - From bottom 50% to top 1%
   - Composition of wealth along the distribution
3. Contribution 3: Counterfactual and mechanisms
   - Decomposition of driving forces: markups, taxes, capital gains
   - How these factors are transmitted to wealth inequality

The model

- An original HA model with infinitely-lived dynasties facing:
  - Uninsured labor income risk
  - Uninsured entrepreneurial risk: few households receive large amount of (risky) income (profits)
  - Wealth in utility
- Three assets: equity (capital), indivisible gross housing and deposits (cash). Endogenous portfolios, delivering increasing returns in wealth
- A full account of the system of taxes and transfers (level, progressivity)

Preview

- Calibrate the model to 1984 using DINA and fitting:
  - National accounts (macro)
  - Proportional and progressive taxes and transfers, gov. spending (micro+macro fiscal)
  - The composition of portfolios, asset returns and income and wealth shares (micro)
- Match income and wealth shares, up to top 1%
- Dynamics: feed the model with shocks affecting
  - Market power: Rising markups and profit concentration
  - Tax/transfer system: changes in progressivity, tax structures
  - Housing + equity capital gains: changes in asset prices
  - Production: TFP growth and capital depreciation
- Match the observed dynamics of pre-tax income and wealth shares

Results

- Rising pretax income inequality:
  - Rising markups and profit concentration are the dominant force
  - Changes in taxation play a quantitatively smaller but non-negligible role
- Rising wealth inequality:
  - Driven primarily by rising capital income at the top, amplified by tax changes
  - Capital gains matter through valuation effects, but are not the main driver
  - Transmission from income to wealth inequality depends critically on heterogeneous saving rates
  - Behavioral responses (savings and portfolio choices) are at least as important as mechanical effects

Literature

- **HA models**: Bewley (1977); Huggett (1993); Aiyagari (1994); Krusell & Smith (1998), Kaplan, Moll & Violante (2018), Achdou et al. (2022)
- **Det. of income inequality**: De Nardi (2004); Cagetti & De Nardi (2006); Gabaix et al. (2016); Kaymak & Poschke (2016); De Nardi & Fella (2017); Benhabib & Bisin (2018); Hubmer, Krusell & Smith (2020), Benhabib et al. (2021)
- **Rising markups**: De Loecker & Eeckhout (2018); Boar & Midrigan (2019); De Loecker, Eeckhout & Unger (2020); Eeckhout et al. (2021); Eggertsson, Robbins & Wold (2021); Deb (2024)
- **DINA and det. of wealth inequality**: Saez & Zucman (2016); Garbinti, Goupille-Lebret & Piketty (2018); Piketty, Saez & Zucman (2018); Martínez-Toledano (2020); Kuhn, Schularick & Steins (2020); Bozio et al. (2021); Garbinti, Goupille-Lebret & Piketty

Model

Model: firms

Representative intermediate good producer under perfect competition

$$y^m = \xi k^{\alpha} \ell^{1-\alpha}$$

Selling good at price φ. Profits (non-labor payments) taxed at rate τ_π. Factor demands:

$$\alpha \frac{\varphi y^m}{k} = \frac{r^k}{1-\tau_\pi} + \delta \text{ and } (1-\alpha)\frac{\varphi y^m}{\ell} = w$$

Monopolistic competition on final goods market:

$$\frac{\theta}{\theta - 1}\varphi = 1$$

So that:

$$y \;=\; \xi k^{\alpha} \ell^{1-\alpha} \text{ and } w = (1-\alpha)\frac{\theta - 1}{\theta}\frac{y}{\ell}$$

Model: income processes (workers)

- **Workers.** When working, household j supplies ℓ^j and earns $w^j = we^{z^j}$. We normalize $\mathbb{E}[e^{z_t^j}] = 1$.
- **Idiosyncratic productivity.** Mean-reverting process in continuous time:

$$dz_t^j = -\rho\, z_t^j\, dt + dL_t^j,$$

where increments over a small step Δ follow a Gaussian mixture:

$$\Delta L_t^j \sim p_1\, \mathcal{N}(\psi_1 \Delta,\, \sigma_1^2 \Delta) + (1 - p_1)\, \mathcal{N}(\psi_2 \Delta,\, \sigma_2^2 \Delta),$$
$$p_1 \psi_1 + (1 - p_1)\psi_2 = 0.$$

Interpretation: *job ladder* (frequent small "good" innovations; rare large "bad" shocks).

Model: income processes (entrepreneurs)

- **Entrepreneurs.** If entrepreneur, $\ell^j = 0$ and household receives a share of aggregate profits:

$$\pi^j = \omega^j \frac{\pi}{e},$$

  where e is the equilibrium mass of entrepreneurs and ω^j is relative entrepreneurial productivity (discretized as a Markov chain).

- **Transitions.** Worker $\leftrightarrow$ entrepreneur with probabilities (p_{ew}, p_{we}), combined with within-state transition matrices $(\mathcal{P}^w, \mathcal{P}^e)$ and cross-state mappings $(\mathcal{P}^{ew}, \mathcal{P}^{we})$.

Model: income processes (discretization)

- **Workers' productivity discretization.** Approximate $z^j_{t+\Delta}$ with mixture innovations by a finite-state Markov chain (workers' transition matrix $\mathcal{P}^w$).
- **Entrepreneurs' heterogeneity.** Entrepreneurial productivity ω^j follows a (discretized) Markov chain with transition matrix $\mathcal{P}^e$ (e.g. low/medium/top entrepreneurs).
- **Global income-state Markov chain.** Income states combine:
  - worker productivity states (e.g. 5 bins),
  - entrepreneur types (e.g. 3 bins),
  - and cross-occupational transitions governed by (p_{ew}, p_{we}) and $(\mathcal{P}^{ew}, \mathcal{P}^{we})$.

Model: income processes

- Total net wealth $a^j = k^j + p^h h^j - d^j + m^j$ with $p^h =$ relative price of housing
- Labor and capital income

$$\begin{aligned} \Phi_\ell^j &= \left(1 - \tau_\ell^j\right)\left(w^j\left(1 - \mathbb{1}_{ej}\right)\ell^j + \mathbb{1}_{ej} 0.7\pi^j\right) \\ \Upsilon_k^j &= r^k k^j + r^h p^h h^j + r^m\left(m^j - d^j\right) + \mathbb{1}_{ej}(1 - \tau_\pi)0.3\pi^j \end{aligned}$$

- where

$$\begin{aligned} \text{Non-contributive payroll tax} &: \tau_\ell^j \\ \text{Indicator variable} &: \mathbb{1}_{ej} \ (=1 \text{ if entrepreneur}) \\ \text{Corporate profit tax} &: \tau_\pi \end{aligned}$$

Model: preferences and optimization

$$\max_{k^j,h^j,s^j,d^j,m^j,c^j,\ell^j} \int_0^\infty e^{-\rho t}\left\{\frac{\left(\Lambda^j\right)^{1-\gamma}}{1-\gamma}-\frac{\left(\ell^j\right)^{1+\zeta}}{1+\zeta}+\beta\log\left(\frac{a^j}{a}+\mu\right)\right\}dt$$

$$\begin{aligned}
\text{s.t.}\quad & \text{Budg.} && (1+\tau_c)\,c^j + r^h p^h s^j + \Delta^j = \left(1-\tau^j\right)\left(\Phi^j_\ell + \Upsilon^j_k\right) - \phi^j a^j + T^j \\
& \text{NW} && a^j = k^j + p^h h^j - d^j + m^j, \\
& \text{Sav.} && \Delta^j = \dot{k}^j + p^h \dot{h}^j - \dot{d}^j + \dot{m}^j + g_\xi a^j \\
& \text{Borr.} && m^j \geq 0,\ d^j \leq \varsigma p^h h^j, \\
& \text{Bounds} && a^j \geq 0,\ k^j \geq 0,\ h^j \in \left[h^{\min},\infty\right),
\end{aligned}$$

where

$$\Lambda^j = \left(c^j\right)^{1-\kappa-\chi}\left(s^j\right)^{\kappa}\left(m^j\right)^{\chi}$$

$$\begin{aligned}
\text{Flat consumption tax} &: \tau_c \\
\text{Individual income tax} &: \tau^j \\
\text{Individual capital (stock) tax} &: \phi^j \\
\text{Individual monetary transfer} &: T^j \\
\text{Productivity growth rate} &: g_\xi
\end{aligned}$$

Model: expenditure and reformulation

Impose $a^j = k^j + p^h h^j - d^j + m^j$ and assume $r^k > r^h > r^m$ (verified in eq.), the BC becomes:

$$\dot{a}^j + g_\xi a^j + \overbrace{(1+\tau_c)\, c^j + R^{hj} s^j + R^{mj} m^j}^{P^{\Lambda j} \Lambda^j} = \left(1-\tau^j\right)\left(\Phi^j_\ell + \Phi^j_k\right) - \phi^j a^j + \Xi^j + T^j$$

where

$$\begin{aligned} \Phi^j_k &= r^k a^j + \mathbb{1}_{e^j}(1-\tau_\pi)0.3\pi^j : \text{alt. capital income} \\ \Xi^j &: \text{equity + housing capital gains} \end{aligned}$$

Further

$$R^{mj} = \left(1-\tau^j\right)\left(r^k - r^m\right) > 0$$

is the opportunity cost of deposits and where

$$R^{hj} = p^h \left(\overbrace{\left(1-\mathbb{1}_{h^j}\right) r_h}^{\text{renter}} + \overbrace{\mathbb{1}_{h^j}\left[\left(1-\tau^j\right)\left((1-\varsigma)\, r^k + \varsigma r^m\right) + \tau^j r^h\right]}^{\text{homeowner}} \right) > 0$$

is the opportunity cost of housing

Model: households (cont'd)

The dynamic problem solves for $\dot{a}^j$, a^j and the expenditure aggregator Λ^j. Static choices (consumption, deposits, housing services) are *then* computed.

Static demands:

$$m^{dj} = \chi \frac{P_\Lambda^j \Lambda^j}{R^{mj}}, \qquad s^j = \kappa \frac{P_\Lambda^j \Lambda^j}{R^{hj}}, \qquad c^j = \frac{(1-\kappa-\chi) P_\Lambda^j \Lambda^j}{1+\tau_c}.$$

Homeownership decision (discrete):

$$h^j = \mathbb{1}_{h^j} s^j, \qquad d^j = \zeta p^h h^j,$$

$$\mathbb{1}_{h^j} = 1 \text{ if and only if } \begin{cases} s^j \geq h^{\min} & \text{(indivisible housing)} \\ \zeta p^h h^j \leq a^j - k^j - m^{dj} & \text{(collateral)} \end{cases}$$

Otherwise, the household rents ($h^j = 0$).

Model: households (cont'd)

Portfolio composition:

$$\begin{aligned} k^j &= \mathbb{1}_{h^j} \max\Big(a^j - \Big(p^h h^j - d^j\Big) - m^{dj},\, 0\Big)\,, \\ m^j &= \max\Big(a^j - \Big(p^h h^j - d^j\Big) - k^j,\, 0\Big)\,. \end{aligned}$$

Only homeowners can diversify into risky capital.

