

Chapter 2

National Innovation System Dynamics in East Central Europe, the Baltic Countries, and Russia

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ABSTRACT

In this chapter, the structure and dynamics of national innovation systems are explored to produce a comprehensive picture of the current, as well as the past, performance of the countries of East Central Europe, the Baltic countries, and Russia vis-à-vis their competitiveness and innovative capabilities. The results highlight the importance of political and economic freedom, science, and education for promoting innovation. According to the principal component analyses, the best performing countries of the East Central Europe and the Baltic countries, in terms of their national innovation systems, have developed rapidly after the disintegration of the Soviet bloc and compare well in global rankings of innovative capabilities and competitiveness with standings above the countries of Latin America and South-East Asia. The countries under closer examination here that are members of the EU seem to be in a better position compared to the non-EU member countries. Thus, most of the countries in East Central Europe and the Baltic countries have been able to catch up with the global leaders during the analysed time period (1992–2008). However, this kind of development is yet to manifest in Russia.

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INTRODUCTION

In today's globalising knowledge economy the role of innovations has been highlighted as one of the most important engines for productivity growth in individual firms and economic growth on national and regional levels. Therefore, in recent decades much attention has been turned towards researching the enablers of national innovative capability and performance. In this work the concept of 'National Innovation Systems' (NIS) has been brought repeatedly into the fore of scholarly debate. The NIS concept was developed in the late 1980s and early 1990s, by leading researchers in the field including Freeman (1987), Lundvall (1992) and Nelson (1993), not only as an academic framework but also as a tool for policy makers to enhance their nations' competitiveness in terms of innovation. The concept was endorsed and included in science, technology and innovation policies early on in countries such as the Nordic countries of Denmark, Finland and Sweden. The encouraging experiences gained from the Nordic countries have led other nations to follow their example. Similarly, the sheer volume of innovation system studies have manifold in recent years underlining the popularity of the concept among academic circles (Fagerberg & Sapprasert, 2011; Uriona-Maldonado, dos Santos & Varvakis, 2012), policy-makers and international organisations (David & Foray, 1995; OECD, 1999). This wide interest has included several theoretical discussions, but also a series of studies on methodological measurement issues related to the empirical treatment of NIS resulting in a rich literature on cross-country NIS rankings and comparisons. In short, the NIS framework has proven to be a valuable tool in comparing national competitiveness and innovative capabilities (by showing how technological infrastructure differs between countries and how such differences are reflected in international competitiveness) as well as a practical instrument for promoting economic development (Freeman, 2004; Fagerberg & Srholec, 2008).

Globally the literature has, however, more commonly been concentrated on the already well-developed countries of the Western Europe, North America and Japan in terms of comparisons between the most developed OECD countries, countries of the EU etc. However, there are some refreshing exceptions with wider sets of included countries (Castellacci & Archibugi, 2008; Fagerberg & Srholec, 2008). Moreover, an increasing amount of interest has been laid in the socio-economic development of the BRICS countries (Brazil, Russia, India, China and South Africa) and the new EU member states of the Eastern Europe *vis-à-vis* NIS (Cassiolato & Vitorino, 2009; Krammer, 2009). In addition, empirical findings have pointed towards an evident catching up in progress between the global leaders in innovation and (some of) the East European countries (Makkonen & Inkinen, 2013). Still, the research on the countries of the East Central Europe (ECE) and the Baltic countries (Baltics) as well as on Russia has been mainly comparative and cross-sectional. The lack of longitu-

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