

# Analysing non-price competitiveness in euro area countries

Josefina Monteagudo and Francesco Montaruli  
European Commission  
Rome 24 November 2009

# Summary

1. Objective and background
2. References
3. Exports equations
4. Conclusions

# Objective and some background

**Objective:** to assess the extent to which some non-price competitiveness factors are important when explaining external competitiveness.

- ✓ Evidence from practitioners and theoretical analysis suggest that price competitiveness is only one of the factors determining export performance.
- ✓ Few empirical studies have started to include non-price competitiveness factors but there is not a unique definition of non-price competitiveness.
- ✓ NPC includes a broad range of issues as product quality, technological advantage, industry specialisation, business environment, (...).
- ✓ We focus mainly on “technological” and “structural” competitiveness drivers.

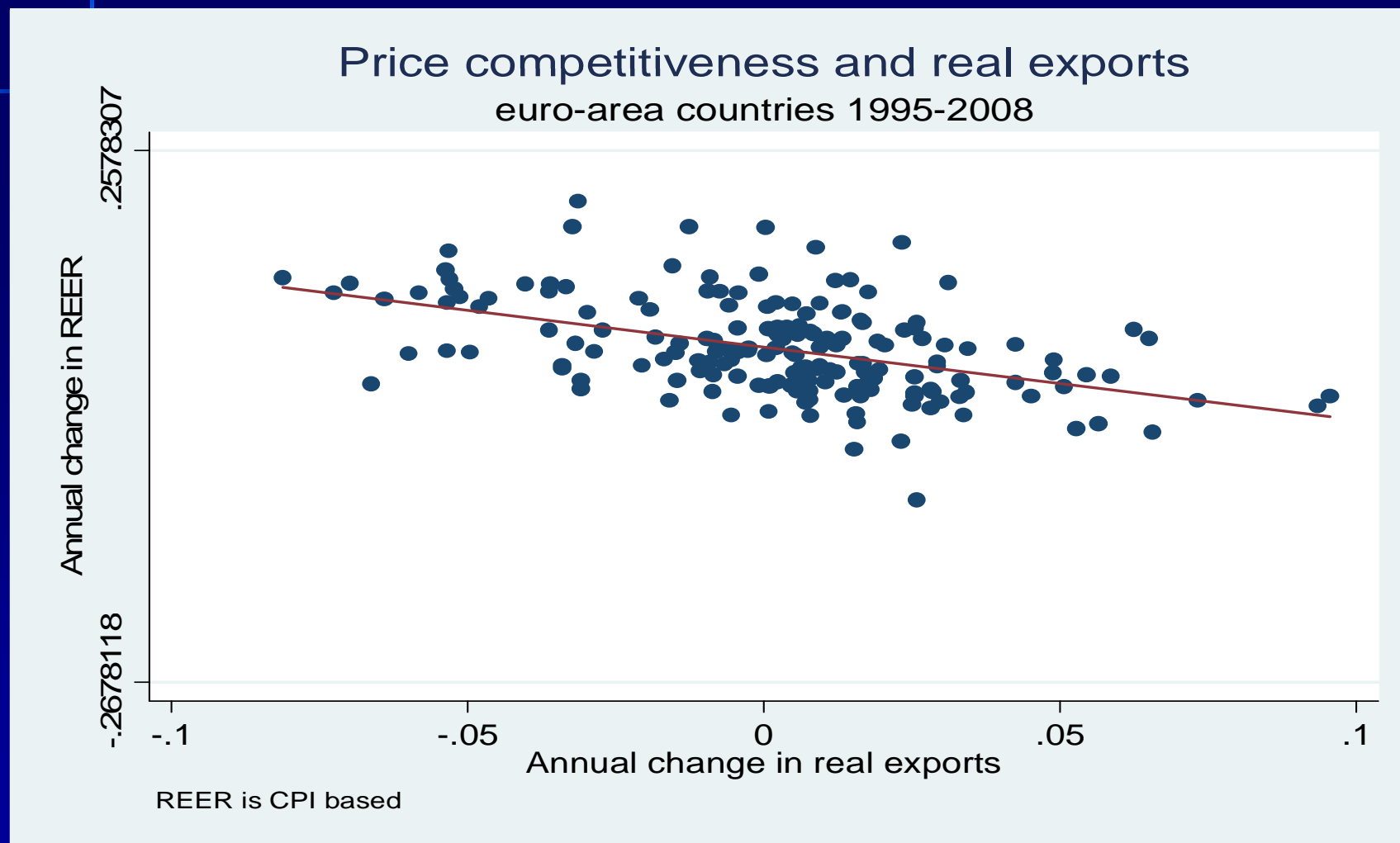
# References: analysis of single factors related to export performance

