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HARVARD LAW SCHOOL
CHALLENGES TO ANTITRUST IN A CHANGING ECONOMY

CHALLENGES TO ANTITRUST IN A CHANGING ECONOMY

2018 HARVARD LAW SCHOOL

Measuring Concentration

Moderator: Nancy L. Rose, MIT

Panelists:
Bruce H. Kobayashi, Federal Trade Commission
Henri Piffaut, DG Comp, European Commission
Lawrence J. White, NYU

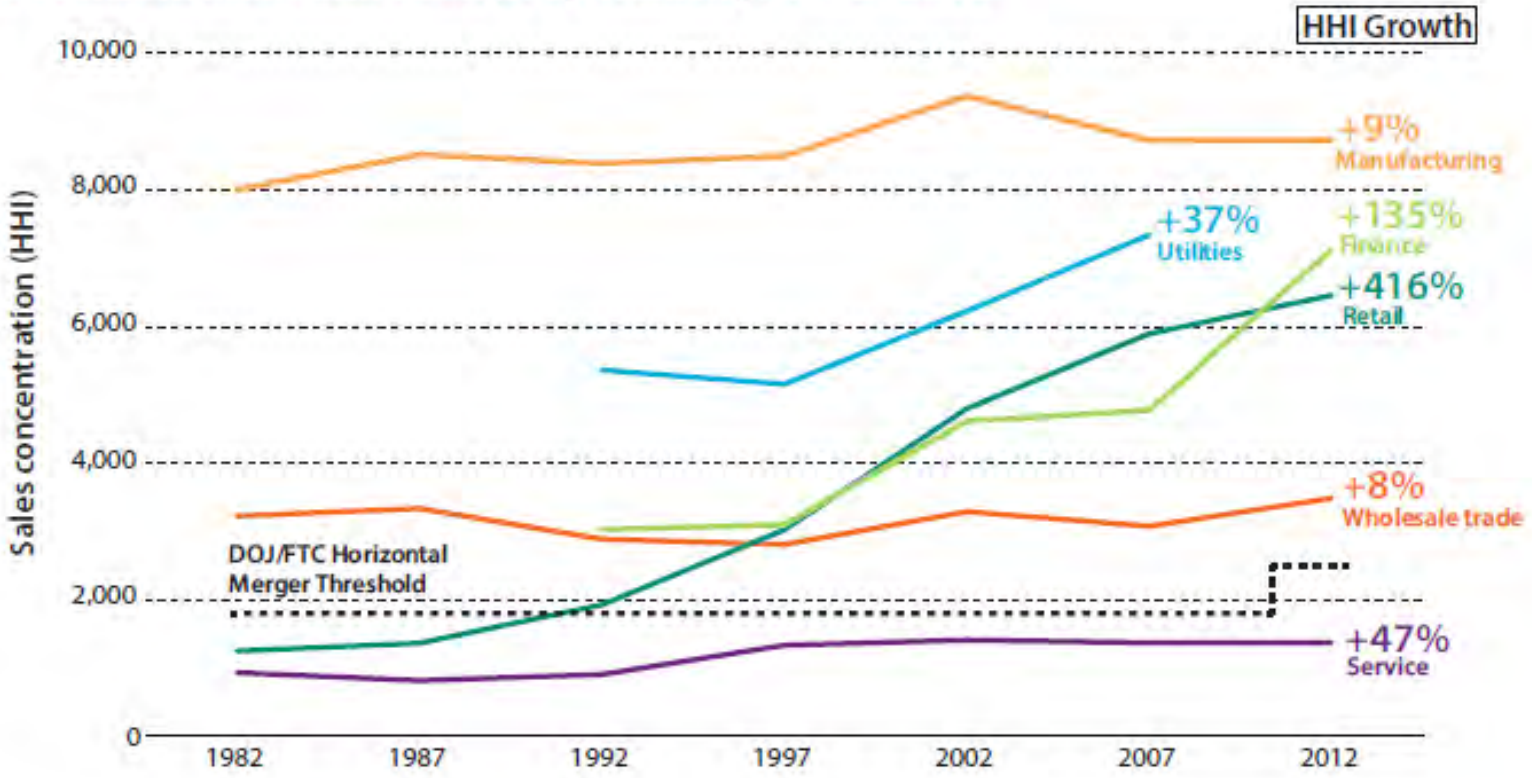
An overview

Widespread concern about growing concentration

In the press, among policymakers, and academics

FIGURE 1.

Market Concentration and Growth by Industry, 1982–2012



Source: Autor et al. 2017.

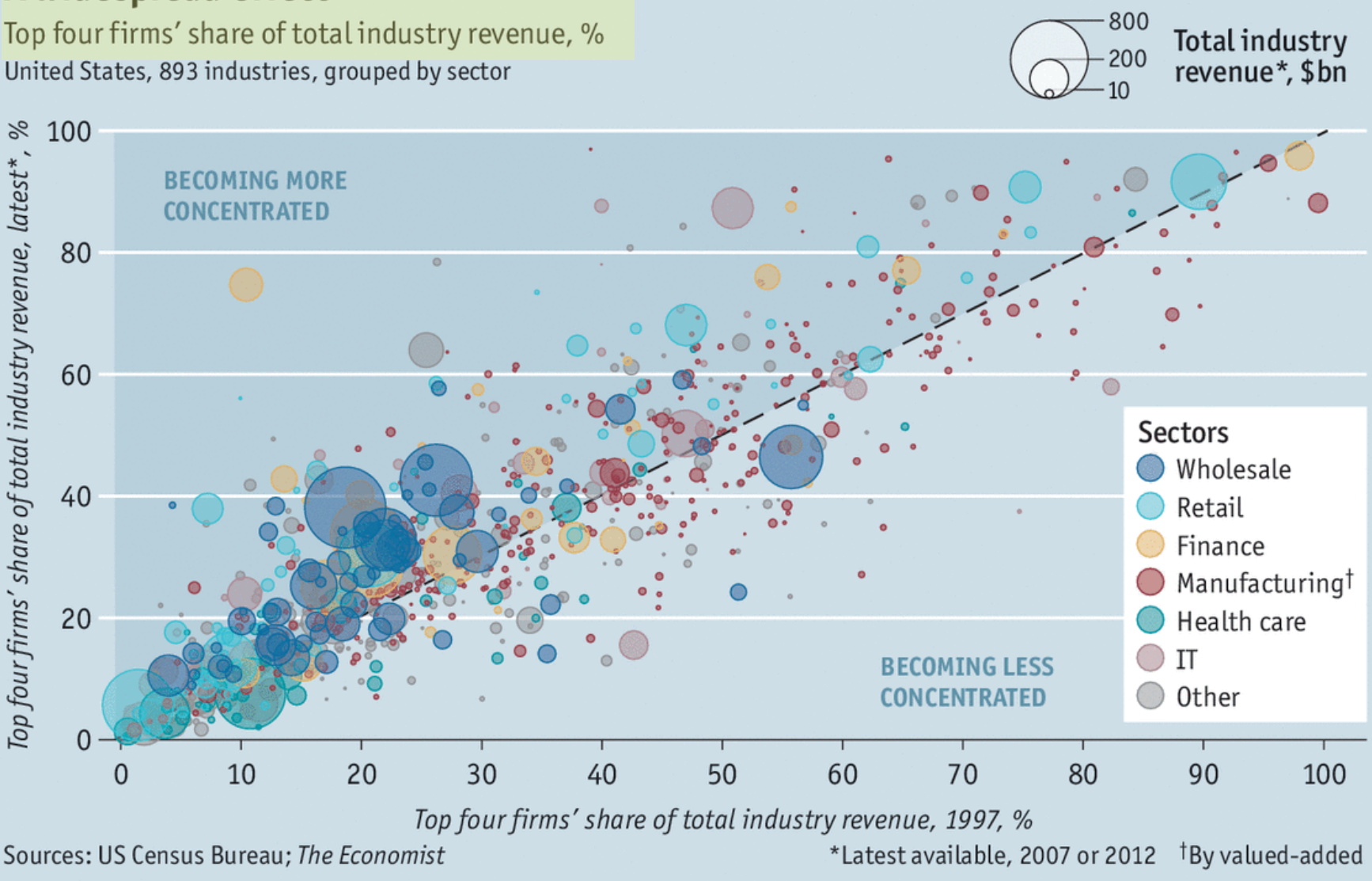
Note: Market concentration refers to the Herfindahl-Hirschman Index (HHI; sales). After defining the boundaries of a market and calculating each firm's share (e.g., of total sales), HHI is calculated by summing the squared market shares of all firms, then multiplying the sum by 10,000. HHI growth is for the date range available (1982–2012 for all series except Utilities and Finance, which show 1992–2007 and 1992–2012, respectively). The dashed line indicates the threshold market concentration established by the U.S. Department of Justice (DOJ) and Federal Trade Commission's (FTC's) Horizontal Merger Guidelines above which a proposed merger would trigger enhanced scrutiny.

THE HAMILTON PROJECT
BROOKINGS

A widespread effect

Top four firms' share of total industry revenue, %

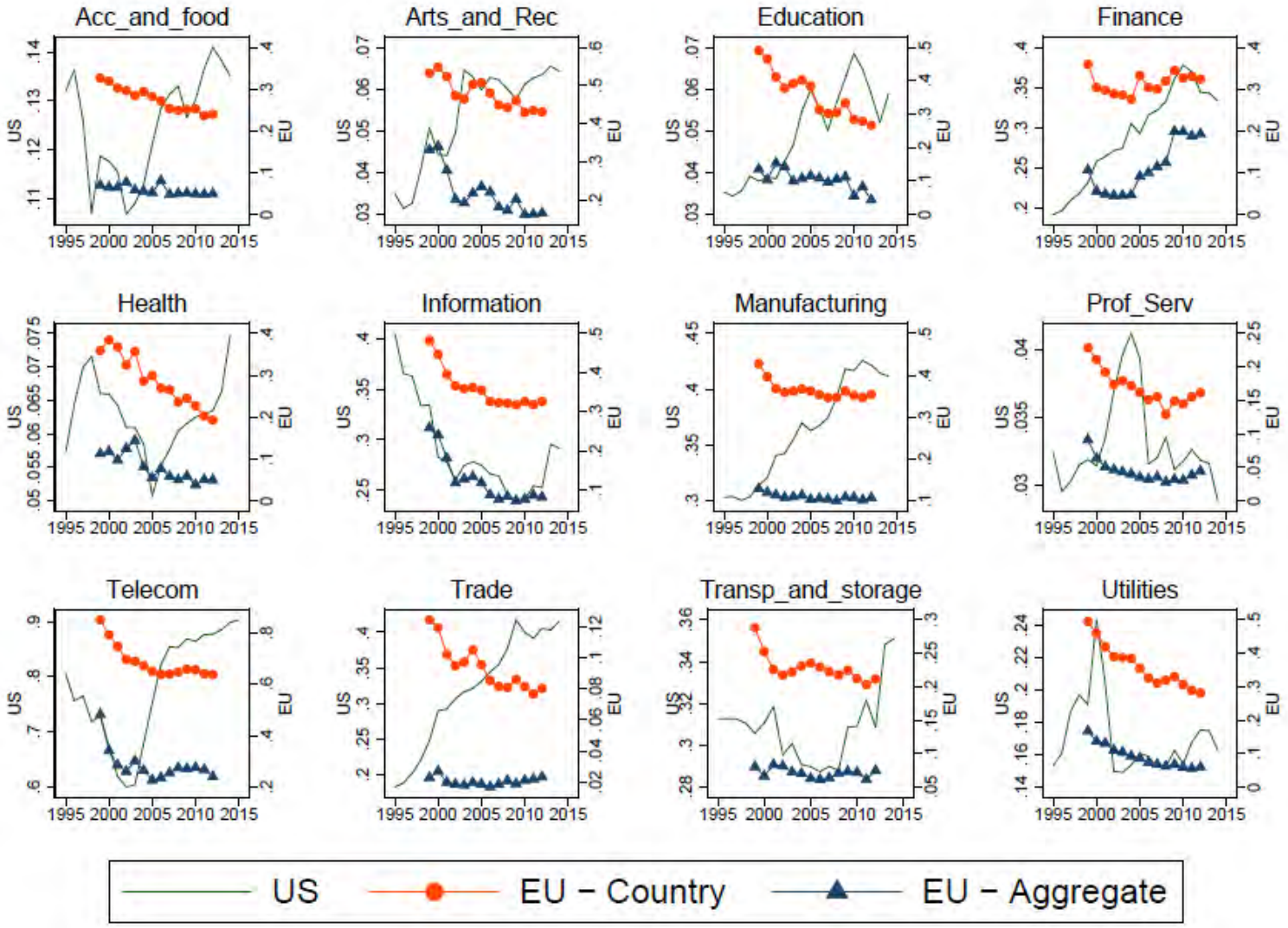
United States, 893 industries, grouped by sector



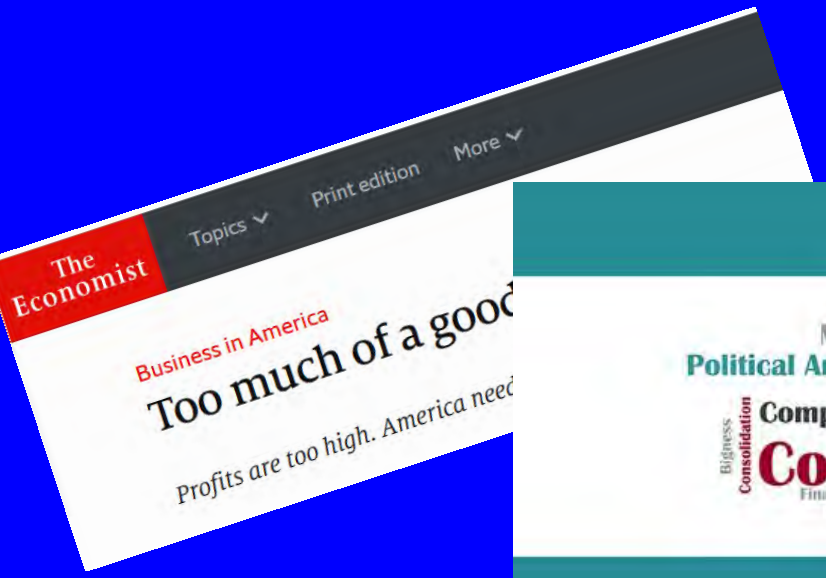
Sources: US Census Bureau; *The Economist*

*Latest available, 2007 or 2012 †By valued-added

Figure 3: *Mean 8-firm CR by Sector: EU vs US*



A “competition problem,” especially in the US?



