

<b>Institution: University College London</b>
<b>Unit of Assessment: 27 – Area Studies</b>
<b>Title of case study: The impact of research on innovation and technological restructuring in Central and Eastern Europe on innovation policy</b>
<p><b>1. Summary of the impact</b> (indicative maximum 100 words)</p> <p>Research conducted at UCL on innovation and innovation systems in Central and Eastern European countries is rooted in a neo-Schumpeterian perspective rather than in mainstream transition perspectives. This research has impacted policy process and analysis through the lead researcher's extensive participation in high-level advisory activities for international organisations (World Bank, European Commission, UN Economic Commission for Europe, etc.) and national governments in Central and Eastern Europe (Czech Republic, Belarus, Ukraine, Slovakia, Slovenia). This led to significant changes in research policy and funding, e.g. a new call within the European Union's FP7 programme and changed innovation strategies in Slovenia and Belarus.</p>
<p><b>2. Underpinning research</b> (indicative maximum 500 words)</p> <p>Since 1994, Professor Slavo Radosevic has approached research on innovation and economic change in Central and Eastern Europe (CEE) and the Commonwealth of Independent States (CIS) through a neo-Schumpeterian 'systems innovation' perspective, with a particular focus on empirical and policy-relevant research. While mainstream economic perspectives focus on the (business and legal) environment as the major determinant of growth, the neo-Schumpeterian perspective focuses on the capacity of an economy to generate technical change, and on its innovation system. Radosevic argues that, as low- and middle-income economies and technology imitators, the members of the CEE and CIS, should pursue innovation policies that reflect their specific challenges of industry and technology upgrading. These policies are implemented in the context of simultaneous government and market failures and thus, he argues, require new approaches rooted in system and capability failures.</p> <p>Focusing on the capacity of these economies to generate indigenous innovation and absorb foreign technology, Radosevic has examined several areas involved in the transformation of innovation systems in the region: the creation of a knowledge-based economy [e]; the transformation and performance of research and development (R&amp;D) [c]; industrial upgrading and industrial networks [f]; links between science and industry [b; d]; innovation policy [a]; and wider European links [f]. He has explored these issues in relation to the countries of post-socialist Europe, with special reference to central Europe (Hungary, Czech Republic) Russia, Ukraine, Kazakhstan, and South-East Europe. In 2011, Radosevic, co-edited a volume exploring innovation policy issues in the EU from a neo-Schumpeterian perspective. This included a chapter [a] offering new policy perspective and recommendations to improve innovation policy in the CEE region. In particular, it shows how the implementation of a neo-Schumpeterian perspective promotes policies which are country specific depending on each country's distance from a technology frontier. This is a substantially different perspective from the dominant focus on 'best practices policies' that permeates the EU and national CEE policies.</p> <p>His continuous stream of high quality and policy relevant research has brought Radosevic recognition as one of the leading European academic specialists in innovation policy issues and as the leading expert for his region of study. Through his neo-Schumpeterian perspective, Prof Radosevic's research has revealed a neglected dimension of post-socialist economic transformation. In particular, he has shown:</p> <ul style="list-style-type: none"> <li>- how the transition process has affected R&amp;D and innovation capacity in the economies of Central and Eastern Europe and elucidated its effects on their long-term capacity to grow;</li> <li>- how these countries have integrated into a wider European framework through industrial networks, and the vital importance of an understanding of the morphology of these networks to understanding patterns of and potential for growth;</li> <li>- how the innovation policies adopted by the countries of Central and Eastern Europe over the last twenty years have been inadequate to promote growth, and which alternative policy approaches</li> </ul>

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are more conducive to growth.

### 3. References to the research (indicative maximum of six references)

[a] Radošević S. and A. Kaderabkova (eds.), *Challenges for European Innovation Policy: Cohesion and Excellence from a Schumpeterian Perspective*, Edward Elgar, Cheltenham, 2011. Chapter 2: 'Challenges of Converging Innovation Policies in a Multi-Tier Europe: A Neo-Schumpeterian Perspective': available on request. Very positively reviewed in: *Science and Public Policy* (2012) pp. 1–2; doi: [10.1093/scipol/scs032](https://doi.org/10.1093/scipol/scs032).

[b] Radošević, S., 'Science-Industry Links in CEE and CIS: Conventional Policy Wisdom Facing Reality', *Science and Public Policy*, June 2011, Vol. 38, No. 5, pp. 365–378. Submitted to REF2.

[c] Radošević, S., 'Research and Development and Competitiveness, and European Integration of South Eastern Europe', *Euro-Asia Studies*, June 2009, Vol. 61, No. 4, June 2009, 621–650: doi [10.1080/09668130902826212](https://doi.org/10.1080/09668130902826212).

[d] Radošević, S. and M. Myrzakhmet 'Between vision and reality: Promoting innovation through technoparks in an emerging economy', *Technovation*, Volume 29, Issue 10, October 2009, pp. 645–656. Submitted to REF2.

[e] Piech, K. and S. Radošević (eds.), *Knowledge based economy in central and eastern Europe: Countries and Industries in a Process of Change*, Palgrave, London, 2006. Available on request.

