

# Fading Stars

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# Overview

**1. Contribution**

**2. Size and Concentration**

**3. Productivity**

**4. Conclusion**

# Important Macro Changes to structure of US economy

1. **Slowdown of productivity growth since mid 1970s and Global Financial crisis**
  2. **Fall of labor share**
  3. **Rise in firm concentration**
  4. **Fall in business dynamism**
  5. **Increase in aggregate price-cost mark-ups**
- **Many of these documented by Thomas' team**
  - **Still some controversy over facts (especially magnitude and timing)**

# Contribution

- Latest in a series of papers by Team Philippon (has already garnered a lot of attention)
- General theme of Thomas' work is that these trends reflect a general increase in firm market power
- And argues that one important factor is declining US enforcement of antitrust (Wu '18; Grullon et al. '16; Gutierrez & Philippon '17; Döttling et al '18 )
  - Anti-competitive mergers; Business practices to extend/maintain monopoly; Lobbying/Regulatory capture; Collusion

An economic theory of everything

# The IMF adds to a chorus of concern about competition

A new study adds to worries about market power



Print edition | Finance and economics >  
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PHYSICISTS' QUEST for a "theory of everything" is well-known. The equivalent in economics is the hunt for common causes for the rich-world macroeconomic trends of the past decade or so: a shrinking share of the economic pie for workers, disappointing investment and lacklustre productivity growth. These must be reconciled with low interest rates, pockets of technological advance and juicy returns for investors willing to take risks.

The leading economic theory of everything is that competition has weakened as markets have become more concentrated. Unlike firms in competitive markets, monopolies limit production in order to keep prices and profits high. They can therefore be expected to restrain their investment, too. They might still be innovative—with monopoly profits up



# Many Possible Explanations for these trends



Smith Richardson  
FOUNDATION

**Mega-Firms:**

**Facts, Explanations and  
Policies**



# Many Possible Explanations for trends

- **Falling competition**
- **Falling diffusion** (Andrews et al, 2015; Akcigit and Ates, 2019)
- **Several flavors of the “Superstar firm” story**
  - **“Winner Take All/Most”** *Example: “Google Effect”* increased importance of **platform competition** (esp. digital markets).
  - **Scale economies.** *Example: “Walmart effect”* Large firms better exploit **intangible capital**; e.g. ICT Bessen '17; Crouzet & Eberley, '18;
  - **Tougher competition:** *Example:* Internet price/quality comparison or *Globalization* generates “Matthew effect” allocating more market share to more efficient firms (Melitz, '03; Autor et al, 2019, Appendix A)
  - Note that these models do not need **within** superstar firm increases in productivity. Changes in economic environment re-allocating more share to firms who are already larger and more efficient.
- I share G-P policy conclusion antitrust needs modernization. But more skeptical that antitrust main reason for (global) trends

# Key findings in “Fading Stars”

- 1. Star firms are not getting (much) larger**
- 2. Star firms are not contributing much to aggregate productivity growth**



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# What is a “star” firm?

- **G-P focus on Compustat firms:**
  - Share of Top 20 firms in economy
  - Shares of Top 4 firms in 62 broad industries
  - And flex a bit around these thresholds; measures of size (e.g. market value vs sales)
- **Numerator based on Compustat firms accounts**
- **Denominator based on Census-type data of US economy**
- **Example of employment**

