

Chapter 3

Innovation and International Competitiveness of Manufacturing Firms: Evidence from Bulgaria, Czech Republic, Hungary, Poland, and Romania

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ABSTRACT

Numerous firm-level studies indicate a positive relationship between innovation and exports, being an important indicator of international competitiveness. The aim of this chapter is to present a cross-country analysis of the relationship between innovation and exports of firms in selected new EU Member States from the CEE region. All types of innovation (i.e. product, process, organizational, and marketing innovation) are analyzed and their relationship with international sales is assessed in this chapter. The analysis is based on Community Innovation Survey (CIS) micro data of 10,903 innovative manufacturing firms from Bulgaria, Czech Republic, Hungary, Poland, and Romania for the 2006 – 2008 period. The logistic regression models are constructed to identify the relationship between each type of innovation and firms' export sales. The reverse causality (i.e. the effect of international sales

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on firm innovation) is also investigated. The strongest relationship between the introduction of product innovation and export sales on all foreign target markets was revealed for firms in all CEE countries. The influence of other types of innovation on export sales was also proved positive, though weaker, in most of these countries. The influence of international sales on firm's innovation in all surveyed countries was weaker than the impact of innovation on export.

INTRODUCTION: INNOVATION AND INTERNATIONAL COMPETITIVENESS PROFILES OF CEE COUNTRIES

The aim of this chapter is to present a comparative cross-country analysis of the relationship between innovation and international competitiveness of firms in selected Central–Eastern European (CEE) countries. In geo-regional terms the priority was given to five largest new EU Member States in this region: Bulgaria, Czech Republic, Hungary, Poland and Romania.

In terms of overall innovation performance the CEE countries ranked low among European countries. According to Innovation Union Scoreboard 2011, Czech Republic, Hungary and Poland were classified as *Moderate Innovators* (with the innovation performance between 50 and 90 percent of the EU-27 average), whereas Romania and Bulgaria were categorized as *Modest Innovators* (with innovation performance not exceeding 50 percent of the EU-27 average). In 2013 Poland fell in the ranking and joined the group of *Modest Innovators*, whereas the other countries under study maintained their positions (*Innovation Union Scoreboard, 2011 and 2013*).

Table 1 presents selected innovation performance indicators for the surveyed countries in 2011 and 2013. The indicator coined “*Enablers*” relates to the main external drivers of innovation performance and differentiates between three dimensions of innovation: “Human resources” measuring the availability of high-skilled and educated workforce; “Open, excellent and attractive research systems” measuring the international competitiveness of the science base and “Finance and support” measuring the availability of financing for innovation projects and governmental support for research and innovation activities.

The indicator “*Firm activities*” refers to the innovation efforts at the firm level and includes the following dimensions of innovation: “Firm investments” including indicators of both R&D and non-R&D investments that firms make in order to generate innovations; “Linkages & entrepreneurship” measuring entrepreneurial efforts and collaboration efforts among innovating firms and with the public sector, whereas the dimension of “Intellectual assets” relates to the different forms of Intellectual Property Rights (IPR) generated in the innovation process. Finally, the indicator “*Outputs*” refers to the effects of firms’ innovation activities and differentiates between “Innovators” being measured by the number of firms that launched

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