Market Power, Growth, and Inequality

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Stylised facts

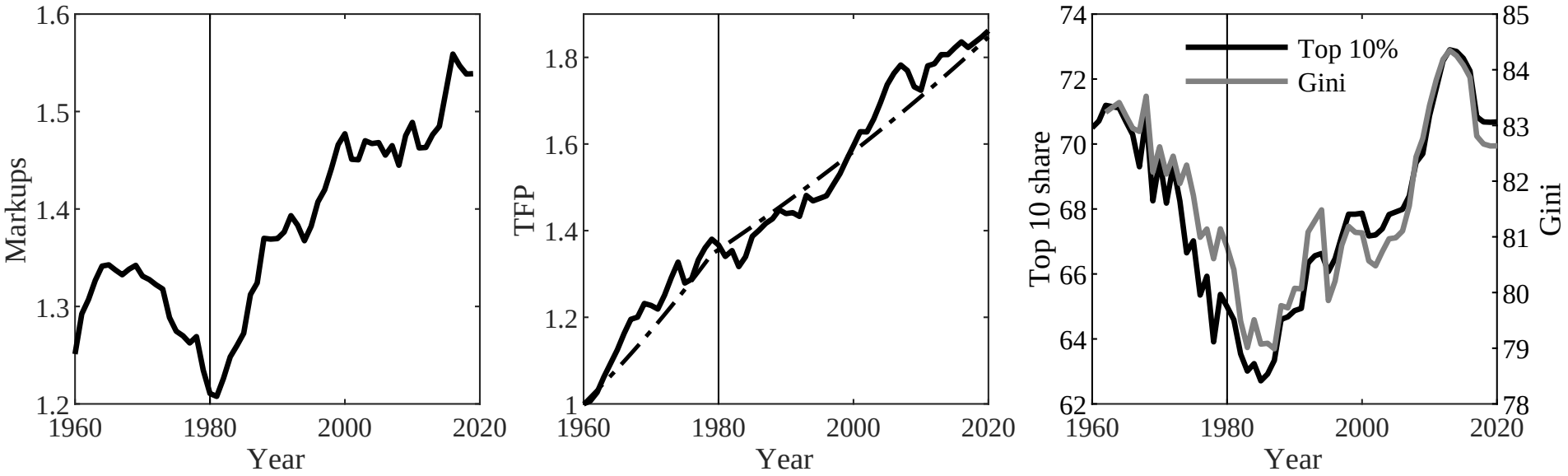


Figure: Market power, growth and wealth inequality in the US

Sources: De Loecker et al. (2020), Fernald (2014), and World Inequality Database (2024).

- **This paper develops a unied framework linking these phenomena**

The model

- Firms
  - Firm compete a la Cournot: endogenous markups
  - Innovate to improve productivity
  - Long-run growth sustained by innovation and knowledge spillovers
  - Free entry
- Households
  - A 2-agent model, Capitalists and Workers, for analytical insights
  - Incomplete markets: no contingent assets available
  - Idiosyncratic employment risk
  - Borrowing constraints
  - Two motives for saving:
    - standard **intertemporal** motive
    - **precautionary** motive

Model features and mechanism

1. A rise in **entry costs** leads to **less entry** and **higher markups**
   - Cornout competition relates entry to markups
2. **Fewer firms** leads to **less innovation**
   - Endogenous growth, g.
   - Knowledge spillovers decline as number of firms shrink
3. **Wealth inequality** increases
   - Heterogenous agents
   - Why? $r - g$!

Model features and mechanism

Why does wealth inequality increase?

- Higher entry costs leads to increased profits and asset demand
- As a consequence $r \uparrow$
- But less firms $\rightarrow g \downarrow$ (weaker spillovers)
- In **rep agent** steady state, $r - g = \rho$, so $r \downarrow$ too
- But in **het agent**, $r - g \uparrow$, although we always have $r \downarrow$.
- Agents far from constraint increase their savings a lot (weak precationary motive, strong intertemporal sub. motive)
- Agents close to constraint does not (strong precationary motive, weak intertemporal sub. motive)
- $\rightarrow$ **wealth inequality increases**

Literature

- Facts:
  - Wealth inequality: (e.g. Piketty, 2014; Piketty and Zucman, 2014; Kuhn and Rios-Rull, 2013; Jordá et al., 2019)
  - Market power: (e.g. De Loecker et al., 2020; Autor et al., 2020; Covarrubias et al., 2020; Bajgar et al., 2019; Hall, 2018)
  - Growth slowdown: (e.g. Gordon, 2012; Fernald, 2014; Cette et al., 2016)
- Sources of recent inequality dynamics:
  - Taxation, Wage inequality, Portfolio/Return het.: (e.g. Kaymak and Poschke, 2016; Benhabib et al., 2019; Straub, 2019; Brendler et al., 2024)
  - Automation: (Moll et al., 2022)
- Market power and growth
  - Aghion et al. (2023); De Ridder (2023); Peters and Walsh (forthcoming); Akcigit and Ates (2023); Olmsted-Rumsey (2022); Cavenaile et al. (2020)

Firms

- Final good: produced under perfect competition,

$$Y_t = \left(\int_0^1 y_{jt}^{\alpha} dj \right)^{\frac{1}{\alpha}}$$

  y_{st} intermediate goods

- Each intermediate good j produced by n firms competing a la Cournot
- Goods produced with labor with technology:

$$q_{ijt} = z_{ijt}^{\eta} \ell_{ijt}$$

Firms

- Firms devote labor to innovation to improve productivity

$$\dot{z}_{ijt} = A\kappa_{ijt} h_{ijt}$$

- Knowledge spillovers

$$\kappa_{ijt} = z_{ijt}^{1-\beta} Z_{jt}^{\beta}$$

  - internal to the firms, learning from other workers
  - external to the firms, learning from other firms

Equilibrium

- A firm i (symmetric, so omit i) in sector j solves a dynamic Cournot game:

$$V_{jt} = \max_{[q_{js}, h_{js}]_{s=t}^{\infty}} \int_t^{\infty} \left[(p_{js} - z_{js}^{-\eta} w_s) q_{js} - h_{js} w_s \right] e^{-\int_s^t (r_\tau - \delta) d\tau} \, \mathrm{d}s,$$

subject to

$$p_{jt} = \left(\frac{Y_t}{y_{jt}} \right)^{1-\alpha}$$
$$y_{jt} = \hat{y}_{jt} + q_{jt}$$
$$\dot{z}_{jt} = A \kappa_{jt} h_{jt}$$