**Figure 1:** *Footprint of the Stars*

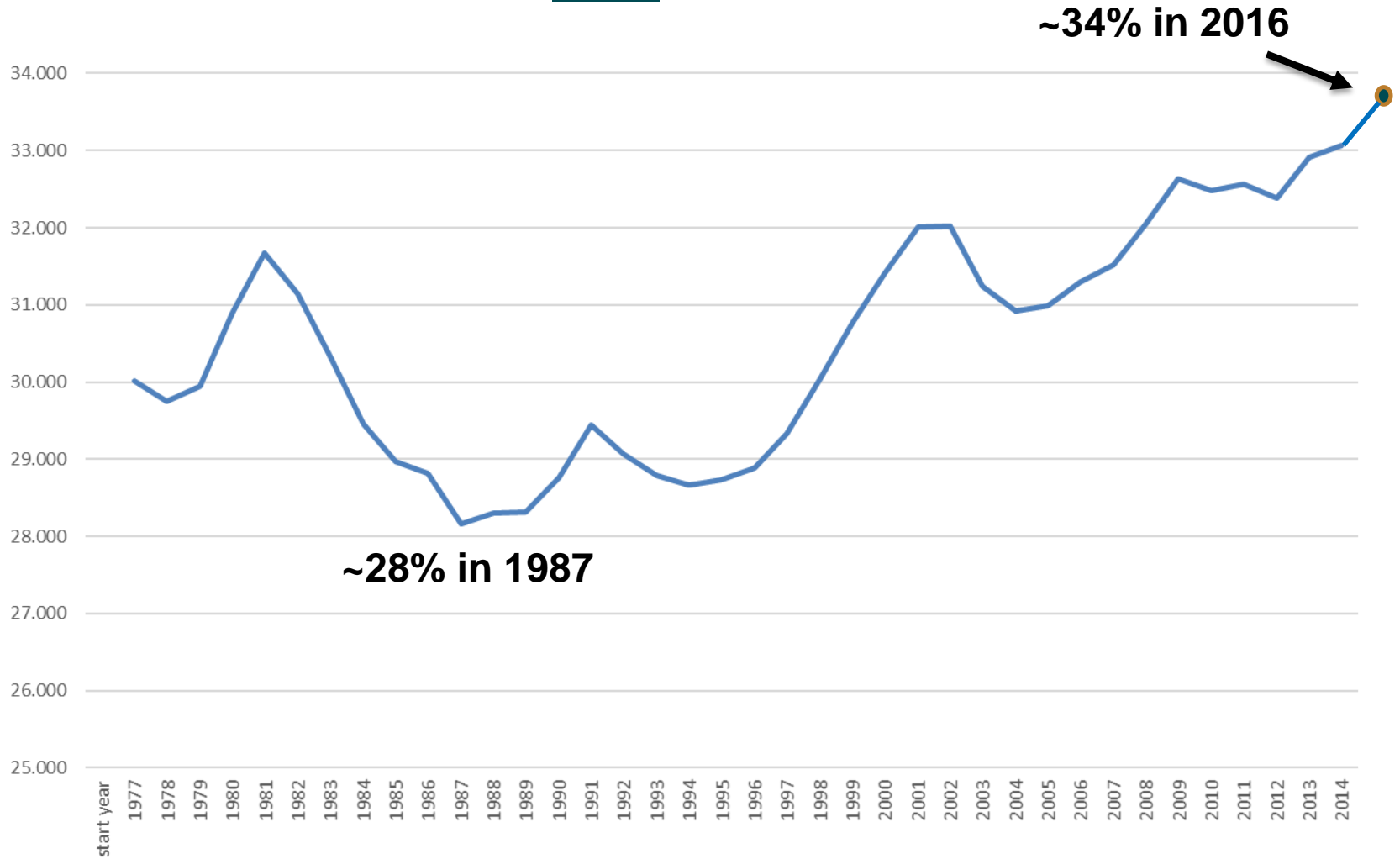


**Source:** Gutierrez and Philippon (2019). Top firms defined by market value of equity

# Compare Compustat to Census data: Population of US firms

- **In 2016 5.2 million employer firms in Census compared to 3,617 publicly listed US firms in Compustat**
- **In Census data since mid-1980s:**
  1. Average Size has increased
  2. Concentration has increased

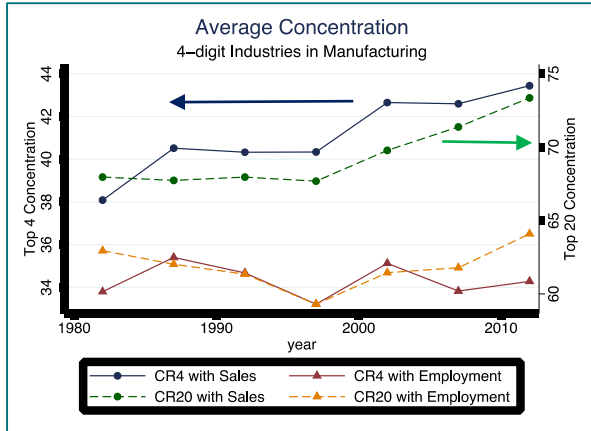
# Population of Employer Firms from Census BDS Share of jobs in Firms with over 5,000 workers rose from 28% in 1987 to 34% in 2016



