

Innovation patterns in Europe

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Innovation patterns & competitiveness

Aggregate exports performance linked to macro factors

- e.g. exchange rates fluctuations, labour costs, foreign demand etc.
- Price vs non-price competitiveness (“quality”)
- General consensus that R&D can improve aggregate export performance through improvement of “quality”

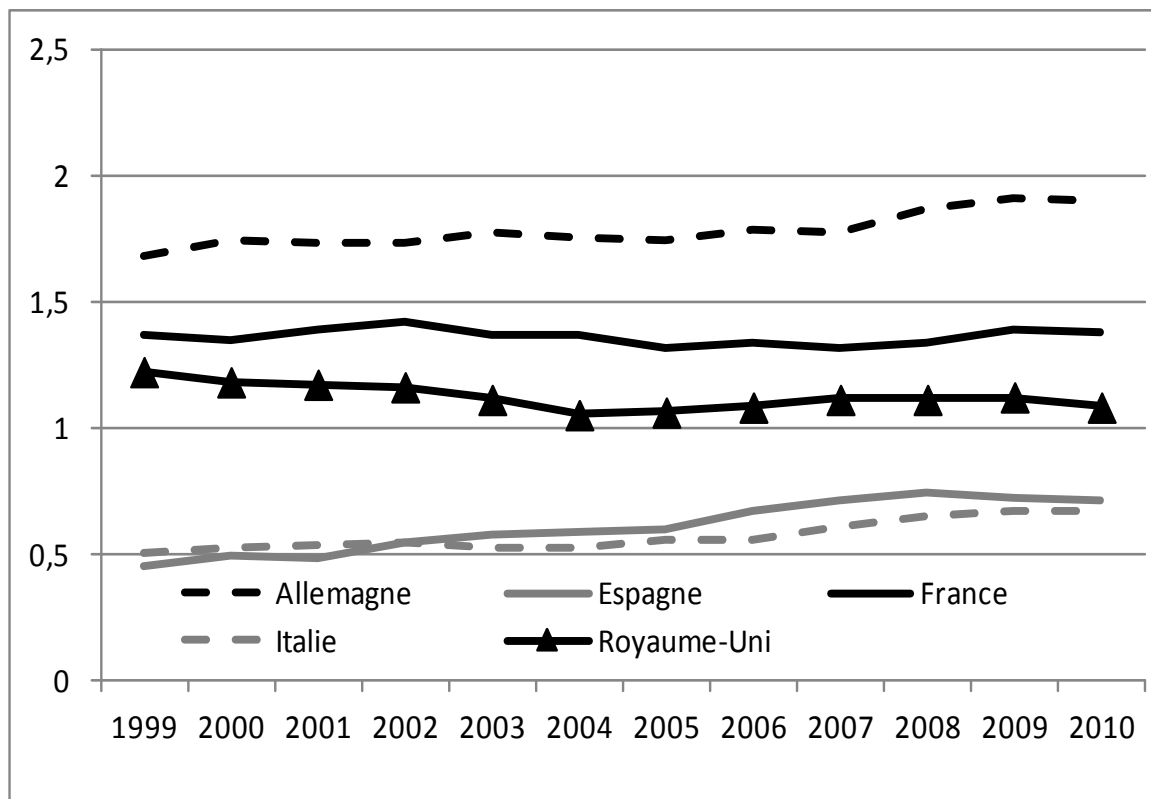
Aggregate patterns of R&D innovation have several dimensions:

- Sector-specialization in innovation-intensive sectors
- Firms propensity to innovate in each sector (intensive and extensive margins)

Explaining aggregate heterogeneity between countries in terms of innovation requires considering both dimensions

