Policies supporting efficiency and effectiveness of R&I systems

Expert workshop

Thursday, 19 September 2013, 9.15 – 16.30 hrs

Covent Garden, Place Rogier 16 (9th floor, room 9.183)

1210 Brussels, Belgium

Summary

By Stefan Zagelmeyer (empirica)

Background

This workshop was meant to validate findings from research in a study about "Policies supporting the Efficiency and the Effectiveness of R&I Systems" on behalf of the European Commission, General Directorate Research and Innovation. The first part of the study includes a comparison of the R&I systems of a selection of European countries (Austria, Belgium, Switzerland, Germany, Ireland, Italy, Lithuania, Slovenia, Sweden, and the United Kingdom). The goal of this analysis is to identify the domains in a national R&I system which are particularly influential in determining overall system performance. The second part includes a characterisation of policy instruments and reforms and an evaluation synthesis to get a better understanding of what policy interventions have made a difference in the studied countries. The objective of the workshop was to discuss, validate and modify the preliminary results of the study.

Attendants

The workshop convened 29 stakeholders from academia, policy and business. Attendance was by invitation only. See a list of attendees in the Annex.

1 Welcome and introduction

Prof. Dr. Stefan Zagelmeyer, Workshop Facilitator

At the beginning of the workshop, Stefan Zagelmeyer welcomed the representatives from the European Commission, public policy makers, industry and academia to the workshop. After a brief introductory round, the participants were briefed about the study on "Policies supporting the Efficiency and the Effectiveness of R&I Systems" and the workshop agenda.

Pierre Vigier, European Commission, DG Research and Innovation

In his opening address, Pierre Vigier, outlined the European Commission's policy objectives about research and innovation systems. After introducing and discussing the institutional, cultural and political context of innovation policies in the European Union, Mr. Vigier emphasised the Commission's wish that the workshop would help to identify efficient and effective policies in the respective research and innovation systems.

2 Research findings I

2.1 Findings from research about R&I systems in ten selected countries (Cor-Jan Jager, Dialogic, NL)

In his presentation of the research approach and of the main results of the first policy brief, Cor-Jan Jager argued that one needs to move away from solely looking at input and output levels when comparing countries on the performance of their R&I systems. He furthermore emphasized the need to combine data, policy (development) and the country-specific context in the analysis.

The main findings of the analysis:

[1] It is important to stress the difference between R&I efficiency and effectiveness, while evaluating countries.

[2] The role of an R&I system in a national economy varies between countries and is highly dependent on its specific characteristics and context.

[3] The Science and Technology subsystem should be treated separately.

[4] R&I paradigms or focus might shift, based on the "level of development" a R&I system finds itself in.

[5] Macro-level analyses should be followed up by country specific analyses at the policy level to really grasp the delicacies in respective R&I systems.

2.2 A critical discussant's view (Dr. Dominique Guellec, OECD)

Acting as discussant of the presentation on Policy Brief 1, Dominique Guellenc summarized the findings of PB1, which according to his perception – and in line with other research - yielded very few links between determinants and outcomes. He also stated that there was a lot of variety and idiosyncrasy hidden behind the macro-indicators. There is no relation between efficiency and the 8 dmensions led him to ask: what are common factors among countries and what are cross country differences? At this stage, research should contextualize.

Mr. Guellenc discussed various options for future comparative research: (i) the analysis of (standardized) common factors, by using the same framework for all countries (mainly

policy brief 1) - OR (ii) the identification of cross-country differences in country studies, i.e. in order to list and compare and contrast policies (policy brief 2). Ultimately, he pleaded for a combination of both approaches, as a middle way. In addition, Mr. Guellenc raised the issue of and asked whether technology and science could really be treated as separate categories.

Finally, Mr. Guellenc concluded that the world of research still knows only very little about the determinants of effective and efficient research and innovation systems. With respect to policy makers, he emphasized that there was no magic bullet.

2.3   Discussion

In the subsequent discussion, Prof. Dr. Andrew Tylecote voiced doubts about the accuracy and validity of the measures used in innovation research. In addition, he suggested to give more acknowledgements to qualitative differences in R&I, business and policy systems.

Pierre Vigier raised the question whether it was possible to identify country cases reflecting extremely good performance on the science and technology indicators, linked to a discussion of relevant and related policies.

Dominique Guellenc raised the issue of whether the research project had considered differences in industrial structure, and had also though about other indicators for, for example, non-technological innovation.

Prof. Dr. Lena Tsipouri commented on the issue of diminishing/increasing returns as far as input factors are concerned. She suggested that further research should investigate issues concerning level of development, maturity and/or critical mass. In addition, she raised the issue of whether it was possible to use information from the Community Innovation Survey for further research.

eventually what are most promising options to increase efficiency of R&I system (Marklund)

next to analytical perspective we need the policy perspective (Marklund)

3   Case studies

3.1   Switzerland: R&I policies in a high-performing country (Jürg Burri, Head of Directorate Research & Innovation, State Secretariat for Education, Research and Innovation, Switzerland)

In his case study presentation, Jürg Burri introduced the workshop participants to the key features of the Swiss research and innovation system, namely (i) an effective national research system, (ii) openness to the world, (iii) top-end research infrastructures, (iv) strong public-private partnerships, and (v) prioritized and stable financing. The presentation ended with an outlook of planned innovation and research policies until 2020, which – among others - includes the establishment of a national innovation park , network clusters, and policies to support young and female researchers.

