

LECTURE 4: TRENDS IN 21ST CENTURY: LABOR SHARE; RISING CONCENTRATION, SEGREGATION, AND SORTING

Fatih Guvenen

University of Minnesota

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NEWER TRENDS (OR THOSE WE ARE JUST REALIZING)

- ① **Labor share** has become volatile from 1970 to 2000 and has a strong downward trend since 2000.
- ② **Labor market flows** seemed to have moderated (E to U flows, worker flows across firms, industries, etc.)
- ③ **Concentration** in production (measured by returns, employment, productivity, etc.) gone up.
- ④ **Outsourcing, offshoring, subcontracting** rose substantially.
- ⑤ (Some evidence that) investment rate seems to have fallen.
- ⑥ **Gig economy** (Uber, airbnb, task rabbit, etc.) seems to be taking off.

NEWER TRENDS, CONT'D

Moreover:

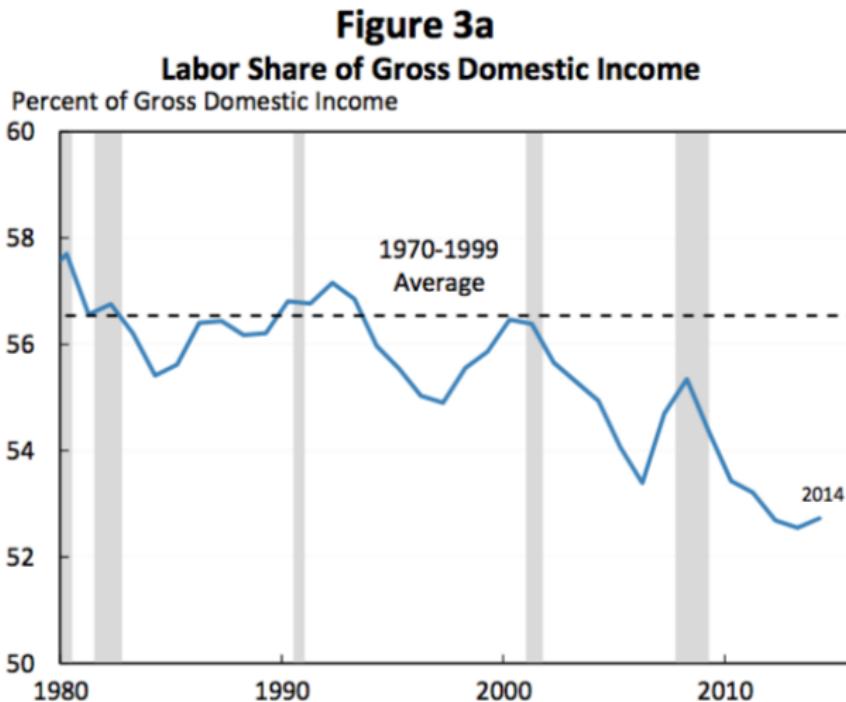
- ① Segregation is going up:
 - ① Workers more segregated across firms (by skill and other attributes)
 - ② Households more segregated by income and education across regions
 - ③ political polarization is up
- ② Sorting is also up: higher skill workers seem to be concentrated at higher quality firms

These trends collectively point to a global economy in flux....

Perhaps going an important transformation we don't fully understand.

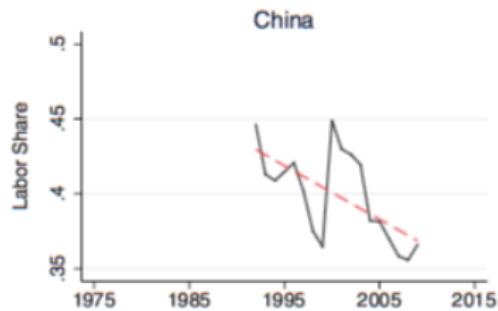
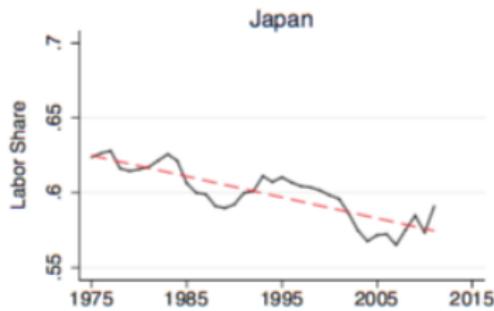
LABOR SHARE

FIGURE: Furman and Orszag (2016)



LABOR SHARE, BY COUNTRY

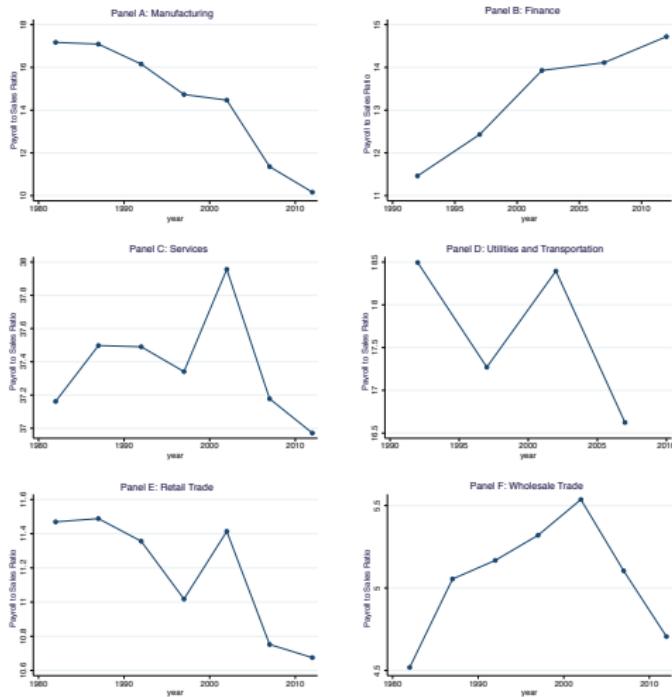
FIGURE: Karabarbounis and Neiman (2013)



AUTOR ET AL (2017)

1. Falling labor share—within industries:

Figure 3: Average Payroll-to-Sales Ratio



WHAT DOES FALLING LABOR SHARE TELL US?

- Does it mean the capital share is rising?
- Not necessarily: If production is not CRS, then there will be profits. So labor and capital shares could both be declining.
- $Y_i = A_i V_i^{1-\alpha} K_i^\alpha$ where Y_i is value-added, V_i is variable labor, K_i is capital and A_i is TFP at firm i . $L = V + F$ where F is fixed overhead labor.
- Labor share: $S_i = \left(\frac{wL_i}{P_i Y_i} \right) = \underbrace{\frac{1-\alpha}{\mu_i}}_{\text{ }} + \frac{wF}{P_i Y_i}$ where $\mu_i = P_i/c_i$ (markup).
- Firm i has lower labor share if : (i) its markup is high, or (ii) share of fixed cost is low.
- Autor et al (2017) use this to argue rise of superstar firms led to falling labor shares.