[f] McGowan, F., S. Radošević and N. von Tunzelmann (eds.), *The emerging industrial structure of the wider Europe*, Routledge, London, 2004. Available on request.

The quality of the underpinning research is demonstrated by its continuous external funding since 1993 from sources including the Leverhulme Trust (1 grant), ESRC (1 grant), and NATO (2 grants); 14 projects were funded by the EC within the Framework Programmes. Key peer reviewed grants include: **€1.2m** from EU FP6 for 2004–07 STREP collaborative project 'Knowledge based entrepreneurship: Innovation, Networks and Systems', coordinated by Bocconi University, Italy (Radošević was Coordinator of the UCL project team with 3 other researchers; led to research output [b]); and **£155K** ESRC funding for 1999-2002 project 'The emerging industrial architecture of the wider Europe: the co-evolution of industrial and political structures', ESRC Programme 'One Europe or several?' Radošević was Project co-ordinator. Led to research outputs [e] and [f].

### 4. Details of the impact (indicative maximum 750 words)

On the basis of expertise garnered through the research outlined above, Professor Slavo Radošević has been invited to participate in a succession of high-level advisory groups; their recommendations for the design of research and innovation policy in Eastern Europe and the Commonwealth of Independent States (CIS), as well as the EU's research policy and programme for the Central and Eastern European (CEE) region, have been underpinned by his work. Radošević's continuous engagement with both individual states and European bodies is an important indicator of the impact of his research. Supporting scientific and technological innovation as a driver of economic growth is a central facet of EU policy, and one of the major areas of Structural Funds for new EU member states.

**Impact on EU policy on funding research:** EU support for research and innovation is administered through its Framework Programmes (FPs) for Research and Development. FP7, which ran from 2007 to 2013, administered a total budget of over €50 billion, representing a 61% increase over its predecessor, FP6. In 2008, Radošević was appointed chair of an expert group on innovation policy established under the EU Czech Presidency (October 2008–January 2009) [see 1, section 5]. In this role, he promoted country-specific approaches to innovation policy, dependent on their distance from the technology frontier. This neo-Schumpeterian idea was also articulated in applied policy analysis published in [a], and in 2010 led, for the first time to a specific call within the EU FP7 programme devoted to the CEE region, as part of the 2011 work programme [1]. This call, 'Addressing cohesion challenges in Central and Eastern Europe', allocated an indicative budget of €5.4 million to small or medium-sized research projects on this subject.

**Impact on Slovenia's Research and Innovation Strategy:** In 2010, Radošević was appointed Team Leader of the Policy Mix Review expert group constituted by the Slovenian government to

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advise on the country's innovation policy [2, p. 1]. On 22 December 2010, he presented the group's recommendations to the Slovenian Council for Science and Technology, chaired by the then-President of Slovenia, Dr Danilo Turk. Following recommendations made in [a] and [e], the gist of the advice given to and taken on board by the Council was that, in transforming from innovation follower to moderate innovator, Slovenia would need to improve coordination of RTD policies across different stakeholders [2, especially recommendation 1, p. 28–29]. This was followed by the adoption by the National Assembly of the Republic of Slovenia of the Resolution on Research and Innovation Strategy of Slovenia 2011–2020 (OG 43/2011) [2], which became legally binding in May 2011, and which refers explicitly to recommendations made by the expert group as one of the three sources forming the basis for the design of the policy, specifically the 'systems innovation' approach described in section 2. The key recommendation for improved coordination across different stakeholders, rather than just an increase in the R&D budget, was also followed in the design of the Slovenian strategy for smart specialisation, which was the main precondition for Slovenia in 2013 to draw on European Structural Funds in 2014–2020 [3].

**Impact on EU Research Policy Design and Evaluation:** In 2009, Radosevic was appointed a member of the EC DG Research expert group chaired by Professor Luc Soete (Maastricht) on 'The role of community research policy in the knowledge-based economy' [4, p. iv]. The group's objective was to develop recommendations on how to frame and articulate the EU's research policy, its objectives and means of action (both financial and non-financial) after 2010, in order to improve its role in fostering the development of the EU knowledge-based economy, strengthening the competitiveness of industry in the EU and stimulating innovation-based growth. In its analysis of cohesion issues, the expert group report draws on four of Radosevic's publications. His research contributed to the group's recommendations on cohesion policies and the application of 'smart specialisation' strategies as the approach to innovation and growth within the EU Structural Funds for 2014–2020 [4: p.177–201].

The group's recommendations were subsequently taken on board in design of the new EU research policy 'Horizon 2020'. Five expert groups – including the EC DG Research group – published a joint statement in January 2010, arguing for a new approach to research and innovation in Europe [4]. This statement informed and influenced discussion and debate within the European Parliament and eventually fed into the development of Horizon 2020 policies. The ongoing significance of this contribution is demonstrated by the fact that, based on his in-depth understanding of the interaction between innovation and growth of CEE countries, Radosevic was invited in 2012 by the EC DG Regio to assist and evaluate 'smart specialisation' strategies in several new member states (Bulgaria, Slovakia and Slovenia) and to provide recommendations for improved implementation. Radosevic has since done this: in 2012, for example, he co-authored a special report on the implementation of smart specialisation in Bulgaria [5], and was appointed by the EC DG Regio as advisor to the Slovak government advising on country-specific strategies during 2013 [5].

