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## Editorial

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## 1 Introduction

The changes taking place since the 1990s in relation to the formulation of innovation policies and the increased role played by regions in most European countries have strongly encouraged several decision-makers to broaden their knowledge in this field. This has caused a proliferation of investigative analyses, as well as the emergence of comprehensive evaluations, especially in the countries where the evaluation culture is more widespread. Nevertheless, these analyses hardly ever have a comparative nature and, when actual comparisons are made, the reason behind them is based on contingent motivations rather than scientific observations.

These papers included in this Special Issue draw on the need for a more extensive knowledge of the matter, expressed in several occasions by regional policymakers, as a result of the situation occurring in main European countries (Germany, France, the UK, Spain and Italy), where the competencies relating to innovation policies have been transferred to the regions. Despite being remarkable, the experiences of other countries, such as those in Scandinavia, or Belgium and Holland, have not been taken into account, owing to the size of both these countries and their regions, as well as to the difficulties in accessing information and data caused by language barriers.

All these have led to a dynamic analysis of the current process, beginning with historical references, in order to outline the starting point and leading up to the present situation, investigated both on a national and a regional level. Furthermore, both national and regional institutional actors involved have also been investigated and policies have

been analysed according to their main lines of intervention. The focus for each country is on one or two regions, chosen because of their relevance within the domestic context and the significance of the policies adopted in them (Rhone-Alpes, North Rhine-Westphalia, Saxony, Wales and Catalonia). Where possible, the economic extent of regional intervention is mentioned, in order to provide data on the scope of the policies enacted in these regions.

From a methodological point of view, the work group has begun from a complete examination of the economic literature on the subject as well as from a comprehensive collection of available documentation on the chosen countries and regions.

A field investigation has followed, involving scholars, administrators and officers of several organisations, which on a daily basis deal with industrial policies in the countries and regions chosen for this research. Specifically, for each country, national scientific referees have been picked and they have been asked both to support the fieldwork and to check on the final drafting of the reports.

These papers have been presented at the Fifth Triple-Helix Conference held in Turin in May 2005.

## **2 Main evidence**

Regarding policies for research and development and innovation, all the countries analysed in this study have changed their priorities and paradigms in the last decade. First in the UK and later in France and Germany, European countries have progressively reduced direct aids to firms, substituting them either with indirect support instruments of the infrastructural type (such as technology transfer policies, the creation of scientific parks, technopoles and incubators) or with the definition of networks to endorse the interfacing between universities and firms, especially those of smaller size. This tendency has manifested itself to a lesser degree in Spain and Italy, where, in comparison to the other countries analysed here, the GDP share of expenditure for research and development activities is lower.

In all the countries studied here, this accelerated evolution has brought to light overlapping of competencies, confusion of roles, duplication of interventions and waste of resources, as underlined by several of the interlocutors who have been interviewed. First of all, it should be remarked that the traditional and obvious polarisation between the German decentralisation, where Länder are strongly autonomous in deciding their policies, and the French centralism, based on the strong role of the state, seems to be utterly overcome. There is, in fact, a general tendency towards the decentralisation of innovation policies. The solutions adopted range from the French policy of concerted action achieved by means of State-Region programme contracts to the Spanish model of regional management of national policies (with local adaptations and integrations), to the creation in the UK of new actors (regional parliaments and agencies), whose competencies and those of the state are concurrent. Italian regions have been attributed concurring legislative powers in the field of the scientific research with matters reserved to the exclusive competence either of the state or of the regions, and negotiated matters between the state and the regions.

On the whole, central governments are responsible for the definition of National Plans, in particular concerning basic research, while regions concentrate on certain industrial sectors (Germany and France) or on issues regarding mainly the management

of innovation (Spain). In the UK, except for England, the devolution process has brought to light delays in the adjustment of aid measures to support innovation. This situation is bound to change again in the future. In France, programme contracts will probably become outdated and in the UK interventions will be rationalised, possibly delegating more power to the regions.

