Measuring Market Power in the Macroeconomy

Jan De Loecker — Leuven

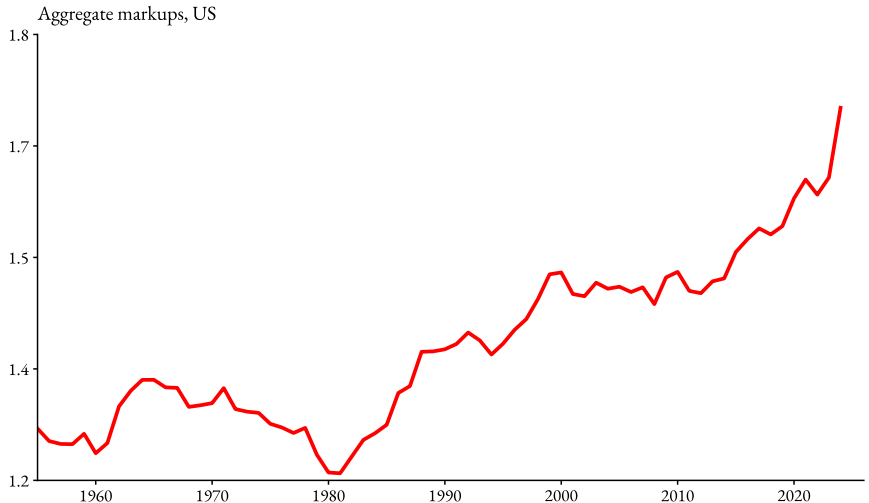
Jan Eeckhout — UPF Barcelona

AMEC Symposium on The Secular Rise in Markups

Federal Reserve Bank *of* New York

October 16, 2026

Is Market Power on the Rise?



Method

- FOC from Cost Minimization wrt variable input V, **firm-specific** markup:

$$\mu_{it} = \theta_{it}^{V} \frac{R_{it}}{P_{it}^{V} V_{it}}$$

  θ_{it}^{V}: output elasticity; $\frac{R_{it}}{P_{it}^{V} V_{it}}$: inverse expenditure share

- Challenge: obtain output elasticities $\rightarrow$ **Production Function Estimation**:

  $\rightarrow$ Endogeneity Bias, Unobserved Price Bias, Heterogeneous Quality

- **Aggregate** weighted Markups:

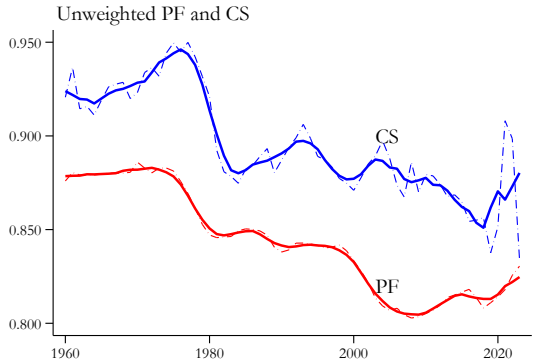
$$\mu_t = \sum_i m_{it} \theta_{it}^{V} \frac{R_{it}}{P_{it}^{V} V_{it}}$$

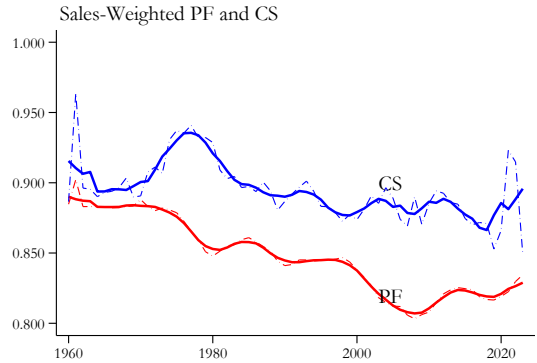
Firm-specific Output Elasticities: Cost Shares

- 'Non-parametric'; Implicit assumptions: CRTS, no fixed costs, all inputs are variable
- But: **firm-specific** elasticity $\Rightarrow$ more firm heterogeneity

Firm-specific Output Elasticities: Cost Shares

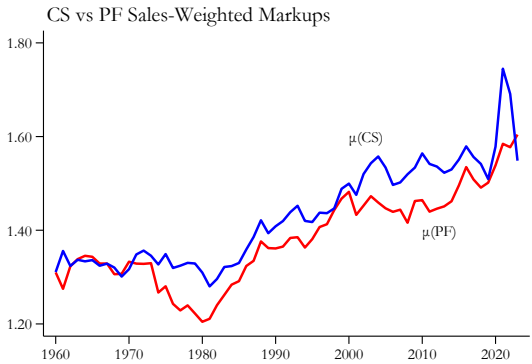
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- But: **firm-specific** elasticity ⇒ more firm heterogeneity

