

Industrial, Research and Innovation and Technology Analysis – IRITEC

Directorate B Growth and Innovation – B3 Territorial Development Unit

WELCOME



The IRITEC team warmly welcomes the readers of this first edition of our IRITEC NEWS. Our aim is to periodically share with you our main scientific and policy contributions, and keep you informed on recent and up-coming dissemination events.

IRITEC provides empirical evidence on the dynamics, performance and location of key innovative industries and companies worldwide, and benchmarking analysis of EU top R&D investors against their main competitors. It combines expertise from the economics of industrial research and innovation and from the development and diffusion of key and emerging industrial technologies. The objective is to support the design, implementation and evaluation of EU-related policies, such as innovation, research, and technology and industrial policy.

The project concentrates on the analysis of company-level data and the use of quantitative microeconomic analysis, combined with qualitative interpretations and policy-relevant conclusions. One key strength of IRITEC is the exploitation of its own company dataset, which includes information on company performance, location of subsidiaries, patents and technological profiles, and scientific citations.

Many of the analytical activities are carried out as part of the Industrial Research and Innovation Monitoring and Analysis (IRIMA II) project, a joint collaboration between the European Commission's Joint Research Centre, Directorate B, Growth and Innovation and Directorate General Research and Innovation – Directorate A, Policy Development and Coordination.

We hope you find this information useful for your own scientific and policy-related activities. We very much welcome your comments and proposals for exchange and collaboration. For a full account of our work and publications, please visit our website: <http://iri.jrc.ec.europa.eu/home>.

Happy reading!

Fernando Hervás
IRITEC project leader

[SCOREBOARD](#)

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SCIENTIFIC AND POLICY CONTRIBUTIONS

Headlines

Product regulation policies and employment policies show strong combined effects on decisions regarding top R&D investment locations. The higher the level of product market regulation (PMR), the higher the negative effect of employment protection legislation (EPL), and vice-versa.

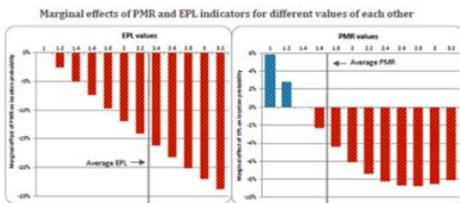
Reforms in these two policy areas should therefore be coordinated to be more efficient. Scientific evidence suggests a threshold of product regulation above which existing employment policies can start *detering* investment decisions. Some Member States would particularly benefit from diminishing current levels of product regulation.

Lowering barriers to trade and investment is more effective for attracting knowledge-intensive foreign investment than reducing the cost of starting a business or reducing the corporate income tax rate.



TOP R&D INVESTORS' LOCATION DECISIONS: HOW TO SUCCEED IN THE GLOBAL REGULATORY CONTEST? ([link](#))

Working Paper 01/2016: REGULATION, RED TAPE AND LOCATION CHOICES OF TOP R&D INVESTORS [\(link\)](#)

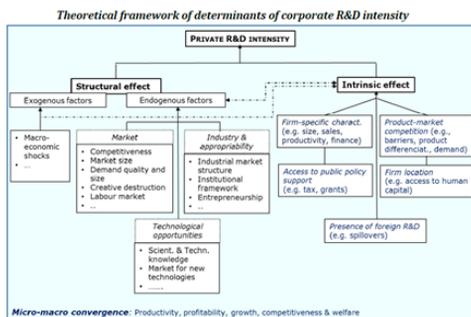


This paper investigates how product and labour market regulations and red tape affect the way in which top corporate research and development (R&D) investors worldwide organise their cross-border operations.

May 2016

Working paper 02/2016: CORPORATE R&D INTENSITY DECOMPOSITION: THEORETICAL, EMPIRICAL AND POLICY ISSUES [\(link\)](#)

This paper aims to review the theoretical and methodological frameworks of corporate R&D intensity decomposition and how it is applied in the literature in order to determine the policy implications of empirical results that at first sight may seem to be contradictory.

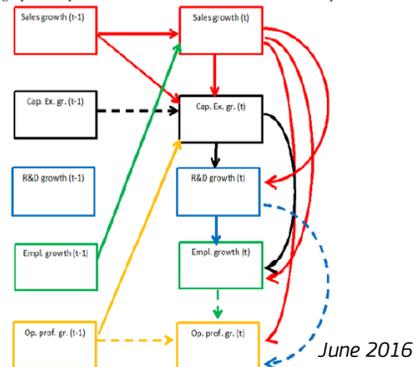


May 2016

Working paper 03/2016: WHO'S DOING WHO? GROWTH OF SALES, EMPLOYMENT, ASSETS, PROFITS AND R&D ENTANGLED IN A CURIOUS FIVE-WAY LOVE TRIANGLE [\(link\)](#)

Understanding causal relationships among key economic variables is crucial for policy makers. To this end, we applied a technique recently imported from the Machine Learning community (Structural Vector Autoregressions (SVARs) identified using Independent Components Analysis (ICA)) to a set of the world's largest R&D investors.

