The Rise of Market Power and the Macroeconomic Implications

Jan De Loecker Jan Eeckhout Gabriel Unger

Presentation by Shasha Wang

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Agenda

1. Introduction

2. Empirical Framework

3. Results

4. Discussion

Goal of the Paper

Propose and test two hypothesis

1. Rise in concentration in most industries reflects declining domestic competition (henceforth DDC) and not EFS
2. Decline in competition is (partly) responsible for the decline in investment, after controlling for INTAN and GLOBAL

Estimation of markups

Follow a radically different approach (than using demand prices):

- Production approach: wedge between a variable input's expenditure share in revenue and that input's output elasticity.

Main findings:

- Sharp increase in markups starting in 1980, steep in 1980s and 90s, followed by a period of stable markups in the 2000s.
- There are marked changes in the distribution of markups over time, mainly in the top of the markup distribution.
- Rise in the average weighted markups is due to an increase in the upper tail of the unweighted markups.

Empirical Framework

Cost minimization yields...

$$\mu_{it} = \theta_{it}^{\nu} \frac{P_{it} Q_{it}}{P_{it}^{V} V_{it}}$$

Output:

$$q_{it} = \theta_{it}^{V} \nu_{it} + \theta_{it}^{k} k_{it} + \omega_{it} + \varepsilon_{it}$$

Evolution of markups, Data:

- Compustat.
- Economic Census.

Results, Average markup increase

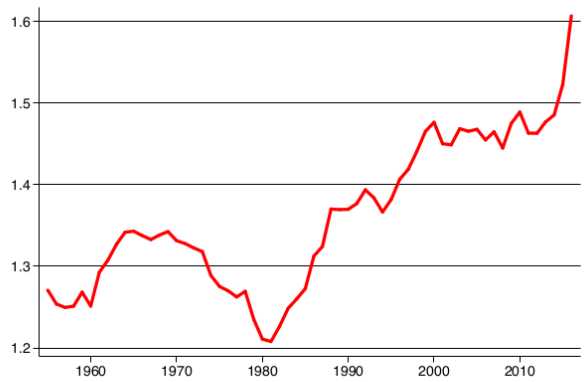


Figure 1: Average Markups for Conventional Production Function. Output elasticities θ_{st} from estimated PF1 are time-varying and sector-specific (2 digit). Average is sales weighted. Evolution 1955-2016.

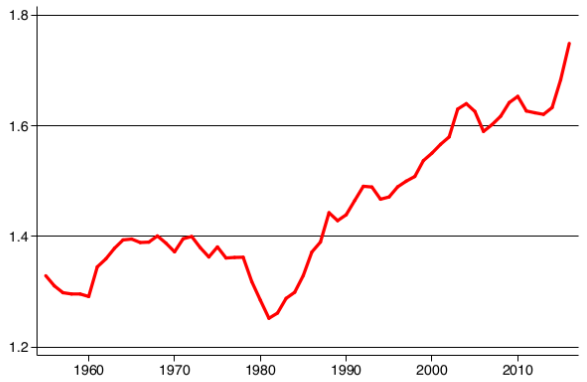
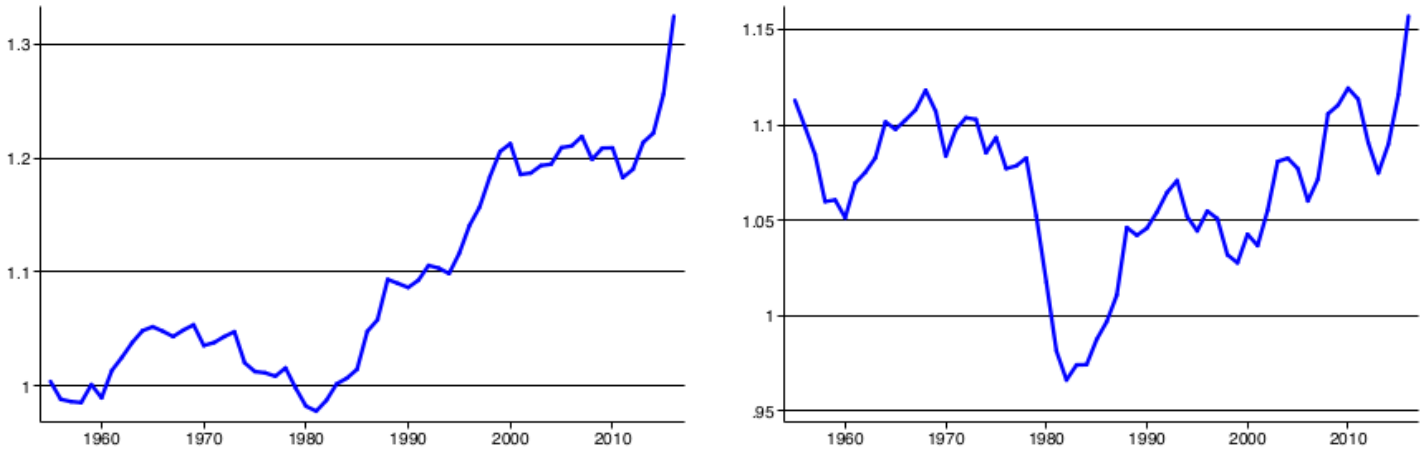


