

Theoretical and Practical Challenges of National Innovation Systems: Practical Lessons from Russia and Latvia

Alfred Watkins and Natalia Agapitova

World Bank

The concept of the national innovation system (NIS) is a core concept for analyzing an economy's capacity to produce, commercialize, import, and utilize knowledge and technology. Innovation, learning and technological development, indispensable for long-term economic development of a nation, are now seen as systemic activities involving many and diverse economic actors. Therefore the NIS concept rests on the premise that enhancing linkages among various actors, especially with respect to knowledge creation, diffusion and use, is a crucial for improving a country's innovative performance (OECD, 1997).

However, the actual state of knowledge about the functioning of the NIS is almost exclusively based on the analysis of benchmarking economies. Therefore, we know more about what an 'ideal' NIS looks like, than how could we assist the developing countries in attaining this ideal. There is still a great controversy about the way that channels of interaction between firms and their social and institutional environment emerge, develop and change over time.

Pursuing comparative studies of different innovation systems, including those of developing countries, could help to get a critical understanding of various aspects of transition process between two different innovation regimes. The lessons from post-Soviet countries' transition from a militarily-oriented, centrally planned innovation regime towards market oriented systems of production contribute to the understanding of how specific national innovation systems respond to global trends and challenges. While studies of newly industrialized economies (NIE) lead to the conclusion that the development of human resource is the most critical element (Dahlman and Nelson, 1995), the evidence provided by ongoing research projects in Russia and Latvia, suggests that human resources alone are not sufficient for the emergence of an innovative economy. For example, Russia ranks third out of 75 countries accordingly to a measure of per capital Scientists and Engineers, but only thirtieth on the basis on an Innovation Capacity index (Porter and Stern, 2001).¹ Other FSU and CEEC's show a similar disparity between their relative high standing in terms of scientists and engineers per capita and their relatively lower standing in terms of innovation capacity.

Then, the paper will demonstrate that while both Russia and Latvia possess rich experience in cutting edge scientific research and outstanding human resources, the main challenge on the way of transforming Soviet-type system into interactive and open NIS is to develop learning capabilities and linkages between all levels of society and to reform

¹ Porter, Michael and Scott Stern, 2001. *National Innovative Capacity*. Institute for Strategy and Competitiveness, Harvard.

institutions so that they operate and interact as part of a coherent system rather than as isolated elements. The analysis of the patterns of R&D activities in Latvia and Russia will be conducted with respect to:

- 1) Particularities of centrally planned innovative activities;
- 2) A comparative analysis of the impact of different levels of liberal reforms in both countries;
- 3) Achievements, remaining weaknesses and similarities of two newly independent NIS.

Taking into account the established priority areas, some lessons will be drawn from the comparative analysis of evolution of these two NIS in terms of innovation development policies.