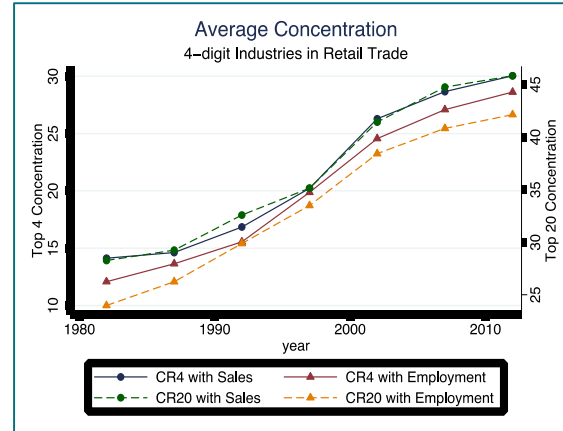
**Source:** Census BDS (Business Dynamics Statistics) SBA, <https://www.sba.gov/advocacy/firm-size-data#susb>

# Rising Concentration in SIC4 within all sectors (using Economic Census – firm population)

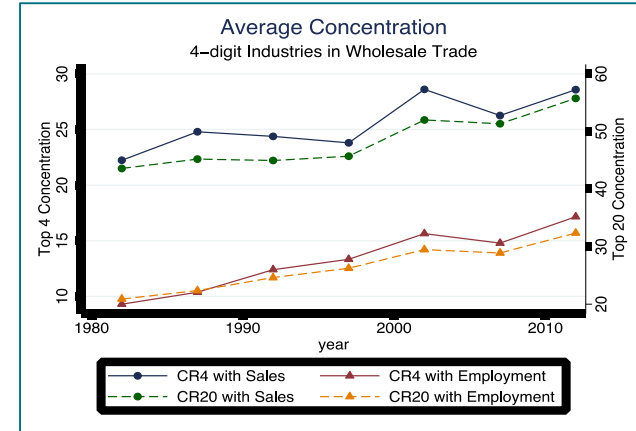
## Manufacturing



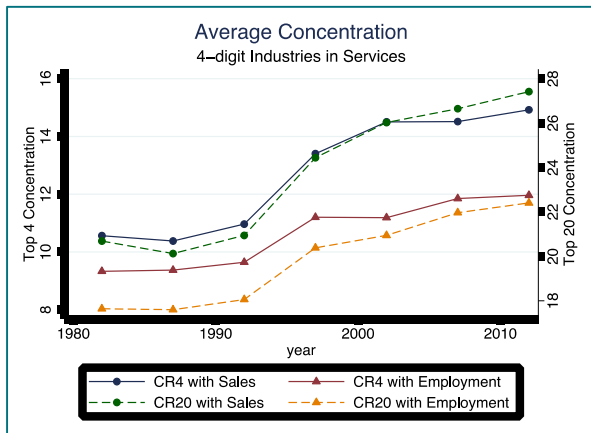
## Retail Trade



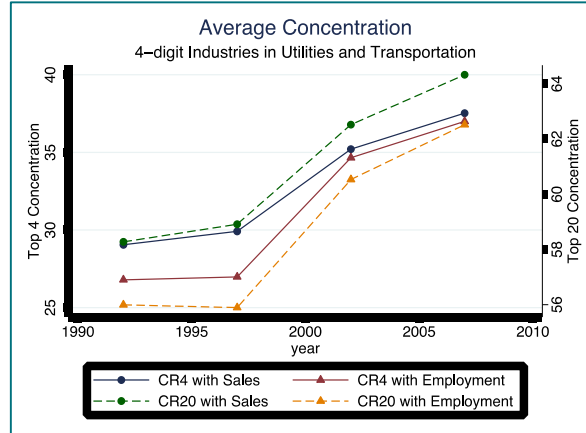
## Wholesale Trade



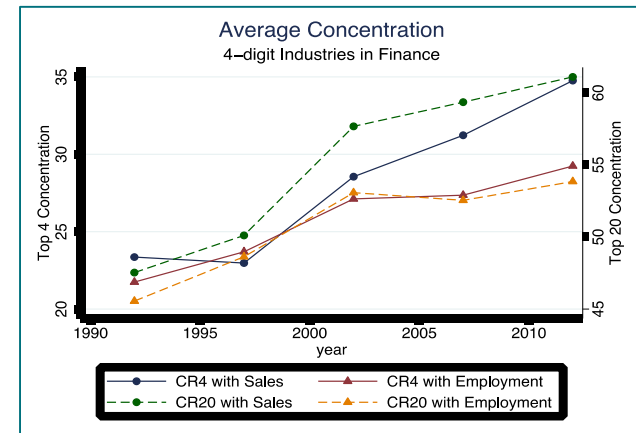
## Services



## Utilities + Transportation



## Finance



**Notes:** Economic Census. Weighted av. of concentration across the SIC-4's within each sector. 676 SIC4 industries. **Source:** Autor, Dorn, Katz, Patterson & Van Reenen (2019)

# Why so different in Compustat vs. Census data?

1. Definition of “star”? e.g. top 20 vs. wider group (~2k firms have >5k employees)
2. Industry definition (e.g. ~700 4 digit industries Autor et al vs. 62 Compustat)
3. Definition of top group mainly based on market value of equity
  - I would avoid this as market valuations fluctuate wildly
  - During DotCom huge valuations for firms selling little and employing few. Same today (e.g. Tesla)
4. Time period
5. **Nature of Compustat measures**

# Compustat Issues

- **Very useful for some purposes (e.g. market value or investment-Q analysis)**
- **But problematic when wanting to say general things about US economy**
  - Heavy Selection: US publicly listed companies (and a few stragglers). About 30% of US workers and this coverage shifts a lot over time (e.g. DotCom bubble; falling #IPOs)
  - Regulations mandate only global consolidated accounts (includes employment in non-US establishments). Breakdown into US vs. others is often missing
  - Similarly, sales breakdowns across industries often unreported
- **Authors aware of these issues and try to make corrections, but hard to do**



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## 2. Productivity

- **“Within” contribution of stars for each year:**

$$g_t^{within} = \sum [Weight_{i,0} * \overline{\Delta \ln \left( \frac{Sales}{Labor\ Services} \right)}]$$