- We solve this differential game by focusing on the Nash equilibrium in open-loop strategies

Innovation and growth

- Symmetric equilibrium gives

$$w_t = \theta_t z_t^{\eta}$$
$$h_t = \frac{g_t}{A n^{\beta}}$$
$$g_t = \frac{\dot{z}_t}{z_t} = \frac{1}{\beta}\left[A\eta\, n_t^{\beta}\ell_t - R_t - \delta\right]$$

- with

$$R_t = \underbrace{r_t - \eta g}_{\text{return gap}} \qquad \theta_t = \underbrace{\frac{n_t - 1 + \alpha}{n_t}}_{\text{markup}}$$

- externality

$$Z = nz, \kappa_t = z_t^{1-\beta} Z_t^{\beta} = n^{\beta} z_t$$

Free entry and market clearing

- Value of the firm is net present value of profits

$$v_t = \frac{\frac{1-\theta_t}{\theta_t}\ell_t - \frac{g_t z_t}{A\kappa_t} + v_{n,t}\dot{n}_t}{R_t + \delta},$$

  where $v = V/w$ is the stationarised firm value
- To enter, firms must pay a cost ϕ in terms of labor
- Free entry:

$$v_t = \phi$$

- Market clearing

$$1 = n_t\left(\ell_t + \frac{g_t}{n_t^{\beta} A}\right) + m_t\phi$$

- Mass of entrants, m_t

$$\dot{n}_t = m_t - \delta n_t$$

Steady state

- *Given an interest rate*, the firm side is described by

$$g_t = \frac{1}{\beta}\left(A\eta\, n_t^{\beta}\ell_t - (R_t+\delta)\right), \tag{1}$$

$$\phi = v = \frac{\frac{1-\theta_t}{\theta_t}\ell_t - \frac{g_t z_t}{A\kappa_t}}{R_t+\delta}, \tag{2}$$

$$1 = n_t\left(\ell_t + \frac{g_t}{n_t^{\beta}A} + m_t\phi\right), \tag{3}$$

  in the three unknowns g_t, ℓ_t, and m_t.

- The interest rate links the households and the firms. Two ways to close the model
  - Capitalist and workers
  - Incomplete markets

Households: Capitalists and Workers

- Capitalist consumption follows Euler equation:

$$\frac{\dot{c}_t^c}{c_t^c} = R_t - \rho$$

  in steady state $R = \rho$
- Workers consumption: $C_t^w = w_t \Rightarrow c_t^w = 1$.
- Capitalists' wealth is total firms' value $a = nv$, Free entry $\implies v = \phi$
- The **wealth to income** ratio measures inequality

$$a = n\phi$$

Market power and growth

Proposition

An increase in the entry cost, reduces the number of firms per product line and, if $\beta = 1$ *and* $|\varepsilon_{n,\phi}| = |\frac{\partial n}{\partial \phi}\frac{\phi}{n}| < 1$*:*

1. *reduces growth*
2. *increases the wealth to wage ratio*

$$\frac{\partial g}{\partial \phi} = \frac{A\eta}{\beta} n^{\beta} \left(\underbrace{\frac{\partial \ell}{\partial \phi}}_{\text{firm size}} + \underbrace{\beta \frac{1}{n}\frac{\partial n}{\partial \phi}\ell}_{\text{spillovers}} \right). \tag{4}$$

- **market size** effect: less firms $\Rightarrow$ higher firm size ℓ (+)
- **spillovers** effect: less firms means weaker spillovers (−)
- **GE** effect: more labor absorbed by fixed entry cost (−)

Ideas are harder to find: it's market power!

- Competition and growth: beyond escape competition (Aghion et al., 2001, 2005)

  $\rightarrow$ the **knowledge spillover** channel

- Spillover channel $\Longrightarrow$ higher innovation investment and lower productivity growth possible

- Aligns with evidence on declining research productivity (Bloom et al., 2020)

  "ideas are harder to find" because of market power/concentration

The drivers of wealth inequality

- Inequality driven by the return gap, $R = r - \eta g$
  - Capitalists have access to asset market: higher r benefits them
  - Workers only benefit from wage growth, proportional to g
- Rep. agent models in steady state supply of assets is indeterminate: $R = \rho$
- To understand inequality dynamics need to study the transition
- For initial BGP at time $t = t_0$, assuming new BGP reached in $t = t_1$,

$$a_{t_1} = a_{t_0} e^{\int_{t_0}^{t_1} (R_s - \rho) ds}.$$

permanent rise in wealth materializes as the return gap *temporarily* exceeds ρ.

