

Competition, Markups, and Predictable Returns
Corhay, Kung & Schmid

Discussion — NBER Summer Institute 2015

Erik Loualiche — MIT Sloan

Motivation

R. E. Hall, 2004, Quarterly Journal of Economics

(...) rents arising from adjustment costs are relatively small and are not an important part of the explanation of the large movements of the values of corporations in relation to the reproduction costs of their capital.

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Growing literature

- Fama and French (1997), Hou and Robinson (2006)
- Bustamante and Donangelo (2014), van Binsbergen (2007)
Loualiche (2014), Opp et al. (2014), Novy-Marx, Garlappi et al.

Plan

- 1 Summary
- 2 Markup Volatility
- 3 Predictability, Markups and the Labor Share
- 4 Industrial Organization and Asset Pricing

This Paper

Markups predict returns

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Asset Pricing with Markups

- Monopoly power: firms rent
- Variation in asset prices from varying monopoly rents
- Focus on the extensive margin of investment rather than classic capital investment at the intensive margin

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Markups amplify booms and busts

- RBC model: economy goes through good and bad times
 - ▶ Bad times: low productivity, low investment, low firm entry
 - ▶ Good times: high productivity, high investment, high firm entry

How do markups amplify business cycles?

The Role of Markups for Business Cycles

Good times

- High productivity
- More production
- More new firms enter the economy
- More competition

Bad times

- Low productivity
- Low production
- Low level of firm entry
- Low competition

The Role of Markups for Business Cycles

Good times

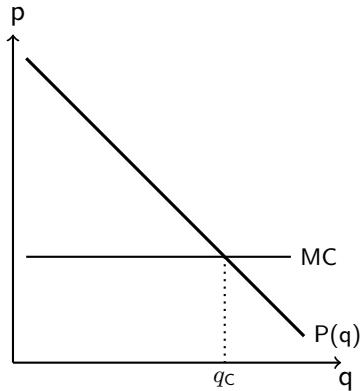
- High productivity
- More production
- More new firms enter the economy
- More competition
- **Markups fall**
 - ▶ low price distortions

Bad times

- Low productivity
- Low production
- Low level of firm entry
- Low competition
- **Markups rise**
 - ▶ high price distortions

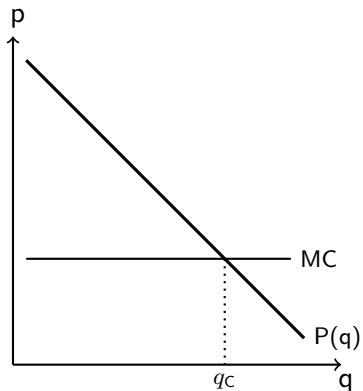
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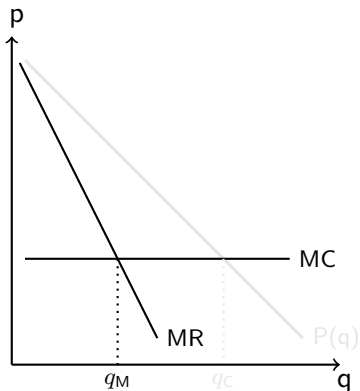


The Role of Markups for Business Cycles

Good times



Bad times



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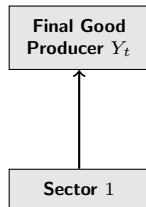
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- Low profits

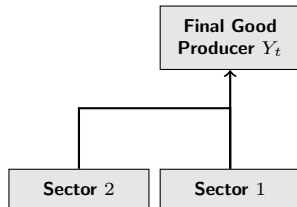
Bad times

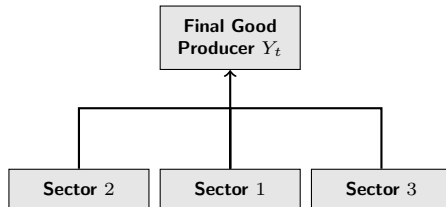
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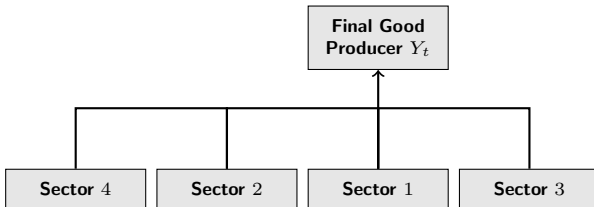
Countercyclical Profits: what about firms risk premium?

