

The Internationalisation of Research and Development in the European Union



PLATON+ Fact Sheets are addressing the members of the business community and researchers from other than Socio-economic Science and Humanities disciplines, helping them to better understand how the topic of focus can or should be addressed within their activities.

The process of globalisation has had a deep impact on the structure of many sectors of the economy. Research and development (R&D) has however long been one of the least mobile sectors. It is only relatively recently that there has been an acceleration in the internationalisation of research and development.

This internationalisation which has been driven predominantly by the activity of multinational enterprises has been manifested in **an increase in the number of R&D laboratories located abroad as firms reorganise towards global rather than national research systems**. While developed economies attract the bulk of this investment an increasing amount has been directed towards emerging economies.

This raises **important issues** as the development of a country R&D sector has consequences for its overall economic performance as it has effects on its competitiveness, employment and its capacity to absorb new technologies and knowledge.

International R&D and the European Union

- Largest global flows are between 3 major regions USA, Japan and European Union.
- Five countries, namely USA, Japan, Germany, UK and France, account for 80% of global spending.
- The USA is the dominant global investor.
- In 2005 US multinationals invested 17 billion USD in R&D in the EU, 61% of all US foreign investment.
- EU firms are highly internationalised spending on average 40% of their R&D budgeted cross border.

Where do firms locate in the EU?

- The United Kingdom and Germany were the most frequently chosen destinations accounting for 72% of firms:
 - most firms locating in the UK originated from North America.
 - most firms locating in Germany originated from Western Europe.
- The accession countries accounted for 6% of new firms.
- Inner London was the most frequently chosen region of Europe for new firms.

Who were the main foreign investors?

- At a regional level most of the firms locating in the EU originated in Western Europe (50,9% of the total).
- At country level, the United States was the single largest investor accounting for 30% of firms.
- From Western Europe, Switzerland was the single largest investor.

What determines the location choice of R&D multinational firms?

- The **market potential** of a region, reflecting the importance of access to foreign markets. Overseas research centres often operate as support laboratory functions to adapt products to local technical specifications or characteristics of markets as well as providing technical backup to local production and sales.
- **Labour costs**, which is a negative characteristic as firms are deterred from locating in regions with high labour costs.
- **Labour flexibility**, since rigid local labour markets, as signalled by a high unemployment rate, detract from regions attractiveness to firms. This also shows that R&D firms are unconcerned with having a pool of available workers in a region.
- **Education level**, which reflects a recent feature of R&D investment motivation with firms locating to access skilled foreign labour markets.
- **Technological development**, which reflects firms' desire to access local resources, enabling the local research system to be incorporated into the firms' research system.
- The countries' level of **Information and Communication Technologies (ICT) infrastructure**.
- The R&D sector of the economy has long been identified as geographical sticky and benefitting from **agglomerations of activity** due to its characteristics of economies of scale and scope and difficulty in spatially transferring knowledge. This feature appears in the analysis with clustering of research activity in a region being a significant determinant in firm's location choice.

These determinants differ depending on the country of origin of the firms and thus show differing motivations among firms:

- for North American firms the clustering effect on location choice is stronger than for European firms.
- education level of local labour market and ICT infrastructure appear to drive the location choice of European R&D multinationals but this is not the case for North American firms.

How could policy increase the attractiveness of regions to foreign investment in R&D?

- Enabling an environment for spillovers and better embedding of foreign owned R&D into local chains of production.
- Possible subsidy effects would be enhanced in regions with existing presence of agglomeration.
- Policy for R&D, ICT infrastructure and education are important in increasing the attractiveness of regions to R&D investment.
- Policy differentiated depending on the country of target firms.
- Strengthen the domestic knowledge-base.
- Inward R&D foreign investment is closely related to policies that affect the attractiveness of FDI in general, such as a "healthy business environment".

Sources used for this fact sheet and further reading.

- Iulia Siedschlag, Donal Smith, Camelia Turcu, Xiaoheng Zhang, "What Determines the Attractiveness of EU Regions to the Location of R&D Multinational Firms?" EU-funded project DYNREG Working Paper No 46/ 2009.
- "The Internationalisation of Business R&D: Evidence, Impacts and Implications", Paris: Organisation for Economic Co-Operation and Development, 2008.
- "World Investment Report 2005: Transnational Corporations and the Internationalisation of R&D", Geneva: United Nations, 2005.

Related research projects funded under the 6th and 7th Framework Programme

- Dynamic Regions in a Knowledge –Driven Global Economy - DYNREG (www.esri.ie/dynreg)
- The Competitiveness of Firms, Regions and Industries in the Knowledge-based Economy - MICRO-DYN (www.micro-dyn.eu)

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PLATON+ Fact Sheets provide a short description of a key socio-economic topic and its social, economic political and cultural impact on the European Union. They aim to stimulate discussions while highlight a number of 'open' issues for future research rather than provide a detailed presentation of the topic.

They are addressing the members of the business community and researchers from other than Socio-economic Science and Humanities disciplines, helping them to better understand how the particular topic can/ should be addressed within their activities.

The information contained in this document is based on the research activities of EU-funded projects and accredited and acknowledged world-wide information organisations. Thus, **the views expressed, have been derived from the resources used and do not necessarily reflect that of PLATON+ partners.**

PLATON+ is an innovative EU-funded project aiming to:

- (1) **communicate** socio-economic research results and assets to policy makers, Civil Society Organisations and to business communities across Europe, and
 - (2) **show ways** of collaboration and **bring into contact** socio-economic researchers and researchers from other disciplines.
- PLATON+ partners are selecting valuable research results and disseminating them to policy and decision makers, other researchers, business community and Civil Society Organizations by means of policy-oriented publications, targeted events, trainings and variety of other activities.

The project consortium consists of 12 partners from 10 European countries.

PLATON+ at a glance

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Consortium:

Business and Communication Consultancies:

- International Environment and Quality Services North Greece Ltd (Q-PLAN N.G., Greece, www.qplanng.gr) (Coordinator)
- Hill & Knowlton Eesti AS (H&K, Estonia, www.hillandknowlton.ee)
- ALMA Consulting Group (ALMA, France, www.almacg.com)

National Contact Points:

- Agency for the Promotion of European Research (APRE, Italy, www.apre.it)
- The Scientific and Technological Research Council of Turkey (TUBITAK, Turkey, www.tubitak.gov.tr)

Technology Transfer Organisations:

- Leibniz Universitaet Hannover - Uni Transfer (LUH, Germany, www.tt.uni-hannover.de)
- Wroclaw Centre for Technology Transfer of Wroclaw University of Technology (WCTT PWR, Poland, www.wctt.pl)

Research organisations and foundations:

- The Interdisciplinary Centre for Comparative Research in the Social Sciences (ICCR, Austria, www.iccrinternational.org)
- Hungarian Science and Technology Foundation (TETALAP, Hungary, www.tetalap.hu)
- The Economic and Social Research Institute (ESRI, Ireland, www.esri.ie)
- ALBA Graduate Business School (ALBA, Greece, www.alba.edu.gr)
- Institut Européen d'Administration des Affaires (INSEAD, France, www.calt.insead.edu)