Power imbalances in French food retailing: Evidence from a production function approach to estimate market power

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Introduction

- EU food retailing is characterized by dominant oligopolies operating alongside a high number of small fringe retailers (European Commission, 2014).
- Potential for large retailers to exert market power leading to decreasing competitiveness of small stores, consumer welfare loss and shrinking value chain efficiency (e.g. Sexton and Xia, 2018).

Motivation

- Potential market power abuses by dominant retailers is top priority on the policy agenda of EU antitrust authorities (OECD, 2014), e.g., investigation of potential collusion by two French retailers as of 2019 (European Commission, 2019).
- Largest six firms (Top-6) generate 90% of sales in French food retailing (OECD, 2014).

Objectives

- Evaluate if Top-6 food retailers exhibit higher oligopoly markups ((price-marginal cost)/marginal cost).
- Assess relationship of markups and profits revealing if market power reduces consumer welfare.

Data

- AMADEUS accounting database.
- Financial reports on the legal-entity-level, i.e. for firms that operate one or several retail stores.
- 3,366 French food retailing firms during 2006-2014.

Table 1: Variables and descriptive statistics

Variable	Definition	Mean (Stdv.)
Top-6	Firm is affiliated to a Top-6 retailing group regarding sales (0/1)	0.188 (0.390)
Discounter	Firm operates discounter stores (0/1)	0.019 (0.136)
Hypermarket/ supermarket	Firm operates store(s) in NACE class G47.11 (retail sale in non-specialized stores with food, beverages or tobacco predominating) (0/1)	0.730 (0.444)
Individual/ specialized	Firm operates store(s) in NACE group G47.2 (retail sale of food, beverages and tobacco in specialized stores) (0/1)	0.270 (0.444)
Convenience/ neighborhood	Firm operates convenience store(s) with a smaller product assortment and longer opening hours	0.012 (0.110)
ROA	Return on Assets (%) calculated as Operating Profit(Loss)/Total Assets	0.097 (0.112)

Results

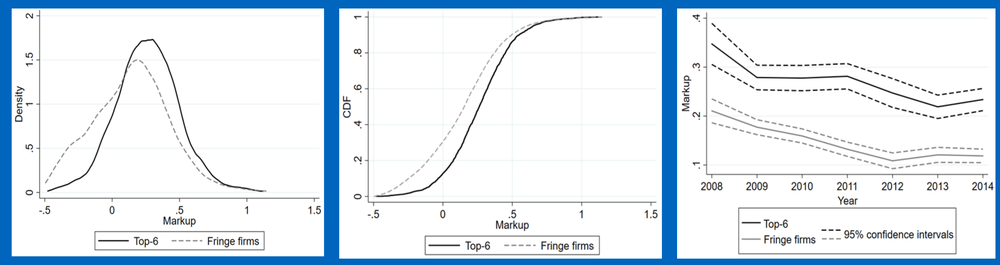

Figure 1: Densities and Cumulative Distributions (CDFs) of markups for Top-6 and fringe firms; Development of Markups over time

Table 2: Regressions results for markups and profitability

Variable	Markup (Qreg)	ROA (dynamic panel)
ROA(t-1)	-	0.435*** (0.111)
Ln(Markup)	-	0.042** (0.017)
Store type variables		
Top-6	0.091*** (0.024)	0.014** (0.007)
Discounter	0.134*** (0.042)	0.009 (0.014)
Individual/specialized	-0.147*** (0.024)	-0.022 (0.029)
Convenience/neighborhood	0.122 (0.099)	0.097*** (0.029)

Methodological Approach

- Production function approach by Hall (1988) and De Loecker and Warzynski (2012) to estimate markups:
  - ➢ Under assumption of cost minimization markup can be calculated as the quotient of an input's output elasticity and the input's expenditure share in total sales.
- (Robust) 0.5-quantile panel estimator to assess relationship of markups and association to a Top-6 retailing group.
- Dynamic panel model for link between markups and profitability to evaluate the effect on consumer welfare.

Discussion & Conclusion

- On average oligopoly markups of 0.18.
- Significantly higher values for Top-6 firms (0.273 vs. 0.161).
- Figure 1 reveals that markups of Top-6 firms stochastically dominate those of fringe firms.
- Markups decrease over the analyzed time span, supporting earlier findings which suggest that food retailing is characterized by intensive price rivalry in downstream markets resulting in low margins
- ➢ Power imbalances between dominant retailers and fringe firms and the presence of welfare decreasing market power towards consumers

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