3.2 Austria: R&I policies in a country on the way to become a leader in innovation (Prof. Dr. Stefan Zagelmeyer, empirica, Germany)

In his case study presentation on the research and innovation system Austria, Prof. Dr. Stefan Zagelmeyer introduced the workshop participants to the performance of Austria in several international country rankings. He continued to outline the key features of the Austrian innovation systems and – based on the findings of the RIS project's country case study on Austria - critically discussed its strength and weaknesses.

The presentation concluded with a critical discussion of Austria's 2011 "Research, Technology and Innovation (RTI) Strategy: The Way to Become a Leader in Innovation in 2020", which includes a comprehensive package of policy ranging from education to venture capital to competition policies to innovation governance to structural change.

4 Research findings II

4.1 Policies supporting efficiency and effectiveness of R&I systems (Prof. Dr. Franz Barjak, FHNW, Switzerland)

Franz Barjak's presentation reported on policy brief 2 and included the identification of major R&I funding strategies and R&I policy reforms and instruments as well as an analysis of their contribution to R&I system efficiency and effectiveness.

He first introduced the workshop participants to the methodology used in the analysis of policy brief 2, distinguishing between different categories of R&I inputs (capital, labour, knowledge, and infrastructure) and R&I organization (organizations & institutions, networks, markets, and sectors). He suggested to assess policies along the four dimensions (i) consistency and coherence, (ii) goal attainment and effects, (iii) subsidiarity of policies, and (iv) policy learning and dialogue.

According to Mr. Barrjak, the initial analysis of R&I policies ran into a number of methodological problems such as a lack of details on policy instruments and the time lag between policy implementation and policy impact. In addition, the initial analysis – using countries groupings according to the levels or growth of science efficiency or technology efficiency - did not yield any clear patterns.

In response to these problems, the research team modified the methodological approach and used the (enhanced) IUS 2011 grouping for analysing common characteristics of the country groupings with respect to the analytical dimensions outlined above.

Based on this analysis, Mr. Barjak concluded that the specific context of a country in combination with the goals that it sets (i.e. basis for effectiveness) determine the contours for input and output (i.e. basis for efficiency). Therefore, one should be cautious comparing efficiency between countries, as the specific context and set goals of a country are inherently idiosyncratic.

4.2 A critical discussant's view (Dr. Mattew Allen, Manchester Business School, UK)

Acting as discussant of Franz Barjak's contribution, Matthew Allen emphasised the importance of research and innovation from a social and economic perspective, trying to balance the policy objectives of economic growth and social well-being. The research would clearly show the systemic nature of research and innovation.

Mr. Allen raised a number of issues which could be addressed in future research projects. Specific emphasis could be given to the firm perspective, looking at different types in terms of size and/or competitive strategies. Another potentially fruitful area would be the nature of innovation, differentiating between different types of innovation. He furthermore raised the issues of internationalization, the role of multinational corporations, and of the distribution of benefits from innovation.

4.3   Discussion

The subsequent discussion focussed mainly on three themes. Dominique Guellenc asked for more information on why the categorization in policy brief 1 was not used.

Andrew Typlecote emphasized the role of internationalization and multinational corporations for different types of research and innovation systems.

Finally, Goran Marklund raised the issue of policy conclusions and recommendations for policy makers.

5   Panel discussion: R&I systems policies in Europe – the way forward

Participants:

- Eric Sleeckx, Head of Unit of the Monitoring & Analysis Department, IWT (Belgium)

- Gonçalo Lobo Xavier, AIMMAP - Association of Portuguese Metallurgical, Mechanical Engineering and Similar Industrial Companies (Portugal)

- Prof. Dr. Andrew Tylecote, Management School, University of Sheffield, (UK)

Eric Sleeckx, in his role of representative of public policy makers, raised the issue of returns on public subsidies/support for R&D and criticized the exclusive use of efficiency as performance criterion as being too narrow. Instead, he suggested to highlight the role of 'social innovation'. He furthermore argued that multi-level issues (e.g. EU-level, national level, regional level) would deserve a more prominent role in the analysis of research and innovation systems, especially from the perspective of policy makers. As far as concrete policy instruments are concerned, he argued in favour of the use of policy experiments.

From the perspective of industry, Gonçalo Lobo Xavier asked for more patience of public policy makers with respect to the returns of public policies. He furthermore argued in favour of a higher degree of coordination of otherwise differentiated R&I policies in multi-level systems.

Finally, Andrew Tylecote discussed the links between the business systems approach and the research and innovation systems (RIS) approach. Extending current research to integrate an international dimension, he emphasized the role of multinational corporations, especially for countries such as Belgium and Ireland, which are used by MNCs as production platforms.