EVIDENCE

- Barkai (2017, LSE working paper):
 - ▶ Capital share declined by 30% of its base value.
 - ▶ Rising profits make up the difference.
- Eggertsson, Robbins, Wold (2018, “Kaldor and Piketty’s facts: The rise of monopoly power in the United States”)

Factor share	1985	2015	Change (%)
Labor Share (%)	63	57	- 6
Capital Share (%)	26	17	- 9
Tax Share (%)	8	9	+1
Pure Profit Share (%)	3	17	+14

Table 1: Factor shares. 5-year moving averages

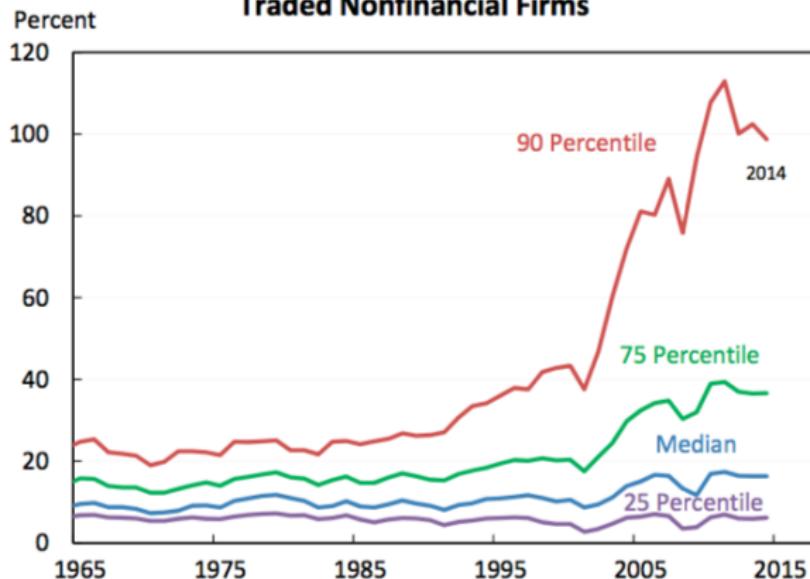
Rising Concentration

RISING CONCENTRATION

- Autor et al (2017): Concentration (sales, value added) has increased.
Complements recent evidence:
- Furman and Orszag (2015): Return (on capital, equity, etc.) distribution of US firms diverging (more so since late 1990s).
- Andrews, Criscuolo, Gal (2016): Since 2000, top firms diverging from rest in productivity
- Guvenen-Mataloni-Rassier-Ruhl (2017): R&D-intensive sectors had 3X productivity growth of rest since 1985.
 - ▶ Similar divergence for IT-producing and IT-using sectors vs. the rest.

I.A. RETURN ON CAPITAL (FURMAN-ORSZAG 2016)

Figure 8
Return on Invested Capital Excluding Goodwill, U.S. Publicly-Traded Nonfinancial Firms

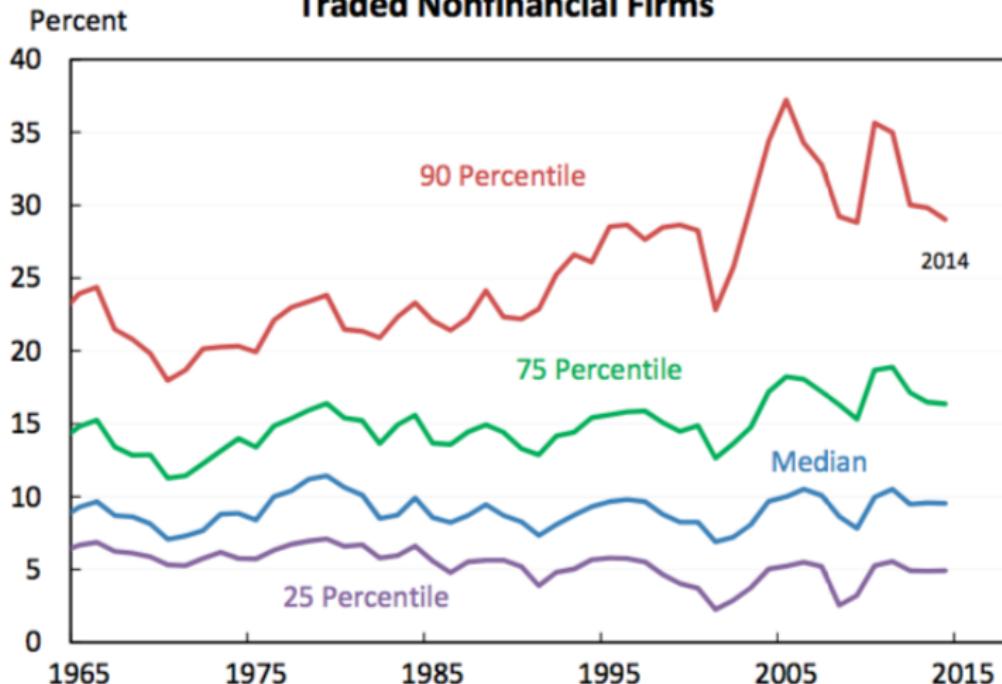


Note: Publicly-traded non-financial US firms. Return on *capital* is the return on invested capital, defined as net after-tax operating profits divided by capital invested in the firm. Return on equity would be affected by debt/equity mix.

I.A. RETURN ON CAPITAL (W/OUT GOODWILL)

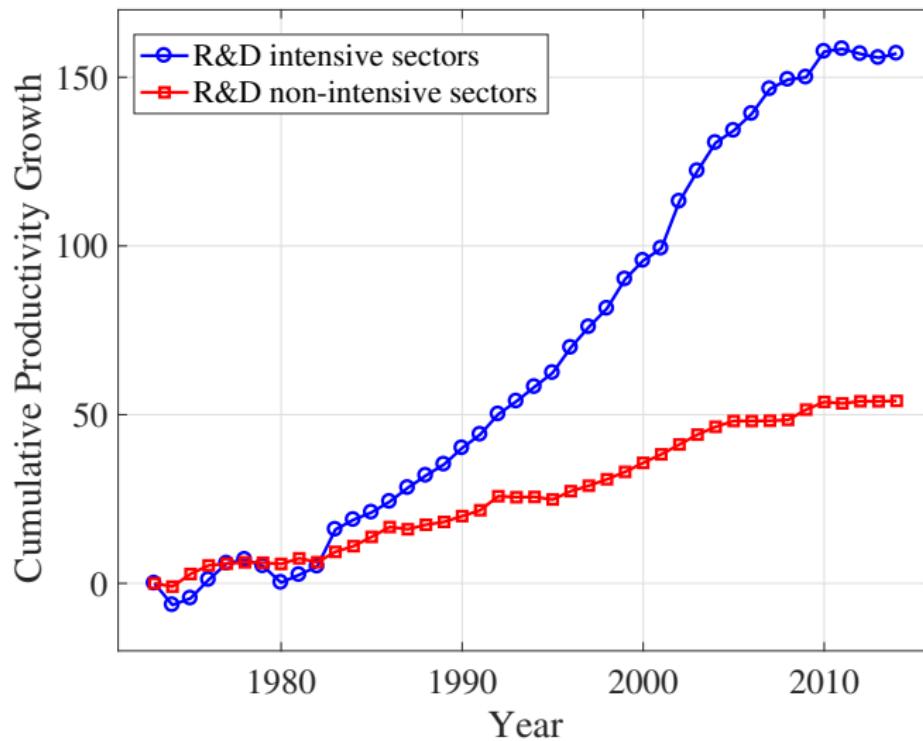
Figure 9

Return on Invested Capital Including Goodwill, U.S. Publicly-Traded Nonfinancial Firms



Note: Publicly-traded non-financial US firms. Return on *capital* is the return on invested capital,

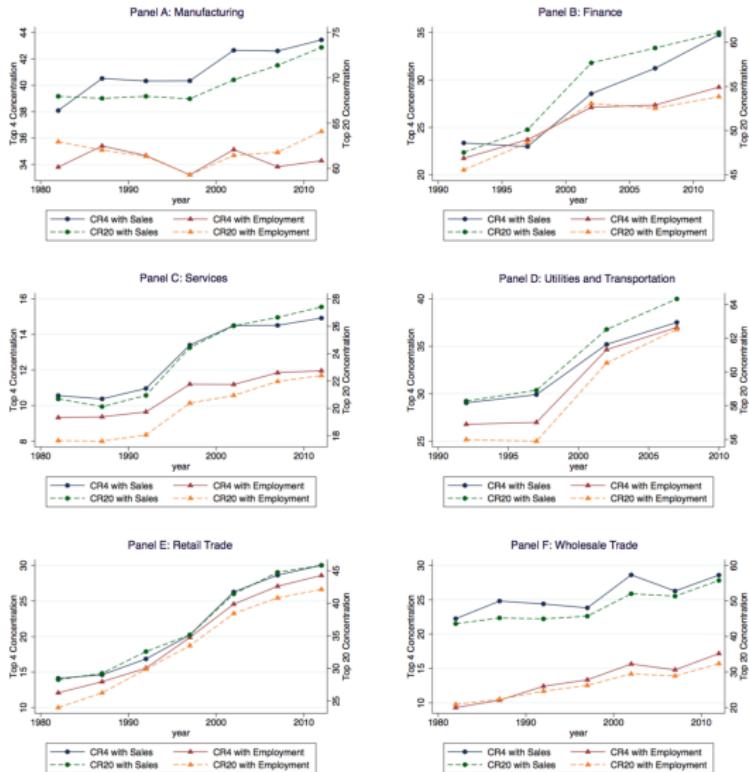
I.B. DIVERGENCE IN PRODUCTIVITY GROWTH



Source: Guvenen-Mataloni-Rassier-Ruhl (2017)

