



NON-COMPETITION? WHAT IS THE STATE OF ART?

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Workshop on “Estimating the costs of non-competition for the Macro-economy”

23rd June, 2022



A roadmap

1. **Evidence for non-competition?** Evidence and Challenges
2. Possible **Explanations** for these trends?
3. Possible **implications**. Do different drivers warrant different concerns?



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4. Market Power: the road ahead



What is non-competition? A tough question!

- 👍 From a theoretical point of view, straightforward! Monopoly, duopoly, cartels, etc.
 - Market Power: “ability of a firm to raise price above costs and generate excess profits to compensate for investment, risk and innovation.” (Eeckhout, 2021)
- 👎 From an empirical/methodological point of view, much less clear-cut.
 - Two strands of literature try to answer this question:
 - Literature focused on the definition of the market, antitrust enforcement, etc.
 - More at macro level: literature on concentration, mark-ups, business dynamism, etc.
 - Very recently these 2 communities have started cooperating to find common answers. A big step ahead!
 - *Why is that?* Several challenges from an empirical point of view. How to...?
 - Proxy for competition: concentration vs. mark-ups (average and dispersion), etc.
 - Define the “relevant market” and its boundaries
 - Get granular & longitudinal data
 - “Natural experiments”...



Multiple measures to try to catch trends in competition

Multiple measures to try to (imperfectly) proxy for non-competition and “market power”. The literature has documented a number of trends:

- **Concentration:**
 - Increase in concentration (Affeldt et al., 2021; Autor et al., 2020; Bajgar et al., 2019; Bauer and Boussard, 2020; Bessen, 2017; Bighelli et al., 2021; De Loecker et al., 2022; Gutiérrez and Philippon 2017, 2018; Koltay et al., 2022; Crouzet and Eberly, 2019).
 - Decrease in concentration (Amiti and Heise, 2021; Gutiérrez and Philippon, 2020; Kalemli-Ozcan et al., 2022; Rossi-Hansberg et al., 2021).
- **Mark-ups:** increase in mark-ups; in mark-ups dispersion (Calligaris et al., 2018, De Loecker and Eeckhout, 2018a and 2018b; De Loecker et al., 2020; De Loecker et al., 2022; Hall, 2018; Crouzet and Eberly, 2019) and reallocation towards high mark-ups firms (De Loecker et al., 2020).
- **“Declining Industrial Disruption” and Entrenchment at the top:** (Bessen et al., 2020; Andrews et al., 2016; Bajgar et al., 2021)
- **Entry and exit rates:** declining business dynamism (Akcigit and Ates, 2021; Calvino et al., 2020; Decker et al., 2017; De Loecker et al., 2022).
- **“Killer Acquisitions”** (Cunningham et al., 2021)
- *Labour share:* decline in labour shares (Autor et al., 2017, 2020; Barkai, 2020; Cette et al., 2020; De Loecker et al., 2022; Panon, 2020).
- *Productivity dispersion:* productivity slowdown and divergence (Andrews et al., 2016; Berlingieri et al., 2020, Cette et al., 2018; Criscuolo et al., 2022; De Loecker et al., 2022).
- *Profit dispersion:* increase in profit dispersion (Barkai, 2020; Bessen, 2017).

Each of them has big limitations in capturing “product market competition”. However, most of them seem to point in the same direction.

Just a coincidence?



Measuring concentration

Some common measures of concentration:

- Share of industry sales generated by the 10% largest firms
- Herfindahl-Hirschman Index (HHI)
- Share of sales due to the X (4,5,8,20) largest firms in country c , industry i and year t :

$$CR_{cit}^X \equiv \sum_{f=1}^X \frac{S_{citf}}{S_{cit}}$$

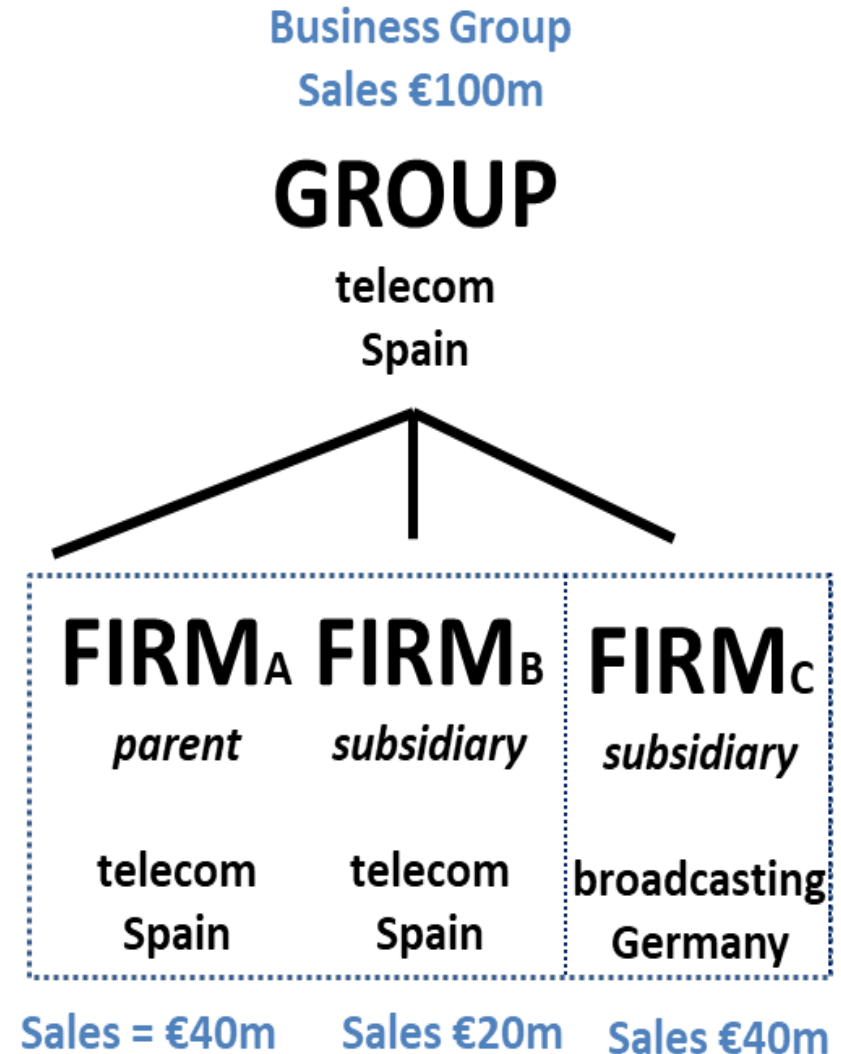
Some challenges:

- Definition (e.g. for each country, 2-digit industry, year)
- Industry \neq market
- Country vs. world region vs. local
- Concentration of production vs. sales
- Group structure
- Choice of Sample and of denominator



OECD methodology: apportioning into countries and industries

- Relies on financial data from Orbis and WorldScope.
- Combines ownership data from Orbis and M&A deals from Zephyr to reconstruct worldwide ownership links of **Business Groups**.
- Looking at business group level, **apportions unconsolidated sales** of firms across industries and countries and relies on combined consolidated and unconsolidated account information to fill gaps in the data.