America's Monopolies Are Holding Back the Economy

THE WALL STREET JOURNAL.

Wave of Megadeals Tests Antitrust Limits in U.S.

Analysis shows that in many industries, most firms are competing in highly concentrated markets

October 18, 2015

PANEL QUESTION:

What should we make of these reported trends in concentration?

Is Europe different?

Thinking Sensibly about Markets and Market Concentration

Lawrence J. White
Stern School of Business
New York University
Lwhite@stern.nyu.edu

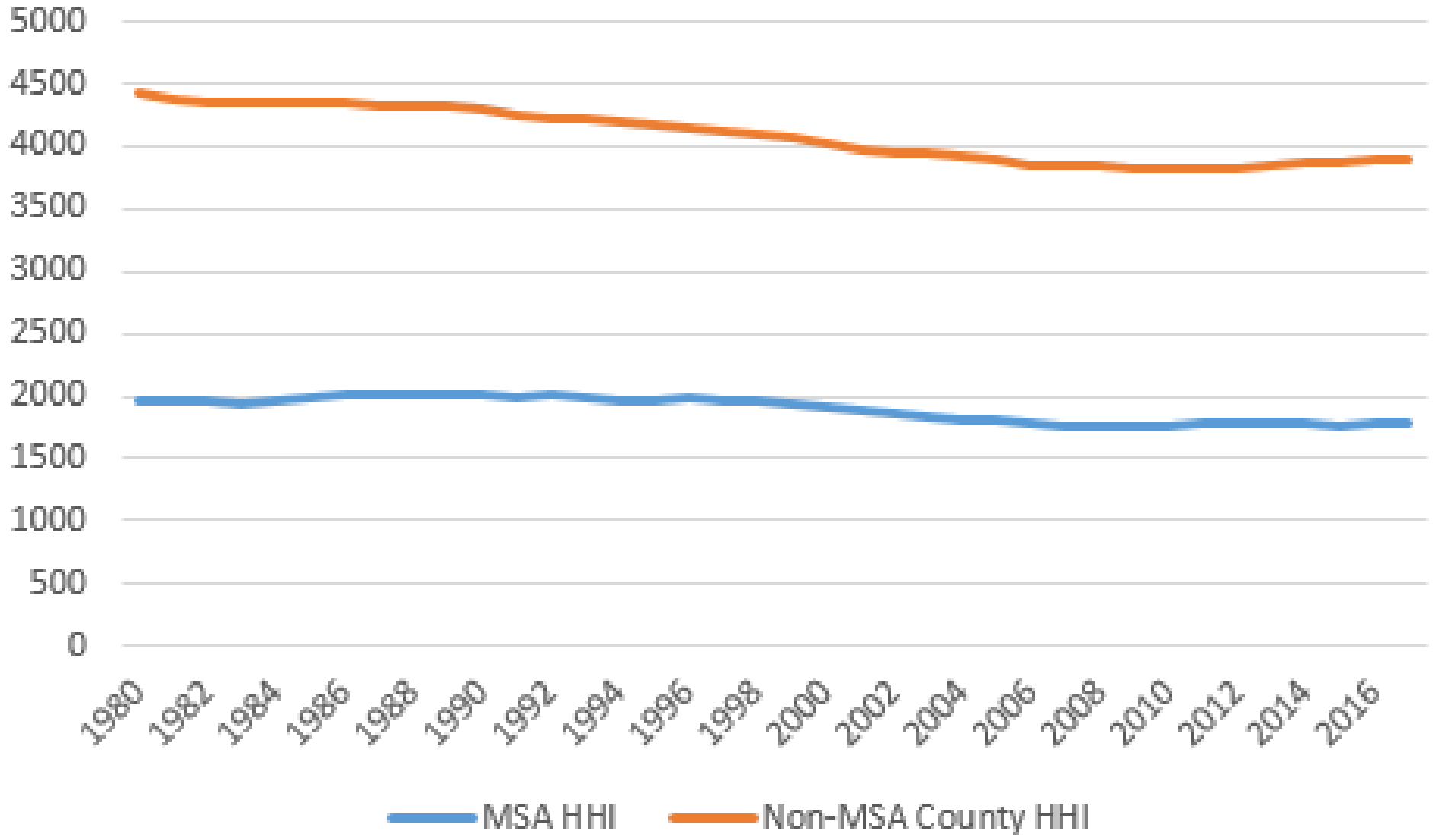
Presentation at the Harvard Law School, November 9, 2018

Do national concentration measures reflect relevant antitrust markets?

- Usually not
  - A relevant market is one in which market power can realistically be exercised
- National measures are too aggregated at the product level and/or geographic level
  - Why would we think that nationwide "financial services" constitutes a relevant market for antitrust/competition purposes? Or nationwide "wholesaling"? Or "retailing"? Or???
- Banking as an example

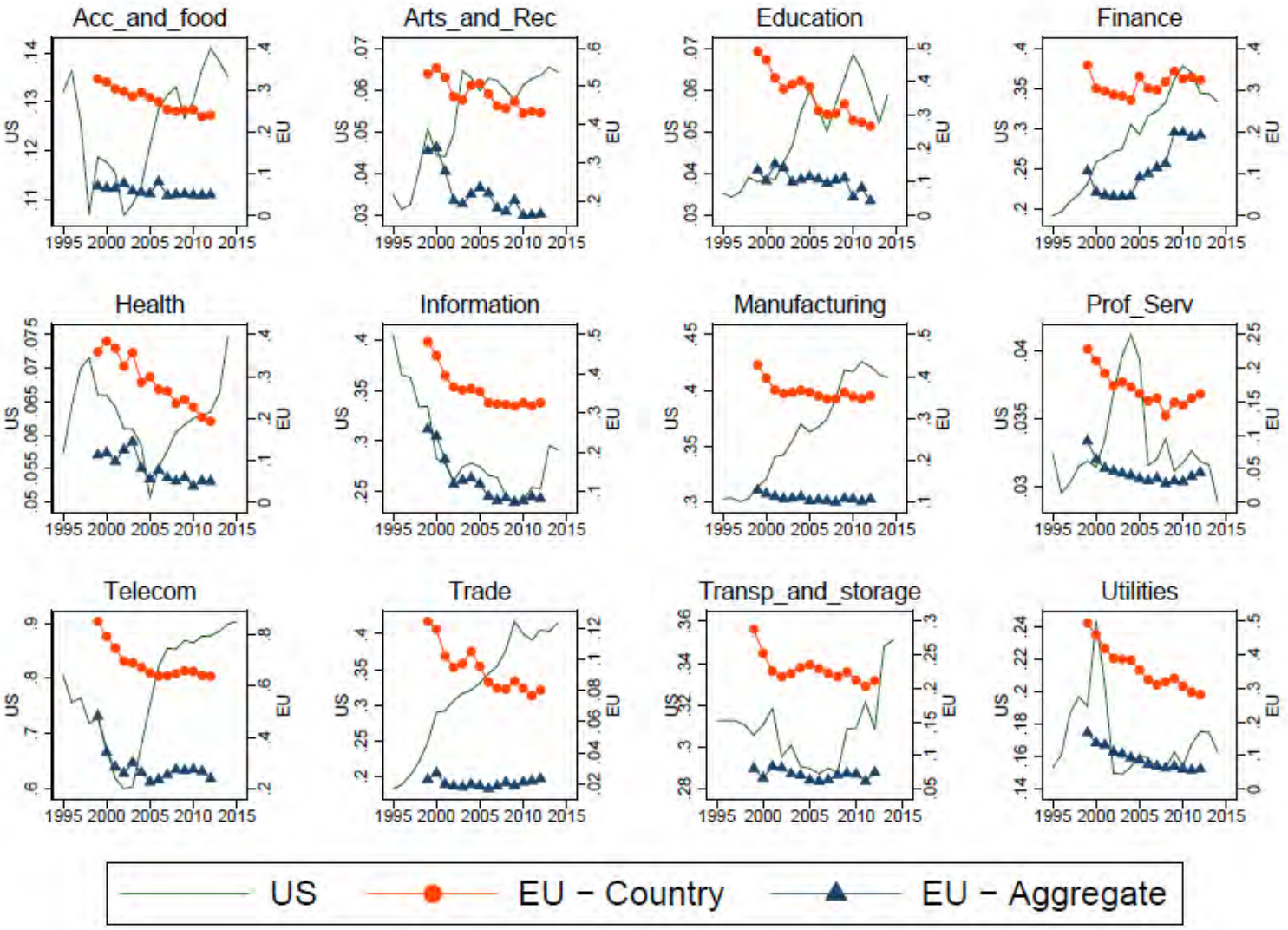
National asset shares of the top 5 banks in the U.S.: 1996-2016

Average HHIs for bank deposits in local geographic areas: 1980-2016



US v. EU: Gutierrez & Philippon, 2018

Figure 3: *Mean 8-firm CR by Sector: EU vs US*



PANEL QUESTION:

What do you make of reports linking concentration to worse market outcomes?

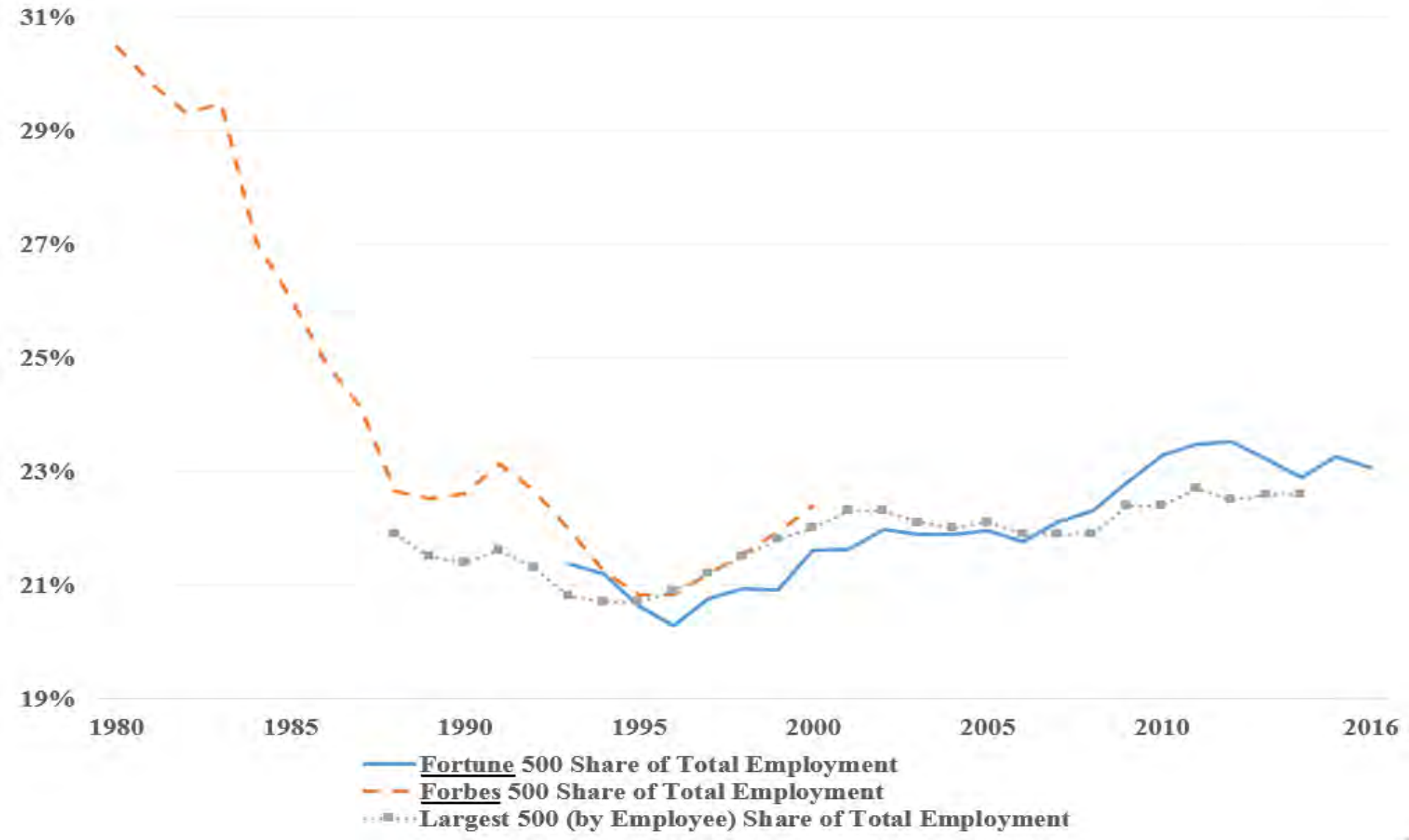
Do rising margins (as reported) reflect increases in market power?

