8

THE REGIONAL INNOVATION PARADOX REVISITED

Robert Hassink and Pedro Marques

Introduction

Regional innovation policies have developed strongly in Europe since the mid 1980s. This surge is mainly due to the increasing importance of the regional level with regard to diffusion-oriented innovation support policies (Cooke and Morgan 1998; Asheim et al. 2003; Fritsch and Stephan 2005). Partly supported by national and supranational support programmes and encouraged by strong institutional set-ups found in successful regional economies such as Baden-Württemberg in Germany and Emilia-Romagna in Italy, many regions in Europe have been setting up science parks, technopoles, technological financial aid schemes, innovation support agencies, community colleges and initiatives to support clustering of industries since the second half of the 1980s. The central aim of these policies is to support regional endogenous potential by encouraging the diffusion of new technologies both from universities and public research establishments to small and medium-sized enterprises (SMEs), between SMEs and large enterprises (vertical cooperation) and between SMEs themselves (horizontal cooperation). Over the years these policies have however been the target of strong criticism for a variety of reasons: for example Lovering (1999) claimed that the theory behind them was poorly developed and was in fact being led by a few policymakers’ desire to make claims about nonexistent regional economic transformation; Tödtling and Tripl (2005) criticized one-size-fits-all approaches, on the basis that different regions suffer from different shortcomings, and that innovation policy should be designed with that in mind.

In this chapter we will focus on one particular shortcoming of regional innovation policies that has received relatively little attention: the innovation paradox, as defined by Oughton et al. (2002). It refers to the observed fact that lagging regions are often the ones with less capacity to make effective use of the policy instruments created to increase innovation potential. Therefore, innovation policies are likely to reinforce current regional inequalities, by allowing those firms in core regions to develop even further their potential. We will however argue that in line with recent work in Economic Geography we need to avoid looking at the region as a bounded, relatively closed entity (Hassink and Klaerdang 2012). As a way to build on this concept we will suggest a multi-scalar approach that considers not only the regional dimension, but also the organizational (below the region) and the national (above the region) scales. We will suggest that the effectiveness of innovation policy, particularly in poorer regions, results from the interaction between these three scales of activity.
In the following section we will describe the general trends in innovation policy and its theoretical foundations. We will then discuss its main shortcomings, in particular those related to the innovation paradox. We will then use the case study of the moulds industry in Portugal, which is based on PhD research by one of the authors (Marques 2011), to illustrate our argument. We will conclude with some brief remarks and policy suggestions.

Regional innovation policies: general trends and theoretical foundations

Regional innovation policies consist of four groups of measures. First, a large range of financial aid schemes, such as support for R&D, is devised both at national but in some countries also at regional level to boost innovativeness of SMEs. Second, technology transfer and consultancy agencies, which includes all agencies found in a region operating at three different stages of support: the provision of general information, the provision of technological advice and support for joint R&D projects, between firms (of which technology-following SMEs are the main group) and universities and public research establishments (Hassink 1996). Agencies that belong to this group try to help to solve innovation problems mainly of technology-following SMEs by either giving them advice themselves or by referring them to other agencies in a further stage of support. Third, in the 1990s, technology parks, a land and property-led technology policy concept, aimed at encouraging the spatial clustering of high-tech firms and R&D organizations. They were very popular among local, regional and national policymakers as a tool to boost regional economic growth (Hassink and Berg 2014). They often adopted different denominations, such as science parks, high-tech centres, incubator centres, technology parks, technoparks or science cities, but their final aim was similar, namely, to boost regional technology transfer, innovativeness and hence competitiveness. Fourth, in addition to the three more traditional policy measures, the most recent measures focus on the ‘smart specialization’ of regions (McCann and Ortega-Argilés 2015). The objective of this new wave of innovation policies is twofold: first it aims to build on the complementarities that exist in a region and encourage processes of path creation through related variety and cross-sectoral collaboration. Second it aims to go beyond a narrow emphasis on stimulating the production of codified knowledge (R&D, patenting), to consider both other types of knowledge (synthetic, symbolic) but also other elements such as good governance, and human capital that are seen as essential to ensure good policymaking. For an extensive description of innovation policies in different contexts see McCann and Ortega-Argilés (2013).

Regional innovation policies: why did they surge?