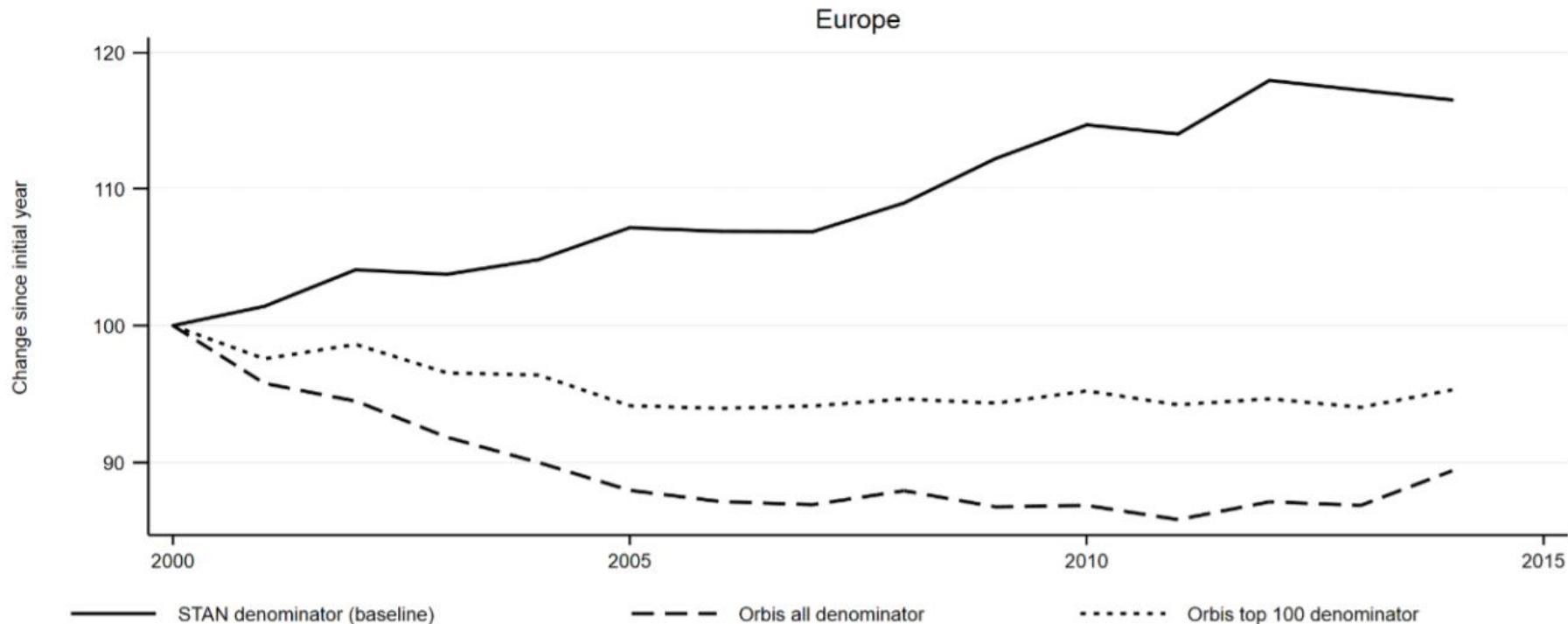




OECD methodology: the importance of the denominator

Total sales in each country c , industry i and year t (denominator of the concentration measure) are taken from external data sources relying on national accounts.

Share of sales due to 8 largest groups (rel. to 2000)

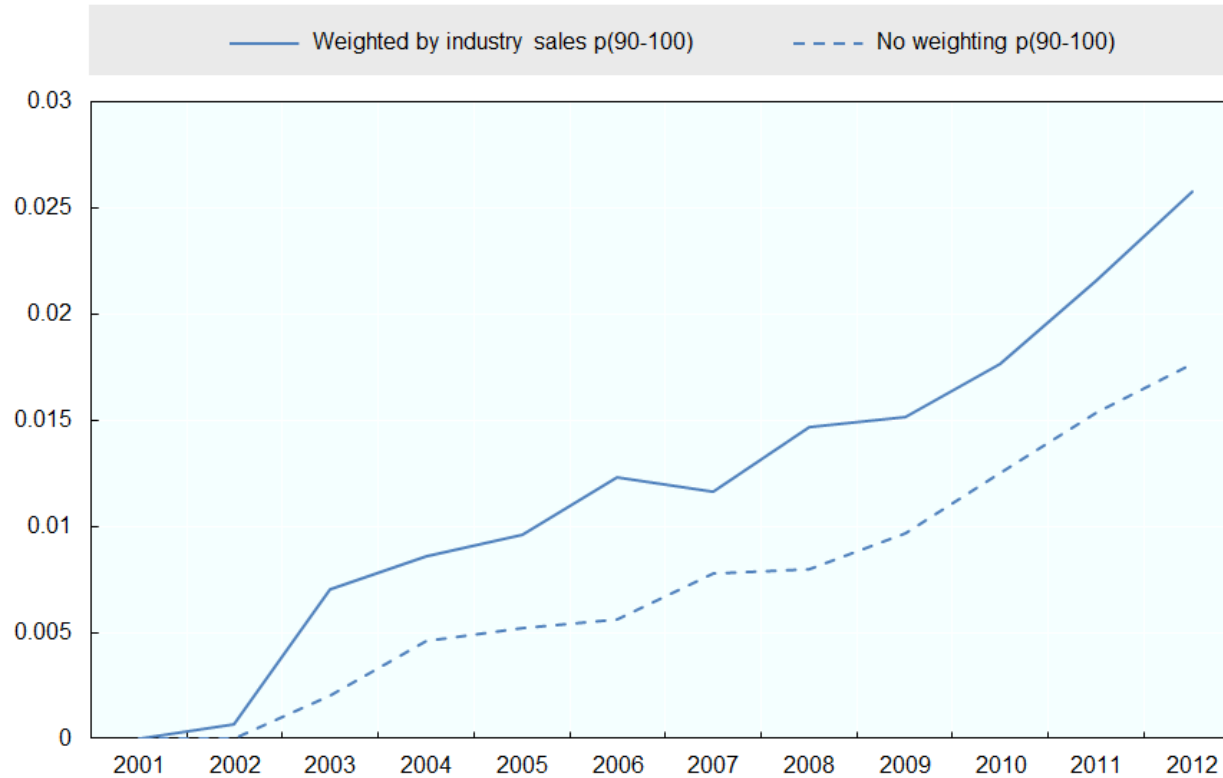


Source: Bajgar et al., (2019) "Industry Concentration in Europe and North America", STI WP.