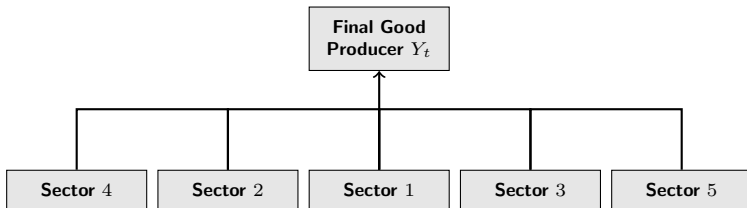
**Final Good
Producer Y_t**

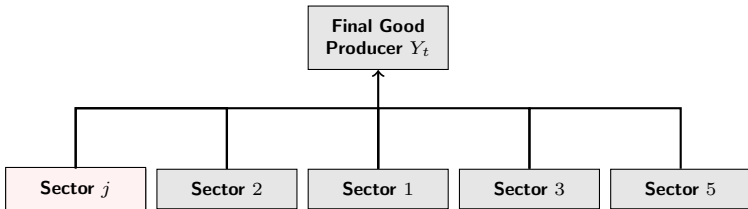


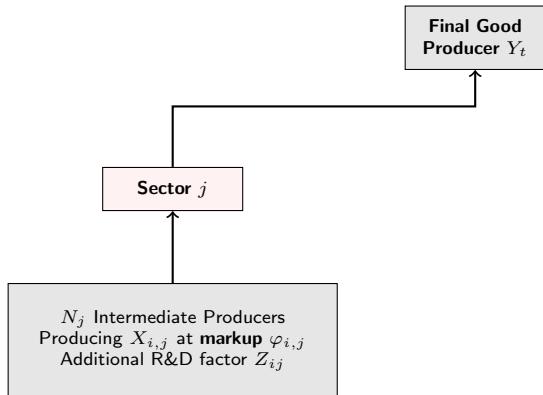


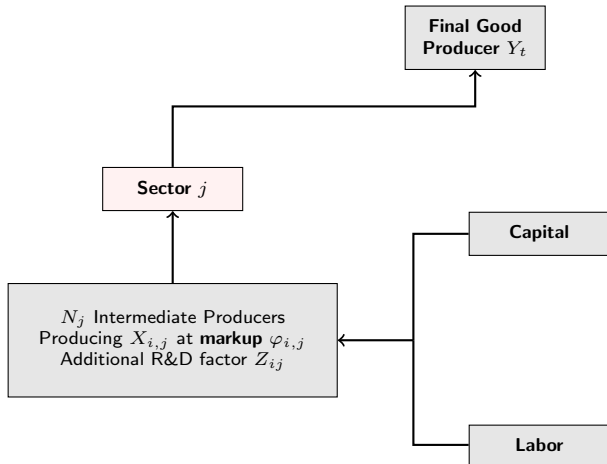


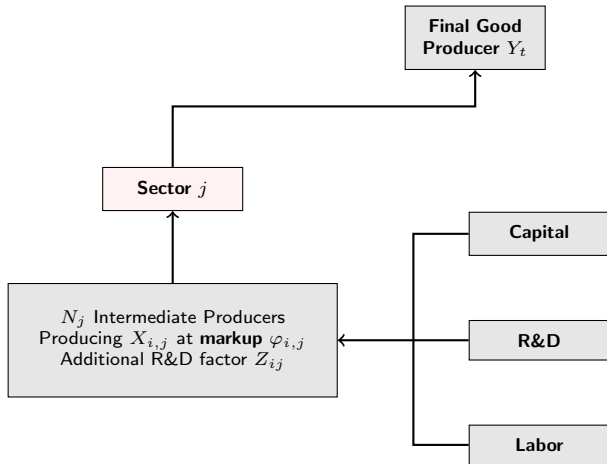


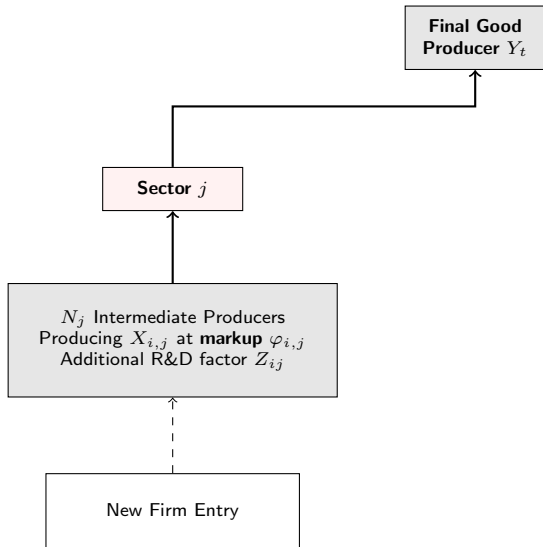


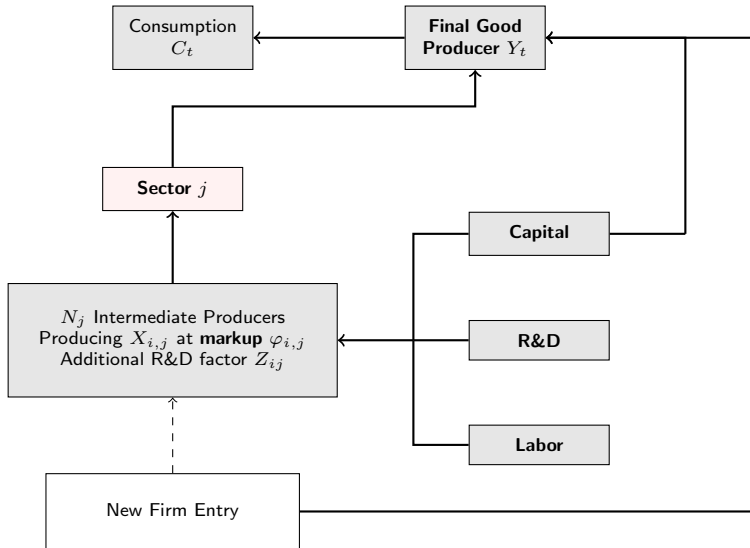