Transitional dynamics

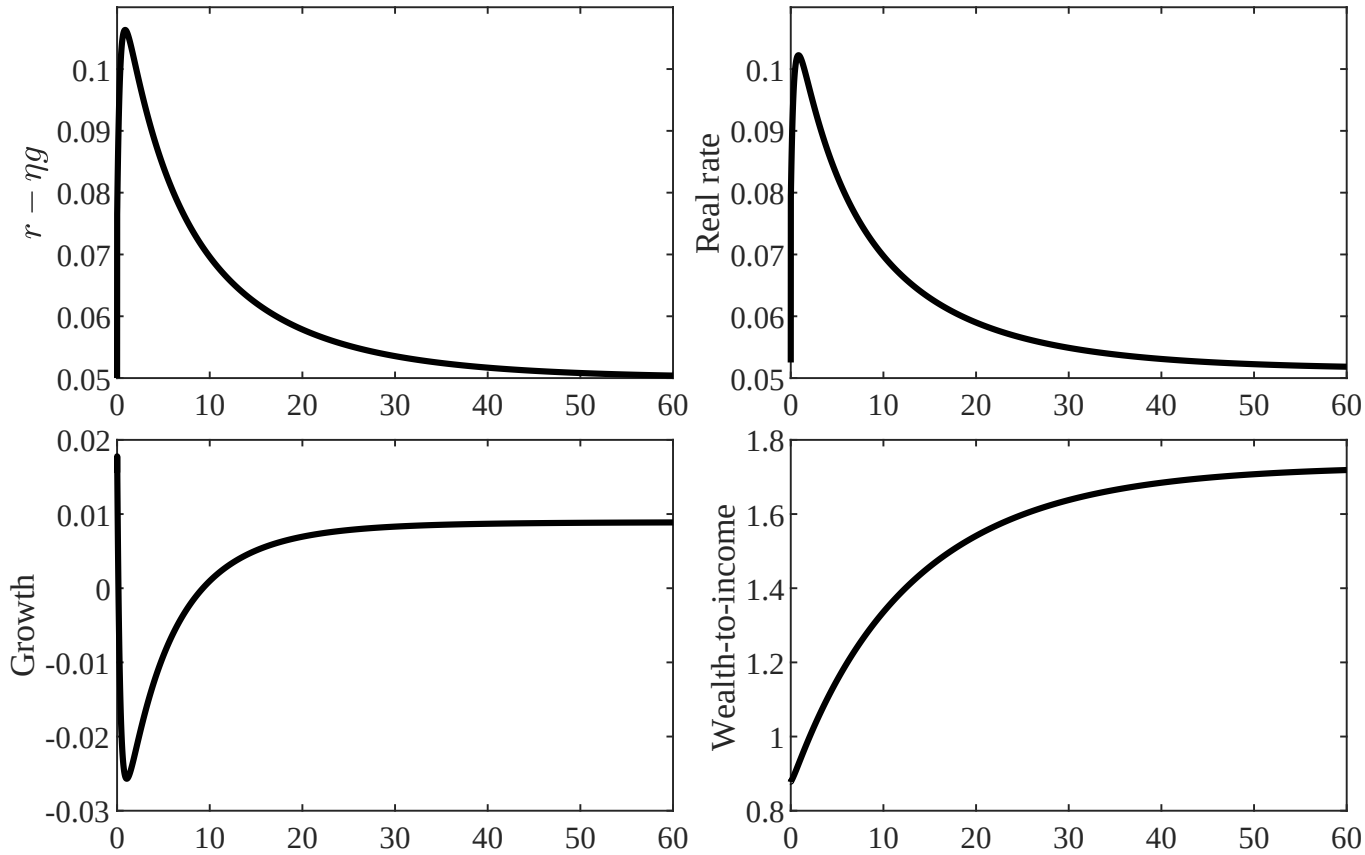


Figure: Capitalist-worker model – transitional dynamics.

Notes. Transitional dynamics from an increase in the entry cost that renders a new markup of 1.5.

Market power, growth and inequality: intuition

- Higher entry costs lead to less entry, higher markups and increased asset demand.

  $\Longrightarrow$ upward pressure on interest rate, increasing return gap, $R = r - \eta g$, encourages asset supply.

- With less firms, growth subdues due to weaker spillovers $\Longrightarrow \uparrow R$
- Over time, growth slowdown leads to higher desire to save for intertemporal reasons, and pressure on interest rate alleviates.
- Thus in the long run:
  - interest rate is permanently lower!
  - assets and wealth inequality permanently higher
  - growth subdued, and competition hampered.

A heterogeneous agent growth model

- All agents save and accumulate assets
- Markets are incomplete
- Uninsurable income risk $\Longrightarrow$ heterogeneous households
- This will provide to new aspects to simple two-agent model
  1. All households work and save $\Longrightarrow$ realistic wealth distribution
  2. Supply of assets not infinite elastic anymore
- Firm problem, identical to two-class model

Households with Incomplete Markets (1/2)

- With incomplete markets, the stationarized HJB equation for a household is:

$$\rho_s v(a,s) = \max_c \left\{ \ln c + v'(a,s)\dot{a} - \sum_{s' \in S} \lambda_{s',s}(v(a,s) - v(a,s')) \right\} \tag{5}$$

$$\text{where} \quad \dot{a} = y_s + aR - c, \quad \text{and} \quad v'(0,s) \geq \frac{1}{y_s}, \quad \forall s \in S$$

  - S is a set of exogenous states.
  - $\lambda_{s',s}$: Poisson arrival rate for transitions to s'.
  - Borrowing is ruled out by the boundary condition.

- We consider 6 states $S = \{(y_i, \rho_j) : i \in \{e,u\},\ j \in \{l,m,h\}\}$:
  - e/u: employment/unemployment
  - $l/m/h$: low/medium/high discount factor

- Heterogeneous ρ generates a realistic wealth distribution (Krusell and Smith, 1998)

Households with Incomplete Markets (2/2)

The model admits a stationary cross-sectional distribution $f(a,s)$ such that:

- Solving HJB $\rightarrow c = g(a,s)$ and $\dot{a} = h(a,s)$, mapping out the Kolmogorov forward equation (see Achdou et al. (2022)) for law of motion of cross sectional distribution,

$$\dot{f}_t(a,s) = -\frac{\partial[f_t(a,s)h(a,s)]}{\partial a} - \sum_{s' \in S} \lambda_{s',s}(f_t(a,s) - f_t(a,s')) \qquad \text{(KFE)}$$

- In steady state: $\dot{f}_t(a,s) = 0$ and

  Aggregate asset supply:

$$A^s = \sum_{s \in S} \int_a a f(a,s)\, da$$

Asset market equilibrium. Determine interest rate r and the return gap R

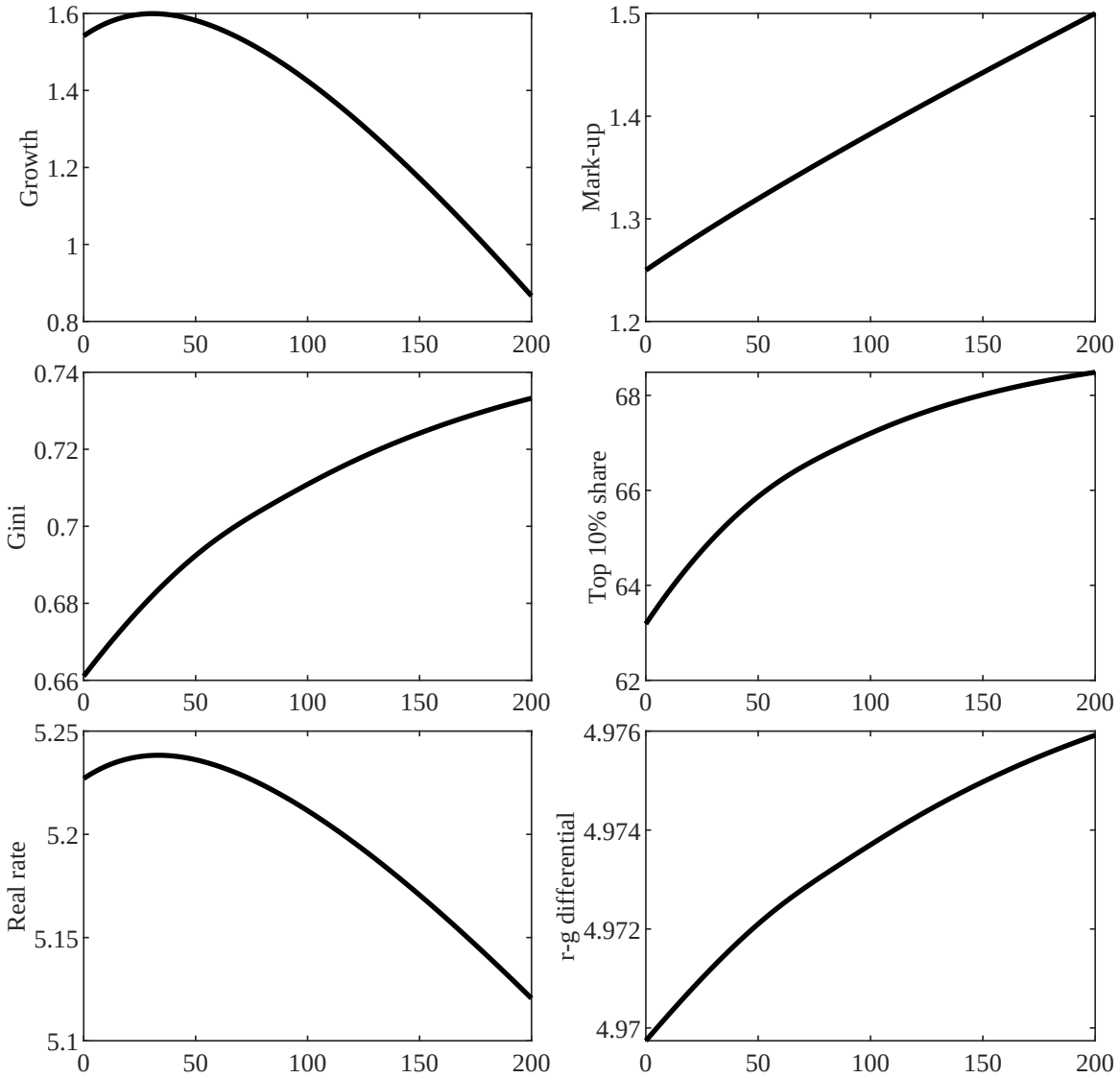
$$A^s = nv = n\phi.$$

Calibration

Table: Calibration summary

External parameters	Value	Source
CES parameter (α)	0.394	Feenstra et al. (2018)
Discount factor (ρ)	0.05	Annual real return
Spillover parameter (β)	0.77	Bloom et al. (2013)
Bankruptcy rate (δ)	0.14	Census (BDS)
Calibrated parameters	Value	
R&D productivity (A)	0.33	
Technology curvature (η)	0.40	
Entry cost (ϕ)	0.40	
Arrival rate of employment (λ_{eu})	0.8125	
Arrival rate of unemployment (λ_{ue})	0.0519	
Arrival rate of h cond. m (λ_{hm})	See Section 7.5.1	
Arrival rate of m cond. h (λ_{mh})	See Section 7.5.1	
Patience gap (ε)	3.4e(-4)	
Moments	Data (Model)	Source
Markup	25%	De Loecker et al. (2020)
TFP growth rate	1.56%	Fernald (2014)
R&D/GDP	1%	NSF S&E Indicators
Unemployment rate	6%	Bureau Labor Statistics
Unemployment duration	12 weeks	Westcott and Bednarzik (1981)
Mass of medium patient	80%	Krusell and Smith (1998)
Top-10% wealth share	63%	World Inequality Database (2024)
Elasticity of current wealth to wealth 30 years ago	0.71	Clark and Cummins (2015)

Comparative statics



Comparative statics

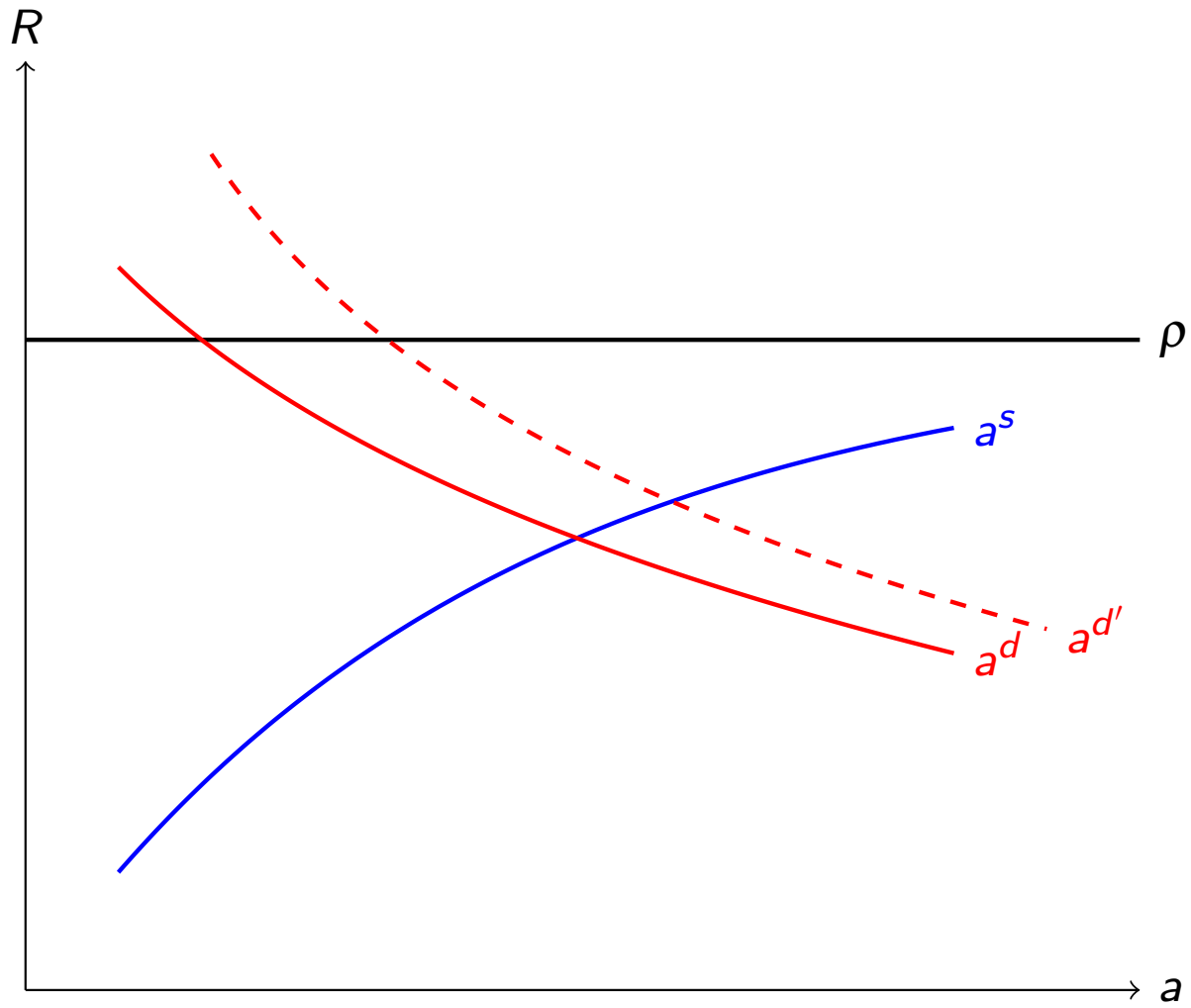
- **The rise of market power**:
  - $\uparrow$ entry cost (ϕ) to generate observed increase in markup: 25% $\rightarrow$ 55%
- **Return gap**:
  - growth declines
  - real interest rate declines
  - return gap increases
- **Inequality**
  - Gini coefficient increases: 0.66 $\rightarrow$ 0.73
  - Top 10% wealth share rises: 64% $\rightarrow$ 70%