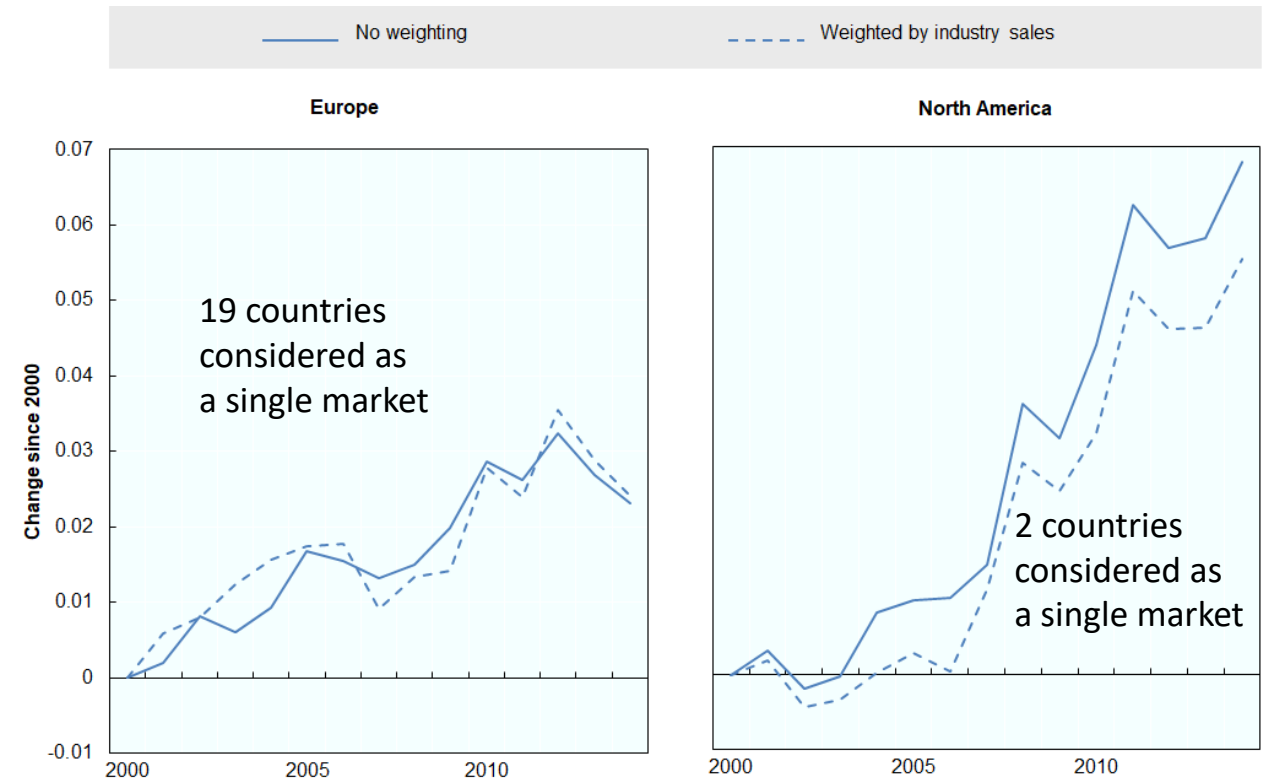


Some OECD findings: rising industry concentration

Top 10% firms share in industry sales
Concentration within countries (MultiProd)



Top 8 firms share in industry sales
Europe as a single market (Orbis)





However... Mixed evidence on concentration trends

- **Increasing concentration:**
 - In the US (Autor et al., 2020; Bessen, 2017; Gutiérrez and Philippon 2017, 2018).
 - In Europe (Affeldt et al., 2021, Bajar et al., 2019; Bighelli et al., 2021; De Loecker et al., 2022; Koltay et al., 2022).
- **Decreasing concentration:**
 - In the US (Amiti and Heise, 2021; Rossi-Hansberg et al., 2021).
 - In Europe (Gutiérrez and Philippon, 2020; Kalemli-Ozcan et al., 2022).

How's that? Very different underlying data and methodological assumptions... not necessarily “contradictory”:

- Amiti and Heise (2021): control for import and export.
- Rossi-Hansberg et al. (2021): look at concentration in the local market.
- Kalemli-Ozcan et al. (2022), Gutiérrez and Philippon (2020): use only unconsolidated accounts (exclude MNEs and firms that switch from unconsolidated to consolidated accounts) and a different denominator.



OECD Methodology: next challenges

- Better define the “relevant market” for competition:
 - Use a more granular sectoral classification (from 2- to 3-digit industries).
 - Take into account import and export patterns (Amiti and Heise, 2021).
 - National vs. EU-level concentration.
- Sectoral characterization of concentration.
- Relationship between sectoral and market concentration.
- (Possibly) product-level concentration.
- (Possibly) concentration in product-level sales.



Measuring mark-ups

De Loecker & Warzynski (2012) methodology:

$$\hat{\mu}_{it} = \frac{\widehat{OE}_{it}}{\widetilde{IS}_{it}}$$

estimated elasticity of output with respect to intermediates

cost of intermediates as a share of the firms revenue

Intuition: in perfect competition input shares = output elasticities, Solow (1957).

For mark-ups more consensus on the increasing trend (at least in the US), much less on the underlying assumptions.

→ Possible criticisms:

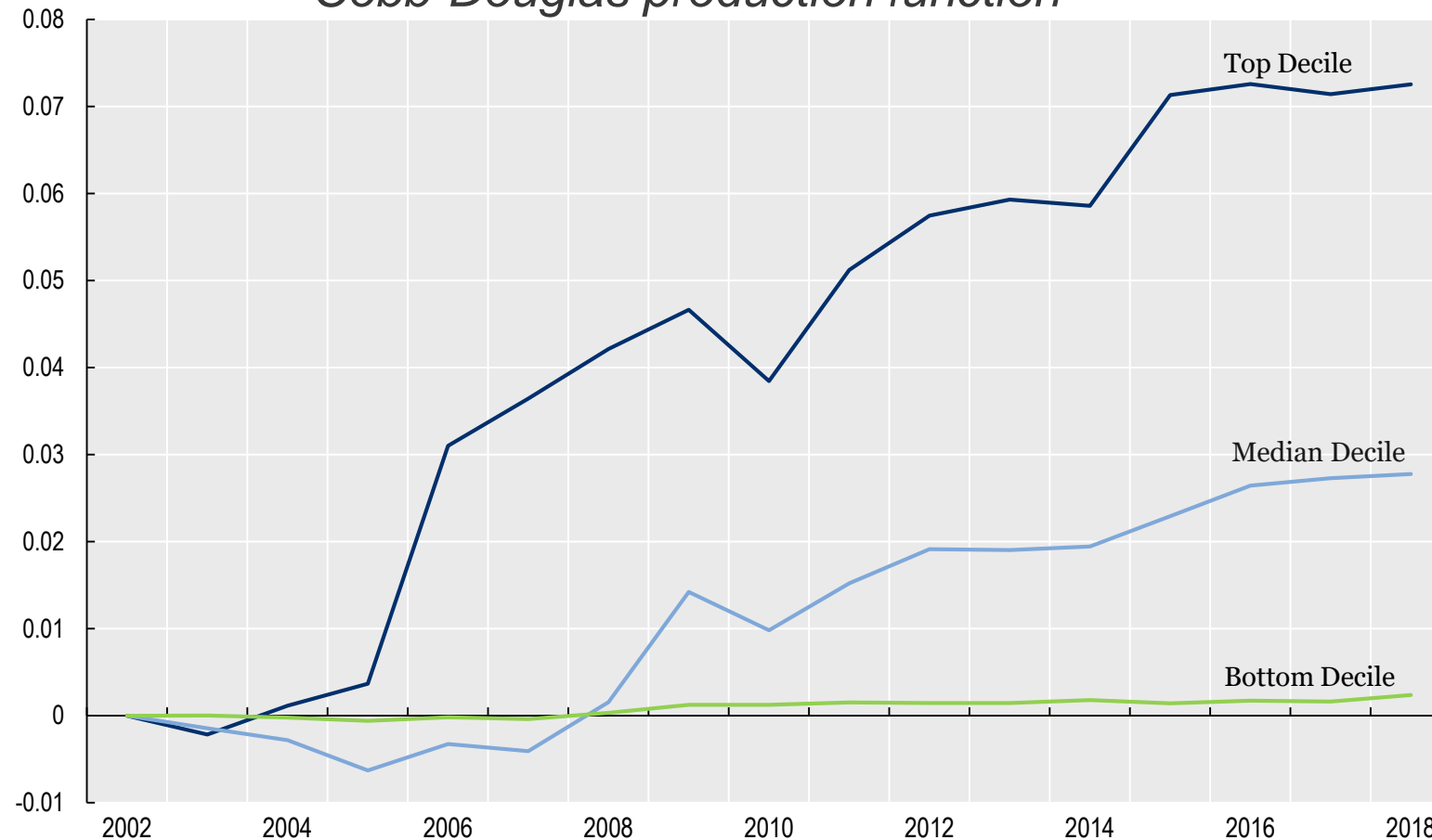
1. Numerous assumptions are needed:
 - Each firm is cost-minimising
 - One fully flexible input → e.g. intermediates
 - Specification of the production function (e.g., Cobb-Douglas, translog)
2. Mismeasurement due to overhead costs? Market power ≠ high overhead costs (Traina, 2018).



