Fading Stars

Germán Gutiérrez and Thomas Philippon

NYU, NBER, CEPR

July 2019

The Big Puzzles

- Productivity
    - "Innovation" has never been so fast
    - ... but actual US productivity growth has never been so slow

- Concentration
    - Superstar interpretation: Good news. (Autor et al., 2017)
    - Market power interpretation: Bad news. (Furman, 2015; Grullon et al., 2019; Gutiérrez and Philippon, 2017)

- "Common wisdom": stars of the new economy are pulling away, driven by fast productivity growth
    - Really?

Defining the Stars

- Top 20 firms by market value in any given year (Top 20).
  - Economy-wide stars (public firms only)
  - GM, GE... IBM ... Microsoft & Walmart ... Google, Amazon and Facebook

- Top 4 firms within each ~3-digit industry (Top 4*Ind).
  - Industry composition by number of firms is constant
  - By market value of equity (public firms only)
 - By sales (including private firms after 1992)

Introduction
○○

Footprint
●○

Hulten
○○○

Reallocation
○○○○

Fading Stars
○○○○○○

Appendix
○○○○○○○
○○○○○○

References

Employment

Employees over Civilian Employment
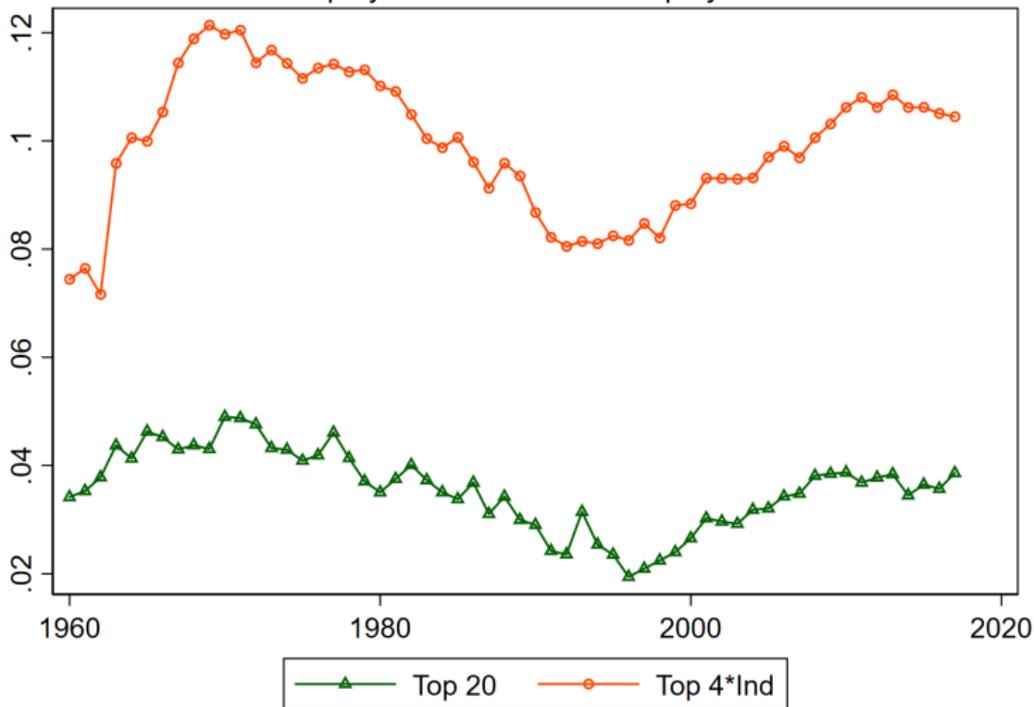
Sales