- *Quality implies many different dimensions. According to Hallak and Schott (2008) it refers to all the features, tangible and intangible, influencing consumers' economic valuation. Greenhalgh, Taylor and Wilson, (1994) using industrial data shows a positive role of innovation on export volumes.*
- *We directly look into the effect that R&D and patents may have on export performance. We also look into “soft” quality upgrading.*
- *Guerrieri and Meliciani (2005) study the reasons for different countries to specialise in exporting specific producer services and in particular financial, communication and business services. Our approach makes use of TFP contributions in a number of selected services sectors.*
- *Framework conditions under which businesses operate (Nicoletti and Scarpetta, 2003) are fundamental. We test them on indicators that include number of procedures, time and cost to export and a skill composition.*

## References: countries empirical studies of the overall impact on export

- *They provide interesting insights about econometric techniques and the competitiveness channel impact on export growth in different countries.*
- *A study of the ECB task force on competitiveness and export performance of the euro area (2005) estimates that technological (patenting and R&D data) and structural competitiveness factors do affect export performance.*
- *Fabrizio, Igan and Mody (2007) investigate the dynamic of product quality and international competitiveness by focusing on the eight new central and east European member states over the time span 1994-2004.*
- *An empirical analysis of non price competitiveness trends in Italy is carried out by Lissovolik (2008). He emphasises how the restructuring phase of the Italian industries might have only recently favoured a recovery of export performance.*