Aggregate patterns

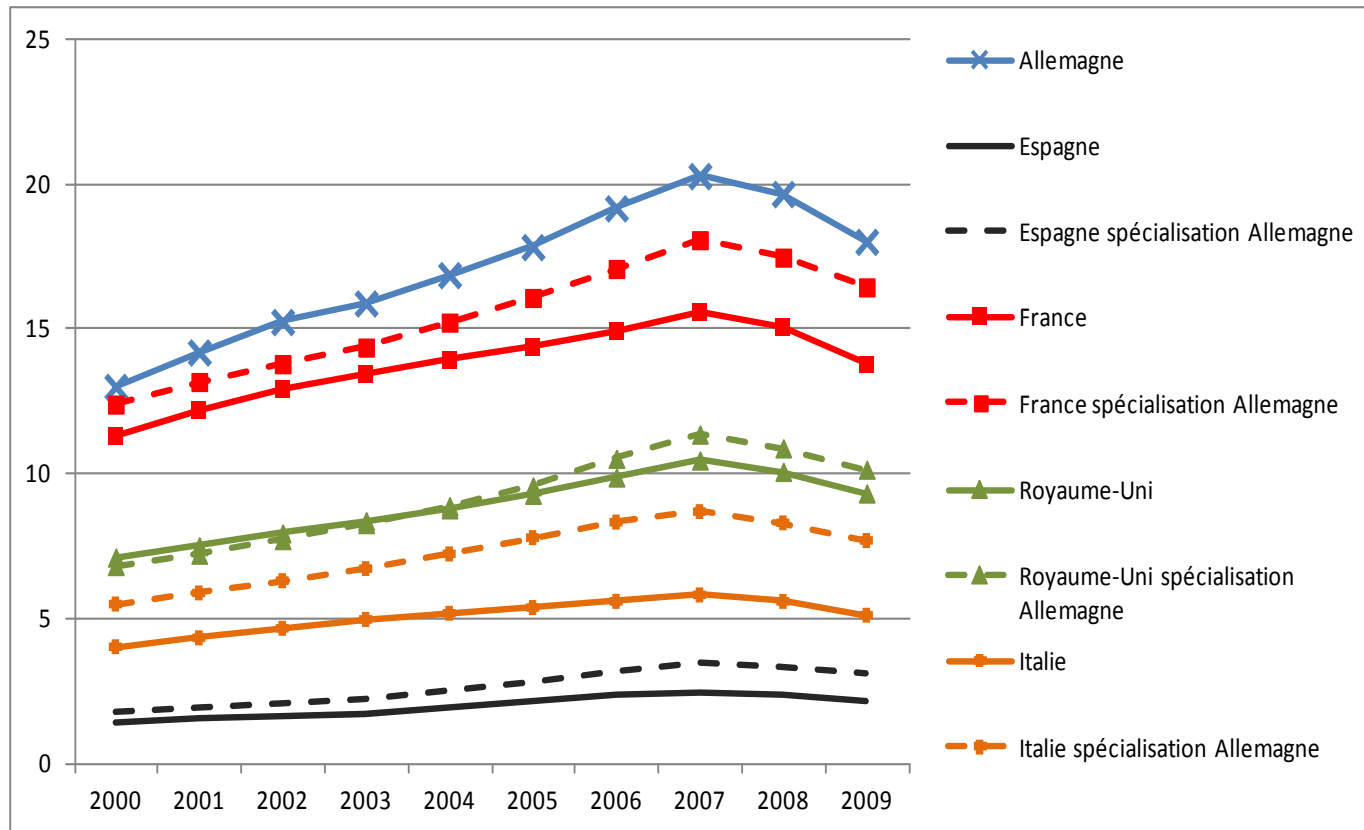
Figure 1 : Share of R&D expenses in GDP (%)