Market power, growth and the return gap

- Market power and growth: as before, concentration weaken spillovers
- Market power and the interest rate:
  - Higher entry costs $\Rightarrow$ increase profits, firm value, and asset demand
  - $\uparrow$ Asset demand $\Longrightarrow$ $\uparrow$ real interest rate
- **Growth-interest rate feedback**
  - Lower entry $\Rightarrow$ slows growth $\Longrightarrow$ the return gap $R = r - \eta g$ increases
  - Growth slowdown $\Rightarrow$ increases saving (asset supply) $\Rightarrow$ **lower** real interest rate

  $\Rightarrow$ increase the return gap $R = r - \eta g$, always! Why??

Asset market



Interest rates and growth feedback

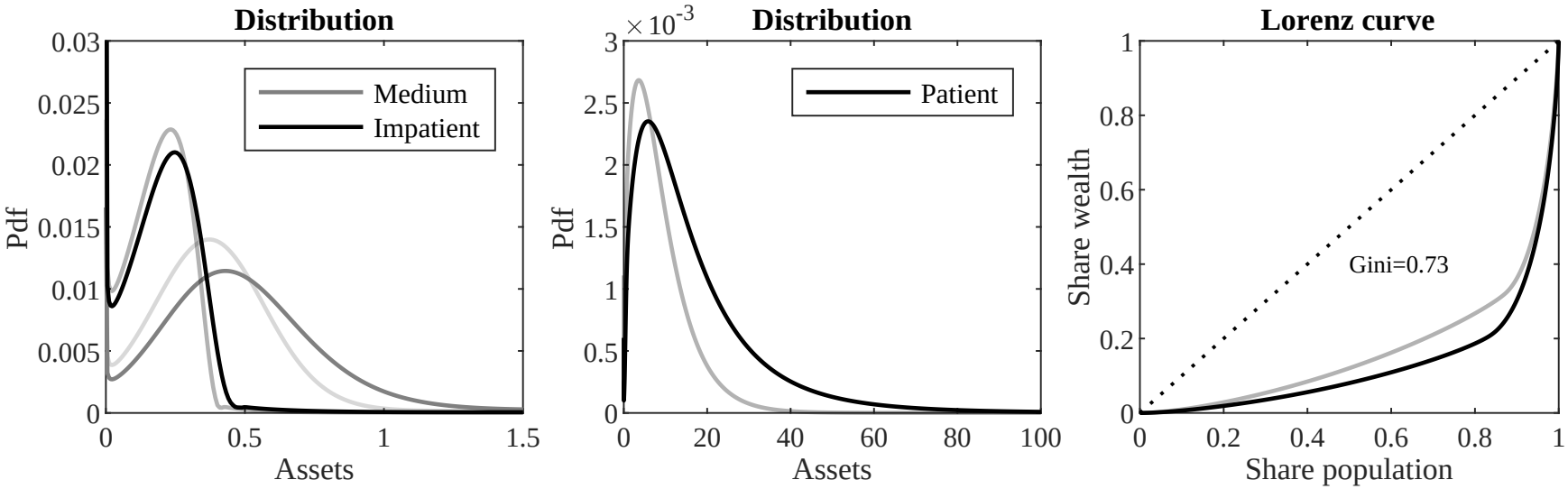
The **role of endogenous growth** in driving wealth inequality

- Directly affects the return gap: $R = r - \eta g$
- Growth, interest rate feedback:
  - Fixed productivity, increased market power $\Rightarrow$ *higher* r
  - But here, slower g reduces r, because lower g increases saving
  - Consistent with U.S. evidence on declining real interest rates (Holston et al., 2017)