Some OECD findings: rising mark-ups, especially at the top

Mark-up growth over time (2001-2018) in different parts of the distribution

Cobb-Douglas production function



Source: Calligaris et al., "Mark-ups in the digital era" (2018).



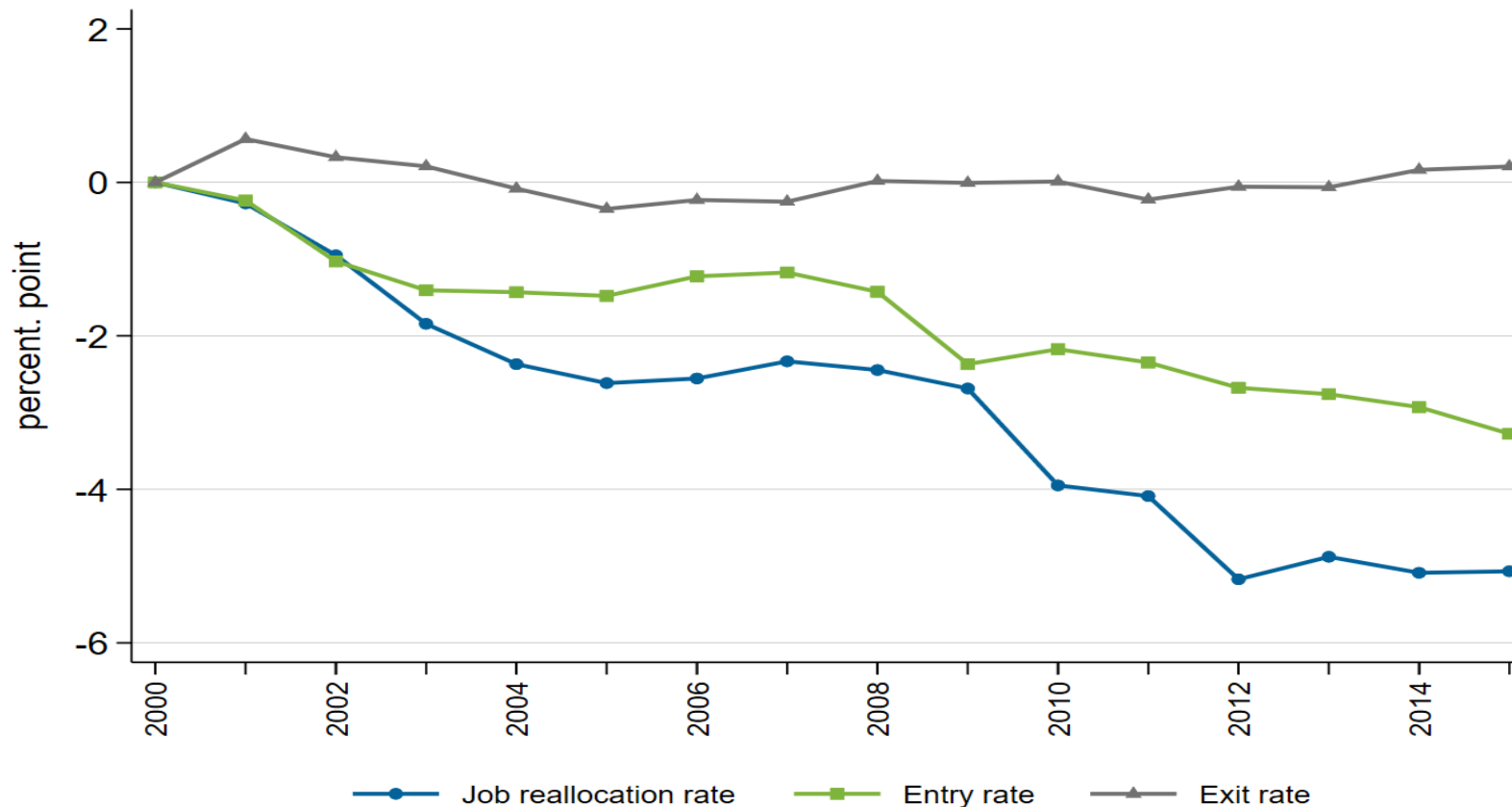
Measuring business dynamism

- Entry rates:
 - Evidence of declining rates (e.g., Bakhtiari, 2017, Calvino et al., 2020, Decker et al., 2014)
- Job reallocation rates: a measure of the simultaneous job creation and job destruction occurring within an industry
 - Evidence on declining rates (Akcigit and Ates 2021, 2019; Bijnens and Konings 2017; Calvino et al., 2020; Decker et al. 2014) and declining responsiveness of business-level employment to productivity (Decker et al., 2018 and 2020)
- Share of employment in young firms:
 - Evidence on declining share (Calvino et al., 2020; Davis and Haltiwanger, 2019; De Loecker et al., 2022)



Some OECD findings: dynamism is steadily declining

On average, JR and ER have declined by 5 pp and 3 pp respectively, over 15 years
(i.e. around 0.35 pp and 0.2 pp each year)



Source: Calvino et al. (2020) “Declining business dynamism: structural and policy determinants”, STI Policy Paper.