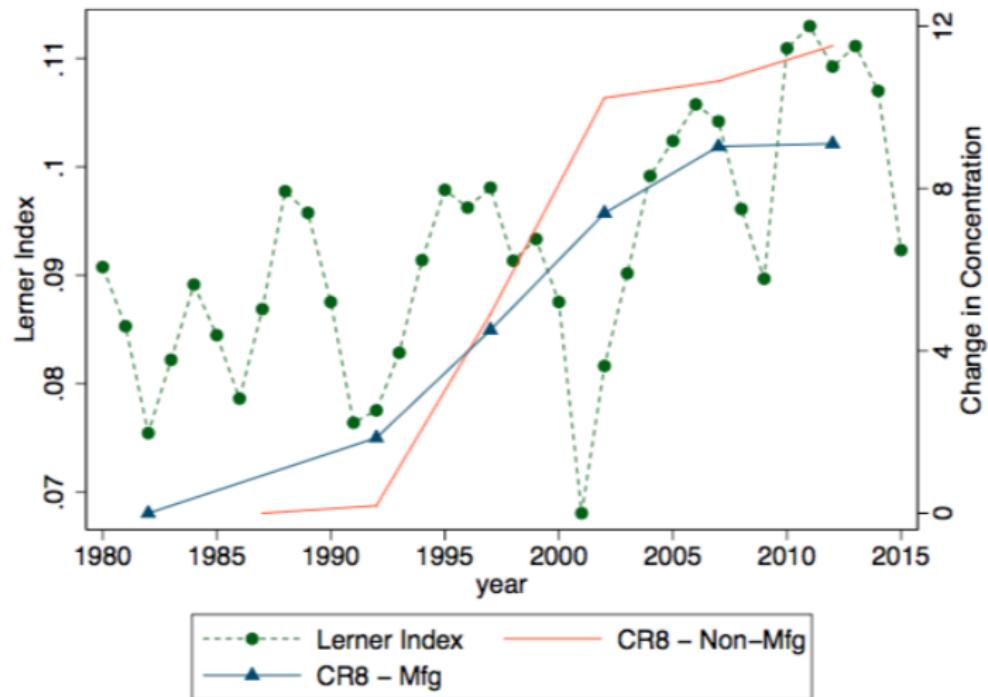
I.B. RISING CONCENTR. BY INDUSTRY (AUTOR ET AL)

Figure 4: Average Concentration Across Four Digit Industries by Major Sector



I.B. RISING CONCENTRATION AND MARKUPS (GUITERREZ-PHILIPPON)

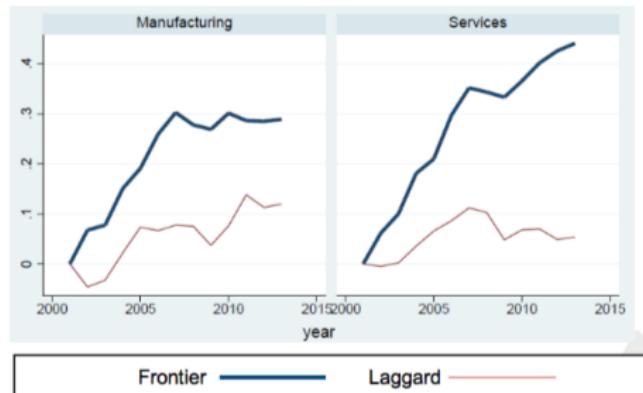
Figure 1: Concentration and Mark-ups



I.B. RISING CONCENTRATION, GLOBAL (ANDREWS ET AL)

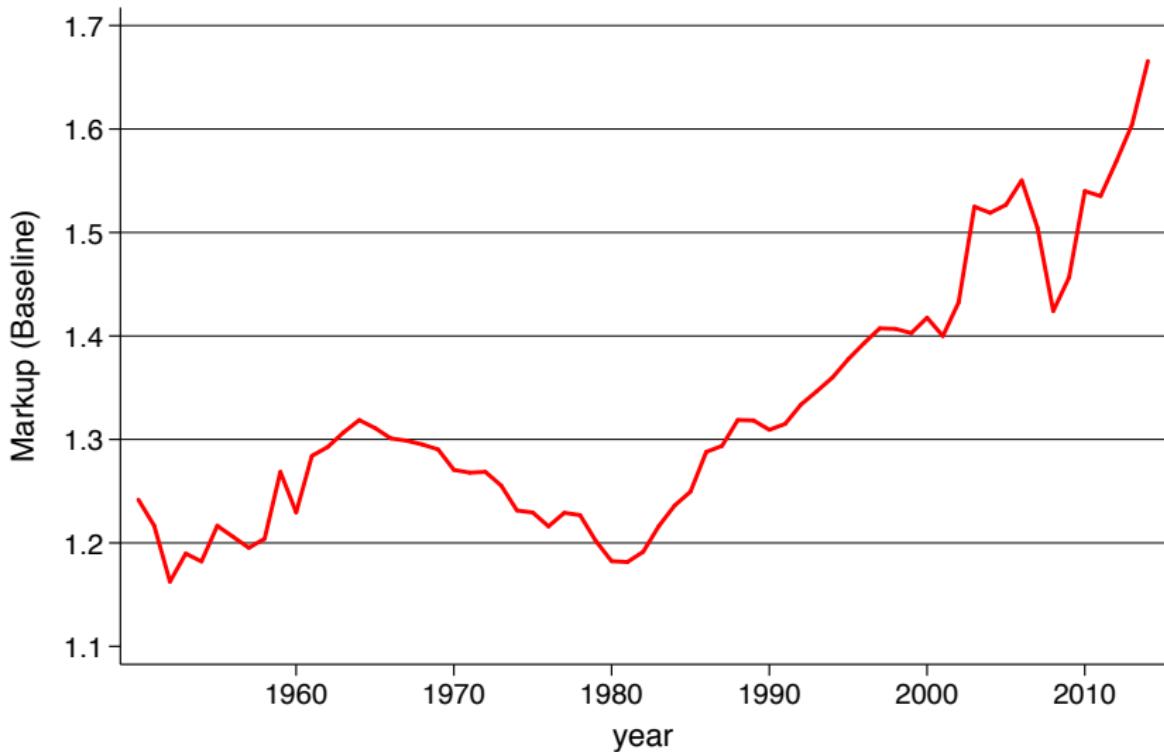
Figure 4. A widening gap in mark-up corrected MFP

Global frontier defined in terms of mark-up corrected MFP (MFPQ)



Notes: the global frontier group of firms is defined by the top 5% of companies with the highest MFPQ levels within each 2-digit industry. Laggards capture all the other firms. Unweighted averages across 2-digit industries are shown for MFPQ, separately for manufacturing and services, normalized to 0 in the starting year. Time period is 2001-2013. Services refer to non-financial business services. See details in Section 3.3.

