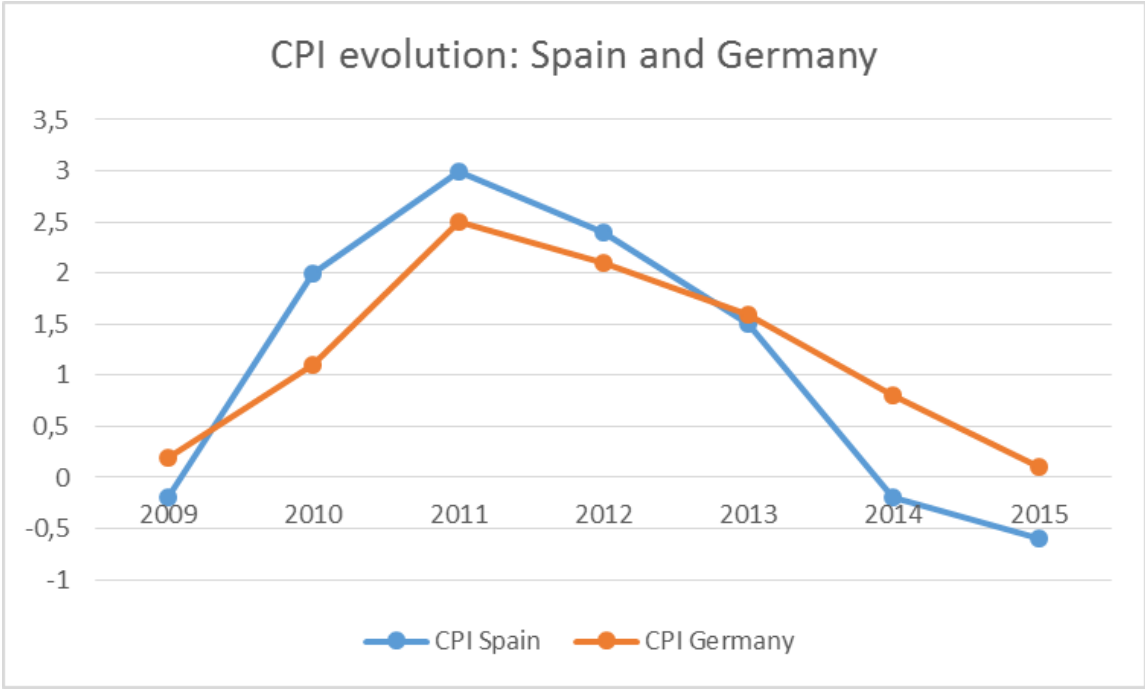
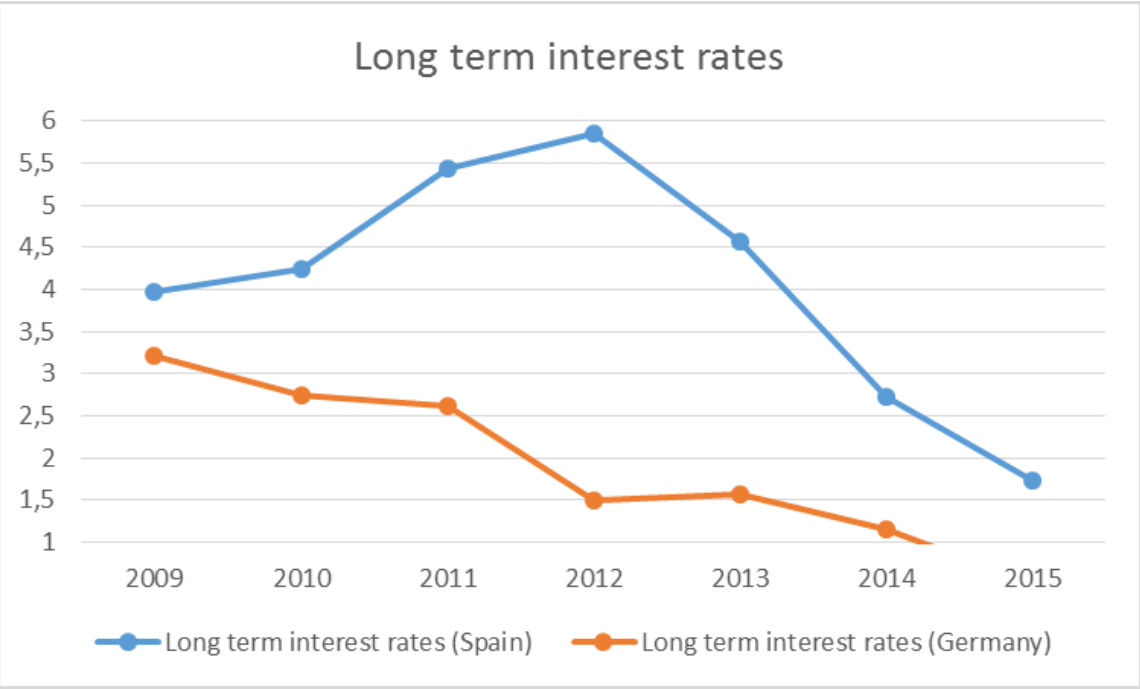