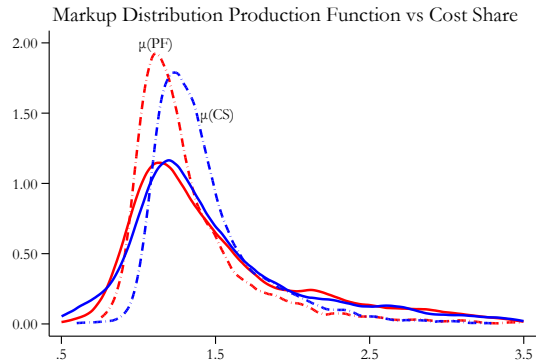




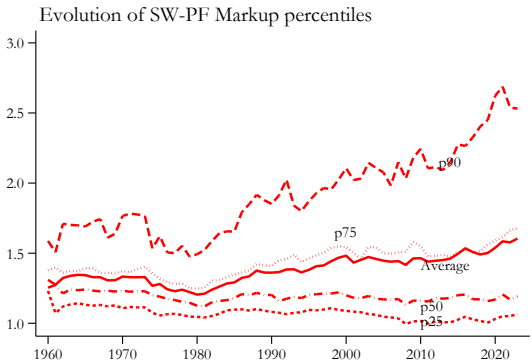
→ Output elasticities are not rising

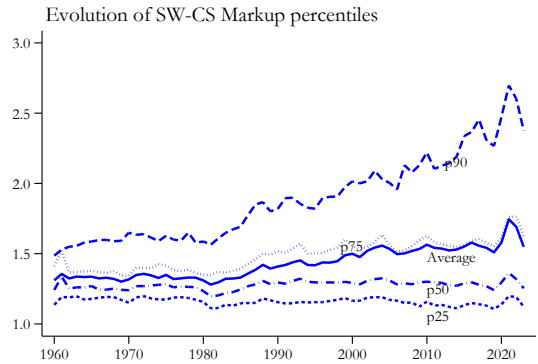
Markups: Production Function vs Cost Shares



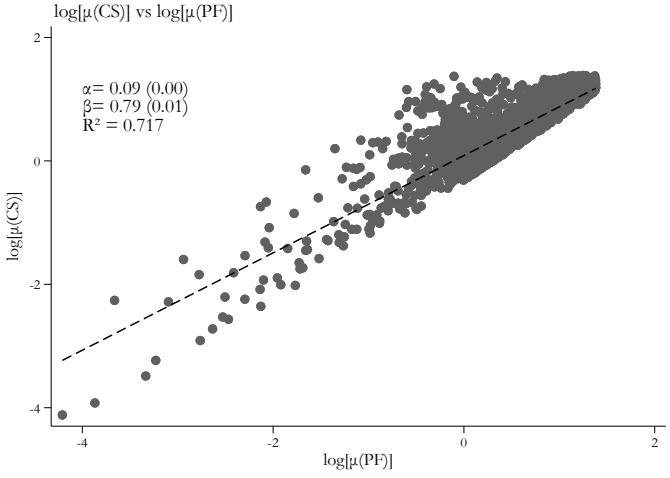


Markups: Production Function vs Cost Shares





Markups: Production Function vs Cost Shares

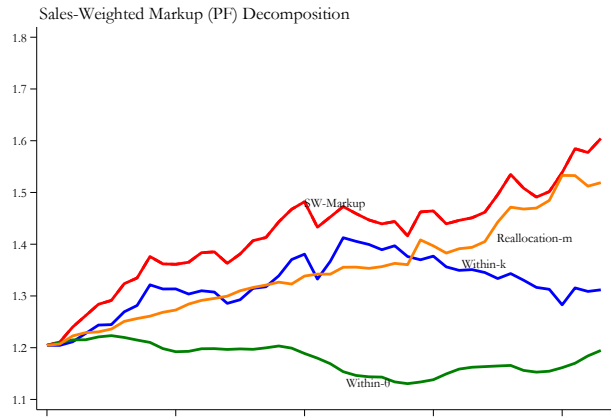


Output Elasticities Don't Contribute to Rise of Markups

$$\mu_t = \sum_i m_{it} \theta_{it}^V \frac{R_{it}}{P_{it}^V V_{it}}$$

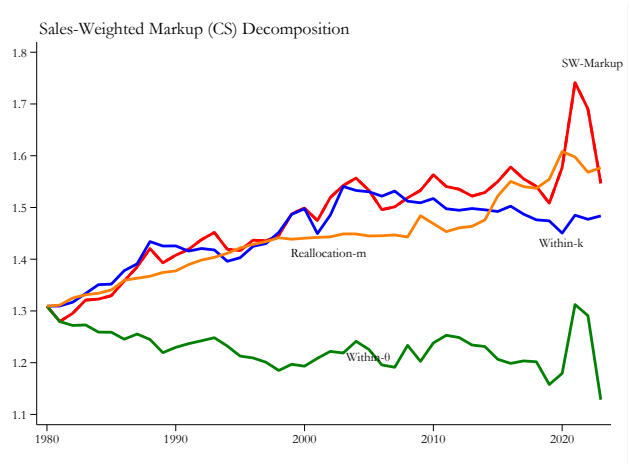
Output Elasticities Don't Contribute to Rise of Markups

$$\mu_t = \sum_i m_{it} \theta_{it}^V \frac{R_{it}}{P_{it}^V V_{it}}$$



Cost Shares Don't Contribute to Rising Markups

$$\mu_t = \sum_i m_{it} \theta_{it}^V \frac{R_{it}}{P_{it}^V V_{it}}$$



Aggregation and Weights

$$\text{Revenue-weighted:} \quad \mu_t^R = \textstyle\sum_i s_{it}\mu_{it} \quad s_{it} = \dfrac{R_{it}}{\sum_i R_{it}}$$

$$\text{Cost-weighted:} \quad \mu_t^C = \textstyle\sum_i c_{it}\mu_{it} \quad c_{it} = \dfrac{P_{it}^V V_{it}}{\sum_i P_{it}^V V_{it}}$$

- Cost-weighted is preferred in macro because of aggregation properties:
  - → ratio sums ($\Rightarrow$ no heterogeneity): $\mu_t^C = \sum_i \dfrac{\cancel{p_{it}^V V_{it}}}{\sum_i p_{it}^V V_{it}} \theta_i^V \dfrac{R_{it}}{\cancel{P_{it}^V V_{it}}} = \theta_t^V \dfrac{\sum_i R_{it}}{\sum_i P_{it}^V V_{it}}$