- Not necessarily
  - Rising levels of IP may well be the source of rising margins
  - There may also be sectoral shifts that influence the calculations of average margins

Are large companies becoming more important in the U.S.?

- This is separate from antitrust/competition measurements
- How should we measure economy-wide importance?
  - Value added share? Employment share? Profits share? Payroll share? Stock market valuation share?
- Measuring importance by the share of private-sector employment accounted for by the largest 500 companies in the U.S.
  - But does employment really measure Facebook's importance?

Employment % of largest 500 companies in the U.S.: 1980-2016



Conclusion

- Concentration in relevant markets may – or may not – be rising
  - Most of the national NAICS data are way too broad
- Increased margins may – or may not – reflect increased market power
  - But rising IP will mean higher margins
- Aggregate concentration seems to have risen moderately over the past 20 years
  - But still below the levels of the early 1980s
  - This is irrelevant for antitrust/competition issues
- More research!

PANEL QUESTION:

How do antitrust enforcers use concentration measures?

How should they?

Some quirks in the measurement of concentration in relevant markets

- We still don't know how to define/delineate markets in most monopolization cases
  - The HMGs' "hypothetical monopolist" SSNIP test is invalid if the alleged monopolization is already present
    - All firms – monopolistic or competitive – should find a 5-10% price increase from current prices to be unprofitable
    - This is the "cellophane fallacy"
- In merger cases: If "unilateral effects" are significant, then the 2 merging firms constitute a relevant market – and any additional efforts at market definition/delineation are irrelevant and potentially misleading.

PANEL QUESTION:

Do these trends suggest the need for changes in merger enforcement approaches?

If so, what direction should we look toward?

Thank you!

Overview

- Do national concentration measures reflect relevant antitrust markets?
- Do rising margins (as reported) reflect the exercise of market power?
- But what about the increasing size of large companies?
- Some quirks in the measurement of concentration in relevant antitrust markets
- Conclusion

Thinking Sensibly about Markets and Market Concentration

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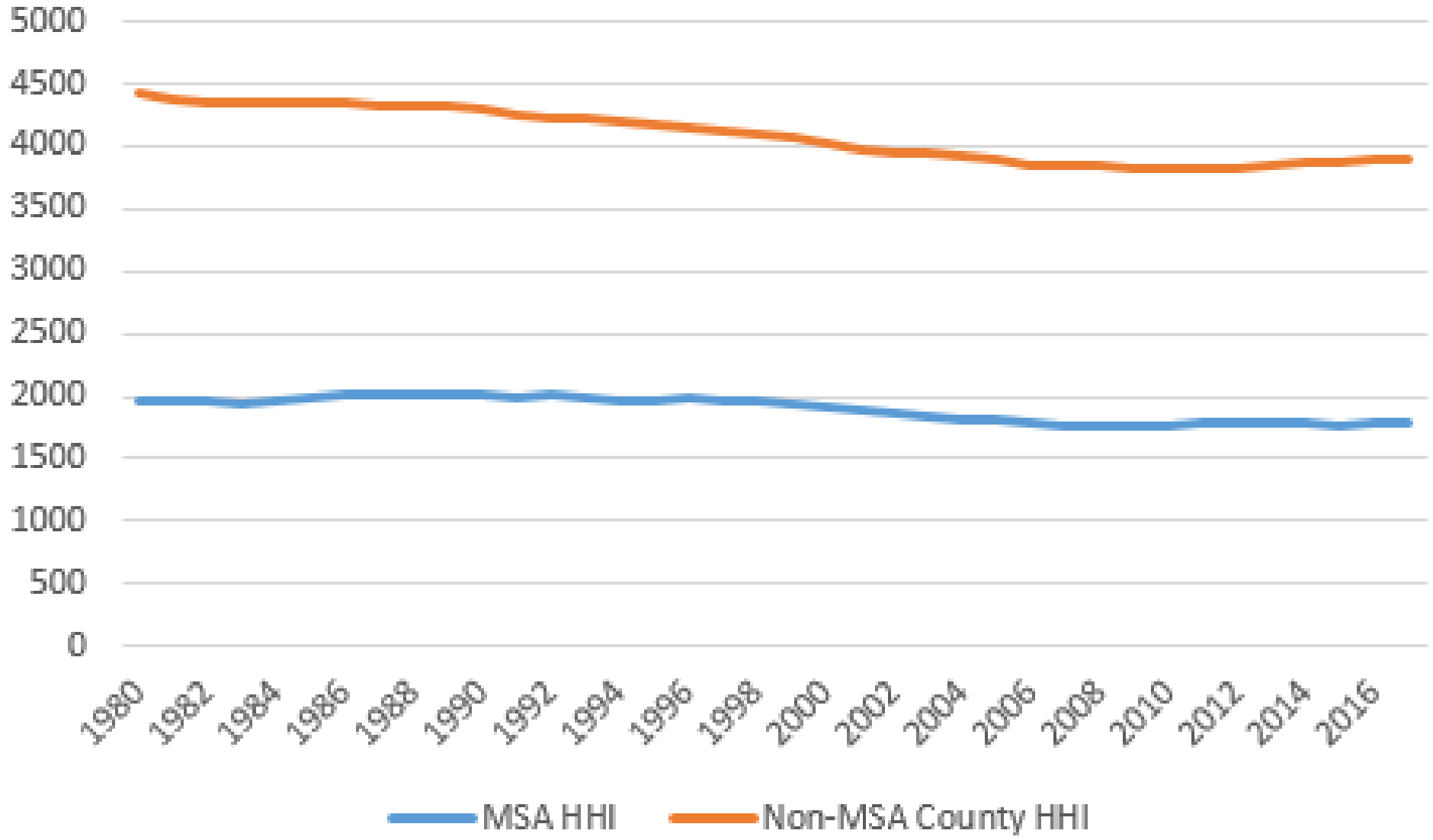

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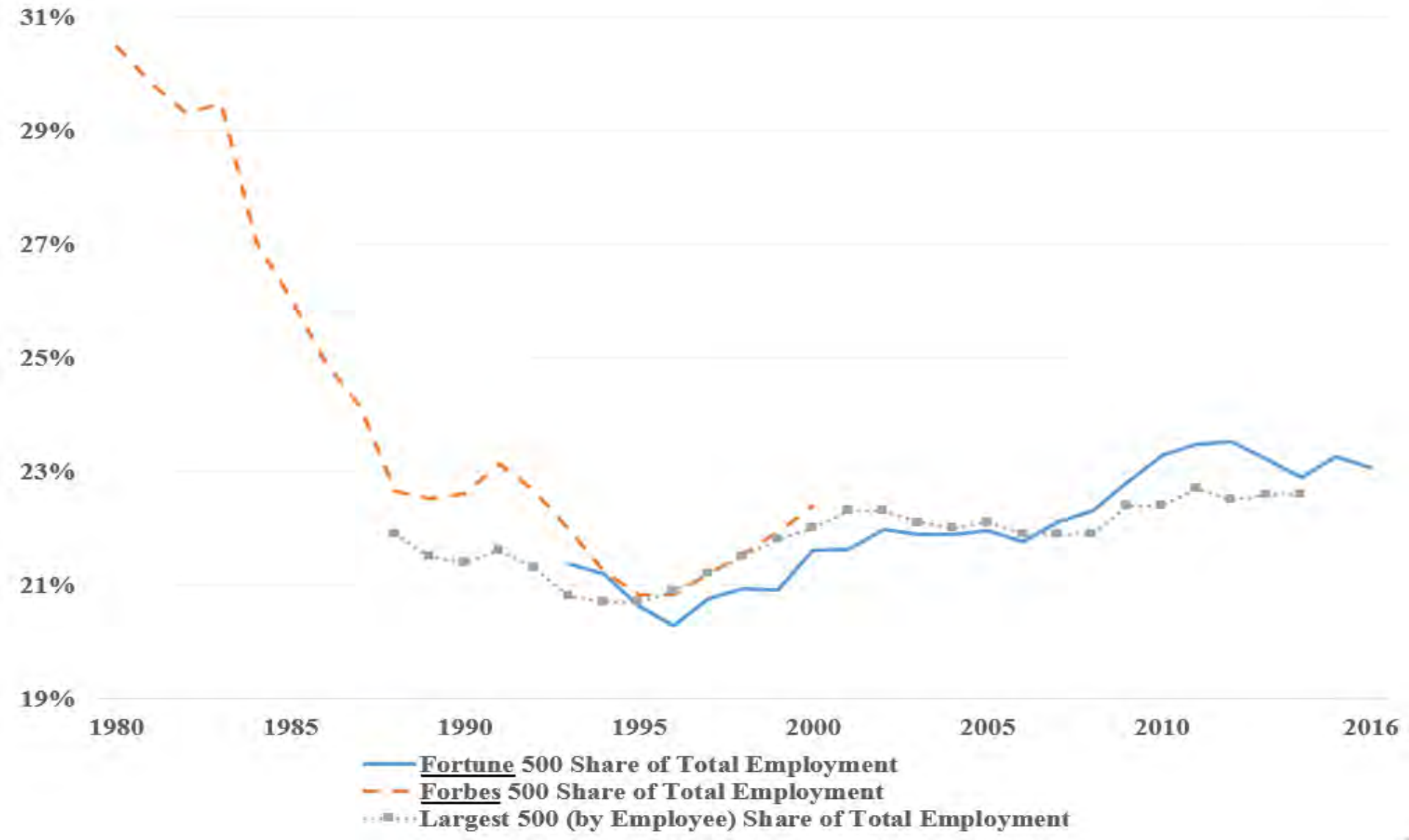