**UNECE Study on Innovation Systems and Its Application in Belarus:** The UN Economic Commission for Europe (UNECE) seeks to promote an environment conducive to economic growth, competitiveness and knowledge-based growth in Europe and central Asia. In 2007 it commissioned a study titled 'Creating a conducive environment for higher competitiveness and effective national innovation systems: Lessons learned from the experiences of UNECE countries, 2007'. This study, which was revised and republished the same year by the United Nations, acknowledged Radosevic's 'major substantive contribution' (including the majority of the report), and referred repeatedly to his research outputs, drawing particularly on [d] [6].

Since 2008, this report has been used in former Soviet countries as a state-of-the-art review of issues in innovation policy. In Belarus, for instance, a country-specific Innovation Policy Review was carried out in 2010 on the basis of the UNECE report. Radosevic authored a chapter on knowledge generation and transfer and co-authored an assessment of recent performance as part of that Review, the recommendations from which formed the basis for new state policies to encourage innovation [7]. Policy changes following these recommendations included:

- The law 'On the state innovation policy and innovation in the Republic of Belarus', provided a broad concept of innovation policy and recognising the importance of entrepreneurship in state

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promotion of innovation.

- The newly adopted law 'On amendments and additions to certain laws on the legal protection of intellectual property' assigned clearly defined property rights to R&D organisations and individuals.
- Presidential Decrees 503 (8 Nov 2012) and 357 (7 Aug 2012) introduced changes in public financing in order to increase tolerance for risk in public support for innovation activities. This included increased resources for the Belarusian Innovation Fund with budgetary funding for science and innovation.

Radosevic has continued to engage with this change in innovation policy: thus, for example, he made an invited appearance on 15 November 2012 at a workshop organised by UNECE and the State Committee on Science and Technology on the 'National Innovation Capacity Index and its application in countries of Central and Eastern Europe', held for Belarus policymakers in Minsk [8].

Radosevic also evaluated a similar report for Kazakhstan [9], contributed to a similar review in Ukraine in 2012 [9] and, on the basis of these contributions, was invited to join the expert team reviewing progress in Armenia, which began in September 2013.

### 5. Sources to corroborate the impact (indicative maximum of 10 references)

- [1] Radosevic's appointment as chair of an expert group on innovation policy established under Czech presidency of the EU (January–June 2009); in this role, he edited the volume [a]. Contract and lengthy correspondence related to expert group activities available on request. EU FP7 containing first call for country-specific innovation policies in the CEE region: <http://bit.ly/1bl6vxB> [PDF] SSH.2011.2.2-1 (p. 19).
- [2] For impacts arising from Radosevic's position within the Slovenian Policy Mix expert group: <http://bit.ly/1d9mS9B> [PDF] For the influence of the expert group's report on the subsequent adoption by the National Assembly of the Republic of Slovenia of the Resolution on Research and Innovation Strategy of Slovenia 2011–2020: <http://bit.ly/1hRfa6e> [PDF] (footnote 6, p. 3 and 7.5.5, p. 50). Radosevic's position is corroborated by the former Director-General for Science and Technology, Slovenia.
- [3] Draft Smart Specialisation Strategy, released July 2013: <http://bit.ly/1jflOxh> [PDF] (page 1)
- [4] Citations of research in the EC DG Research Expert Group report (Oct 2009) on the role of community research: <http://bit.ly/HYVey4> [PDF] (pp. 41 [n.25], 147, 193, 193, 199 and 202. Joint Statement on EU policy by five expert groups: <http://bit.ly/1inmrlA> [PDF]
- [5] Report on implementation of smart specialisation in Bulgaria (2012), co-authored by Radosevic for the European Commission DG Regio, and reports to EC DG Regio on Slovakia, available on request. Role assisting Slovakia and Slovenia in designing smart specialisation strategy corroborated by EC DG Regio.
- [6] For acknowledgment of Radosevic's 'major substantive contribution to the UNECE (2007) Comparative Review see p. iv of <http://bit.ly/1aMwkrD> [PDF] References to his research appear on pp. 2, 5, 18, 41, 43, 48, 51, 59, 62, 64.
- [7] Implementation of UNECE recommendations in Belarus: article by Vladimir Nedilko (Head, Department of External Economic Affairs, Belarusian Innovation Fund) in the KBD Newsletter (available on request).
- [8] For Radosevic's contribution to the workshop for Belarus policymakers in November 2012: <http://bit.ly/18l2WDh> [PDF]
- [9] UNECE (May 2013) Innovation Performance Review of Ukraine, UN, Geneva and NY, chapter 4, <http://bit.ly/1d9nbRY>. Role in UNECE analyses corroborated by Chief, Innovative Policies Development Section, UNECE.