As for the actors involved in regional industrial policies, there still are considerable differences among countries concerning the management of instruments in relation to a general involvement of elective assemblies in the definition of policies. In both Spain and the UK, there are regional development agencies, which are in charge of almost all the interventions to aid firms (besides some agencies specialised in internationalisation). Great Britain also shows a certain degree of overlapping between national and local agencies, a situation that seems to occur also in Germany and France, due to the presence of national actors with local branches, whose competencies tend to collide with those of the new subjects created by regional governments. Germany's situation is the most peculiar, due to the presence of a variety of bodies, among which the most important are public development banks (acting both on a national and local level) and some regional foundations. The state of affairs is even more complex in France, due to the traditional presence on the regional level of national government structures (prefectures, ministries' regional directions and national agencies). Several new local and regional structures have been added to these, partly as expressions of local initiative, partly due to decisions made by the central government. On the contrary in Italy, the governance of innovation policies is mainly carried out by the government bodies.

As for intervention themes, due to the limitations of European regulations, traditional investment support policies have been put aside, while interventions for the support of Small- and Medium-sized Enterprises (SME) have become widespread. Within these policies, many initiatives aim at the creation of new firms in hi-technology sectors (particularly as spin-offs of public research). Therefore, regions try to intervene also in support of capital endowment to new firms, both by means of traditional security instruments and by means of participation structures, such as mezzanine instruments, widespread above all in Germany (and to a lesser extent in France).

Another type of intervention, present in all the countries, concerns the transition from traditional actions for the diffusion of innovation to technology transfer actions, carried out using three instruments: specialised interface structures (with a certain degree of overlapping and confusion, above all in France), involvement of the world of research in regional policies, despite national limitations concerning universities and research centres (with the exception of Germany), actions focusing on the transfer of human resources trained within the university research system to the world of firms (in some cases, as in France and in the UK, by means of national programmes, or by means of specific regional measures, as in the German Länder).

In particular, in Germany there seems to be more attention to the cooperation among firms and to the definition of technological networks on a regional basis stimulated by the federal government. The success of the BioRegio Program makes for solid evidence.

France tends to focus more on the transfer of knowledge, both through human capital, strengthening the involvement of recent graduates and researchers in firms, and through technological infrastructures France has equipped itself with in the last few years.

In the UK, essentially in England, aids to firms have been related to the traditional classification of research in basic, industrial and precompetitive research, with particular attention to small enterprises 'micro-projects'.

In Spain, the division of roles is more noticeable. Besides setting up the research National Plan, the central government has defined specific policies to implement the information society, while autonomous communities have set the strengthening of firms' innovation skills as their main objective.

In Italy, one of the main results of the negotiated activities between central and regional administrations is the planning and expected development of the so-called technological districts, which can be activated only on proposal of the single region and in collaboration with the other local institutions, the companies, the universities, the public research institutes and the system of the venture-capital.

Finally, as far as intervention measures are concerned, there seems to be a general tendency to make use of taxation, above all on a national level, while the allocation of non-recoverable grants and subsidised loans originates discretionary evaluation procedures in all the countries. Moreover, firms are required to provide substantial financial participation and, more and more often, if successful, they are required to reimburse the allocated sums. On the other hand, initiatives to stimulate SMEs to resort to external competencies (consultants, marketing and service companies, universities and research centres) are on the rise everywhere. On the whole, Germany prefers financial aids, France opts for tax credits, whereas the UK, Spain and Italy make more use of capital grant contributions.

Therefore, there seem to be common features leading the evolution of innovation policies, both national and regional, towards what is basically a common model, nevertheless characterised, especially on a local level, by specific traits mostly linked to each country or region's different institutional contexts.