Some quirks in the measurement of concentration in relevant markets

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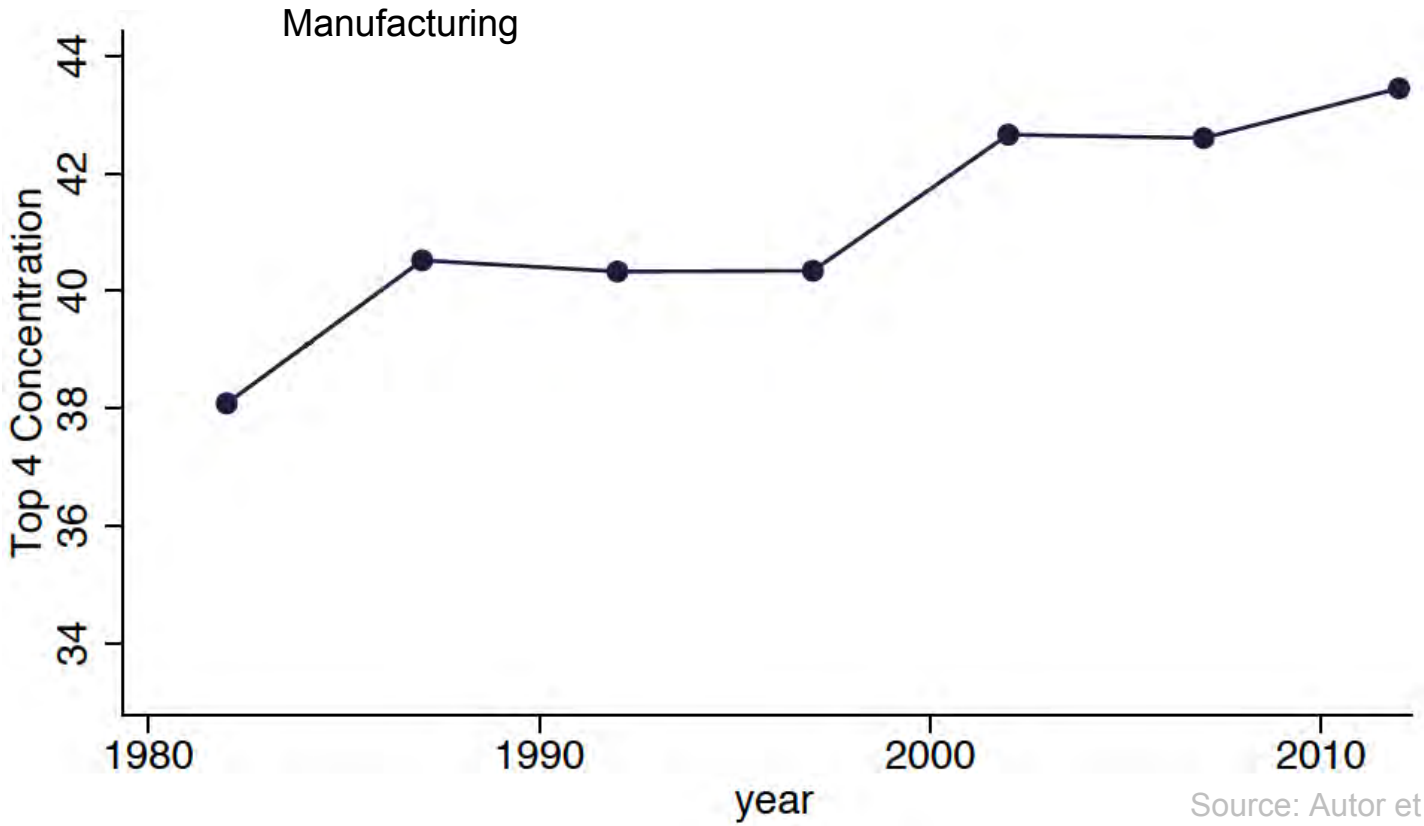
CHALLENGES TO ANTITRUST IN A CHANGING ECONOMY

James Bessen
Technology & Policy Research Initiative, BU School of Law

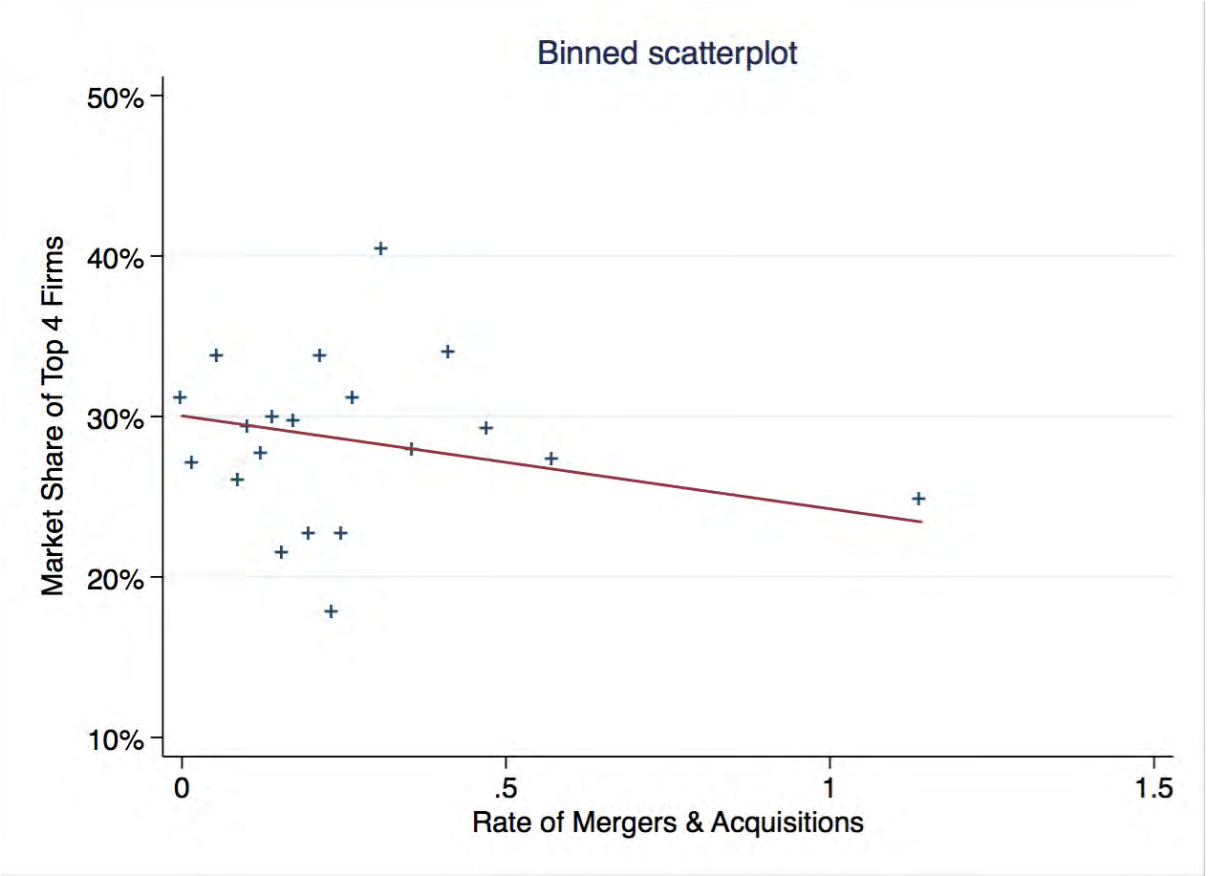
Harvard Law School, November 9, 2018

Rising Industry Concentration

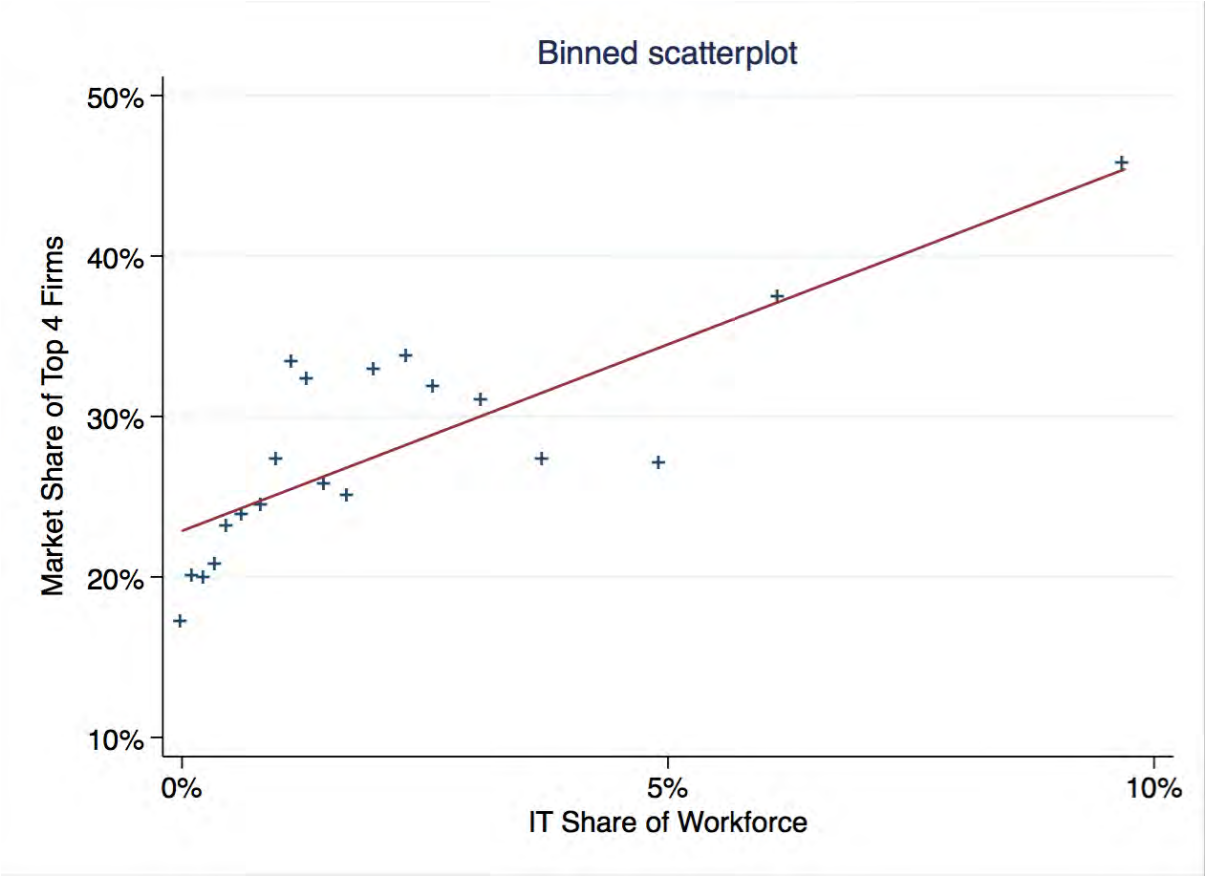


Source: Autor et al. 2017

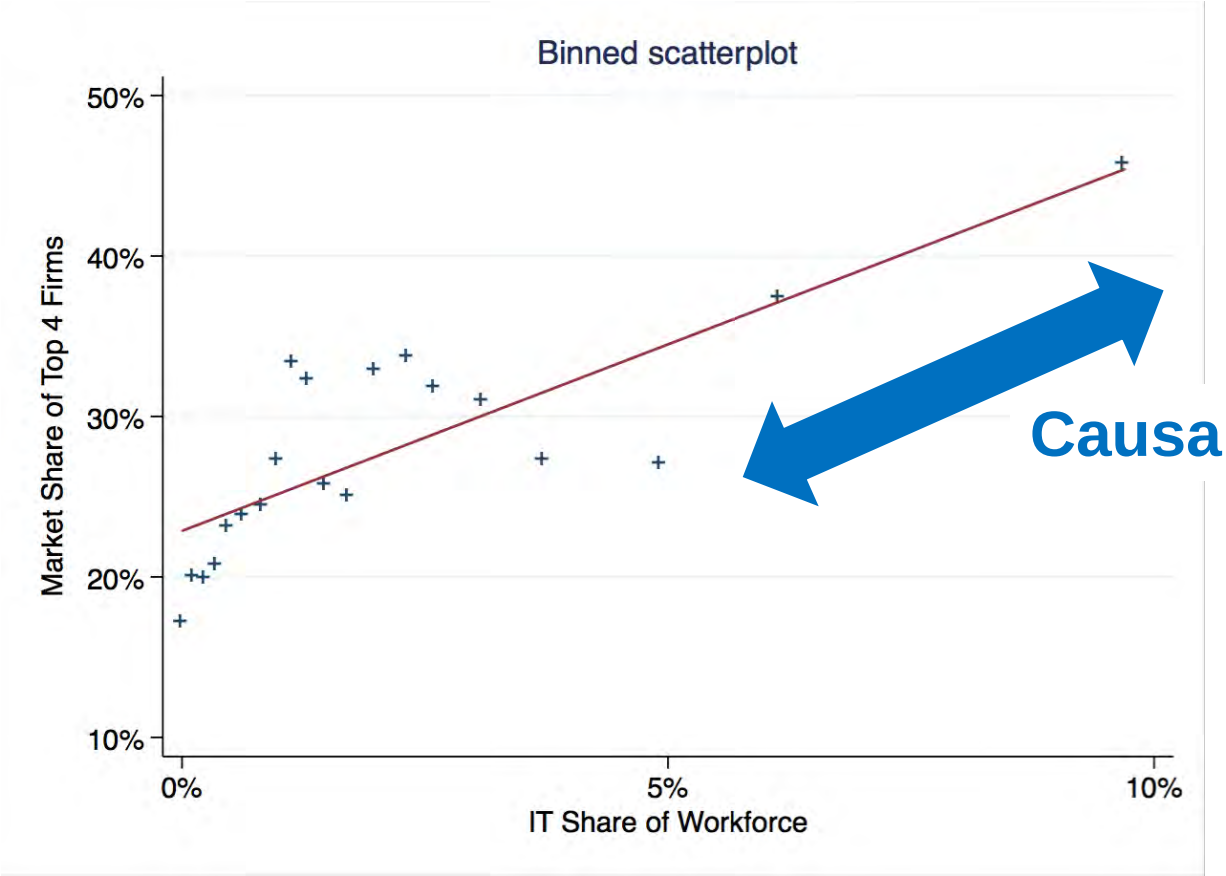
Lax M&A enforcement?



Technology?