    $\Longrightarrow$ new insight: rising inequality despite falling returns

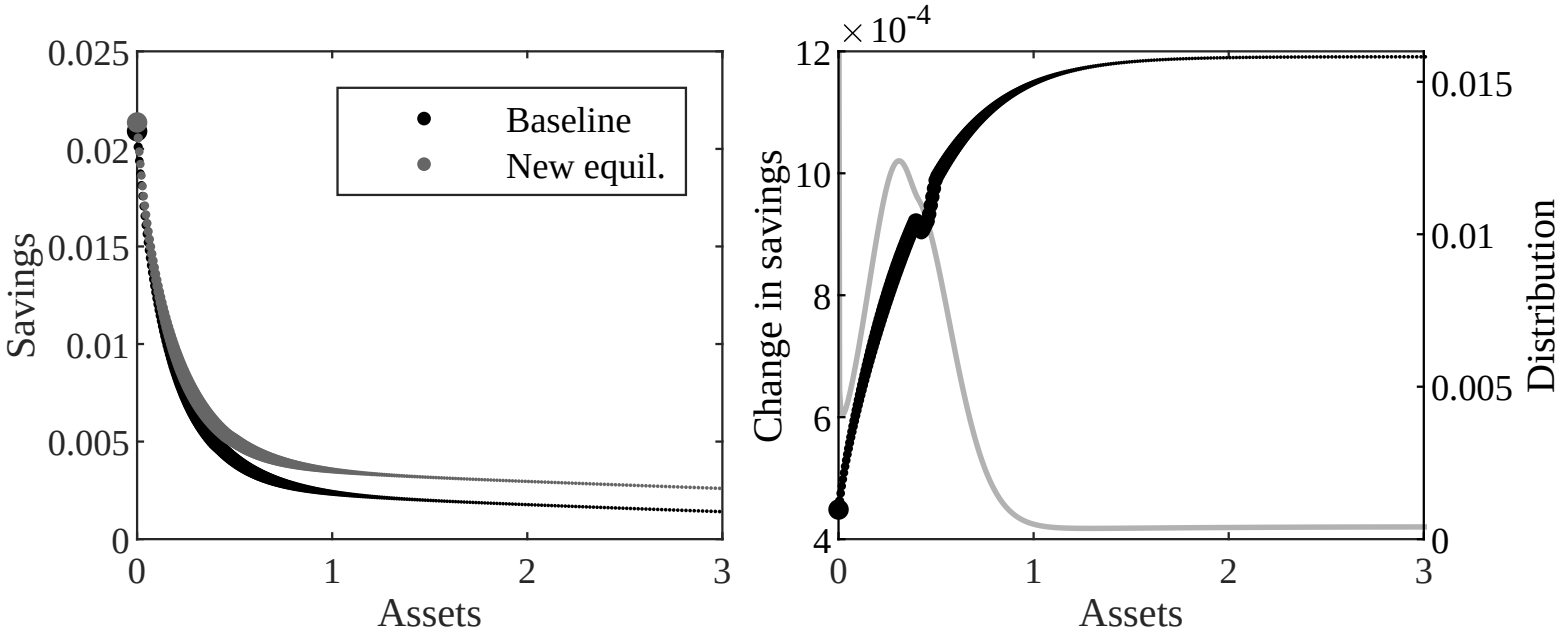
The return gap and wealth inequality

- All distributions shift to the right ⇒ average wealth increases for *all* types.
- **Yet, inequality rises:** higher dispersion in the wealth distribution.
- **Key question:** Why does inequality increase, even as everyone saves more?



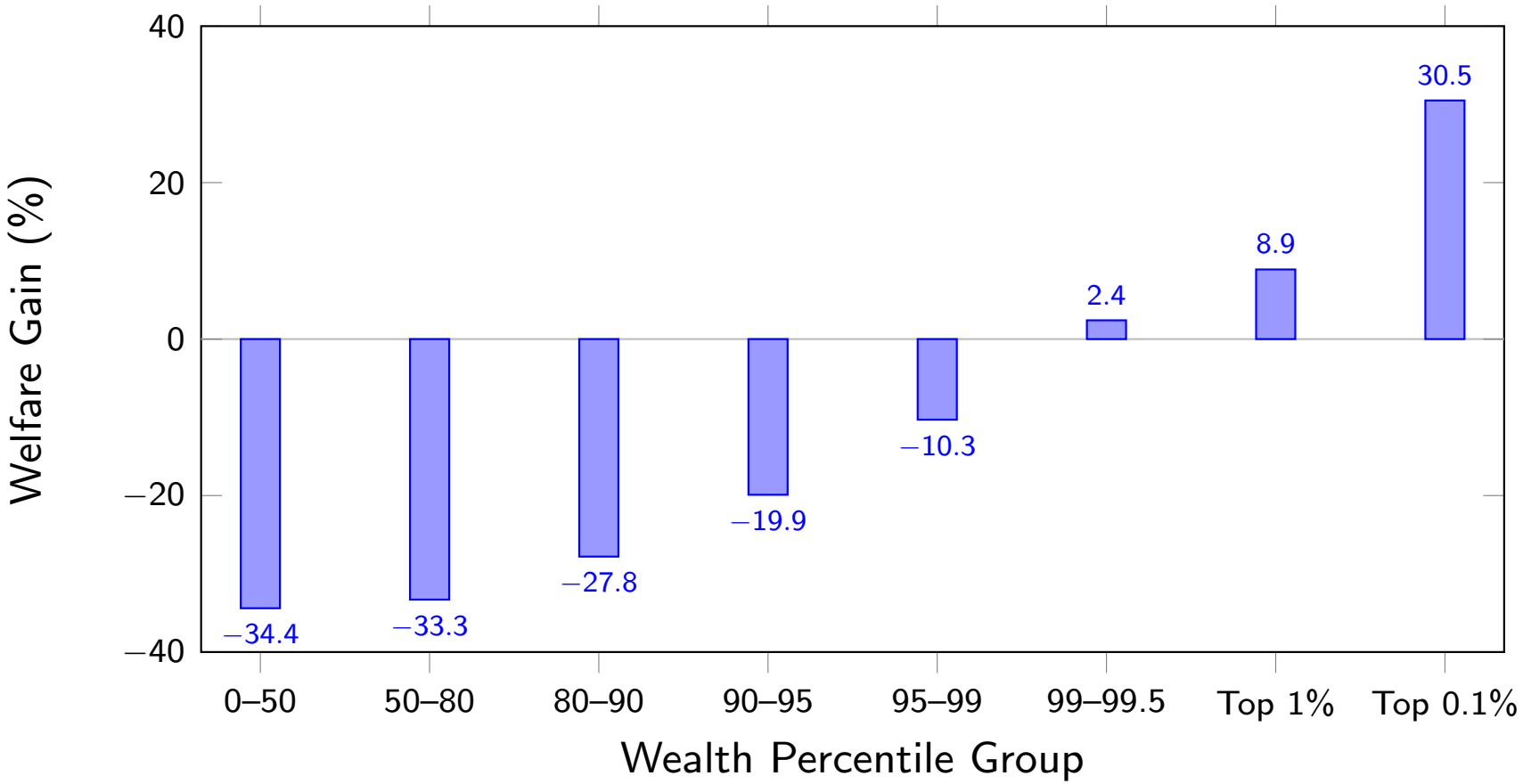
Notes. Impact of increased market power on wealth distribution and Gini index.

Inspecting the mechanism: saving responses



- **Upward shift** in saving function—stronger for asset-rich.
- Rich households respond more to increased return gap $(r - \eta g)$.
- **Mechanism:**
  - Poor save for precaution, rich for intertemporal substitution.
  - Return gap mostly affects substitution motive $\Rightarrow$ rich respond more.
- **Conclusion:** Asymmetric saving response $\Rightarrow$ rise in inequality.

Market power: winners and losers



Notes: The bottom 80% experience large welfare losses. Gains are concentrated in the top percentiles, especially among the wealthiest 0.1%.