Aggregation and Weights

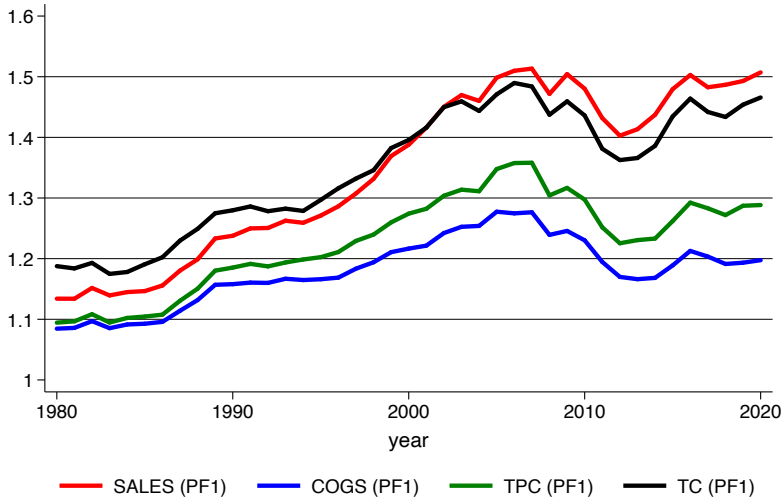
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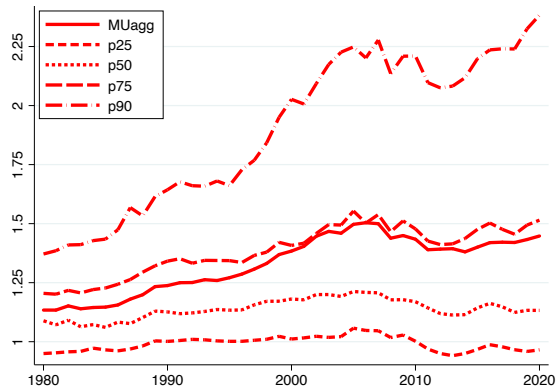
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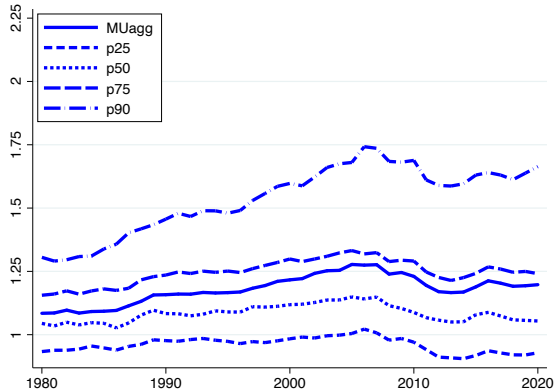
- **Welfare**: not uniquely determined by cost-weighted markup!

Cost-weighted versus Revenue-weighted Markups



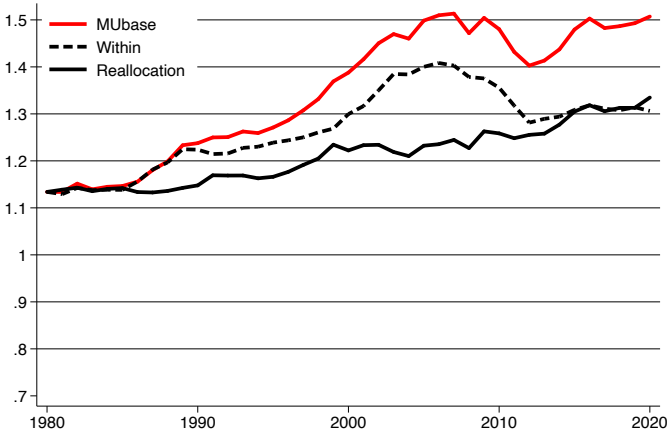
Cost-weighted versus Revenue-weighted Markups



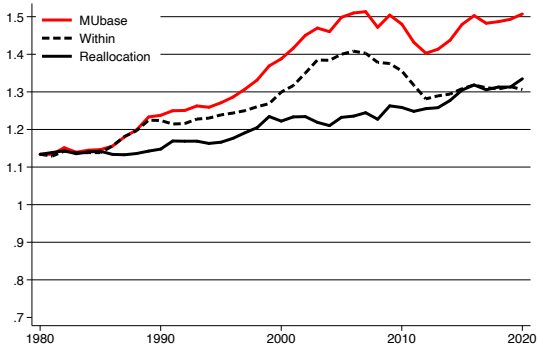


Decomposition: Markups vs Reallocation

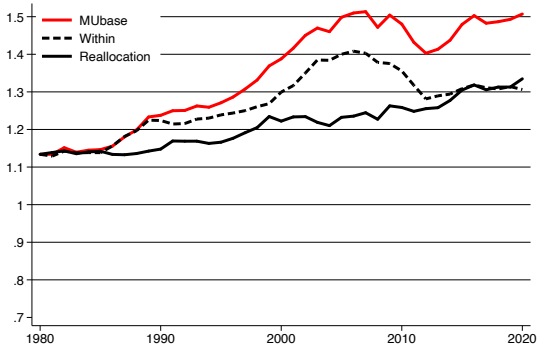
$$\mu_t = \sum_i m_{it}\mu_{it}$$

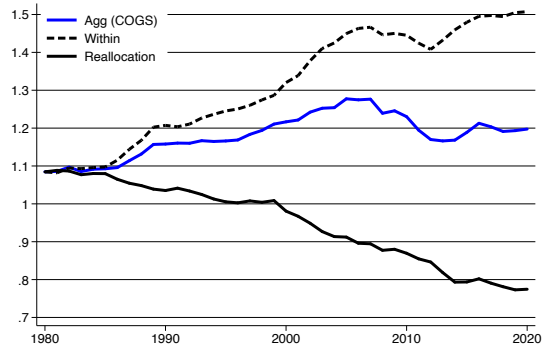


The "McKinsey Effect"