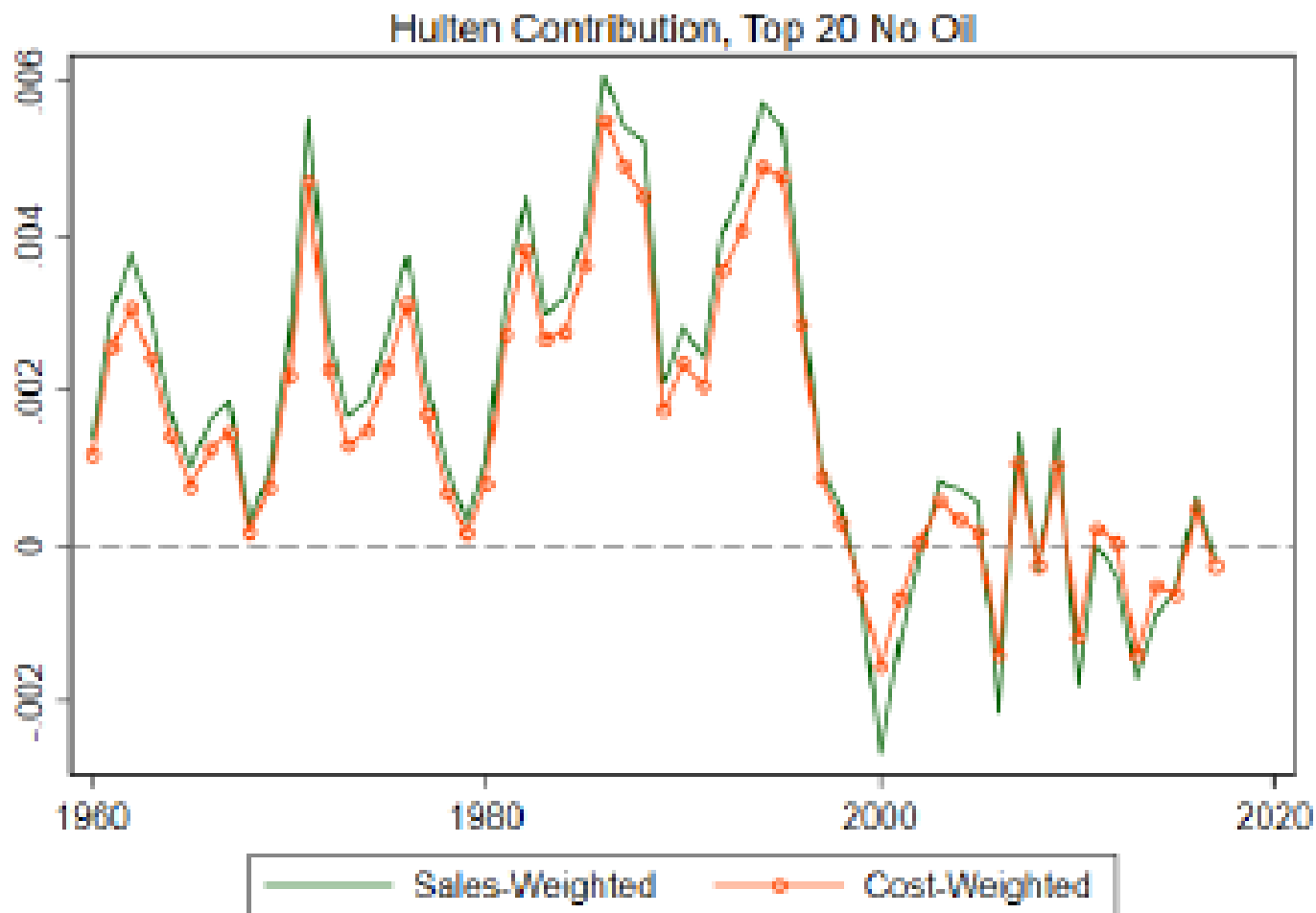
- Weight is (estimated US sales of firm  $i$ )/GDP
- Labor services is employment with a Census-based average wage adjustment for labor quality
- Labor productivity growth is 3 year average

