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# **Market Power and Business Dynamism in the US and around the World**

Meghana Ayyagari

ECA TALKS

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# Stories dominating news headlines

## A giant problem

The rise of the corporate colossus threatens both competition and the legitimacy of business



## Is Amazon getting too big?

By Steven Pearlstein  
Columnist  
July 28, 2017



## The 30-Year Decline of American Entrepreneurship

Americans may worship start-up founders like Steve Jobs, but we've been founding fewer companies of our own.

# My comments today

## Market Power

- How to interpret rise of “Star firms” today?
- Role of efficiency and skill/intangible capital

## Business Dynamism

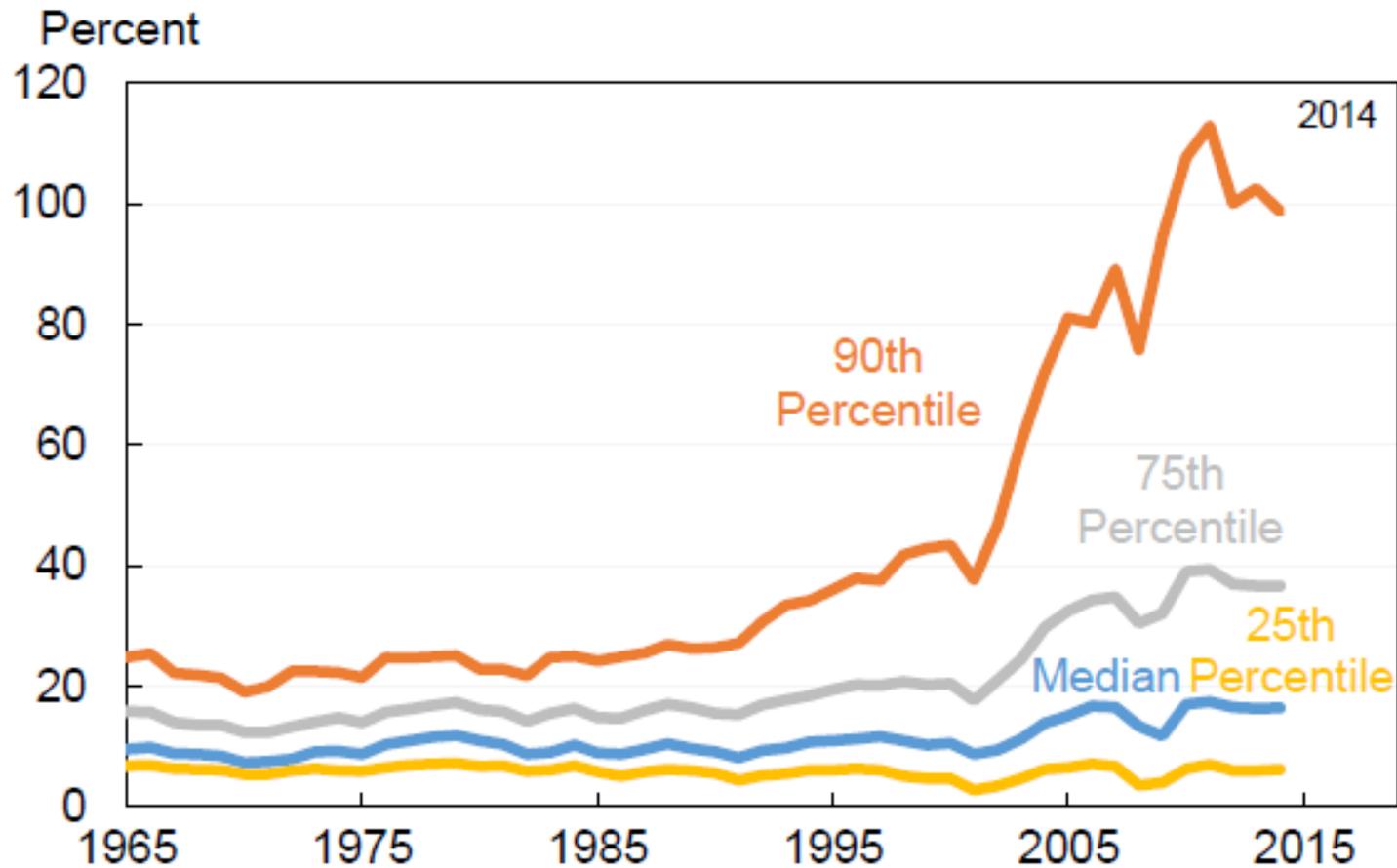
- How has quality of entrepreneurship changed?