Sales over GDP
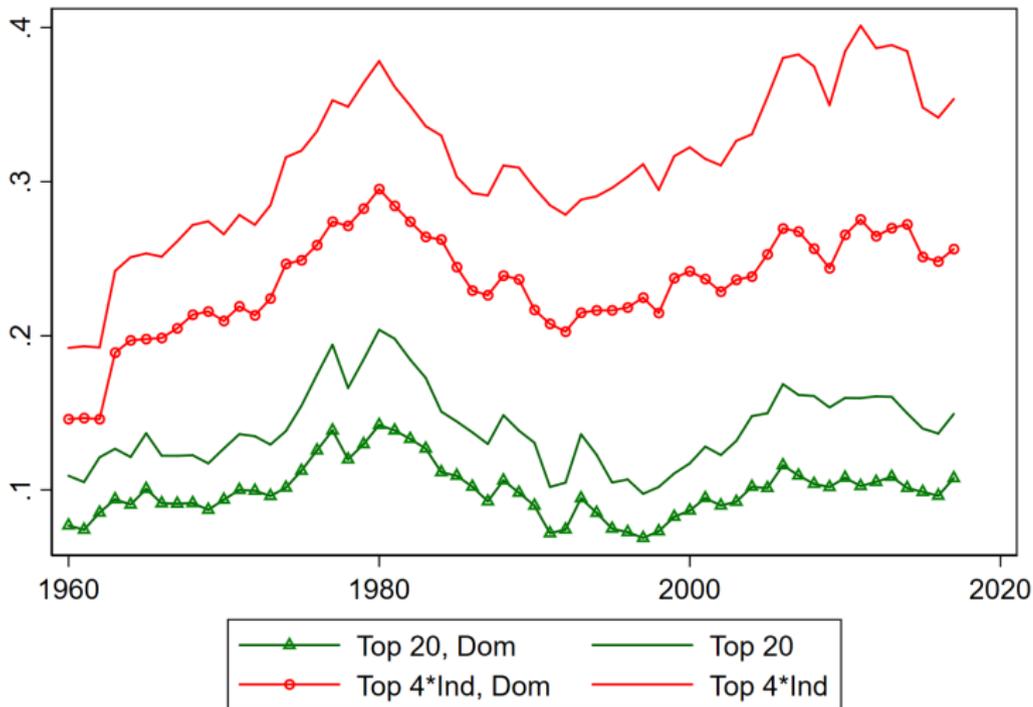
Hulten Contribution

$$g_t^{h*} \equiv \sum_{i \in S_t} \omega_{i,t} g_{i,t,t+3}^z$$

National Stars

Hulten Contribution, Top 20

Notes: Excludes Oil industries

Introduction
○○

Footprint
○○

Hulten
○○●

Reallocation
○○○○

Fading Stars
○○○○○○

Appendix
○○○○○○○
○○○○○○
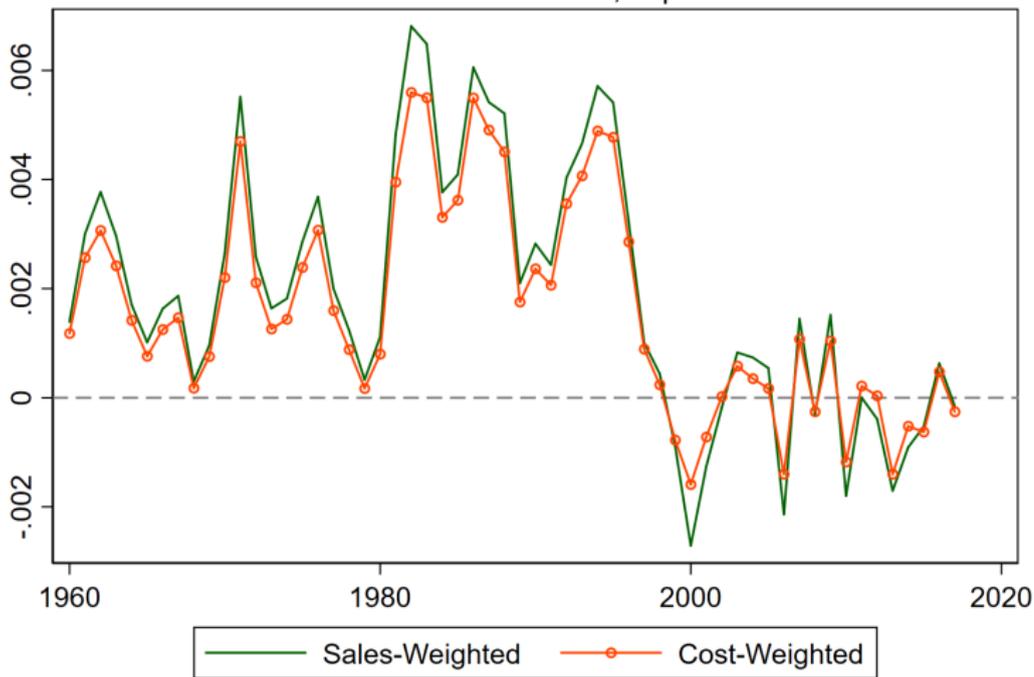
References

Industry Stars
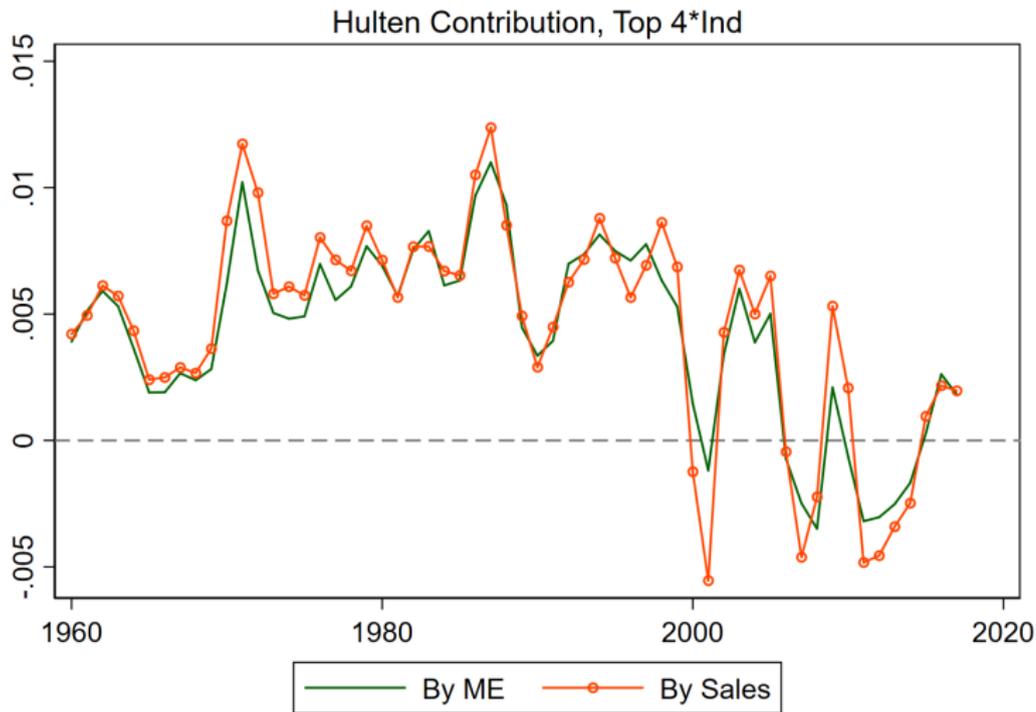
Notes: Excludes Oil industries

Reallocation Contribution

$$g_t^{r*,fwd} \equiv \sum_{i \in S_t} \left(z_{i,t} - \bar{z}_{I,t} \right) g_{i,t,t+3}^n$$

Introduction
○○

Footprint
○○

Hulten
○○○

Reallocation
○●○○

Fading Stars
○○○○○○

Appendix
○○○○○○○
○○○○○○

References

Different Benchmarks

Four Measures of Reallocation Among Top 4*Ind

Legend:
- BEA sector
- BEA Ind, wage-adj
- BEA sector, wage-adjusted
- Compustat
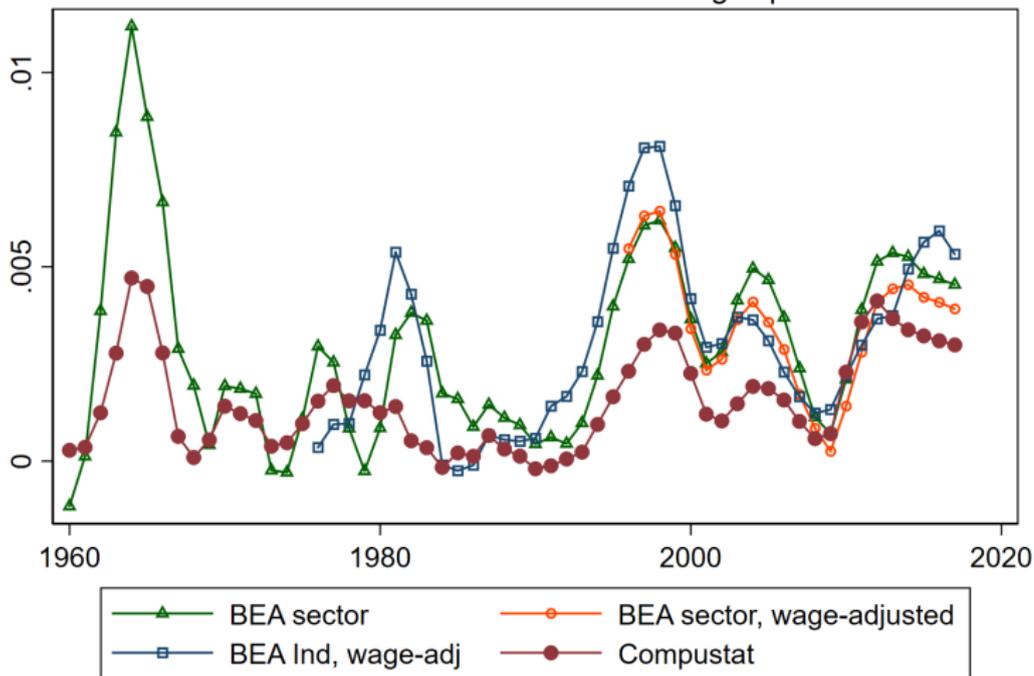
Notes: Excludes Oil industries