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How can we explain these trends? Competing explanations

- **Structural changes:** (Akcigit and Ates 2021, Autor et al., 2020; Bessen, 2017, De Ridder 2019, Brynjolfsson et al.; 2021)
 - Increasing importance of intangibles and digital technologies
 - Need complementary innovations and investment in intangible capitals
 - Increasing importance of sunk costs
 - Globalization
 - Economies of scale and network externalities
 - Decline in knowledge diffusion

→ Superstar firms are becoming larger through organic growth and more profitable through “innovation” and scale.
- **Policy environment:** weakening of antitrust authorities and regulations (Gutiérrez and Philippon 2017, 2018)

→ Superstar firms are becoming grow via M&As and become more profitable through higher prices.

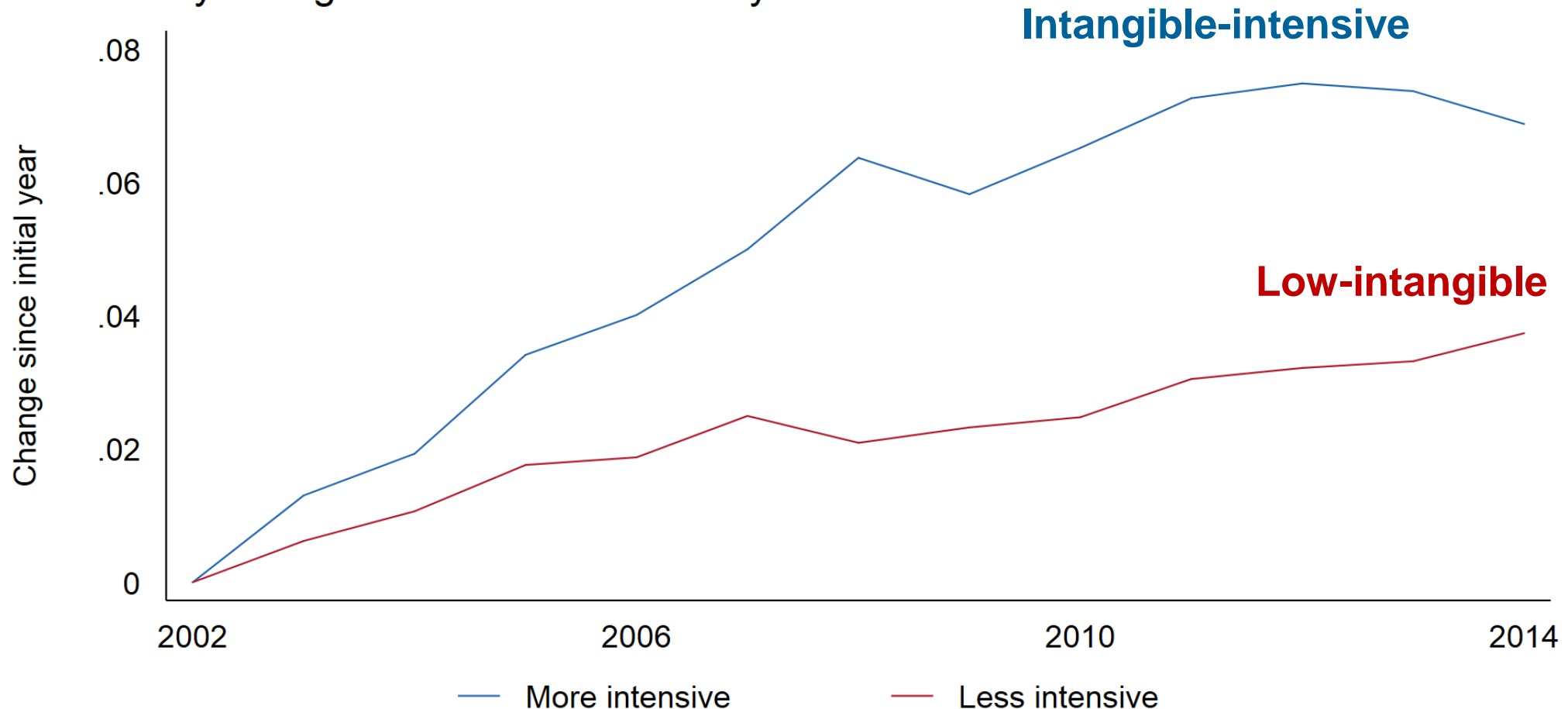
Which story holds true?



Higher concentration in intangible-intensive industries

Share of sales due to 8 largest groups

By intangible investment intensity

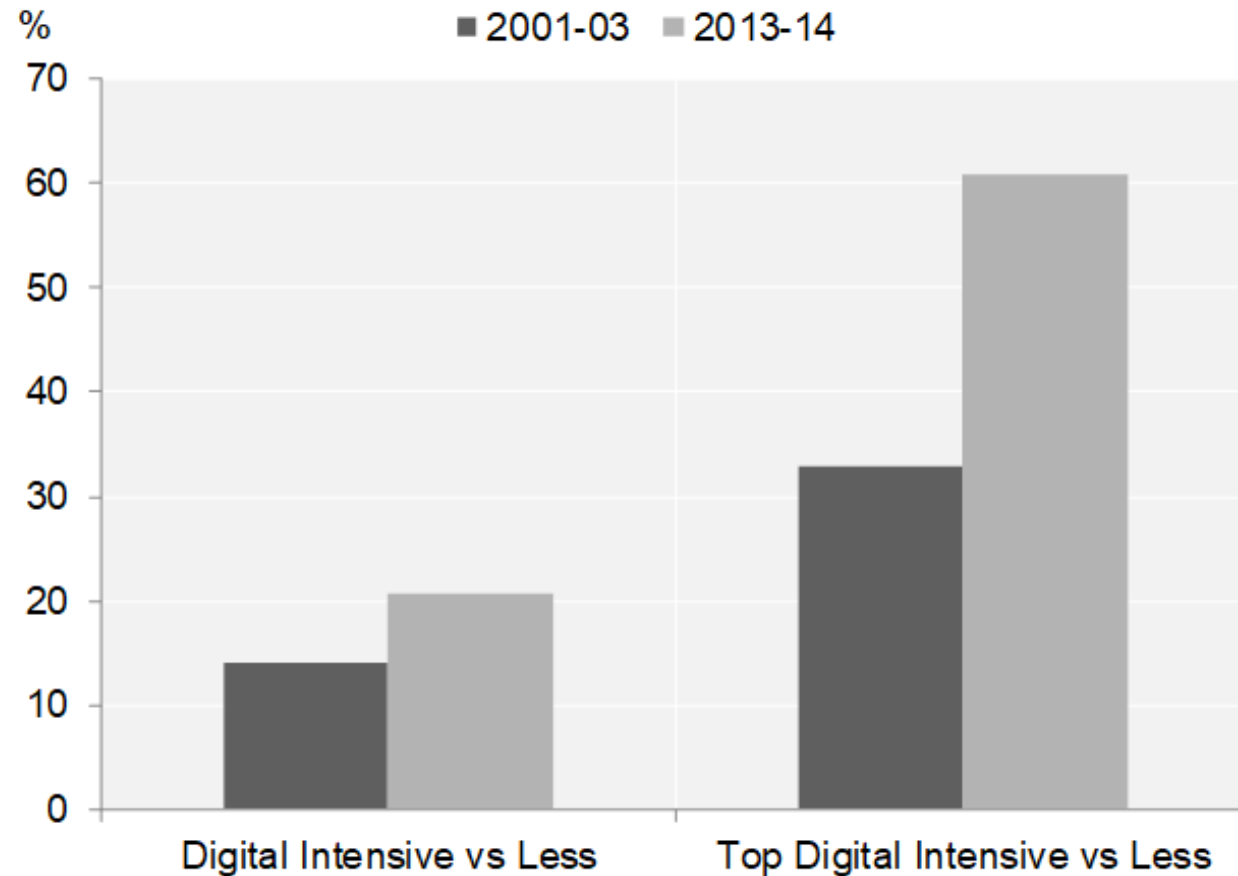


Source: Bajgar et al., (2021) "Intangibles and Industry concentration: Supersize me", STI WP.