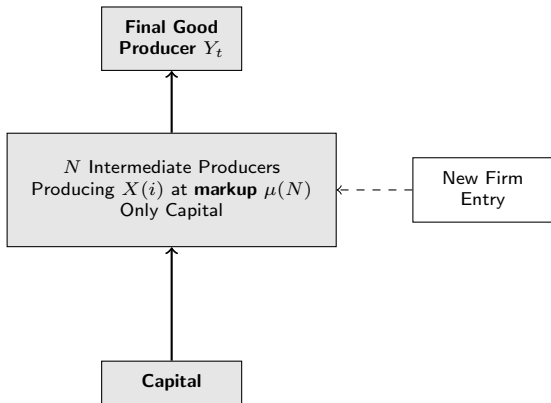


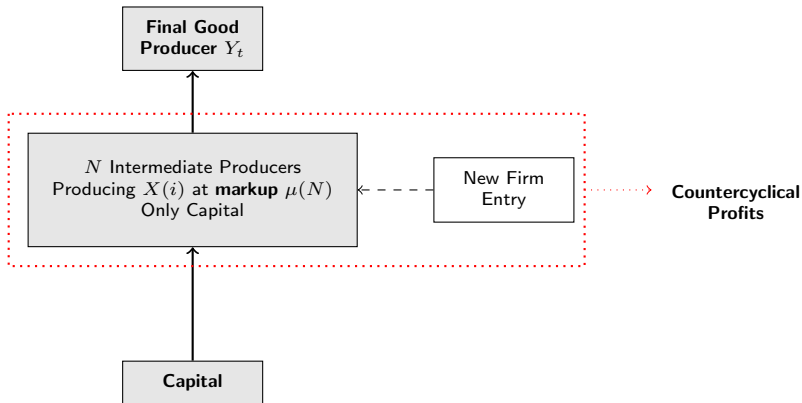


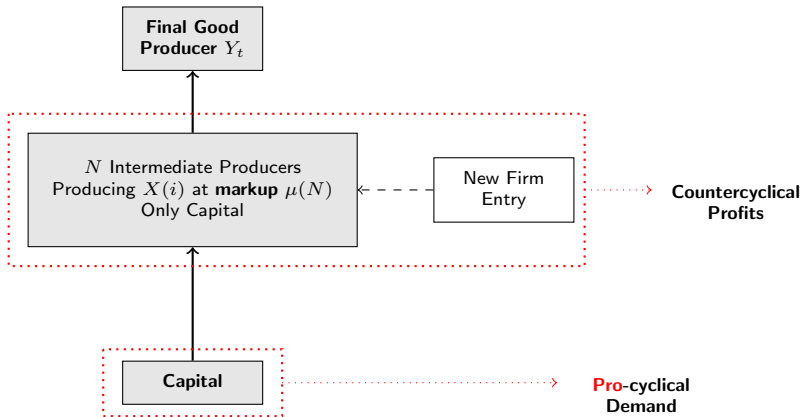


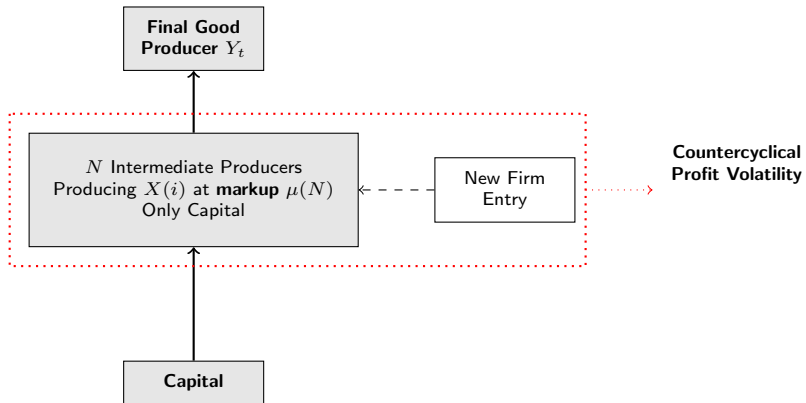


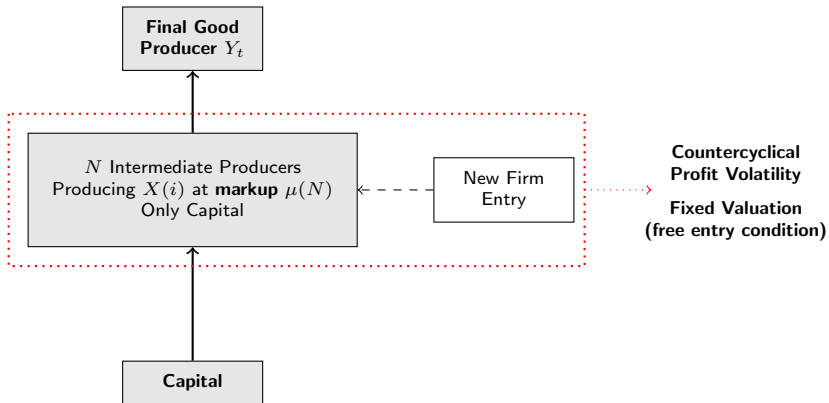


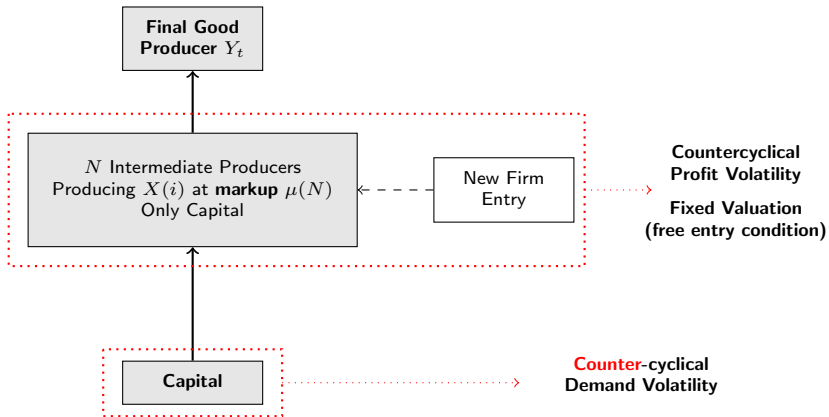


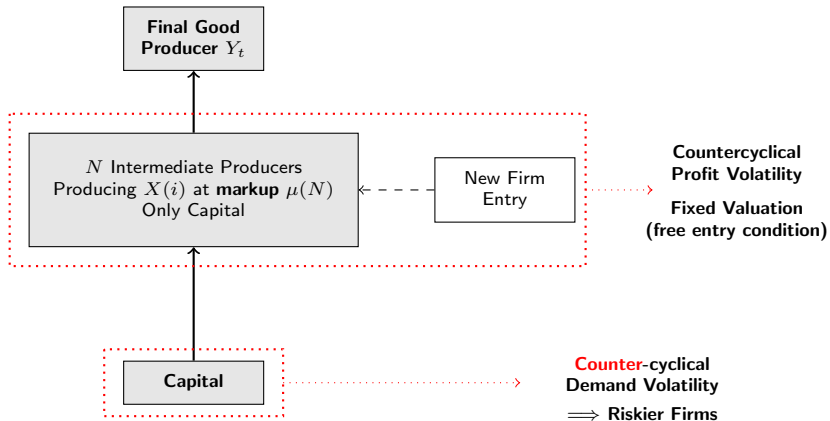