- **“Between” contribution of stars for each year:**

$$g_t^{between} = \sum [Labor\ Productivity_{i,0} * \overline{\Delta \ln EMP_t}]$$

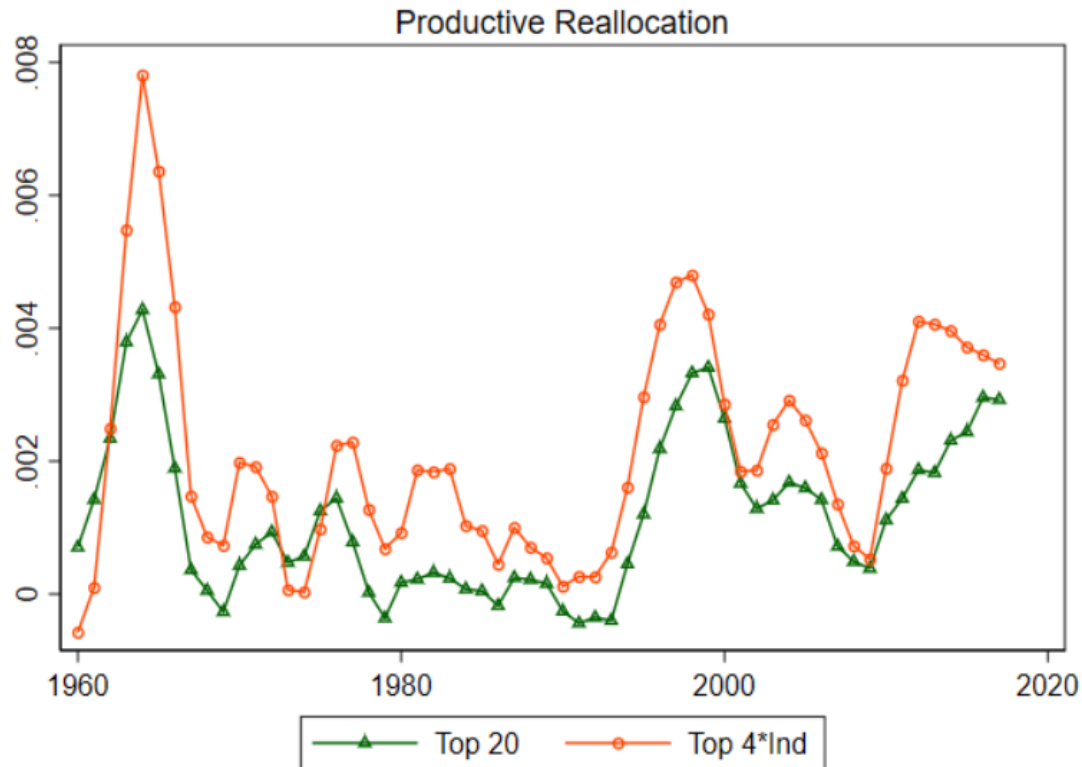
- Productivity relative to industry average

