

Thoughts on the Changing US Business Landscape

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Dynamism Conference

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LSE and MIT

Agenda

Some US Business Trends

Explanations

Policy

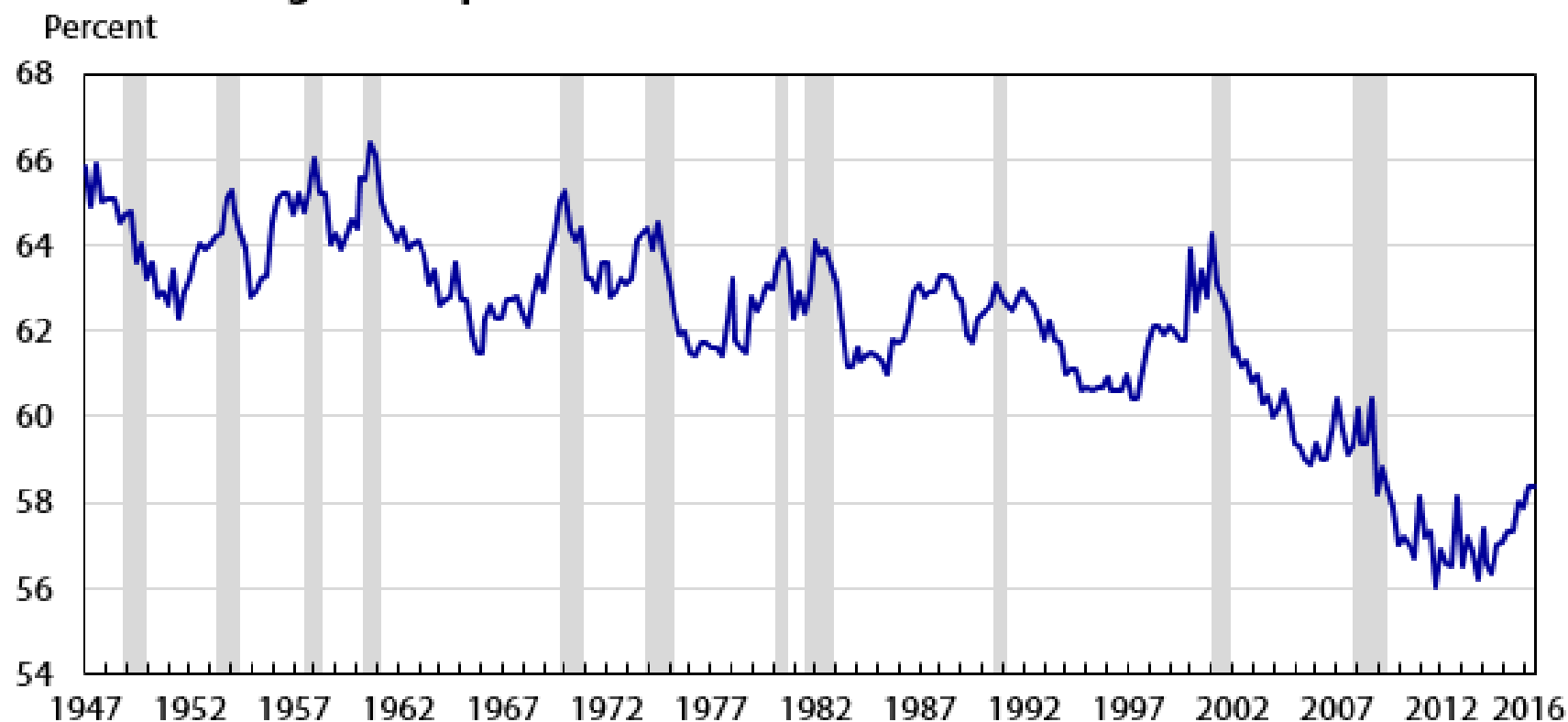
US business trends look worrying

Caveat: (i) Not all of these are universally agreed on (e.g. timing); (ii) even more controversy over what's happening in other countries

1. Aggregate share of labor in GDP ↓
2. Industrial concentration ↑ (“big firms getting bigger”)
3. Aggregate gross profit margins ↑
4. Entrepreneurship ↓
(Share of workers in young firms; rate of new firm creation)
5. Dispersion of labor productivity between firms ↑
6. Positive relationship between productivity & subsequent firm growth (job growth & exit) ↓
7. Positive relationship between firm size & productivity ↓
8. Job reallocation ↓

US Labor Share of GDP

Figure 1. Labor's share of output in the nonfarm business sector, first quarter 1947 through third quarter 2016

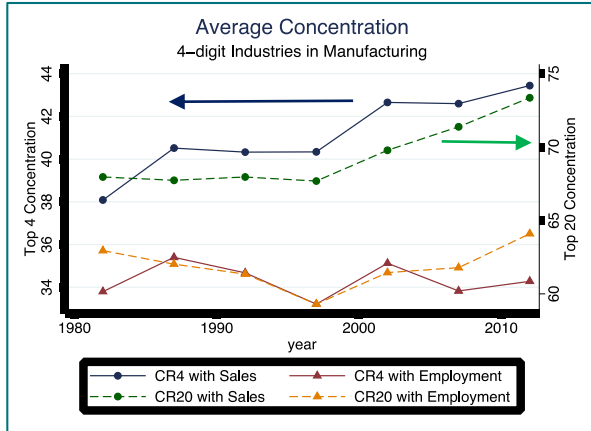


Note: Shaded areas indicate recessions, as determined by the National Bureau of Economic Research.

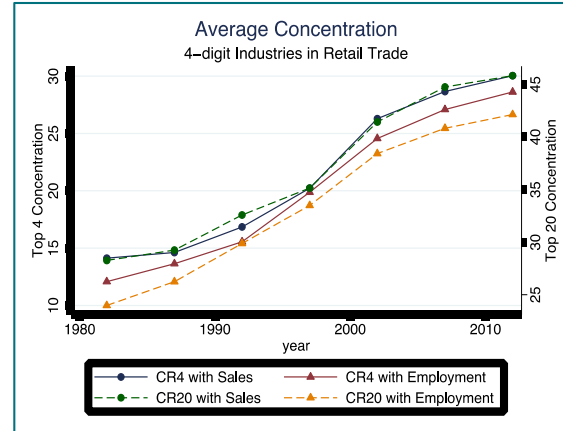
Source: U.S. Bureau of Labor Statistics.

Rising Sales Concentration in US SIC4 since 1982

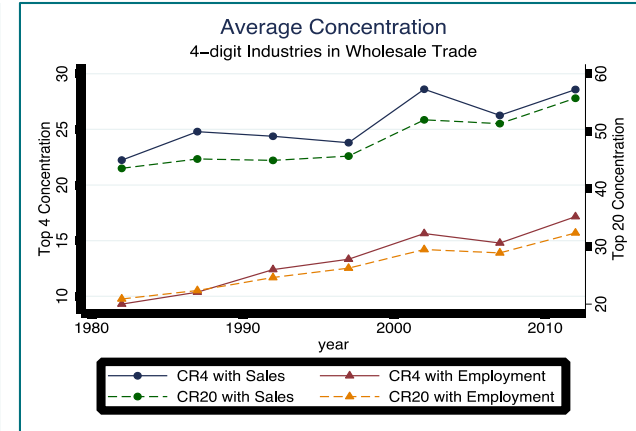
Manufacturing



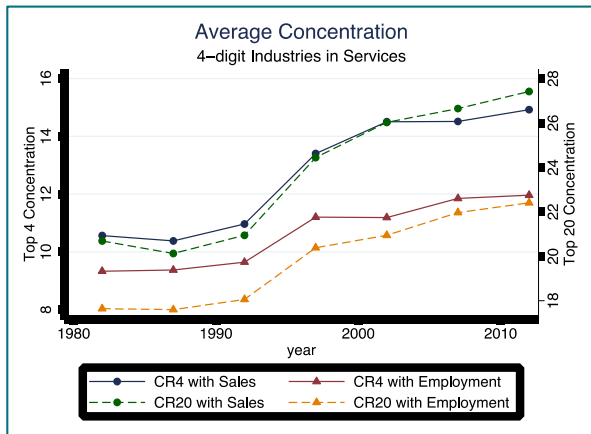
Retail Trade



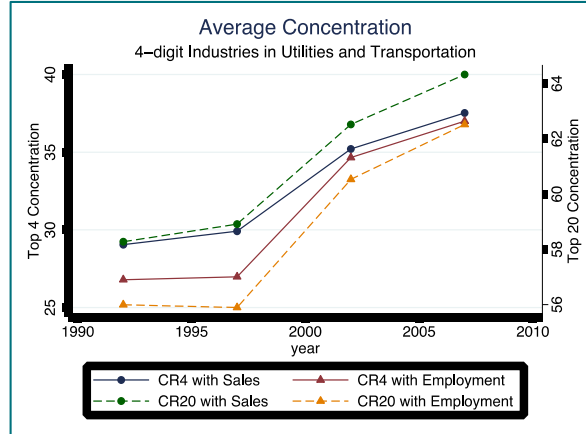
Wholesale Trade



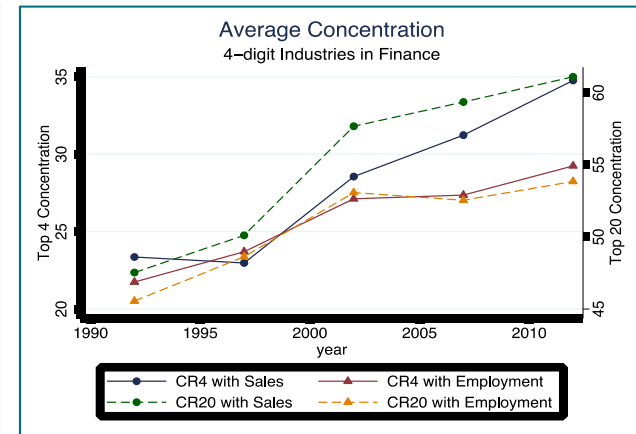
Services



Utilities + Transportation



Finance



Notes: Autor, Dorn, Katz, Patterson & Van Reenen (2020) from Economic Census; Weighted av. of concentration across the SIC-4's within each sector. 676 SIC4 industries underlying this.

