



Conference of the Global Forum of Productivity  
“Market Dynamics, Competition and the Role of Industrial Policy in the Context of  
the COVID-19 Crisis”

WEBINAR 3:

# MARKET POWER, DIGITAL TRANSFORMATION AND THE COVID-19 CATALYST

*Discussion*

Sara Calligaris, OECD

3 December 2020



# The context

---

- Over the last years, active debate among **economists** and **policy makers** about **mark-ups trends**
  - However, the evidence is mostly on the U.S., and on listed firms
  - In addition, little is known about the underlying causes and the link with productivity.
- **The papers presented** contribute to this literature by:
- Documenting mark-up trends for two **European countries**
  - Linking them to:
    - Different levels of efficiency across sectors and/or types of firms
    - Productivity and the role of innovation
  - They are both **complementary to recent OECD work** [Calligaris, Criscuolo, Marcolin (2020)]:
    - Looking at mark-up trends for a large set of countries
    - Linking these trends to digital intensity and the importance of intangible assets



# “Raising Markups to Survive: Small Spanish firms during the Great Recession”, *Aitor Lacuesta et al.*

## Main results:

- Mark-ups increased in Spain during the financial crisis.
  - The result is driven by small (in terms of revenues!) firms who replied to the increase in average costs by increasing mark-ups – rather than increasing their productive efficiency – at the expense of losing market shares.
- More a behavioral response to the cycle, than reasons of more structural nature.

## I especially liked:

- Dataset representative of the population of Spanish firms.
- Detailed estimation of mark-ups with many robustness.
- Detailed information on various elements of the cost structure of firms. → *Also OECD paper checks for the importance of fixed costs*

## Pending questions in my mind:

- What about mark-ups trends by different size groups?
- You claim that overhead costs over sales are much higher for small firms than for larger firms in Spain. What about small but innovative firms? In addition, is it true also for very digitalized sectors?  
→ *Answering these questions would help me to link your results with the OECD paper*



# “Price markups, competition, and productivity: Evidence from Germany”, *Bernhard Ganglmair et al.*

---

## Main results:

- Mark-ups increased in Germany, with the crisis not affecting too much these trends. → *Very close to the OECD paper*
- Mixed effects in the relationship between mark-ups and productivity: overall it is negative in manufacturing and trade, positive in services (mixed results).
- These results are confirmed when controlling for innovation (which is negatively correlated to mark-ups, and positively to productivity).

## I especially liked:

- Link between mark-up and productivity is very important but still quite unexplored!
- Including innovation in the picture. → *Related to the OECD paper, where we link mark-ups to digital intensity and the importance of intangible assets*

## Pending questions in my mind:

- Are mark-ups a very good proxy for the degree of competition at which firms are exposed to?
- What if productivity levels are determinants of mark-ups rather than vice versa?
- Since mark-ups and productivity measures come from the same estimation procedure, is the usage of lagged variables sufficient to solve the issue when linking them?