Labor supply (static):

$$\ell^j = \left[\frac{(1-\tau^j)(1-\tau_\ell^j)(1-\mathbb{1}_{e^j})w^j}{P^{\Lambda j}\Lambda^j}\right]^{1/\zeta}.$$

Model: government

Government budget constraint:

$$g + \underbrace{\int_j \Omega^j T^j dj}_{\text{Transfers}} + r^m m^s = \dot{m}^s + \underbrace{\int_j \Omega^j \tau_\ell^j \left(w^j (1 - \mathbb{1}_{e^j}) \ell^j + \mathbb{1}_{e^j} 0.7 \pi^j \right) dj}_{\text{Social security}}$$
$$+ \underbrace{\int_j \Omega^j \phi^j a^j dj}_{\text{Capital tax}} + \underbrace{\tau_\pi \left(\frac{r^k}{1 - \tau_\pi} k + \int_j \Omega^j \mathbb{1}_{e^j} 0.3 \pi^j dj \right)}_{\text{Corporate tax}}$$
$$+ \underbrace{\tau_c \int_j \Omega^j c^j dj}_{\text{Consumption tax}} + \underbrace{\int_j \Omega^j \tau^j \left(\Phi_\ell^j + \Upsilon_k^j \right) dj}_{\text{Income tax}}$$

where Ω^j is the distribution of households ($\int_j \Omega^j dj = 1$)

Model: equilibrium

- Firms optimize given wages and returns
- Households optimize given past asset level, tax rates, wages, returns and future probabilities of changing states
- Markets (capital, labor, money) clear:

$$
\begin{aligned}
k &= \int_j \Omega^j k^j \, dj \\
\ell &= \int_j \Omega^j \left(1 - \mathbb{1}_{e^j}\right) \left(w^j / w\right) \ell^j \, dj \\
m^s &= m - b = \int_j \Omega^j \left(m^j - b^j\right) dj
\end{aligned}
$$

- Goods market in equilibrium given Walras' law

Solution

- Solve:
  1. The stationary distribution based on 1984 data
  2. The transition dynamics

- Method uses sparse grid methods and takes advantage of the continuous-time formulation of the heterogeneous-agent problem solving the Hamilton-Jacobi-Bellman and Kolmogorov forward equations

- 501 grid points, 8 states (5 states for workers + 3 states for entrepreneurs)

Calibration using 1984 data

Calibration (1984): key ingredients

- **Target year:** 1984 (before inequality rise). Stationary equilibrium with $p^h = 1$.
- **Workers:** 5 productivity states from a Gaussian-mixture process
  - Persistence: $\exp(-\rho_z) = 0.95$; "good" shocks prob. $p_1 = 0.9$
  - Good shocks: $(\psi_1, \sigma_1^2) = (0.02, 0.1)$; bad shocks: $\sigma_2^2 = 0.5$ and implied $\psi_2 = -0.18$
- **Entrepreneurs:** 10% of households (self-employed share)
  - Uncond. entry $p_{ew} = 0.0076$; exit $p_{we} = 0.0683$ (chosen with moments matching)
  - 3 entrepreneur "types" (value-added shares) + Markov transitions across types (means and transitions estimated)
  - Becoming a successful entrepreneur is concentrated among high-skill workers
- **Markups:** set $\theta/(\theta - 1) = 1.0588$ (i.e. $\theta = 18$) to match top 10% and top 1% income shares

Calibration: Taxes and transfers

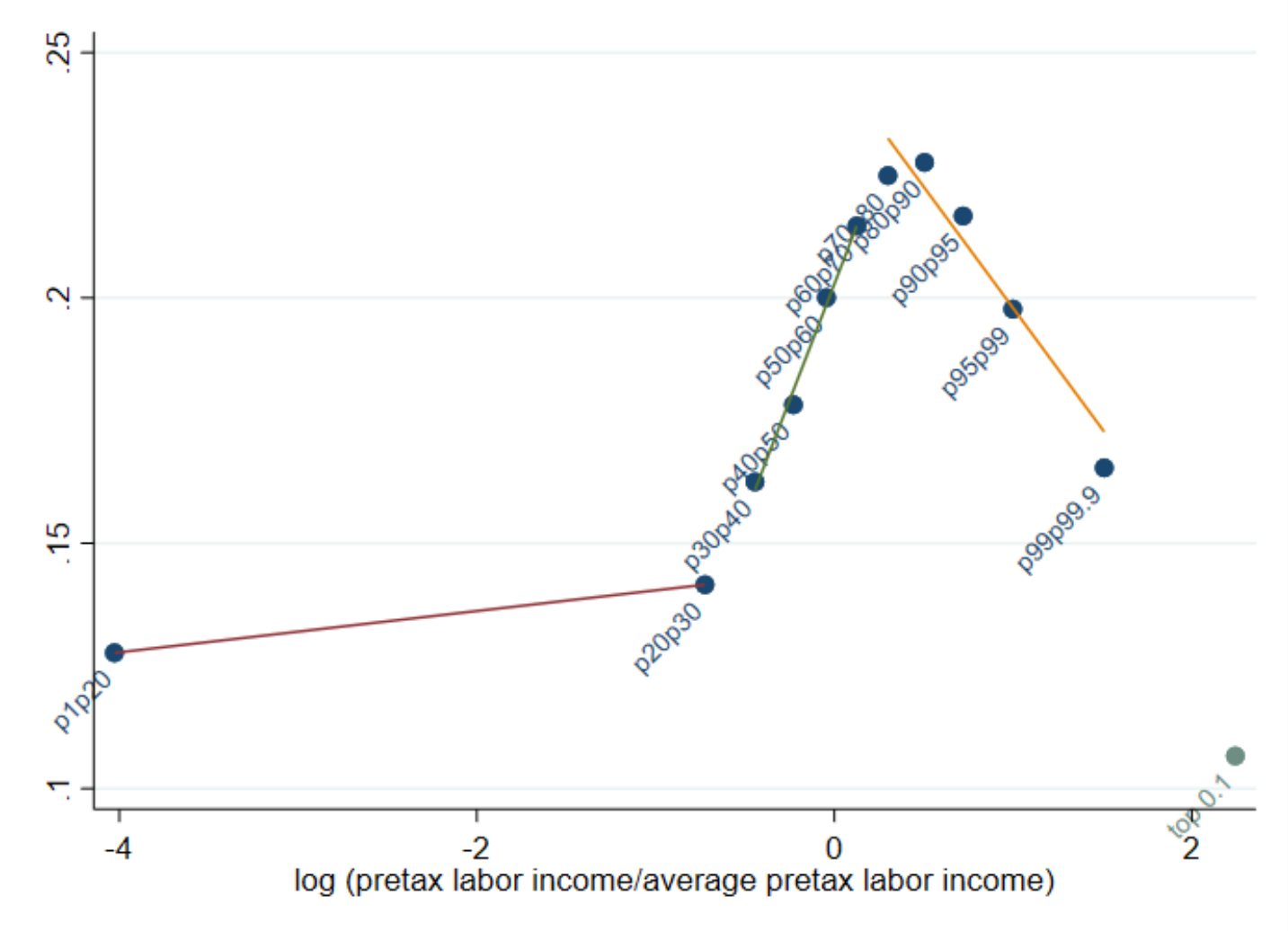
- Flat tax rates computed from the national accounts
- For progressive tax rates / transfers, we model individual tax/subsidy rates on segment s of the tax rate distribution as:

$$\mathcal{T}_s^j = 1 - \left(1 - \overline{\mathcal{T}}_s\right)\left(\frac{\mathcal{B}^j}{\overline{\mathcal{B}}_s}\right)^{-\eta_s}$$

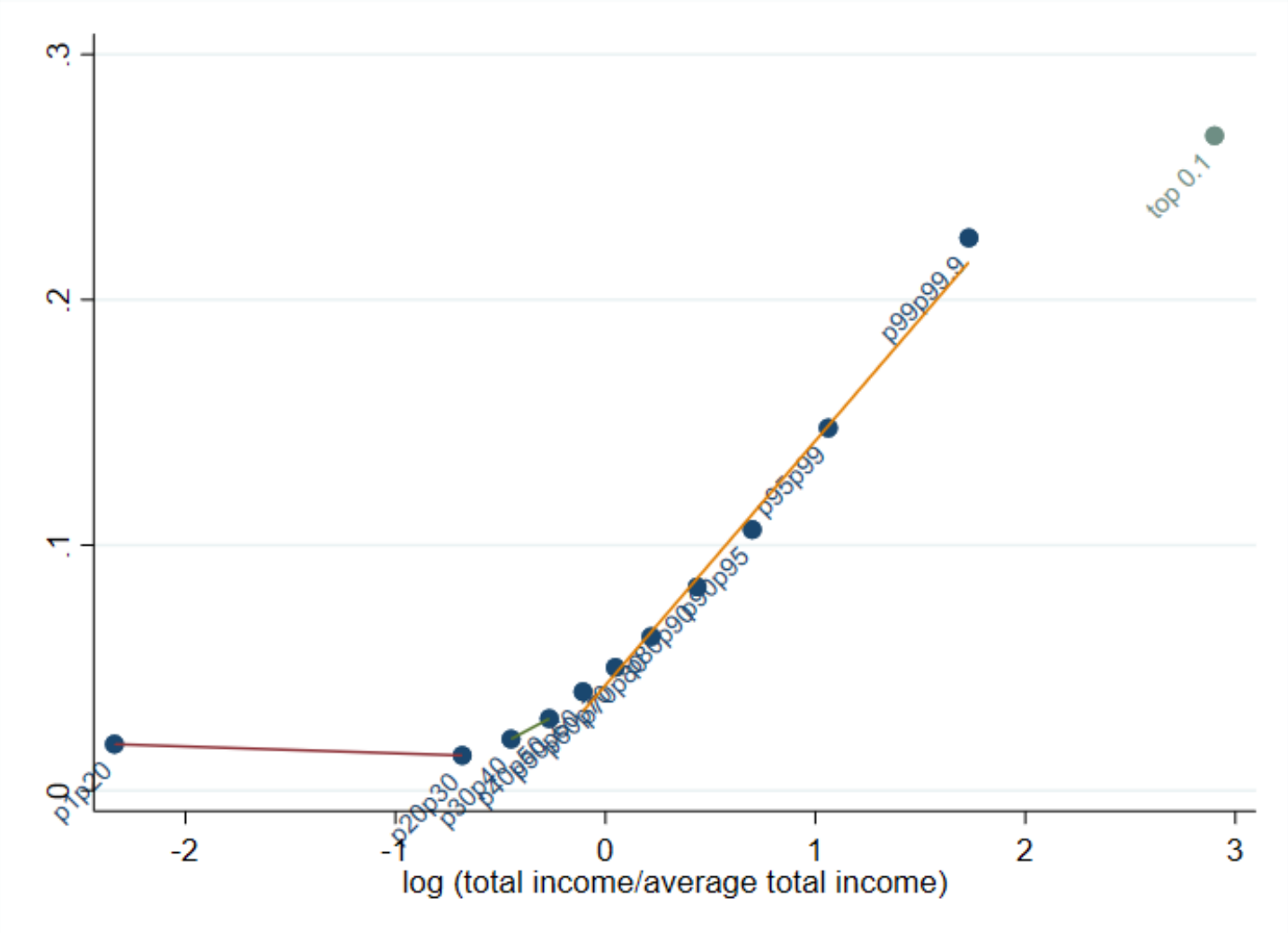
  where $\mathcal{T} = \{\tau, \tau_\ell, \phi, T\}$, $\overline{\mathcal{T}}_s$: level parameter and η_s: progressivity parameter

- Empirically, compute the distribution of tax rates based on DINA, split the distribution in segments (2, 3 or 4) and estimate $\overline{\mathcal{T}}_s$ and η_s on each segment of each tax rate

