



IPTS Steering Workshop on “Industrial Research and Innovation”

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IRI

Industrial Research and Innovation

Mission

Support the implementation of the EU research and innovation agenda (Innovation Union) by providing policy-makers with empirical evidence on the determinants and impacts of industrial R&D and innovation activities.

Analysis mainly based on company data

- Original data: EU Industrial R&D investment Scoreboard
- Official statistical sources: Eurostat, OECD, National offices
- Commercial databases: Compustat, ORBIS, Patstat
- Surveys: CIS, own survey

Research tools

- Quantitative analysis: descriptive statistics, econometrics
- Input-output tables
- Qualitative analysis





IRMA (2008-2011)

Industrial Research Monitoring and Analysis

Collaborative project JRC-IPTS and DG RTD

-Financed through the FP7 “Capacities” – Support for the coherent development of research policies.

-Budget: 6.5 Million euros (80% DG RTD-FP7 / 20% JRC)

-WP1: Scoreboard

-WP2: Survey

-WP3: IRMA papers and reports

-WP4: CONCORD Conferences

-WP5: Company Interviews

-WP6: Diffusion

-WP7: Management, coordination and quality assurance



Main Topics

Europe's **R&D intensity gap** and the role of private sector R&D

Impact of corporate R&I on **companies performance** (productivity, stock market capitalisation, profits)

Interplay between corporate R&I and '**firm dynamics**' (e.g. size, age of firms) and how this affects the industrial structure (sectors and R&D intensities, market barriers to the dynamics of EU innovative firms)

Impact of corporate R&I on **employment**

Impact of other **intangible assets** (beyond R&D): training, marketing, design etc.

Internationalisation/location of corporate R&D



Examples of Evidence

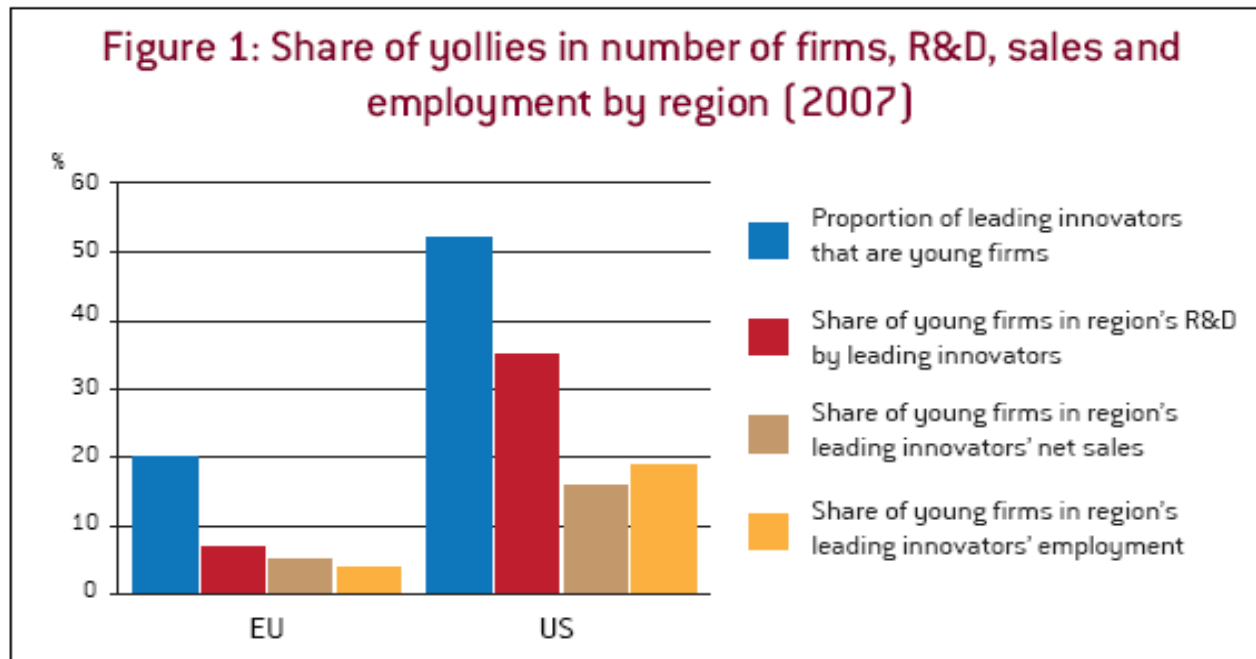
Sub-sector (4-digit ICB)	R&D intensity (%)		R&D Investment (€m)	
	EU	US	EU	US
<i>Most R&D intensive (>10%)</i>				
Biotechnology	17.1	23.9	877.6	7642.7
Semiconductors	21.8	19.1	3344.4	15457.5
Pharmaceuticals	14.5	14.7	19717.5	25097.4
Software	14.6	14.8	3454.3	14320.6
Telecommunications equip.	13.3	14.9	10559.3	10494.9
Internet		12.2	0.0	3167.6
<i>Other, largest R&D investing sectors</i>				
Automobiles & parts	5.6	4.1	27257.7	9963.5
Chemicals	3.5	2.9	7189.6	3389.6
Electronic equipment	6.4	7.8	958.2	1663.8
Electrical comp. & equip.	4.9	2.6	5623.9	726.7
Computer hardware	12.5	3.8	86.7	6617.1
Aerospace & defence	5.8	3	7834.7	6405.8