Reallocation

Productive Reallocation

Legend: Top 20, Top 4*Ind, Top 4*Ind, by Sales

Notes: Excludes Oil industries

Introduction
○○

Footprint
○○

Hulten
○○○

Reallocation
○○○●

Fading Stars
○○○○○○

Appendix
○○○○○○○
○○○○○○
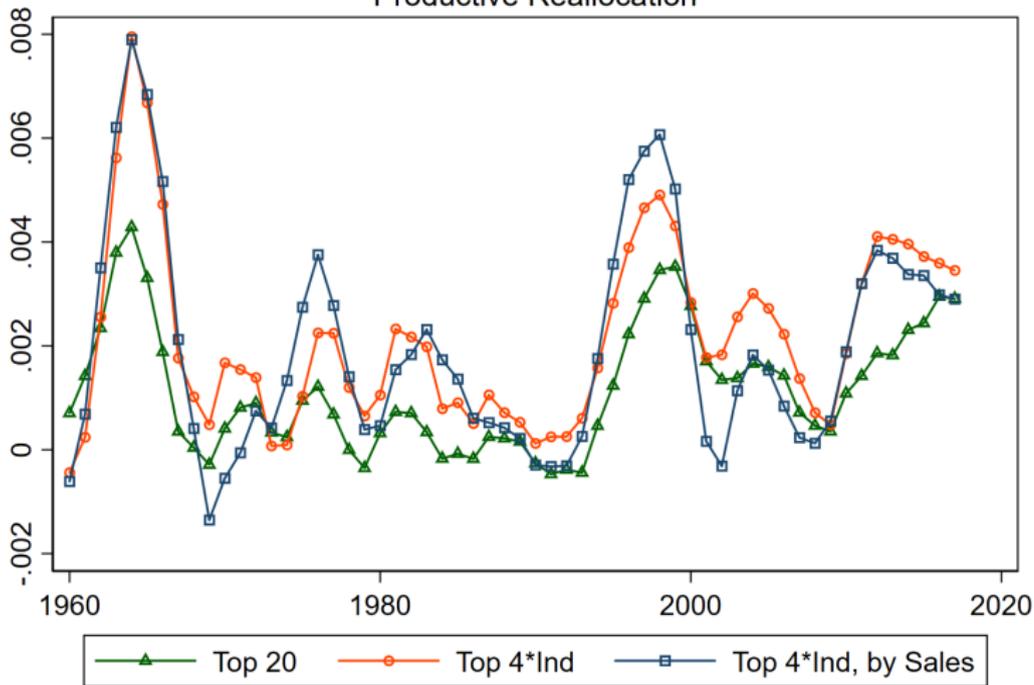
References

Reallocation, Forward vs. Backward-looking

- Perhaps the new firms contribute by **becoming stars faster**?

$$g_t^{r*,bwd} \equiv \sum_{i \in S_t} \left(z_{i,t-3} - \bar{z}_{l,t-3} \right) g_{i,t-3,t}^n$$
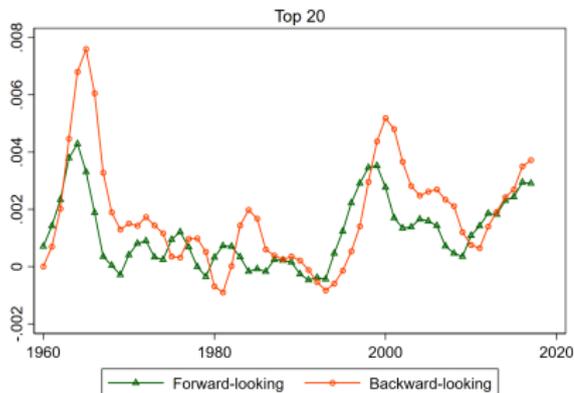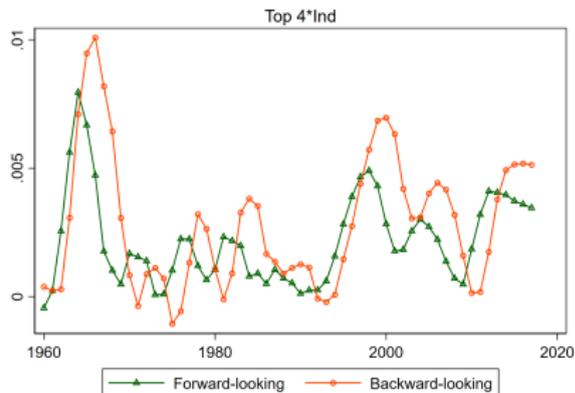
Notes: Excludes Oil industries

Three Facts

1. The economic footprint of the stars has not increased.

2. The Hulten contribution of the stars has dropped from about 50 basis point per year to zero since 2000.

3. The reallocation contribution of stars increased modestly starting in the late 1990s.

Fading Stars

Contribution of Stars to Labor Productivity Growth
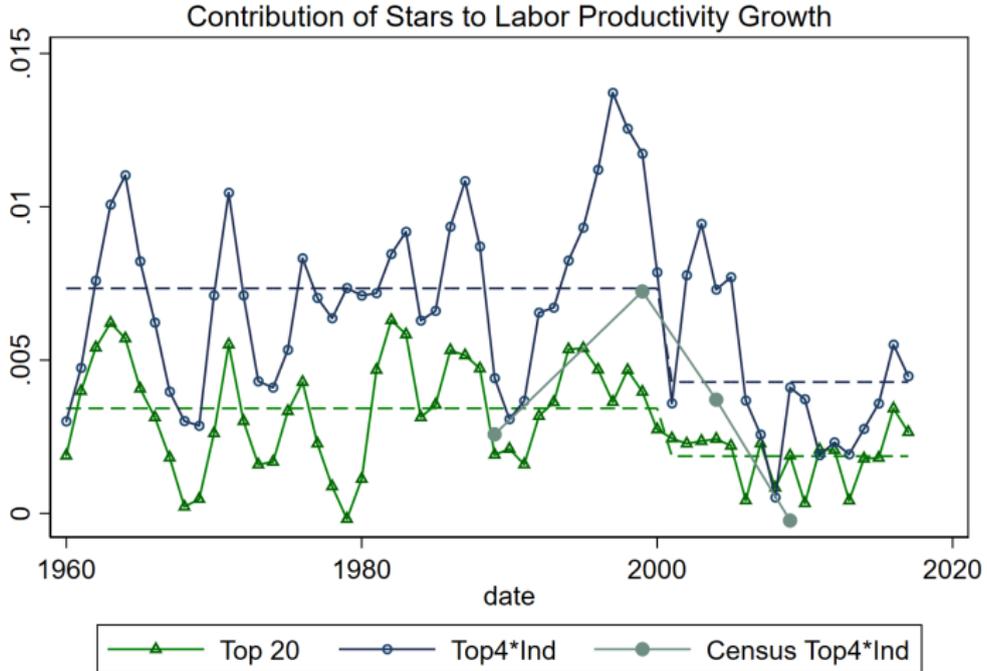
Notes: Excludes Oil industries