Figure 2: Average Markups for the Conventional Production Function using Cost Shares: CS1. Output elasticities θ_{st} are time-varying and sector-specific (2 digit, median). Average is sales weighted. Evolution 1955-2016.

Results, Average markup increase, new production technology



(a) Markup with θ_{st} from PF2

(b) Markup with θ_{st} from CS2

Figure 4: Average Markups for Production Function with Overhead as a factor. Output elasticities from estimated PF2 and from CS2: time-varying, sector-specific (2 digit) output elasticity θ_{st} (sales weighted average).

Results, Average markup increase

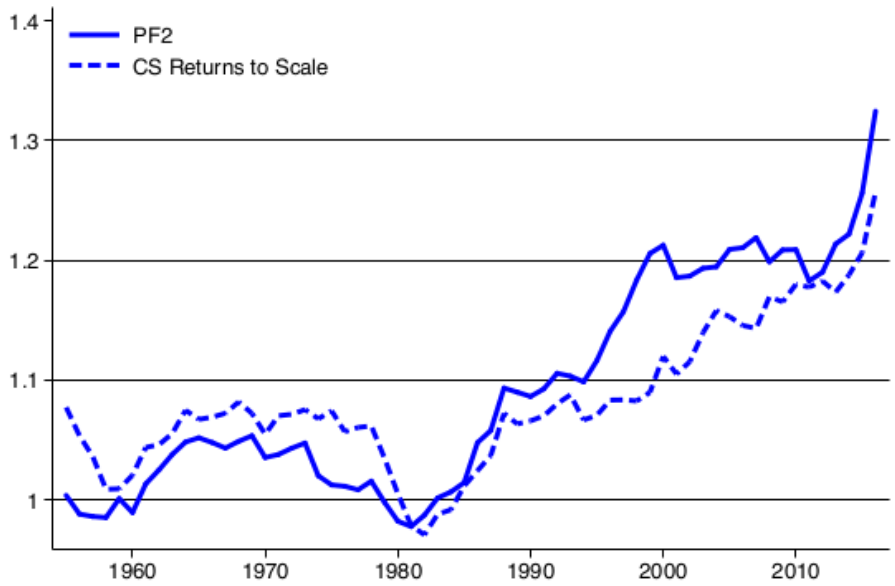
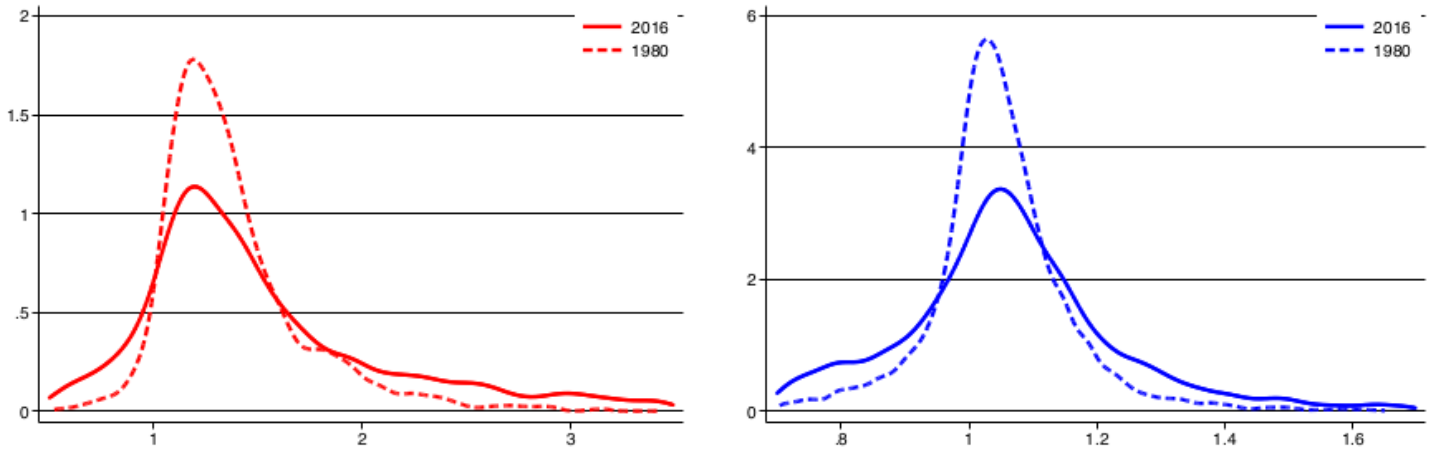