Model Summary

Firms' cash-flow dynamics

- Monopolistic firms:
 - ▶ free entry conditions: perfectly elastic supply
 - ▶ valuation driven by risk-free rate ($q = 1$)
- Capital good producers
 - ▶ demand for capital falls
 - ▶ low cash-flows from rents to adjustment costs

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Expected returns

- Aggregate risk only comes from capital good producers
- Markups **amplify** cash-flow volatility

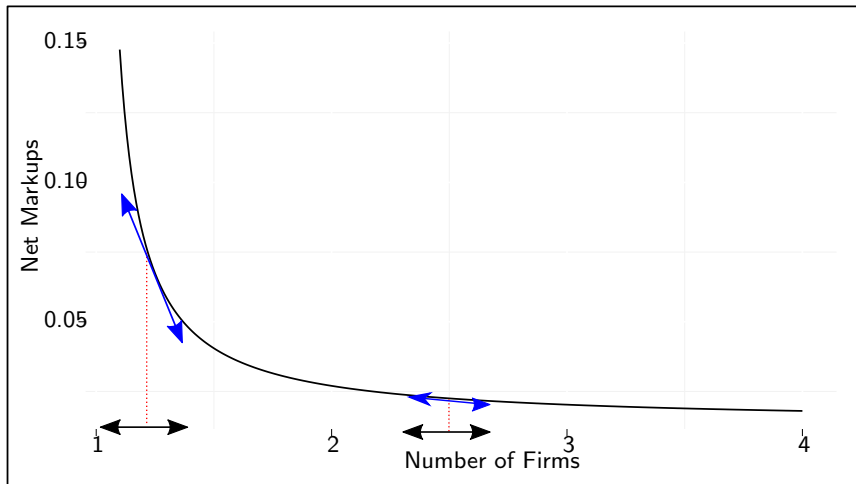
Predictability

- Markup volatility higher in bad times
- Demand (for capital goods) volatility higher in bad times
- Countercyclical risk premium