Autor, Dorn, Katz, Patterson & Van Reenen (2020)

- **‘Superstar Firms’ hypothesis**
 - Large firms tend to have lower labor shares
 - Environment changes to favor these superstar firms (e.g. “winner take all” competition)
 - These firms capture increasing share of market (CONC \uparrow), aggregate labor share falls due to reallocation
- **Comments:**
 - Corollary is that aggregate price-cost margins likely to rise
 - Action is in the top of the distribution: median firm unchanged
 - Can be consistent with persistence dominance

Measurement Issues

- Census admin data (like John Haltiwanger's paper or OECD MultiProd) generally best, but access often hard
 - Near population of employer firms (Economic Census, LBD-R, BED). When sub-samples (e.g. ASM) has sampling weights
- Firm accounting data (useful for overseas affiliate activity)
 - **Compustat**: Rich data on publicly listed firms, but (i) sub-population; (ii) changing degree of selection bias over time; (iii) global consolidated accounts (not just US)
 - **Unlisted firms** (e.g. D&B - NETS, Orbis): Wider sample, but still selection issues; accounting regulations (big problem when using US data: better in many EU countries).
- Many tricky measurement issues, esp. over capital
- Strengths & weaknesses of both types of data: depends on question

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Explanations

- None of empirical measures have a straightforward mapping to welfare or specific models
- Many macro papers are trying to explain all/some of these trends. Examples:
 - Akcigit and Ates (2019, 2020); Aghion et al (2020); de Ridder (2019); Hsieh & Rossi-Hansberg (2019)
- Maybe that a single macro model is not the best way – different explanations in different industries?

Some Explanations

- **Technological**

- More markets are now “winner takes all” innovation
- Increased importance of intangible capital/fixed costs
- Slower Diffusion
- Automation reduces importance of labor for output

- **Globalization**

- Competitive shock from expanding export and import markets (e.g. China)
- Offshoring potential (via global MNE supply chains)

- **Institutional**

- Anti-trust enforcement weaker
- Regulations more burdensome
- Employer Lobbying power: Union decline; monopsony

Relationship between markups of price over marginal cost and shares

Heterogeneous firms i in industry k at time t , (TFPQ= A_{it})

- $Y_{it} = A_{it} F_{kt}(V_{it}, K_{it})$
 - Y = value-added
 - K = vector of (quasi-fixed) capital inputs indexed k at factor cost, w^k
 - V = vector of variable inputs indexed v at factor cost, w^v
- $m_{it} \equiv \frac{P_{it}}{c_{it}}$, mark-up of price over marginal cost

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- Output elasticity with respect to a variable factor:
 - $\alpha_{it}^v \equiv \left(\frac{\partial Y}{\partial V^v} \frac{V^v}{Y} \right)_{it} = \frac{P_{it}}{c_{it}} \left(\frac{w^v V}{PY} \right)_{it} \equiv m_{it} S_{it}^v$
 - $m_{it} = \frac{\alpha_{it}^v}{S_{it}^v}$, elasticity of factor v to its revenue share (S_{it}^v)
- True under reasonably general conditions

Example of Labor Share, S_{it}^L

Labor Share S_{it}^L = payroll (wL) over nominal value added (PY)

- Markup:

$$m_{it} = \frac{\alpha_{it}^L}{S_{it}^L}$$

- If production technology stable over time (just Hicks Neutral change A_t) then markup is simply:

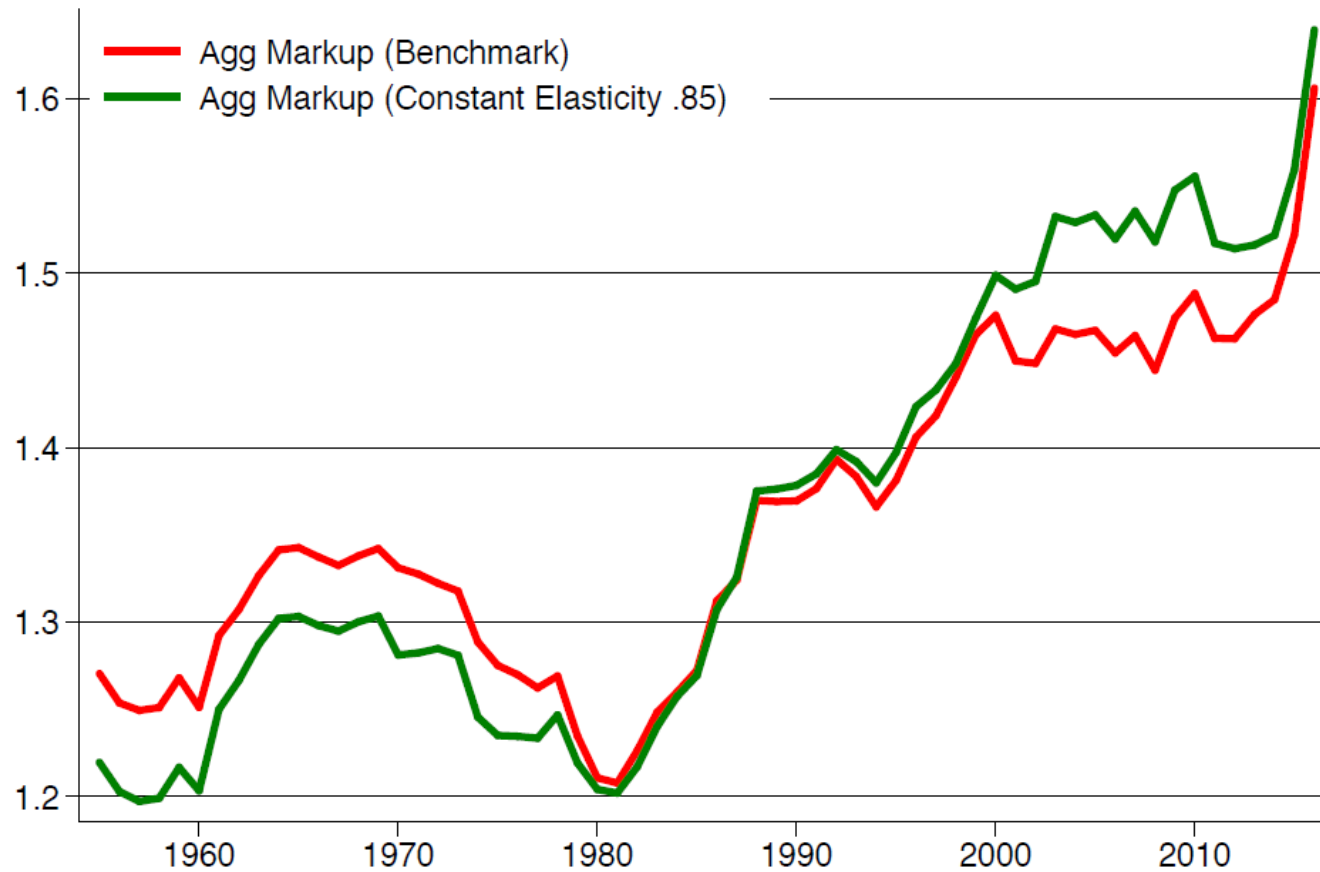
$$m_{it} = \frac{\alpha^L}{S_{it}^L}$$

- So fall of labor share (relatively easy to measure) indicates an increase in the markup
- But might be that technological change (α_{it}^L down) could cause labor share fall (Acemoglu & Restrepo, 2020, on automation)

de Loecker, Eeckhout, and Unger (2020)

- Use Compustat publicly listed firms from 1950s on
- Use composite of all variable costs (“Costs of Goods Sold”, COGS). Labor vs intermediate inputs not separately available in company accounts
- Share of variable costs is COGS/SALES (S_{it}^v)
- They estimate production function to get α_{it}^v but story the same if assume $\alpha_{it}^v = 0.85$, a constant, i.e. it is the fall in COGS share that drives increase in markup (not changes in estimated output elasticities)