European macroeconomic imbalances at a sectorial level: Evidence from German and Spanish food industry

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German firms are bigger in size, that can help to take advantage of the economies of scale. Would ROA/ROE and profitability be higher as a consequence of this structural difference?

Spain has a higher risk premium than Germany, affecting financial cost. Would that negatively affect the level of investment?

The impossibility of devalue currency forces Spain to an internal devaluation process. Has the cost per employee reflected this fact?



Sectorial level: Food industry

Why? EU exports represent 12,1% of total market share (3 times US share) (2013)
The biggest industry in terms of jobs and value added.

Hypothesis to test

H1a: German firms are bigger than Spanish ones measures by number of employees.

H1b: German firms are capable of getting a higher profitability (measured by ROA or ROE)

H2: Positive correlation between size and productivity

H3: Size has a negative correlation with interest rate

H4: Higher interest rate implies low labour productivity

H5: In 2010-2012 and 2013-2015 cost per employee has grown at a lower rate in Spain



Data and Methodology

Information from SABI and AMADEUS.

Filters: More than 50 employees, firms located in Germany and Spain

NACE Code 1072: Biscuit producers

Sample: 35 Spanish firms and 36 German firms.

Periods: 2007-2009, 2010-2012, 2013-2015



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	2007-2009	2010-2012	2013-2015
% average change in non-current assets Spanish firms	4.21%	12.59%	7.77%
% average change in non-current assets German firms	14.11%	-2.01%	6.79%
Average number of employees Spanish firms	442.41	439.86	425.56
Average number of employees German firms	2951.19	3274.69	2839.23
Average interest rate paid by Spanish firms	5.31%	3.94%	3.18%
Average interest rate paid by German firms	13.30%	9.46%	9.91%
Average ROA Spanish firms	3.04%	2.34%	3.99%
Average ROA German firms	6.98%	5.96%	4.07%
Average ROE Spanish firms	4.86%	3.53%	5.51%
Average ROE German firms	25.87%	19.51%	17.74%
Average EBIT per employee Spanish firms	8023.08€	8863.78€	14161.74€
Average EBIT per employee German firms	7526.98€	6666.03€	4848.09€



Variables don't follow a normal distribution

Statistical tests: Mann-Whitney test looking at average differences and correlation (Spearman and Rho correlation) to check variables correlation.

