



Editorial

Regionalization of innovation policy—Introduction to the special issue

1. The question

This special issue of *Research Policy* is devoted to the regionalization of innovation policy. Up to the present, the academic discussion about innovation policy issues has largely ignored the possibilities of decentralization. And in many countries, innovation policy is mainly operated at the national-level applying the same measures and criteria for all types of region. However, there have always been numerous examples of innovation policy measures at a sub-national level,¹ and the number of these examples appears to have grown in recent years. The variety of ways of performing the innovation policy raises the question of what is the “right” or appropriate approach. The contributions to this issue deal with this question by investigating reasons, possibilities and problems of regional decentralization. What are the merits and demerits of such an approach in innovation policy as compared to a policy that is mainly operated at the central state level?

The selection of articles collected in this special issue is largely based on the conference “Regionalization of Innovation Policy—Options and Experiences” that the editors organized together with Axel Werwatz for the German Institute of Economic Research (DIW Berlin) in early June 2004 in Berlin, Germany. At this conference, leading experts discussed (1) the importance of the regional aspect for innovation activities,

(2) the determinants of the quality of regional innovation systems, (3) theoretical concepts of and practical approaches to a regional innovation policy and (4) the interaction of regional and national innovation policy.²

2. Rationale for regionalization of innovation policy

There are several reasons to assume that to regionalize innovation policy may have advantages:

- First, innovation processes are not spread evenly across space, but they are concentrated in certain areas while being more or less absent in other regions. It is, therefore, quite likely that national innovation policies have a regional impact, whether intended or not. Due to the pronounced regional dimension of innovation processes, it may be advantageous to give national policy a regional orientation in order to achieve national-level goals more effectively.
- Second, there are not only regional differences with regard to the amount or share of innovation activity, but also in the way in which regional innovation systems function. For this reason, ‘best practice’ policy measures that apply to all regions may not exist so that different strategies and instruments are needed

¹ In Germany, for example, innovation policy has emerged at the regional level of Federal States, and it took quite some time until the central state began activity in this field.

² A number of other papers presented at the conference will be published in a special issue of “European Planning Studies”, vol. 13, 2005.

for achieving a given goal. Hence, a one-size-fits-all approach to innovation policy that treats all regions in a similar way is not appropriate and probably not efficient (see the contribution by *Toedtling* and *Trippl* in this issue).

- Third, since innovation activity is of key importance for economic development, it may constitute an important starting point of a policy that is aiming at stimulating regional development. Hence, innovation promotion measures, which are focused on a certain region, could be instrumental for regional growth policy. If the primary goal of such a policy is to promote regional development it may, however, be in conflict with the growth objective at the national level.
- Fourth, a variety of policy approaches in different regions is a necessary precondition for comparison and benchmarking. It allows the actors to learn from experience made with different approaches and to identify and adopt superior solutions. However, as far as variety causes additional effort, it could also be a source of inefficiency.

These reasons provide a strong rationale for a regionalization of innovation policy, i.e. not to operate innovation policy entirely on a national scale.

3. What may ‘regionalization’ mean?

Regionalization of innovation policy can mean a variety of things. This becomes particularly clear when regarding different elements of a policy that could be regionalized in some way. In order to illuminate the different possibilities of policy regionalization, it may be helpful to distinguish between policy objectives, the level of operation, the instruments, the way of administration, allocation of decision competencies and finance (Table 1).

The objective of a policy may be the achievement of a national goal or of particular regional character, e.g. to promote regional development. It can be operated nation-wide or in certain regions only. If a policy is operated in several regions, the instruments may be region-specific or identical in all regions. Administration can be completely at a central level, completely within the regions or distributed between both levels. Decision competencies may be fully assigned to

Table 1
The meaning of regionalization for different policy elements

Policy element	Meaning of regionalization
Objectives	Region-specific objectives vs. nation-wide
Operation	In certain regions only vs. nation-wide
Instruments	Differentiated by region vs. identical in all regions
Administration	Within the regions vs. at a central level
Decision competencies	Regional authorities vs. central body
Finance	From within the region vs. from central level

the national-level to actors in the regions or split up amongst them. The funds required for the policy can be raised entirely in the region, come from the central government or be shared between these levels. Obviously, there are diverse ways in which innovation policy may be regionalized. Regionalization is not a whether or not-question but an issue of more or less and how. This can be illustrated as follows with three typical examples of a program.

