Market Power under Heterogeneous Financial Frictions

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Motivation

- Observed increase in market power in recent decades across advanced economies currently a hot topic: actual (De Loecker & Eeckhout, 2018) vs. measurement error (Gutierrez & Philippon, 2019); causes (Autor et al., 2017; Haskel & Westlake, 2017).
    - Agreement on two facts: 1. heterogeneous firms (markups, productivity, profits, ...); 2. estimated markups not necessarily related to actual profits (variable vs. fixed costs)

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    - Higher markups (measured on standard COGS) used to cover higher 'fixed' costs related to the purchase of intangibles
    - Firms' heterogeneity in the ability to access external finance (a feature of firms, eg Irlacher and Unger, 2016) then correlated with cross-sectional behaviour of markups

Data

1. Firm-level data from EFIGE:
   - harmonized and representative cross-country samples
   - $\sim 15,000$ manufacturing firms ($+10$ employees)
   - 7 countries (Austria, France, Germany, Hungary, Italy, Spain, UK)

2. Firm-level balance sheet information (fixed assets, sales, number of employees, ...) merged from Amadeus for the period 2002 - 2013

3. Link with balance sheet data allows calculation of firm-level markups and TFP over time, covering the crisis years 2008-2010

4. Dataset provides information on relevant firms' characteristics (e.g. internazionalization, access to finance) observed once during the years 2008-2010

Key Variables

1. Markups: estimated as in DeLoecker-Warzynski (2012) with Woolridge (2013) routine for production function (ACF, 2015 as robustness check)

2. TFP: estimated through Woolridge (2013), with labor productivity (value added per employee) as robustness check

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   - Whited and Wu (2006) index of financial constraints (inverted and normalized): score from 0 (no financial capability) to 1 (maximum financial capability)

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   - Whited and Wu (2006) index of financial constraints (inverted and normalized): score from 0 (no financial capability) to 1 (maximum financial capability)
   - *Robustness*: ratio of interests on loans to the firm's operating revenues (higher values indicating less constrained access to external finance)
   - *Robustness*: normalized ASCL (Age, Size, Cash, Leverage) index of financial constraints (Mulier et al., 2016): score from 0 (constrained access to external finance) to 1 (unconstrained access)

Markups over time, average before/after 2008
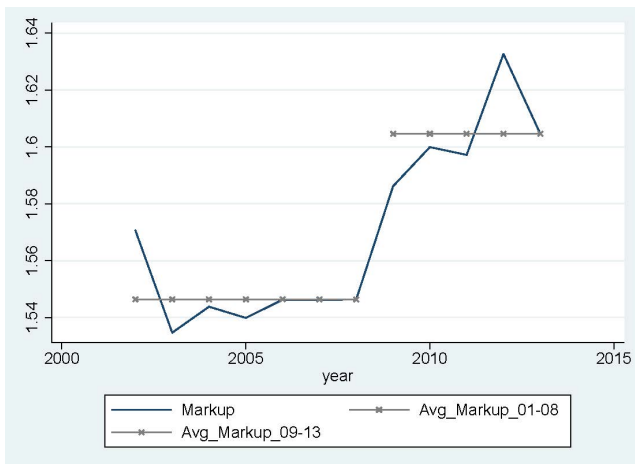
Note: Weighted average of DLW(2012) markups with Woolridge(2013) TFP estimation. Difference before/after 2008 significant in firm-level regression of markups controlling for firm level TFP, *Sector x Country* FE and clustering of s.e.
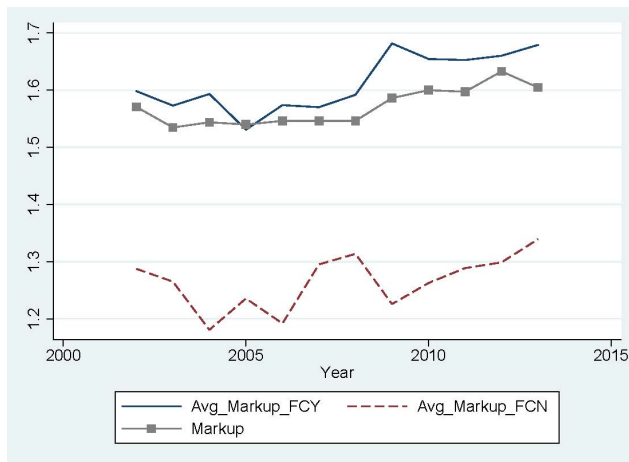
Overall trend and magnitude in line with De Loecker & Eeckhout (2018)