Source : Eurostat

Specialization matters

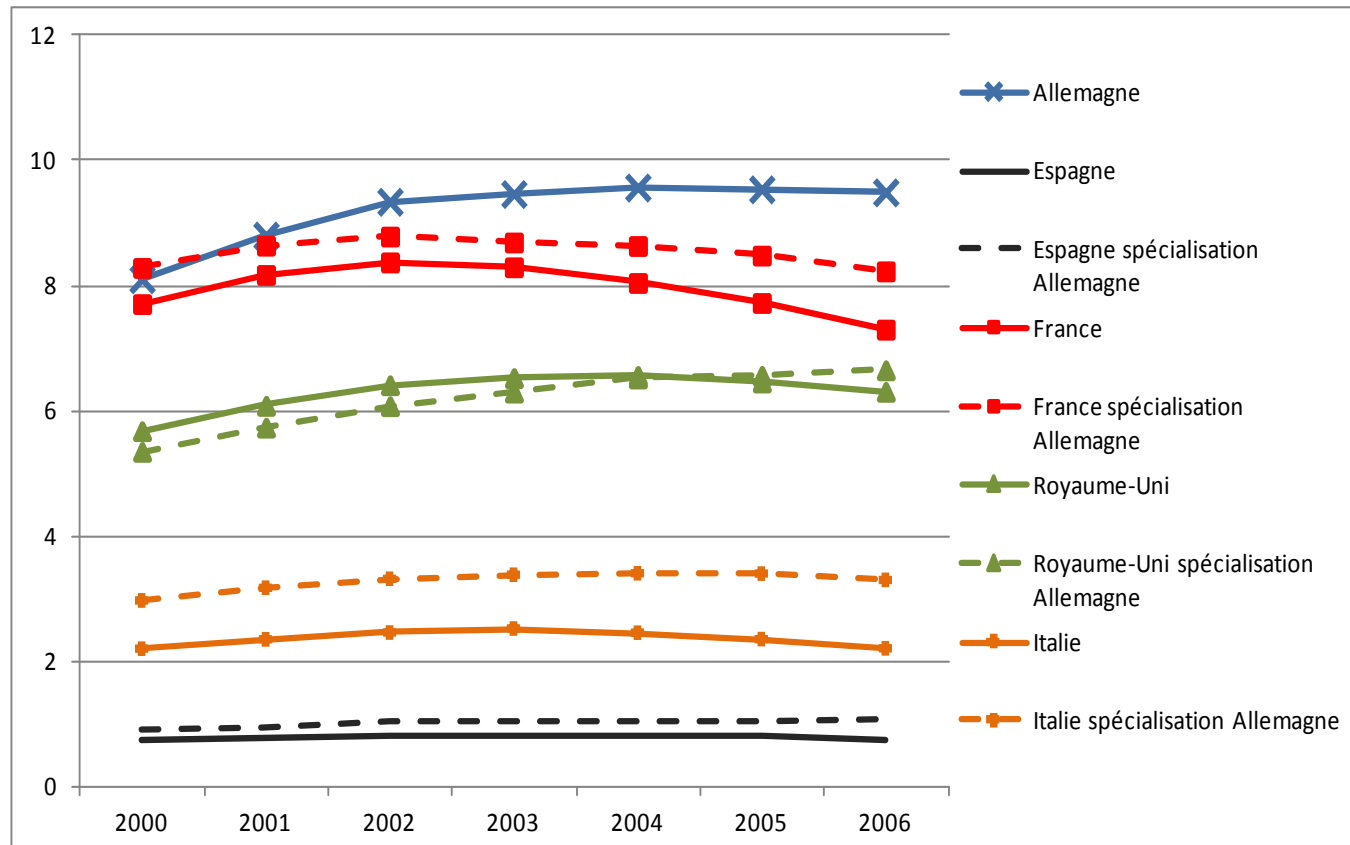
**Figure 2 : Patent stock in manufacturing industry
(for 1000 employees)**



Source : European Patent Office (EPO), Eurostat and EUKlems

Specialization matters

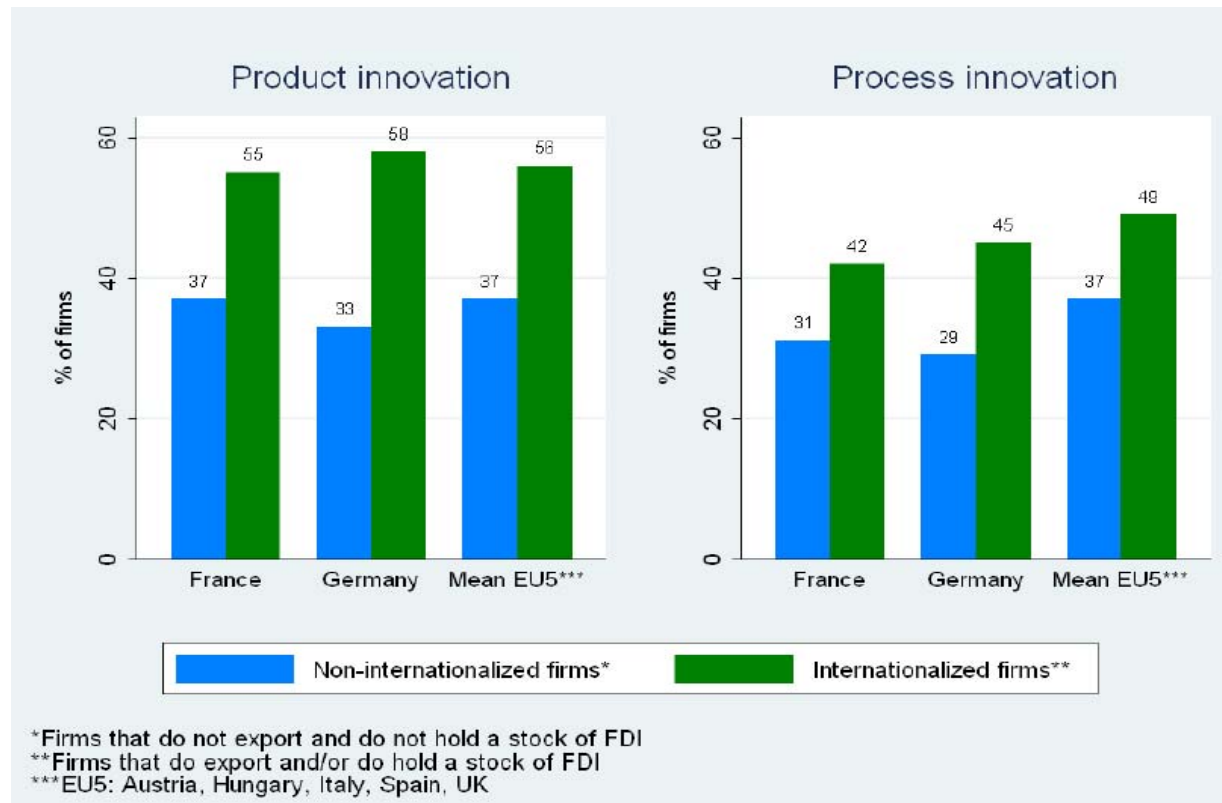
**Figure 3 : Patent stock in manufacturing industry
(for 1000 employees)**