Aggregate Productivity

Contribution of Industry Stars vs. Aggregate Labor Productivity Growth

Legend: Top4*Ind, Fernald DLP, Fernald - Top4*Ind
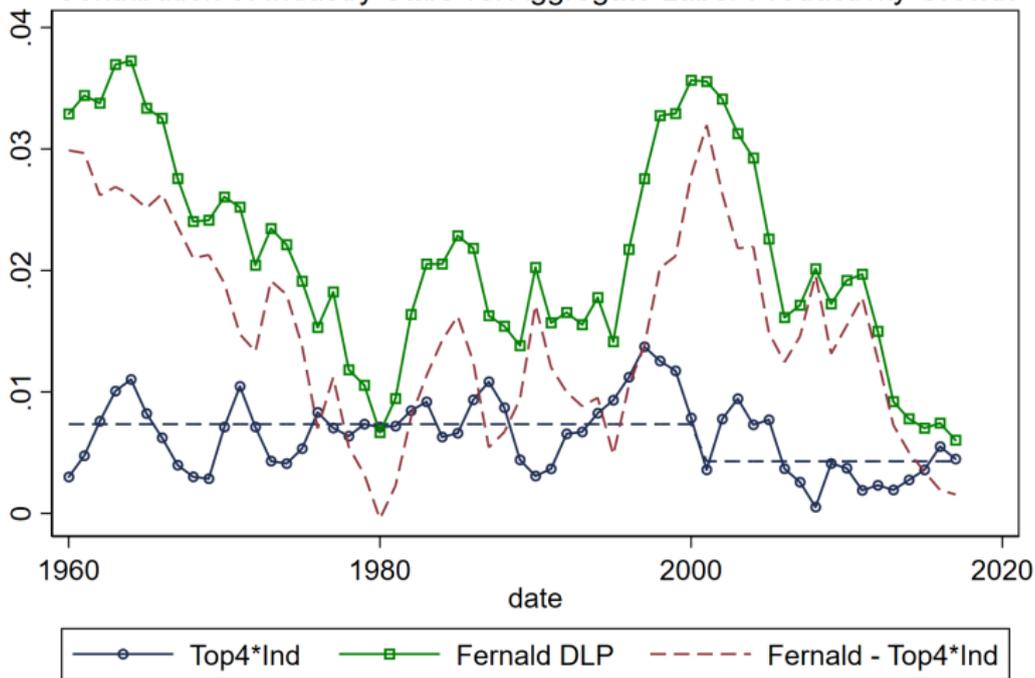
Notes: Excludes Oil industries

Conclusion I

- Frontier firms != Superstar Firms

- What to make of rising concentration? Trade-offs:
    - Productivity gains from reallocation ✔
    - More innovation (Schumpeter Effect) ✘
    - Market Power (higher profits, lower investment,...)?

- Pre vs. post-2000?

Conclusion II: Concentration, TFP, Prices and Markups

	$\Delta_5 \log(TFP)$		$\Delta_5 \log(P)$		$\Delta_5 \log(\mu)$	
	(1)	(2)	(3)	(4)	(5)	(6)
	Pre-00	Post-00	Pre-00	Post-00	Pre-00	Post-00
$\Delta_5 log(CR4^{IA})$	0.186*	-0.044	-0.093	0.077	-0.102*	0.116+
	(0.070)	(0.051)	(0.069)	(0.088)	(0.047)	(0.064)
Cons	0.016	0.025**	0.074**	0.097**	0.048**	0.045**
	(0.013)	(0.009)	(0.013)	(0.010)	(0.012)	(0.011)
Year FE	Y	Y	Y	Y	Y	Y
R^2	.12	.1	.048	.07	.041	.082
Observations	94	141	94	141	94	141

Source: Covarrubias et al. (2019), based on BLS multifactor tables and Compustat. 5Y non-overlapping changes up to 1999 and from 2000 onwards. Similar results using census data and more granular industries.

The End

Thank You!

Relative Labor Productivity of Stars


Real Sales per Employee (Stars vs BEA Average)

Legend: Top 20 (green, triangles); Top 4*Ind (orange, circles)