Draws heavily on

- Ayyagari, Demirguc-Kunt and Maksimovic (ADM) (2020, 2021)
- Ayyagari and Maksimovic (2019)

# Dominant Market Trends:

## 1. Rise of Star Firms



Source: Furman and Orszag, 2018

## Return on Invested Capital, 1965-2014

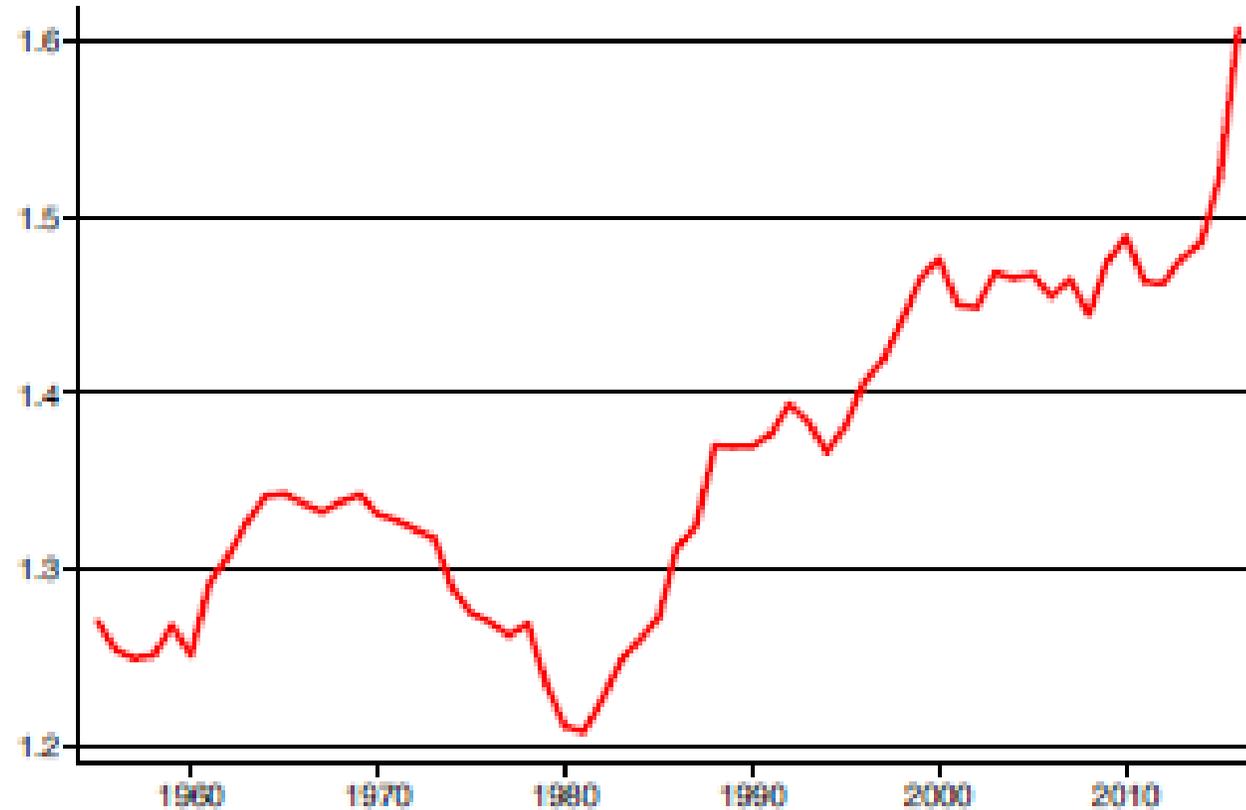
(Excluding Goodwill, U.S. Publicly-traded Nonfinancial Firms)

Not just US!