I.B. RISING CONCENTRATION, GLOBAL (DE LOECKER-EECKHOUT)



Rising Concentration

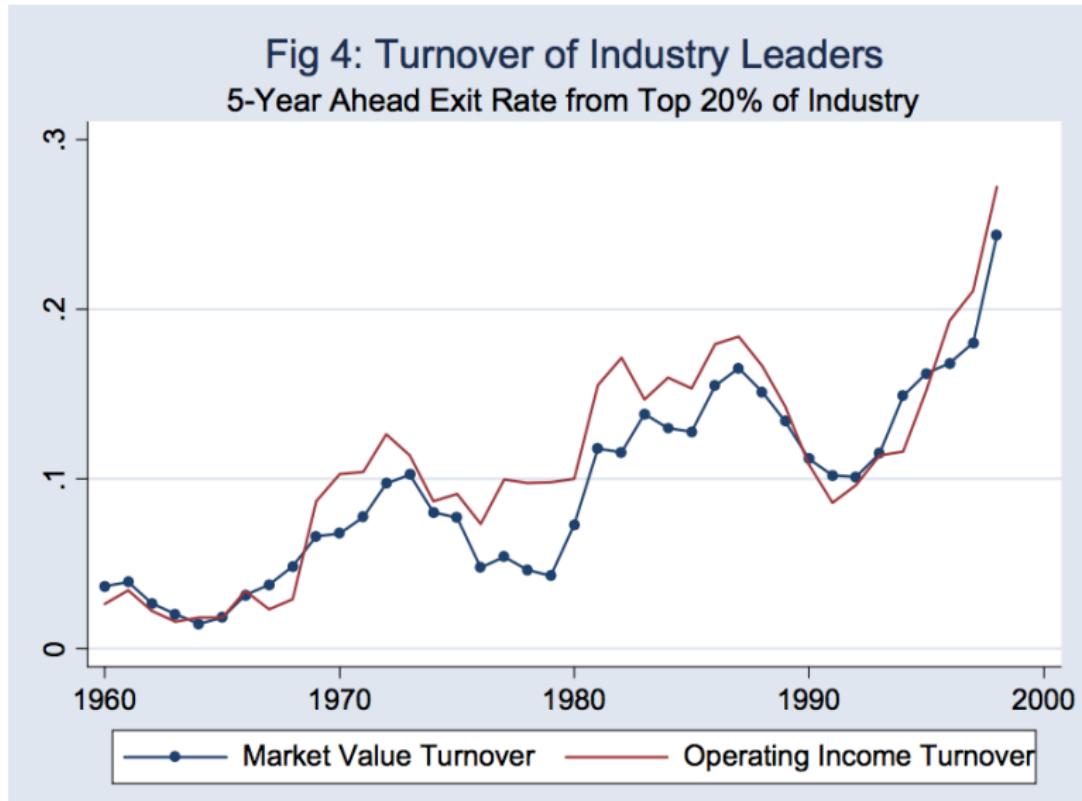
WHAT TO MAKE OF RISING CONCENTRATION?

- Furman and Orszag: “economic rents and barriers to competition”
- Autor-Dorn-Katz-Patterson-vanReenen: “winner takes most” and “consumers have become more sensitive to price and quality due to greater product market competition”.
- McGowan, Andrews and Millot (2017): “divergence due to rising number of zombie firms”.
 - ▶ “Within-industries over the period 2003-2013, a higher share of industry capital sunk in zombie firms is associated with lower investment and employment growth of the typical non-zombie firm and less productivity-enhancing capital reallocation.”
- In general, relationship between competition and concentration is ambiguous.

QUESTIONS

- How persistent are these returns? If they are transitory, they may not indicate rising concentration.
 - ▶ Furman and Orszag suggest “relatively low probabilities of transition out of their return bucket for high-returning firms.”
 - ★ Comin-Philippon (2006) had found decline in persistence.

RISING CONCENTRATION BUT DECLINING PERSISTENCE?



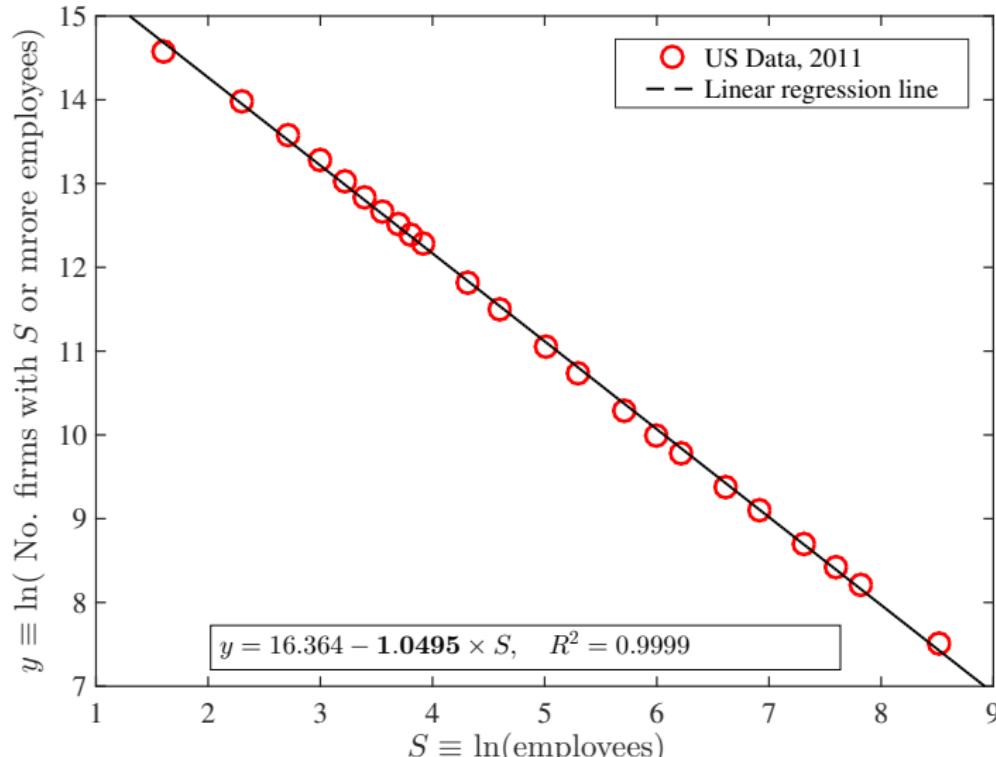
SuperStar Firms in Recent Trends

Basic Idea:

- Large firms are *very* large and getting larger.
- Most of these “superstars” are multinational enterprises (MNEs).
- MNEs shift a lot of operations abroad for tax reasons.
- Many key statistics computed using only domestic data.
- It has the potential of distorting facts and trends.

I. FIRM SIZE DISTRIBUTION IS VERY THICK TAILED

FIGURE: Size Distribution for Firms, $\alpha = 1.0495$



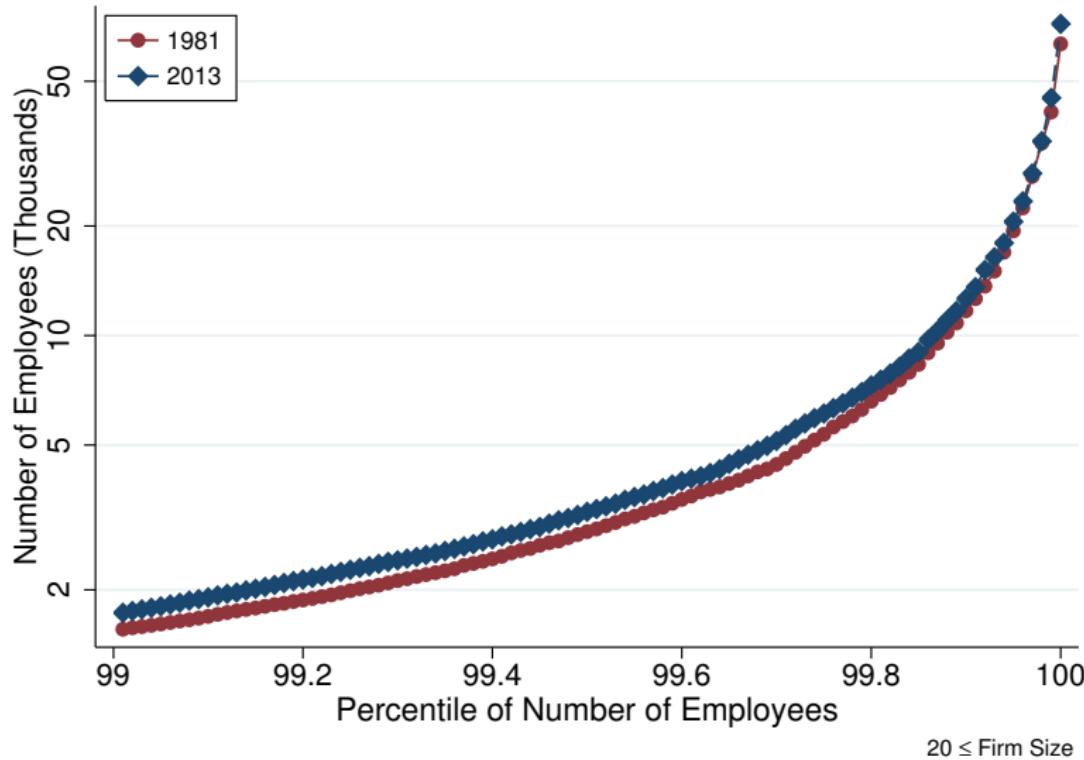
I. FIRM SIZE DISTRIBUTION IS VERY THICK TAILED

