

# The impact of electricity prices on jobs and investment in the Belgian manufacturing industry

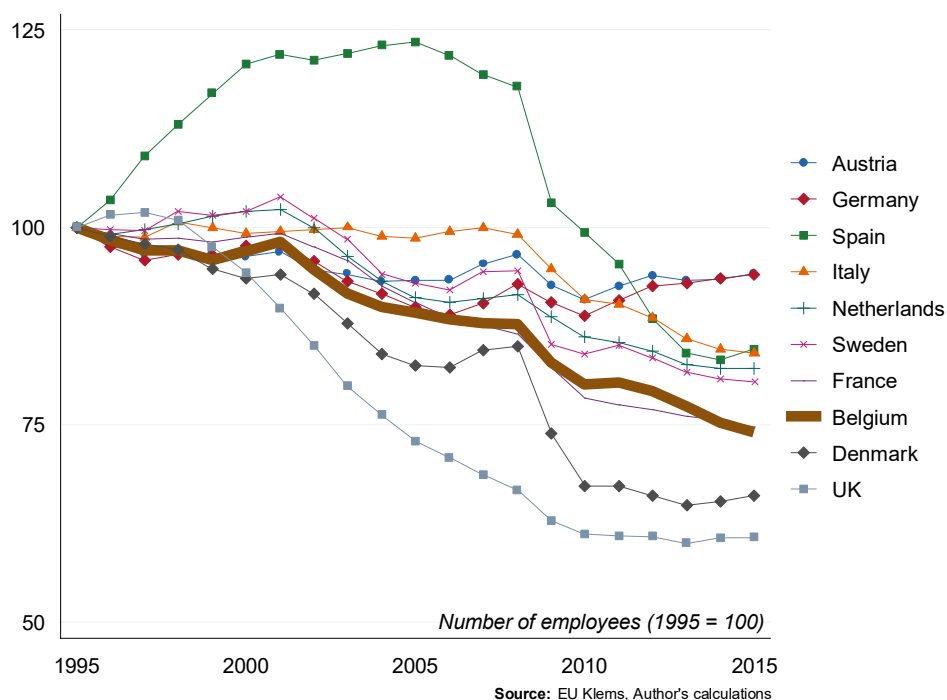
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*VIVES, Faculty of Economics and Business, KU Leuven*

Press conference, 27 March 2018

# Belgium is losing manufacturing jobs faster than most other European countries ...

Relative evolution of manufacturing employment (1995=100)

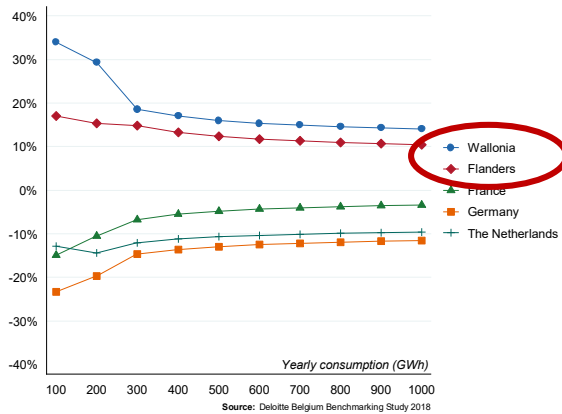


## Comments

- Over the years, employment in the manufacturing industry has declined considerably
- Jobs have predominantly been shifted to the services industry
- In general, the hourly wages in the services industry are significantly lower compared to wages in the manufacturing industry
- In discussions on competitiveness of Belgian industry there has been much attention on the role of labour costs, but...

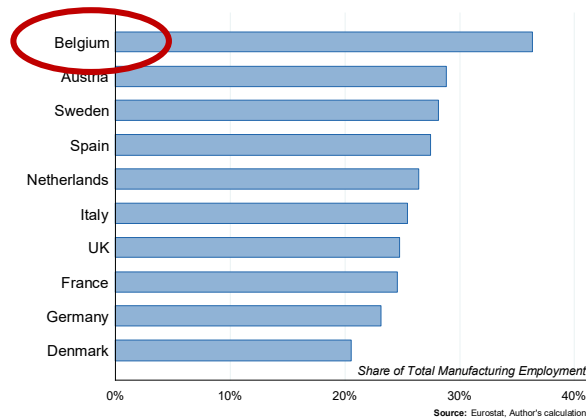
# ... and the role of electricity prices is seldom quantified