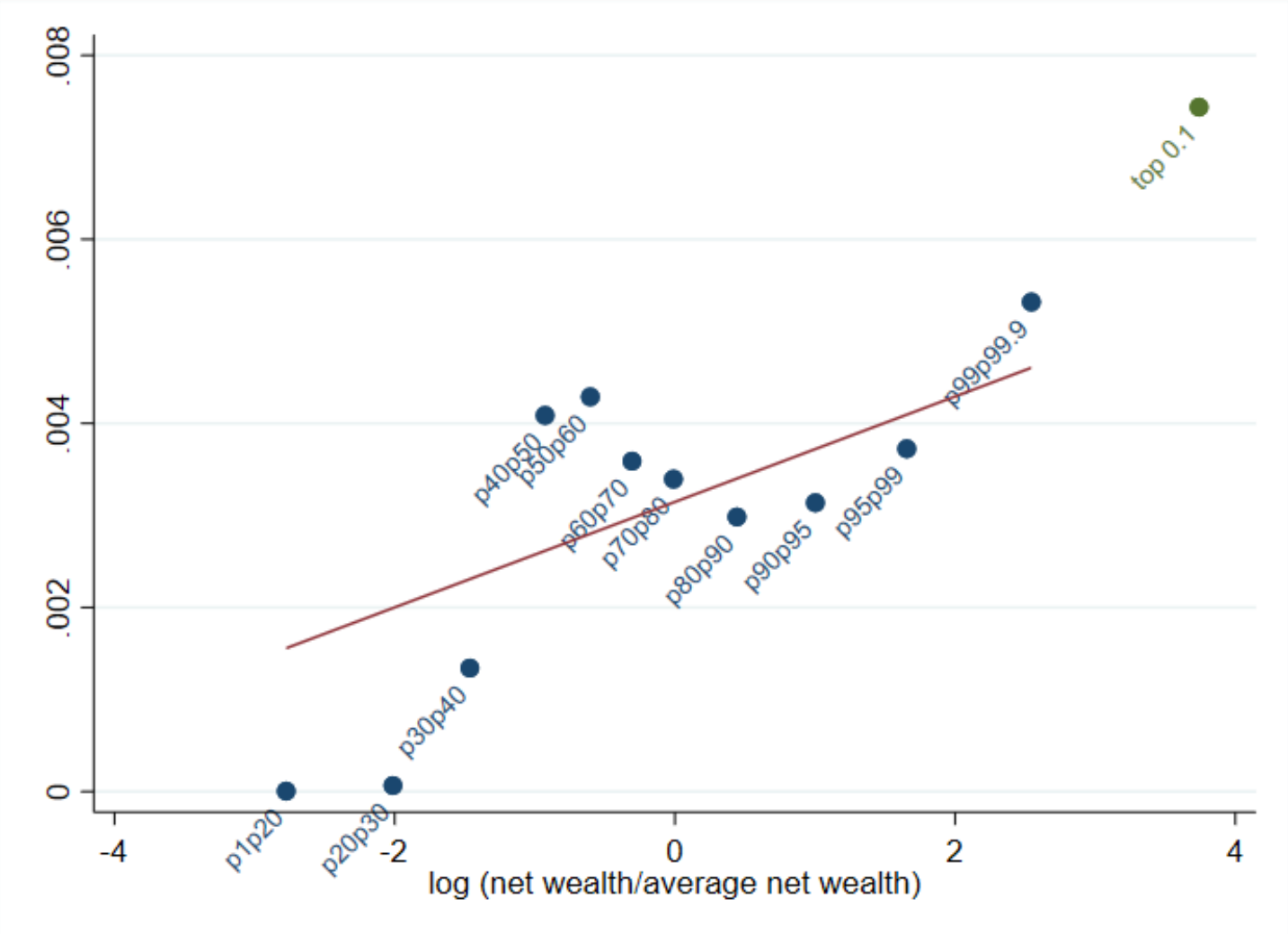
Individual social security tax in 1984



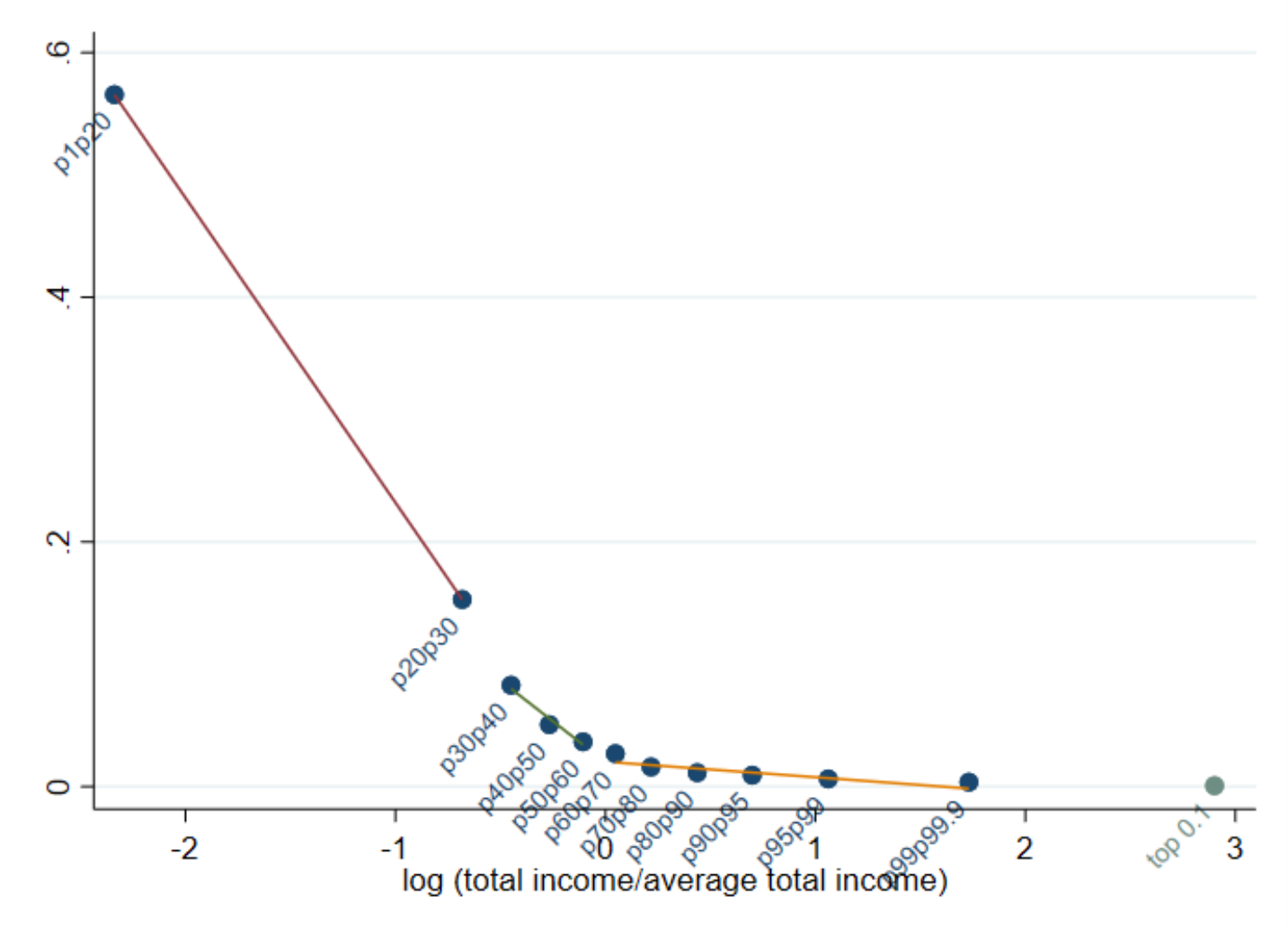
Individual income tax in 1984



Individual capital tax in 1984



Individual transfers in 1984



Calibration (1984): parameter values

	Value	Target / source
Growth rate	$g_\varrho = 0.01064$	NI per capita growth
Discount rate	$\rho = 0.1845$	moments matching
Risk aversion	$\gamma = 1.5$	fixed
Wealth-in-utility weight	$\beta = 1$	fixed
Housing services	$\kappa = 0.2549$	moments matching
Financial services	$\chi = 0.0277$	moments matching
Wealth scale	$\mu = 2.6752$	moments matching
Min housing size	$h^{\min} = 3y$	homeownership rate
Coll. constraint	$\varsigma = 0.75$	fixed
Labor share pin-down	$\alpha = 0.28$	labor share (1984)
Capital depr.	$\delta = 0.1128$	data
Markup	$\theta/(\theta - 1) = 1.0588$	fit top 10%, top 1%
Returns	$r^m = 0.01,\ r^h = 0.0293,\ r^k = 0.0595$	data / implied
VAT (effective)	$\tau_c = 0.3388$	data
Corporate tax (effective)	$\tau_\pi = 0.0803$	data
Gov. spending	$s_g = 0.2934$	data

Validation of the model

Income and wealth shares in 1984

Table 1: Income and wealth shares: data vs. model.

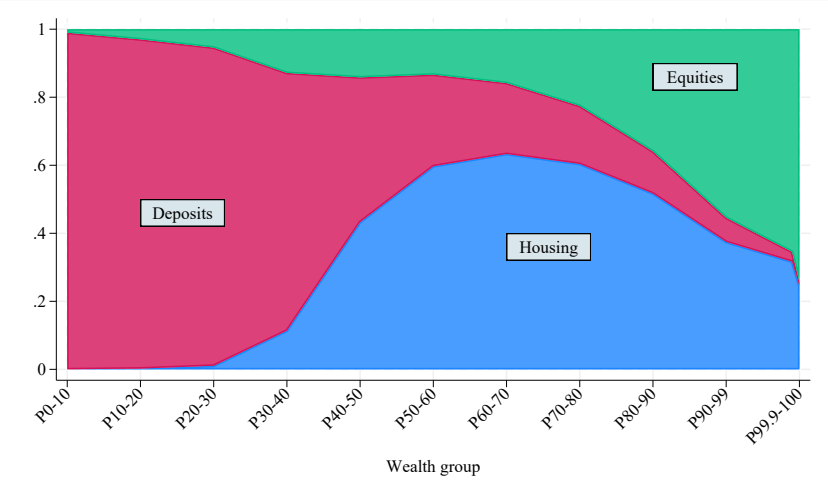
	Data (1984)			Model (1984)		
	Pretax	Posttax	Wealth	Pretax	Posttax	Wealth
Bottom 50% (B50)	0.230	0.337	0.081	0.209	**0.335**	0.104
Middle 40% (M40)	0.486	0.450	0.406	0.505	**0.457**	0.399
Top 10% (T10)	0.283	0.214	0.513	0.286	**0.208**	0.496
Top 1% (T1)	0.070	0.046	0.160	0.073	**0.047**	0.165
Share of deposits in agg. wealth		0.152			0.151	
Share of housing in agg. wealth		0.429			0.410	
Wealth to income ratio		3.241			3.175	

Note: Bold numbers are not targeted.

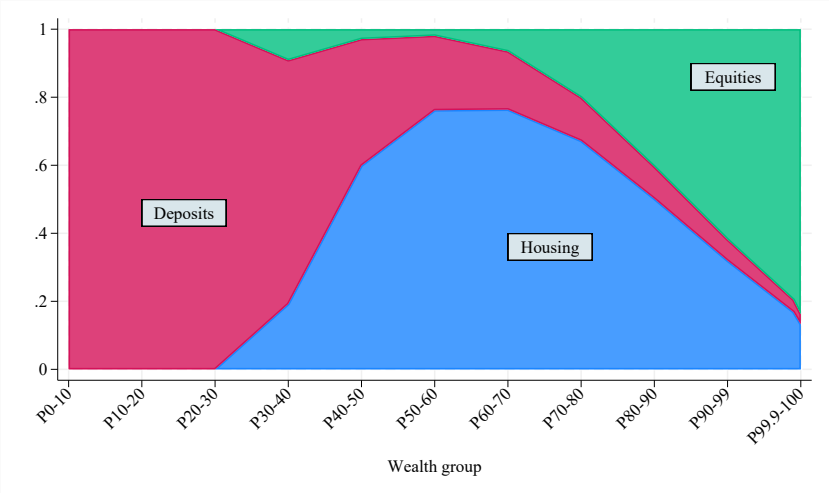
stationary distributions policy functions

Portfolio composition among wealth groups in 1984

(a) Portfolio composition - data



(b) Portfolio composition - model



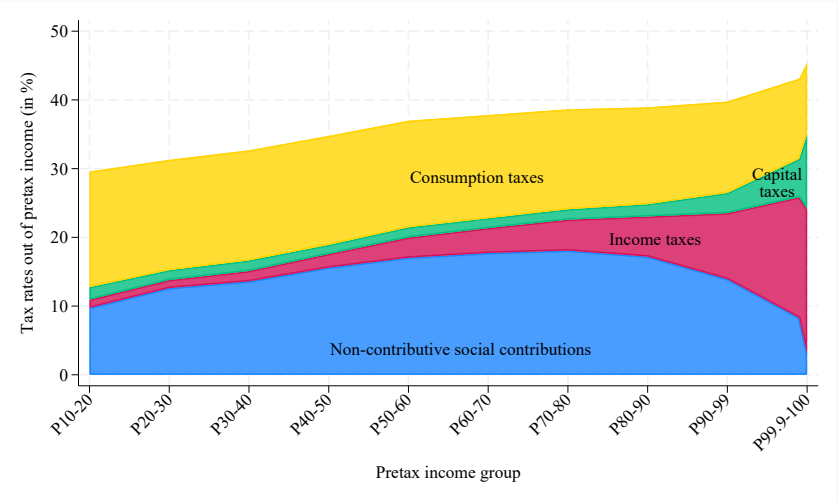
Notes: Series from Panel (a) are taken from from Garbinti et al. (2021).