Mark-ups higher and growing more in digital intensive sectors

Average percentage differences in mark-ups

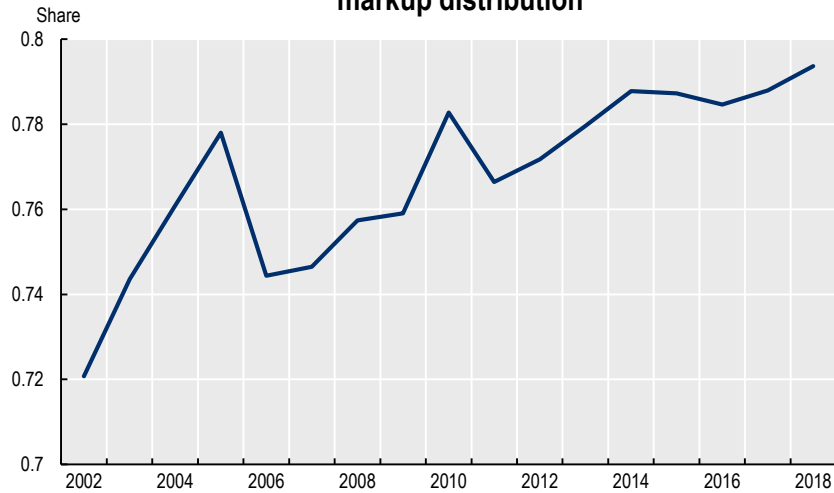


Source: Calligaris et al., (2018) "Mark-ups in the digital era"

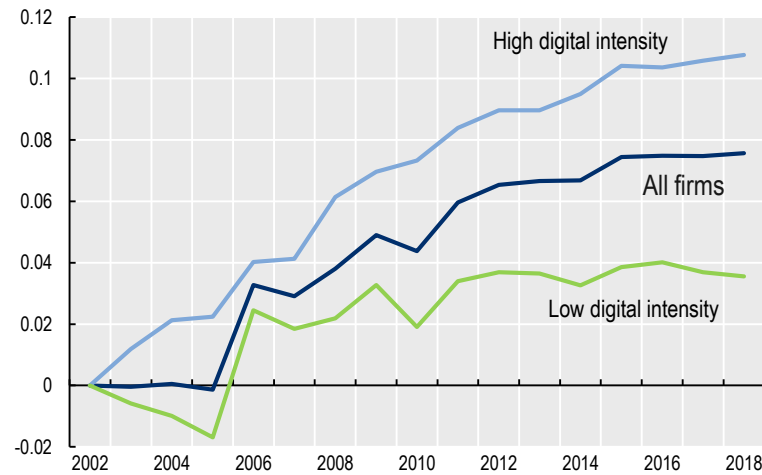


The evolution of Mark-ups distribution for “digital firms”

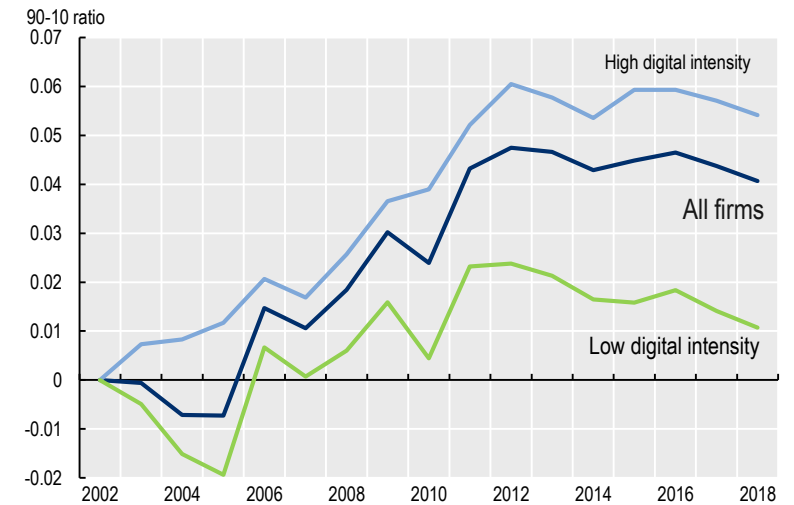
Share of “high digital” firms in the top decile of the markup distribution



Markup trends for firms at the top of the markup distribution: high vs low digital



Markups dispersion (90-10 ratio since 2002)