The "McKinsey Effect"





Profit Rates vs Markups

The Profit Rate:

$$\pi_{it} \equiv \frac{R_{it} - TC_{it}}{R_{it}} \equiv 1 - \frac{AC_{it}}{P_{it}} \equiv 1 - \frac{1}{\mu_{it}} \frac{AC_{it}}{MC_{it}}$$

When $AC_{it} = MC_{it}$ (CRTS, no overhead):

$$\pi_{it} = 1 - \frac{1}{\mu_{it}}$$

But **NOT** in aggregate (even if $AC_{it} = MC_{it}$):

$$\pi_t = \sum_i m_{it} \pi_{it} \neq 1 - \frac{1}{\mu_t}$$

$$\pi_t \neq 1 - \frac{1}{\mu_t}$$

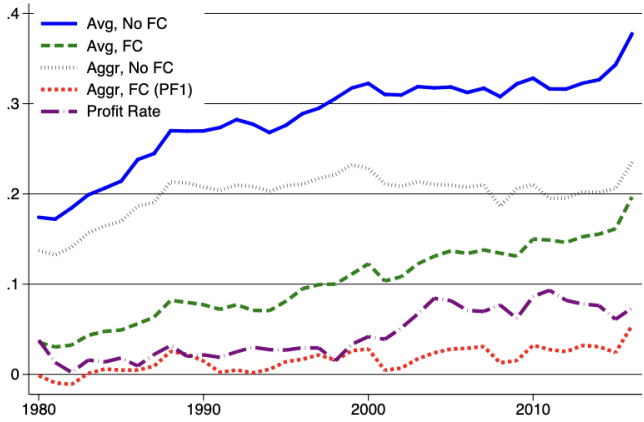
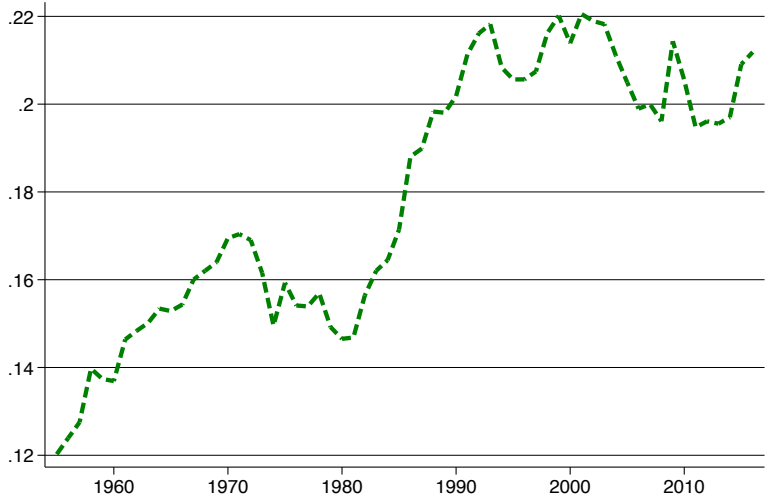
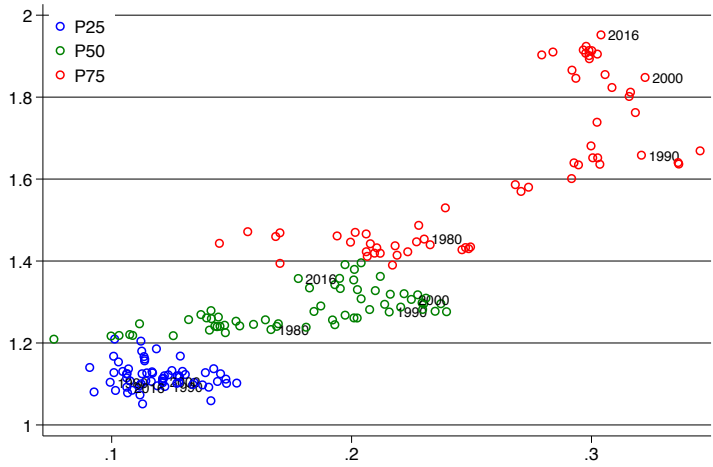