- 27-28 Million “firms” in the US.
- 22 Million has no employees. 6 million has 1 or more employees.
- Among employee-firms:
 - ▶ median firm has 1 employee.
 - ▶ Median worker works in a firm with 1000 employees.

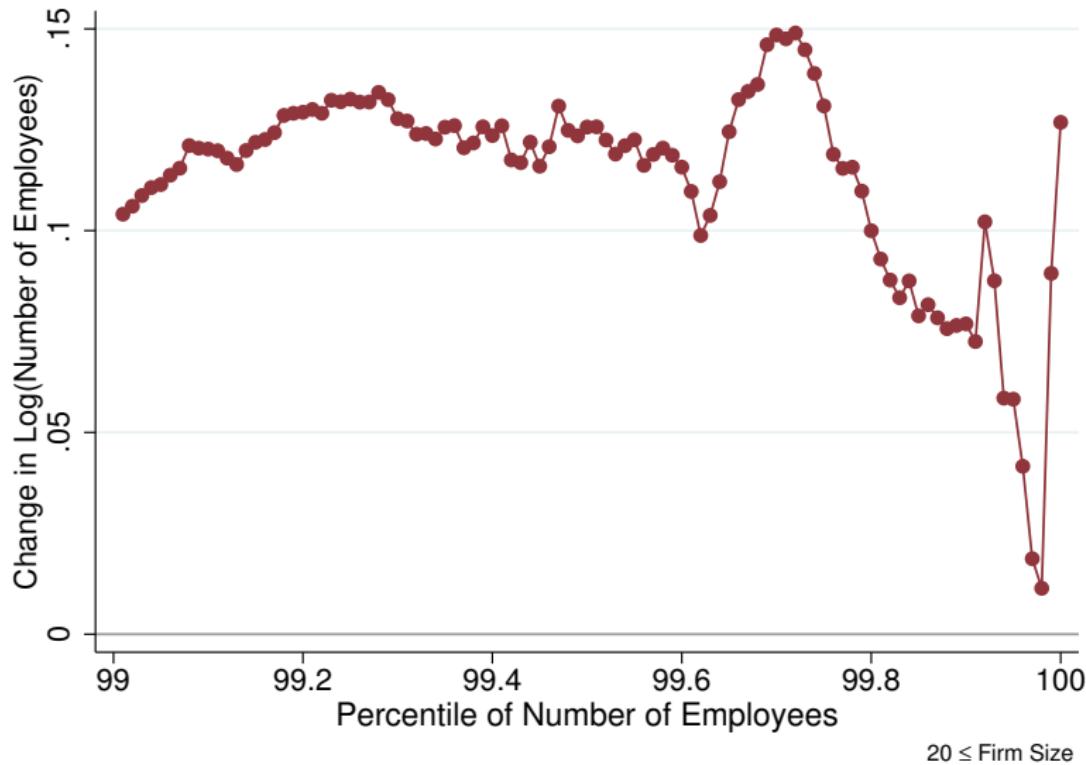
TABLE: Percentiles for Firm Size Distribution, firms with >20 empl.

Number of Employees						
P50	P90	P95	P99	P99.5	P99.9	P99.99
40	182	335	1,178	3,270	13,180	58,335

I. LARGEST FIRMS ARE GETTING LARGER



I. CHANGE IN FIRM SIZE: TOP 1% OF FIRMS



II. MOST SUPERSTAR FIRMS ARE MNEs

- About 2200 parents, number stable since 1980s. Large expansion globally
- Value added of U.S. MNEs (in 2012):
 - ▶ Domestic: \$3.26 trillion (27% of U.S.). Abroad: \$1.4 trillion
- Employment: US parents: 23M workers. Foreign affiliates: 11M
 - ▶ Growth from 1982 to 2008: Domestic: 12%. Foreign: 80%
 - ★ Not to mention growth in foreign contract workers.
- USDIA income grew substantially as % of economy:
 - ▶ 1973–1993 average: 12.4% of US corporate profits.
 - ▶ 2012: 28.1% of corporate profits.

II. TAX DIFFERENTIALS AND PROFIT SHIFTING

- A series of papers (starting with Hines and Rice (1994, QJE), run cross-country regressions of profits reported by affiliate in country i , given effective tax rate τ_i , and labor and capital used:

$$\log(\pi_i) = \beta_0 + \beta_1 \times \tau_i + \beta_2 \times \ell_i + \beta_3 \times k_i + u_i.$$

- $\beta_1 = -3$ to -4 (Hines and Rice 1994, Guvenen et al 2017, Clausing 2016, Dowd et al 2017).
- This is a high elasticity: 1 pp higher tax rate in country i reduces reported profits by 3 pp to 4 pp.

II. PROFIT SHIFTING BY US MULTINATIONALS

Two important factors facilitated profit shifting:

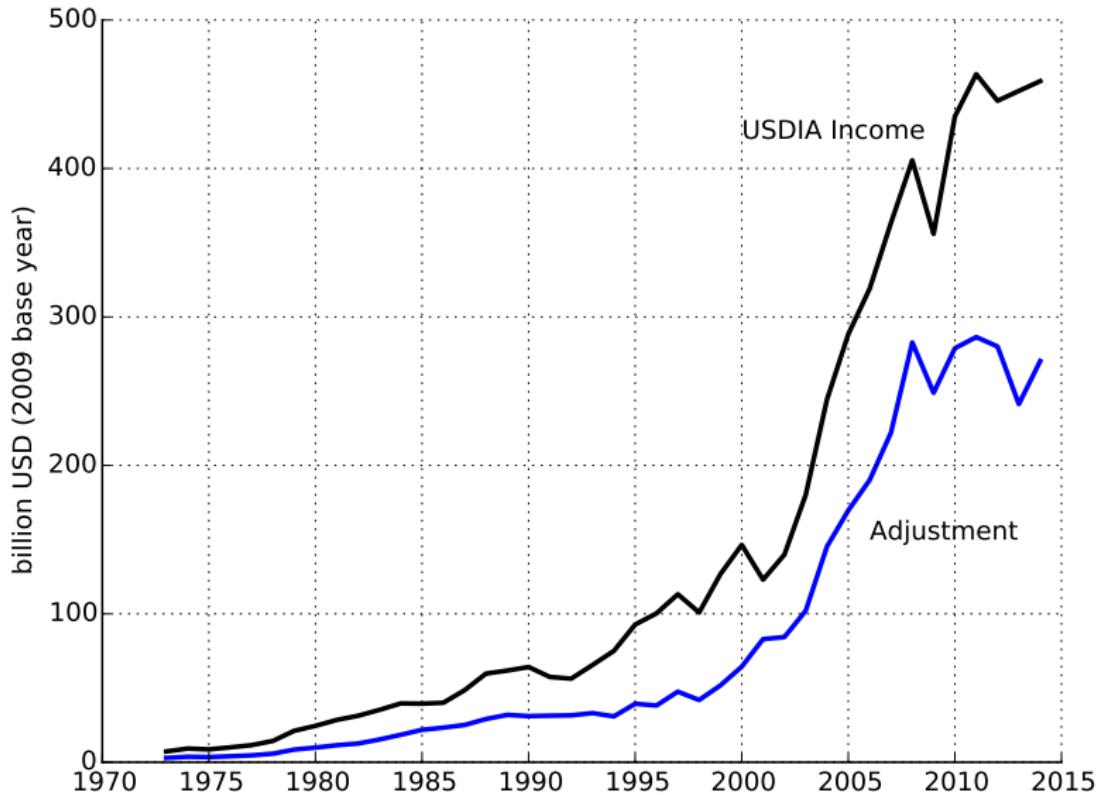
- ① Two major changes in IRS regulations in 1995 and 1997: Cost sharing agreements and check-the-box regulation: made it
 - ① much easier AND and
 - ② more profitable to shift profits to tax havens.
- ② Rise in intangibles made profit shifting easier under 1995 CSAs.
 - IRS realized problem quickly but couldn't reverse it (intense lobbying) until 2009.
 - Profit shifting slows down after 2010 (giving way to corporate inversions!)