A good example of a national policy that accounts for the regional dimension of innovation activity is the German BioRegio program. It was implemented in order to reach the national goal of stimulating development of the German biotechnology sector by means of promoting clusters in selected regions (for details see the contribution of *Eickelpasch* and *Fritsch* to this issue). One main aspect of regionalization in this program was that it was operated in selected regions, which had already attained a high level of R&D in the field of biotechnology. Moreover, the policy was regionalized in the sense that each region implemented its specific concept that was mainly developed by regional actors. However, the initiative for the program, its administration, the selection of regions to be promoted and other decision competencies as well as finance were more or less completely assigned to the central state level. A second type of a regionalized innovation policy is a regional policy scheme, which aims at promoting development in certain backward areas by means of stimulating innovation activity there. This may be in accord with national objectives, or not. The instruments can be region-specific, or not. Authorities on a sub-national scale can be involved in the administration and could also have certain decision rights. In a regional policy that is oriented towards leveling-out the regional welfare differences by redistribution of resources, the

selection the assisted areas is typically dominated by the central-level that also contributes a large share of the respective funds. A third kind of typical program that may be subsumed as a regionalized innovation policy are local innovation initiatives that emerge from within a region. Such an initiative may operate entirely in the respective region with specific instruments, can act autonomously in the sense that administration and decision competencies are completely intra-regional and that the resources spent are entirely raised in the respective region. Provided that such a policy does not involve an inter-regional redistribution of public funds, it cannot be in conflict with goals at the national level.

These examples illustrate that regionalization of innovation policy has many facets and can mean several different things. It entails a large spectrum of topics of which academic research has tackled only a fraction in some details, while large areas have been left unexplored.

4. Overview on contributions to this issue

The contributions to this special issue deal with different aspects, which are important in the discussion of necessities for a regionalization of innovation policy and ways in which this can be achieved. Main topics are the role of innovation for regional development (*Asheim and Coenen; Cooke; Ronde and Hussler; Audretsch and Lehmann*), the variety of characteristics and problems of regional innovation systems (*Asheim and Coenen; Howells; Toedting and Trippl*), as well as the instruments for stimulating regional innovation activity (*Eickelpasch and Fritsch; Feldman and Martin; Fromhold-Eisebith and Eisebith; Howells*).

Philip Cooke in his contribution reviews the recent developments in the theory of regional innovation processes. He particularly argues that a large scale of regional activity in a certain field is often overemphasized as an explanation for regional innovation performance. Taking the development of the bioscience sector in the region of Basel (Switzerland) as an example, he shows that regional knowledge capabilities and the integration in world-wide networks and knowledge flows are probably much more important than sheer size. This view is confirmed by an empirical analysis of regional innovation activity in French manufacturing industries by *Patrick Ronde and Caroline Hussler*.

They find that innovation processes are to a degree industry specific, but that location and regional proximity play a rather significant role. The analysis indicates a key role of relationships to other actors for knowledge exchange and the success of innovation activity. An important result of their analysis is that the knowledge of related industries within the respective region has a greater effect on innovation activity than those of the geographical neighbors of the same industry. They conclude that the appropriate mix of industries in a region and their interaction are rather important for the efficiency of regional innovation systems.

The contribution of *David Audretsch* and *Erik Lehmann* deals with two important issues in the discussion of regional innovation processes and innovation policy—universities and high-technology new firms. Because universities are regarded a nucleus of regional innovation processes, the setting up or the enlargement of universities is quite popular as a means for stimulating regional innovation and growth. One way in which such an effect may occur is start-ups of knowledge intensive firms. Such start-ups can be an important means to commercialize the knowledge that is within the academic sector. Since new firms tend to be set up close to the location of the founder, most of such start-ups will occur within the respective region. In an empirical analysis of German regions, the authors can show that there is, indeed, such a significantly positive relationship between the regional knowledge capacity, particularly that of the universities, and the number of high-technology new firms.

The importance of region- and industry-specific knowledge for innovation processes is also a central issue in the contribution by *Björn Asheim* and *Lars Coenen*. Based on evidence from five Scandinavian regions, they analyze differences in the knowledge base and the functioning of the respective regional innovation system. Because of such differences, they conclude that ‘off-the-shelf best-practice’ measures that fit for all regions may not exist, and that innovation policy should account for the specific characteristics and circumstances of a region. This is also a main point in the contribution by *Franz Tödting* and *Michaela Trippl*. They compare typical characteristics of innovation systems in three regional categories, the ‘periphery’, ‘old industrial regions’ and ‘fragmented metropolitan regions.’ Given the great differences between these three types of region with regard to the conditions for