FIGURE XI

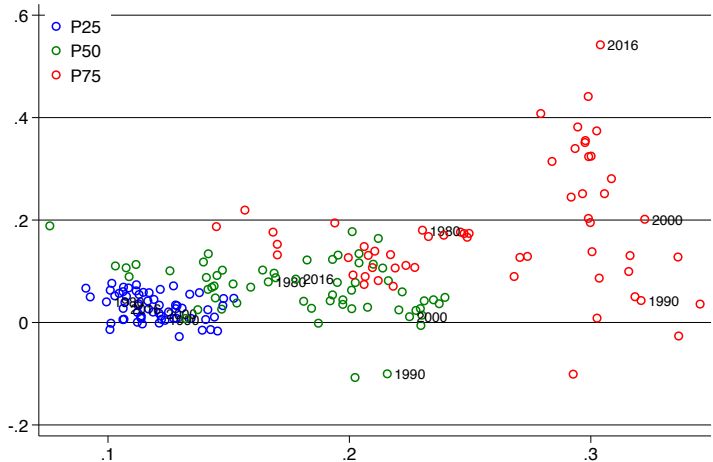
Technology: Overhead



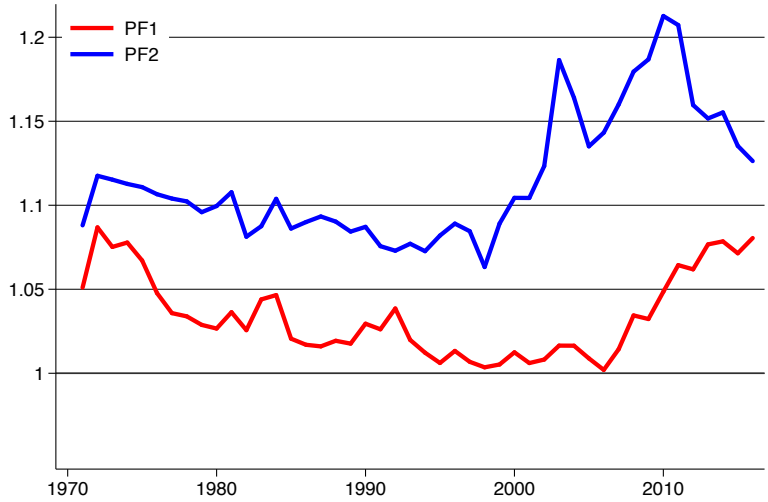
Technology: Overhead and Markups



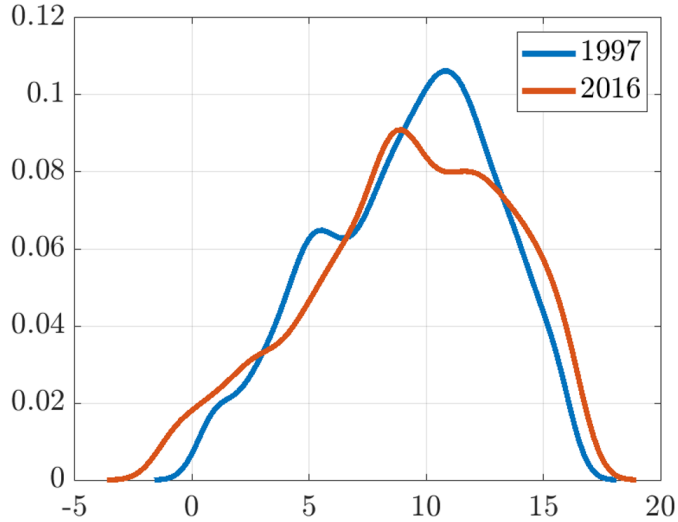
Technology: Overhead and Profits



Technology: Returns to Scale

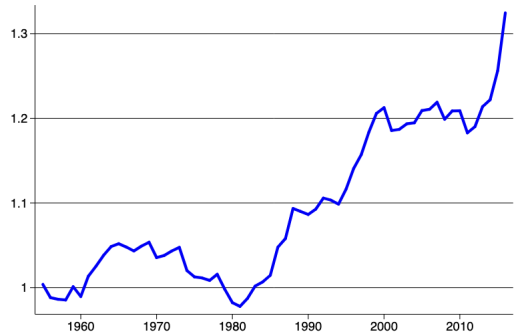


Productivity Dispersion: Census Data

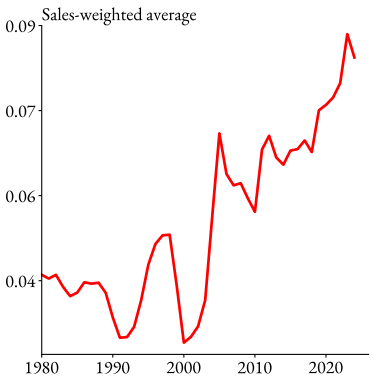


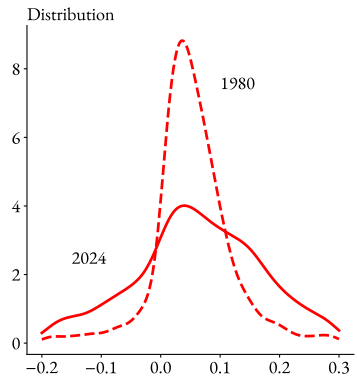
Production Function & Choice of the Variable Inputs

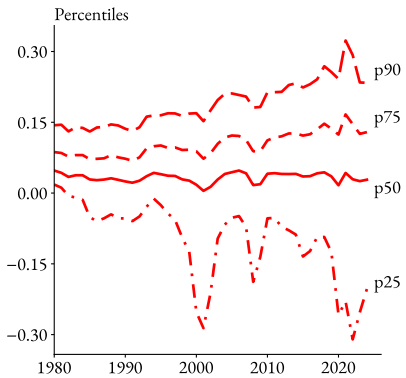
- $Q(V_{it}, K_{it}, X_{it})$, where $p_{it}^X X_{it}$ is overhead (SGA)
- Level and increase of markup depends on production function!