Pretax returns on wealth among wealth groups in 1984

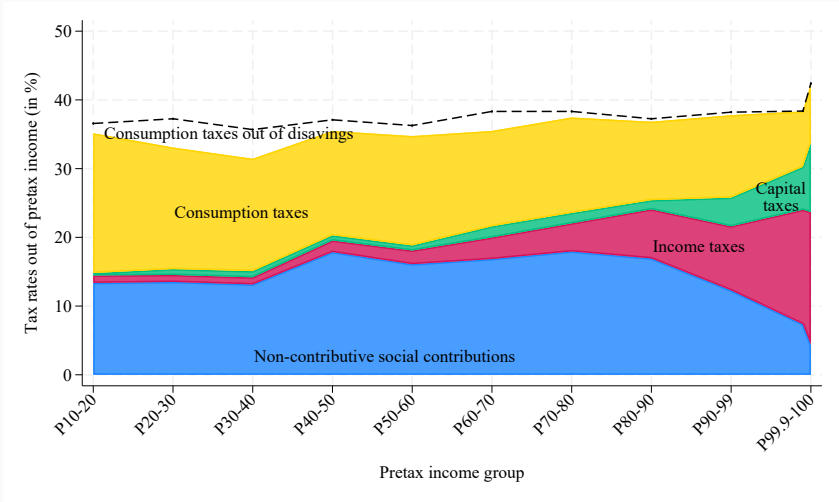
Notes: Real rates of returns are computed by weighting each asset-specific real rate of returns (housing, equities, and deposits) by the proportion of each asset in the wealth of the group. Returns on deposits and housing are taken from the national accounts. Returns on equities come from the national accounts in the data series and are estimated by the model in the model series.

Taxes paid by pretax income group in 1984

(a) Data (pretax income group)



(b) Model (pretax income group)



Notes: Data from Panel (a) taken from Bozio et al. (2020).

Dynamic simulations

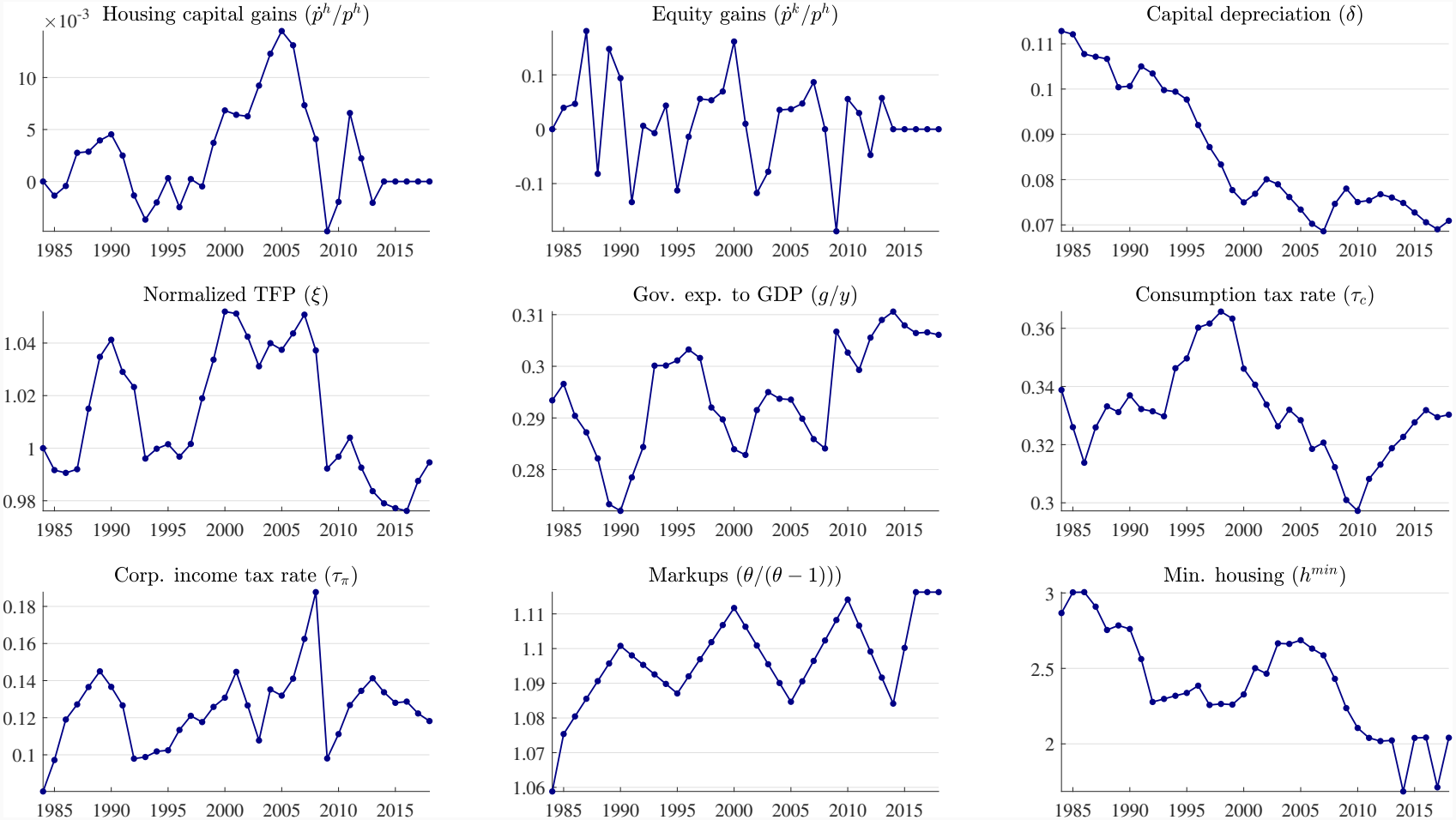
Dynamic simulations: assumptions

- **Asset markets.** Deposits and housing are in perfectly elastic supply at given, constant returns r^m and r^h. The return on equity r^k adjusts endogenously to clear the capital market.

- **Treatment of capital gains.** Observed capital gains on housing and equity are applied *ex post* to households' asset positions: they affect measured wealth and wealth taxes, but do not enter households' Euler equations or intertemporal optimization (except through housing, see below).

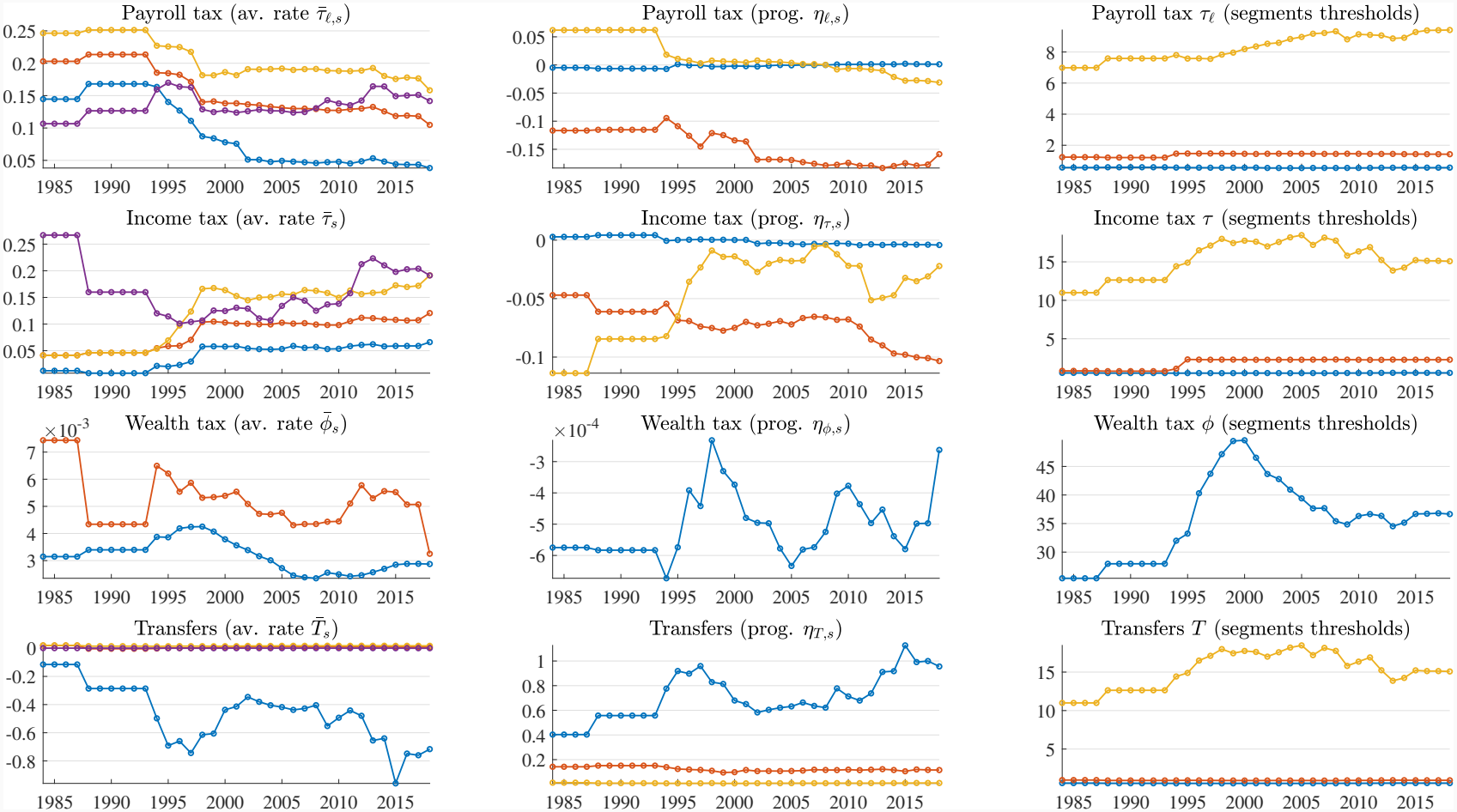
- **Housing prices and expectations.** Households partially internalize housing price changes: a fraction (20%, corresponding to an average turnover of 5 years) of observed housing price growth enters housing decisions, which helps match the aggregate housing-to-wealth ratio.