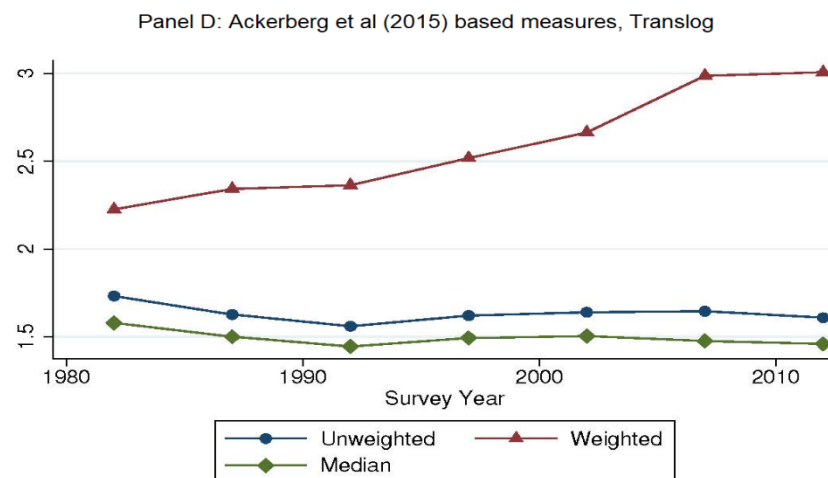
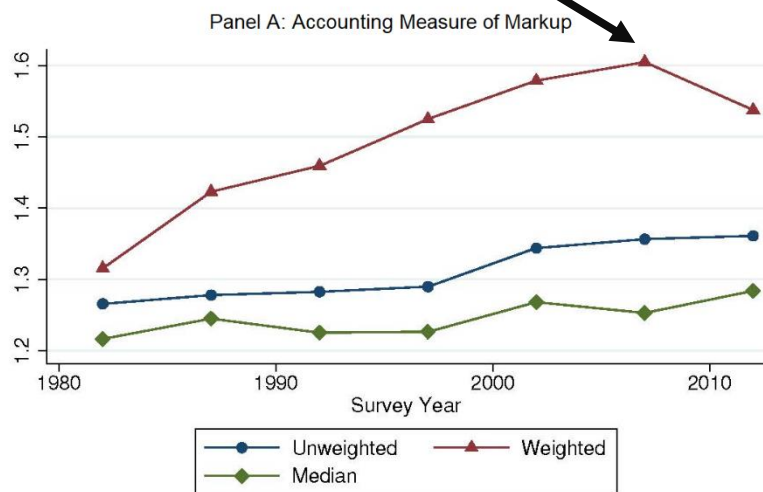
Estimation of markups with and without controlling for changing production function technologies (Compustat)



Source: de Loecker, Eeckhout and Unger (2020, Figure 2)

Estimation of markups on Administrative Census data shows similar patterns. Aggregate Markup rises, driven by reallocation.

Aggregate markup
(weighted average)



Reallocation important: typical firm (median or unweighted) markup (and labor share broadly stable). Action at the top

Notes: Autor, Dorn, Katz, Patterson & Van Reenen (2020). Census of Manufactures. Panel A: Antras et al (2017) method; B-D use production function, de Loecker and Warzynski (2012).

Correcting for tangible and intangible capital

- These markups over **variable** costs. Like gross margins, these do not adjust for fixed costs/capital
- If markups have risen solely due to greater need of covering fixed costs, economic profits have not risen
- Focus of papers in this session is on accounting for **intangible capital**
 - *Bessen et al; Bajgar et al; Crouzet & Eberly* all find evidence that patterns like higher markups, concentration, more persistent dominance are closely related to measures of intangible capital

Bessen, Denk, Kim & Righi (2020)

- Dominant firms major investments in intangibles (proprietary software) makes them hard to dislodge
 - Helps account for fall in displacement from 2000 onwards when software investment exploded (& more so for top 4 firms)
- Measurement based on:
 - Compustat: R&D, SG&A, “intangibles”, Advertising
 - Patents, lobbying
 - LinkedIn IT workers for own account software
 - ACES & BEA software better, but this is only at industry level (would be good to match in at establishment level)
- Allocation of Compustat firms to markets hard because they operate in many industries & across the world
 - See Bloom, Schankerman & VR (2013) for R&D

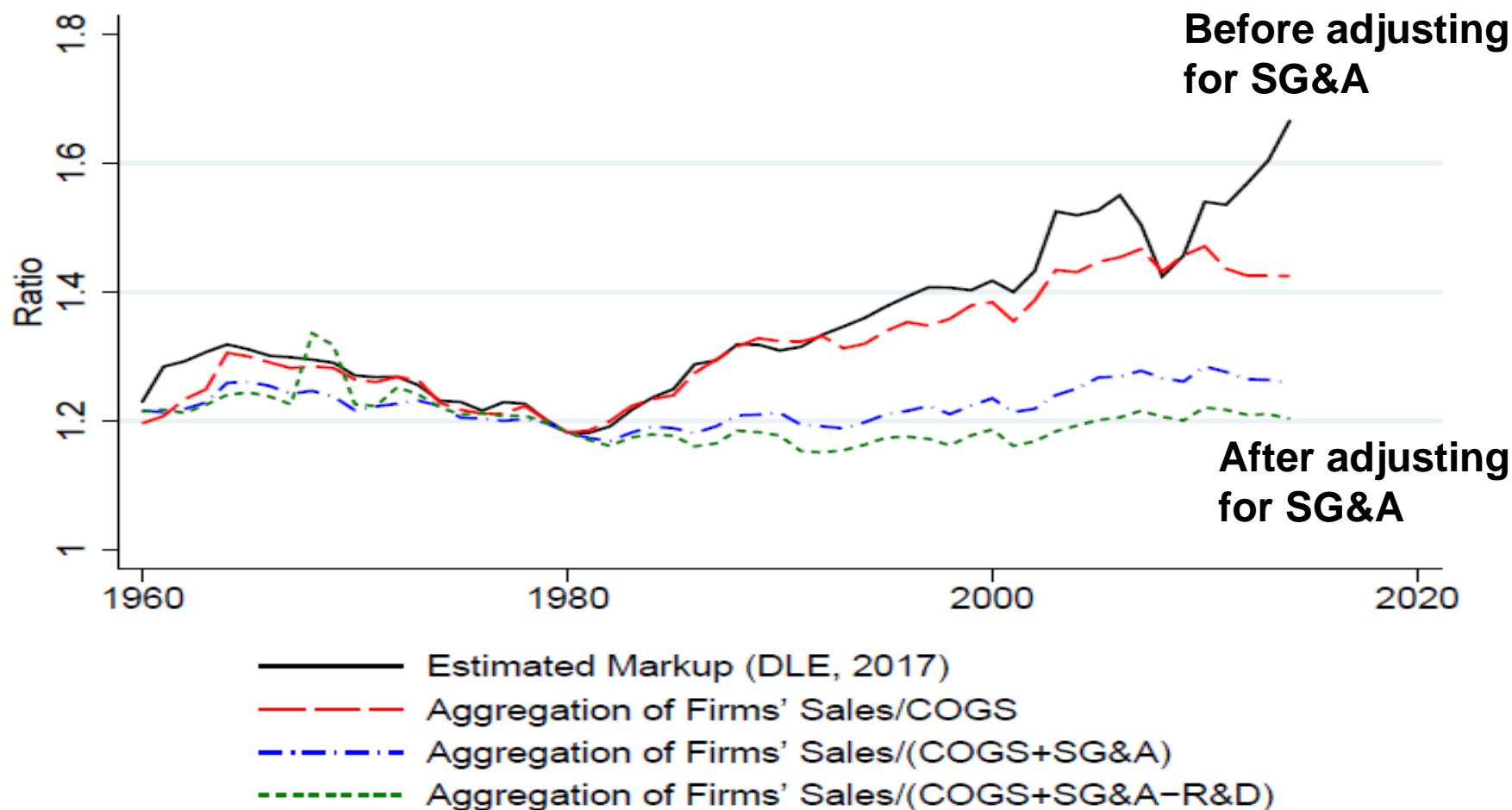
Cooper, Haltiwanger & Willis (2020)

- Takes many of moments of declining dynamism
 - Fits a structural model of labor demand in US manufacturing by SMM.
 - Allow parameters to change in 1980s vs 2000s
- Increased adjustment costs of labor is favored explanation (key moment is labor change for high lagged TFP firms)
- Does better than increased market power explanation (and others like changing distribution of shocks)
- Issues:
 - Why have adjustment costs risen?
 - What about firm-specific market power? curvature of revenue function (incomplete pass through of shocks).
 - Could intangibles also explain findings? (measurement error in TFP, labor less important factor?)