# Standard regressors are important



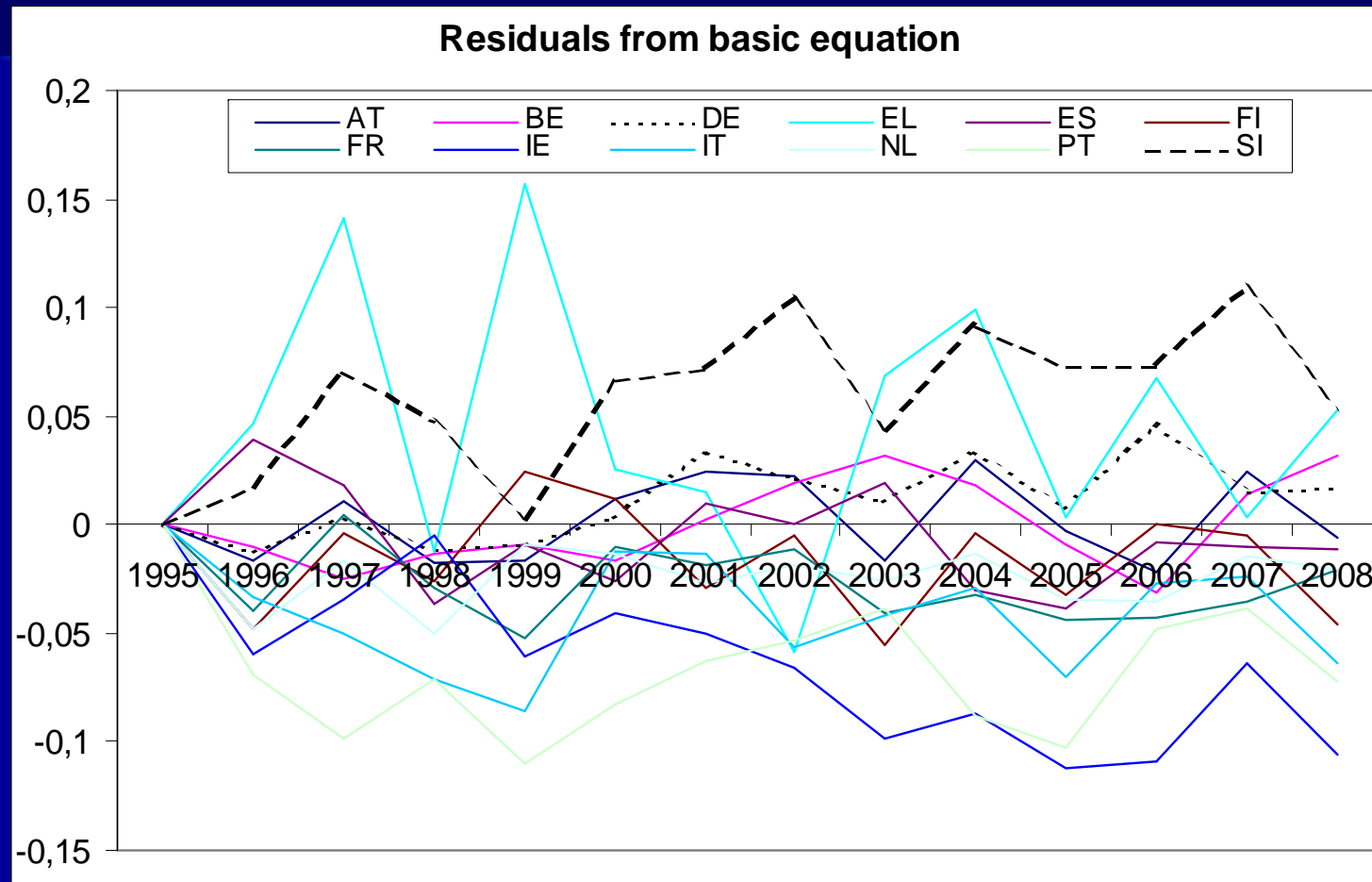
# Basic exports equation

$$\ln(\text{exports}_{it}) = \alpha_i + \gamma \ln(\text{exports}_{it-1}) + \beta \ln(\text{demand}_{it}) + \delta \ln(\text{REER}_{it}) + \varepsilon_{it}$$

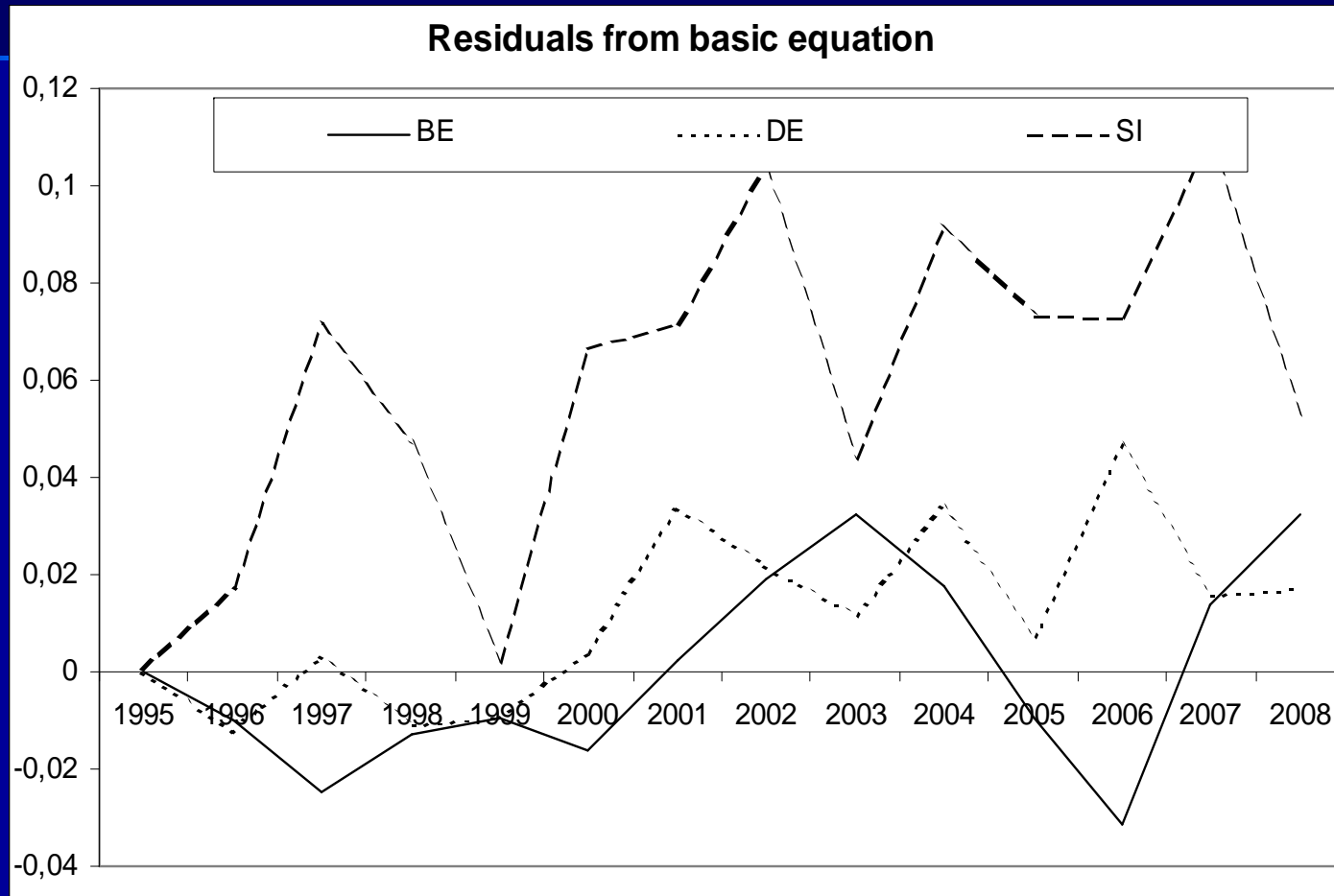
- ✓ Equation estimated in levels and in first differences. Demand and price elasticities have the expected sign and are statistically significant.
- ✓ Interaction effect (capturing whether services react differently to relative prices) is statistically non significant.