Dynamic simulations: Exogenous variables



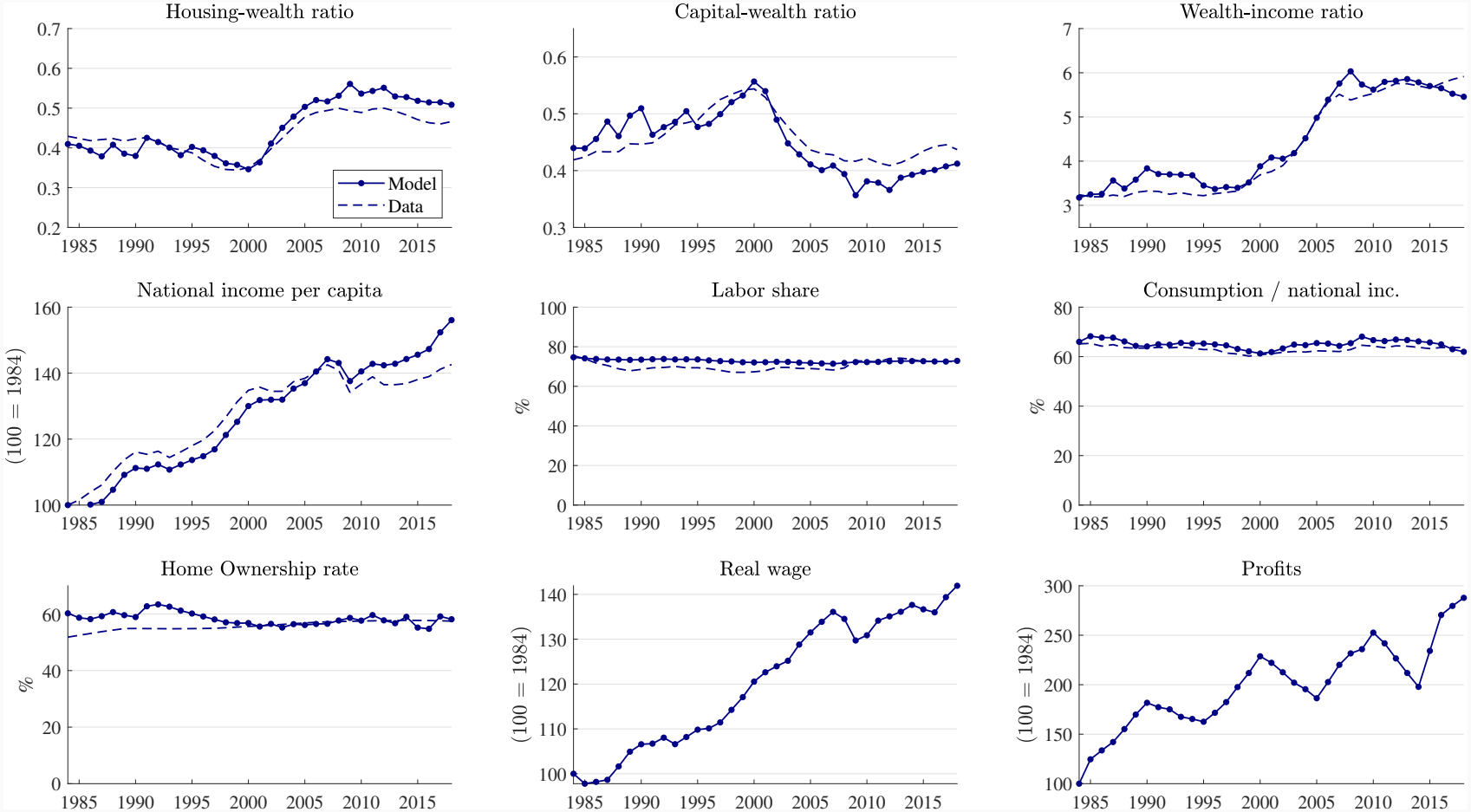
Dynamic simulations: Exogenous variables

Figure 3: Progressive tax system (estimated parameters)



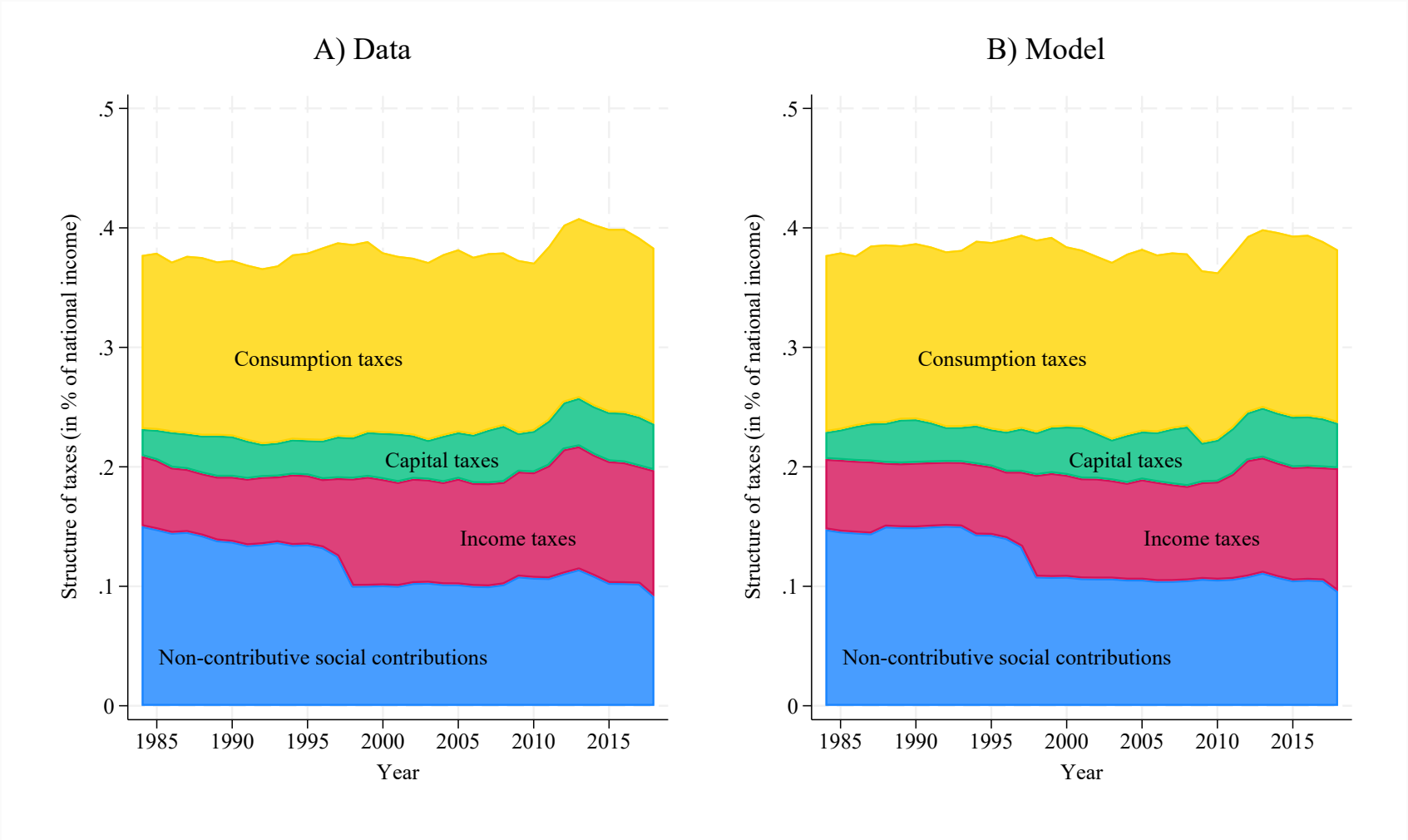
Note: blue = lower part of the tax base, red = middle part, yellow = upper part, purple = top part.

Baseline results: aggregate variables

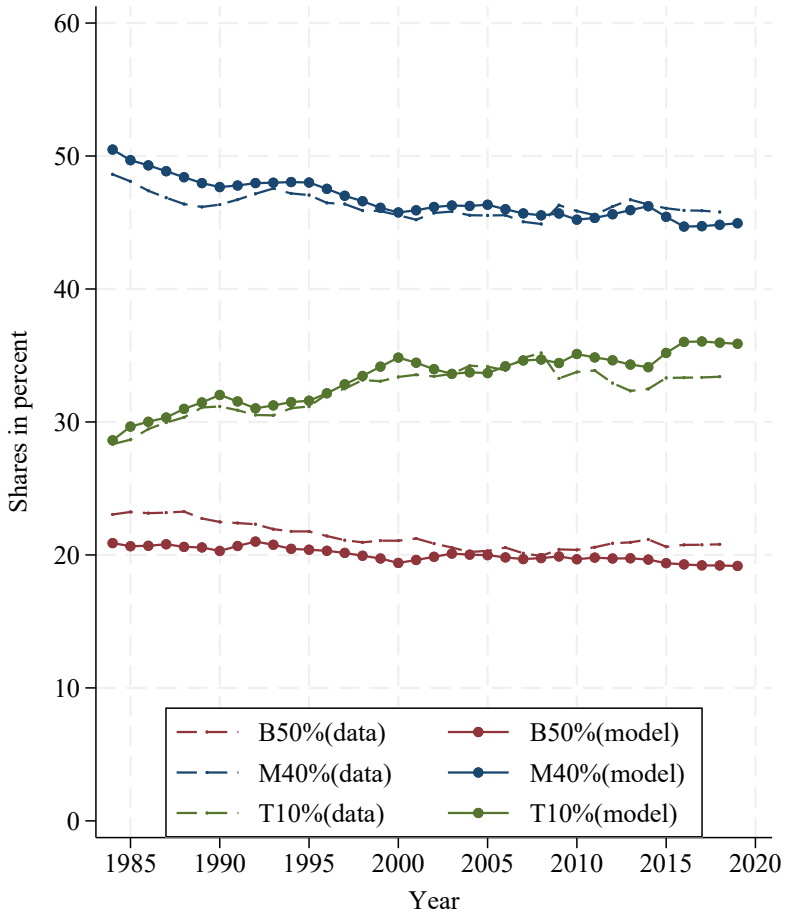


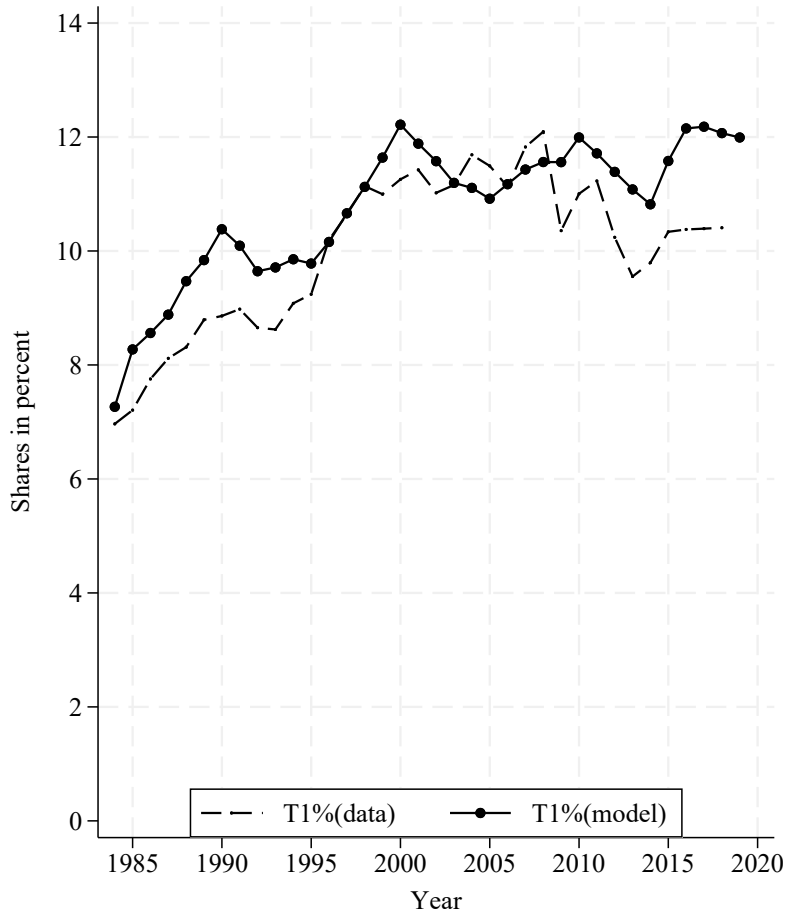
Baseline results: endogenous dynamics (cont.)