Binned scatterplot
50%
40%
30%
20%
10%
Market Share of Top 4 Firms
0%
5%
10%
IT Share of Workforce

Technology?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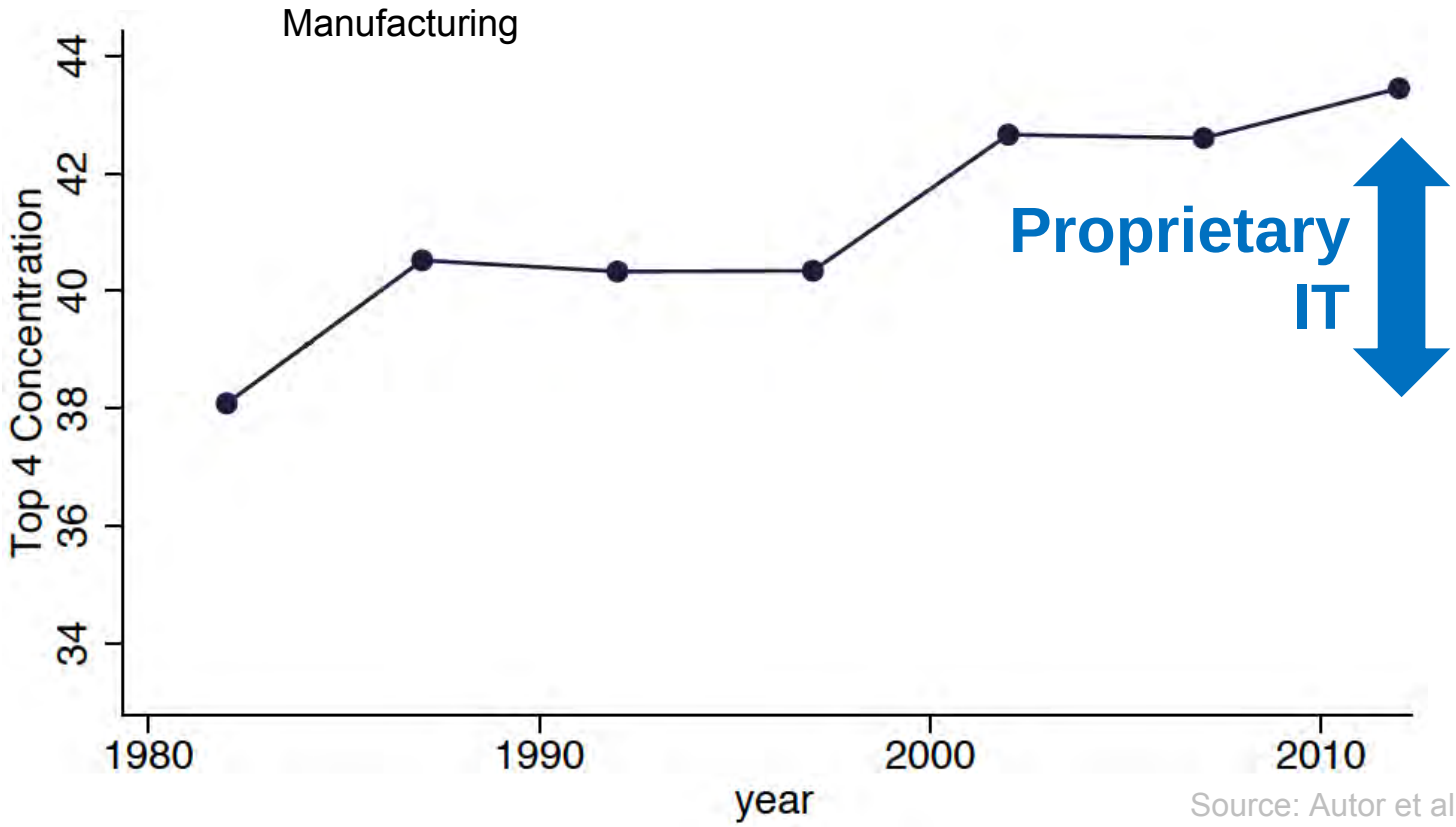
Rising Industry Concentration



Source: Autor et al. 2017

Example: Walmart

- 1982: 3% market share
- Major logistics IT
  - Speed delivery, faster response
  - Greater assortment
  - Lower prices
- 2012: 52% of general merchandise

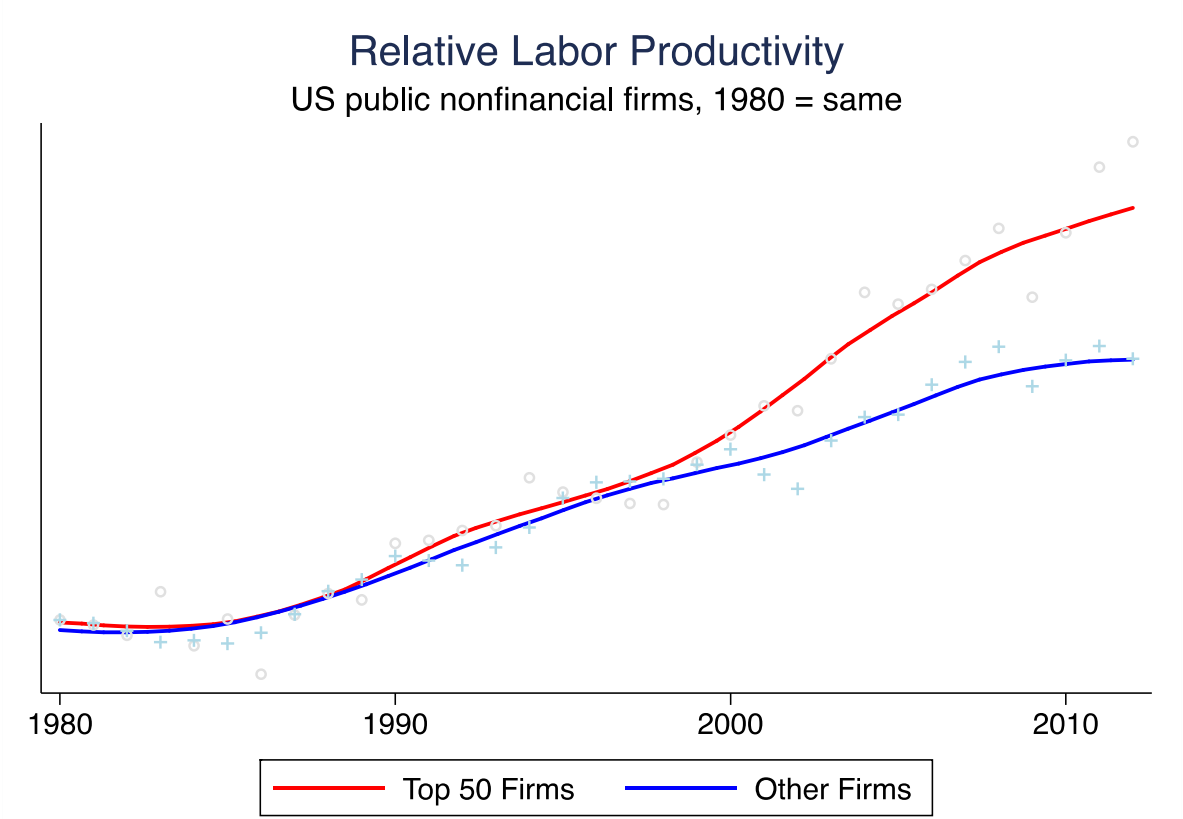
Rising Industry Concentration

- **Good news:**
  - Top firms more productive

Rising Industry Concentration

- **Good news:**
  - Top firms more productive
- **Bad news:**
  - The rest fall behind

US Productivity Gap



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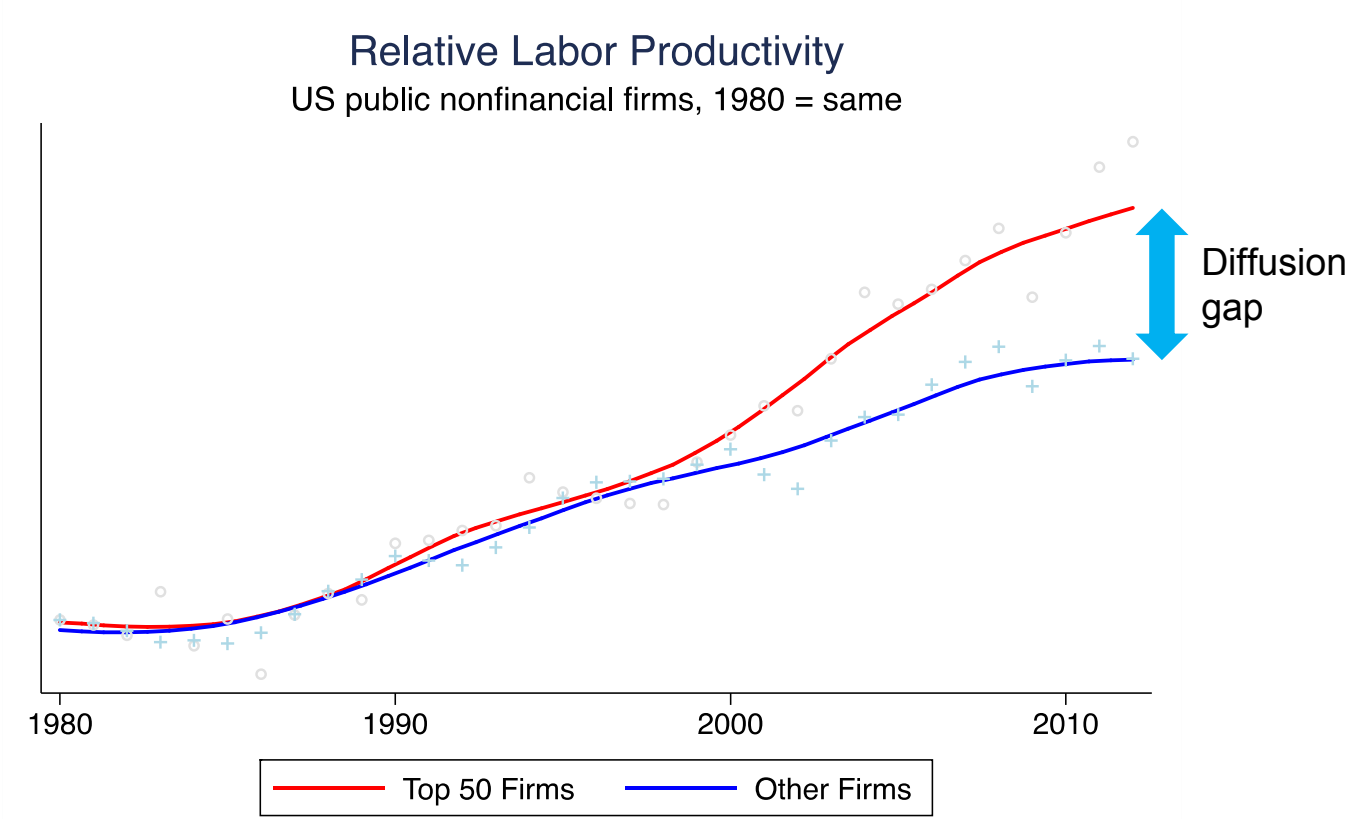
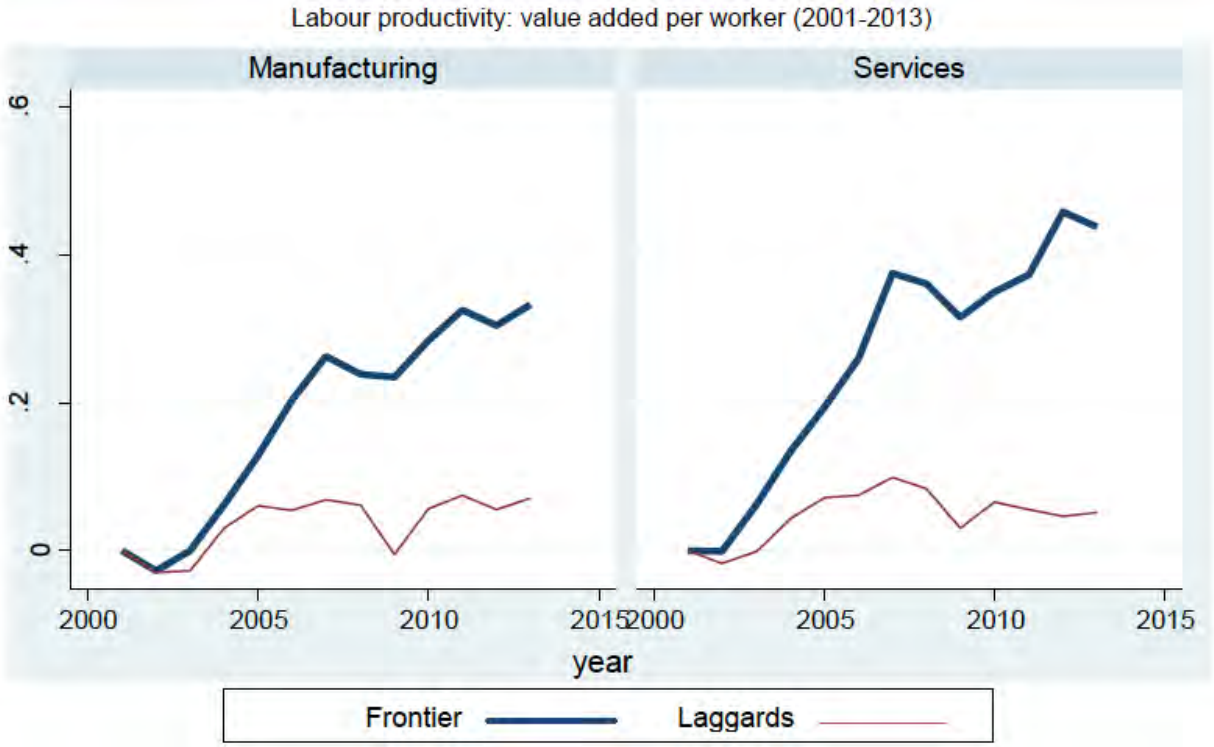