Some Issues with the intangibles story

- Measures we have are very crude
- Better to use more firm-level measures, using admin data and specify types of intangibles (e.g. management work)
- My personal take:
 - Intangible capital definitely accounts for **some** of increase in markups, etc. But how much does it account for?
 - Some types of intermediate service inputs may be part of the problem – legal, consultancy & lobbying fees
 - What explains rising investment in intangibles? Not all due to price change

One Example: Changing Markups after deducting SG&A



Source: Karabarbounis and Neiman (2018), Compustat

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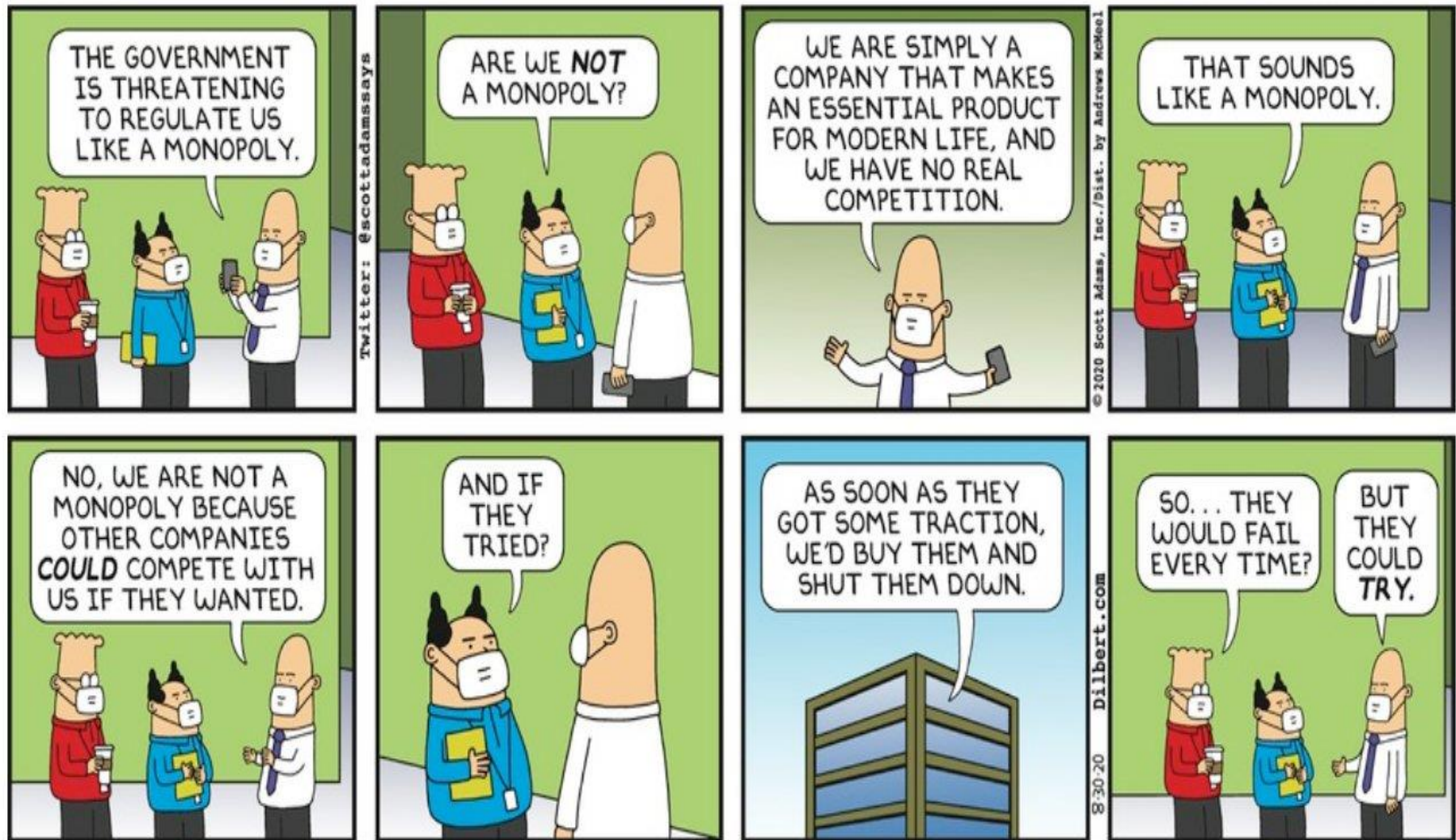
Explanations

Policy

Policy Implications

- Even if superstar firms gained their positions through competing on the merits, this does not mean anti-trust can be relaxed (as Bajgar et al, 2020 emphasize)
- An economy dominated by a small number of firms is at risk that firms can use their market power to the detriment of consumers (Microsoft example)
- Needs to be emphasis on **future** competition. Actions that seem benign today may chill competition in the future.
 - **Example:** “Killer Acquisitions” by dominant platform firms of start-ups that may become future platform rivals
 - Tirole (2020) on shifting burden of proof more towards firms

In Dilbert we trust



Thank you!

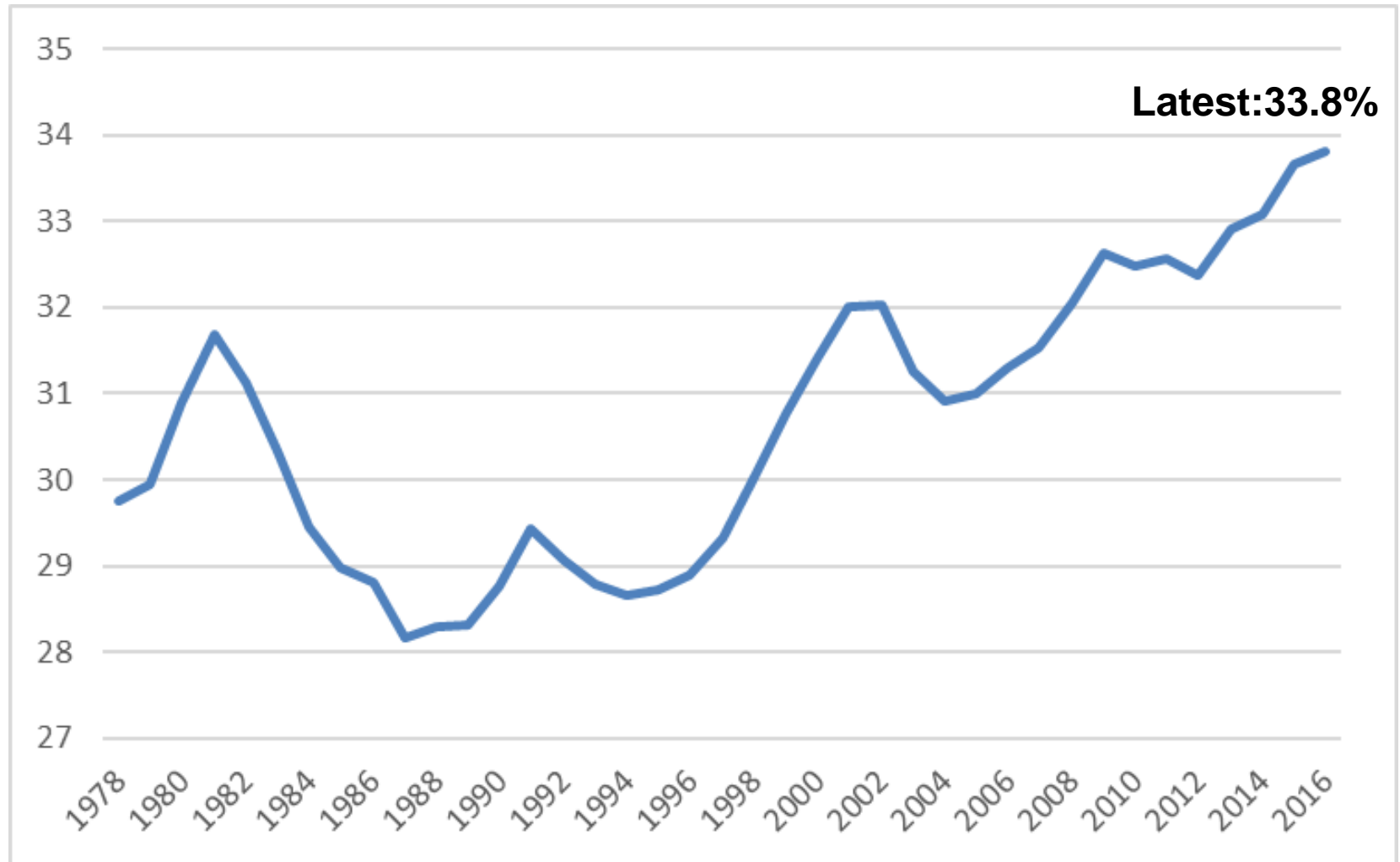


Motivation



- Growth of “Superstar Firms” in digital (GAFAMs) and beyond (e.g. Walmart, Costco in Retail, etc.)
- Raises concern that product market power has increased over last three decades
- Negative welfare effects – allocative inefficiency; slower productivity and wage growth; falling labor share & inequality
- **Broader social & political concerns:** dominant firms lobby to skew “rules of game” in their favor; privacy; democratic deficit fueling populist anger (New Gilded Age).