Structure of aggregate taxes over time (in % national income)

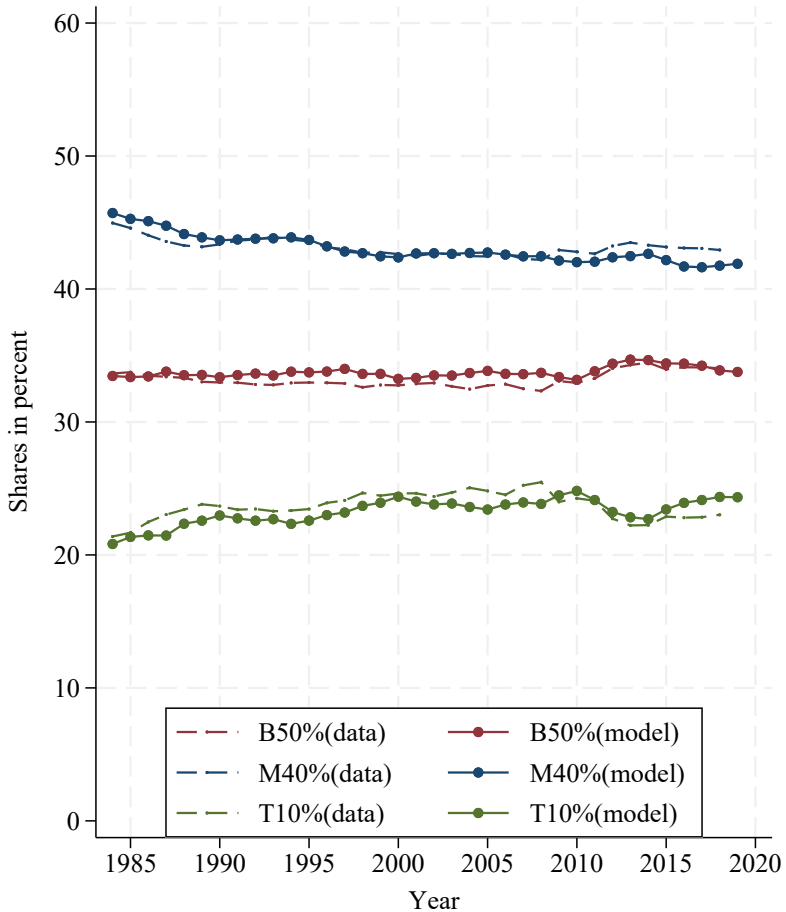


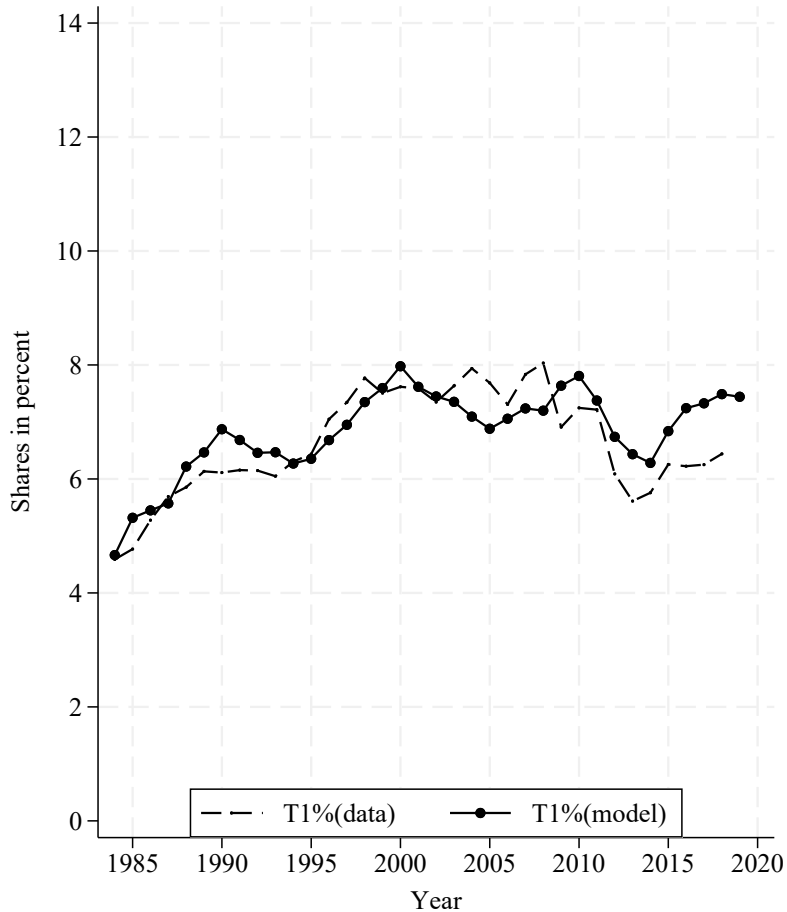
Baseline results: Pretax income shares



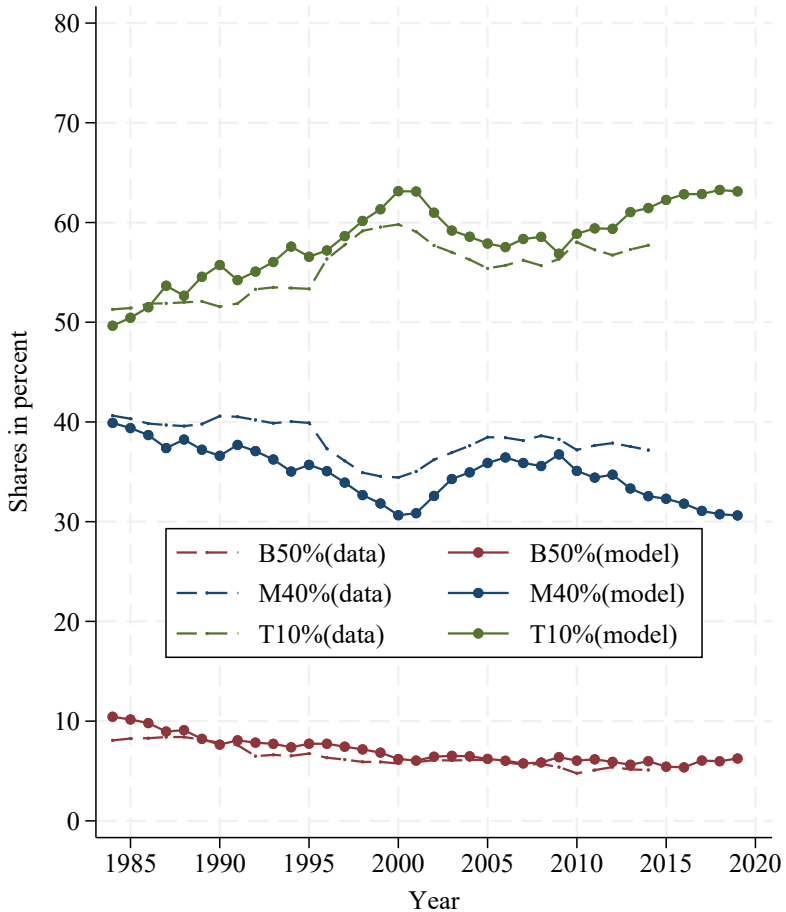


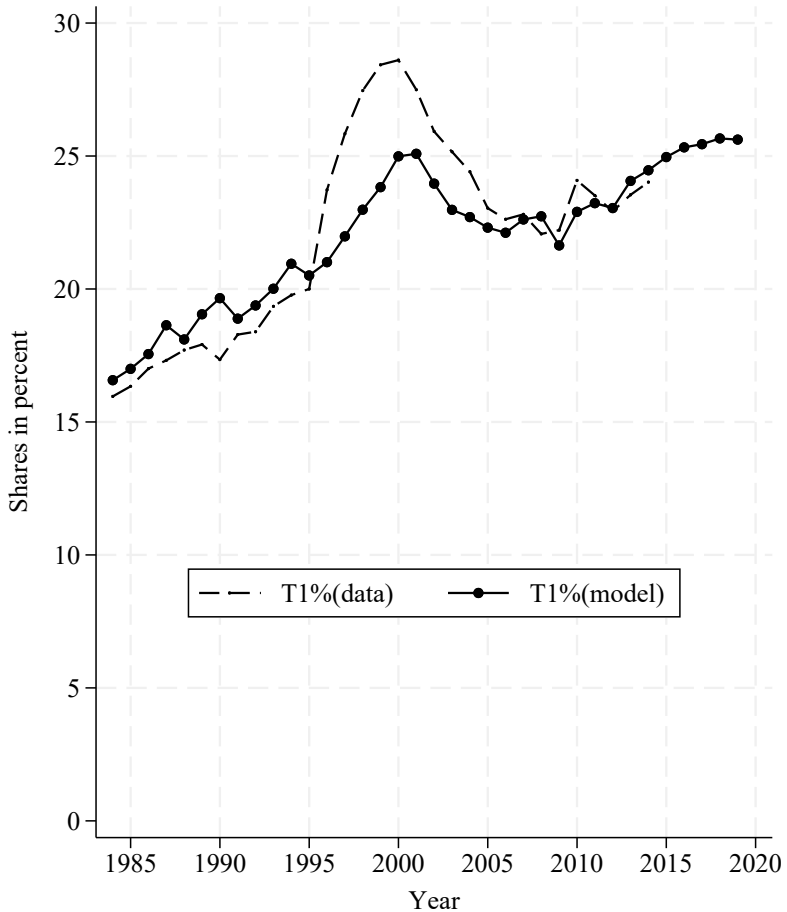
Baseline results: Post-tax income shares