# Within Contribution of Stars Has Fallen in recent decades



# But Between/Reallocation Contribution of stars to productivity *has* increased in recent decades

Figure 4: *Reallocation Contribution of the Stars*



Note: Reallocation productivity defined as average of Compustat and Labor Quality Adjusted measures.

# Implications

- **As noted, main superstar firm models are not that large firms are becoming more productive**
  - Rather, idea is that forces of reallocation have become stronger, giving more output to these firms
  - Data seem to support this!

# Issues with Productivity Decompositions

- **General Compustat concerns as already discussed**
- **Using sales per worker has drawbacks as a measure of productivity**
  - Includes firm prices, so reflects markups (maybe star markups not rising within firm)
  - Should use value added by deducting intermediate inputs off sales. Try using COGs and adjusting for estimated wage bill (as in your labor quality measure)
  - TFP would be better using capital information
- **Why not normalizing on overall productivity growth?**
  - E.g. Maybe stars making smaller contribution as productivity growth has slowed in general
  - Could be increasingly hard to innovate at frontier
- **If stars' productivity growing more slowly than followers how does this match OECD work showing the opposite?**
  - Seems to reject the “slowing diffusion” explanation?

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# Conclusions

- As usual, an interesting and provocative paper from the Philippon team addressing one of the biggest issues in economics today
- General concern is making economy-wide extrapolations from Compustat needs extreme care.
  - Like to see more back-up from comprehensive Census-type datasets
- Combine multiple sources of information and methods the way forward to shed light on these issues
- Look forward to next version!



# Back Up

# Other points

- How is the lack of an increase in CONC consistent with the earlier work focusing on an increase in US CONC?
- Labor Quality Correction in productivity:
  - Idea is to use wages as a measure of labor quality. Like HK use wage bill instead of employment for lab productivity. But problem is that wage bill not reported in Compustat
  - So use Census payroll of top 4 vs. rest of industry as Census reports concentration of payroll
  - Problems: (i) part of higher average wages is rent-sharing; (ii) top 4 in Census firms are not the same firms as top 4 in Compustat
- In “within” is the productivity growth measure relative to the industry average? It should be.
- Why do you use emp for between and not sales like you do for within?