The increasing importance of regions for innovation policy can be considered as the outcome of a convergence of regional and technology policy since the early 1980s (Fritsch and Stephan 2005). These two policy fields converged into regional innovation policies since their aim became partly the same, namely supporting the innovative capabilities and thus competitiveness of SMEs. Moreover, there have been decentralization and regionalization trends in innovation policy not only in Europe, but also in the USA and East Asia (Dodgson and Bessant 1996; Cooke and Morgan 1998). These trends fit into what Asheim et al. (2003) observed as a shift from a firm oriented, static allocation of resources for innovation to a trans-sectoral, dynamic and system oriented, learning-to-innovate policy based on proactive, multi-actor partnership. Although we can speak of a general phenomenon, there are of course large differences between individual regions and countries concerning the extent to which these trends take place (see also Prange 2008). Generally, contributing factors to regional innovation policies are a federal political system,
decentralization, strong regional institutions and governance, a strong industrial specialization in the region, sociocultural homogeneity and thus relationships of trust, large economic restructuring problems and a strong commitment of regional political leaders (Hassink 1996).

One of the main arguments supporting the use of the regional level for innovation support has been called the ‘garden argument’ (Paquet 1998): if the economy is regarded as a garden with all kinds of trees and plants, for the gardener (government) there is no simple rule likely to apply to all plants. Growth is therefore best orchestrated from its sources at the level of cities and regions. At this level, rather than at the national level, policymakers can better tailor policy in relation to demand (Nauwelaers and Wintjes 2003). Regionalization, therefore, allows for differentiation in policies, which is necessary because of differing regional economic conditions and thus different support needs of industries and firms. Regionalization also raises the enthusiasm and motivation of regional policymakers, as they are now able to devise ‘their own’ policies. Moreover, because of the large variety of institutional set-ups and initiatives in Europe and North America, these laboratories of experimentation offer both national and regional policymakers plenty of institutional learning opportunities (Hassink and Lagendijk 2001). The arguments in favor of regionalization and unfolding endogenous potential in regions have been recently taken up again by scholars in favour of a place-based approach towards regional development policy (OECD 2011; Barca et al. 2012).

Standardization and the innovation paradox

Despite the above-mentioned garden argument and the plea for tailored regional innovation policy, the use of benchmarking, the creation of partnerships and the search for best practices has led to the standardization of regional innovation policies in Europe (Martin and Sunley 2003; Tödtling and Trippl 2005). Partnerships and benchmarking between cities and regions are strongly supported in Europe by the European Commission in the framework of several programmes (see for instance the IRE-Network and the Mutual Learning Platform on www.innovating-regions.org). Moreover, an increasing number of consultancies, such as McKinsey, earn their living with benchmarking exercises and advices to regional governments all over the world with lessons learned in successful regions. There is also a rich literature describing policy initiatives in full detail and trying to come to some kind of comparison in the concluding sections (Cooke et al. 2004; OECD 2007, 2010, 2011). Learning from best-practice initiatives is the main credo of many of these studies. Particularly in Europe one of the main arguments in favour of inter-regional learning processes has been the institutional diversity in that continent: one should benefit from the strengths of the diversity of innovation policies in regions and nations (Dodgson and Bessant 1996: 11).

In this chapter we will focus specifically on the regional innovation paradox (Oughton et al. 2002) which is another important, yet relatively ignored argument against standardization and in favour of differentiated, fine-tuned policies. Oughton et al. (2002) identified more than a decade ago an important paradox in this field: due to the lack of absorptive capacity, less-favoured regions cannot benefit to the same extent from innovation policies in comparison with structurally strong regions, which leads to stronger territorial disparities and hence to eroding cohesion. Their argument is fairly simple yet powerful and based on several indicators that show that richer regions make a better use of policy instruments to stimulate further innovative capacity. For example, they demonstrate that in the European Union (EU) ‘almost 70 per cent of the total variation in R&D expenditure across regions is accounted for by variation across regions within states, while variation across nation states accounts for around 30 per cent’ (Oughton et al. 2002: 99 – emphasis in the original). What this means in practice is that the richer regions
in the EU have relatively similar performances, while the poorest regions lag behind significantly in their national contexts. Theoretically, they draw on the concept of regional innovation systems (RIS) to argue that explanations for poor performance result from the lack of complementarities between business, education and government policy in the poorest regions. Therefore the problem is not specific to a single element within each region, but rather due to systemic failures.