- **Export Superstars** (Freund and Pierola 2015);
- **Frontier firms** (Andrews et al. 2015)

# Dominant Market Trends:

## *2. Rise of Market Power*



### Evolution of Average Markups, 1955-2016

Markups are output elasticities from a production function

- Also globally

**Source:** De Loecker, Eeckhout, and Unger (2020);  
De Loecker and Eeckhout (2017)

# Questions:

1. **Are the trends related and if so why?**
  - Do star firms (top 10% of ROIC) have high markups?
  - 2 Competing Macro Views: **Market Power** vs. **Efficiency/Demsetz Hypothesis**
2. **What role does the rise of intangible capital (and associated measurement issues) play?**
3. **Should we be concerned?**
  - Do we see supply restricting monopolistic behavior?
  - Are they less affected by competitive shocks?
4. **What about implications for New or young firms?**

# Model of Star Firms

## Intangible Capital, Productivity, and ROIC

Consider the standard monopolistic competition model with non CES preferences and the following demand structure:

$$q(p) = p^{-\sigma} d(Ap)$$

Firms are heterogeneous in productivity,  $z$  (Melitz 2003). So higher  $z$  firms have higher factor inputs and higher outputs

Suppose the firm's inputs are labor  $L$ , physical capital  $K_1$ , and intangible capital  $K_2$ , the production function is given by:

$$Y = zL^{1-\alpha} K_1^{(1-\eta)\alpha} K_2^{\eta\alpha}$$

where  $\eta$  is intangible intensity and  $\alpha$  is labor share

With CRS the cost of producing one unit of a good is proportional to  $1/z$ .

# Mapping the Production Model to ROIC

If  $v$  is the measurement error in measuring intangible capital,  $\eta$  is intangible intensity and  $\delta$  is the depreciation rate, we can express ROIC as:

$$ROIC = \frac{\text{Earnings}}{\text{Invested Capital}} = \frac{py - WL - \gamma R_2 K_2 - \delta K_1 - \delta v K_2}{K_1 + v K_2}$$

*Hypothesis 1:* ROIC is increasing in markups ( $\mu$ )

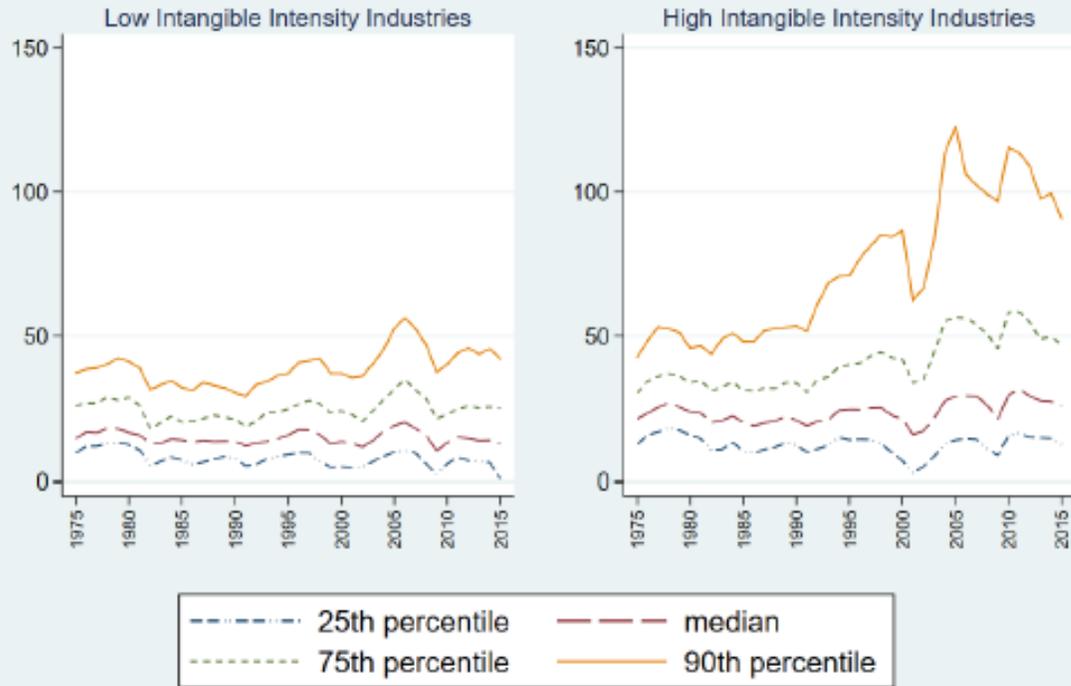
*Hypothesis 2:* When we fully adjust for intangible capital, ROIC is increasing in intangible intensity ( $\eta$ ) and

*Hypothesis 3:* When we fully adjust for intangible capital, ROIC is increasing in intangible intensity ( $\eta$ ) and markups ( $\mu$ ).