First differences – Dynamic panel regression	
Demand	1.02**
REER	-0.54**
REER*services	0.6

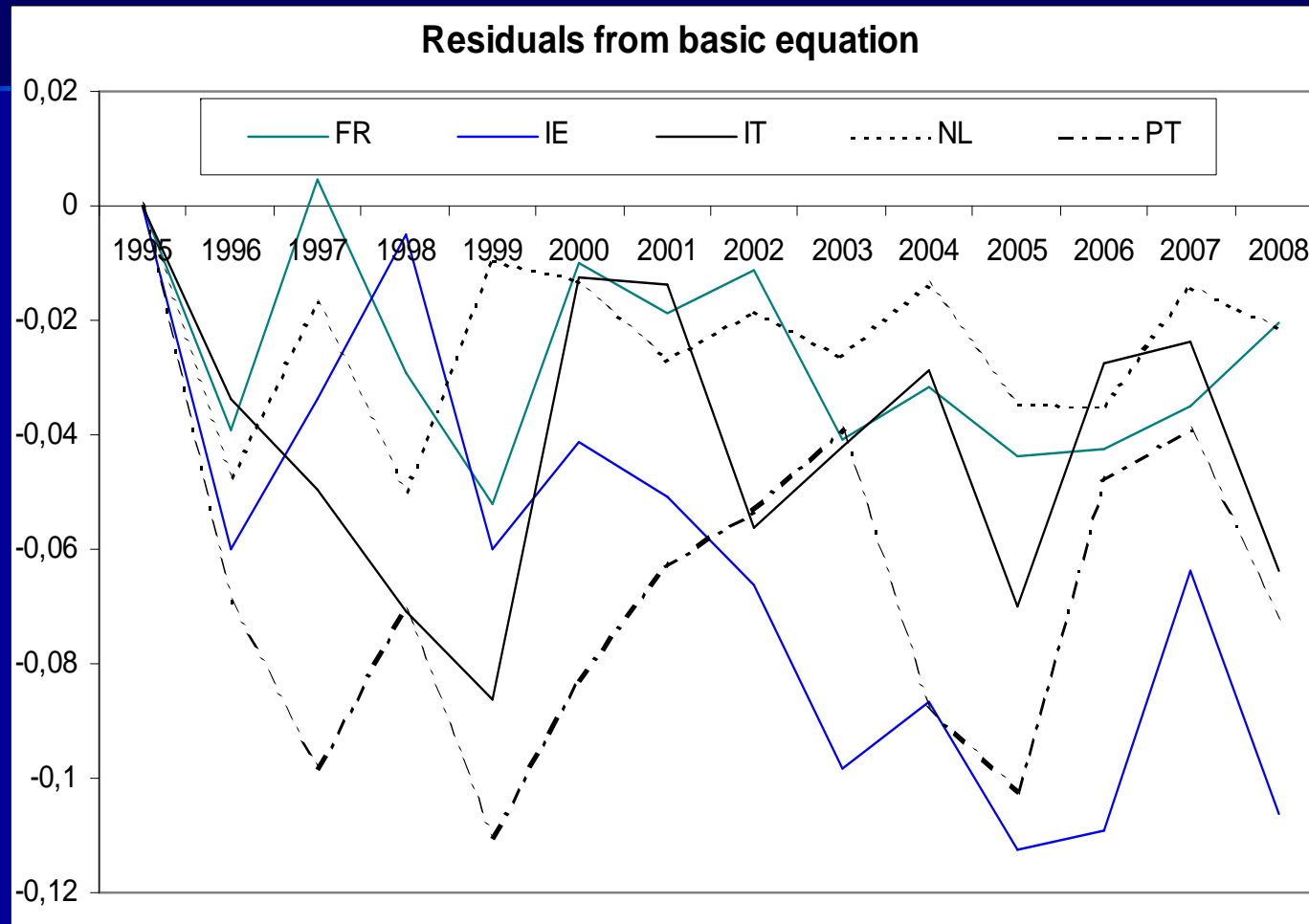
# Residuals from basic regression



# Residuals from basic regression (I)



# Residuals from basic regression (II)



## Extended exports equation

$$\ln(\text{exports}_{it}) = \alpha_i + \gamma \ln(\text{exports}_{it-1}) + \beta \ln(\text{demand}_{it}) + \delta \ln(\text{REER}_{it}) + \gamma \ln(Z_{it}) + \varepsilon_{it}$$

Z refers to non-price competitiveness variables:

- ✓ Technological aspects of competitiveness could affect exports performance in different ways. High innovative countries export more (proxying quality, more efficient interactions, more efficient networks sales, etc.).
  - R&D intensity, number of patents and the exports deflator used as proxies.

# Extended exports equation

- ✓ Services as facilitators. Well functioning, efficient and dynamic services markets might play a relevant role in facilitating exports. For example when services are used as a product differentiation tool.
  - TFP share in value added in selected services (financial intermediation, transport and communication, business activities)
  
- ✓ Better regulation and a reduction of administrative burdens could have a significant impact on exports performance.
  - Enforcing contracts and labour skill composition

# Extended exports equation: results

Dynamic panel regression

Dependent variable is real exports (in levels)

Persistence	0.70**	0.71**
REER	-0.40**	-0.38**
Demand	0.16**	0.19**
R&D		0.06*
Patents	0.09**	
Export deflator	-0.007	0.10
TFP_TC	0.002**	0.001
TFP_BS	0.001	-0.001
TFP_FI	0.002**	0.001*

## Extended exports equation: results

- ✓ Innovative countries export more: a 10% increase in R&D intensity increases exports of goods by over 2%. Similar results hold for patents.
- ✓ Some evidence suggesting exports of services are less reactive to innovative efforts
- ✓ Quality upgrading from soft innovation may be important, but the proxy used doesn't capture it
- ✓ Higher TFP contribution to value added in the financial sector has a very small, but statistically significant effect on exports. Results for other services sectors are non-significant

# Extended exports equation: results

Dynamic panel regression  
Dependent variable is real exports

Relative prices	-0.45**
External Demand	0.36**
Enforcing contracts: # procedures	-0.29**
Enforcing contracts: time	0.21**
Enforcing contracts: cost	-0.92**
Persistence	0.50**

- ✓ high negative effect on exports (particularly damaging is the cost-related variable): a 1% increase in the number of procedures decreases exports in the long-run by almost 0.6%; the long-run impact of a 1% increase in the cost of contracts is a decrease in exports by 1.8%.

## Conclusions

- The dynamic panel model confirms that understanding better export performance requires going beyond external demand and price competitiveness.
- In particular, technological competitiveness seems to support real exports providing a stimulus to entrepreneurship and competitiveness.
- Moreover, our preliminary results point to financial services as having a positive effect on exports.
- Looking forward, we think that the empirical analysis can be improved in a number of directions:
  - use sectoral rather than aggregated data. For example, sectors could be classified according to their level of technological content or to their labour force skill distribution;
  - improve indicators used in the text for the services-as-facilitator hypothesis by identifying which type of goods and services are more likely to be sold in packages;
  - look at other non-price competitiveness factors related to product differentiation and product variety.