Baseline results: Wealth shares

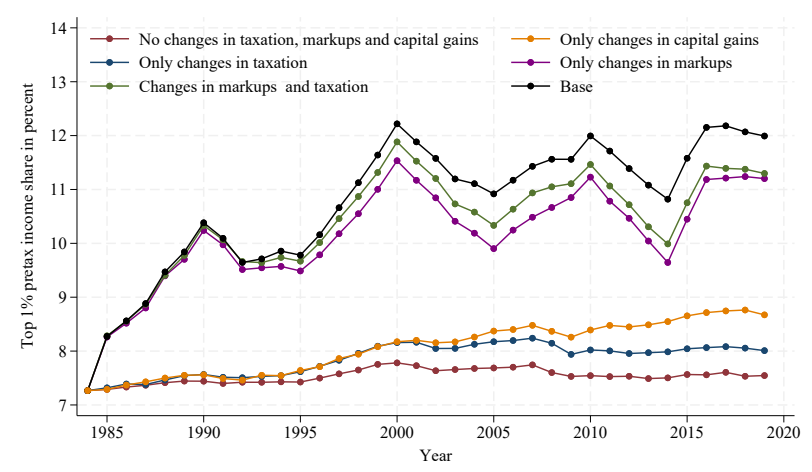




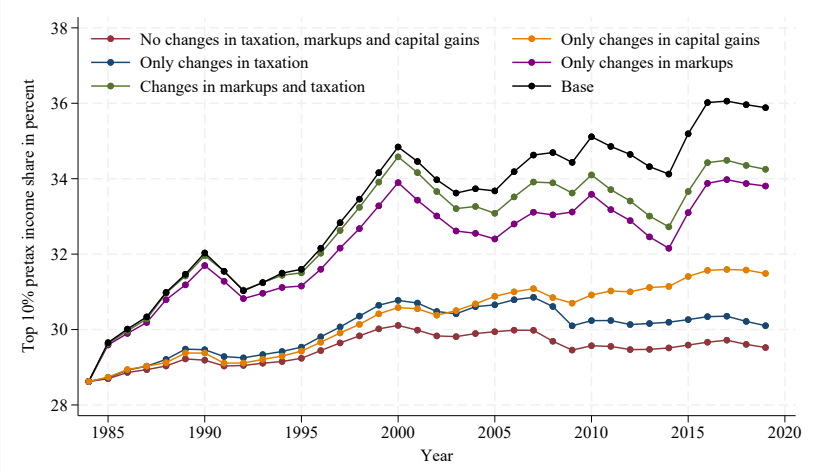
Counterfactual exercises

Counterfactual pretax income shares

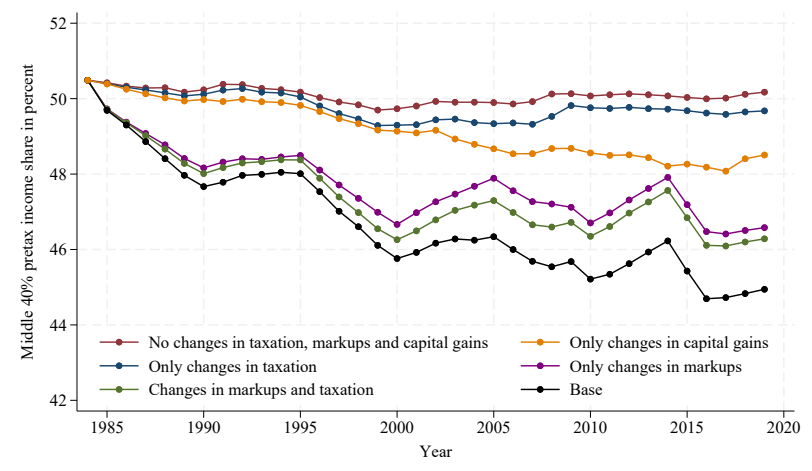
Top 1%



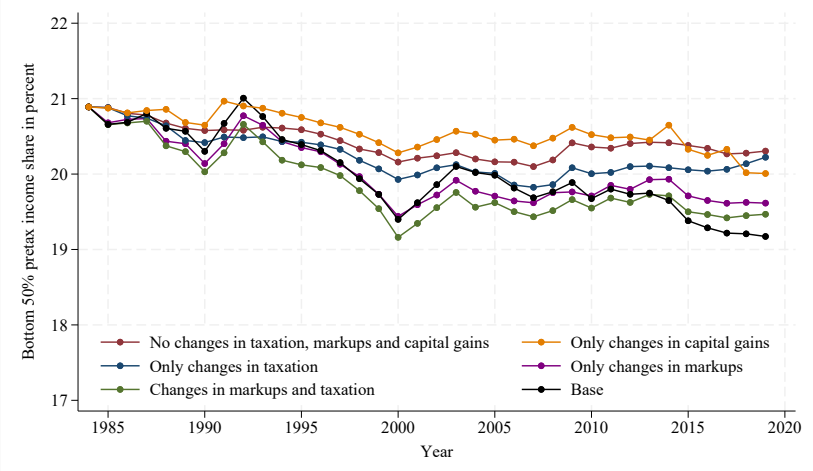
Top 10%



Middle 40%



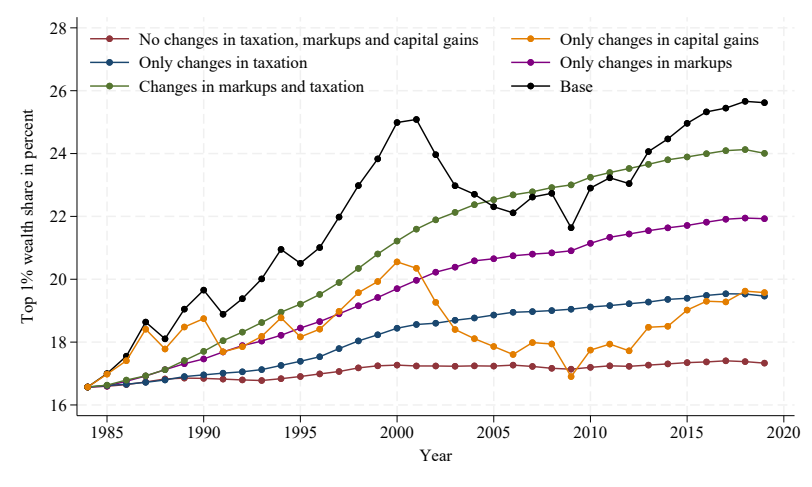
Bottom 50%



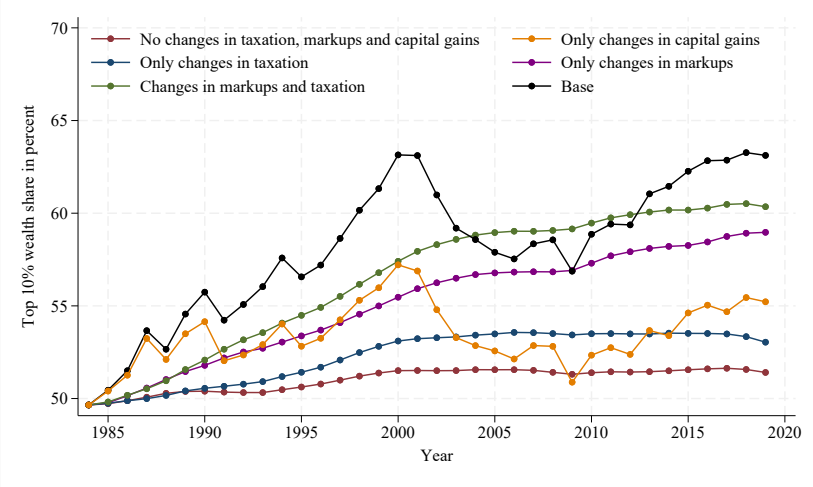
- TFP + depreciation alone: inequality almost flat.
- Markups are the main driver; taxes and capital gains amplify modestly.

Counterfactual wealth shares

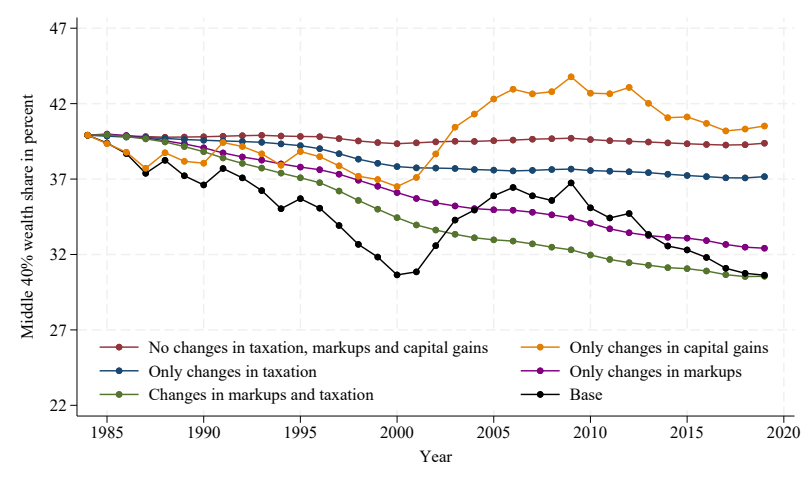
Top 1%



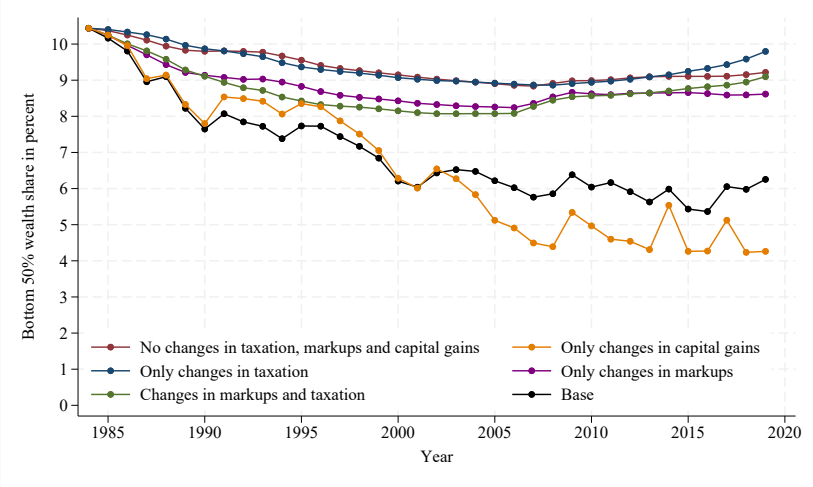
Top 10%



Middle 40%



Bottom 50%



- TFP + depreciation alone: wealth inequality remains broadly stable.
- Markups, taxation, and capital gains all matter (heterogeneous effects).

Mechanisms: wealth accumulation and transmission channels

Using the wealth accumulation identity:

$$W_{it+1} = (1 + q_{it})(W_{it} + S_{it}) = (1 + q_{it})\Big(W_{it} + s_{it}(1 - \tau_{it})\, sh_{it}^{Y}\, Y_t\Big)$$

Which implies the wealth share evolution:

$$sh_{it+1}^{W} = \frac{(1 + q_{it})}{(1 + q_t)} \cdot \frac{W_{it} + s_{it}(1 - \tau_{it}) sh_{it}^{Y} Y_t}{W_t + s_t(1 - \tau_t) Y_t}$$

Five channels for wealth inequality dynamics (focus: i = top 1%):

- Pretax income inequality (sh_{it}^{Y})
- Tax progressivity by wealth group $(\tau_{it}$ vs $\tau_t)$
- Saving-rate inequality $(s_{it}$ vs $s_t)$
- Capital gains inequality $(q_{it}$ vs $q_t)$
- Aggregate pretax income (Y_t)

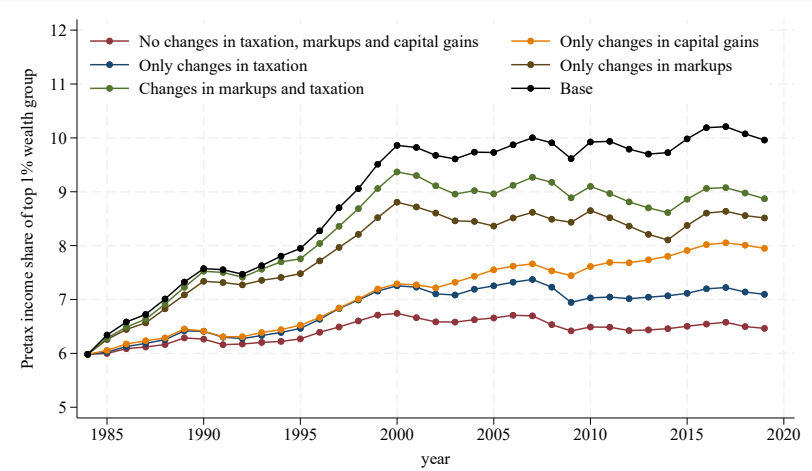
Transmission channels – Top 1% wealth share (1984–2019)

Counterfactual Scenarios	Top 1% Wealth Share Variation	Variations due to changes in Pretax Income Inequality	Tax progressivity	Saving rate inequality	Capital gains inequality
Base: markups, taxation, capital gains	55%	15%	1%	72%	-33%
Markups + taxation (cst. capital gains)	45%	15%	1%	29%	0%
Markups only	32%	12%	0%	20%	0%
Taxation only	17%	5%	1%	12%	0%
Capital gains only	18%	6%	0%	36%	-23%
No changes (tax, markups, cap. gains)	5%	3%	0%	2%	0%

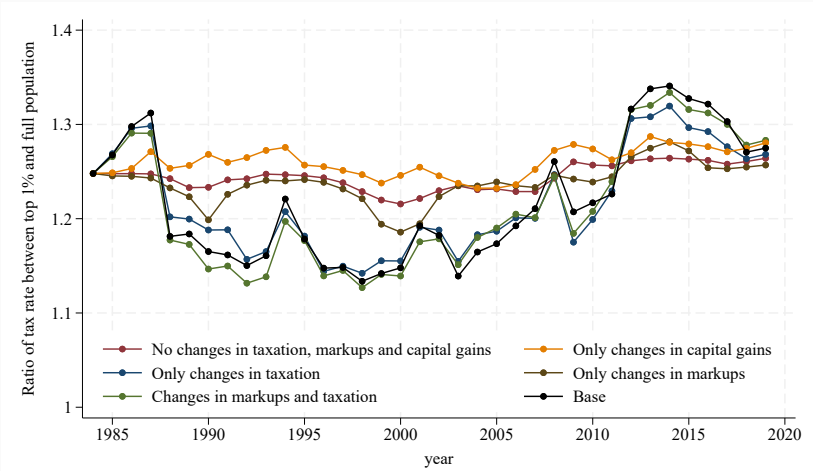
Main result: **saving-rate inequality** is the dominant transmission channel; capital gains combine a negative mechanical effect with a positive behavioral / general equilibrium effect via savings.