Source : The 2010 EU Industrial R&D Investment Scoreboard
European Commission, JRC/DG RTD.

Company data from top R&D investors

- R&D intensities of EU companies are close to their US counterparts.
- Big differences are in the sector mix of the EU and US Scoreboard samples.
- Strong structural origin of the R&D gap. Concentrated in a small number of high-tech sectors.

Examples of Evidence



The EU lacks young global innovative companies among top R&D investors (Yollies = Young Leading Innovators created after 1975) This matters because **yollies are more R&D intense and show better performance, in sales and in employment.**



Impact of R&D on firm's performance

Main Results

Impact on productivity

- Positive impact of R&D investment appears to be higher for high R&D companies. Low R&D intensive companies benefit more from capital expenditures.
- Impact on productivity of R&D investments are lower for EU companies than for US ones. Problem of efficiency or rather result in different home market size and “intellectual” entrepreneurship?

Impact on employment

- At company level the impact of R&D is positive and increases as the R&D intensity increases;
- At sectoral level, where business stealing is controlled for, the employment impact is positive.





IRIMA (2012-2015)

Industrial Research & Innovation Monitoring and Analysis

Collaborative project JRC-IPTS and DG RTD

-Budget: **6** Million euros (80% DG RTD-FP7 / 20% JRC)

-WP1: Analysis of top R&D investors - Scoreboard & Survey

-**WP2: Targeted research on the economics of R&I**

-WP3: Diffusion – Two workshops per year

-WP4: Management, coordination and quality assurance



Purpose of today's Steering Workshop?

Discuss the IRIMA prospected research activities on the economics of R&I for 2012-2013 (Work Package 2).

Topic 1 – Productivity and employment

Topic 2 – “Non-R&D” innovation drivers

Topic 3 – Technological and innovation patterns



Main issues to discuss

State of the art – what do we know and policy needs

IRIMA expected contribution - research questions

Data sources

Methodologies



IRMA Final Review recommendations

- **Exploit further Scoreboard data: main distinctive feature of the project + growing relevance of company data in global economy. Analyse further company versus territorial data. Improve information on location, market spread, technologies...**
- **More integration of project's "products" (SB, Survey, Analysis)**
- **Increase thematic focus, find clear story line, build on past analyses.**
- **Improve presentation of results for policy-makers**



...and further food for thought...

- To what extent does sector by sector analysis continue to make sense?**
- How to reconcile differences in data sources and samples (e.g. BERD versus CIS)?**
- How much can we expect from blending/combination of sources? Feasibility, resources, data access...**
- How to reconcile solid scientific output with policy impact?**



Let's try to keep things into perspective!

Size of the project: 1.5 million € / year

1/3 of annual budget for data collection only

Size of team (10 people)

60% of staff on temporary contracts (three years), pros and cons.

Location: pros and cons...



Expected outcomes

Concrete feed-back and input for the IRIMA draft research plans (2012-2013):

Please be open and frank during discussions!

Collaboration prospects

Academic networking – “IRIMA community” for workshops, peer-reviewing, exchange of information etc.