### **3 The contents of the special issue**

The issue is made up of five papers dedicated to national cases and regional evidence, plus one paper on the theoretical evolution of the regional innovation policy. The latter is written by the guest editors and considers two main matters: the theoretical assumption for public policies in R&D and the practices in progress. In the first issue, particular attention will be paid to the current perspectives and contents: that is SMEs support, the regionalisation of policies and the Triple-helix systemic approach. The second topic deals with the consequences for policymaking according to the current main policies for innovation, such as: mission policies, diffusion and technology transfer policies, infrastructural policies and territorial policies.

The paper by Helmut Karl and Rüdiger Wink focuses on the interaction between innovation policy and federalism in Germany. As a matter of fact, the German innovation policy is based on two strategic elements. Innovation policy tries to build up innovation infrastructures mainly related to the generation of new knowledge with the help of big scientific associations. Simultaneously, innovation policy follows mission-oriented objectives (focusing on key technologies) and strives to improve knowledge diffusion (increasing the share of commercialised knowledge). Due to the German Federalism, both strategic elements act on a federal as well as a Länder level. Therefore, both on the regional and the central level, policymakers struggle with

similar problems. In particular, the mission-oriented approach suffers from serious knowledge deficits and there is a political failure to pick the 'winners'. In addition, the mix of joint decision and finance schemes and autonomous decision structures on the federal and the regional levels causes inefficiencies, because not all responsibilities are efficiently allocated. A lack of transparency also exists, because the support schemes and instruments are too complex. Therefore, the division of labour between the federal state and the Länder beyond the infrastructure policy can be improved. The presentation will provide an overview of existing deficits of the German federal system and options to overcome them.

The paper by Alessandra Ressico analyses the French context, and in particular the Rhône Alpes situation, under the Triple-Helix theoretical framework. In this model, path-dependent trajectories are expected to collide continuously, allowing for the creation of new dynamics. Following this theoretical background, this aim of this paper is to assess if the interaction between universities, firms and institutions is favoured. This interaction is closer in regional policy due to the institutions' better awareness of the territory. Furthermore, the increasing possibility of autonomy becomes crucial in expanding this relationship.

The paper by Elisa Salvador and Rebecca Harding examines policy structures to promote innovation in Wales. Following the devolution process, the National Assembly decides its regional policy priorities and has considerable power to develop and implement policies within a range of areas, one of which being economic development. The Welsh Assembly and the Welsh Development Agency – which play key roles in the economic development success of Wales – have a strong focus on building their region through enterprise and innovation. This paper illustrates the extent to which the strategy followed by the National Assembly and the Welsh Development Agency has begun to bear fruit. It critically assesses some of the published documents on Welsh Development, specifically growth targets set in 'A Winning Wales', and looks at progress towards achieving these targets. This paper highlights the importance and the consequences of the devolution process and the establishment of the Welsh Assembly in the 'catch-up' process.

The article by Daniela Defazio and José Garcia-Quevedo focuses on the case of the Catalan Science and Technology system and its related policies. Following the theoretical framework of the Triple-Helix model, the multiple dimensions that structure the government–university–industry relationship in Catalonia will then be analysed. The geographical focus and the institutional context of the Spanish system call for institutional coordination in a multigovernance sense on one side, and emphasise the role of the regional government in shaping the structure of the linkages, on the other. In this context, priorities and interventions included in the last Catalan Research and Innovation Plan for 2005–2008 will be considered as a crucial step for the future of the Catalan S&T system. The challenge of the 2005–2008 Research and Innovation Plan is in fact that of structuring and implementing a coordinated and synchronised system of interventions for R&D and innovation. The government's effort to link and to be linked efficiently with science and entrepreneurial environment will then be discussed in light of the emerging structure of relationships.

The Italian situation is described by the guest editors Secondo Rolfo and Giuseppe Calabrese. Following the devolution process and the recent changes in the institutional framework, the Italian regional governments are assuming a new and growing role in R&D support. This evolution, however, is not clearly determined and could cause some

conflicts between the national and regional levels, especially in the science policy area. This paper analyses new regional policies related to this matter, local initiatives in the Triple-Helix context, and future consequences on the national innovation system.

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