



**Final Conference Event 21/09/2021**

Food Systems Dynamics

VALUMICS H2020 PROJECT - Understanding food value chain and network dynamics

---

# Food Industry Business Profitability

Matthew Gorton<sup>1</sup>, Paulus Aditjandra<sup>1</sup>, Gu Pang<sup>2</sup>, Mercy Ojo<sup>1</sup> and Carmen Hubbard<sup>1</sup>

*<sup>1</sup> Newcastle University*

*<sup>2</sup> University of Birmingham*



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 727243



# Contents

1. Context and rationale for the study
2. Overview of European food industry profitability
3. Firm level analysis – data and methods
4. Firm level analysis – findings
5. Lessons for managers and conclusions

## Context

- In contrast to predictions based on classical economic models, variations in firm profitability persist within and across industries, including the agri-food sector.
- Explaining determinants of variations in profitability across and within sectors is an important theoretical, practical and policy issue.
- Two sets of factors which may explain why some firms achieve higher profitability than others: “industry effects” and “firm level effects”.
- Given the size and importance of the food industries in Europe, need to consider what accounts for variations in profitability within it.

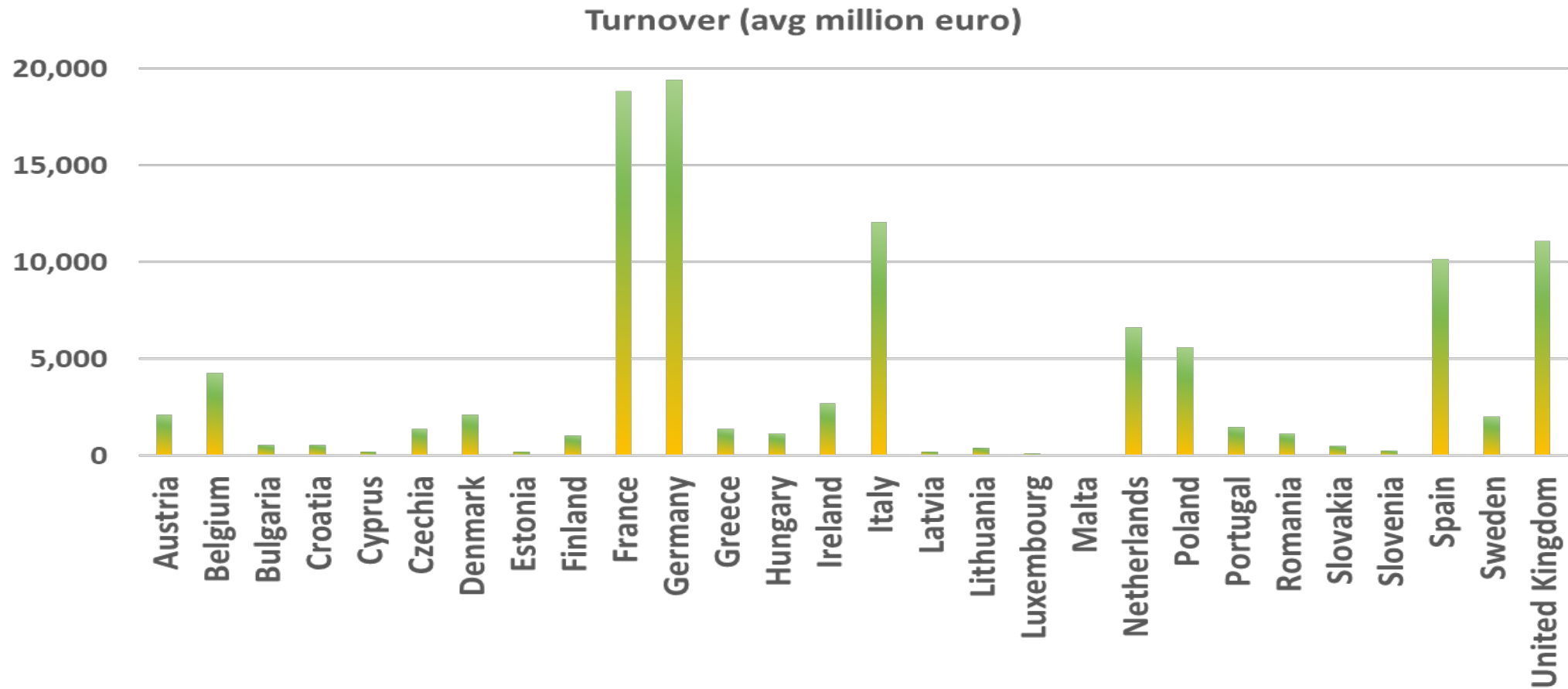
## Objectives of the Research

- To understand the profitability of the European food industry in aggregate, drawing on data from Eurostat's Structural Business Statistics (SBS)
- To understand the determinants of firm level profitability in the European food industry, using data from Bureau van Dijk's AMADEUS database