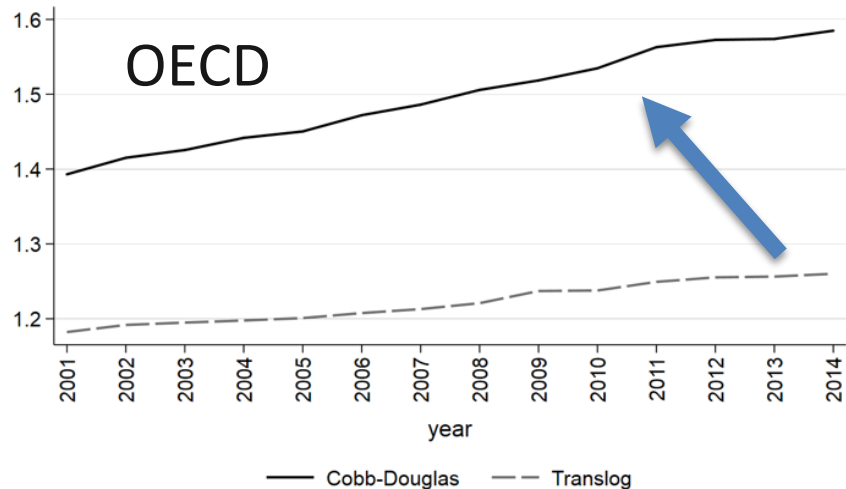
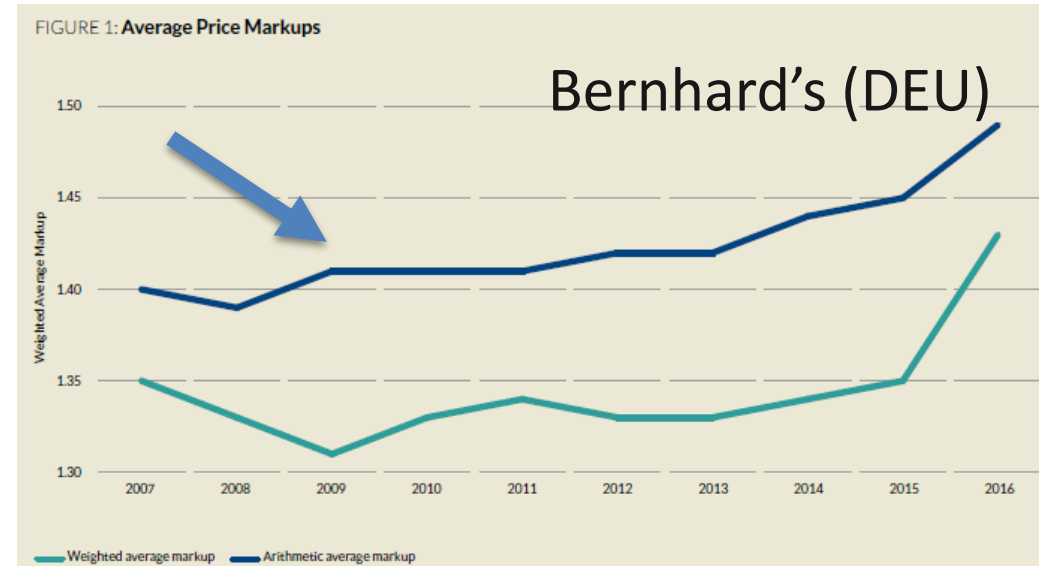
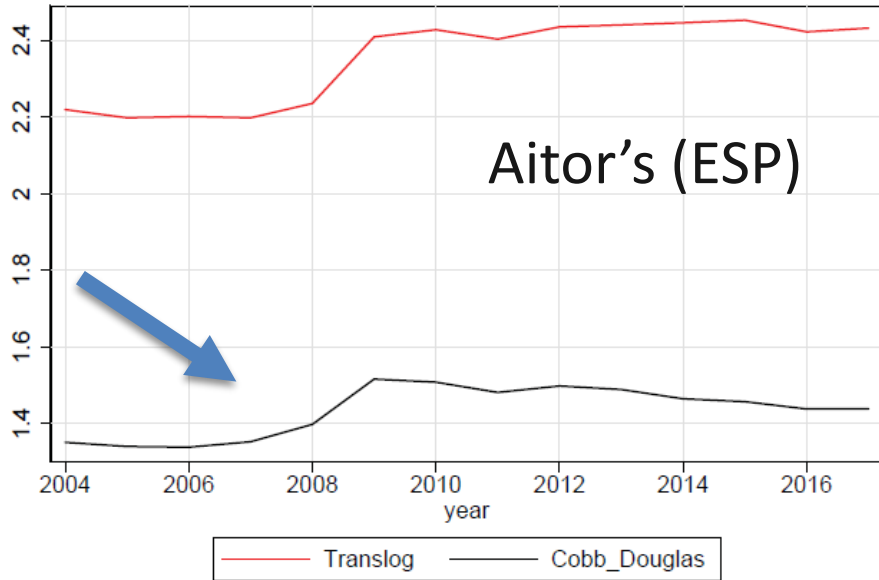
## Some “technicalities”