Back
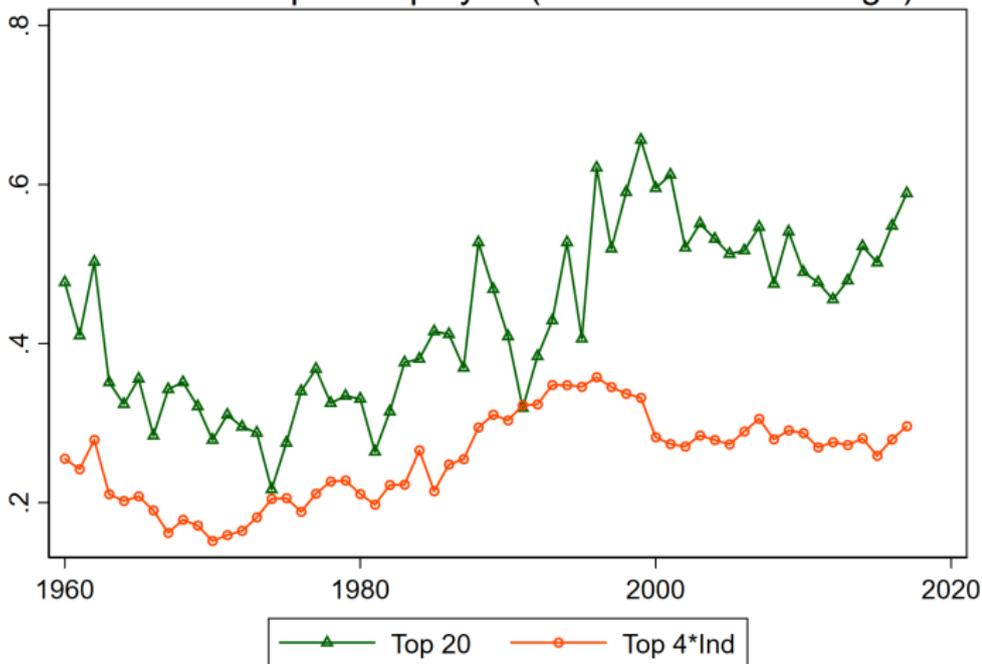
Profits of the Stars

Profit Margin (OIADP/SALE)
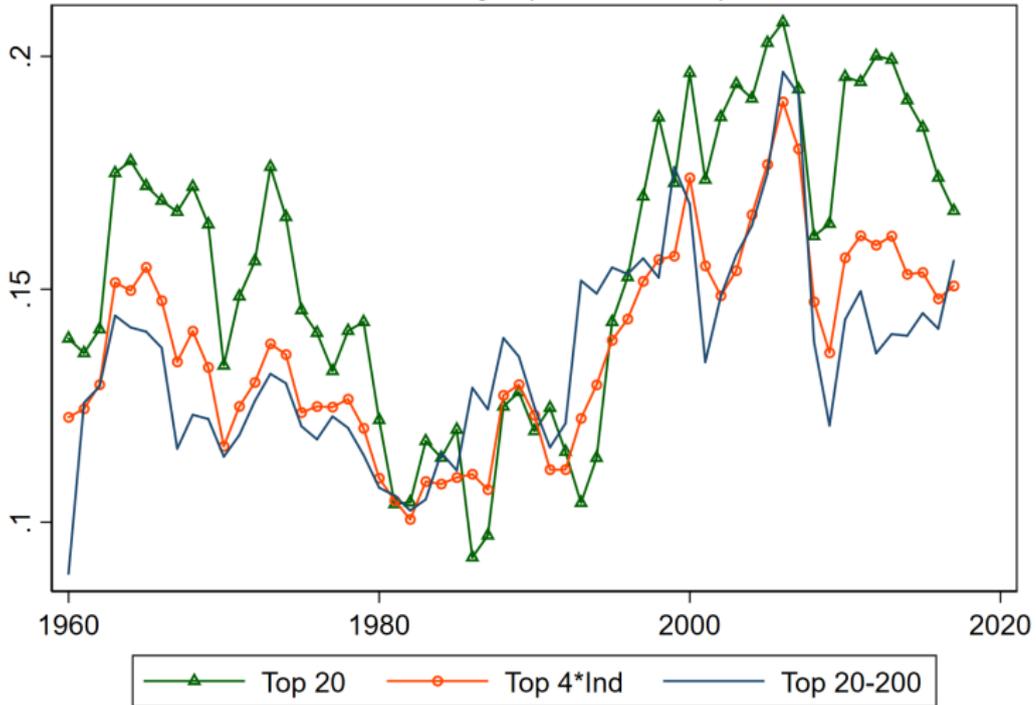
Impact of Oil Shocks

Effect of Oil on Reallocation, Top 4*Ind
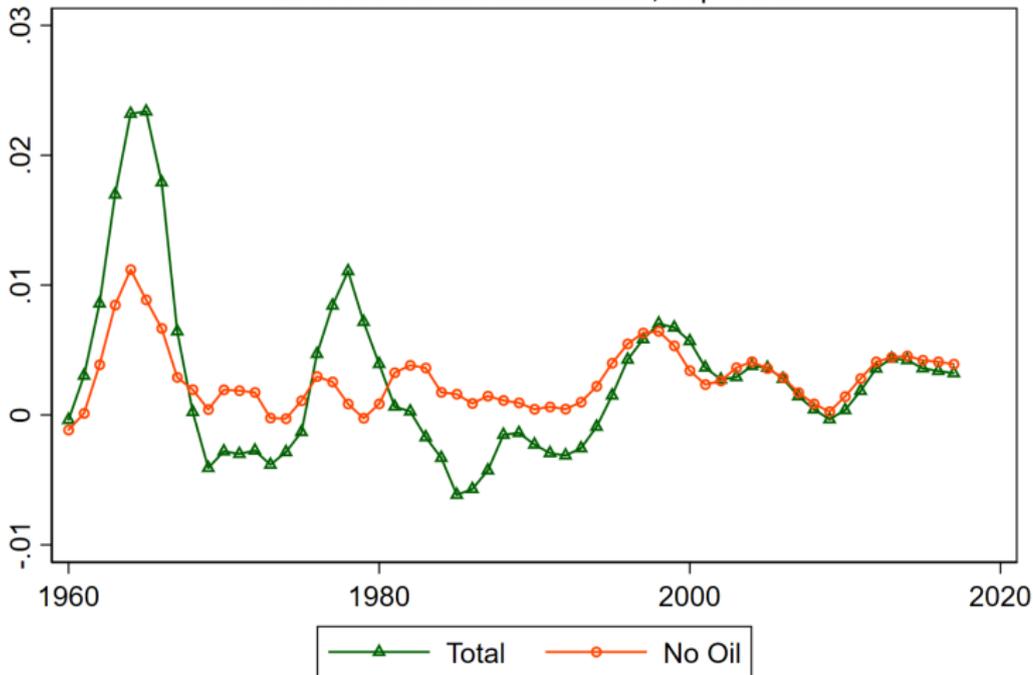
Note: BEA-based with wage adjustment