*Hypothesis 4:* At a given level of markup, star firms have higher output and investment than non-star firms.

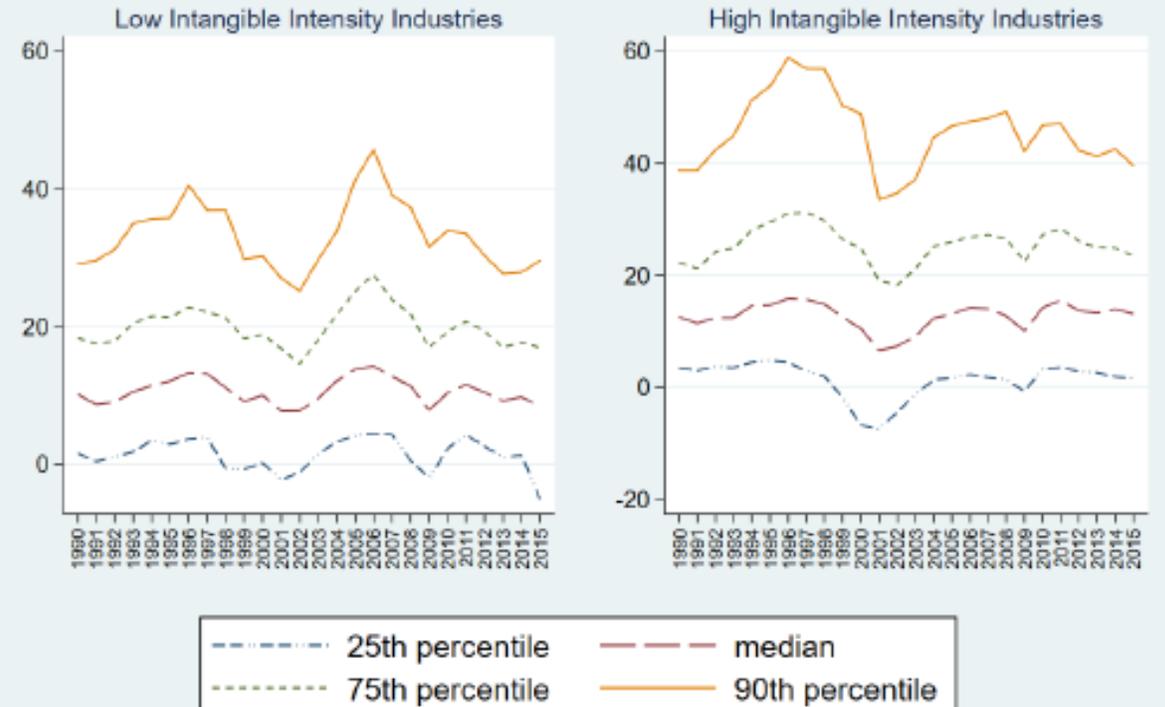
# #1: Intangible Capital Correction matters

## Return on Invested Capital



Conventional ROIC metric

## Return on Invested Capital Includes PT (2017) correction for intangible capital



Source: (ADM, 2020; 2021)