Mechanisms by scenario (Top 1% wealth group)

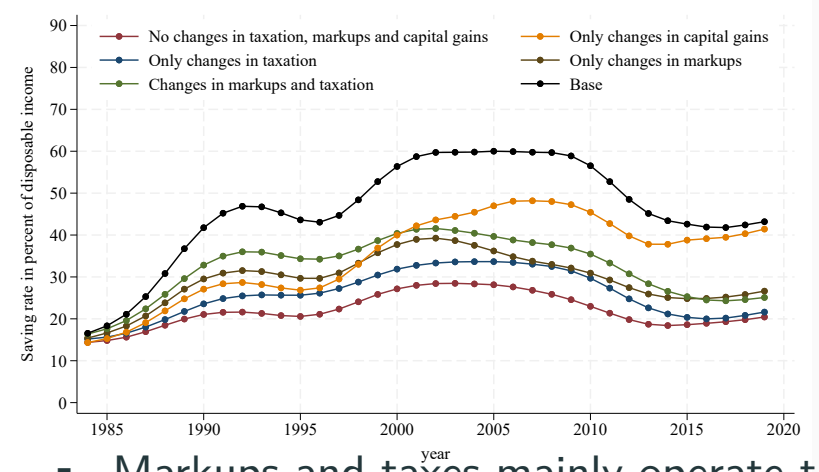
Pretax income share (Top 1% wealth group)



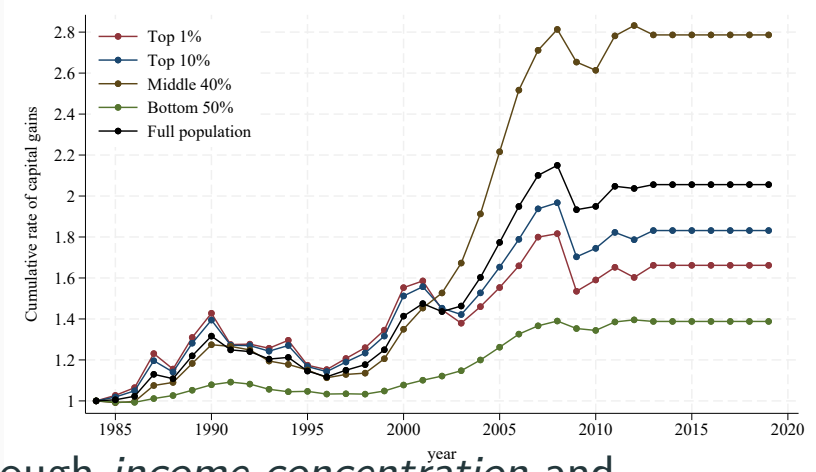
Net tax rates: ratio top 1% / full pop.



Synthetic saving rates (Top 1% wealth group)



Cumulative capital gains (baseline)



- Markups and taxes mainly operate through *income concentration* and (especially) *saving-rate inequality*.
- Capital gains have a non-trivial mechanical component, but their net effect is largely mitigated by endogenous saving responses.

Conclusion

Income inequality

- Rising markups are the dominant driver of income concentration.
- Changes in taxation slightly *amplified* – rather than offset – the rise in inequality driven by market power.

Wealth inequality

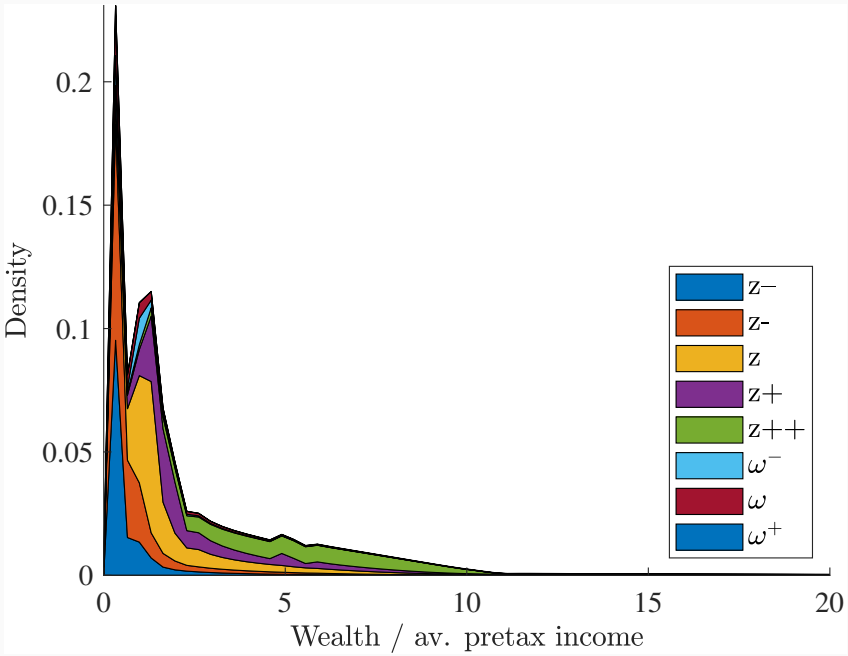
- Rising markups and changes in taxation increase top 10% and top 1% wealth shares.
- Capital gains matter, but their effects are heterogeneous across groups and periods, and largely overturned by endogenous changes in saving rates.

Key result

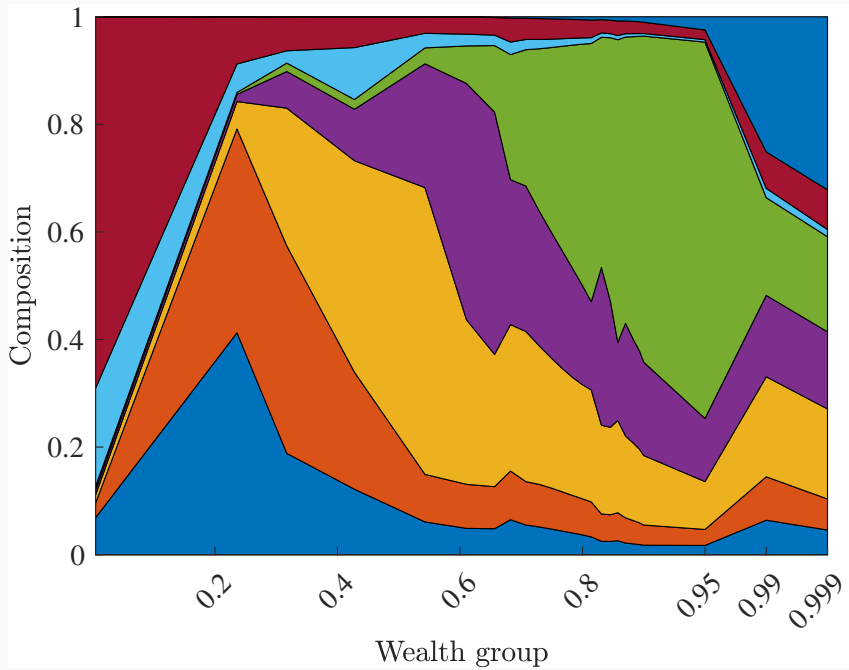
- Behavioral and general-equilibrium responses – especially changes in saving rates – are at least as important as mechanical effects.
- A structural model is essential to identify these transmission channels.

Stationary distributions – 1984

(a) Stationary distributions



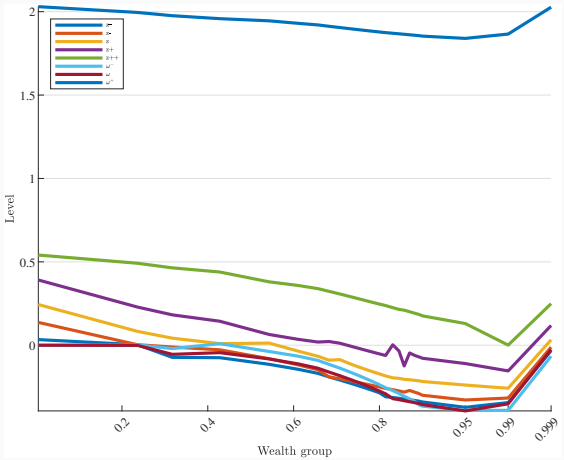
(b) Composition of the population



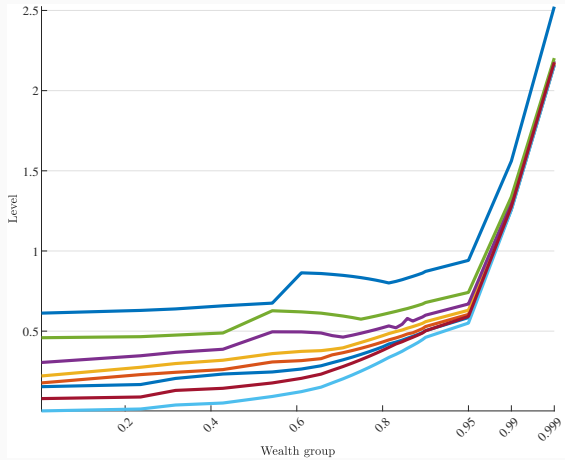
back

Policy functions

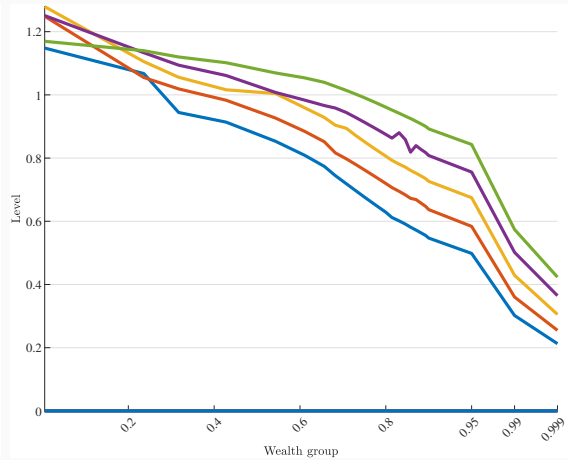
(a) Savings ($\dot{a}^j$)



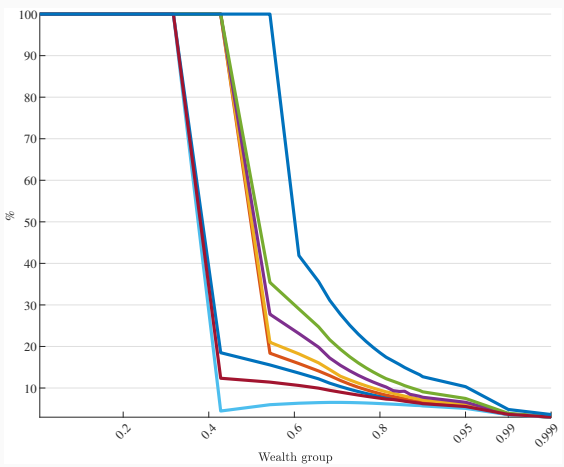
(b) Consumption (c^j)



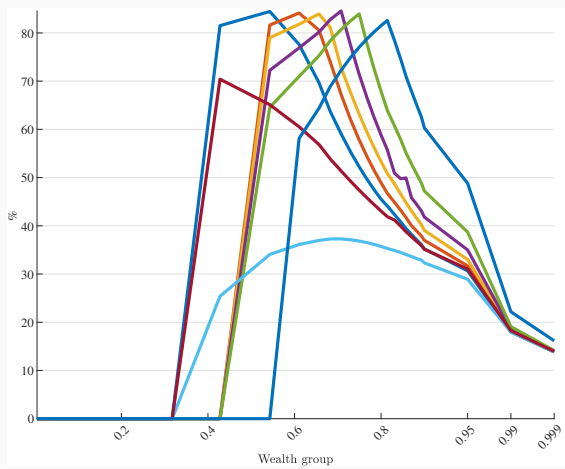
(c) Labor supply (ℓ^j)



(d) Share of deposits



(e) Share of housing



(f) Individual asset returns