Sources of rising market power

Are rising entry costs a key driver? Could other policy shifts explain rising market power?

- Evidence on **entry cost**:
  - direct evidence: **regulatory burden** has increased (Kalmenovitz, 2023; Dawson and Seater, 2013; Akcigit and Ates, 2023; Trebbi et al., 2023, e.g.)

    Regulatory burden

  - indirect evidence: **stock market valuation** share of GDP ↑ from 50 in 1975 to 200 in 2020

    stock market value

Alternative sources of rising market power

- **Corporate taxes and R&D subsidies** (Akcigit and Ates (2023)):
  - Tax rate τ: $\downarrow$ from 50% to 21%
  - R&D subsidy s: $\uparrow$ from 5% to 20%
  - Lower taxes or higher R&D subsidies $\Longrightarrow$ higher markups and higher growth
- **Slower knowledge diffusion** (Akcigit and Ates (2023)):
  - Declining spillovers $\rightarrow$ higher markups, slower growth
  - Our result: Knowledge diffusion declines *endogenously* as fewer firms enter.
- **Falling real interest rates** (Liu et al. (2020)):
  - Lower $r \rightarrow$ higher market concentration
  - Our view: The fall in r is a result of rising market power.
- **Population growth** (Peters and Walsh (forthcoming), Hopenhayn et al. (2022)):
  - Smaller population growth $\rightarrow$ fewer firms $\rightarrow$ higher markups and lower productivity
  - Matches our model: reduced entry weakens competition and growth

Conclusion

- **Motivation:** US data since 1980 show rising market power, slowing growth, and increasing wealth inequality.
- **Key results:** Endogenous growth with heterogeneous households and variable markups.
  - Wealth inequality depends on return-growth gap $(r-g)$.
  - Higher markups $\rightarrow$ higher asset returns, lower growth $\Rightarrow \uparrow (r-g)$
  - Heterogeneous household response to return gap $\Longrightarrow$ higher inequality
  - Lower growth $\rightarrow$ brings down asset returns! $\Rightarrow$ Rising wealth inequality despite falling interest rate.
- **Welfare Implications:** most households lose; top 1% benefit.
- **Policy implications:** policymakers should rethink competition policy's broader economic and social implications

Market Capitalization as % of GDP

Source: World Federation of Exchanges (WFE)

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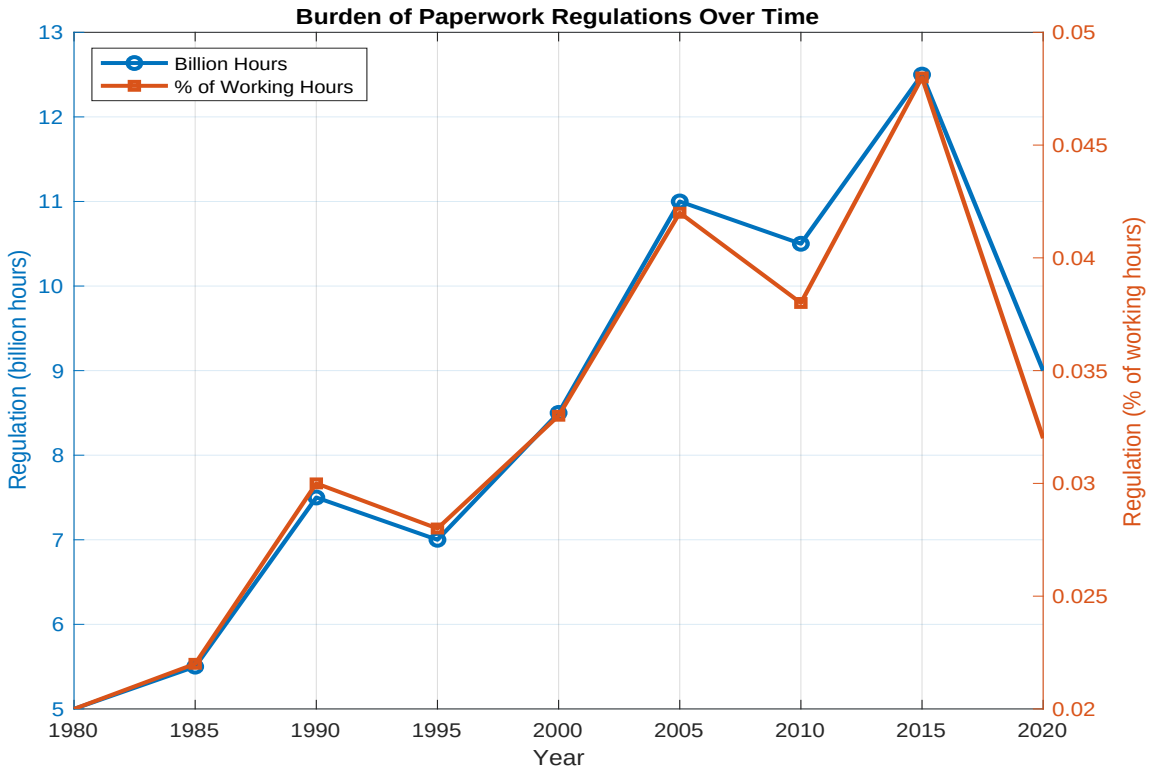
Burden of Paperwork Regulations



Source: Kalmenovitz (2023)

Note: The figure plots the aggregate burden of federal paperwork regulations since 1980, based on the number of hours taken to prepare and file the paperwork: in billion hours (red solid line) and as a share of total hours worked in the United States (blue connected line).

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Achdou, Yves, Jiequn Han, Jean-Michel Lasry, Pierre-Louis Lions, and Benjamin Moll, "Income and Wealth Distribution in Macroeconomics: A Continuous-Time Approach," *The Review of Economic Studies*, 2022, *89* (1), 45–86.

Aghion, Philippe, Antonin Bergeaud, Timo Boppart, Peter J Klenow, and Huiyu Li, "A Theory of Falling Growth and Rising Rents," *The Review of Economic Studies*, 2023, *90* (6), 2675–2702.

__ , **Christopher Harris, Peter Howitt, and John Vickers**, "Competition, Imitation and Growth with Step-by-step Innovation," *Review of Economic Studies*, 2001, *68* (3), 467–492.

__ , **Nicholas Bloom, Richard Blundell, Rachel Griffith, and Peter Howitt**, "Competition and Innovation: An Inverted-U Relationship," *Quarterly Journal of Economics*, 2005, *120* (2), 701–728.