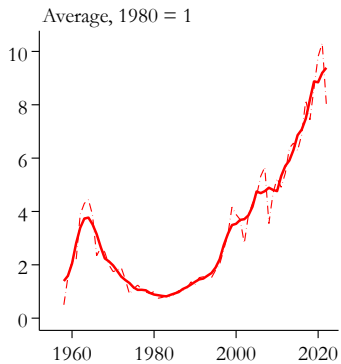
Profit Rate

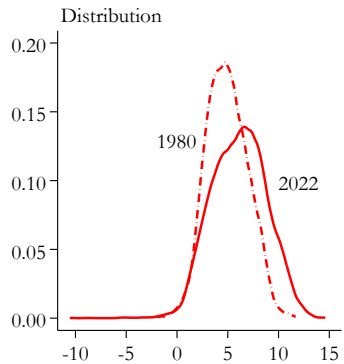

Sales-weighted average
0.09
0.07
0.06
0.04
1980
1990
2000
2010
2020

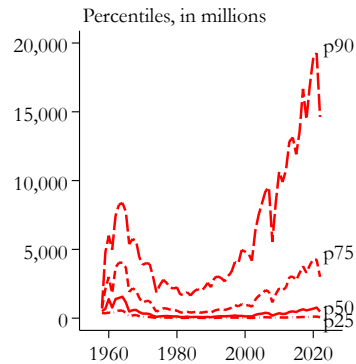

Distribution
1980
2024
8
6
4
2
0
−0.2
−0.1
0.0
0.1
0.2
0.3


Percentiles
0.30
0.15
0.00
−0.15
−0.30
p90
p75
p50
p25
1980
1990
2000
2010
2020

Market Value of Firms



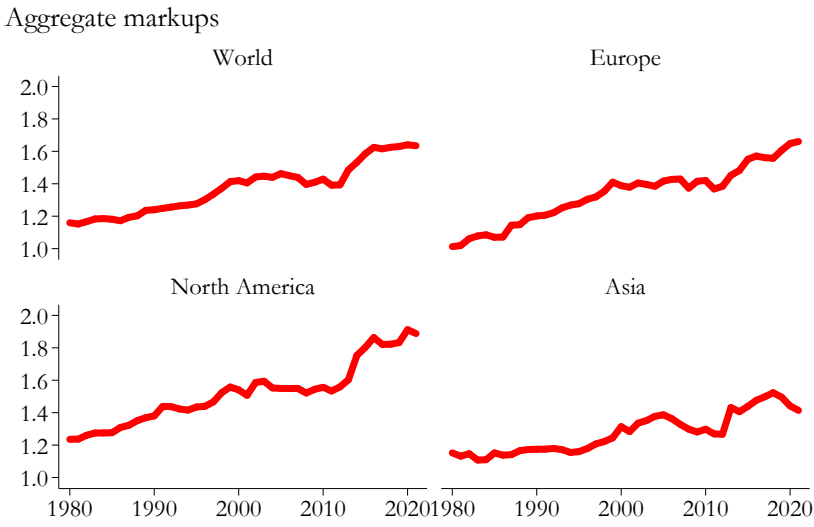




Top 7 of Publicly Traded Firms 2024–2025

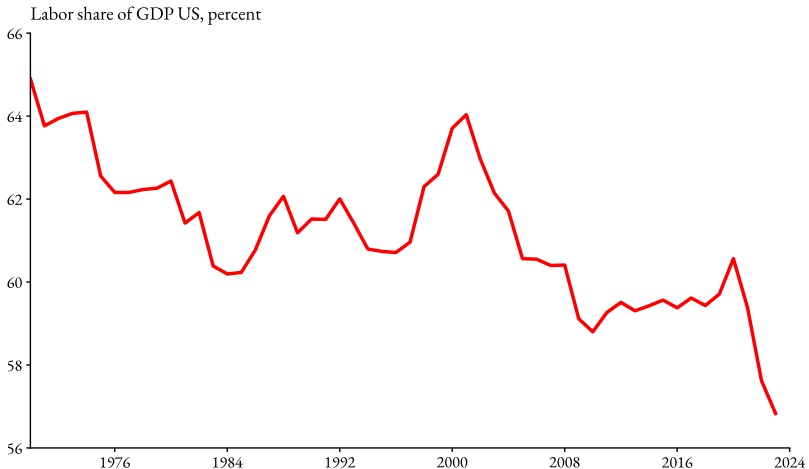
		Market Value		Profits		Market Value Increase	
		trillion $	Share	trillion $	Share	trillion $	Share
1	Apple	3.785	4.98%	0.094	3.07%	0.91	6.53%
2	Nvidia	3.289	4.32%	0.073	2.39%	2.09	14.98%
3	Microsoft	3.134	4.12%	0.088	2.89%	0.37	2.69%
4	Amazon	2.307	3.03%	0.059	1.94%	0.77	5.50%
5	Tesla	1.296	1.70%	0.007	0.23%	0.50	3.60%
6	Meta	1.276	1.68%	0.062	2.05%	0.51	3.64%
7	Alphabet	1.106	1.45%	0.100	3.28%	0.29	2.08%
Total		16.193	**21.28%**	0.484	**15.86%**	5.470	**39.03%**

A Global Phenomenon



Labor Share

Karabarbounis-Neiman



Labor Share: Technology vs Market Power?

The New York Times https://www.nytimes.com/2026/09/07/opinion/labor-capitol-workers-income.html

GUEST ESSAY

Why Labor's Share of Wealth Is Shrinking

Sept. 7, 2026

Listen · 6:22 min

By Brent Neiman
Mr. Neiman is a professor of economics at the University of Chicago.

That may be the wrong solution, because it's not rising market power, but new technology — A.I. being the latest example — that is probably the most important force reducing the labor share. Breaking up big companies won't help restore labor's share and may not help workers at all. Designing policies for a change this significant requires understanding the real cause.