TABLE I – Assets in U.S.-owned foreign affiliates, 2012

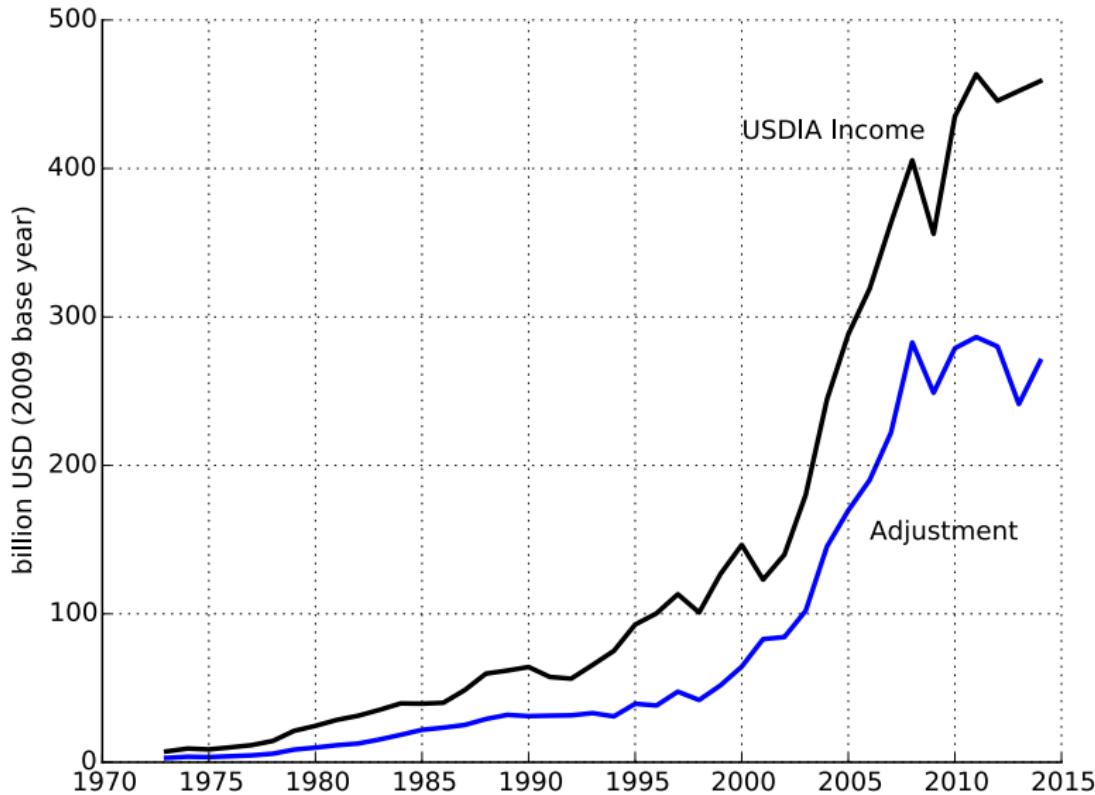
	Ratio of U.S.-owned foreign affiliate total assets to		
	PPE	Compensation	Employment (mil. USD)
World	16.8	39.0	1.8
Canada	6.4	21.2	1.2
Ireland	20.0	142.7	10.9
Luxembourg	1,109.6	1,380.0	121.6
Netherlands	97.7	115.3	8.7
Switzerland	59.9	60.0	7.7
Barbados	41.8	1,444.7	43.3
Bermuda	130.8	1,475.5	155.8
U.K.I., Caribbean	101.2	3,330.2	199.8
Hong Kong	40.3	39.3	2.7
Singapore	18.6	50.3	3.1

Notes: Total assets are the sum of all financial (e.g., cash, receivables) and non-financial (e.g., property, plant, and equipment, inventories) assets on a historic cost basis — that is, amounts reported on firms' financial statements under U.S. generally accepted accounting principles (GAAP). United Kingdom Islands (U.K.I.), Caribbean, consist of the British Virgin Islands, Cayman Islands, Montserrat, and Turks and Caicos Islands.

II. RISE IN PROFIT SHIFTING BY US MNEs



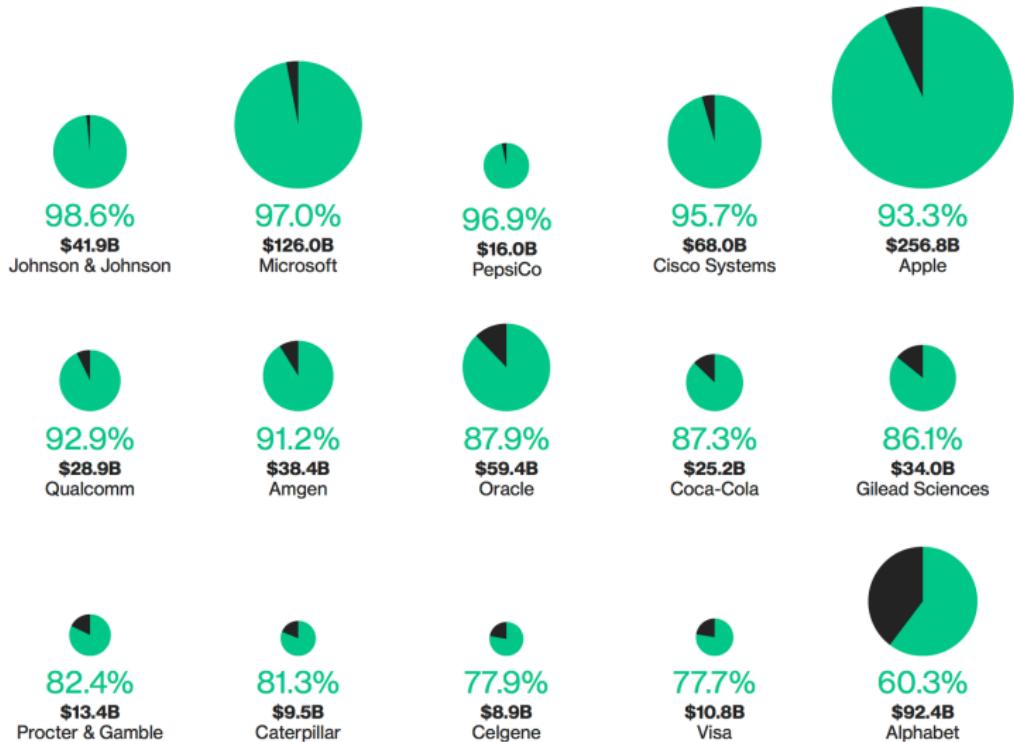
II. RISE IN PROFIT SHIFTING



I. WHY IS CORPORATE SAVING RISING?

- A number of papers wrote clever and sophisticated models trying to explain the rise of cash held by firms (based on precautionary savings, because it became harder to borrow; or need to make large acquisitions to counter slowing innovations, etc.)
- One interesting fact is most of the rise in cash held by firms is abroad.
- Foley, Hartzell, Titman, Twite (JFE 2007): tax diff. crucial for cash held.
- Several pieces of evidence:
 - ① Most US corporate cash sits abroad in tax havens (\$2+ trillion)
 - ② Ask the CEOs! They say (not too loudly) that it's for tax reasons.
 - ③ Superstar firms have little problem borrowing. So precautionary savings argument is weak.