	Aitor's paper	Bernhard's paper	OECD's paper
Data	Spanish Commercial Registry - 80% of limited responsibility firms included → <i>quite representative of the whole population</i>	<ul style="list-style-type: none"><li>• Orbis data for Germany firms with 20+ employees</li><li>• Innovation data from MIP</li></ul>	<ul style="list-style-type: none"><li>• Orbis data for 25 countries (including Spain and Germany) with 20+ employees</li><li>• Patents from PatStat</li><li>• OECD indicators of the digital intensity of industries</li></ul>
Period covered	2004-2017	2007-2016	2001-2014
Mark-up estimation	DLW (2012) assuming: <ul style="list-style-type: none"><li>• Gross output production function</li><li>• OP approach</li><li>• Intermediates as fully flexible input</li></ul>	DLW (2012) assuming: <ul style="list-style-type: none"><li>• Value added production function</li><li>• ACF approach</li><li>• Labour as fully flexible input</li></ul>	DLW (2012) assuming: <ul style="list-style-type: none"><li>• Gross output production function</li><li>• ACF approach</li><li>• Intermediates as fully flexible input</li></ul>

- OECD and Bernhard's paper: average firm larger than in the population
- OECD data are closer to Bernhard's paper, whereas OECD methodology to Aitor's paper



# Overall, mark-ups exhibit comparable magnitude

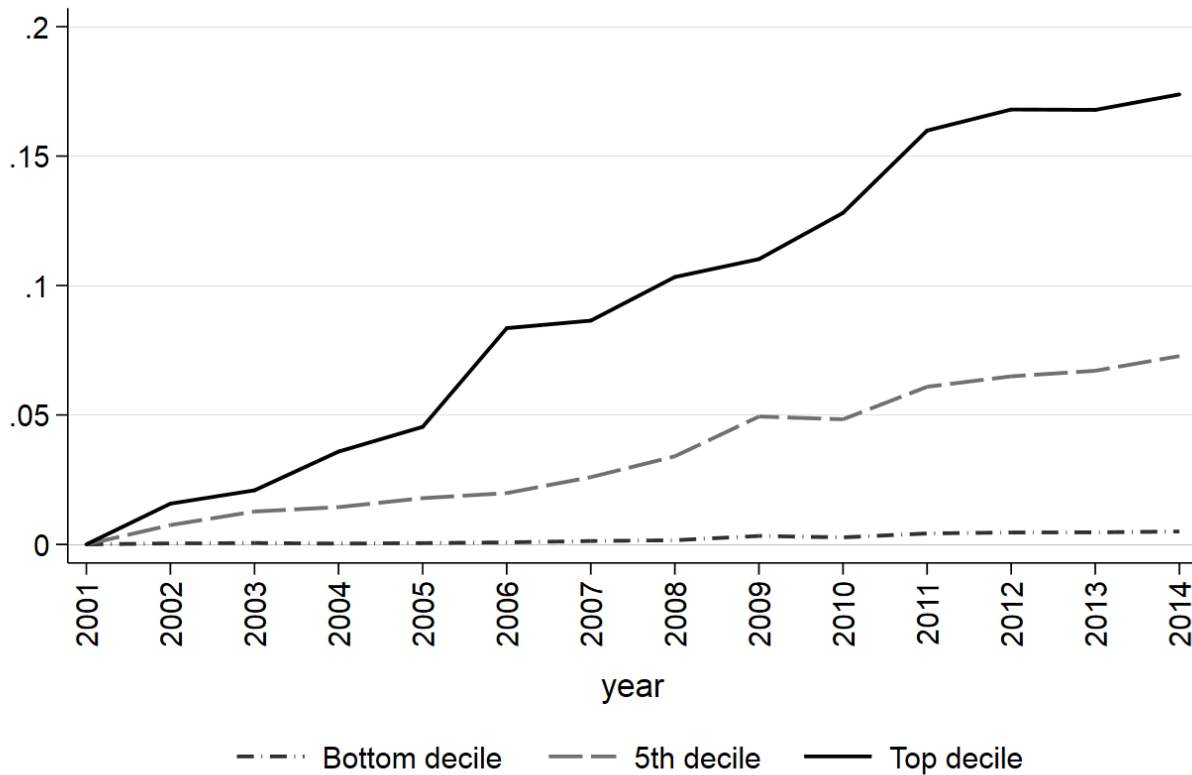


Starting from comparable magnitudes...  
...Different answers when going more granular.



