

Non-technical summary

The aim of the project is to assess the functioning of the technology-specific systems of innovation in European Economic Area economies by carefully analyzing the patenting and publishing patterns of firms and academia, as well as funding data of some public and private actors.

The complex and collective nature of innovation processes has long been recognized both in the neoclassical economics, and in the evolutionary or Schumpeterian economics. The latter stream has come up with the concept of “innovation systems”.¹ The theory of the “national systems of innovation”, developed in late 1980s and early 1990s, is probably the most famous application of this concept. In this project we will apply a more recent, and quite promising, concept of the “technology-specific systems of innovation” (TSIS) proposed by Hekkert and others.² According to this approach, the development of a given technology in the economy depends on how the technology-specific system of private and public actors perform its functions. These functions include: “Entrepreneurial activities”, “Knowledge development”, “Knowledge diffusion through networks”, “Guidance of the search”, “Market formation”, “Resources mobilization”, “Creation of legitimacy/counteract resistance to change”.

In this project we will offer a quantitative analysis of three functions of the technology-specific systems of innovations: “Knowledge development”, “Knowledge diffusion through networks”, and “Resources mobilization”. We will propose measures of the TSIS functions based on the patenting and publishing data, as well as the data on the public and private funding of startups. Then we will perform an econometric analysis on the dataset we will have created.

¹ Edquist, C. (2006). Systems of Innovations: Perspectives and Challenges. W: J. Fagerberg, D. C. Mowery, R. R. Nelson (red *Oxford Handbook of Innovation* (s. 181–208). OUP Oxford.

² Hekkert, M. P., Suurs, R. A. A., Negro, S. O., Kuhlmann, S., Smits, R. E. (2007). Functions of innovation systems: A new approach for analysing technological change. *Technological Forecasting and Social Change*, 74(4), 413–432