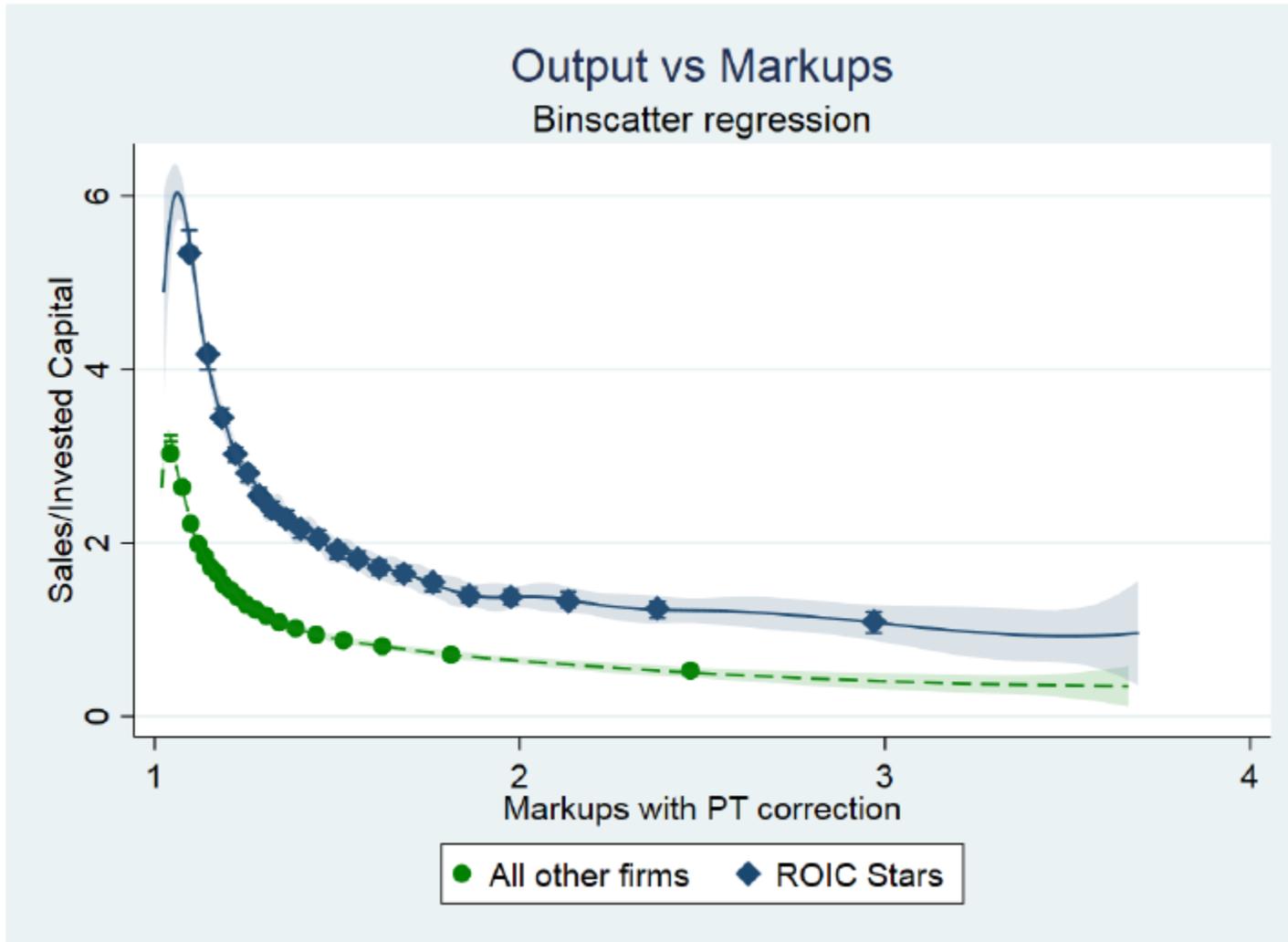
In the absence of this correction, we may be identifying the wrong firms as stars, especially in industries where the intangible capital adjustment matters the most.

## #2: Star Firms have higher Markups

Consistent with the theoretical model of star firms following Autor et al (2020), we see:

- **Initial Markups → Future Star Status**
  - Markups measured in the initial life of the firm (when the firm presumably has not accumulated much market power yet) predicts future star status
- **More valuable patents and higher productivity → Star Status**

# #3: No evidence of output restricting behavior



At every level of markup, stars have higher output and investment (Capex, R&D, and SGA)

# #4: Stars are NOT differentially affected by competitive shocks

Import Competition in the US Study

TABLE 2.

	(1)	(2)	(3)	(4)	(5)
	Markups	ROIC	Output	Investment	R&D
L.Log(Assets)	0.066*** (0.020)	3.418*** (0.271)	0.037*** (0.012)	0.003*** (0.001)	0.002** (0.001)
L.Log(Age)	0.018 (0.019)	0.946 (0.887)	0.016 (0.033)	-0.009*** (0.002)	-0.019*** (0.005)
L.Imports	-0.528* (-0.267)	-78.062** (-36.147)	-1.323 (-0.948)	0.092* (0.052)	0.024 (0.068)
L.Imports x L2.ROIC Star	0.070 (0.320)	-0.216 (-22.339)	-0.670 (-0.669)	-0.003 (0.045)	0.011 (0.054)
L2. ROIC Star	0.222*** (0.049)	24.747*** (2.322)	0.463*** (0.094)	0.020*** (0.005)	0.002 (0.011)
N	10403	10595	10486	10540	10570
adj. R-sq	0.123	0.238	0.037	0.038	0.048
Weak ID Test	17.037	16.939	16.966	17.006	16.962
Fixed Effects	Industry, Year				