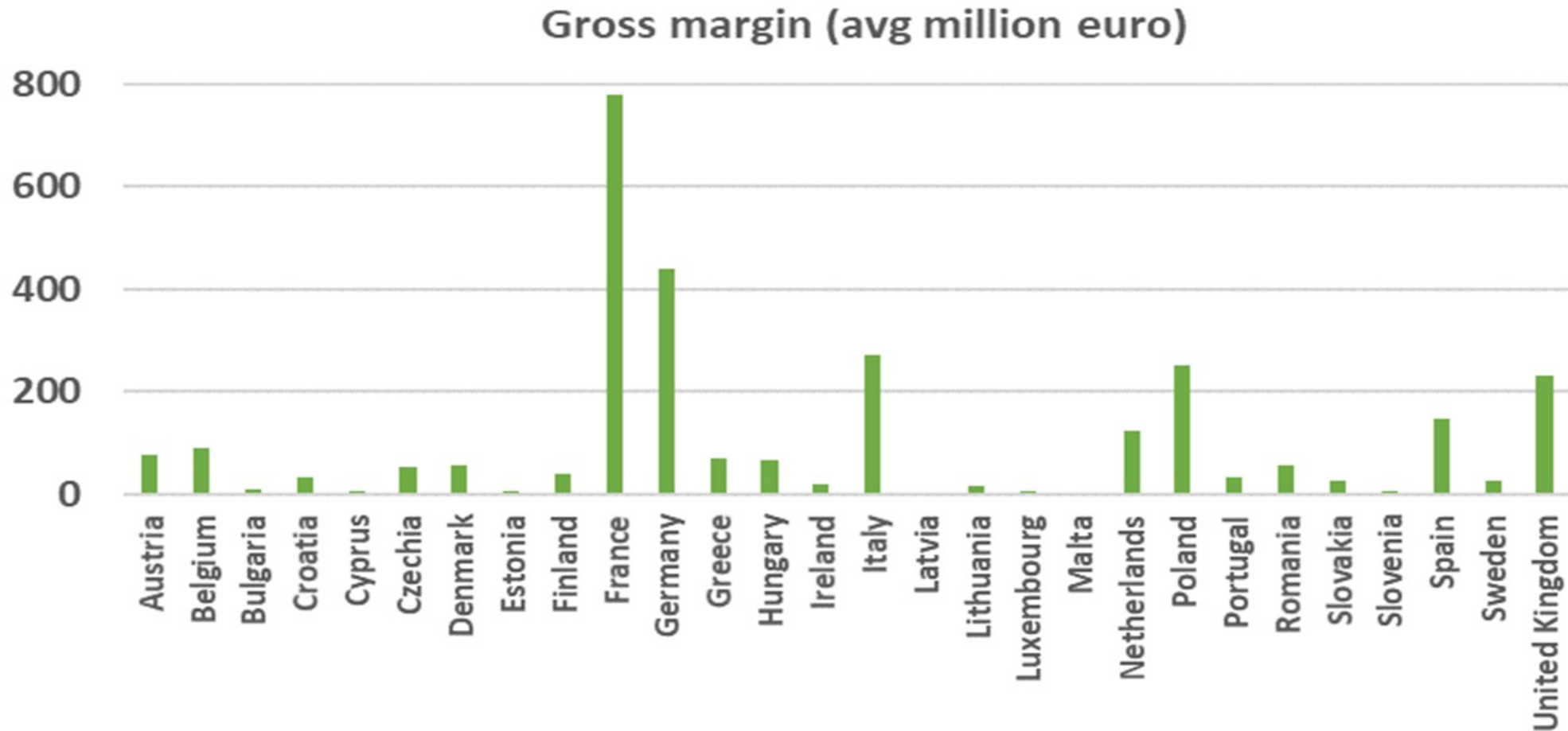
## Structure and Profitability of the EU Food Industry