Source : USPTO, Eurostat and EUKlems

Product/Process innovation in EFIGE

Figure 4 : % of innovative firms

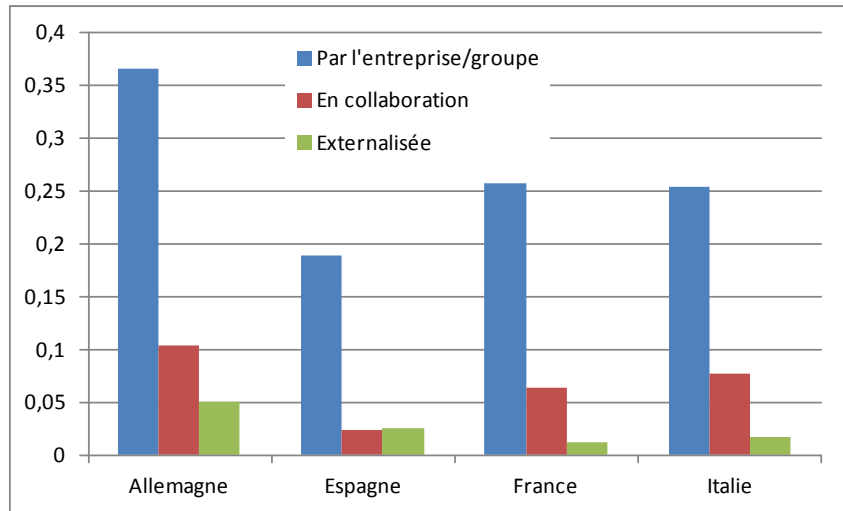


Source: Berthou and Hugot, “How does innovation affect the internationalization pattern of firms?”, EFIGE country report for France

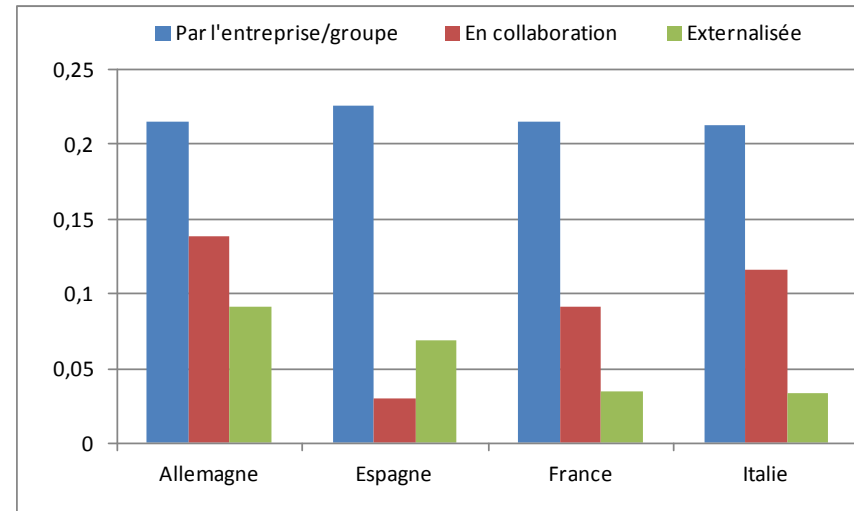
Product/Process innovation in CIS

Figure 5 : % of innovative firms

Product Innovations



Process innovations



Source : Community Innovation Survey (CIS), Eurostat

Summary

- Huge heterogeneity in Europe w.r.t aggregate R&D/innovation performance
- Part of this is explained by sector-specialization of production
 - But specialization on different stages of production within each large sector may also be important
 - e.g. R&D and production of innovation-intensive inputs located in Germany, assembly of high-tech / high-quality goods in Spain ?
- Need to improve quality existing surveys
 - Firm-coverage or representativeness
 - Quality of data related to extensive & intensive margins of innovation