# “Mark-ups in the Digital Era”, *Calligaris, Criscuolo, Marcolin (2020)*

Log Mark-up growth over time (2001-2014) in different parts of the distribution



*In our case **dynamics are pushed by the top.***

- Deciles of the mark-up distribution in each 2-digit industry-year
- Dynamics not due to a particular country
- Holds with different production function specifications (e.g. Translog)

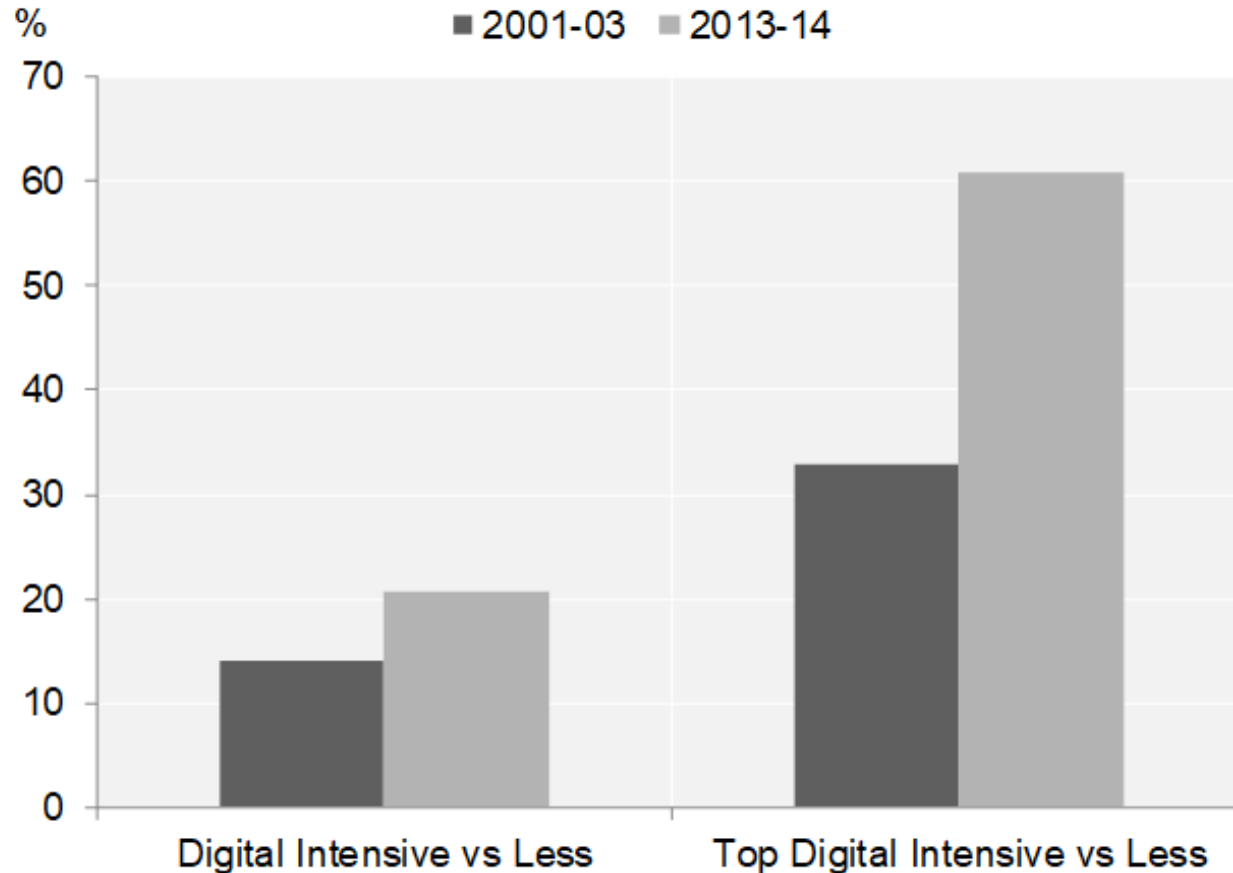
*Note:* Unconditional averages of firm-level log mark-ups in the chosen part of the distribution of mark-ups. Deciles of the distribution are defined relative to the rest of the firms in each 2-digit industry-year. All firms in the manufacturing and non-financial market service sectors included in the sample. The figures plots log mark-ups and indexes the 2001 level to 0, hence the vertical axes represent log-differences from the starting year.