Circles sized by total cash & marketable securities (\$B) ● Percent held overseas ● Percent held in the U.S.



DO SUPERSTAR FIRMS FACE DIFFICULTY BORROWING?

- Doesn't seem to be the case. Example:
 - ▶ May 2013:
 - ★ Apple sells \$17B worth of 10-year bonds
 - ★ Market offers \$50B.
 - ★ Interest rate: 2.4% vs 1.95% for US gov't bonds.
 - ▶ Apple's debt:
 - ★ 2012: Zero.
 - ★ 2017: \$108B
- Corollary: Measuring *net* corporate savings is hard.
 - ▶ So net cash position often much smaller than gross.
 - ★ Apple: \$256B cash. \$108B debt.
- Tesla issued bonds (ABS) in January 2018:
 - ▶ Issue \$546 million.
 - ▶ Submitted offers: 14X supply. Tesla reduces

TAXES AND MNEs: SAVINGS.

- Taxes are a major driver of corporate financial decisions.
 - ▶ 2004 repatriation holiday:
 - ★ \$362 billion repatriated.
 - ★ Firms didn't keep the cash.
 - ★ Almost all of it went to dividends and share repurchases (E.g., Microsoft: \$32B one-time dividend, and \$30B share repurchase.)
 - ▶ Corporate inversions.
 - ▶ Rise in share repurchase as opposed to dividend payments.
- My conclusion is that taxes are the main driver, not precautionary savings.
 - ▶ Incidentally: major problem in developing countries (e.g., Turkey, South Africa, etc.) was firms being able to borrow **too easily** since 2000s.

III. MULTINATIONALS AND RECENT TRENDS

- Foreign operations of US MNEs often not included in US data sources and statistics. Sometimes, this is due to
 - ▶ challenges in collecting data on foreign affiliates (e.g. Census data as in Autor-et-al-2017) or
 - ▶ international accounting standards.
- Tax differentials across countries give MNEs incentives to shift profits abroad. Attribute:
 - ▶ revenues (including royalties) abroad
 - ▶ costs and expenses home.
- Profit shifting incentives, MNEs often attribute some of their US activities to tax havens abroad.

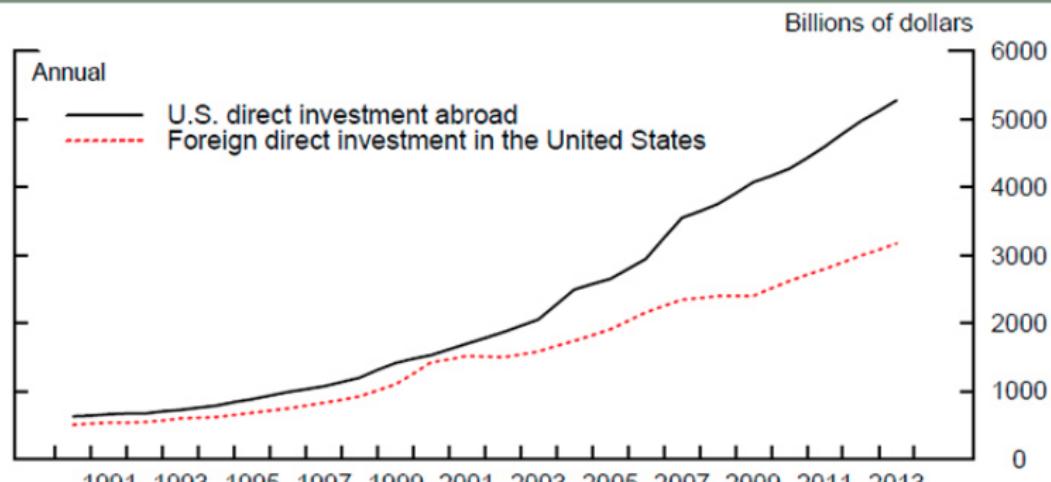
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- Profit shifting incentives, MNEs often attribute some of their US activities to tax havens abroad.
- ∴ Some of the important trends documented may have to be revised once international data is considered.

USDIA vs FDIUS

Figure 1: Direct Investment Positions



Source: Federal Reserve Board Statistical Release Z.1, 'Financial Accounts of the United States' (September 18, 2014).

III. MULTINATIONALS AND RECENT TRENDS

Accounting for foreign operations of MNEs could affect:

- trend in labor share (we estimate 1% more drop)
- rise in concentration (still open)
- investment trends (open)
- share of profits accruing to private vs public firms (large effect)

OPEN QUESTIONS

1. Is production now less labor intensive? E.g., rise of machines?



- ◆ Autor et al and some others: yes.
- ◆ Me: probably, part of it.

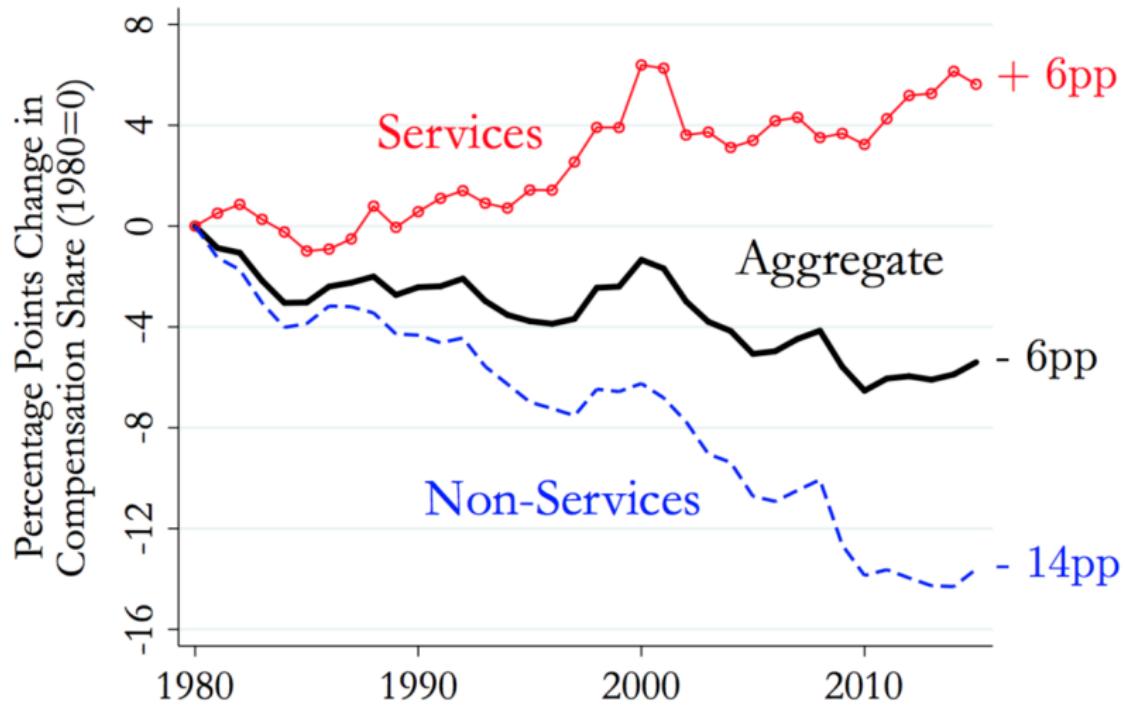
2. Or is part of labor input not captured in “payroll”? (My guess)

SUMMARY AND CONCLUDING THOUGHTS

- Labor share is declining, especially in 21st century.
 - ▶ Trends in labor share seem different for service vs non-service sectors.
 - ▶ Luis Diez Catalan documented some interesting facts.
 - ★ The first two below can be noticed in previous work but not emphasized.
 - ★ The last three are quite novel.