Mega Firms getting bigger since mid '80s: % JOBS in firms with over 5,000 workers (up from 28% in 1987 to 34% in 2016)



Source: SBA, <https://www.sba.gov/advocacy/firm-size-data#susb>

Explanations for these trends?

- **Falling competition?** Wu (2018); Grullon et al. (2016); Gutierrez & Philippon (2017) on **weaker antitrust**
- Increased **platform competition** (network effects, esp. digital markets). *“Google Effect” – Winner take all/most*
- **Increases in Fixed Costs.** Example: Larger firms better at exploiting intangible capital like proprietary software – *“Walmart effect”* (Eberly & Crouzet, 2018)
- **Slow Diffusion of new technologies:** Akcigit and Ates (2019); Andrews et al (2013)
- **Increasing Competition:** Greater sensitivity to price (e.g. Internet, Globalization) allocates more market share to more efficient firms (Demsetz 1973; Autor, Dorn, Katz, Patterson & Van Reenen, 2019, Appendix A)

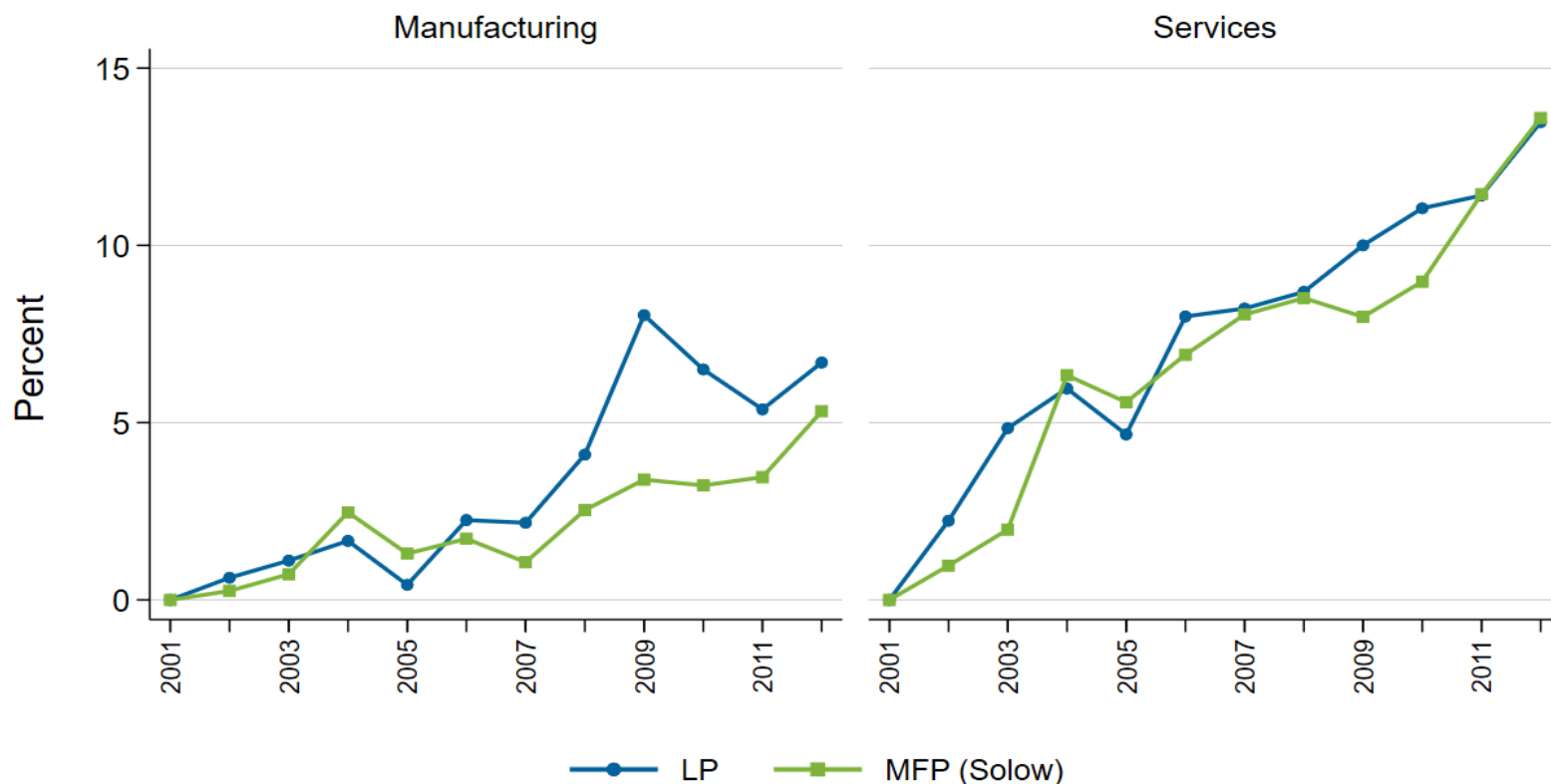
Calculating Profit Share (K-N, 2018)

$$s_{\pi} = 1 - s_L - s_K$$

$$s_L = WN/Y, \quad s_K^j = R^j K^j / Y.$$

$$R_t^j = \frac{(1 + \tau_t^x) \xi_t^j}{1 - \tau_t^k} \left[\left(\frac{(1 + \tau_{t-1}^x) \xi_{t-1}^j}{(1 + \tau_t^x) \xi_t^j} \right) (1 + (1 - \tau_t^k) r_t) - (1 - \delta_t^j) - \frac{\tau_t^k \delta_t^j}{1 + \tau_t^x} \right].$$

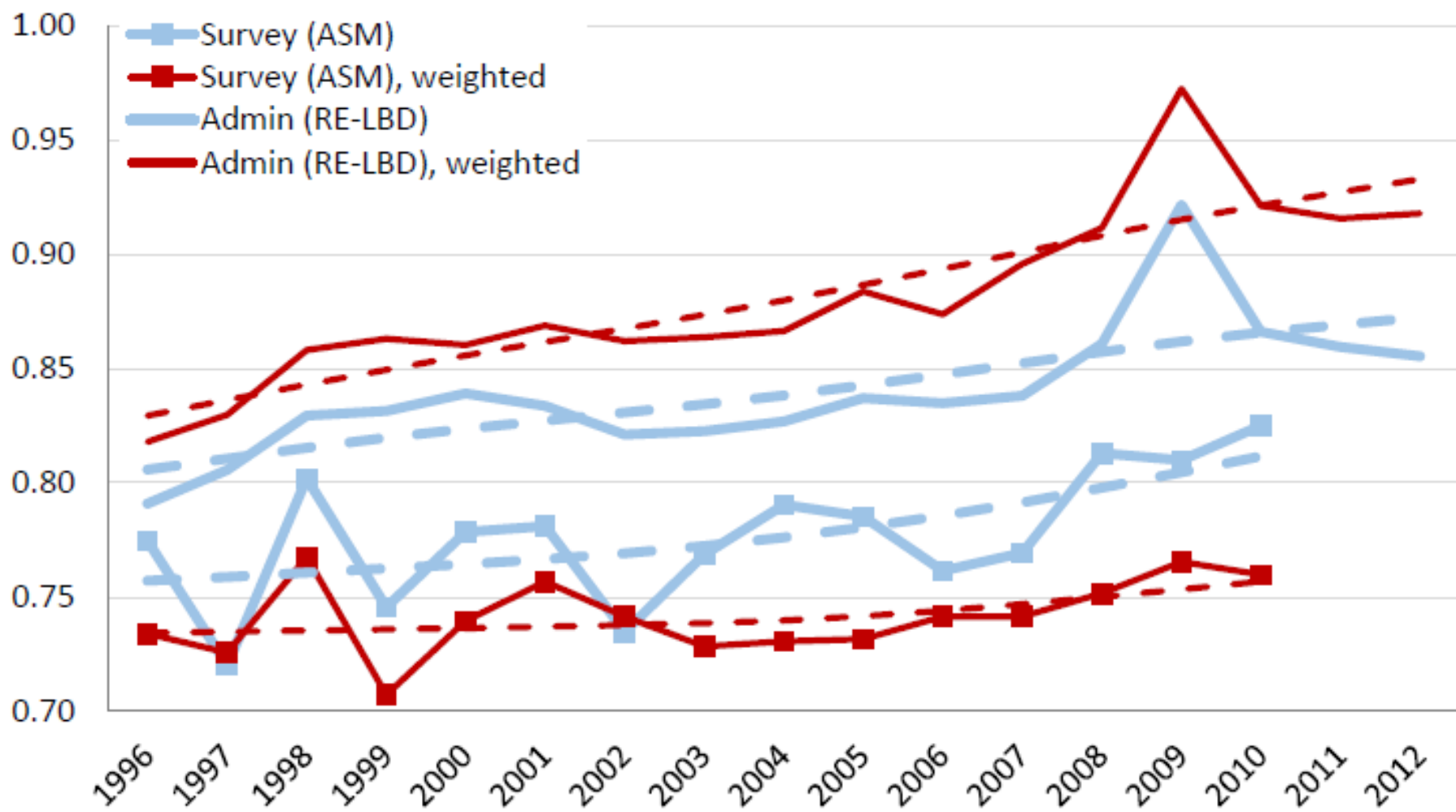
Change in firm-level productivity dispersion 2001-2012 (pooled across 16 OECD countries)



