

# Chapter 1

## Drivers and Policies for Increasing and Internationalising R&D Activities of EU Multinational Enterprises

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### ABSTRACT

*R&D and innovation activities of firms are the main source of economic growth over the long term. A recent trend is the increasing off shoring of R&D activities of large Multinational Enterprises (MNE), i.e. delocalization of R&D outside their home countries. After examining the evidence and explanatory factors of this new phenomenon, the authors focus on the study of the factors impacting on the internationalization of R&D of EU MNEs. Based on the data coming from a survey of large EU MNEs, they first present some descriptive statistics based on this survey and, second, carry out an econometric analysis to examine the drivers of R&D internationalization, of the preferred location(s), and the impact of public support granted to R&D. Policy implications are also discussed.*

### INTRODUCTION

Research and Development (R&D) and innovation activities are one of the most important factors of economic growth, job creation, competitiveness, and finally welfare improvement and prosperity of nations. Therefore, governments design and

implement policies in order to support and sustain these R&D activities. They give incentives to companies, for instance to increase the level of R&D activities. At the EU level there are two well-known instruments following the Lisbon Strategy. The first one is the so-called Barcelona target of 3% which means that the total R&D expenditures divided by the GDP has to be 3% in the EU. This ratio is currently less than 2% in

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the EU; but this 3% percent target is again the target, which is proposed in the follower of the Lisbon Strategy, i.e. the Europe-2020 strategy. At the EU level, there are also the framework programs, which consist in funding R&D collaborations among universities themselves but also between industry and universities (Capron & Cincera, 2007). Since R&D is an important ingredient of economic growth in the long term, it is also important to implement policies in order to attract and retain firms that indeed invest a lot in R&D in the EU. In fact, R&D activities are more and more internationalized (Cincera, et al., 2006); for instance according to the statistics of UNCTAD, R&D investment of multinational companies have more than doubled between 1990-1993 and 2002; they have increased from 30 billion dollars to more than 67 billion dollars. Therefore, this represents an increase in the total R&D worldwide share from 10% to 16%. Another example is Motorola. This company established one of the first foreign research facility in China in 1993 and now there are more than 700 research labs controlled by foreign companies in China. Therefore, R&D activities delocalize and tend to internationalize in particular in China and in India. This can be a matter of concern for policy makers. Indeed, if R&D is an important engine of growth and if companies delocalize their R&D activities, then the question is: where will the outcomes of these research activities be implemented? Are they implemented in the foreign countries or are these outcomes benefiting the home countries of the multinational companies, which delocalize their R&D activities? There is no recent literature addressing these questions. Yet, some recent studies have started investigating these questions and it seems that delocalized R&D is profitable for both the host and the home country.

In a nutshell, R&D activities appear to be more and more globalized and it is therefore important to analyze the order of magnitude and directions of these trends. Yet, an important limitation in this respect comes from the statistical indicators

at our disposal to analyze these questions and which are not perfect. There are two types of statistical sources for measuring R&D activities. The first source is the Business Expenditure on R&D (BERD) released by the EUROSTAT and the OECD and the second one is the R&D scoreboard of the most important companies worldwide that invest in R&D. These two sources suffer from some limitations as BERD for instance refers to all R&D performed within a given country and we do not know the nationality of the companies performing the R&D in the country. It can be a domestic company or it can also be a foreign one. Another issue with BERD, is that it also includes the public funding of private R&D. This share represents more or less 5% of total BERD.

The EU industrial R&D scoreboard released by the EC-JRC-IPTS is another major data source for assessing the level of R&D at the micro level. These data are publicly available since 2000. They consist of a scoreboard of the 2000 most important companies performing R&D worldwide (1000 EU and 1000 non-EU companies). These 2000 companies represent all together about 85% of the total private R&D in the world. However, here again we have information on the total R&D investments expenditures performed worldwide by a company but we do not know exactly the breakdown of these activities by country.

Given these limitations, it is not really possible to investigate and analyze the trends and the importance of the globalization of R&D activities with these two sources of R&D information. This is the reason why the European Commission decided to launch a survey called "the EU Survey on R&D Investment Business Trends." It started in 2005 and is organized regularly on a yearly basis. The IPTS is in charge of conducting this survey and analyzing the results based on this data. Another motivation for organizing this survey rests in the fact that although R&D globalization has been observed since the beginning of the 1990s, there are in fact only a few studies that have analyzed these questions at the micro level.

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