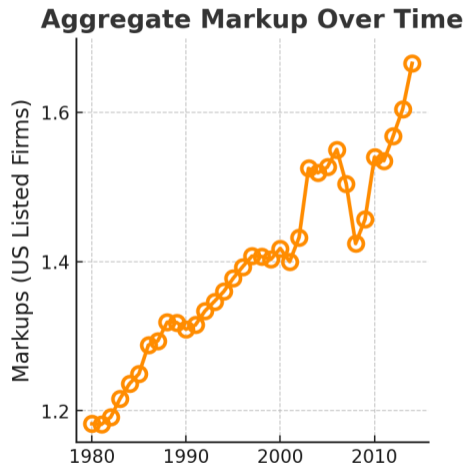
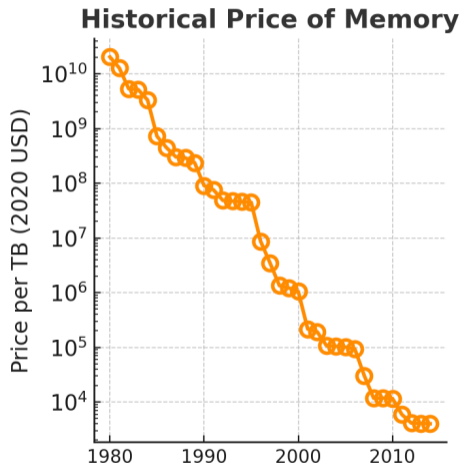


## **Data and Markups: a Macro-Finance Perspective**

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Jan Eeckhout and Laura Veldkamp - Discussion by Maarten De Ridder



How are **markups**, market power, and prices related in the **data economy**?

Two polar views:

- Data enables firms to **extract more surplus** from consumers
- Data enables firms to make **more efficient decisions**, e.g. by reducing uncertainty

Rise in **markups**: seems like surplus extraction but actually reflects **efficient decision making**

- Firms can increase scale and cut marginal costs through **up-front investments**
- **Uncertainty** about what **kind of products** consumers demand limits up-front investment
- Data is a forecasting tool: **resolves uncertainty** and encourages investment
- **Ambiguous** effect on markups: lower risk premium ↓ but higher investment to reduce m.c. ↑
- Only increase if investment to reduce marginal costs is sufficiently **feasible** or risk is **cheap**
- Firm-level markups increase more: firms **reallocate production** to high-markup products

## Why this matters for (monetary) policy

For **anti-trust** policy: clear that markups from efficient decision making offer **no case for action**

For monetary policy: important not to be **simplistic** about rise of markups

- Textbook view: increase in markups is a **negative supply shock**
- Full view: markups can be a **positive** supply shock if joint with cost+price reduction

### Fantastic paper

- An original + intuitive way to think about **production, uncertainty, and data**
- **Challenges textbook thinking** on relationship between prices, markups and market power
- Compelling theory to explain recent trends in (various measures of) aggregate markups

### Discussion

1. Alternative mechanisms
2. Empirical evidence
3. Effects on business dynamism and growth

Data that reduces uncertainty can also **cause rent extraction**. 2 examples:

1. Uncertainty about **consumer types**

- Facilitates first-degree price discrimination
- No change in equilibrium quantities, but (close to) full consumer surplus extraction

2. Uncertainty about **price-elasticity of demand**

- Say firms are risk averse (as in the paper)
- Optimal markup under uncertain demand elasticity is lower than true optimal markup
- Key difference: data could cause **prices to rise** and **quantities to fall**

Paper is a theoretical contribution - need **evidence** to tell which story is true

Main testable predictions

- Data raises up-front investments: lower marginal costs, higher fixed costs
- Data raises markups, as long as up-front investments are feasible
- Data reduces the variance of earnings (!)
- Data raises the co-variance of firm-size and markups (!!)



## A 'back of the envelope' empirical strategy

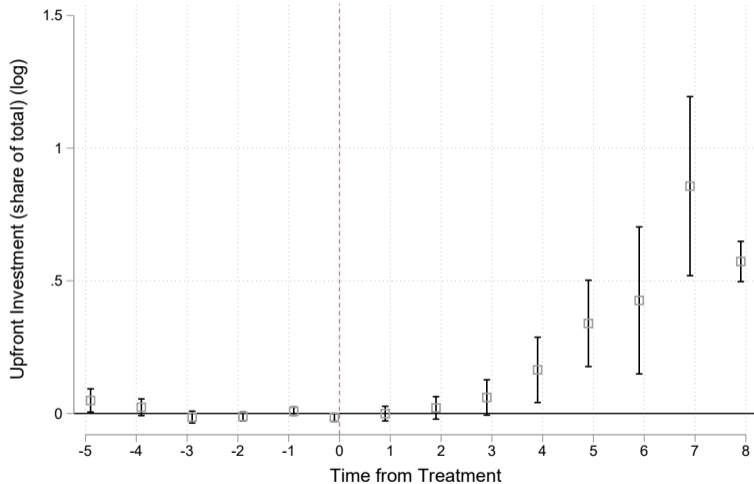
Premise: key driver of data collection and use of data in firm decisions is **internet access**

**Broadband** was rolled-out staggered in quasi-randomly way in France (Malgouyres et al. JIE 2021)

Test model's prediction by comparing pre and post-broadband roll-out cities for 2000-2008