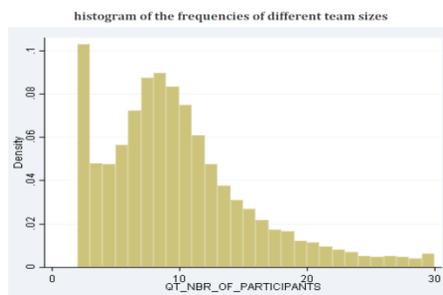
graphical representation of the SVAR results for the full sample



June 2016

Working Paper 04/2016: DIVERSITY IN ONE DIMENSION ALONGSIDE GREATER SIMILARITY IN OTHERS: EVIDENCE FROM FP7 COOPERATIVE RESEARCH TEAMS [\(link\)](#)

Our analysis of collaborative research teams that received FP7 funding presents robust results that indicators of diversity in several dimensions (diversity of organizational form (universities, firms, etc.), diversity in nationality and inequality in project funding share) are negatively correlated with each other.

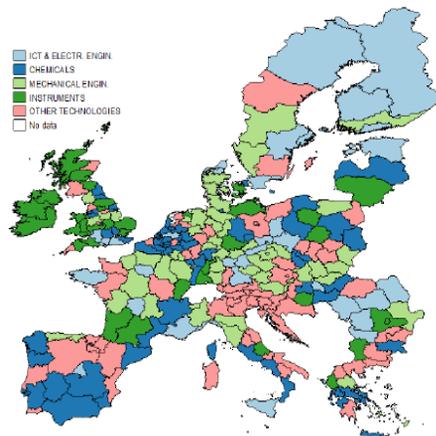


June 2016

Technical Report: THE DISTRIBUTION OF TECHNOLOGICAL ACTIVITIES IN EUROPE: A REGIONAL PERSPECTIVE [\(link\)](#)

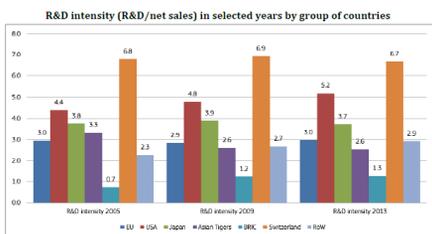
This study analyses the major patterns and trends in the spatial distribution of technological capacities in the EU area over the 1996-2011 period, adopting a regional perspective.

Dominant technological specialization of EU-NUTS2 regions (2008-11)



August 2016

Working Paper 05/2016: EU CORPORATE R&D INTENSITY GAP: WHAT HAS CHANGED OVER THE LAST DECADE? [\(link\)](#)



This paper contributes with new findings to the literature on corporate research and development (R&D) intensity decomposition by examining the effects of several parameters on R&D intensity and investigating its comparative distribution among top R&D firms, sectors and world regions/countries.

May 2016

WORKSHOP ON THE DEVELOPMENT OF KETS FOR INDUSTRIAL MODERNIZATION, THEIR REGIONAL AND THEIR LINK TO EMERGING TECHNOLOGIES. Brussels, 8 June 2016

This workshop was part of the KeyTEC project diffusion activities. One main objective was presenting recent results and future analytical plans to relevant colleagues in the DGs and other JRC units and receiving feedback on its relevance to support policy making in related areas.

[Summary report](#)

[Presentations](#)



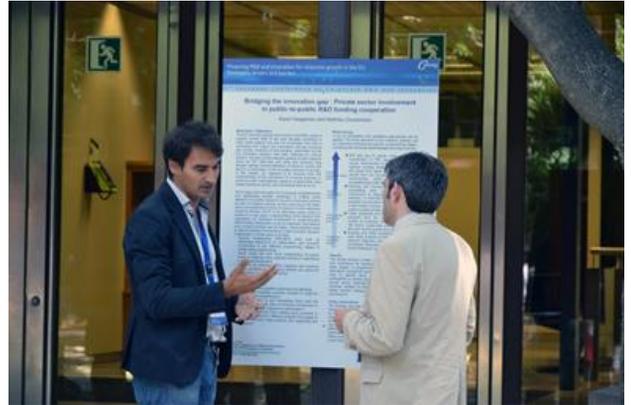
SEVENTH IRIMA WORKSHOP ON INNOVATION, EMPLOYMENT, FIRM GROWTH AND JOB CREATION. Brussels, 28 June 2016

During the 7th IRIMA workshop, high-level academics and policymakers gathered in Brussels for a one-day workshop on Innovation and Employment. The main objective were:

- i) to get a better understanding of the relation between innovation and job creation on firm and sector level;
- ii) to provide insight in growth patterns of young firms and policies to facilitate growth and minimize the impact of barriers to growth, and
- iii) to formulate policy messages on how to shape tomorrow's policies in the light of the Europe 2020 strategy with respect to innovation and job creation.