innovative activity and the operation of the innovation system, they argue that there can be no uniform 'ideal' model of innovation policy that applies to all types of region. Hence, region-specific solutions are required that account for such divergent regional conditions. *Jeremy Howells* in his contribution gives an overview on the arguments for such a regionalization of innovation policy and discusses the pros and cons of region-specific innovation policy measures. He arrives at an intermediate position stating that, on the one hand, policies should account for region-specific factors but that they should, on the other hand, not be completely custom-tailored. Generally, policy makers should take the opportunity to learn from experiences made with innovation policy instruments in other regions and should be open to adopt such policies if they can be assumed to be principally appropriate and have been proven successful elsewhere. One main advantage of adopting such tried and tested policies is that they are 'ready to use'. But it could also be a disadvantage if the policy does not account for the specific characteristics of the respective region.

Maryann Feldman and *Roger Martin* focus on the question of what may be a promising development policy for regional jurisdictions. Borrowing from the literature on corporate strategy, they assume a bottom-up perspective and deal with this question from the perspective of the actors in the region. They stress the importance of developing a coherent activity set that reflects the uniqueness of local capabilities as a main source of jurisdictional advantage. In discussing the possible ways of how to achieve such jurisdictional advantage, the authors state that neither command and control nor *laissez faire* can be recommended. In their view, government should follow a strategy between these extreme nodes trying to coordinate regional actors and correcting market failure like in the field of infrastructure, basic research and education. They advocate that an appropriate strategy should be based on investment in knowledge and the attraction of talent. A low wage strategy is not regarded a promising concept. The contribution of *Martina Fromhold-Eisebith* and *Günter Eisebith* investigate policies that try to promote spatial clusters of innovative activity. They do not agree with the pessimistic view that cluster promotion policies have barely been successful. However, it is very clear that such policies must be specific to the respective region. Based on a comparison of different

strategies, they make recommendations for choice of instruments to promote development of different types of clusters.

Alexander Eickelpasch and *Michael Fritsch* examine a new type of innovation promotion program that attempts to stimulate the division of innovative labor in certain regions by organizing contests of concepts for self-organized innovation 'networks. In their contribution, they provide a rationale for such a policy, report experiences made with the approach and outline advantages, critical issues and limitations. Generally, they find the new type of policy rather promising for a number of reasons. It also becomes clear that the administration of the policy is much more demanding than in conventional innovation promotion programs, which allocate a uniform type of assistance by successive case-by-case decision. The approach is, however, not suited as a means for achieving a levelling-out of welfare by inter-regional distribution of public funds.

5. Conclusion and outlook

There can hardly be any doubt that a regionalization of innovation policy may have significant advantages over a pure central-level approach that operates with uniform instruments regardless of region-specific characteristics. Given the prevailing dominance of such a central-level approach in innovation policy, there are obviously large potentials for improvement. The topics of the contributions to this special issue reflect the current discussion about regional innovation policy quite well. This discussion was largely focused on the importance of space for innovation activity, on the main forces that drive regional innovation processes, the diversity of regional innovation systems and the necessity for innovation policy to apply specific instruments or strategies in different regions. In this context, regionalized innovation policy was mostly dealt with as a means to reach goals that mainly pertain to the regional level, particularly to stimulate regional development.

Given the different aspects of a regionalization of innovation policy (Section 2), several questions remain that are more or less unexplored and deserves investigation. One of these issues is the contribution of regionalized innovation policy to the achievement of goals at the national level, which has been largely neglected. Another important issue is the assignment of respon-

sibilities and competences within a federalist system. This problem becomes particularly relevant when jurisdictions like states unify to form a larger political body, as is the case in the European Union. What kind of innovation policy should be performed at the level of the central state, e.g. which competencies should be assigned to the central, European level? What can be accomplished better at the level of nation states or at a regional level? How could and should the different levels of a federal system interact in the field of innovation policy? What is the possible scope of an autonomous, bottom-up innovation policy in the regions that do not gain any finance from a central state? How could and should policy at a central-level stimulate and assist such bottom-up initiatives? How should the financial burden of a central-state innovation policy be allocated among the different federal levels? Regardless to the answers to such questions, the contributions to this special issue strongly suggest that actors at the regional-level could and should play a much bigger role in innovation policy.

Although our knowledge about the role of space in innovation processes and about appropriate policy measures has grown quite considerable in the last years, much more research in this field remains to be done. We hope that this special issue will be helpful in initiating and directing such further research.

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