Figure 6: Average Markup: Benchmark (PF2) and Cost Shares with Returns to Scale (Syverson)

Results, Distribution of markups



(a) Production Function PF1

(b) Production Function PF2

Figure 7: Distribution of Markups μ_{it}: Kernel Density Plots (unweighted)

Results, Increase of volatility in markups

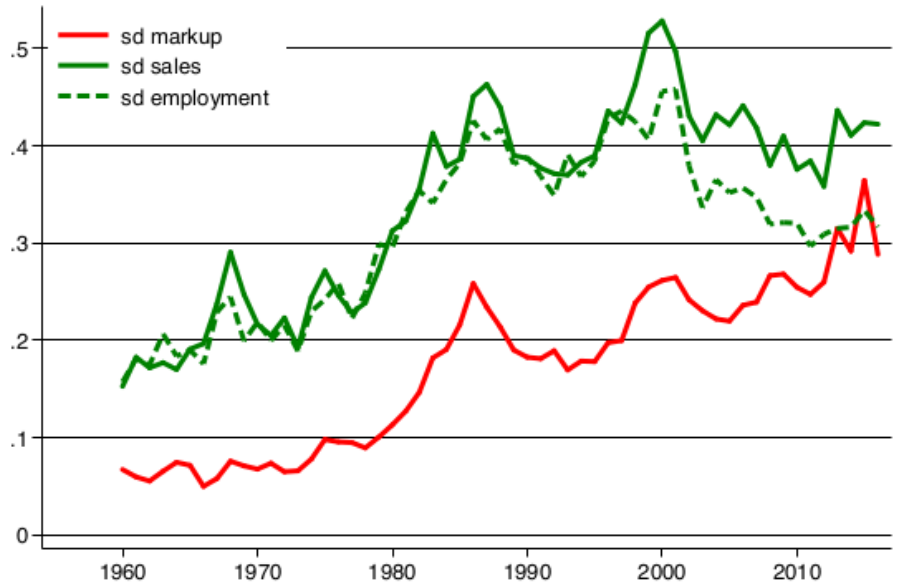
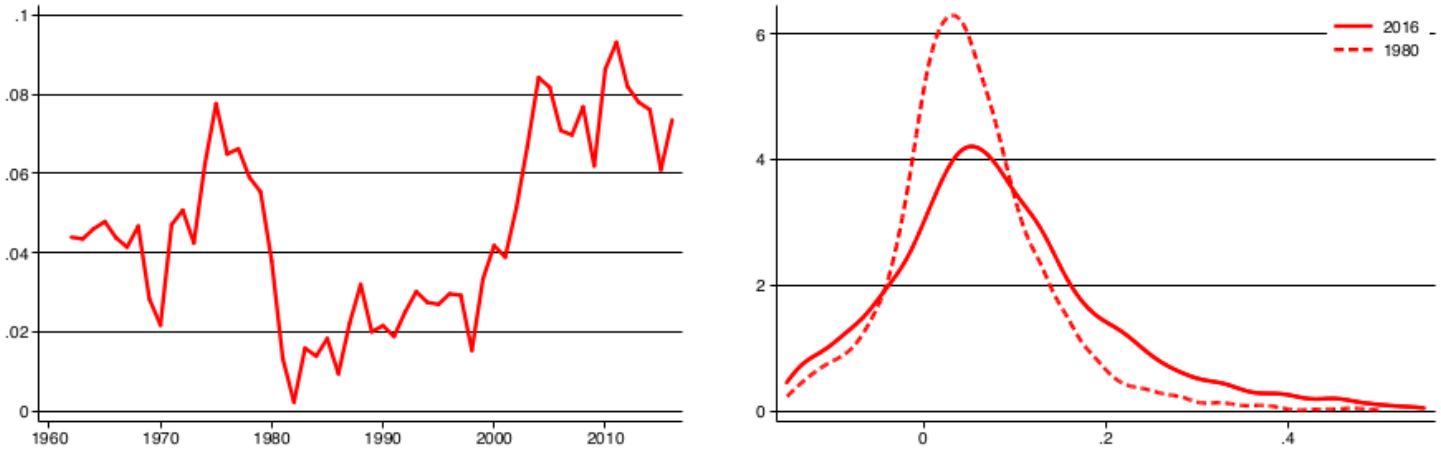


Figure 9: The Evolution of the Standard Deviation of Markups, Sales and Employment (1960 - 2016). (AR(1) in logs on their lag with year and industry fixed effects; The estimated persistence is 0.84).