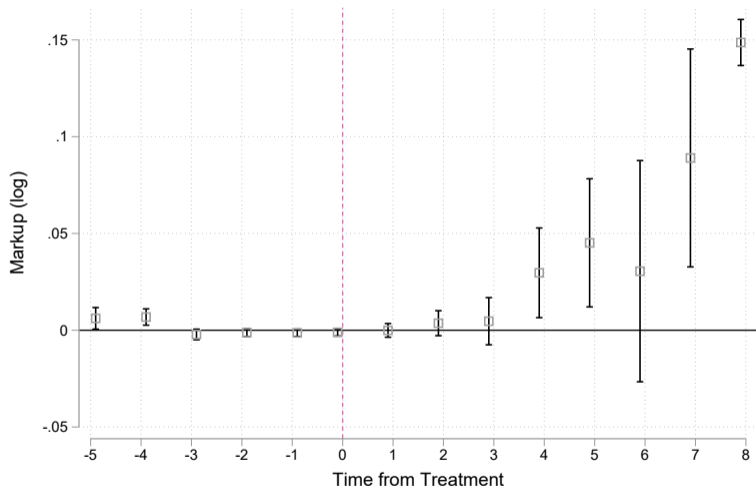
- Firms' markups: *Hitchhiker's Guide to Markup Estimation* (De Ridder, Grassi, Morzenti 2023)
- Up-front investments: wedge between markups and profits (De Ridder, AER 2024)
- City-block level data on access to broadband (Malgouyres et al., JIE 2021)
- Accounting data: balance sheet and income statement from FICUS-FARE (manufacturing)

## Prediction 1: rise in up-front investment vs variable costs



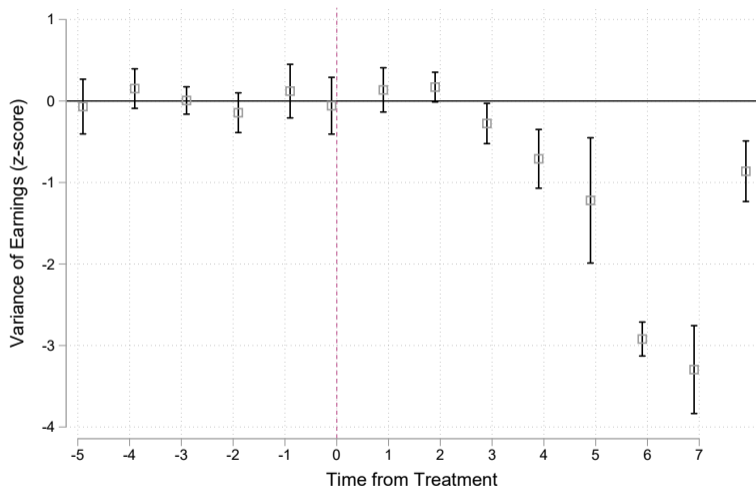
Results from Callaway and Sant'Anna (2021)'s estimator. Controls: Dep.-industry-year effects and firm effects.

## Prediction 2: increase in firm markups



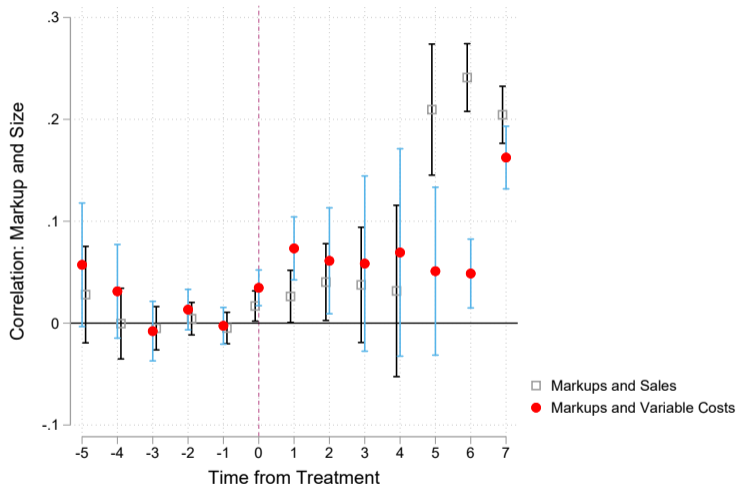
Results from Callaway and Sant'Anna (2021)'s estimator. Controls: Dep.-industry-year effects and firm effects.

### Prediction 3: decline in variance of earnings



Results from Callaway and Sant'Anna (2021)'s estimator. Controls: Dep-year effects and city effects.

## Prediction 4: increase in covariance between markups and size



Results from Callaway and Sant'Anna (2021)'s estimator. Controls: Dep-year effects and city effects.

### Main testable predictions

- Data raises up-front investments: lower marginal costs, higher fixed costs ✓
- Data raises markups, as long as up-front investments are feasible ✓
- Data reduces the variance of earnings (!) ✓
- Data raises the co-variance of firm-size and markups (!! ) ✓

Next step: use **direct information on firms' use of data**

## Comment 3: adding business dynamism and growth

Data gives **incumbent firms** a competitive advantage: has a negative **externality** on potential entrants

Reasoning based on De Ridder (2024):

- Firms produce multiple goods, expand into other firms' markets (**creative destruction**)
- Consumers demand goods from firm with lowest **quality-adjusted price**
- World without data: innovating entrant always becomes producer
- World with data: incumbent has **data** and uses it to **reduce marginal costs**
- Incumbent can **undercut** entrant on price and **prevent creative destruction** by entrants

Similar empirical predictions:

- Rise in markups + upfront investment, lower earnings variance, higher markup/size covariance

How are **markups**, market power, and prices related in the **data economy**?

Rise in **markups**: seems like surplus extraction but actually reflects **efficient decision making**

**Excellent paper** that **challenges textbook-thinking** on what an increase in markups reflects

**Further empirical evidence** needed to understand if paper captures main effects of data on consumers