Growing productivity gap, global



Source: OECD 2017

Rising Industry Concentration

- **Good news:**
  - Top firms more productive
- **Bad news:**
  - The rest fall behind
    - Slower productivity growth
    - Slower wage growth
    - Greater inequality

Policy

- IP balance
  - Innovation incentives
  - Diffusion

- Balance lost
  - Innovation incentives strong
  - But diffusion less
  - **LESS** optimal balance since 2000

Evidence that policy matters

- Patents, especially software
  - Reduce sequential innovation in SW (Galasso & Schankerman 2014)
  - PAE litigation reduces R&D (Tucker 2016, Mezzanotti 2017, Cohen et al. 2018, Srinivasan 2018)
- Employee non-compete agreements
  - Reduce labor mobility (Balasubramanian 2018, Marx et al. 2009, Fallick et al. 2006, Garmaise 2009)
  - Reduce entrepreneurship (Samila & Sorenson 2011)
- Inevitable disclosure doctrine
  - Reduces labor mobility (Png and Samila 2013)
  - Reduces innovation (Contigiani et al. 2018)

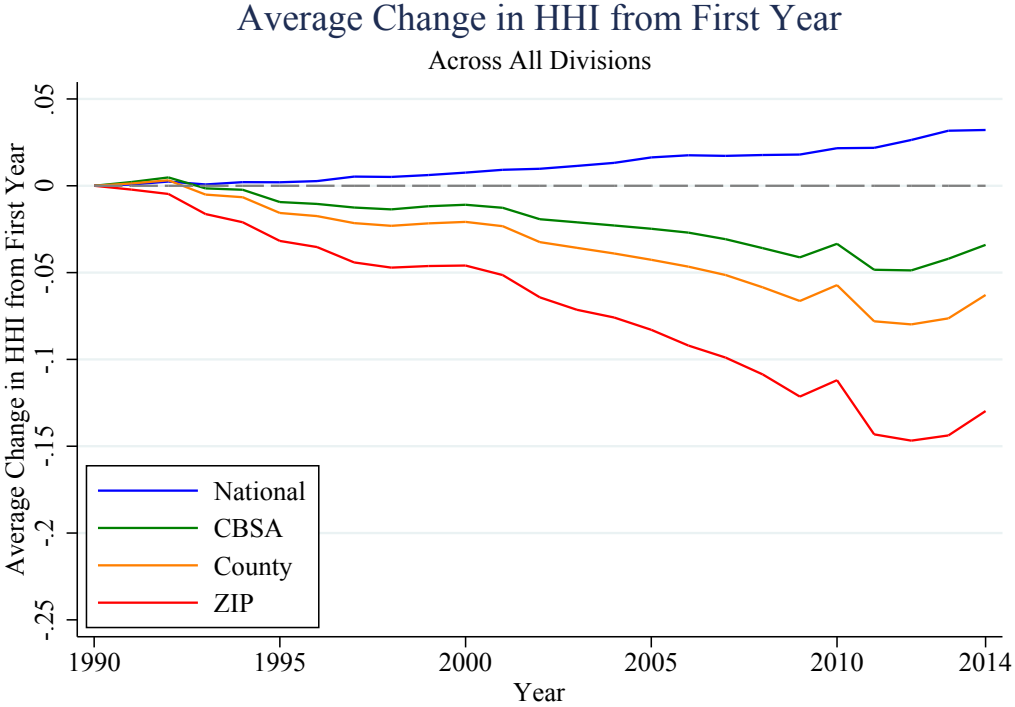
What can policy do?

- Antitrust
  - Compulsory licensing?
- IP
  - Clearer boundaries
  - Narrow scope
- Employee mobility
  - Restrict non-compete agreements
  - Restrict inevitable disclosure doctrine

Esteban Rossi-Hansberg

Department of Economics and Woodrow Wilson School, Princeton University

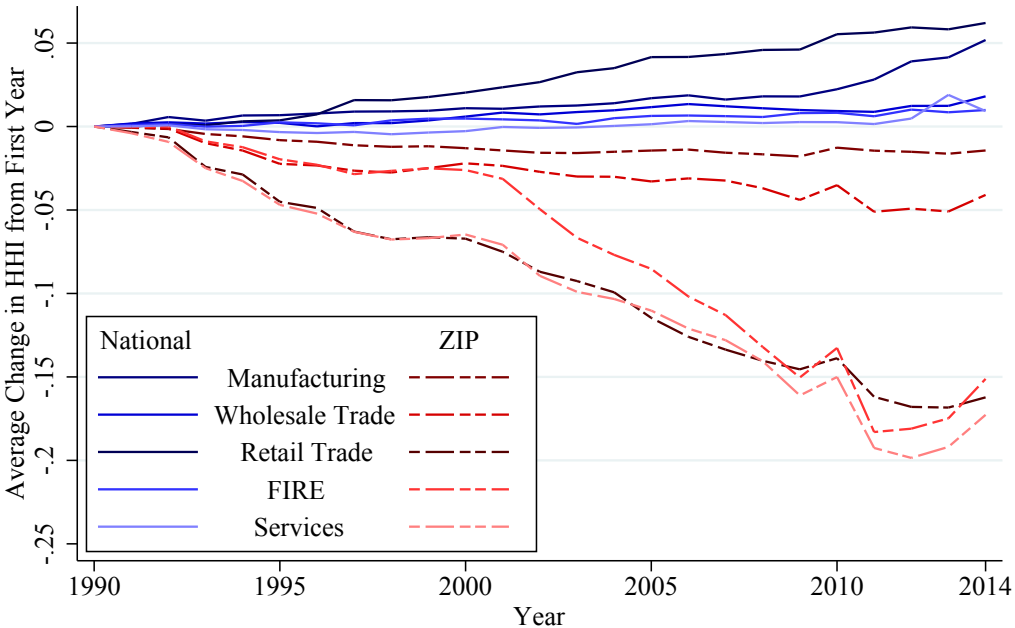
CHALLENGES TO ANTITRUST IN A CHANGING ECONOMY, HARVARD LAW SCHOOL, NOV. 9, 2018



Source: Rossi-Hansberg, Trachter, and Sarte (2018)

Average Change in HHI from First Year

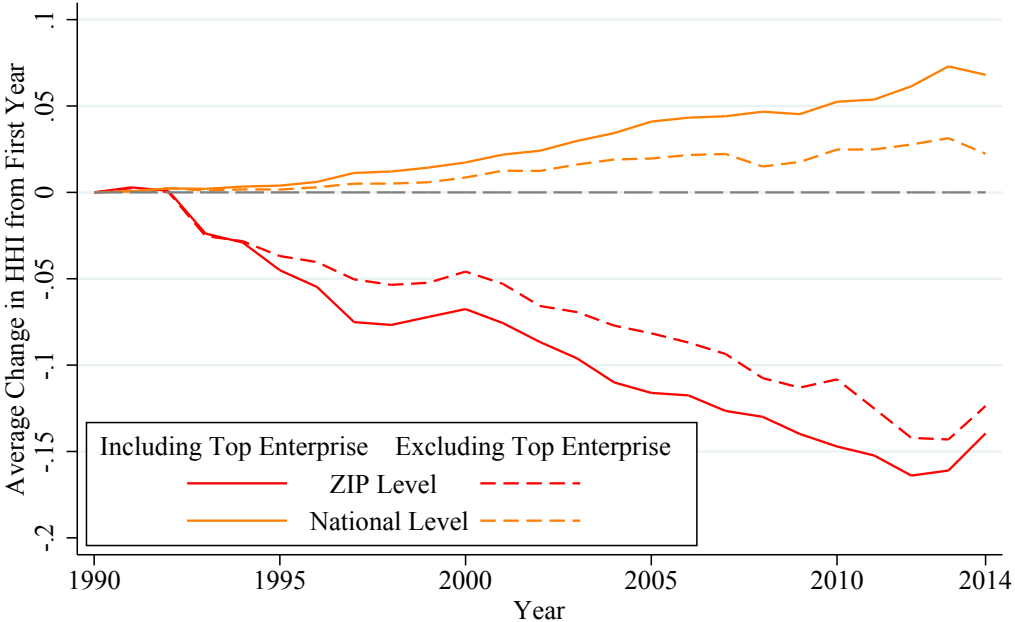
National and ZIP Levels, for Each Division



Source: Rossi-Hansberg, Trachter, and Sarte (2018)

Average Change in HHI from First Year

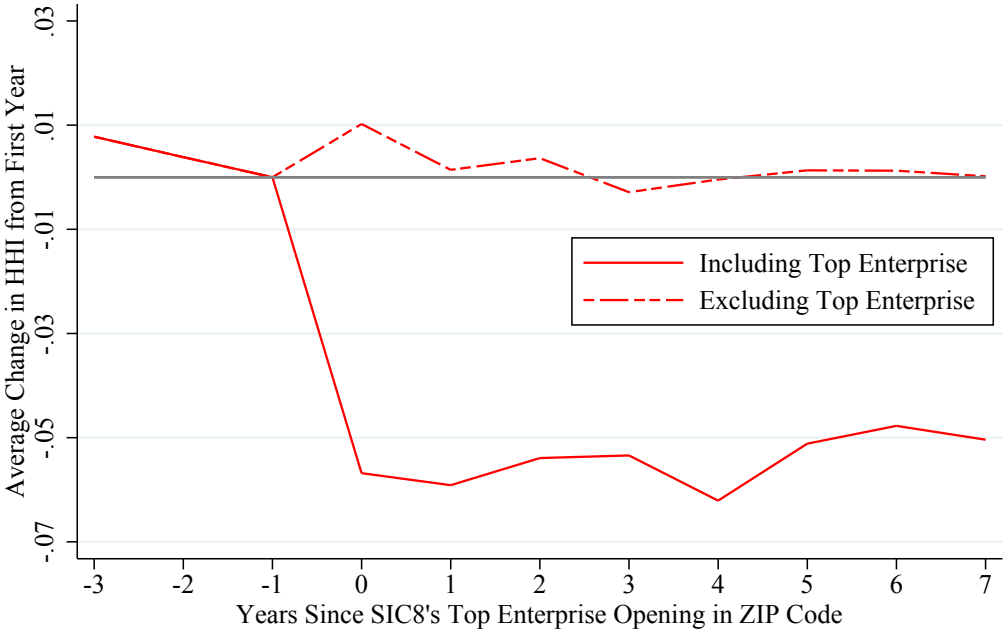
Across SIC8s with Positive National and Negative ZIP Trends



Source: Rossi-Hansberg, Trachter, and Sarte (2018)

Average Change in HHI after Top Enterprise Opening

Across SIC8s with Positive National and Negative ZIP Trends



Source: Rossi-Hansberg, Trachter, and Sarte (2018)

Tech and competition

Hal Varian
Harvard Law School
November 2018

The views in this presentation are those of the author and do not represent the views of his employer or any other party.