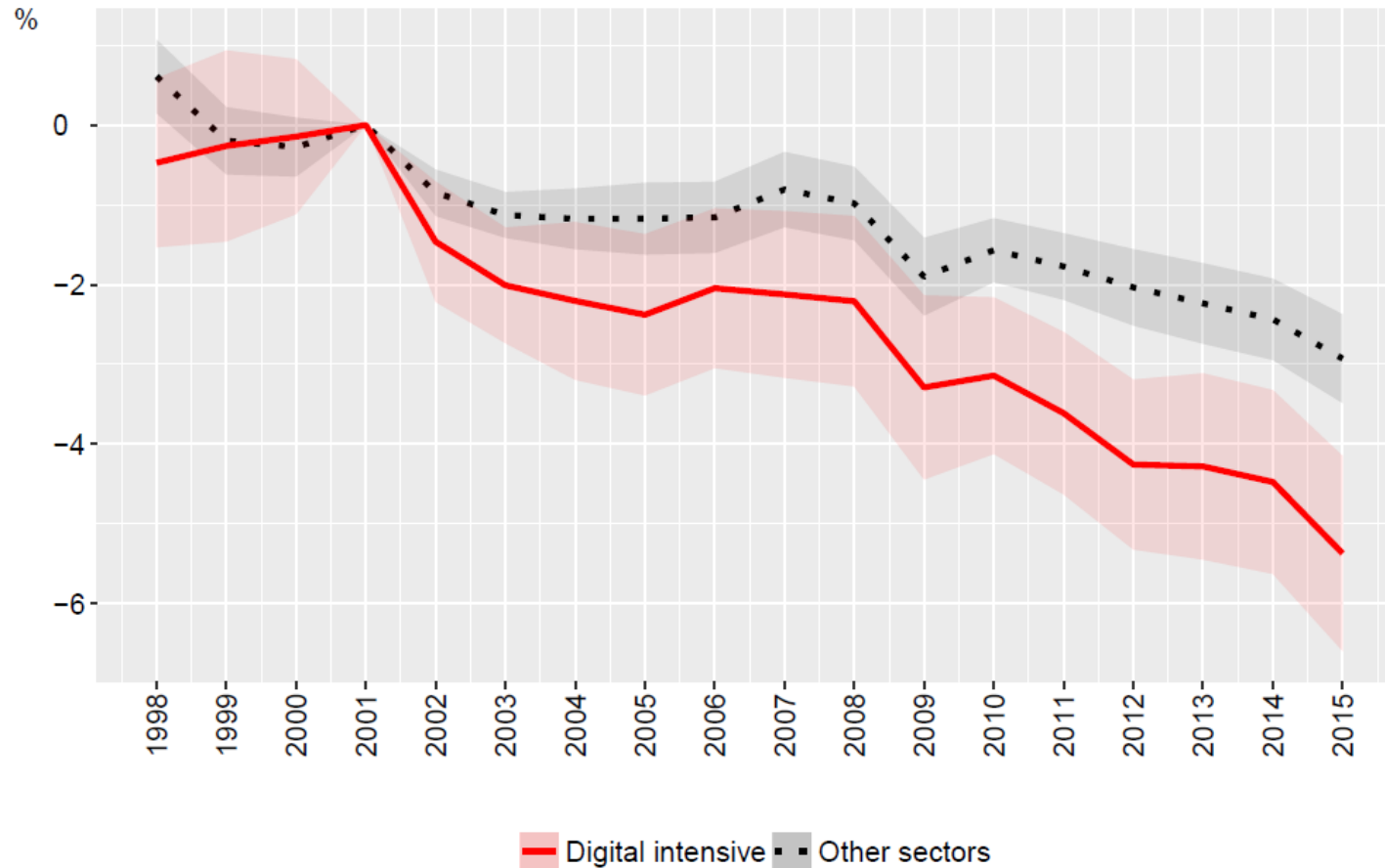


Source: Criscuolo (2021) based on methodology of Calligaris et al., (2018) “Mark-ups in the digital era”



Business Dynamism declined more in digital intensive sectors

Entry rates

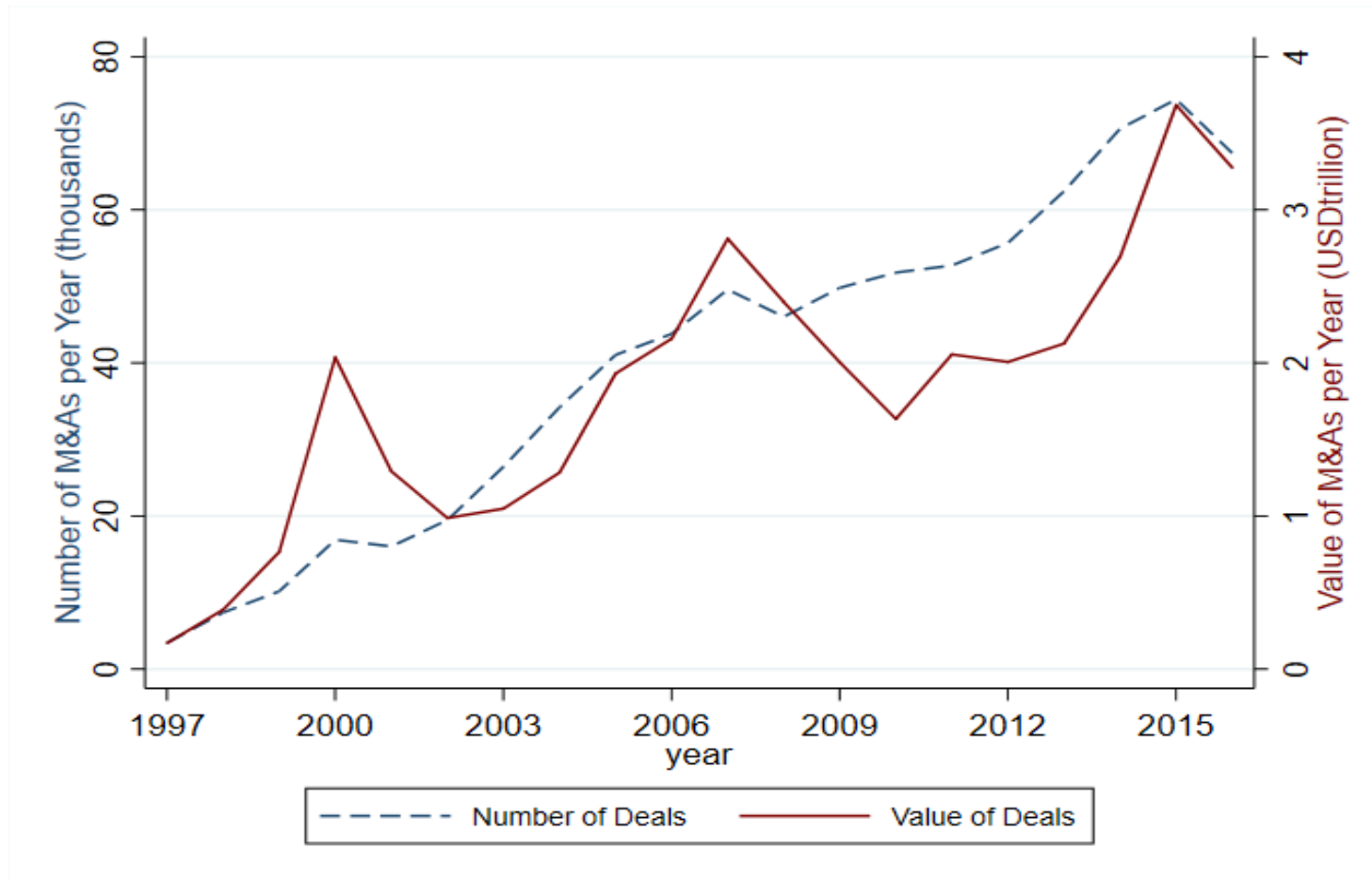


Source: Calvino and Criscuolo, "Business dynamics and digitalisation", 2019.



M&As activity increased over time

The number and value of M&As has been increasing



Source: Bajgar et al., (2021) "Intangibles and Industry concentration: Supersize me", STI WP.



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The debate: good vs. bad concentration? (I)

- Most likely, both structural changes and the policy environment are jointly “driving” lower competition.
 - The key question is: *do different explanations for the observed trends imply different consequences?*
- We might have to distinguish static and dynamics implications.



In the short run

Market power

- Increase in mark-ups and profit rates.
- Concentration associated with lower investment & higher prices; role of lobbying and regulations; antitrust developments.

Thus:

- Decreases efficiency and productivity growth.
- Entrenchment at the top.

Superstars

- Concentration associated with higher innovation and productivity.
- Structural changes disproportionately benefit large/productive firms.

Thus:

- Increase efficiency and productivity growth.
- Lead to “Winner-takes-most” dynamics.



In the long run

Also in the “superstar world” there are concerns in the long term:

- Digital technologies need complementary investments;
- Intangibles are non-rival, allow economies of scale and network externalities.
 - Possibly leading to:
 - Higher barriers to entry and to technology diffusion.
 - Potential foreclosure and problem of dynamic competition.
 - Reduced future innovation.