[Summary report](#)

[Presentations](#)



SEMINARS ORGANISED BY IRITEC AT JRC DIRECTORATE B FOR GROWTH & INNOVATION

OECD work of IPs: recent evidence and future directions

Hélène Dernis (OECD, Paris, FR)
31/03/2016

Tools for causal inference from cross-sectional innovation surveys with continuous or discrete variables

Dominik Janzing (Max Planck Institute of Intelligent systems, Tübingen, DE)
04/04/2016

Industry Public Technological Knowledge and New Venture Growth and Survival

Barbara Larraneta (UPO Sevilla, ES) and Lucia Naldi (JIBS, SE)
08/04/2016

Government support programs for innovative small and medium firms: Do they work?

Sven-Olov Daunfeldt (HUI Research, SE)
05/05/2016

Entrepreneurship and ADHD

Johan Wiklund (Syracuse Univ, USA)
24/05/2016

Innovation and firm performance: evidence from Spain

Mercedes Teruel (URV Reus, ES)
24/06/2016

COMPLETED

Study on tools for causal inference from cross-sectional innovation surveys with continuous or discrete variables

Dominik Janzing, from the Max Planck Institute for Intelligent Systems, recently finished a subcontracted report entitled "Tools for causal inference from cross-sectional innovation surveys with continuous or discrete variables." The machine learning community has recently developed some exciting new techniques for causal inference from observational data, which work even for discrete variables. In this project, Dominik applied these techniques to analyse Scoreboard data (on the world's largest R&D investors) as well as Community Innovation Survey data. The report contains a large number of results, and also makes the software available for future research.

Final report available [here](#).

A reappraisal of the impact of corporate R&D and innovation on employment

The aim of this report is to provide updated quantitative and qualitative analyses of the impact of corporate R&D and innovation on employment in industries and firms in the European Union member states. Over the last decades, the paradigm based on ICT and automation has led to a dramatic adjustment of the employment structure raising again a widespread fear of an upcoming "technological employment". After a critical survey of the more updated empirical evidence on the topic, new econometric analyses (longitudinal data), based on a dynamic labour demand, are provided. The first one is at the sectoral-level and uses OECD STAN-ANBERD data; the second one is at firm-level and uses European R&D top-performers Scoreboard data. In addition, two microeconomic studies, based, respectively, on Italian and Spanish firm-level data, are provided. Finally, in order to offer evidence of the "qualitative" impact of innovation, a tentative study matching, at the sectoral-level, OECD STAN-ANBERD and EU-SILC data, has been provided. Overall, R&D seems to have a positive and significant impact on employment, especially in high-tech industries. Moreover, R&D positively affects the categories of tertiary educated workers, high-skilled white-collars and the employees handling non-routinized tasks.

Final report available [here](#).

ONGOING

R&D and innovation activities in companies across Global Value Chains

The objective of the study is to better understand, from the perspective of EU firms and their peers, the geographical and organizational patterns of corporate R&D and innovation across GVCs and their interactions with home and host-countries' economies and policy initiatives. This includes a better understanding of the drivers and barriers to improving the location of high-value creation and knowledge-intensive activities in Europe and the competitive position of EU industry in strategic GVCs.

Study on the analysis of the link between trademarks, innovation and economic performances of the world top corporate R&D investors

The internal report on Trademarks, innovation and economic performances exploits the corporate trademarks data recently released in the EC-JRC/OECD COR&DIP© database, v.0. 2015 (Access to COR&DIP©). The study examines the empirical links between the intangibles assets and the innovative and economic performances of top R&D spenders. Key insights from the analysis are twofold, revealing the interplay of both sectoral and firm effects. First, the results suggest that technological capabilities need to be further translated into actual market opportunities before realizing revenues in the marketplace; second top R&D investors, focused mostly on delivering technology-based product innovations, are more likely to enjoy a growth premium from delivering services.

Study on the effect of mergers and acquisitions on R&D performance: empirical evidence for the R&D Investment Scoreboard firms

The report of Alberto López (Universidad Complutense Madrid) and Sara Amoroso on mergers and acquisitions (M&A) activities of the R&D Scoreboard (SB) companies contributes to the discussion on the existence of knowledge spillovers, learning effects and productivity gains from cross-border M&A. First, it provides a snapshot of the geographical and sectoral distribution of all the M&A deals involving SB companies in the last 13 years (2000-2012). Using measures of technological relatedness and age, the report shows that the majority of deals involve European and US young companies in technological related fields. Second, the preliminary econometric investigations of the effects of M&A deals on the performance of both targets and acquirors companies point at a positive impact on the R&D, sales and labour productivity growth only for the acquirors.



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