Source: ADM (2020)

# #4: Stars are **NOT** differentially affected by competitive shocks

End of Cartel Membership in the International study

	Markups	Markups
Treated	Stars	Non-stars
Treat	-0.002	0.030**
	(0.023)	-0.012
Post	0.002	0.003
	(0.002)	(0.002)
Treat x Post	0.012	-0.014***
	(0.018)	(0.003)
Fixed Effects	Cartel, Year	Cartel, Year
N	93,468	100102
Adj R-Sq	0.165	0.172

Source: ADM (2021)

# #5: Countries with better Institutions have more Star firms

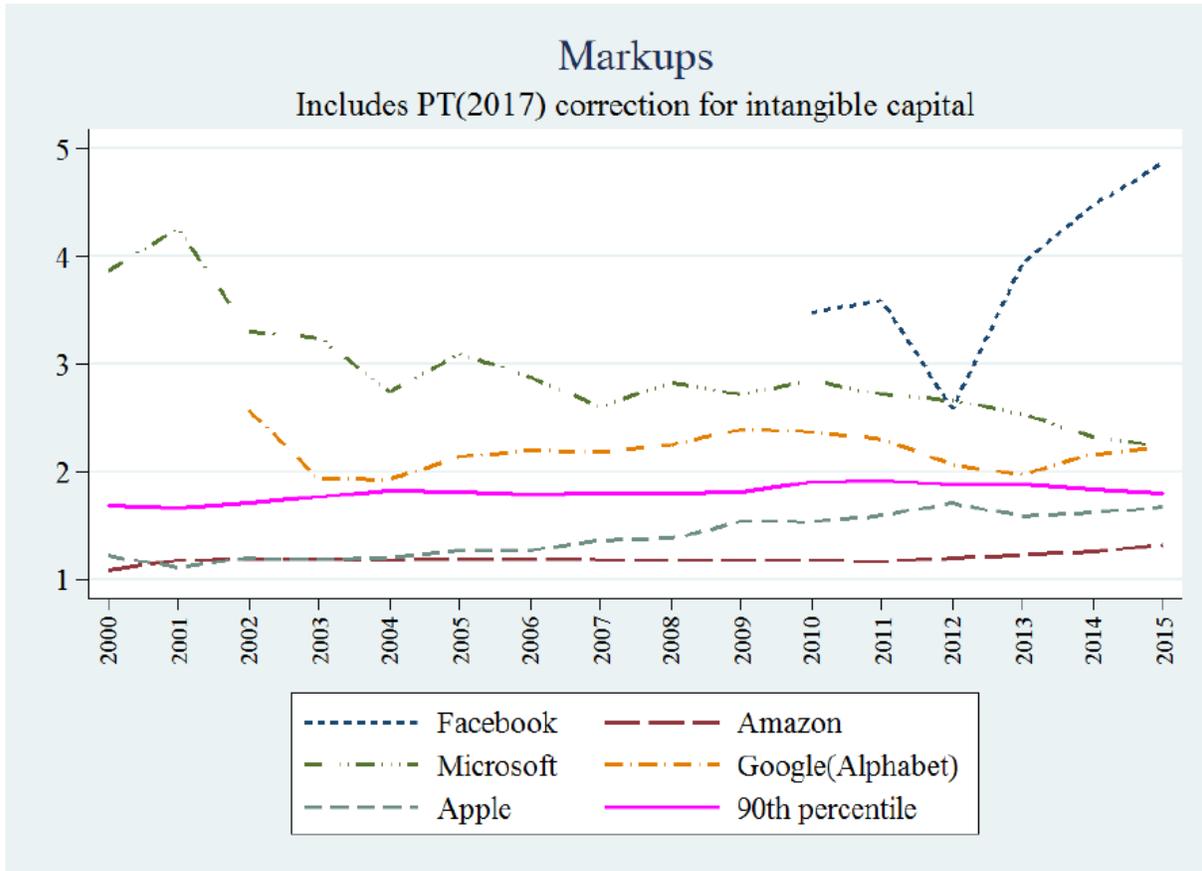
- **Greater churn in who becomes a star firm in high income countries**