	2012	2013	2014	2015	2016	2017	2018
<b>Number of enterprises</b>	265,382	264,306	268,301	265,853	265,411	259,691	265,094
<b>Turnover (million euro)</b>	916,000	939,000	950,000	957,000	960,000	1,030,000	1,026,034
<b>Gross profits (million euro)</b>	19,166	20,450	21,697	24,259	24,723	30,245	n/a
<b>Profits as % of turnover</b>	2.09	2.18	2.28	2.53	2.58	2.94	n/a

# Manufacture of food products, beverages, and tobacco (2017)



# Total gross margin for the manufacture of food products, beverages, and tobacco (2017)



## Firm level analysis - data

- Extracted from the AMADEUS database ts of accounting records
- In AMADEUS, an industry is captured using NACE codes. We used 3-digit NACE codes for the manufacturing of food, specifically: meat, fish, vegetable and animal oils and fats, dairy, milling and baking, animal feeds and processing and preserving of fruits and vegetables.
- Data extracted from AMADEUS during 2019 and given the availability of data, the analysis focuses on the period 2012 to 2017. After cleaning the data for missing entries, the valid sample stood at 8,645 firms.



## Firm level analysis - modelling

- The analysis employed Hierarchical Linear Modelling (HLM), which allows data to be classified into two or more levels.
- We developed the structural model at level 1 (firm) and level 2 (branch of food industry).
- The Level 1 (firm) variables considered included an enterprise's market share, age, size of firm, short term debt risk, and number of employees.
- For Level 2 (industry) we consider the degree of market concentration (the market share of the four largest firms in that branch of the food industry) and industry growth, measured in terms of change in sales.
- Models estimated using the software HLM6 (Hierarchical Linear and Nonlinear Modelling).

## HLM – Industry level effects

- Degree of **market concentration** has a positive effect on return on assets
- **Growth of sales in a branch of the food industry** has a positive effect on return on assets

## HLM – firm level effects

- **Market share** has a positive effect
- **Firm age** has a negative effect
- **Firm size** has a positive effect
- **Short-term risk** has a negative effect
- Number of employees has a positive effect, but it is not statistically significant
- **Market concentration positively moderates the relationship between market share and return on assets**

## Lessons for managers

- 1) **Increase market share while increasing market concentration to achieve greater profitability.** Classic M&A strategy. Strong evidence for this strategy also in USA.
  
- 2) **Refinance to reduce short-term debt risks and importance of cash flow management**
  
- 3) **Seek out high growth niches to maximize the effect of size on profitability.** Overall, food is a low margin business with largely static sales. However, niches that witness higher growth.

## Conclusions

- European food industry characterized generally by low margins
- Both firm and industry effects explain variations in firm-level profitability
- Lower returns are witnessed where there are many, smaller firms competing (consolidation difficult)
- Short term debt is associated with lower returns
- While margins are generally low, growth niches exist which offer opportunities for higher profitability

## Contact details:

**Matthew Gorton**

[Matthew.gorton@newcastle.ac.uk](mailto:Matthew.gorton@newcastle.ac.uk)

**Carmen Hubbard**

[Carmen.hubbard@newcastle.ac.uk](mailto:Carmen.hubbard@newcastle.ac.uk)



[www.valumics.eu](http://www.valumics.eu)

## Staying in touch...

<http://valumics.eu/sign-up/>



@ValumicsH2020  
#VALUMICS



@VALUMICSH2020



valumics-h2020  
#valumics



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 727243

## Selected References

- Aditjandra, P., Pang, G., Ojo, M., Gorton, M. and Hubbard, C. (2019) **Report on statistical analysis of agribusiness profitability**. VALUMICS “Understanding Food Value Chains and Network Dynamics”, funded by European Union’s Horizon 2020 research and innovation programme GA No 727243. **Deliverable: D5.4**, Newcastle University, UK, 48 pages.
- Barney, J.B. (1991) 'Firm resources and sustained competitive advantage', *Journal of Management*, 17(1), pp. 99-120.
- Gschwandtner, A. and Hirsch, S. (2018) 'What Drives Firm Profitability? A Comparison of the US and EU Food Processing Industry', *The Manchester School*, 86(3), pp. 390-416.
- McGahan, A.M. and Porter, M.E. (1997) 'How much does industry matter, really?', *Strategic Management Journal*, 18(1), pp. 15-30.
- Slater, S.F. and Olson, E.M. (2002) 'A fresh look at industry and market analysis', *Business Horizons*, 45(1), pp. 15-22.