We will build on this concept to argue that in order to understand better the problem of the regional innovation paradox it is necessary to complement the analysis of systemic failures at regional scale with both the organizational (‘below’ the region) and the national (‘above’ the region) level. There are different arguments for including these two extra scales. Regarding the organizational level, research on absorptive capacity (Cohen and Levinthal 1990; Abreu 2011) has shown that there can be important variations between firms regarding their capacity to innovate. According to Cohen and Levinthal (1990) ‘prior related knowledge confers an ability to recognize the value of new information, assimilate it, and apply it to commercial ends. These abilities collectively constitute what we call a firm’s “absorptive capacity”’ (Cohen and Levinthal 1990: 128). While we do not want to deny that the RIS is crucial to have region-wide effects on innovation and development, it is important to emphasize that lagging regions are not homogeneous entities. For example Lorentzen (2006) and Vale and Caldeira (2007), using two very different case studies, showed that in a lagging region the most dynamic firms can connect with key agents in other places to have access to the knowledge that they would probably acquire locally, if they were located in more dynamic territories. Based on our own research, there is evidence that in lagging regions some firms are efficient in using policy instruments to increase innovation capacity. Usually this implies having both the deep technological knowledge that allows firms to engage in R&D projects, but also the extensive knowledge necessary to fulfil policy requirements and manage the expectations of policymakers. Both types of knowledge are important to generate absorptive capacity (Abreu 2011).

The presence of a small number of firms with higher levels of absorptive capacity could be seen as a potential source of change for the whole RIS, since they could be the trigger that unleashes a wave of knowledge accumulation through systemic interaction with other co-located organizations. However, as identified by Tödtling and Trippl (2005), poorer regions often manifest systemic failures in their RIS which is likely to hinder this process. Variation in absorptive capacity among firms in poorer regions therefore poses two important questions: the first is whether those firms that have the capacity to make effective use of policy instruments are well connected with their environment to generate positive knowledge externalities. The second is whether these firms, probably operating in fragmented or less well developed institutional settings, monopolize the use of policy instruments and therefore reinforce their distance to other firms in the same region.

The second level identified above (the national) is equally important, though for a different set of reasons. It might be contradictory to identify the national level as relevant, when as discussed before the main differences in innovation performance are within countries and not between countries. However, there are both positive and normative arguments that support the inclusion of this level of analysis. The first derives from the central role played by national governments in devising policy, not only for innovation but also in many other areas of government intervention. It is true that in some countries regions have more autonomy to devise policy; however recent research has been unable to find conclusive evidence that strong regional decentralization leads to higher levels of growth in the OECD countries (Ezcurra and Rodríguez-Pose 2013). In practice this means that national institutional variation is likely the most important element explaining different growth rates. On a different study, Percoco (2013) suggested that the main factor explaining different levels of efficiency in regional development
are national institutional settings. Both sets of studies point to the continuing relevance of national policies in explaining different rates of economic growth and should lead us to incorporate this level of analysis when explaining dysfunctions at the regional or local levels. The normative arguments in favour of using this scale of analysis are to a great extent a product of these research results. For example at the EU level Barca (2009) suggested a ‘place-based’ approach to regional development, that is both strongly supportive of incorporating local knowledge in the design of the policy itself, but that also seeks to integrate the different scale of government to ensure good coordination and effectiveness. In what concerns our particular focus, the innovation paradox at the regional level, we argue that to understand systemic failures in some regions it is necessary to analyse them in relation to their national setting. Many key policies, such as those covering education (including higher education), science and technology, industrial development, labour markets and others are primarily devised at the national level, with regions only having a certain amount of input. As a consequence, if we observe deficiencies at the regional level for example in terms of skills, it would be a mistake to take into consideration only the endogenous features of that region.

Summarizing, we have argued that variation in the quality of regional innovation systems is indeed important in explaining the innovation paradox. However, we have also argued that in order to fully understand this phenomenon we have to integrate in our model both the level below the region (organizations) and above the region (the nation). We will now use the case study of the moulds industry in Portugal to illustrate the main points in our theoretical framework.

**The innovation paradox revisited: the case of the mould industry in Portuguese regions**

In order to develop our argument we will start by presenting a brief contextualization of our case study. We will then proceed with the discussion of empirical results by focusing first on differences between firms in terms of their access to innovation policy, second on how they are partly explained and influenced by broader systemic problems at the regional level, and third discuss the importance of the national institutional environment.