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Markups and the Business Cycles



Markups and returns

- Predictability regression in the model
- Markups specified exogenously
- Classic predictability regression

$$r_{t,t+n} - y_t^{(n)} = a + b \cdot pd_t + \varepsilon_{t+1}$$

	Horizon (in years)				
	1	2	3	4	5
A. Countercyclical Markups					
$b^{(n)}$	0.002	0.004	0.005	0.007	0.009
R^2	0.000	0.000	0.000	0.000	0.000
B. Countercyclical and heteroscedastic markups					
$b^{(n)}$	-0.022	-0.044	-0.066	-0.087	-0.109
R^2	0.015	0.029	0.043	0.057	0.070

Conditional Volatility of Markups: Evidence

Markup elasticity

- This paper: elasticity of markups to new firms is higher in bad times
- What is the evidence from industrial organization?

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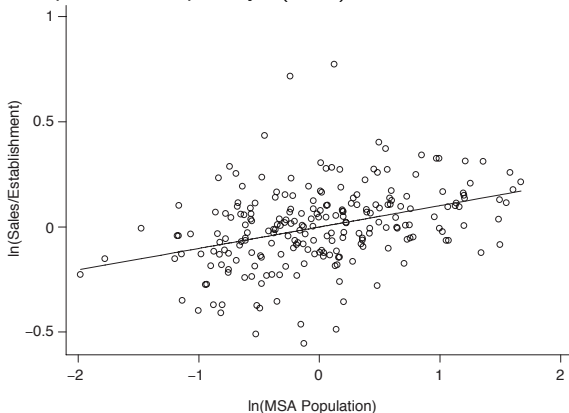
- Large evidence on the link between number of competitors and markups
 - ▶ Negative
- Evidence on convexity?
 - ▶ Markup elasticity greater when number of firms is smaller

Conditional Volatility of Markups: Evidence

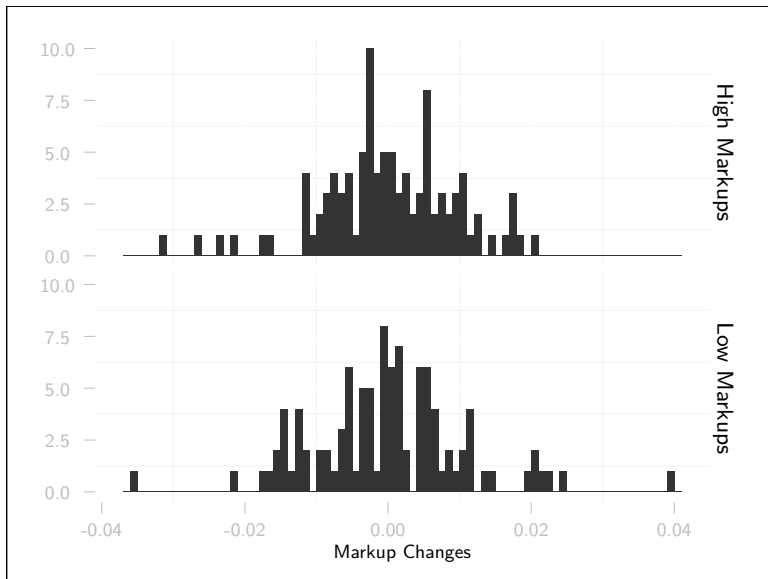
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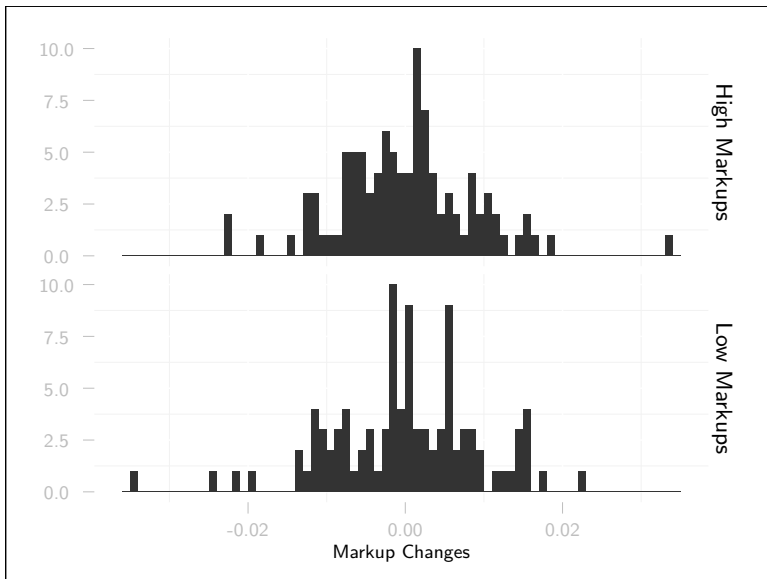
- Campbell and Hopenhayn (2005)