Belgium has higher electricity prices,



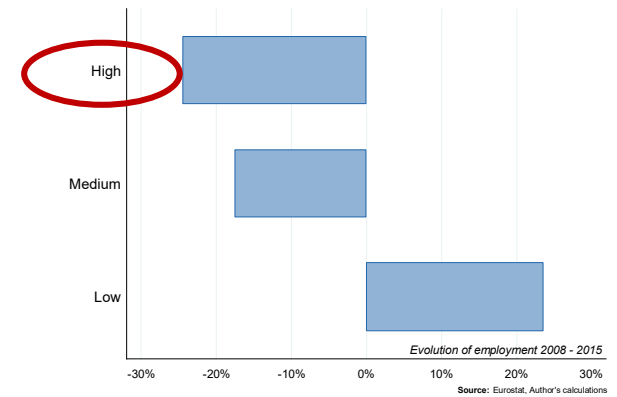
Electricity prices Belgium vs. neighbouring countries

a higher share of employment in sectors with high electricity intensity,



Employment Share at High Energy Intensive Sectors

and loses most jobs at sectors with high electricity intensity

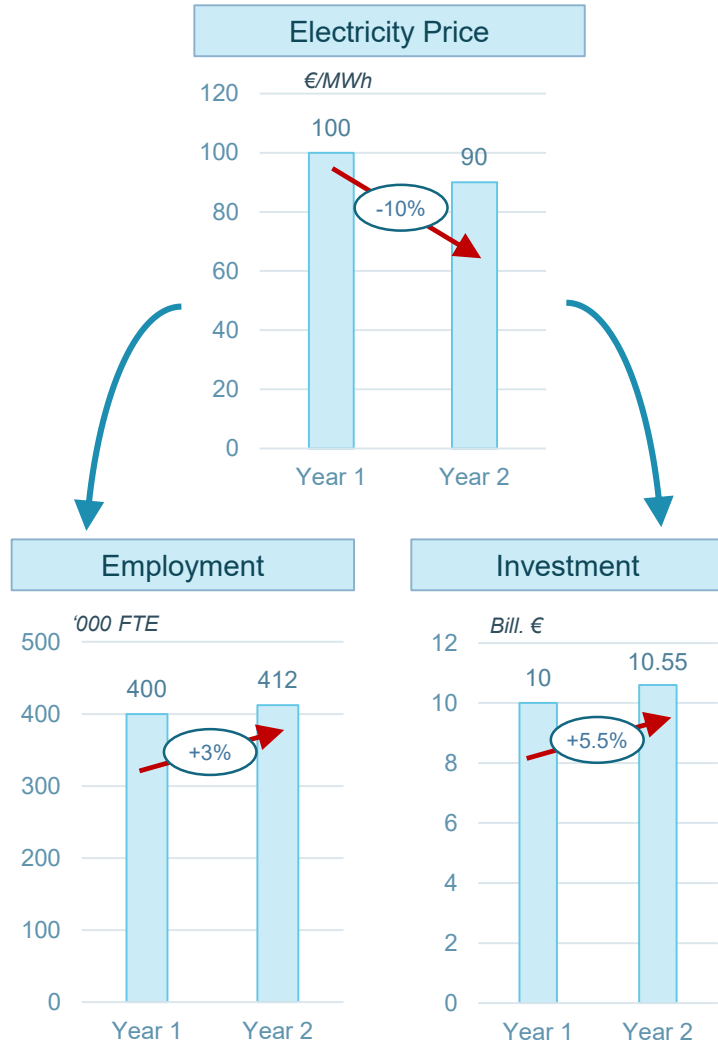


Evolution of Belgian Manufacturing employment in function of electricity intensity



Objective of the study: Is there a link between manufacturing jobs/investment and the price of electricity?

# Our study finds that a 10% decrease of electricity prices could trigger 12,000 jobs and €550M investment

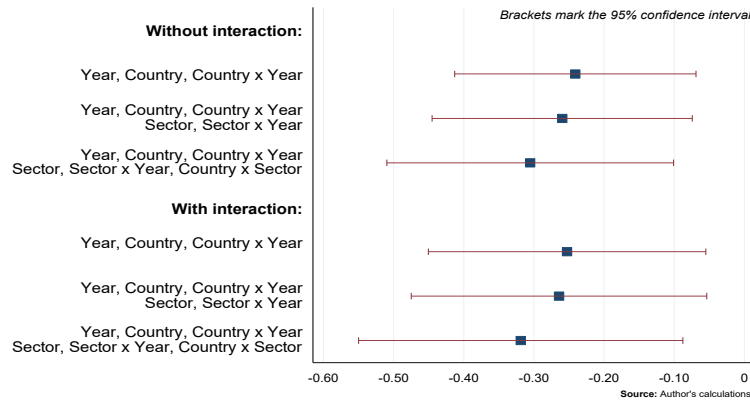


- We have assembled a dataset with employment, investment, electricity intensity and prices for 24 manufacturing sectors, in 10 EU countries for the period 2008 – 2015
- We find that a -10% decrease in electricity prices leads to a +3% increase in employment and +6% increase in investment
- For the Belgian manufacturing industry this corresponds with ~12,000 jobs and ~€550M investment
- This is likely to be an underestimation as indirect job creation is not taken into account and Belgium's electricity intensity is higher than the average European