The Portuguese moulds industry for plastic injection has existed in Portugal since the 1940s, as a spin-off from the glass industry, which had been established by royal decree in the eighteenth century. After 1986, when Portugal joined the European Union, its growth rate accelerated exponentially. Currently the sector comprises about 450 SMEs, employing over 7500 workers, and is mostly located around two cities: Marinha Grande and Oliveira de Azemeis (CEFAMOL 2012). Around 90 per cent of its total production is exported, mostly to EU countries. Its main clients are firms in the automobile sector. Annual turnover for the whole sector has remained relatively stable for most of the twenty-first century, with a significant increase in 2012 (CEFAMOL 2012). The same cannot be said, however, for the regions where it is located. Table 8.1 gives us the GDP (measured in power purchasing parities) for different regions in Portugal as a percentage of the GDP in the twenty-seven countries of the EU. Portuguese GDP in 2010 was 80 per cent of the EU average, down from 81 per cent in 2000. The highest concentration of mould firms is in the NUTS 3 region of Pinhal Litoral and the NUTS 2 region of Centro. A smaller concentration of firms is in the NUTS 3 region of Entre Douro e Vouga, part of NUTS 2 region Norte. What this table shows is that despite the stability in the Portuguese moulds industry both regions (at the NUTS 3 level) have seen their relative GDP decline substantially. This discrepancy between the evolution of an important local industry and its
surrounding region lends support to the idea that an exclusive emphasis on the regional scale might be misleading.

Regarding the innovation support system for the Portuguese moulds industry, it includes a variety of organizations. At the sectoral level we have CEFAMOL, the association of Portuguese mould makers; CENTIMFE, a technological centre funded by a combination of public and private funds, that supports firms through consultancy and the management of collaborative R&D projects. It is similar to other technological centres working for other sectors in Portugal, both in its funding scheme (public and private) and in its aims (CENTIMFE 2012). And finally CENFIM, a training school offering technical qualification to people who want to work in this sector. At the regional level we find the regional development agency CCDR-C, which has responsibility for implementing central government policy, and several higher education institutions, though some firms have relationships with higher education institutions located outside their region. At the national level we find government agencies such as AICEP and IAPMEI, which are responsible for specific programs directed at firms in the whole country.

### Firms and innovation policy

In some of the academic literature about the Portuguese moulds industry, we find a narrative about a dynamic sector, where knowledge and ideas are shared freely through informal contacts (Beira et al. 2003; Mota and Castro 2004). However, we found in our research that even among this relatively small group of SMEs there are significant differences in the way they use the RIS support system and policy instruments in general. One relevant example is the participation rates of firms in R&D projects either managed by the technological centre (CENTIMFE) or the ones where the technological centre is a partner. These projects are usually funded by a mixture of private and public funds, including EU funds, and often involve partners in several countries. Table 8.2 shows some data collected by the authors based on information available at CENTIMFE’s website. In total there were twenty-one R&D projects listed on the website, and a total of thirty-two companies listed as partners. As Table 8.2 illustrates, only eight of them have participated in more than one project. Iberomoldes, the second biggest mould firm in Portugal (the biggest is Simoldes), clearly dominates with eleven participations – probably relevant is the fact that one of the owners of this firm was the president of the board for CENTIMFE, plus the former president of the association of mould makers (CEFAMOL), of the Forum ManuFuture Portugal and of the International Special Tooling and Machining International.

<table>
<thead>
<tr>
<th>Region NUTS2</th>
<th>2000</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norte</td>
<td>65</td>
<td>65</td>
</tr>
<tr>
<td>Entre Douro e Vouga (NUTS 3)</td>
<td>69</td>
<td>64</td>
</tr>
<tr>
<td>Algarve</td>
<td>88</td>
<td>83</td>
</tr>
<tr>
<td>Centro</td>
<td>69</td>
<td>67</td>
</tr>
<tr>
<td>Pinhal Litoral (NUTS 3)</td>
<td>85</td>
<td>79</td>
</tr>
<tr>
<td>Lisboa</td>
<td>114</td>
<td>112</td>
</tr>
<tr>
<td>Alentejo</td>
<td>75</td>
<td>74</td>
</tr>
<tr>
<td>Região Autónoma dos Açores</td>
<td>68</td>
<td>75</td>
</tr>
<tr>
<td>Região Autónoma da Madeira</td>
<td>91</td>
<td>104</td>
</tr>
</tbody>
</table>

This dominance of a small number of firms is not unique to the moulds industry, as confirmed in an interview with a high-level policymaker:

The technological centres, created many years ago, have had many difficulties to find clients and in reality they often have three or four big clients in the region where they’re located, or sometimes out of it, with whom they work intensively and then there are many other firms that don’t use them or use them only sporadically.