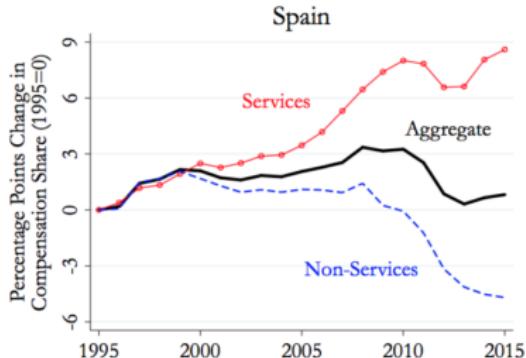
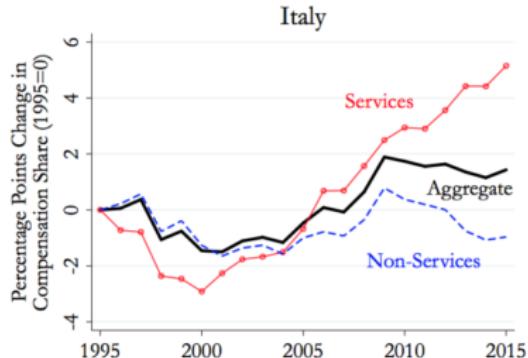
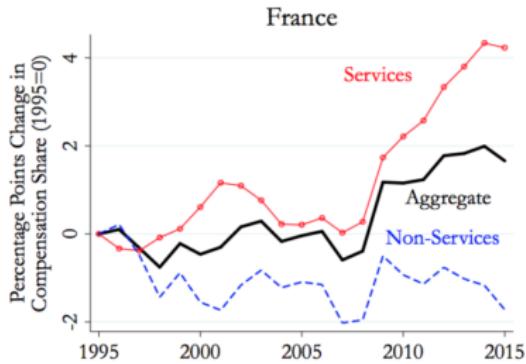
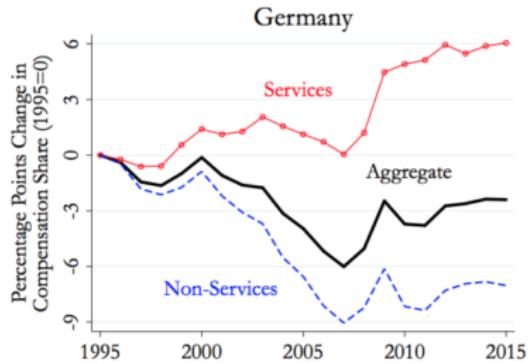
Luis' FACTS: SERVICE VS NONSERVICE

FIGURE: Service vs. Non-service

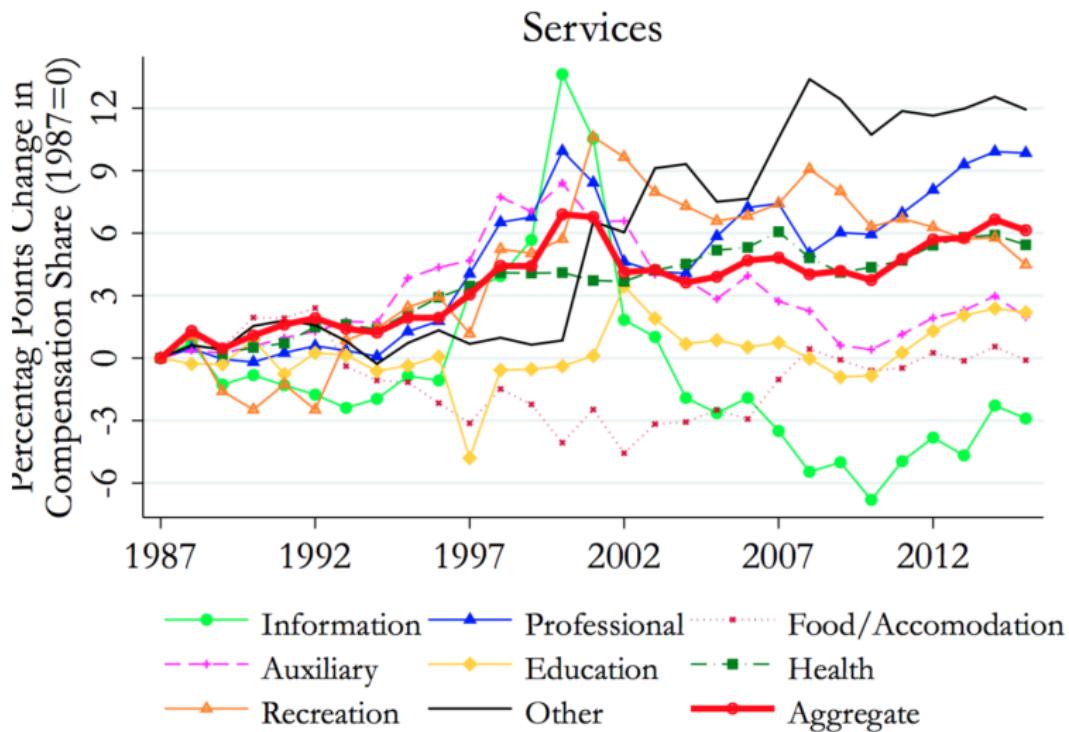


Luis' FACTS: SERVICE VS NONSERVICE, EUROPE

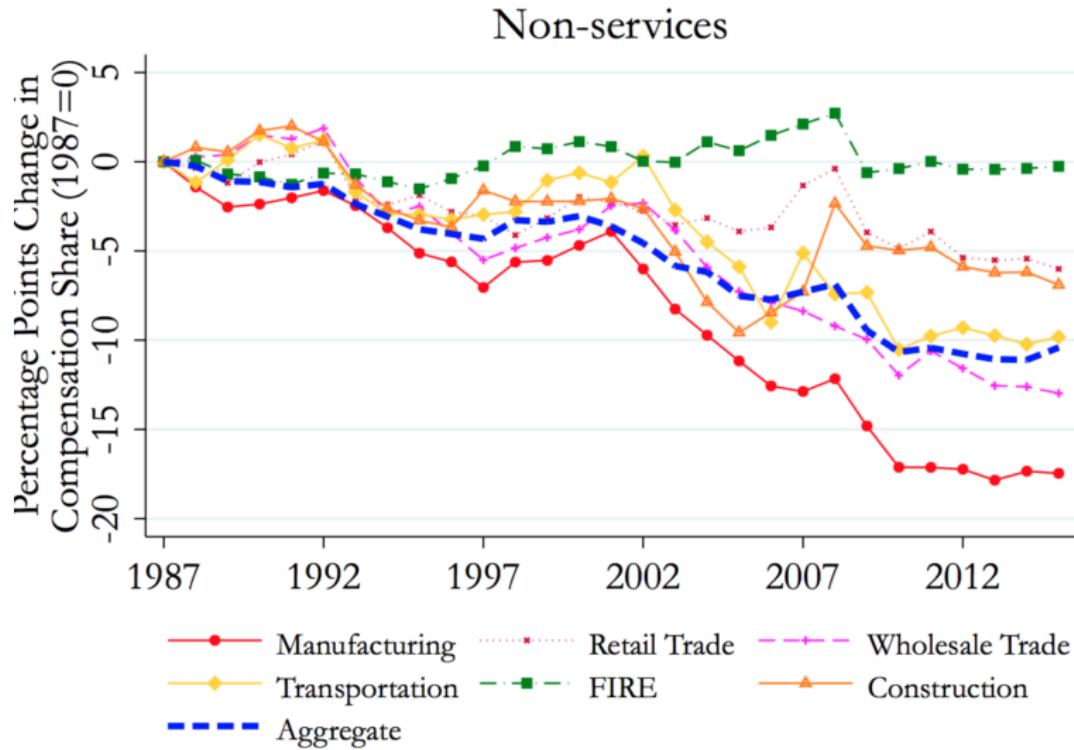
FIGURE: Service vs. Non-service, Europe



Luis' FACTS: WITHIN-SERVICES



Luis' FACTS: WITHIN-REST



Luis' FACTS: LEVEL VS CHANGE OVER TIME