Panel A: Classification of star firms by their status at t-4

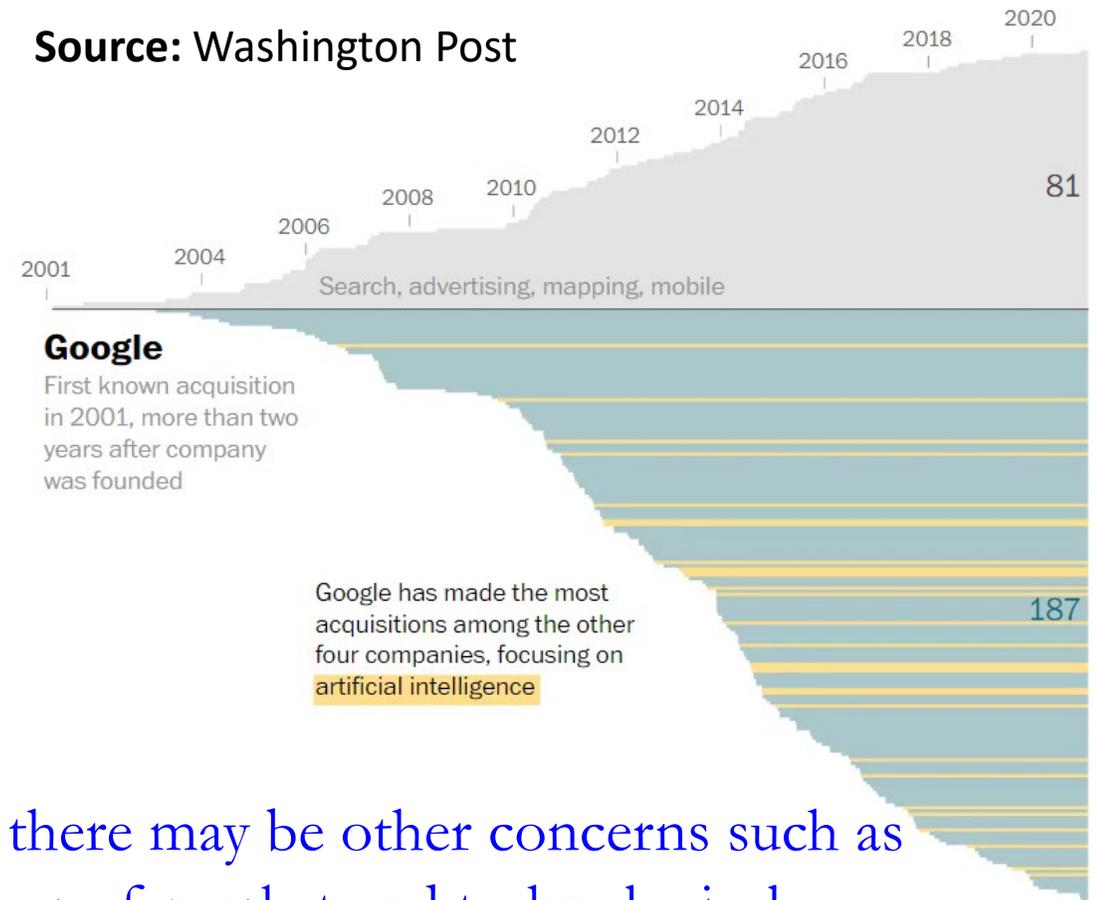
	Top 10%	Top 11-50%	Bottom 50%
High Income	44.40%	34.80%	20.80%
Upper Middle Income	55.74%	31.17%	13.09%
Lower Middle Income	45.24%	41.67%	13.10%