Concentration

CEA brief on competition and market power

Table 1: Change in Market Concentration by Sector, 1997-2012

Industry	Revenue Earned by 50 Largest Firms, 2012 (Billions $)	Revenue Share Earned by 50 Largest Firms, 2012	Percentage Point Change in Revenue Share Earned by 50 Largest Firms, 1997-2012
Transportation and Warehousing	307.9	42.1	11.4
Retail Trade	1,555.8	36.9	11.2
Finance and Insurance	1,762.7	48.5	9.9
Wholesale Trade	2,183.1	27.6	7.3
Real Estate Rental and Leasing	121.6	24.9	5.4
Utilities	367.7	69.1	4.6
Educational Services	12.1	22.7	4.2*
Professional, Scientific and Technical Services	278.2	18.8	2.8*
Arts, Entertainment and Recreation	39.5	19.6	2.5*
Administrative/ Support	159.2	23.7	1.6
Health Care and Assistance	350.2	17.2	0.8*
Accommodation and Food Services	149.8	21.2	0.1
Other Services, Non-Public Admin	46.7	10.9	-0.2*

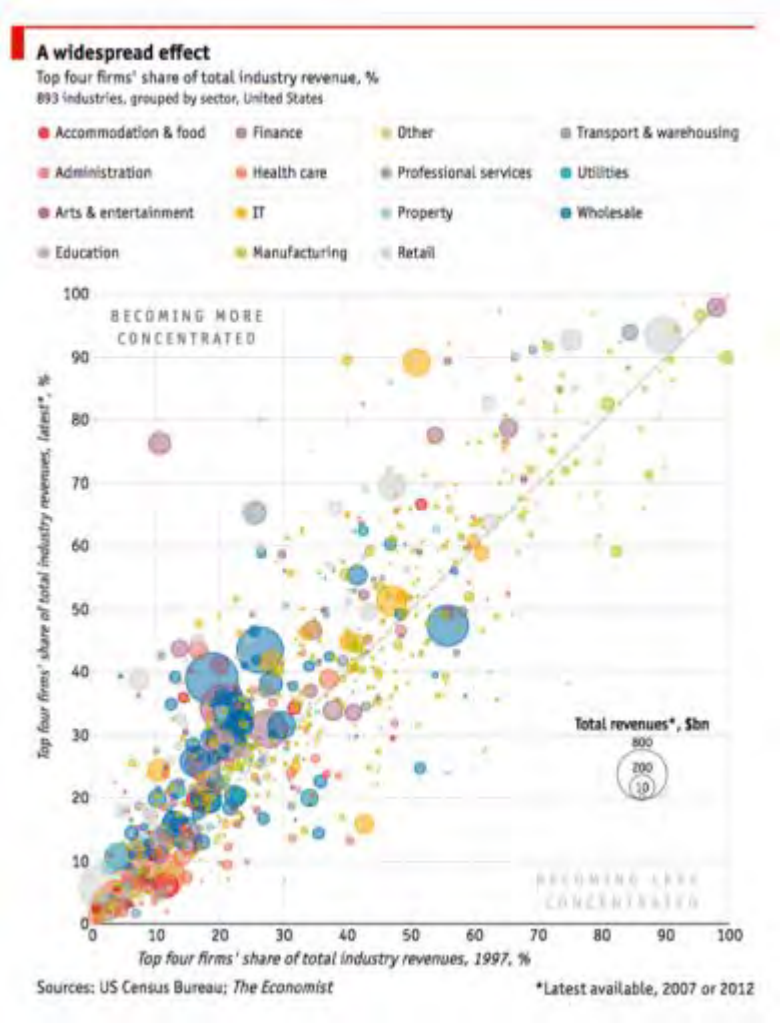
Source: CEA

CEA brief on competition and market power

- See Shapiro (2017) “Antitrust in a time of populism”
- Data from US Census US companies only, foreign firms are not measured
- 50-firm concentration ratio has little to say about competition
- 2-digit industries are far too coarse to be useful
- Local competition is not considered

The Economist article

- From Shapiro (2017)
  - Census data, CR4 at 4-digit NAICS level, 893 industries
  - No foreign competition
  - 85% of the industries see increased concentration (above 45 degree line)
  - But it is a relatively small increase: average CR4 goes from 26% to 32%. This would not be considered problematic by antitrust economists



NEWS

The Rise of Market Power
I have posted the draft of J. De Loecker, J. Eeckhout, "The Rise of Market Power and the Macroeconomic Implications".
Media coverage:
The Economist · The Wall Street Journal · Financial Times · NY Times · Bloomberg · Reuters · Quartz · Harvard Business Review · Pro Market · Noahpinion · Marginal Revolution · Growth Economics · The Weeds, Vox Podcast
Video: A funny take on Market Power by John Oliver

New paper: Global Market Power
This paper documents the evolution of markups for 134 countries around the world.

Sabbatical at Princeton
This academic year 2017-2018 I am the Louis A. Simpson visiting fellow and visiting professor at the Department of Economics at Princeton University.

Upcoming Seminars
This semester I give talks at ASU, Columbia, Yale, IMF, UPenn, McGill, Northwestern, Saint Louis Fed, Philadelphia Fed, UCLA, Banque de France, SED Mexico, Singapore (NUS and SMU).

De Loecker and Eeckhout equation

$$\frac{\text{price}_t}{\text{marginal cost}_t} = \frac{\text{output elasticity of labor}_t}{\text{revenue share of labor}_t}$$

- One equation...
- Two unknowns
  - Margin (price/marginal cost)
  - Output elasticity of labor (% change output over % change in labor input)
- We need another equation to determine margin!

De Loecker and Eeckhout equation

$$\frac{\text{price}_t}{\text{marginal cost}_t} = \frac{\text{output elasticity of labor}_t}{\text{revenue share of labor}_t}$$

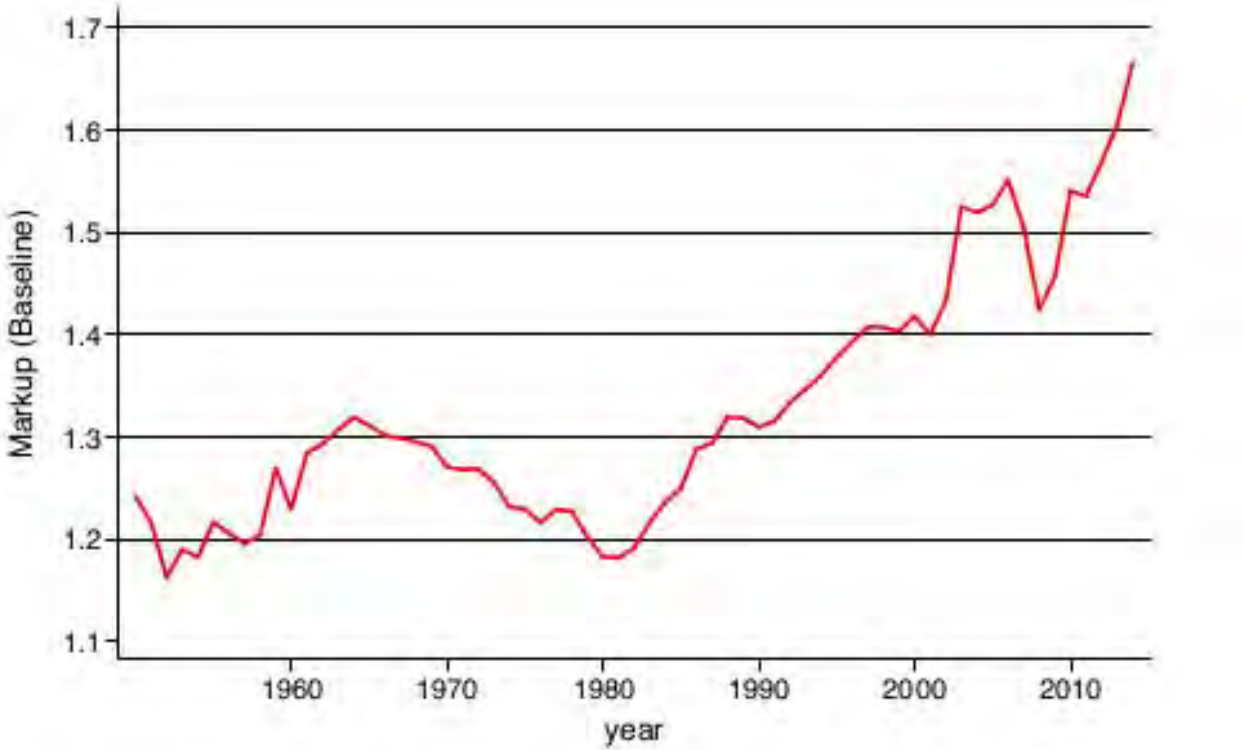
Assume that output elasticity of labor has been constant for 70 years!

$$\frac{\text{price}_t}{\text{marginal cost}_t} = \frac{\text{output elasticity of labor}}{\text{revenue share of labor}_t}$$

Labor share in US

Source: FRED

The evolution of average markups (1960 - 2014)



Source: DeLoecker and Eeckhout

Facts about labor share

- Labor share fell in essentially all OECD countries and most industries starting around 1980
- Which is more plausible?
  - “All OECD countries decide to relax antitrust policy in all industries around 1980.”
  - “Around 1980 there was a technological shock that reduced marginal cost going forward.”
- In the data, both price and marginal cost both fall but marginal cost falls more rapidly, leading to an increase in markup

The assumption that technology is constant is critical

If you assume that:

$$\text{output elasticity of labor}_t = \text{revenue share of labor}_t$$

then there is no change in markup over time!

Competition

Concentration and competition?

- Autor, et. al. (2017a and 2017b) present two interpretations of concentration increase
  - “...super-star firms with higher productivity increasingly capture a larger slice of the market,”
  - “...arise from anticompetitive forces whereby dominant firms are able to prevent actual and potential rivals from entering and expanding.”
- Their conclusion: industries that became more concentrated were those in which productivity increased the most
- Related findings by Ganapati [2017] and Bessen [2017]

Where's the competition in search? Follow the money.

- General purpose search is a tough business: you can only sell 6% of what you produce.
  - Why? Only 6% of clicks are commercial clicks (ads)
  - Competition is intense for commercial clicks: Amazon, eBay, Yelp, Travelocity, Expedia, Orbitz, Trip Advisor, and thousands of comparison and review sites
- Nobody cares about competition in non-commercial clicks: book search, scholar search, patent search, encyclopedia search, etc.
- Is Wikipedia dominant in online encyclopedia search? Who cares?

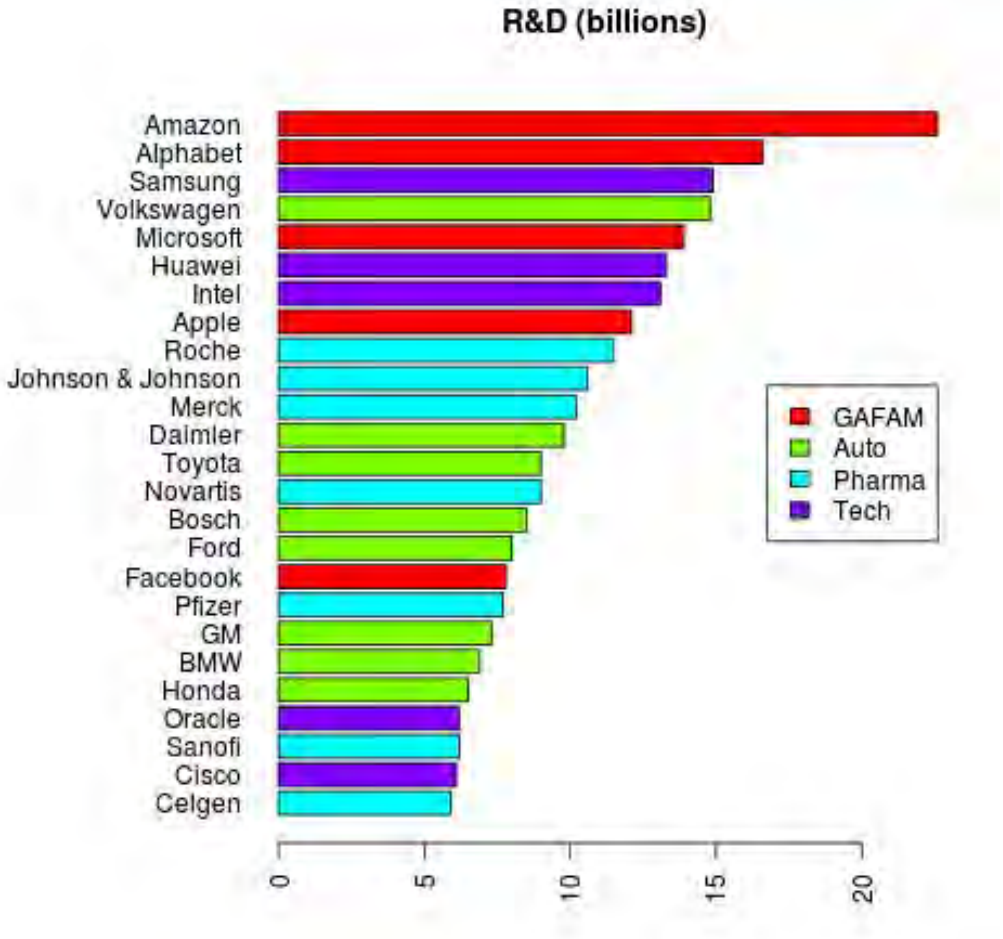
Competition

Tech firms compete intensely against each other. That's why prices are low and innovation is high.