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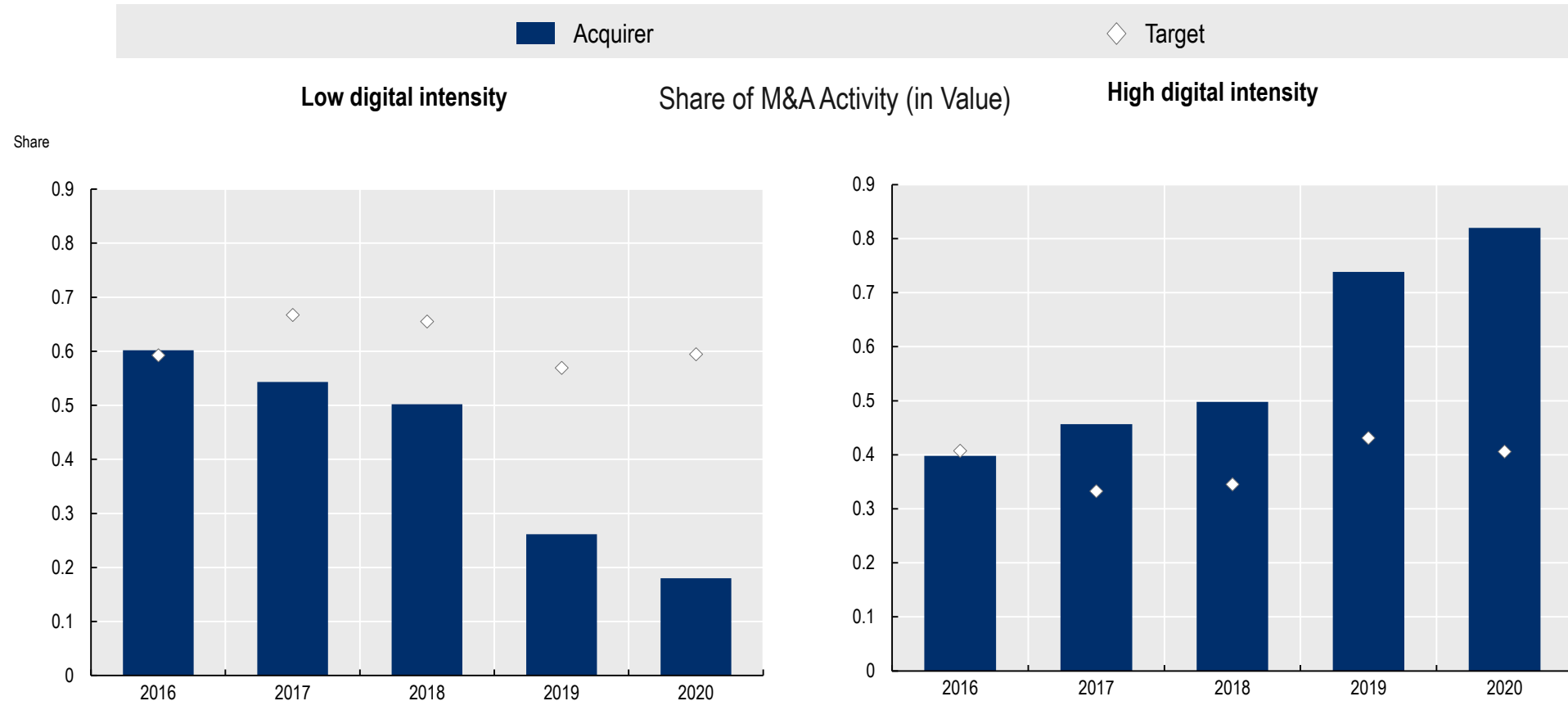
A long road ahead of us!

Better measurement and more analysis is needed!

- Same or different drivers of concentration increases in US vs international? (Crouzet and Eberly, 2018; Gutierrez and Philippon, 2019)
- Firm growing through innovation have the potential to entrench their position foreclosing competition. (Van Reenen, 2018; Ayyagari et al., 2020; Bajgar et al., 2021)
- Need better measurement of intangible assets in digitalized and globalized economy (e.g. data and their value)
- Need for policies that encourage broader investment in intangibles; level-playing field (large incumbents vs start-ups; data interoperability; etc) and knowledge diffusion (re-think IP; collateralizing IP assets).
- Need finer measures of regulations, entry barriers etc. (e.g. preventing ex-ante collusive behavior).
- More analysis of drivers and consequences of non-competition!!!



M&As and digital adoption trends during COVID



Source: Criscuolo (2021)

Heterogeneous adoption patterns:

—Larger, more digital and more productive firms more likely to adopt (multiple and more advanced) technologies.



Are we about to see signs of change or more of the same?

June 2 2022 FINANCIAL TIMES

US COMPANIES TECH MARKETS CLIMATE OPINION WORK & CAREERS LIFE & ARTS HTSI

Opinion Lex + Add to myFT

Tech sell-off: record fundraising has given start-ups breathing space

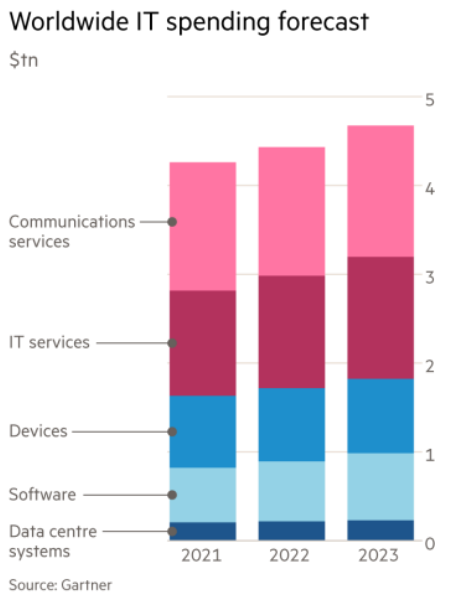
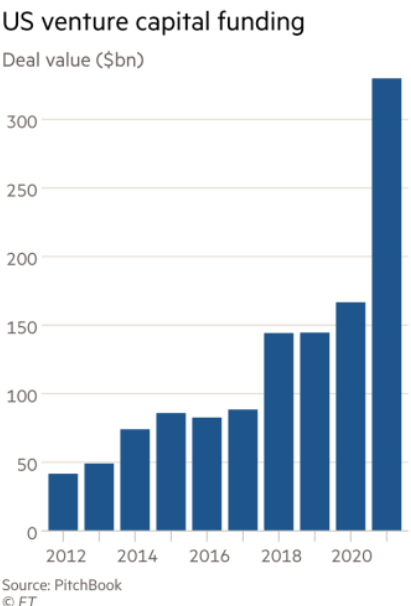
Technology stocks are down but the strength of recent investments means companies have some protection

Kellogg Co + Add to myFT

Kellogg's to split into three separate food businesses

Chief says US group studied past break-ups in its own industry and by other companies such as GE

Other food businesses have also been trying to narrow their portfolios while struggling to generate organic growth amid changing consumer habits.



US retailers face shake-up as consumers trade down to beat rising prices

Inflation is creating winners and losers among stores as customers seek out cheaper products





THANK YOU!

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