Note: BEA-based with wage adjustment

Relative Wages

Weighted Average Wage
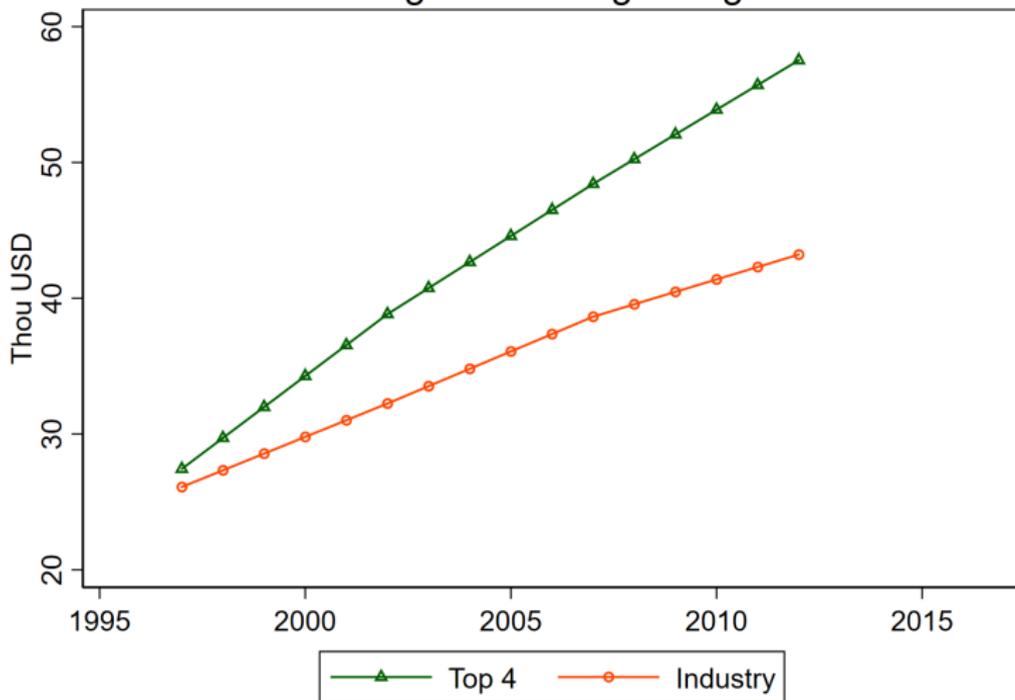
Outsourcing?

Foreign Affiliate Share of MNE Employment
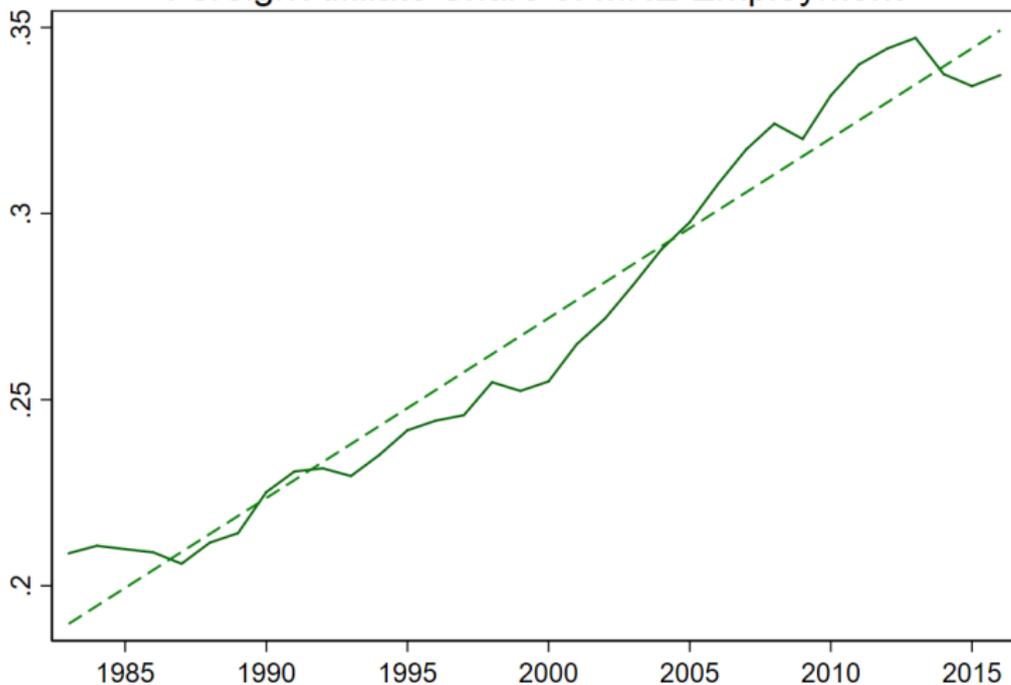
Source: BEA MNE Accounts

Compustat vs. Census: Reconciliation

Contribution of Stars to Labor Productivity Growth (Sales-Rank)

Source: BEA MNE Accounts
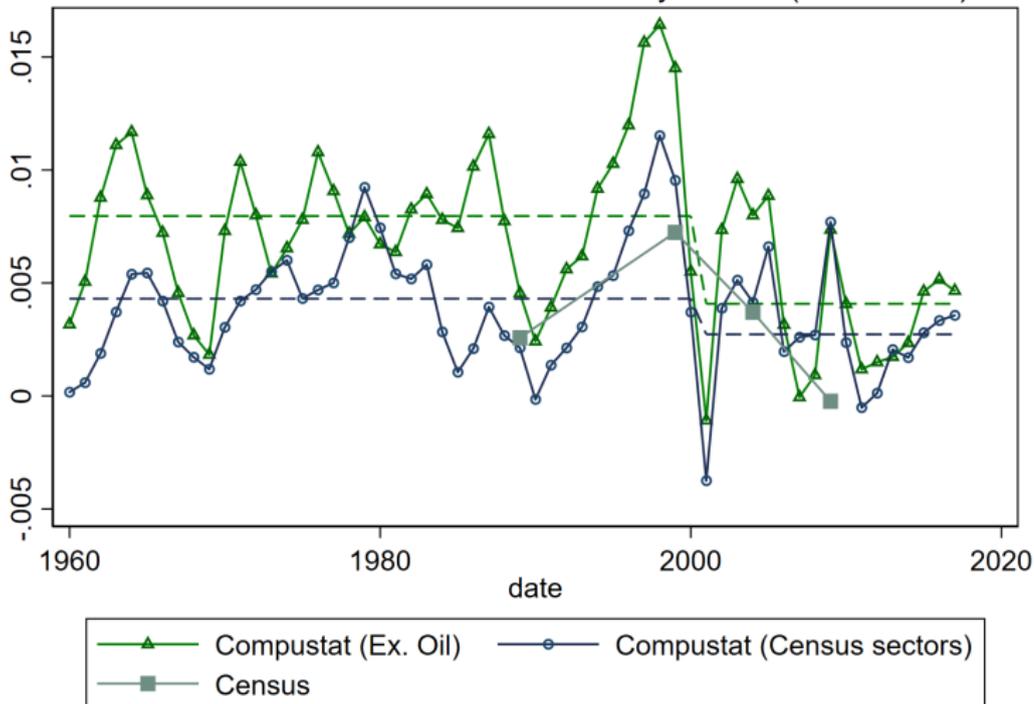
Contribution of Stars to Labor Productivity Growth, Forward vs. Backward-looking
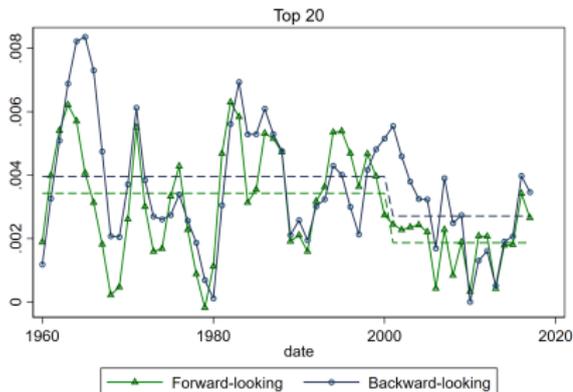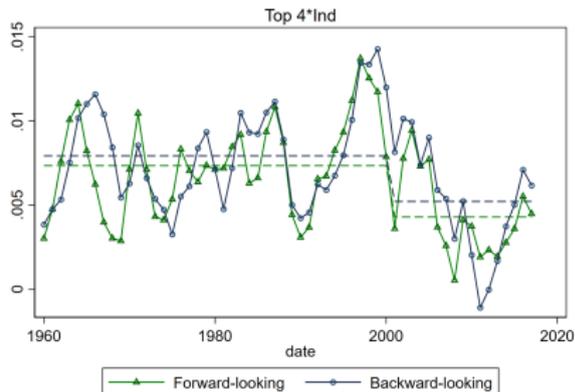
Notes: Excludes Oil industries