Product	AMZN	AAPL	GOOG	FB	MSFT
advertising platforms	✓		✓	✓	✓
artificial intelligence	✓	✓	✓	✓	✓
browsers	✓	✓	✓		✓
cloud services	✓		✓		✓
digital assistants	✓	✓	✓	✓	✓
ebooks	✓	✓	✓		
email and messaging		✓	✓	✓	✓
games	✓	✓	✓	✓	✓
general purpose search engines			✓		✓
home delivery services	✓		✓		
maps		✓	✓		✓
office tools		✓	✓		✓
operating systems	✓	✓	✓		✓
smartphones	✓	✓	✓		✓
social networks			✓	✓	
special purpose search engines	✓	✓	✓	✓	✓
streaming video	✓		✓	✓	
video and music distribution	✓	✓	✓		
video conferencing		✓	✓	✓	✓

Global R&D spend

Tech companies are leading spenders on R&D.



Source: Bloomberg

Kill zone: where is it?

- Kill zone: “areas not worth operating or investing in, since defeat is guaranteed.”
- Google, Apple, Amazon, Microsoft, Facebook, China, Europe, and many others have all announced major AI initiatives.
- Surely no startup would want to enter this “kill zone”

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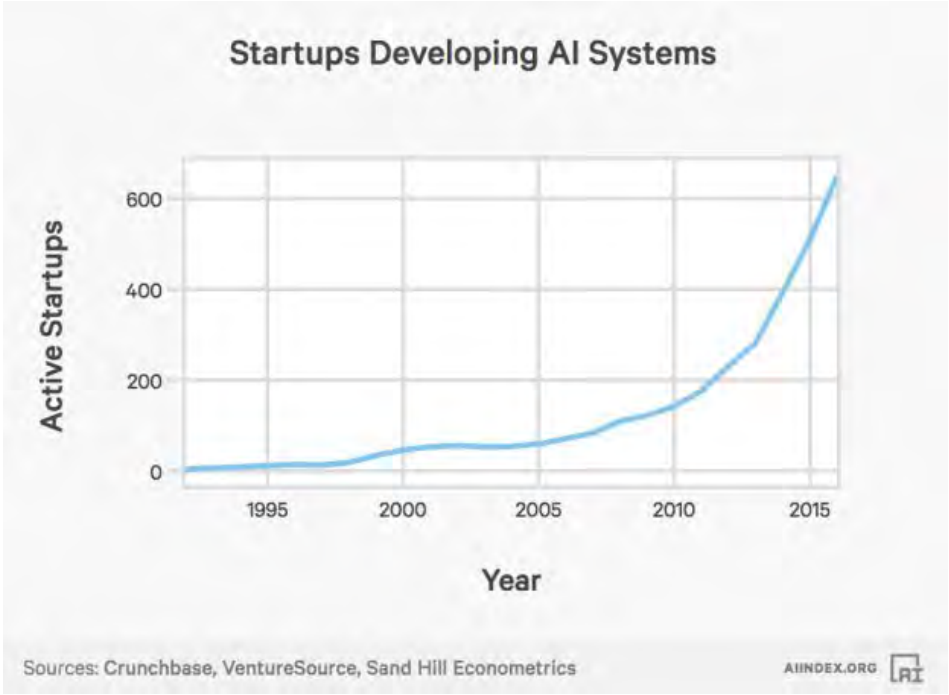
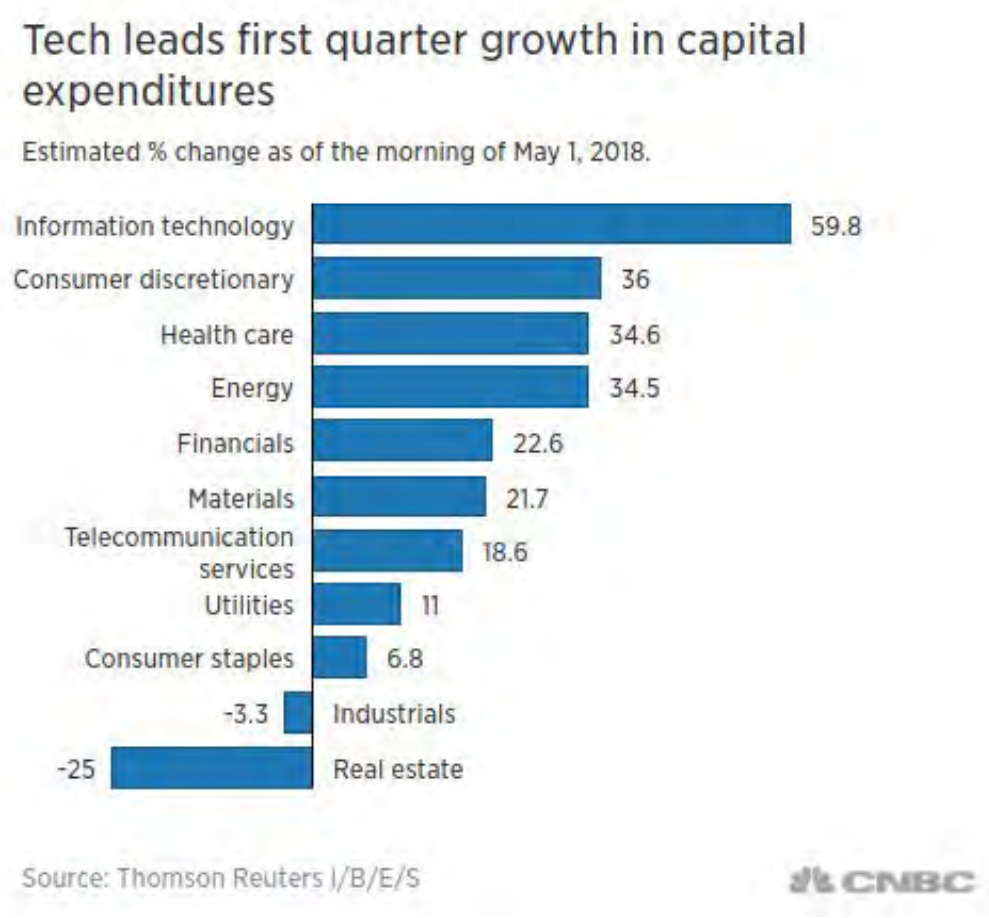
- Google, Apple, Amazon, Microsoft, Facebook, China, Europe, and many others have all announced major AI initiatives.
- Surely no startup would want to enter this “kill zone”
- Or would they?



Capital investment

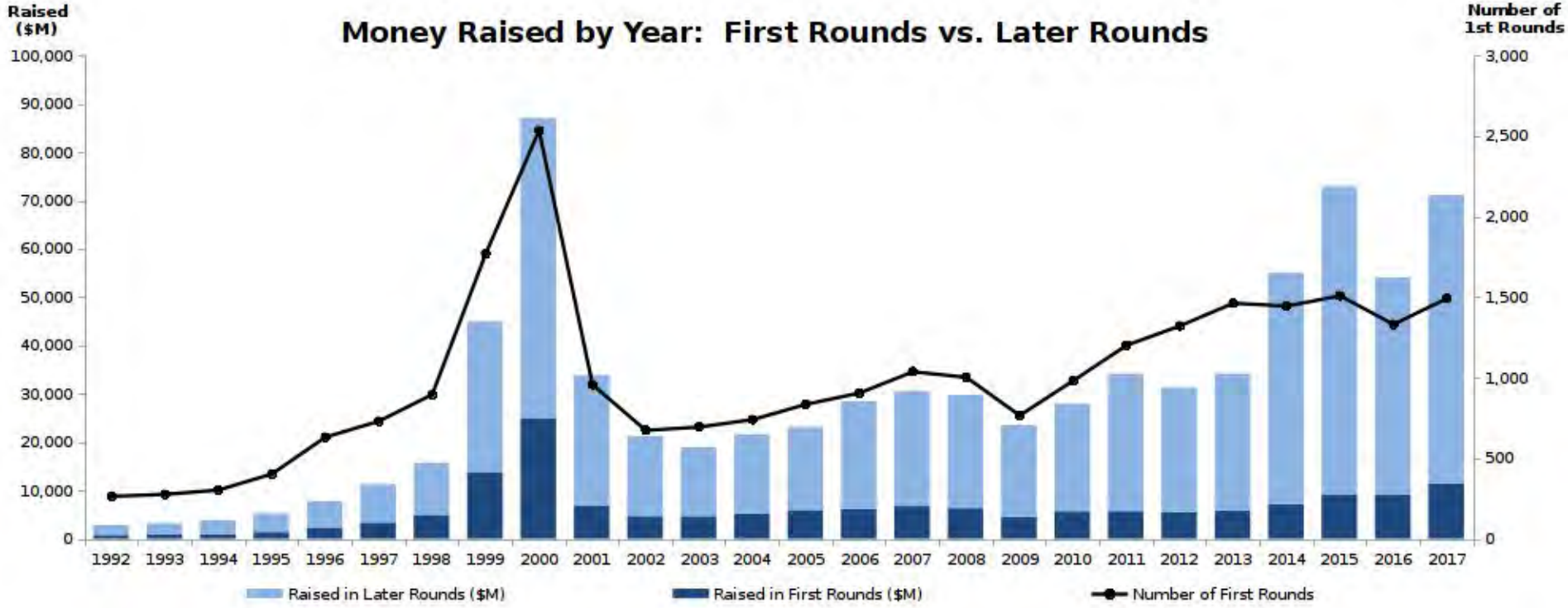
Also true for CapX: 59% increase YoY. “Alphabet and Microsoft accounted for much of the increase…”



Source: CNBC

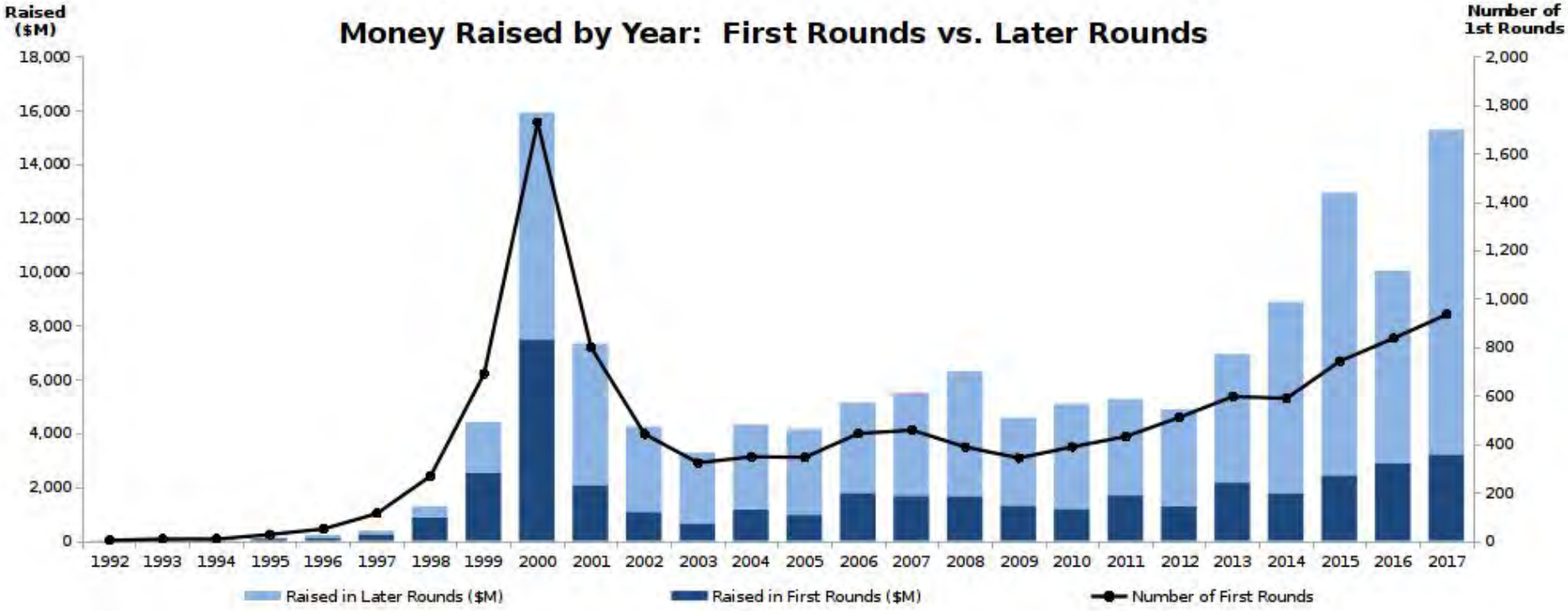
Entry

Entry: VC finance of US startups



Source: Sand Hill Econometrics

Entry: VC finance of European startups



Source: [Sand Hill Econometrics]

The End

Two-Sided Red Herrings

Richard Schmalensee

November 9, 2018

Nothing New Here

Everybody's in the Pool

It’s Just Like Pimples

Not Interchangeable, Not in

Two-Sided Analysis Will *Devastate* Antitrust!