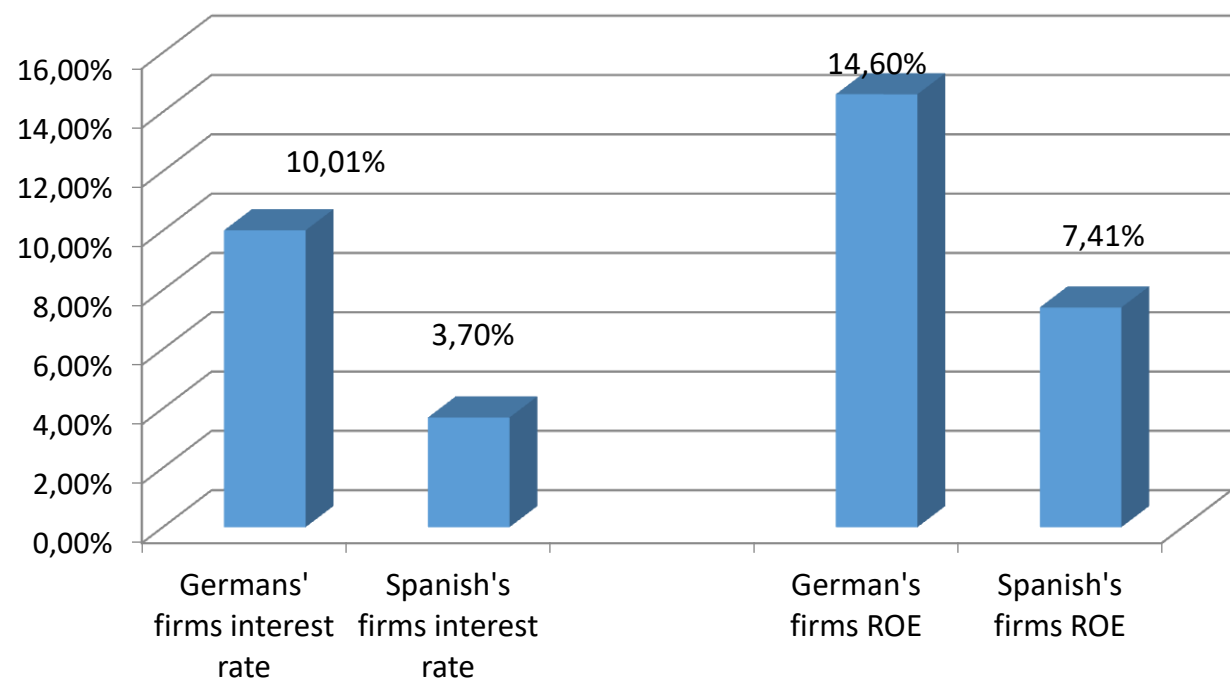
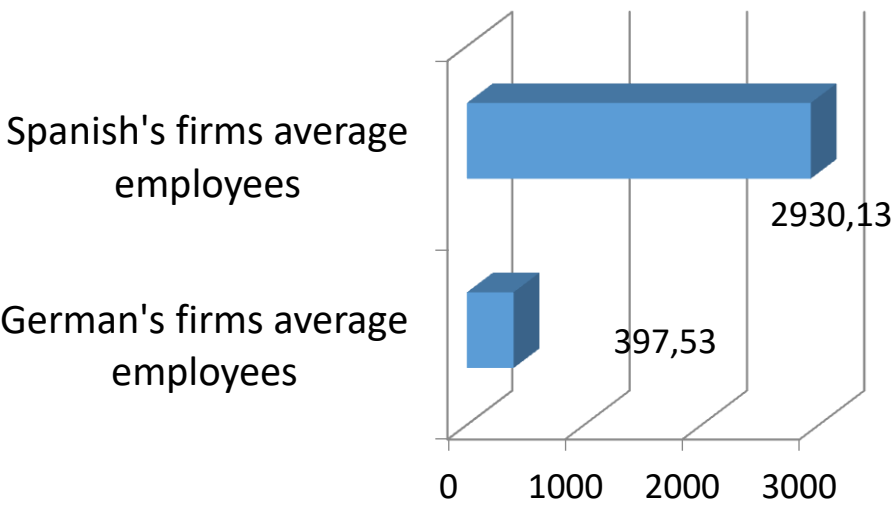
RESULTS

H1a: German firms are bigger than Spanish firms. ACCEPTED

H1b: German firms and Spanish firms have different financial conditions. ACCEPTED, but with Spanish firms facing lower cost (reason: different financing cost? Banking sector concentration?)

H2: German firms are more profitable. ACCEPTED

All these hypothesis are accepted with a p-value less than 1%





H2: Positive correlation between size and productivity. REJECTED . $-0.480 / -0.340$ at 1% level. The correlation is positive.

H3: Negative correlation between size and interest rate. REJECTED. $0.320/0.217$ at 1% level. The correlation is positive.

H4: Negative correlation between labour productivity and interest rate. (1% level) -0.342

H5: Cost per employee

2010-2012: cost per employee increased at 7.49% for Spanish firms, just a 2.95% for German firms.

2013-2015: cost per employee increased at 8.02% Spanish firms, just a 7.28% for German firms.



CONCLUSIONS

Being bigger doesn't mean to be more efficient.

The value in terms of EBIT per employee is higher in the Spanish firms, they are more productive, but less efficient in terms of final ROA/ROE

No evidence at microeconomic level of higher financial cost for Spanish firms. Credit constraints have not been tested.

Interest rate negative correlates with productivity, more research at the industry level will be interesting.

More investment in capital is compatible with more investment in human resources.



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Thank you so much

Questions & Comments?