Labor Share: Technology vs Market Power?

$$\underbrace{\frac{WL}{Y}}_{\text{Labor share}} + \underbrace{\frac{rK}{Y}}_{\text{Capital share}} + \underbrace{\frac{\Pi}{Y}}_{\text{Profit share}} = 1$$

Labor Share: Technology vs Market Power?

$$\underbrace{\frac{WL}{Y}}_{\text{Labor share}} + \underbrace{\frac{rK}{Y}}_{\text{Capital share}} + \underbrace{\frac{\Pi}{Y}}_{\text{Profit share}} = 1$$

	Output shares			Cost shares	
	Labor	Capital	Profit	Labor	Capital
	$\frac{WL}{Y}$	$\frac{rK}{Y}$	$\frac{\Pi}{Y}$	$\frac{WL}{wL+rK}$	$\frac{rK}{wL+rK}$
1980	0.65	0.33	0.02	0.66	0.34
2024	0.58	0.32	0.10	0.65	0.35

Labor Share: Technology vs Market Power?

$$\underbrace{\frac{WL}{Y}}_{\text{Labor share}} + \underbrace{\frac{rK}{Y}}_{\text{Capital share}} + \underbrace{\frac{\Pi}{Y}}_{\text{Profit share}} = 1$$

	Output shares			Cost shares	
	Labor	Capital	Profit	Labor	Capital
	$\frac{WL}{Y}$	$\frac{rK}{Y}$	$\frac{\Pi}{Y}$	$\frac{WL}{wL+rK}$	$\frac{rK}{wL+rK}$
1980	0.65	0.33	0.02	0.66	0.34
2024	0.58	0.32	0.10	0.65	0.35
Mismeasured Capital: How much?					
2024	0.58	**0.40**	0.02	0.59	**0.41**

Sample Selection

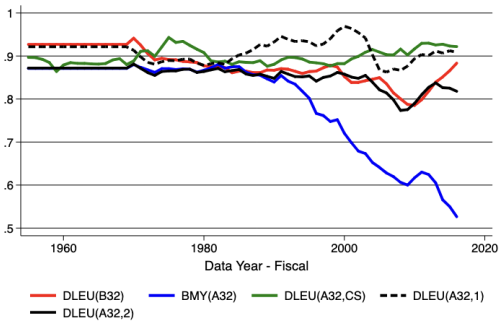
Benkard, Miller, Yorukoglu (2025): sample selection affects the results

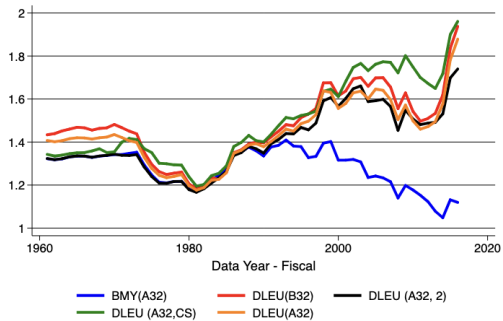
Table 2: Assessing Robustness of DLEU (2020)

Output elasticity specification	Sample A	Sample B	Sample C	Sample D
Calibrated ($\theta = 0.85$)	✓	✓	✓	✓
QJE (2020): PFsector	✓	✓	✓	✓
QJE (2020): PF sector-time	✓	✓	✓	✓
Re-estimated: PF sector	✓	✓	✓	✓
Re-estimated: PF sector-time	✗	✓	✗	✓
Re-estimated: Cost-share sector-time	✓	✓	✓	✓

Notes: ✓indicates that headline markup trend is robust, and if in color red it indicates it is part of the original DLEU analysis, while green indicates it was part of De Loecker and Eeckhout (2017) where essentially sample A was used (no requirement to observe SGA) and an industry-specific translog production function specification was used to effectively generate time-varying production functions, and similar patterns were found (see Appendix A and B in De Loecker and Eeckhout (2017) for the sample size and the aggregate markup pattern for sample A). We only engage with the aggregate trend, for more analysis on the distribution, see the original DLEU article.

Sample Selection





Sample Selection

- Driven by Biotech firms in NAICS 3254 (Pharmaceutical & Medicine Manufacturing)
  1. Close to **zero sales**
  2. **Small share** of sample sales (3% of NAICS 3254); large number of firms ($\sim$ 200)
  3. Change over time: did not exist before 1990
- **Production approach** to estimating output elasticities:
  1. Zeros on the left (revenue is orders of magnitude smaller than cost)
  2. Production function estimation: **no weighing**: Pfizer same weight as biotech startup
  3. **Cost shares** yield usual output elasticities: need no revenue

$\rightarrow$ **Biotech** with no sales have a **different production technology** (like Finance)

Summary

1. **Rise of Markups** **NOT** driven by Output Elasticities
   - → by expenditure shares and reallocation
2. **Firm-level** markup (level and change) depends on technology
   - → is overhead an input?
3. **Aggregate** markup depends on **weight**:
   - → revenue vs. variable cost vs. total cost $\Rightarrow$ Reallocation
4. **Welfare**: Same cost-weighted aggregate markup $\not\Rightarrow$ same welfare

→ Market power is **multifaceted**, each facet adds information

Summary

1. **Rise of Markups** **NOT** driven by Output Elasticities
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→ Market power is **multifaceted**, each facet adds information

"Markup estimates have issues" $\Longrightarrow$ "Let me show all aspects of market power"

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Jan De Loecker — Leuven

Jan Eeckhout — UPF Barcelona

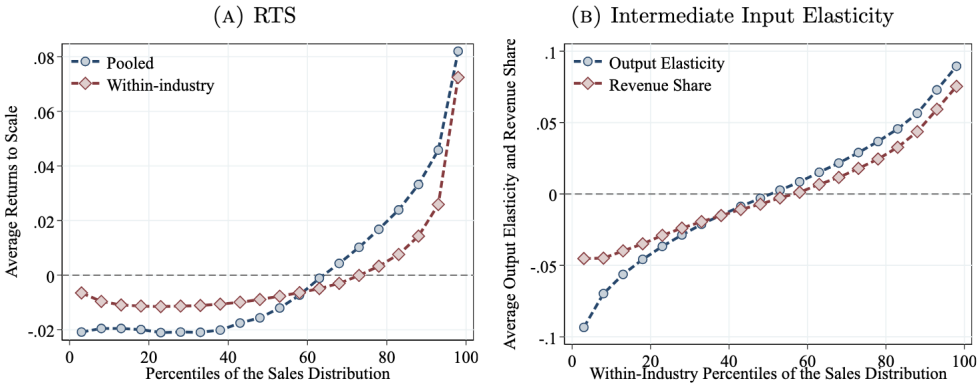
AMEC Symposium on The Secular Rise in Markups