Source: OECD Multiprod, <https://www.oecd.org/sti/ind/multiprod.htm>

Notes: Coefficients on year dummies from regression of 90-10 log(productivity) within an industry-year cell in 16 OECD countries (AUS, AUT, BEL, CHL, DEU, DNK, FIN, FRA, HUN, ITA, JPN, NLD, NOR, NZL, PRT, SWE)

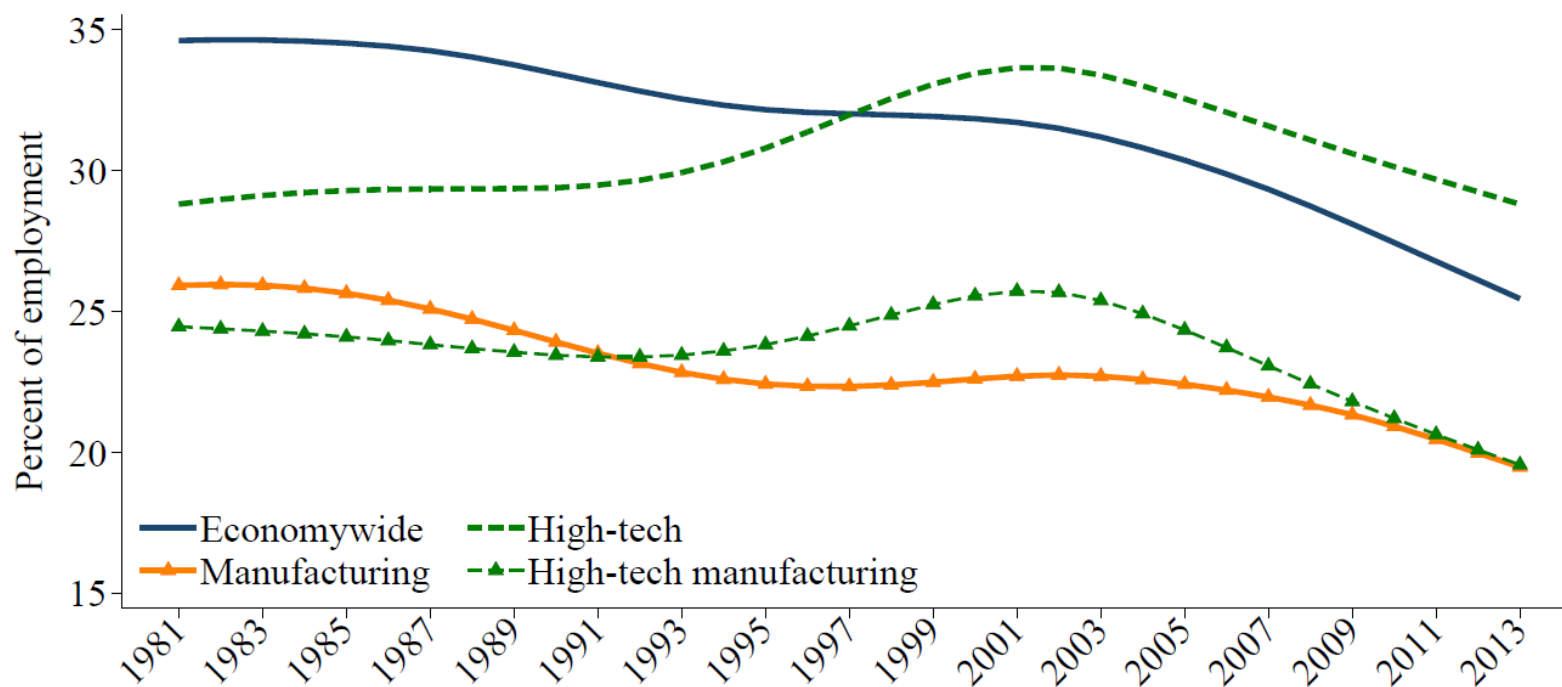
Rising US productivity dispersion (manufacturing)



Source: Decker, Haltiwanger, Jarmin & Miranda (2018, Figure A6)

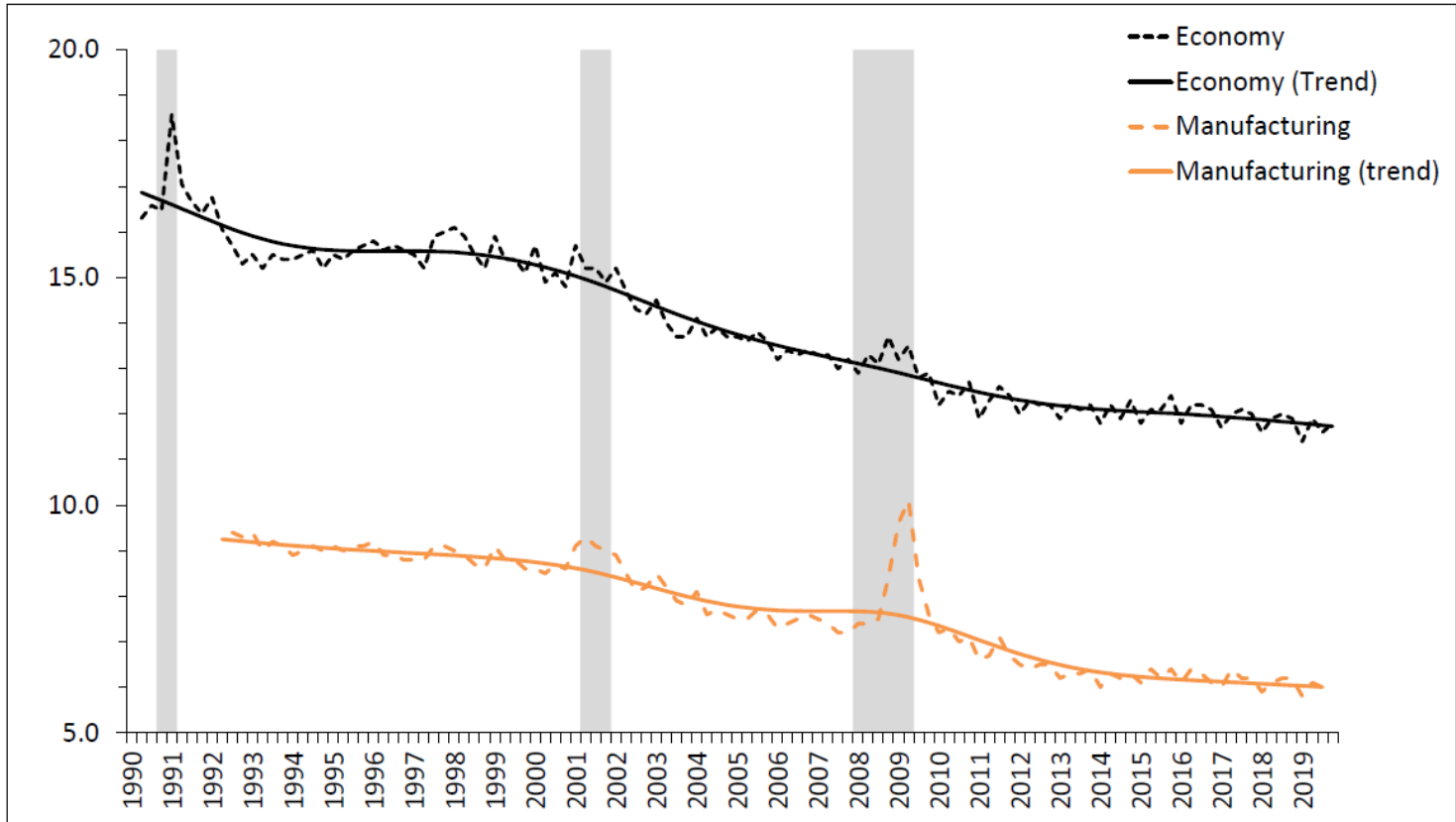
Notes: Standard Deviation of log(real sales/employment) normalized in a NAICS 6 digit industry-year. HP filtered series in dashed lines. LBD is population whereas ASM is corrected for sample selection. Weights are employment weights.