Results, Profits

Markups does not necessarily imply profits.

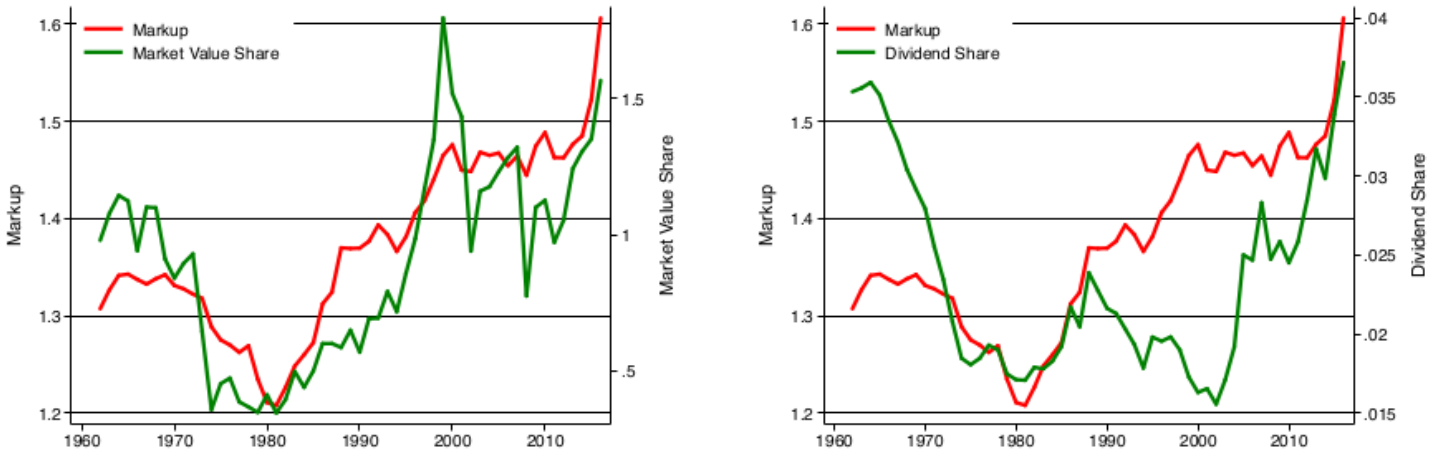


(a) Average Profit Rate (sales weighted)

(b) Kernel Density Profit Rate (unweighted)

Figure 14: Average Profit Rate and Profit Rate Distribution.

Results, Market value and dividends



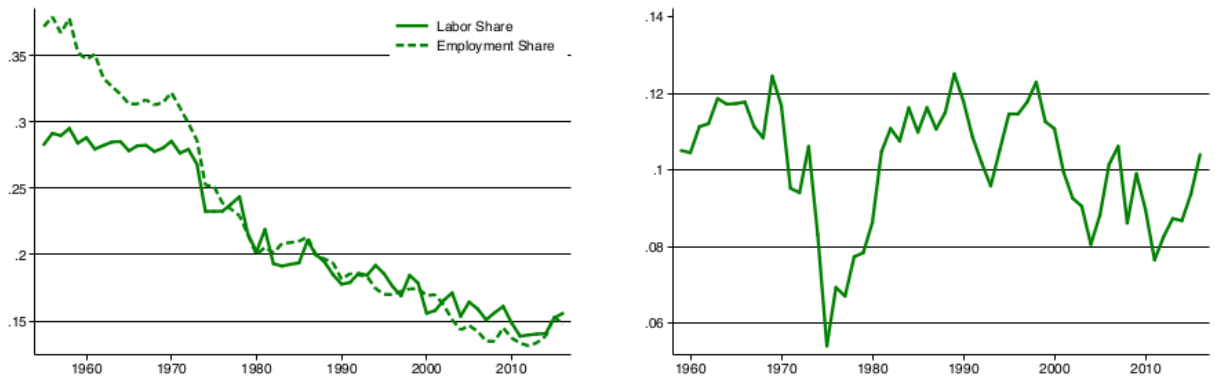
(a) Average Market Value (share of Sales), Markup (b) Average Dividends (share of Sales), Markup

Figure 15: Market Value and Dividends.

Macroeconomic implications (discussion)

- Non-conclusive evidence for the mechanism behind the decline in labor share.
- Capital share: same logic as for labor. In this framework, inversely proportional to the markup.
- Low skill wages and labor force participation: Lower output implies lower demand for labor.
- Migration rates: decreased (in US).

Results, Labor Share decline



(a) Average Labor and Employment Shares (= Employees/Sales; normalized to 0.2 in 1980).

(b) The Evolution of the Average Capital Share in our sample of firms.

Figure 21: Labor and Capital Shares.