Federal Reserve Bank *of* New York

October 16, 2026

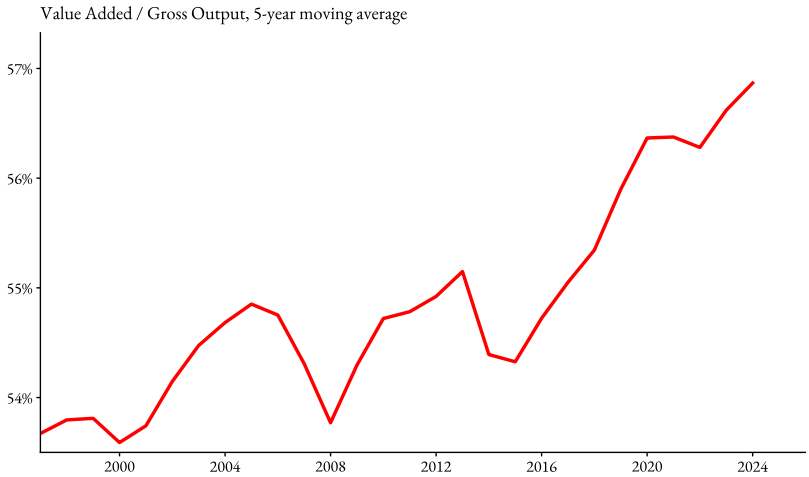
Technology: Firm-specific Returns to Scale

FIGURE 2 – RTS AND INTERMEDIATE INPUT ELASTICITY INCREASE WITH FIRM SIZE

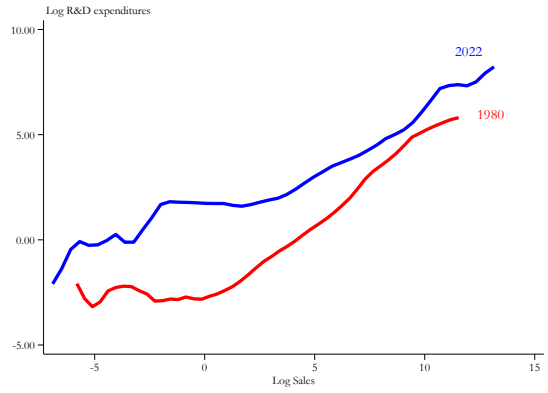


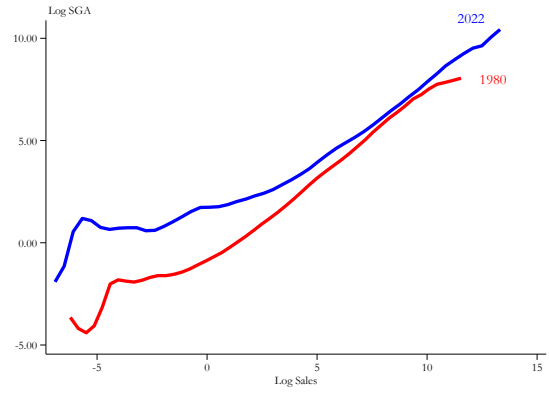
From: Hubmer, Chan, Ozkan, Salgado, Hong (2025)

Aggregate Outsourcing

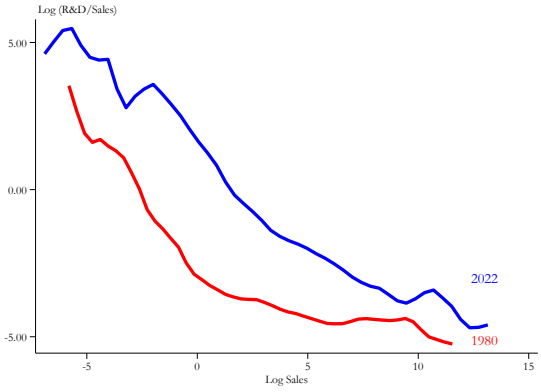


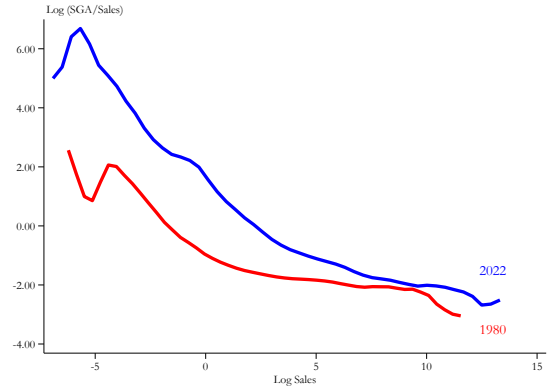
Innovation


Log R&D expenditures
10.00
5.00
0.00
-5.00
-5
0
5
10
15
Log Sales
2022
1980


Log SGA
10.00
5.00
0.00
-5.00
-5
0
5
10
15
Log Sales
2022
1980

Innovation


Log (R&D/Sales)
5.00
0.00
-5.00
-5
0
5
10
15
Log Sales
2022
1980


Log (SGA/Sales)
6.00
4.00
2.00
0.00
-2.00
-4.00
-5
0
5
10
15
Log Sales
2022
1980

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Jan De Loecker — Leuven

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AMEC Symposium on The Secular Rise in Markups

Federal Reserve Bank *of* New York

October 16, 2026