Back

EU and US are Different: Labor Shares
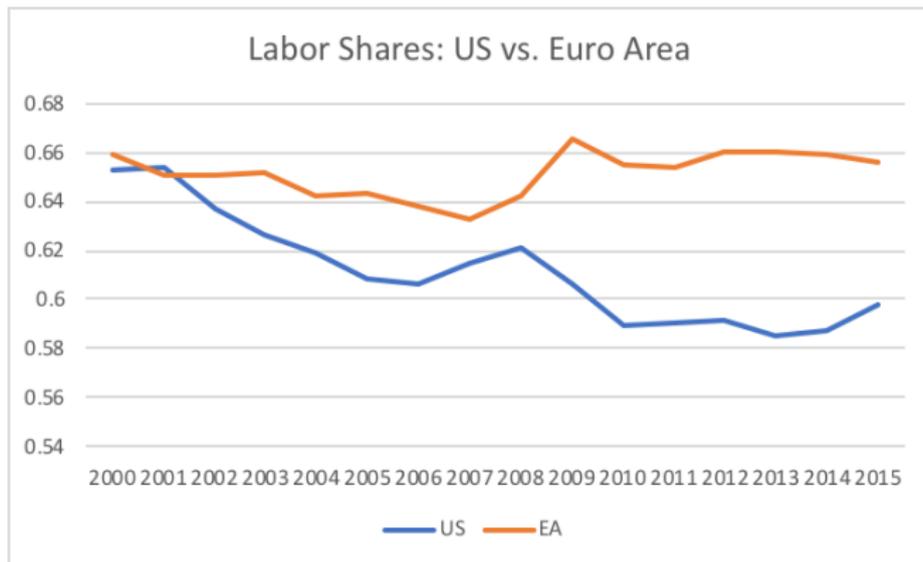
Source: EU KLEMS 2017. See also Gutiérrez and Piton (2019).

Introduction
○○

Footprint
○○

Hulten
○○○

Reallocation
○○○○

Fading Stars
○○○○○○

Appendix
○○○○○○○
○●○○○○

References

EU and US are Different: Concentration

Mean CR8 (OECD 2019)

Source: Bajgar et al. (2019)
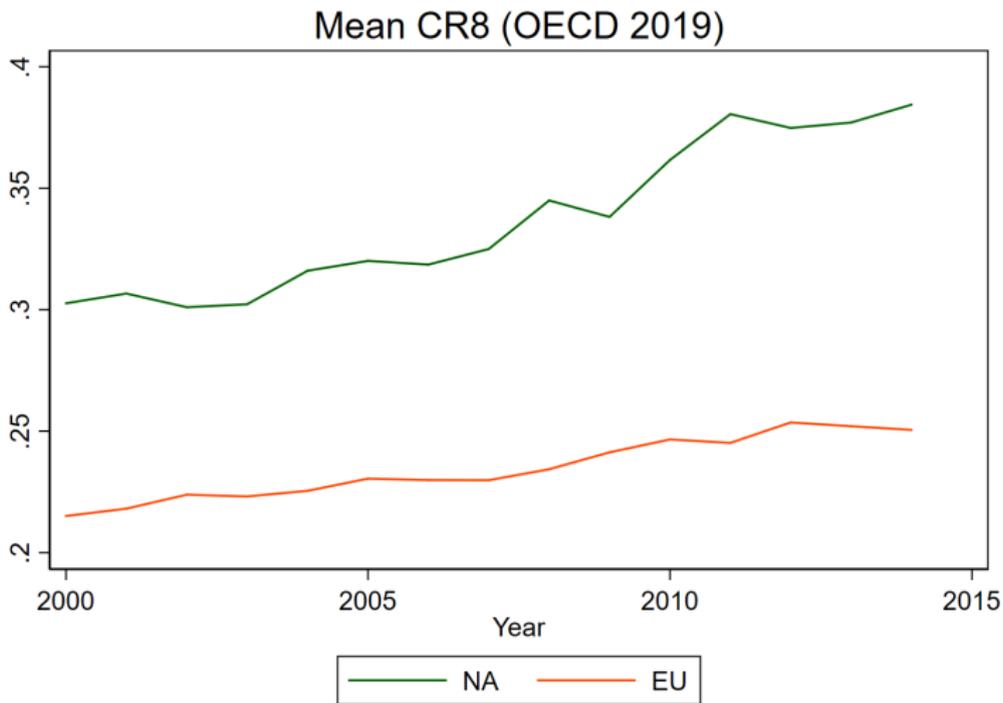
EU and US are Different: Profit Rates