Conditional Volatility of Markups: Evidence



Conditional Volatility of Markups: Evidence



Conditional Volatility of Markups: Evidence

	Volatility	
	Bad Times	Good Times
Labor Share		
First difference	0.95%	1.08%
AR(1)	0.87%	0.95%
Compustat		
profit margins	1.03%	1.06%
profitability	0.71%	0.81%

What About Entry Rates?

	Volatility	
	Bad Times	Good Times
Markups		
First difference	0.95%	1.08%
AR(1)	0.87%	0.95%
Compustat		
profit margins	1.03%	1.06%
profitability	0.71%	0.81%
Entry Rates		
aggregate	3.2%	3.4%
industry	9.8%	11.1%

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What About the Predictability Results?

What do they do

- Predictability regression: future returns on markups

$$r_{t+1} = a + b \cdot (\text{markups})_t + \varepsilon_{t+1}$$

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What do they do

- Predictability regression: future returns on markups

$$r_{t+1} = a + b \cdot (\text{markups})_t + \varepsilon_{t+1}$$

- How can we measure aggregate markups?
 - ▶ Large macroeconomics literature on markups (for models of sticky prices)
 - ▶ Rotemberg and Woodford (1991); Rotemberg and Woodford (1999): countercyclical
 - ▶ Nekarda and Ramey (2010): a- or pro-cyclical
- This paper: Hall (1986) method
- From firms' optimization: markups are the inverse of marginal costs
- Cobb-Douglas: markup \propto 1/labor share
- This paper's regression:

$$r_{t+1} = a + b \cdot (1/\text{labor share})_t + \varepsilon_{t+1}$$

What About the Predictability Results?

The labor share and predictability

- Large finance literature on the labor share and asset returns
- Lettau and Ludvigson (2001), Santos and Veronesi (2006)
(see also Belo et al. (2014))

An example: Santos and Veronesi (2006)

- Large labor share predicts low risk premium
- Low covariance of consumption and asset returns

Identification

- What is the mechanism?
- Should we truly care about markup variations as sources of risk?

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Competition risk and prices – Loualiche (2014)

Heterogeneity across product markets

- Risk of displacement of monopoly rents for incumbent firms
- Heterogeneity in industries exposure to the risk of new entry
- Some industries become more risky than others

Explaining the cross-section of industry returns

- Is I.O. the answer to Fama and French (1997)?
- Summary statistics approach at the industry level
 - ▶ I measure the elasticity of industry entry to aggregate shocks
 - ▶ I measure the elasticity of industry cash-flow to entry
- Two elasticities at the industry level (cash-flow and industry entry)
↔ predict CS of industry returns

Conclusion

New Direction for Production Based Asset Pricing:

- Important topic: where do firms cash-flow come from?

Future work:

- Inspect the mechanism precisely: if markups matter how exactly?
- Move to the cross-section?