Markups vs. profit rates over time
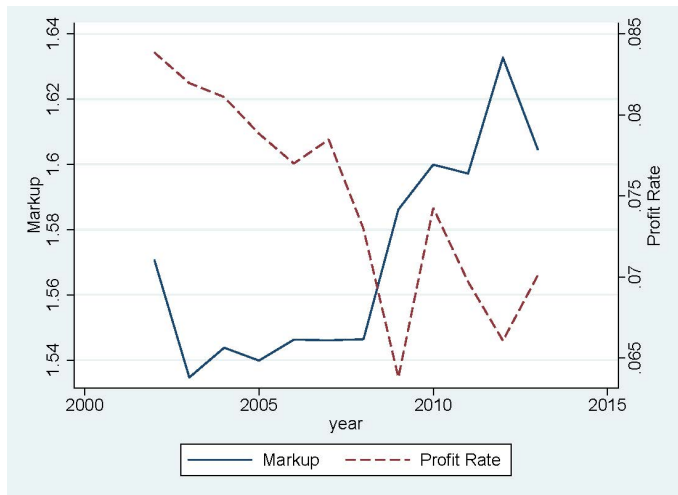
Note: Weighted average of DLW(2012) markups with Woolridge(2013) TFP estimation, and profit rates calculated as EBITDA/Revenues

Markups over time by access to finance

Note: DLW(2012) markups with Woolridge(2013) TFP estimation. Firms with access to finance above (FCY) or below (FCN) median. Financial access is the (inverted) Whited and Wu (2006) index calculated on balance sheet data.

Markups and Access to Finance

$$\ln \mu_{isct} = \alpha + \beta_0 \cdot \ln TFP_{isct} + \beta_1 Fin\ Access_{isct} + \gamma_i + \delta_{sct} + \varepsilon_{isct}$$

VARIABLES	(1) OLS Markup	(2) OLS Markup	(3) OLS Markup	(4) OLS Markup	(5) OLS Markup ACF
ln_TFP	1.555***	1.650***	1.591***		1.518***
	(0.00914)	(0.00955)	(0.00952)		(0.00970)
WW	0.294***			0.215***	0.254***
	(0.0113)			(0.0160)	(0.0115)
Interest paid / OR		1.198***			
		(0.197)			
ASCL			0.0604***		
			(0.00762)		
Labor Productivity				1.253***	
				(0.0137)	
Constant	-3.832***	-3.922***	-3.791***	-5.236***	-3.910***
	(0.0216)	(0.0249)	(0.0231)	(0.0545)	(0.0228)
Observations	49,413	39,389	47,081	53,052	56,142
R-squared	0.964	0.967	0.961	0.937	0.956
FE	i, sct	i, sct	i, sct	i, sct	i, sct
SE	cluster mark	cluster mark	cluster mark	cluster mark	cluster mark
Time	2002-2013	2002-2013	2002-2013	2002-2013	2002-2013

Note: Weighted regressions with firm and *Sector x Country x Year* FE, clustered s.e. Financial capability is the (inverted, normalized) Whited and Wu (2006) index calculated on balance sheet data.

Markups and Financial Frictions

- Results point at a static "long-run" effect of financial factors on markups, through their interplay with firm sunk investments, and cost structure
- Results confirmed in IV regressions exploiting quasi-experimental variation in working capital needs across firms in France (Beaumont and Lenoir, 2019)
- Results consistent with a theoretical model with heterogeneous financial frictions, heterogeneous marginal costs and variable demand elasticity
- General equilibrium results seem to show that a tightening of financial constraints has effects on markups through both the intensive (lower) and the extensive (higher) margin

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Key takeaway: local financial frictions can play a role in shaping how common shocks (e.g, euro-area demand shocks, monetary policy) generate a different pattern of pass-through across different countries