GOS/PROD

Source: Covarrubias et al. (2019), OECD STAN
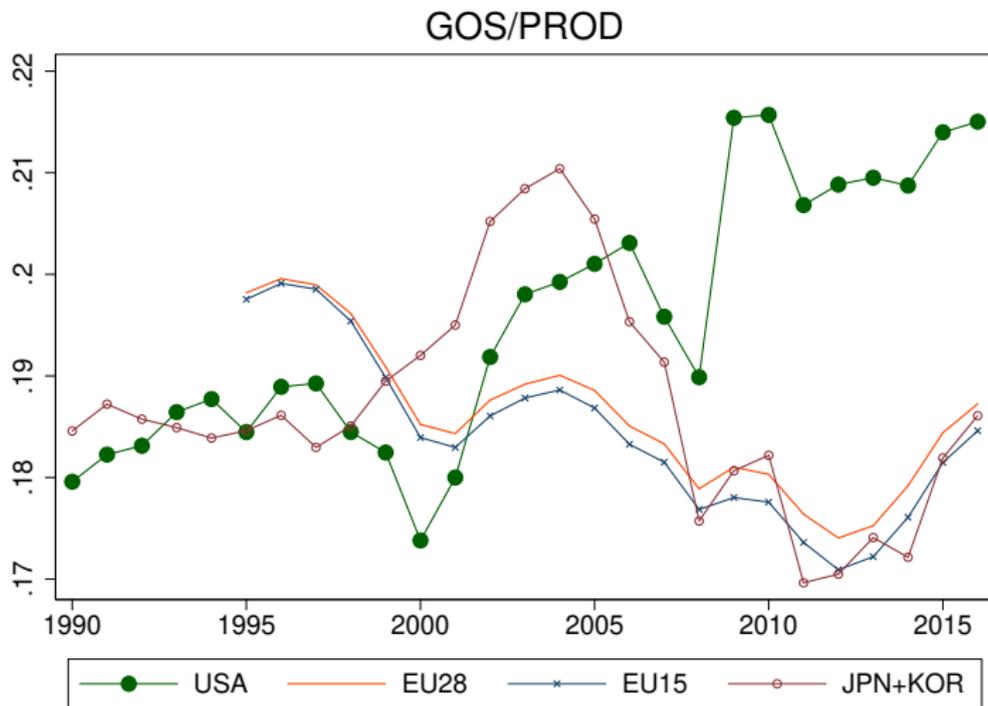
Markup vs. Concentration: Time-Series
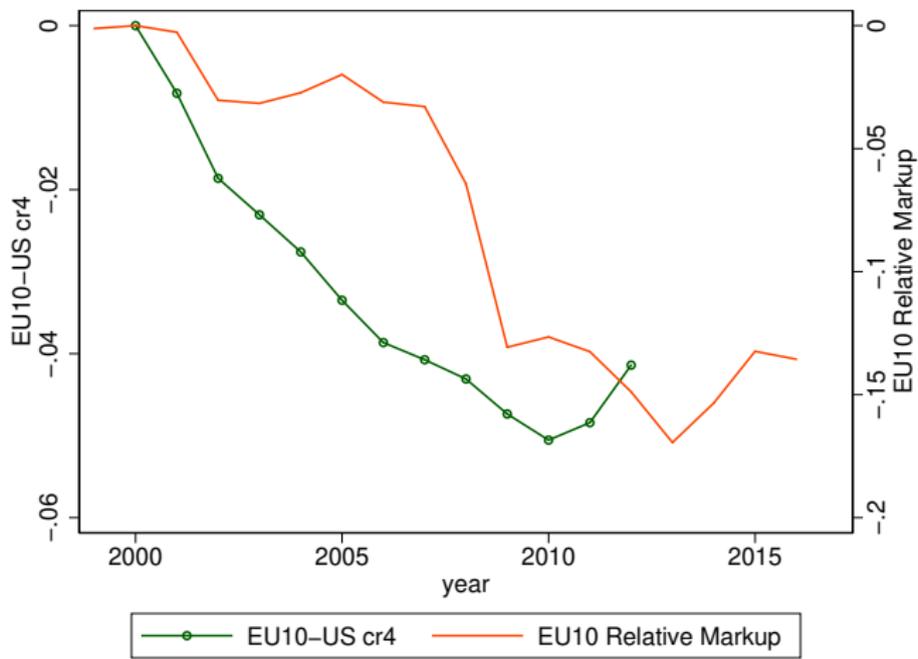
US Prices are Higher: Broadband Internet

Rank	Country	Broadband Cost
37	South Korea	$ 29.9
47	Germany	$ 35.71
54	France	$ 38.10
...		
113	US	$ 66.17

The Entry of Free

Relative Price of Communication in France
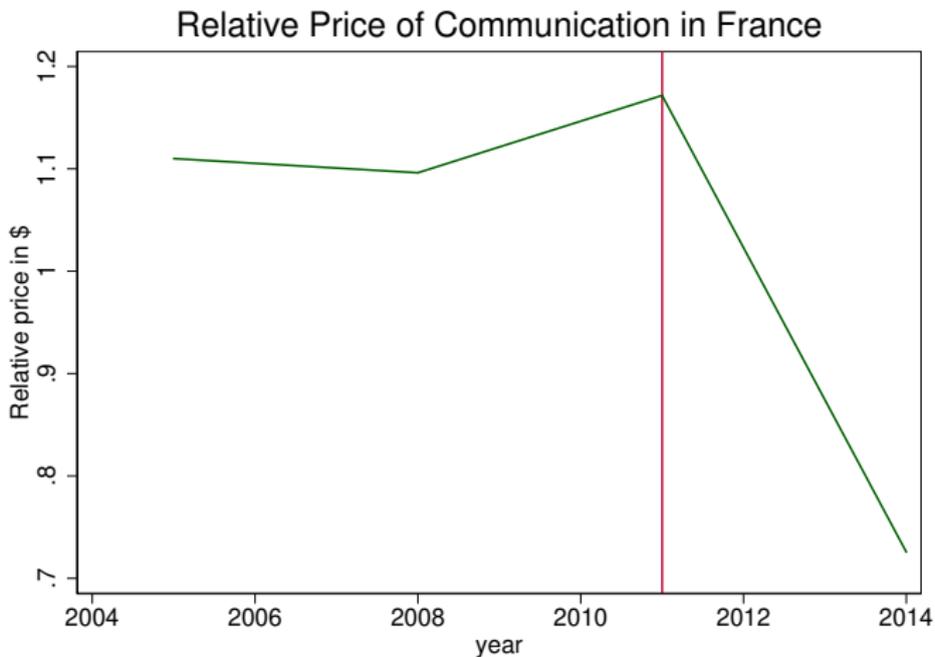
References I

Autor, D., D. Dorn, L. F. Katz, C. Patterson, and J. V. Reenen (2017). The fall of the labor share and the rise of superstar firms.

Bajgar, M., G. Berlingieri, S. Calligaris, C. Criscuolo, and J. Timmis (2019). Industry concentration in europe and north america. Technical report, OECD.

Covarrubias, M., G. Gutiérrez, and T. Philippon (2019). From good to bad concentration? u.s. industries over the past 30 years. *NBER Macroannuals*.

Furman, J. (2015). Business investment in the united states: Facts, explanations, puzzles, and policies.

Grullon, G., Y. Larkin, and R. Michaely (2019). Are us industries becoming more concentrated? *Review of Finance*.

References II

Gutiérrez, G. and T. Philippon (2017). Investment-less growth: An empirical investigation. *Brookings Papers on Economic Activity Fall*.

Gutiérrez, G. and S. Piton (2019). Revisiting the global decline in the (non-housing) labor share.