- **Good competitive environments are associated with more star firms**

# #6: What about Superstars?



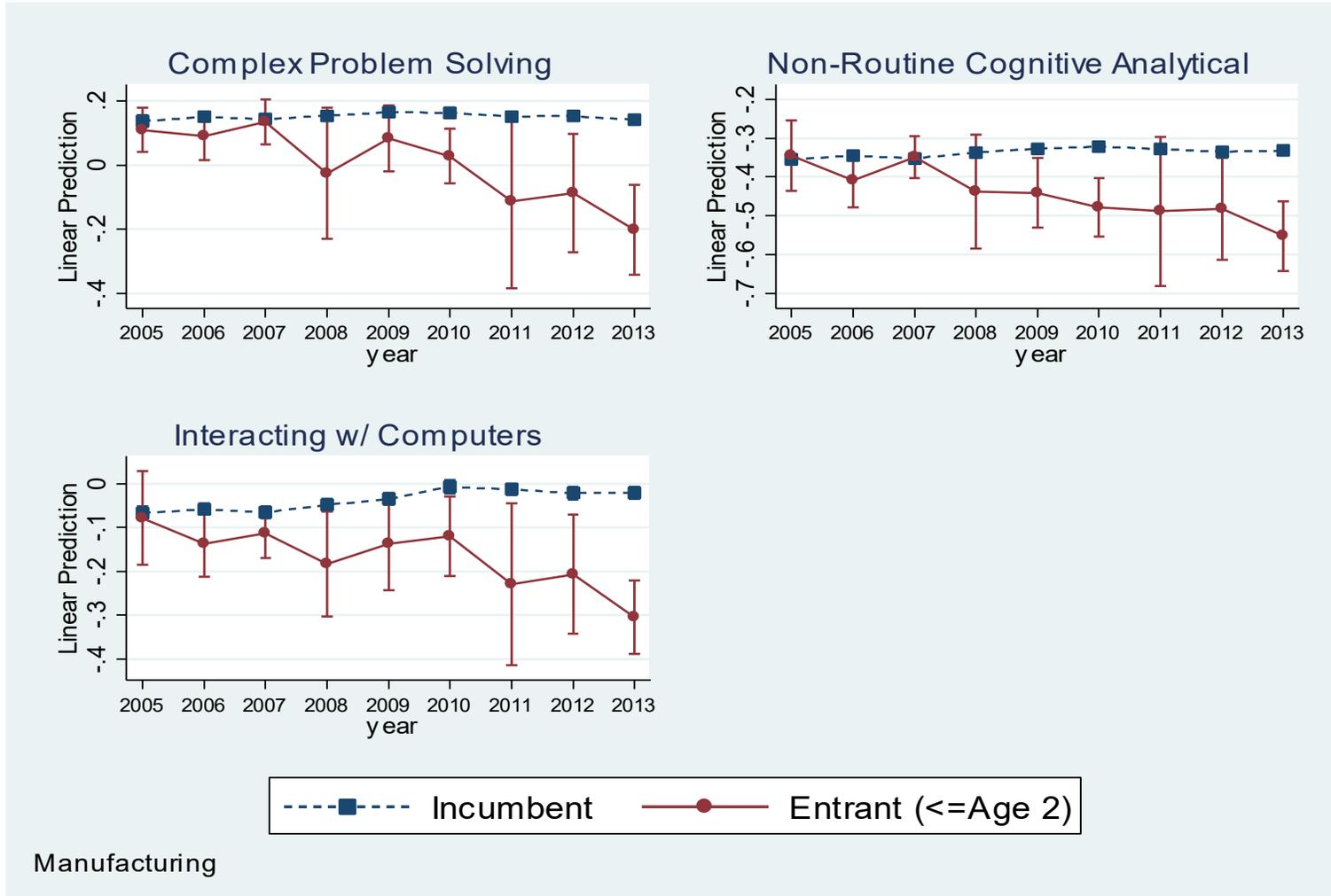
Source: Washington Post



Don't look too bad on the metrics!

But there may be other concerns such as danger of market and technological foreclosure!  
(e.g. Killer acquisitions (Cunningham et al.))

# #7: Skill Level of Entrants vs. Incumbents



Polarization of workers within US manufacturing with entrants entering low-skilled production niches

- More pronounced in industries that are hit by Chinese import shocks

# Takeaways

- **The consequences of not measuring intangible capital are far-reaching**
- **Rising markups - implications not as bleak as they appear**
  - Technology seems to be a driver of rise in markups
  - Star firms produce and invest more than other firms with the same markups.
  - Star firms are more innovative
- **Caution is warranted when inferring market power from the rise of star firms**
- **But implications for long-run dynamism and entry may be a concern.**

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