

Innovation and trust across European regions: Is there still a socialist legacy after all these years?

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1. Aims and scope

In this paper we argue that there is still a negative impact of socialist legacy on innovation and R&D cooperation in regions of Central and Eastern European (CEEs) countries. We particularly focus on the channels behind such a negative link. A main conjecture is that trust and quality of government are negatively affected by socialist exposure. Therefore, both are crucial mediators of the negative relationship between socialist legacy and regional innovation. To the best of our knowledge, this is the first study decomposing the innovation gap of post-socialist Eastern European countries.

2. Background and theory

Socialist innovation systems had several deficiencies (for an overview, see Fritsch et al. 2023). While there has been an increase in innovation activity across Eastern Europe after the breakdown of communism, there is still a considerable gap in innovation activity. In the literature, this gap is attributed to socialist legacy effects on formal and informal institutions in post-socialist countries (Alesina and Fuchs-Schündeln 2007). The most prominent examples of such socialist legacy effects are the level of trust and the quality of government.

Previous research emphasizes the importance of strong rule of law, intellectual property rights, and pro-market institutions in fostering innovation by reducing transaction costs and uncertainty. Therefore, we argue that the negative effect of socialist legacy on inventiveness and R&D cooperation is mediated by the quality of government.

A number of studies found that exposure to authoritarian regimes like socialism had a negative effect on the interpersonal level of trust. Authoritarian regimes seek to control their citizens and to shape their perceptions of society and

the economy, leading to an environment of low trust where individuals view others with suspicion. This enduring influence of socialist regimes can affect interpersonal trust negatively. Such a negative effect on trust may then be detrimental to innovation and R&D cooperation. Therefore, we argue that the negative effect of the socialist legacy on innovation activity and R&D cooperation is mediated by the level of interpersonal trust.

3. Data and empirical strategy

Our study focuses on patenting activity at the NUTS2 regional level in several European countries (Rassenfosse, Kozak, and Seliger 2019) for the period 1980-2014. Our dataset includes 205 NUTS2 regions, with 59 regions located in post-socialist countries and 146 regions located in the Western countries.

R&D cooperation, a proxy for collaborative innovation activities, is measured through the number and regional share of co-inventions. Additionally, we consider the regional share of innovative SMEs engaged in collaborative activities, using data from the Regional Innovation Scoreboard provided by the European Commission.

To capture quality of government, we rely on the quality of government data as provided by the University of Gothenburg (Charron et al. 2022), which includes information on subnational governance based on citizen perceptions and experiences with public services. For interpersonal trust, we utilize data from the European Social Survey, Round 10.

For analyzing how quality of government and interpersonal trust mediate the relationship between socialist legacy and innovation, we employ Structural Equation Modeling (SEM). We include robust standard errors and allow residuals of our mediating variables to be correlated with each other to account for the possibility that they may have parallel effects on innovation. The SEM allows us to decompose the effects of the socialist legacy on innovation into direct and indirect effects through interpersonal trust and quality of government. We include the following controls in all regressions: regional employment share in knowledge-intensive activities, regional R&D expenditures business sector, persons per 1000 square km.

4. Results and conclusions

The analysis reveals that socialism exerts a significant negative impact on innovation. Both interpersonal trust and the quality of government are found to be negatively influenced by the socialist legacy. Moreover, the impact of socialist legacy on patenting activity and R&D cooperation is partially mediated by trust and the quality of government. There remains a significant direct impact of socialist legacy on innovation that is not explained by either interpersonal trust or the quality of government. Interestingly, we do not find evidence for a direct impact of interpersonal trust on inventiveness.

The decomposition analysis reveals that the indirect effect of socialism on patenting activity is 1.2 times greater than the direct effect, with quality of government playing a role that is 5 times larger than interpersonal trust. However, in the case of cooperation, the direct effect of socialism is found to be larger than the combined indirect effect through interpersonal trust and the quality of government.

Our study contributes to the literature on trust and innovation in several ways. First, we look at the impact of trust on innovation activity by considering the communist legacy, arguing that communism eroded quality of institutions and social trust. Second, we establish a more nuanced understanding of the relationship between trust and innovation activity by distinguishing quality of government and social trust. Third, we differentiate between the level of inventive activity and the intensity of cooperation, thus capturing different aspects of the innovation process.

Literature

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