The Rise of Market Power and the Macroeconomic Implications

De Loecker, Eeckhout & Unger, 2019

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Beyond Macro

Outline

- Why are we interested in markups?
- Measurement methods
- De Loecker, Eeckhout & Unger paper
- Will not talk about cyclicality

Why are we interested in markups?

- Can be a good measure of market power
- Increase in market power can be related to some macro trends
  - Decline in labor share
  - Lower investment rate
  - Decrease in firm entry
  - Distributional impacts

The measurement

Why is it an issue?

- Data on marginal cost is not easy to obtain or even prices

1. Accounting approach
   - Barkai (2016)
   - Estimates based on profits and CRS
   - No need of estimating the production function
   - Calculation of profits are not easy
2. Demand approach
   - Berry, Levinsohn, and Pakes (1995) and Bresnahan (1989)
   - Need to specify a demand system to estimate price and elasticity of demand
3. Production approach
   - Hall (1988)
   - Estimate the production function and use FOC for a single factor of production
   - The one used in the paper

De Loecker, Eeckhout & Unger(2019)

Preview of results

- The paper shows that average markups were 21% above marginal cost in 1980, and now it is **61%**.
- This increase is mainly driven by the **increase in upper percentiles**, but the median is the same.
- Most of the change is coming from the **reallocation** channel.
- They claim that the increase in markups means **a rise in market power** by showing some trends on profitability and overhead costs.

Production Approach

Based on the cost minimization problem of the firm

$$\mathcal{L}\left(V_{it}, K_{it}, \lambda_{it}\right) = P_{it}^{V} V_{it} + r_{it} K_{it} + F_{it} - \lambda_{it}\left(Q(.) - Q_{it}\right) \tag{1}$$

FOCs imply:

$$\begin{aligned}
\frac{\partial \mathcal{L}}{\partial V_{it}} &= P_{it}^{V} - \lambda_{it} \frac{\partial Q(.)}{\partial V_{it}} = 0 \\
\theta_{it}^{v} &= \frac{\partial Q(.)}{\partial V_{it}} \frac{V_{it}}{Q_{it}} = \frac{1}{\lambda_{it}} \frac{P_{it}^{V} V_{it}}{Q_{it}} \\
\mu_{it} &= \theta_{it}^{v} \frac{P_{it} Q_{it}}{P_{it}^{V} V_{it}} \\
\mu_{it} &= \frac{\theta_{it}^{v}}{s_{it}^{v}}
\end{aligned}$$

To estimate output elasticity θ_t^v they use 2 different approaches:

- Estimate production function
  For each industry s, estimate

$$y_{it} = \theta_t^v v_{it} + \theta_t^K k_{it} + \omega_{it} + \varepsilon_{it}$$

- Use cost share

$$\alpha_{it}^V = \frac{P_{it}^V V_{it}}{P_{it}^V V_{it} + r_{it} K_{it}}$$

  Then the output elasticity of industry s:

$$\theta_{st} = median_{i \in s}\{\alpha_{it}^V\}$$

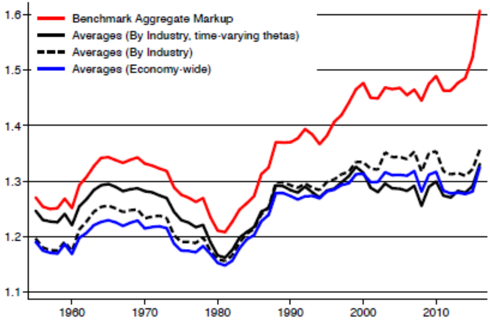
Aggregating the markup

$$\mu_t = \sum_i m_{it}\mu_{it}$$

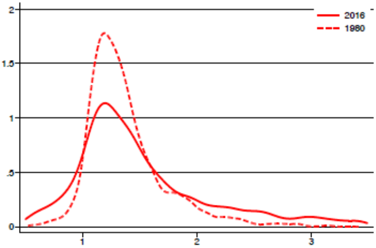
Which weight should we use?

Their benchmark is **weighted by revenue**

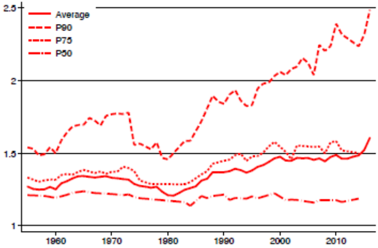
- To capture the fact that there is a reallocation of revenues from low markup firms to high markup firms



Distribution



(a) Kernel Density (unweighted)

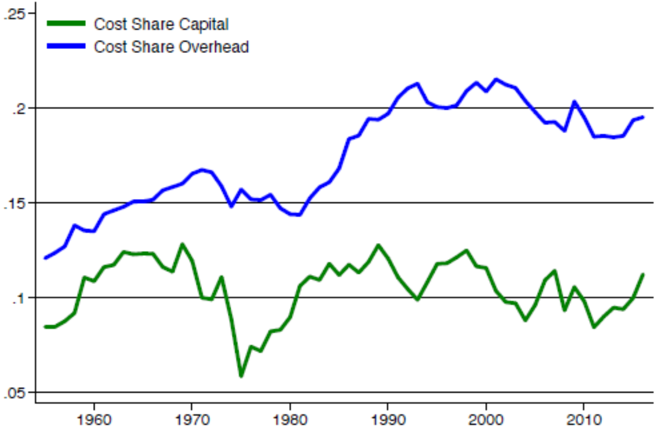


(b) Percentiles Markup Distribution (revenue weight)

- The increase is almost entirely coming from the top half of the markup distribution.
- No sector or industry drives this result.

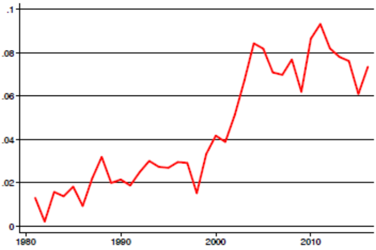
Market power

- The rise in overhead cost cannot explain the increase in markups entirely!

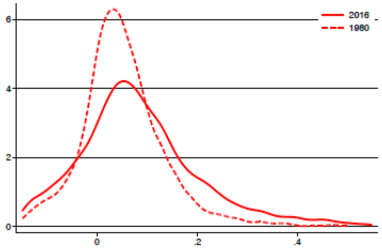


Profitability

- Similar trend in profitability supports the claim of increasing market power.



(a) Average Profit Rate (revenue weighted)



(b) Kernel Density Profit Rate (unweighted)

- Then why do we need markups?

Decline in Labor Share

- Confirms the inverse relationship between markups and labor share
- Firm-level evidence, not say something about aggregates

	Labor Share (log)					
	(1)	(2)	(3)	(4)	(5)	(6)
Markup (log)	-0.24	-0.23	-0.20	-0.24	-0.68	- 0.73
	(0.03)	(0.03)	(0.03)	(0.03)	(0.02)	(0.02)
Cost Share (log)					0.91	0.96
					(0.01)	(0.01)
Year F.E.		X	X	X	X	X
Industry F. E.			X		X	
Firm F.E.				X		X
R^2	0.02	0.08	0.21	0.88	0.93	0.99
N	24,838					

Accounting Approach

$$
\begin{aligned}
F_L &= \mu_t \frac{w_t}{p_t} \\
s_t^L &= \mu_t^{-1} \times const \\
F_K &= \mu_t \frac{r_t}{p_t} \\
s_t^K &= \mu_t^{-1} \times (1 - const) \\
s_t^L + s_t^K &= \mu_t^{-1} \\
(1 - s_t^{\pi}) &= \mu_t^{-1}
\end{aligned}
$$