*Source:* Calligaris, Criscuolo, Marcolin (2020).



# Mark-ups are higher in digital intensive industries

Average percentage differences in mark-ups, digital vs less digital sectors



*... and more so in 2013-14 than at the beginning of the 2000s.*

In addition:

- Firms operating in the services sector display higher mark-ups than firms operating in manufacturing.
- The correlation between digital intensity and mark-ups is stronger in services than in manufacturing.

*Note:* The graphs report the estimates of a pooled OLS regression explaining firm log mark-ups in the period, keeping into account firm's capital intensity, age, and country-year of operation, as well as a dummy variable with value 1 if the industry of operation is digital intensive vs less intensive (specifications on the left in the graph), or if the industry of operation is among the top 25% of digital intensive industries vs. not (specifications on the right in the graph). Standard errors are clustered at the firm level. All coefficients are significant at the 1% confidence level. The graph reports  $\exp(\hat{\alpha}_1)-1$ .

*Source:* Calligaris, Criscuolo, Marcolin (2020).





# Summary of additional empirical findings

---

- Investigate which particular features of technology are driving this positive correlation between mark-ups and digitalization
  - The intangible components of the digital transformation, and specifically software investment intensity and patent stock intensity, matter above all others for mark-up dynamics.
- Check for the importance of fixed costs in explaining the previous links
  - The contribution of intangible assets to mark-up growth is not entirely explained by the industry's fixed-cost structure.
- Explore two competing explanations (openness to trade and exposure to product market regulation), as well as the link between mark-ups and concentration
  - The positive correlations of mark-ups with software investment intensity and patent stock intensity is not entirely explained by any of them.



# What lessons for policy? (I)

---

- In Aitor's presentation:
  - a story of low-revenue firms responding to the GFC with an increase in mark-ups – rather than in the productive efficiency – to face an increase in average costs.
  - This increase in mark-ups comes for them at the expense of losing market shares.
- In Bernhard's paper, mixed effects in the relationship between mark-ups and productivity, depending on the sector taken into account.
- In the OECD paper, existence of a mark-up premium for firms operating in digital intensive industries. → Recent technological developments seem to have benefitted disproportionately intangible-intensive firms.



## What lessons for policy? (II)

---

- These very different stories would call would call for different policy approaches.
- If procompetitive policies have the potential to increase firm-level productivity, would the solution be to look at competition policies to promote productivity growth?
  - What about the service sector, which shows different results?
  - A “differentiated” policy approach?
- Related, if intangible-intensive firms face high fixed costs, coupled with low marginal costs and rising importance of investments in complementary assets, large incumbents might be advantaged.
  - What to do if firms attain their currently dominant positions on their merits by out-competing rivals?



## What lessons for policy? (III)

Policy is key to make growth more inclusive

- Fostering innovation, mobility and experimentation
  - Innovation at the top and sharing of knowledge
  - Framework conditions for entrepreneurship and reallocation
  - Reducing barriers to job mobility
- Boost technology diffusion
  - Increase firms' awareness and absorptive capacity
  - Skills, access to finance, support to R&D

Particularly relevant over the COVID-19 crisis and in the recovery

→ How to develop better tools to limit firms' market power and its adverse consequences on growth, while at the same time promoting innovation and experimentation?



THANK YOU!

[sara.calligaris@oecd.org](mailto:sara.calligaris@oecd.org)