Akcigit, Ufuk and Sina T. Ates, "What Happened to U.S. Business Dynamism?," *Journal of Political Economy*, 2023, *131* (8), 2059–2124.

Autor, David, David Dorn, Lawrence F. Katz, Cristina Patterson, and John Van Reenen, "The Fall of the Labor Share and the Rise of Superstar Firms," *Quarterly Journal of Economics*, May 2020, *135* (2), 645–709.

Bajgar, Matei, Giuseppe Berlinghieri, Sara Calligaris, Chiara Criscuolo, and Jonathan Timmis, "Industry Concentration in Europe and North America," *OECD Productivity Working Papers*, 2019.

Benhabib, Jess, Alberto Bisin, and Ming Luo, "Wealth Distribution and Social Mobility in the US: A Quantitative Approach," *American Economic Review*, 2019, *109*, 1623–1647.

Bloom, Nicholas, Charles I. Jones, John Van Reenen, and Michael Webb, "Are Ideas Getting Harder to Find?," *American Economic Review*, April 2020, *110* (4), 1104–44.

__ , **Mark Schankerman, and John Van Reenen**, "Identifying Technology Spillovers and Product Market Rivalry," *Econometrica*, 2013, *81* (4), 1347–1393.

Brendler, Pavel, Moritz Kuhn, and Ulrike Stein, "To Have or Not to Have: Understanding Wealth Inequality," CEPR Discussion Paper DP19412, CEPR 2024.

Cavenaile, Laurent, Murat Alp Celik, and Xu Tian, "Are Markups Too High? Competition, Strategic Innovation, and Industry Dynamics," *mimeo*, 2020.

Cette, Gilbert, John Fernald, and Benoît Mojon, "The pre-Great Recession slowdown in productivity," *European Economic Review*, 2016, *88*, 3–20. SI: The Post-Crisis Slump.

Clark, Gregory and Neil Cummins, "Intergenerational Wealth Mobility in England, 1858-2012: Surnames and Social Mobility," *The Economic Journal*, 2015, *125*, 61–85. SI: The Post-Crisis Slump.

Covarrubias, Matias, Germán Gutiérrez, and Thomas Philippon, "From Good to Bad Concentration? US Industries over the Past 30 Years," *NBER Macroeconomics Annual*, 2020, *34*, 1–46.

Dawson, John W. and John J. Seater, "Federal Regulation and Aggregate Economic Growth," *Journal of Economic Growth*, 2013, *18* (2), 137–177.

Feenstra, Robert C., Philip Luck, Maurice Obstfeld, and Katheryn N. Russ, "In Search of the Armington Elasticity," *The Review of Economics and Statistics*, 2018, *100* (1), pp. 135–150.

Fernald, John, "A quarterly, utilization-adjusted series on total factor productivity," in "in" Federal Reserve Bank of San Francisco 2014.

Gordon, Robert J, "Is U.S. Economic Growth Over? Faltering Innovation Confronts the Six Headwinds," Working Paper 18315, National Bureau of Economic Research August 2012.

Hall, Robert E, "New Evidence on the Markup of Prices over Marginal Costs and the Role of Mega-Firms in the US Economy," Working Paper 24574, National Bureau of Economic Research May 2018.

Holston, Kathryn, Thomas Laubach, and John C. Williams, "Measuring the natural rate of interest: International trends and determinants," *Journal of International Economics*, 2017, *108*, S59–S75.

Hopenhayn, Hugo, Julian Neira, and Rish Singhania, "From Population Growth to Firm Demographics: Implications for Concentration, Entrepreneurship and the Labor Share," *Econometrica*, 2022, *90* (4), 1879–1914.

Kalmenovitz, Joseph, "Regulatory Intensity and Firm-Specific Exposure," *The Review of Financial Studies*, 01 2023, *36* (8), 3311–3347.

Kaymak, Baris and Markus Poschke, "The Evolution of Wealth Inequality Over Half a Century: The Role of Taxes, Transfers, and Technology," *Journal of Monetary Economics*, 2016, *77*, 1–25.

Krusell, Per and Anthony A. Smith, "Income and Wealth Heterogeneity in the Macroeconomy," *Journal of Political Economy*, 1998, *106* (5), 867–896.

Kuhn, Moritz and Victor Rios-Rull, "2013 Update on the U.S. Earnings, Income, and Wealth Distributional Facts: A View from Macroeconomics," *Quarterly Review*, 2013. Federal Reserve Bank of Minneapolis.

Liu, Ernest, Atif Mian, and Amir Sufi, "Low Interest Rates, Market Power and Productivity Growth," *Econometrica*, 2020, *90*, 193–221.

Loecker, Jan De, Jan Eeckhout, and Gabriel Unger, "The rise of market power and the macroeconomic implications," *The Quarterly Journal of Economics*, 2020, *135* (2), 561–644.

Moll, Benjamin, Lukasz Rachel, and Pascual Restrepo, "Uneven Growth: Automation's Impact on Income and Wealth Inequality," *Econometrica*, 2022, *90* (6), 2645–2683.

Olmsted-Rumsey, Jane, "Market Concentration and the Productivity Slowdown," *mimeo*, 2022.

Óscar Jordá, Katharina Knoll, Dmitry Kuvshinov, Moritz Schularick, and Alan M Taylor, "The Rate of Return on Everything, 1870–2015*," *The Quarterly Journal of Economics*, 2019, *134* (3), 1225–1298.

Peters, Michael and Conor Walsh, "Population Growth and Firm Dynamics," forthcoming.

Piketty, Thomas, *Capital in the Twenty-First Century*, Harvard University Press, 2014.

__ **and Gabriel Zucman**, "Capital is Back: Wealth-Income Ratios in Rich Countries, 1700-2010," *Quarterly Journal of Economics*, 2014, *129* (3), 1255–1310.

Ridder, Maarten De, "Market Power and Innovation in the Intangible Economy," *American Economic Review*, 2023, *113* (1), 33–66.

Straub, Ludwig, "Consumption, Saving and the Distribution of Permanent Income," *Mimeo Harvard*, 2019.

Trebbi, Francesco, Miao Ben Zhang, and Michael Simkovic, "The Cost of Regulatory Compliance in the United States," 2023. mimeo, Berkeley.

Westcott, Diane and Robert Bednarzik, "Employment and unemployment: a report on 1980," *Monthly Labor Review*, February 1981, *104* (4).

World Inequality Database, 2024. http://data.worldbank.org/indicator/SP.DYN.LE00.FE.IN.