Job Reallocation Declining – Pervasive After 2000



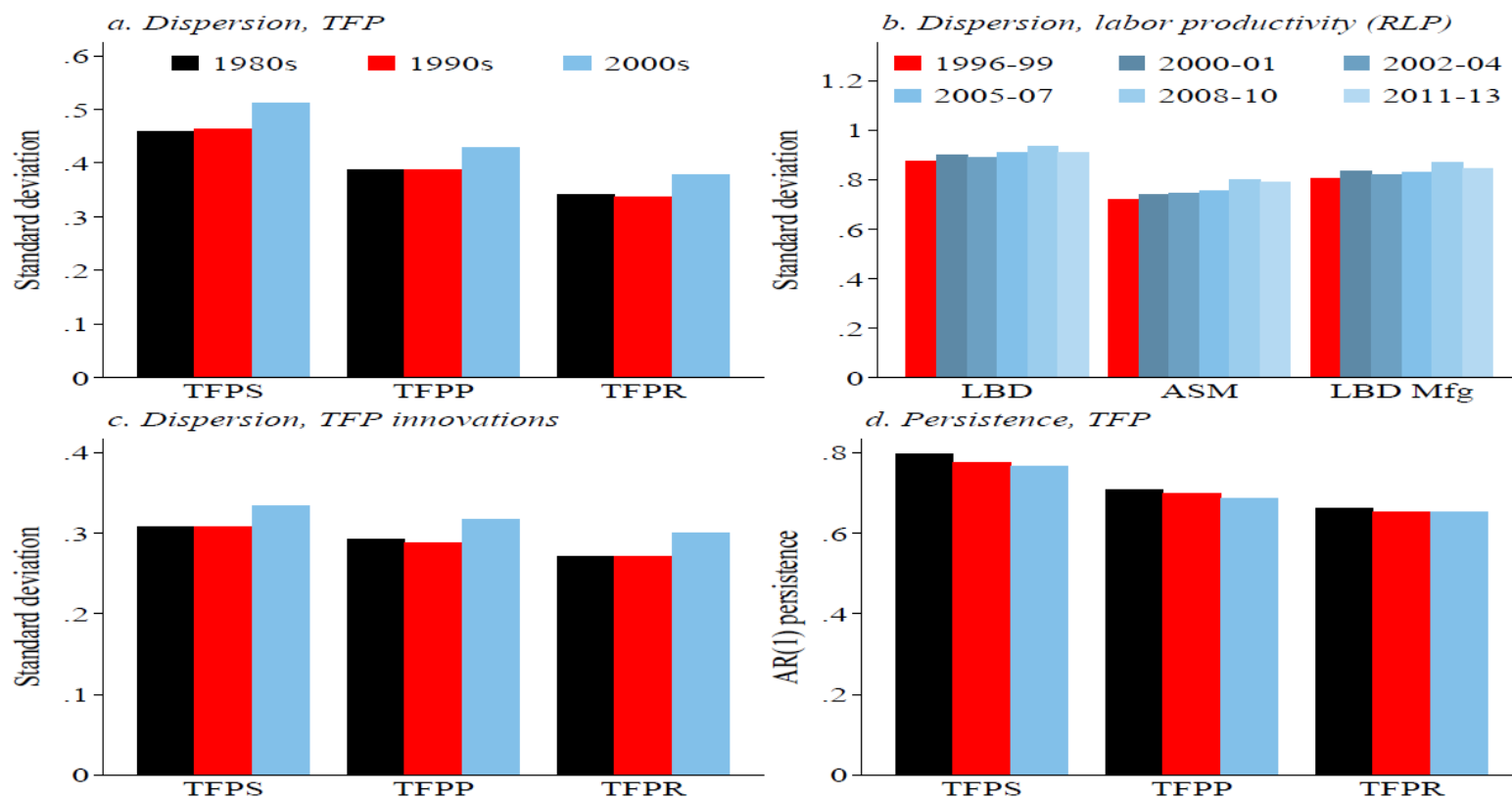
Source: DHJM (2020).

Decline in Job Reallocation Persists through 2019



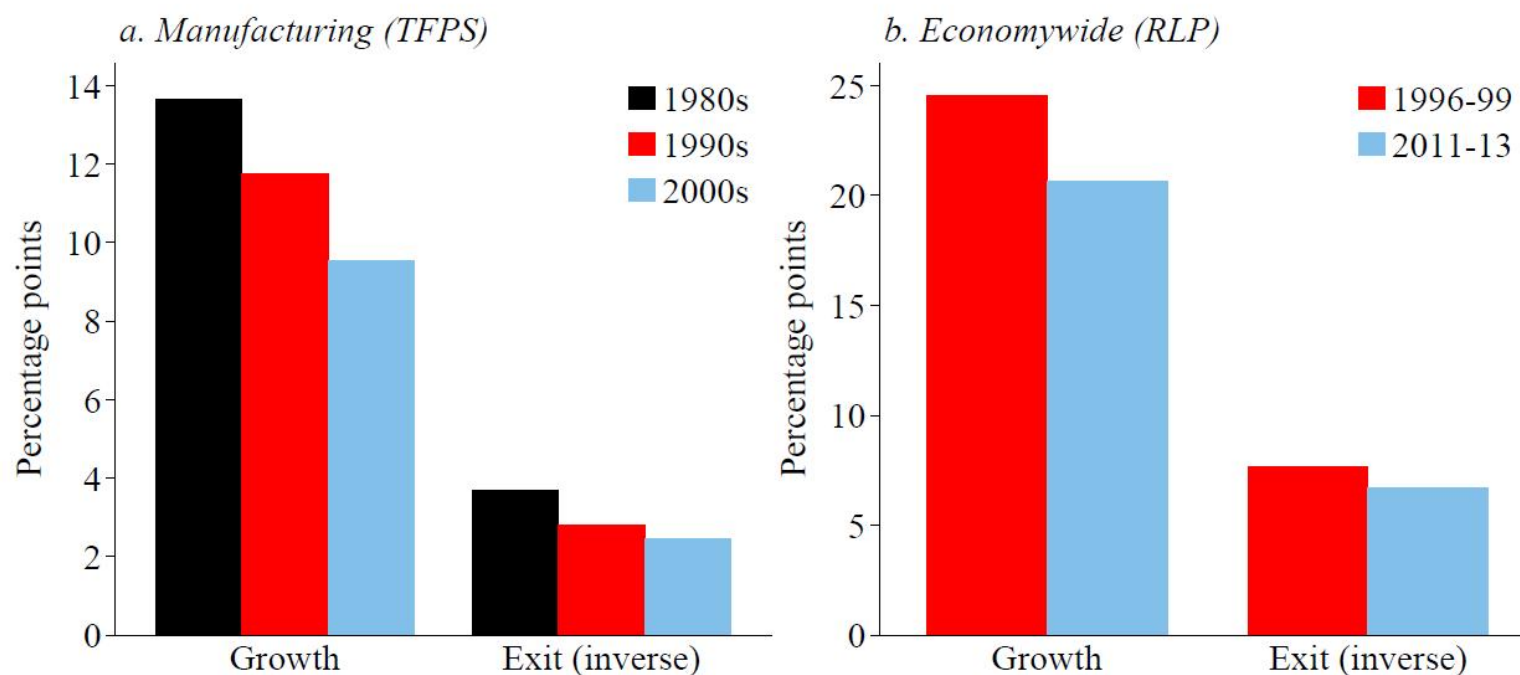
Source: Business Employment Dynamics (BED) for U.S. private and manufacturing sectors (quarterly).

Within-Industry Productivity Dispersion Has Risen



Source: DHJM (2020). TFPS and TFPP are TFP (profit) shocks under CES demand and Cobb-Douglas production.

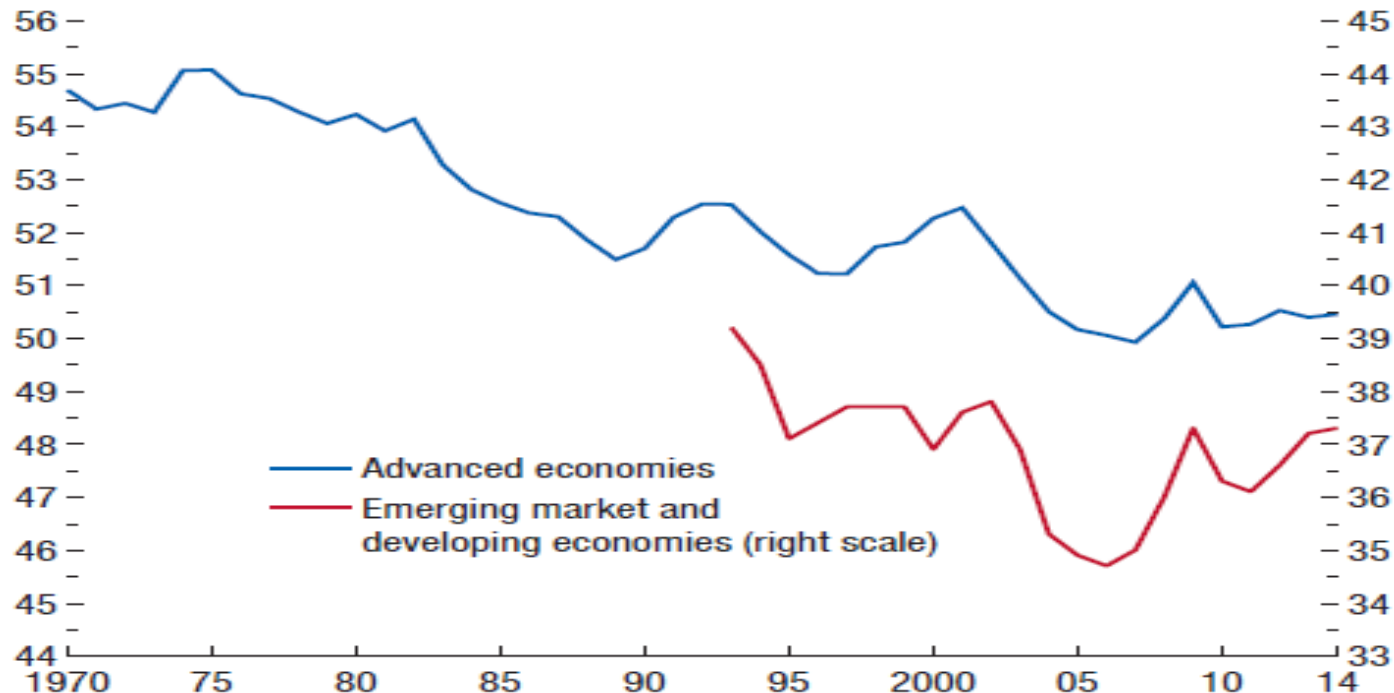
Job Growth and Exit Have Become Less Responsive to Productivity