# Other points

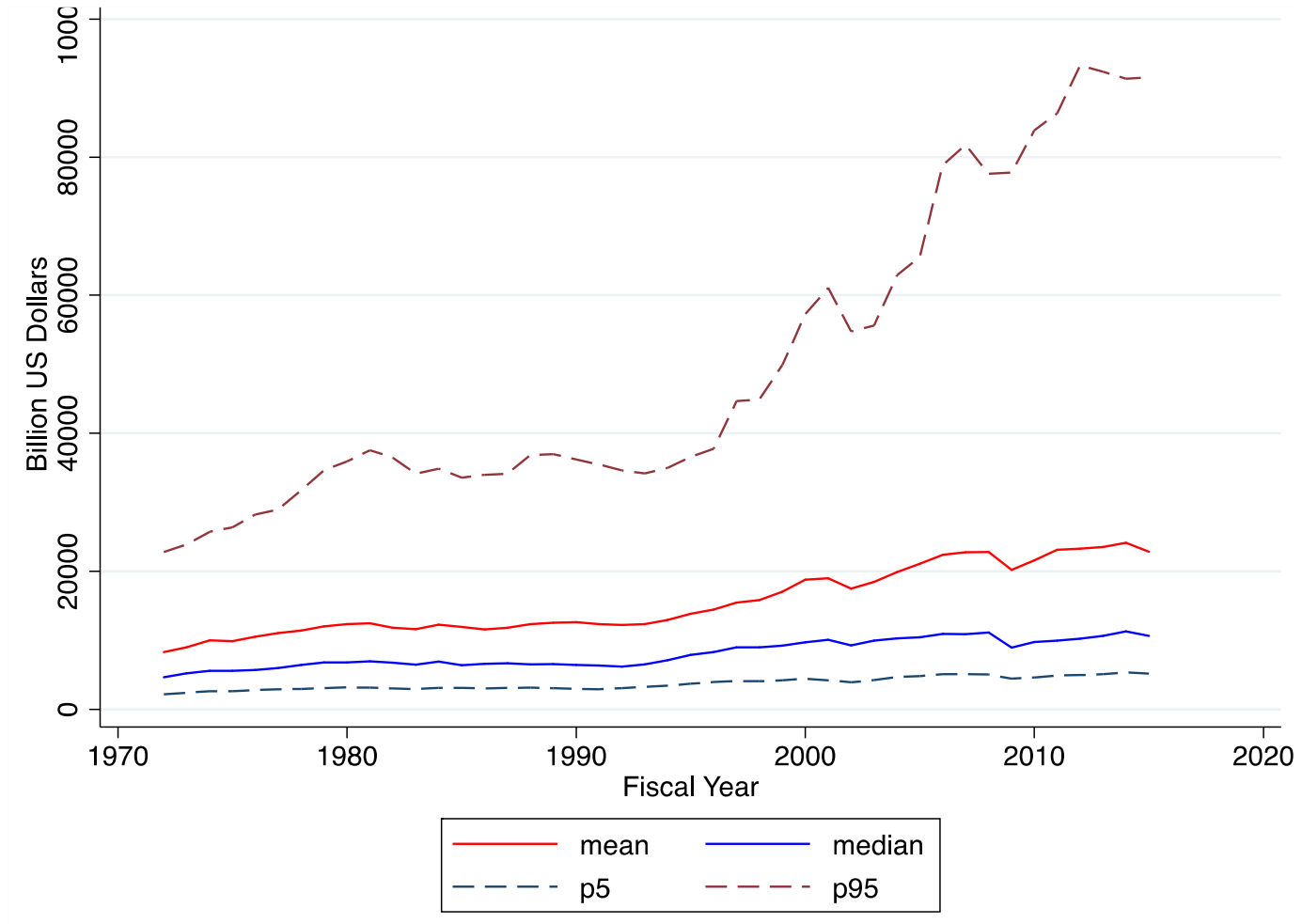
- Does civilian employment include public sector employees (e.g. Federal and Local government)? These are not in Compustat population
- Private firms in Compustat. These are an odd bunch – mainly those who were listed and then became de-listed. Sometimes a couple of years of a company which became listed before it became listed. But does not have anything like all unlisted (or large unlisted firms)
  - Other datasources like Sage; NETS; ORBIS/D&B, etc. have more info on private. But huge holes (see Decker) because private firms do not have to disclose.

# Other points

- Sales adjustment for exports. Unclear we want to deduct as production in US by American workers is exported so is part of production-side of US GDP
  - DO want to take out activity done by overseas affiliates/branches. But hard to do with Compustat (maybe use BEA MNE data?)

# The Rise of Superstar Firms

## Dispersion of Sales among Top 500 Firms



Source: Compustat Analysis