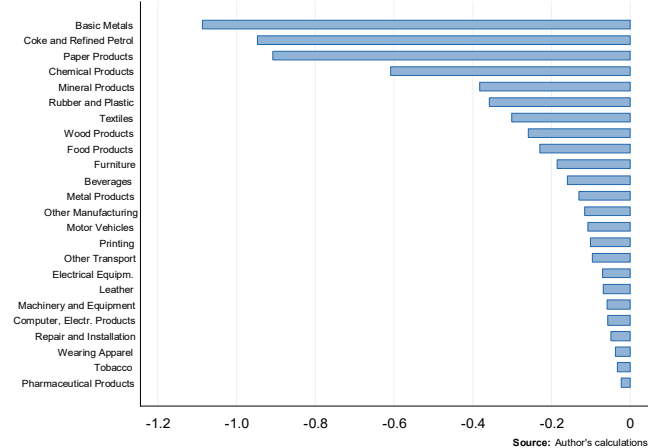
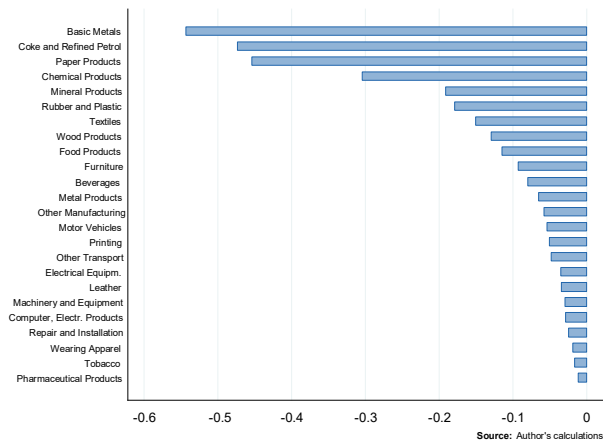
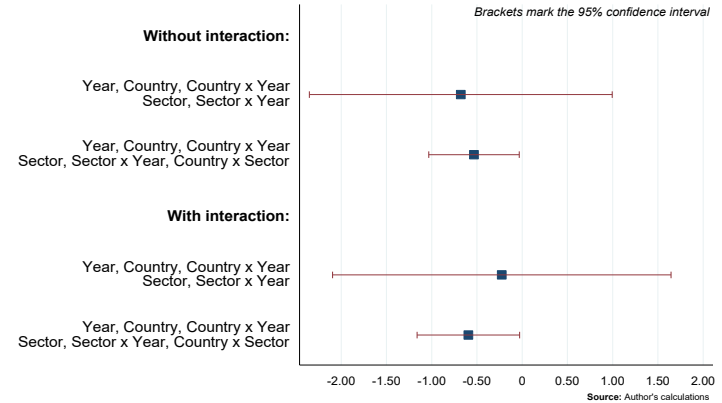
# These results are based on robust econometric analysis to study the elasticity of employment and investment with respect to the price of electricity

Full details of methodology and data in policy paper

## Econometric estimates elasticity of employment



## Econometric estimates elasticity of investment



# About VIVES, the Research Centre for Regional Economics

- VIVES = Research Centre for Regional Economics, part of KU Leuven, Faculty of Economics and Business
- VIVES has a strong track record in using micro-economic based firm- and sector level data to evaluate competitiveness of Belgian firms and to study macro-economic evolutions
- Team for this study:
  - Prof. Joep Konings, director VIVES, fellow Center for Economic Policy Research (CEPR), former adviser European Commission, former Dean Faculty Economics & Business
  - Ir. Gert Bijmens, Electrical Engineer & researcher 'big data', former consultant
  - Prof. Stijn Vanormelingen, Research fellow VIVES, former fellow IESE business school, Professor Industrial Economics Brussels campus

*Thank you*

# Backup: Creation of the Master Dataset from multiple sources

Full details of methodology and data in policy paper

- Eurostat Structural Business Statistics with employment, value added, investment for EU countries on NACE 2-digit level
- Eurostat electricity prices per EU country for non-household consumers (7 consumption bands up to 150,000 MWh)
- Deloitte electricity prices for Belgium and neighboring countries for very high consumption (10 consumption bands 100,000 – 1,000,000 MWh), very high consumption prices for other countries extrapolated based on Belgium and neighboring countries
- Belgian firm level energy expenditure linked with Eurostat data on electricity vs. gas consumption to come to approximate firm-level electricity expenditure
- Generation of consumption profile per NACE 2-digit sector to map prices per consumption level to prices per NACE 2-digit sector
- Eurostat electricity consumption per sector (level of aggregation in between NACE 1-digit and NACE 2-digit) linked with detailed data from German Federal Statistics Office to split the consumption over NACE 2-digit codes



# Backup: Reasons why the 12,000 jobs and €550M investment are likely to be an underestimation

- Estimation based on a 10% price decrease, which is a conservative estimate of the price difference vs. neighbouring countries (Deloitte study = 10.5% to 34%)
- Approach is based on changes within narrowly defined manufacturing sectors, i.e:
  - excludes possible direct spillovers to other manufacturing industries (e.g., more electrical cars produced imply more batteries produced)
  - excludes possible direct spillovers to services industries (e.g., more electrical cars imply more HR services to car producers)
  - excludes indirect job creation in non-tradable services (e.g., the extra manufacturing workers need haircuts and go to restaurants)
- The calculated elasticities are based on averages across all manufacturing sectors across Europe. Since Belgium has historically specialised in the most electricity intensive industries this is possibly another underestimation.