The subsequent open discussion addressed a number of further issues, such as the role of entrepreneurship, the role of globalization, the role of the service sector and the role of open innovation for research and innovation systems.

Annex

Annex 1: List of participants

No.	Title	Name	Organisation	Position
1	Dr.	Allen, Matt	Manchester Business School, University of Manchester	
2		Arjona, Román	Europan Commission, DG Research & Innovation	Chief Economist
3		Babelyté-Labanauské, Kristina	Ministry of Education and Science, Lithuania	Head of Technologies and Innovations Division
4	Prof.	Barjak, Franz	University of Applied Sciences and Arts North-Western Switzerland	Professor for Empirical Economic & Social Research
5	Dr.	Böhm Nielsen, Ane Sofie	R&D External Relations, Novo Nordisk	Director
6		Burri, Jürg	State Secretariat for Education, Research and Innovation Switzerland	Vice Director, Head of Directorate Research and Innovation
7	Dr.	Crimman, Andreas	Crimmann Consulting	
8	Dr.	den Hertog, Pim	Dialogic	
9		Gros, Lutz	Bundesministerium für Bildung und Forschung	
10		Guellec, Dominique	OECD	Head of the Country Studies and Outlook (CSO) Division
11		Jager, Cor-Jan	Dialogic	Senior Consultant
12	Prof.	Lenihan, Helena	Unversity of Limerick	
13	Prof.	Likar, Borut	University of Primorska	
14	Dr.	Lilischkis, Stefan	empirica	Senior Consultant
15		Marklund, Goran	VINNOVA	Deputy Director General External Matters, Director and Head of Operational Development Division
16		Martin, Tom	Tom Martin & Associates	
17		Masson, Antoine	European Commission, DG Research & Innovation	
18		Polt, Wolfgang	Joanneum	Director of the Centre for Economic and Innovation Research
19		Rod, Danièle	State Secretariat for Education, Research and	Researcher

			Innovation Switzerland	
20		Saiz, Raquel	DG Research & Innovation	Policy Officer
21		Sleeckx, Eric	IWT	Head of Unit of the Monitoring & Analysis Department
22		Snoeckx, Eric	Janssen Pharmeceutica	
23	Dr.	Stierna, Johan	European Commission, DG Research and Innovation	
24	Prof.	Tsipouri, Lena	University of Athens	
25	Prof.	Tylecote, Andrew	Management School, University of Sheffield	
26		Vankalck, Stephane	European Commission, DG Research & Innovation	Policy Officer
27		Vigier, Pierre	European Commission, DG Research and Innovation	
28		Xavier, Gonçalo Lobo	AIMMAP	
29	Prof.	Zagelmeyer, Stefan	empirica	

Annex 2: Programme

Time	Sessions
09.15 – 09.30	**Welcome and introduction** • Pierre Vigier, European Commission, DG Research and Innovation: The European Commission's policy objectives about Research and Innovation Systems Brief questions and answers
09.30 – 10.30	**Research findings I** ***Findings from research about R&I systems in ten selected countries*** • Cor-Jan Jager, Dialogic (Netherlands) ***A critical discussant's view*** • Dr. Dominique Guellec, Head of the Country Studies and Outlook (CSO) Division, Directorate for Science, Technology and Industry (OECD) General discussion
10.30 – 10.45	*Coffee and tea break*
10.45 – 12.15	**Case studies** ***Switzerland: R&I policies in a high-performing country*** • Jürg Burri, Deputy Director, Area Head "Research & Innovation", State Secretariat for Education, Research and Innovation SERI (Switzerland) Discussion ***Austria: R&I policies in a country on the way to become a leader in innovation*** • Wolfgang Polt, Director of the Centre for Economic and Innovation Research, Joanneum (Austria) Discussion
12.15 – 13.15	*Lunch break*
13.15 – 14.30	**Research findings II** ***Policies supporting efficiency and effectiveness of R&I systems*** • Prof. Franz Barjak, School of Business, University of Applied Sciences North-Western Switzerland (Switzerland) ***A critical discussant's view*** • Dr. Matt Allen, Manchester Business School, University of Manchester (UK) General discussion
14.30 – 14.45	*Coffee and tea break*
14.45 – 16.00	**Panel discussion** ***R&I systems policies in Europe – the way forward*** • *A public policy view*: Eric Sleeckx, Head of Unit of the Monitoring & Analysis Department, IWT (Belgium) • *A business view:* Gonçalo Lobo Xavier, AIMMAP - Association of Portuguese *Metallurgical, Mechanical Engineering and Similar Industrial Companies (Portugal)* • *A researcher's view:* Prof. Andrew Tylecote, Management School, University of Sheffield, (UK) General discussion
16.00 – 16.30	**Conclusions** • Dr. Johan Stierna, European Commission, DG Research and Innovation
Workshop Chair: Prof. Stefan Zagelmeyer, empirica, Bonn	

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