Source: DHJM (2020).

Figure 3.1. Evolution of the Labor Share of Income
(Percent)

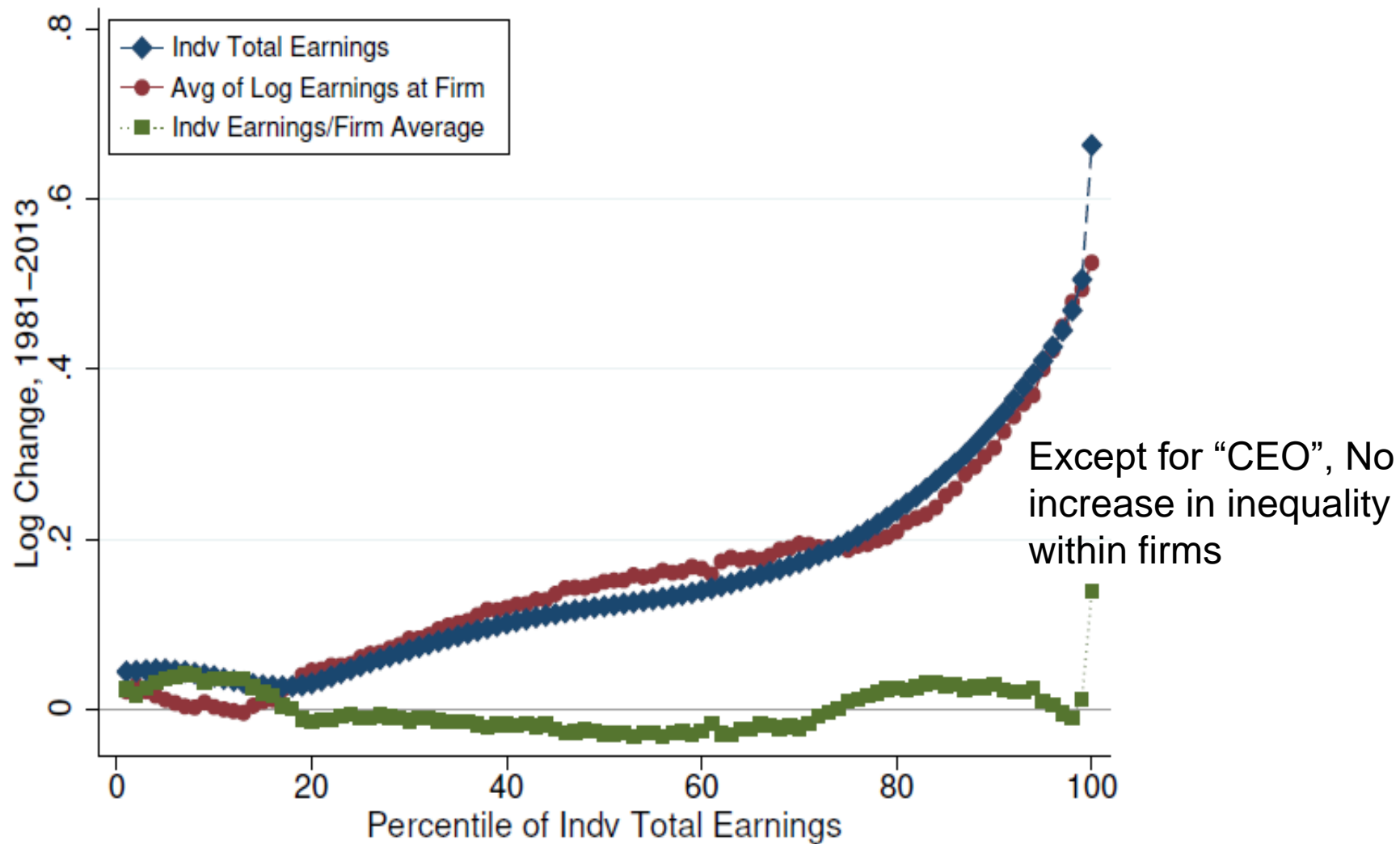
The labor share of income has been on a downward trend in both advanced economies and emerging market and developing economies.



Sources: CEIC database; Karabarbounis and Neiman (2014); national authorities; Organisation for Economic Co-operation and Development; and IMF staff calculations.

Note: For advanced economies the figure shows averages weighted by nominal GDP in current U.S. dollars. For emerging market and developing economies the figure shows year fixed effects weighted least squares regressions (using nominal GDP weights) that also include country fixed effects. Year fixed effects are normalized to reflect the level of the labor share in 2000.

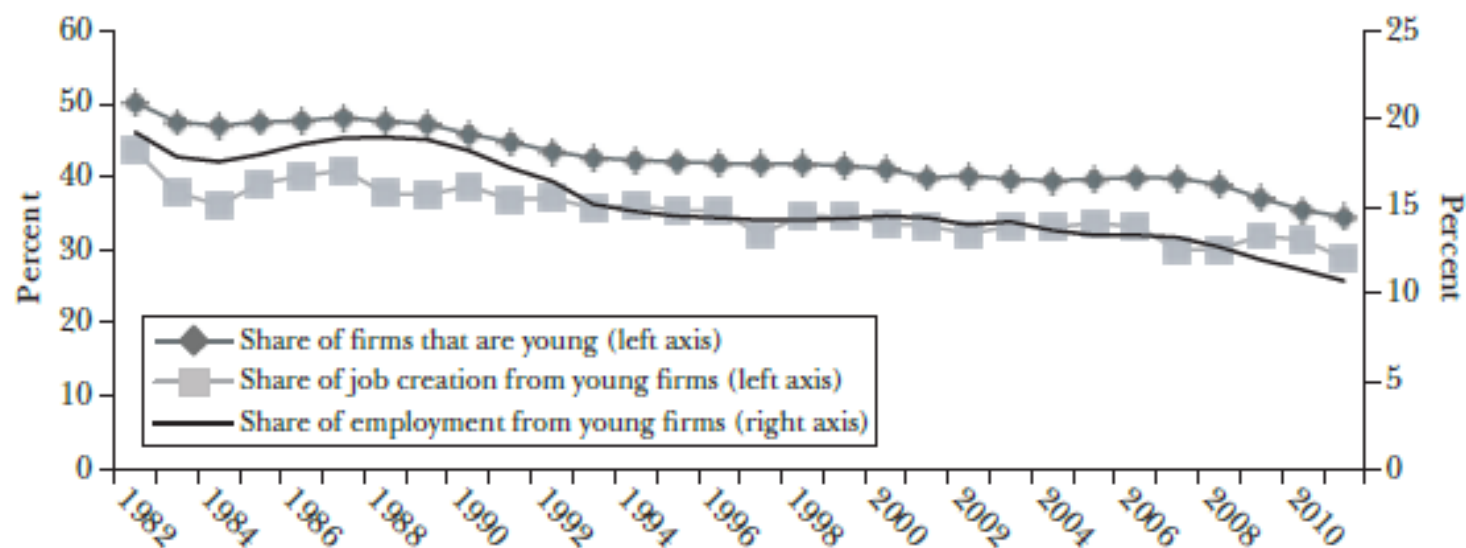
Change in individual US earnings inequality is mainly between firm (rather than within firm), 1981-2013



Source: Song et al (2019, QJE), SSA data

Figure 4

Declining Share of Activity from Young Firms (Firms Age 5 or Less)



Source: Author calculations from the US Census Bureau's Business Dynamics Statistics.

Note: Employment shares in each period based on the average of employment in period $t - 1$ and t (the denominator of the Davis, Haltiwanger, and Schuh (1996) growth rate).