(Advisor to the National Coordinator of the Lisbon Strategy and the Technological Plan; Central Government Body; Author’s interview; 01/09/2008)

What our research demonstrated is that the main reason why there is such a significant difference between firms is variation in absorptive capacity. According to our empirical results and anecdotal evidence about the development of the sector (Beira and Gomes 2007), most firm owners tend to have quite strong technical skills about mould making, but very limited management training. Additionally most of their learning was tacit and on-the-job, with very little incorporation of engineering skills. Therefore there is both a lack of the deep technical knowledge that would allow them to participate in R&D development, and the lack of the extensive knowledge about management that would encourage them to think strategically and invest more in long-term firm development. It is therefore no surprise that among those interviewees whose firms were actively engaged in technological development we found two groups: 1) older owner-managers who had learned tacit skills working for other firms, but who later engaged in formal training, for example at university; 2) younger owner-managers, usually with higher education or at least technical training, who had either created firms recently or inherited them from the original owners (normally the parents). These two groups are not, however, the majority within the sector.

Variation in absorptive capacity between firms also had an impact on the use of other policy instruments, such as those managed by the regional development agency (CCDR-C) or by central government agencies. In interviews with firm owners it was widely mentioned that a small number of companies tended to have privileged access to public innovation funds. This fact was accepted by the policymakers themselves in interviews. However, despite a general perception that these differences were a result of nepotism (which we are not denying could play some role in this process) the main reason was as before explained by absorptive capacity. Those firms that had both the knowledge resources to understand and participate in R&D programmes, together with the knowledge and resources to deal with the administrative issues

<table>
<thead>
<tr>
<th>Name of firm</th>
<th>Number of projects involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iberomoldes</td>
<td>11</td>
</tr>
<tr>
<td>Intermolde</td>
<td>5</td>
</tr>
<tr>
<td>LN Moldes</td>
<td>4</td>
</tr>
<tr>
<td>Vangest</td>
<td>3</td>
</tr>
<tr>
<td>F. Ramada</td>
<td>2</td>
</tr>
<tr>
<td>Famolde</td>
<td>2</td>
</tr>
<tr>
<td>Ferespe</td>
<td>2</td>
</tr>
<tr>
<td>Somoltec</td>
<td>2</td>
</tr>
</tbody>
</table>

Source: Author’s calculation based on CENTIMFE (2009).
involved in managing public funds, were more likely to access them. The more often they accessed these funds the more experience they gained, therefore generating a cycle of knowledge accumulation that gave them an advantage in subsequent rounds of public support. From the perspective of policymakers, engaging with these privileged firms was seen as preferable, because they were more likely to deliver results that could be presented to the organisations that scrutinise the use of public money. This point was acknowledged by policymakers at both the regional and the national level who complained about the general lack of skills in Portuguese small firms and their lack of capacity to manage complex projects.

The regional level

Differences in absorptive capacity among firms translate into a combination of fragmentation and institutional weakness at the regional level. What we mean by the region can have multiple meanings in this context. If we refer to the functional regions where these firms are located, then the RIS would be constituted mainly by the sectoral support system, together with the informal (or cultural) setting that frames its functioning. Institutional weakness was mostly the result of very little engagement from a significant number of economic agents, which makes institutions such as CENTIMFE both financially weaker and also less capable of having a significant impact on the sector as a whole. At the more informal level, the fact that some firms are more effective in taking advantage of CENTIMFE or other organizations reinforces the lack of trust that is present in the sector. It is true that the Portuguese moulds industry is known for having strong informal networks, between owners and also between workers that support the exchange of knowledge and ideas. But as most interviewees admitted, these very rarely translated into active collaboration. On the contrary, interviewees would only work closely with a small number of people with whom they had developed strong personal relationships over the years.

At the level of administrative regions, it is slightly more difficult to draw conclusions. As Markusen (1994) warned two decades ago, it is important to be very cautious when moving between different levels of analysis, since what is true for a firm or group of firms is not necessarily true for the whole region where they are located. This is definitely the case in the Portuguese context. Regional development agencies are for example organized at the NUTS 2 level, but at this scale we find highly heterogeneous regions, with many different industries and localities with different development paths. Below that level there are no public authorities with capacity to participate actively in economic development policies, even if some municipalities may sometimes collaborate with the private sector in specific projects. Nonetheless, what we found in our research is that the general issue of variation in absorptive capacity has a significant impact at this level also. Both for regional development agencies, and for other relevant institutions such as universities, there is a certain difficulty in involving large numbers of economic agents. There tends to be a small number of firms with whom these institutions actively engage, making the system highly biased towards them. This fragmentation is then combined with a high level of informality, which is partly a result of institutional deficiencies at the national level (as will be discussed in the next section) but also of the lack of competencies in private (and public) organizations. This lack of competencies encourages policymakers to work with a small number of trusted people rather than trying to engage with different ones. The following statement neatly summarizes many of the points we are making here:

Generally speaking there is a good regional innovation system, but it works on an informal basis. And I have doubts that it would work better if we formalized it. The
problem is that formality is an obligation and because it’s an obligation it’s frustrating, because you’re often working for the photograph. Besides, its informal character gives us a lot of flexibility, a lot of immediate responses. Because more than an institutional connection there is a personal connection, which makes things happen faster. On the other hand if there was more formalization, the rights, duties and obligations would be clearer. So we have actually tried to make it more formal. Regarding the companies there are those that are usually interested and tend to participate and those that don’t pay much attention to what we do. It’s normal to see in the private sector the same lack of competencies that we see in the rest of the country.

(Assistant Manager in the Commission for the Coordination and Regional Development of the Centro Region; Regional Development Agency; Author’s Interview; 22/10/2008)

In this case study we argued that variation in firms’ absorptive capacity had an impact on the functioning of the RIS. But crucially, we must not forget that a fragmented and weak RIS means that this lack of capacity at firm level was not addressed systemically. It also meant that the benefits enjoyed by the small number of firms who actively participated in these projects did not spillover as swiftly as if there were stronger mechanisms for sharing results. Therefore, more than privileging the firm level of analysis, we emphasize that there are multiple feedback mechanisms that must exist in order to have a strong regional innovation system. The lack of these mechanisms is both created by variation among firms, and is also responsible for the fact that this variation is not addressed. We are as a result arguing that both scales of analysis are important, and must be understood as complementary and mutually reinforcing. They are also ultimately influenced by the wider institutional environment, particularly the rules and norms set by the nation state.

The national level

The financing of policy is a key strategic dimension, because those who have the money have the capacity to influence public policy tremendously

(Coordinator of the Quadro de Referência Estratégico Nacional (QREN); 1 Public Policy organisation; Author’s interview; 09/07/2008).

The continuing relevance of the nation state in policy design and resource allocation must be taken into consideration to explain some of the underlying characteristics shaping this RIS and the Portuguese moulds industry. As the previous quote illustrates, the control of financial resources is crucial in policymaking, and in Portugal the government remains highly concentrated at the national level. We would in particular emphasize two areas of national policy that are relevant to our case study: the first, not directly related to innovation policy, is the persistent lack of skills in the Portuguese society. This affects everyone, including business owners, and can only be explained as a result of long-term educational policy (or its absence), which is mostly defined by the central government. Failure at this level helps to explain why so many SMEs in the moulds industry, and in Portugal in general, are led by individuals with only basic qualifications. The educational level of the owners or managers is particularly important for small firms, because these organizations are less likely to have specialized departments that could for example participate in R&D development.

The second area of national policy relevant for our article is the combination of industrial policy and innovation policy, which as mentioned at the beginning of this chapter has been
converging in many countries, including Portugal. For example between 2005 and 2011 one of the national government’s flagship policies was the Technological Plan, whose objective was to reconvert the Portuguese economy through an investment in knowledge and innovation. According to senior level policymakers interviewed for this case study, firm support in Portugal has changed significantly over the last ten to fifteen years. Whereas in the 1990s policy actions were often dispersed through many small investments, which both limited their impact and created some cases of rent-seeking behavior, more recently the objective has been to concentrate investment in the high growth sector and firms. This story was corroborated by firm owners, who in their interviews confirmed that policy support had indeed changed in this direction, a move that was generally appreciated.

The downside to this process is that the demands made on firms in terms of managing the application and use of these funds has become too onerous for most, except for the bigger ones. This tendency reinforces the differentiation between firms, but also the fragmentation at the RIS level, since as mentioned previously it is a source of distrust and resentment for those who feel that the attribution of these funds is not fair. Another potential problem is that as described in much research on economic geography, a local economic agglomeration is similar to an ecosystem, with each component playing a role in the aggregate performance. The concentration of resources on a few key firms may make sense from a policy point of view, especially in order to ensure that public funds are used with maximum impact. However, in the long-term it may contribute to an erosion of competitiveness among smaller firms, whose existence is important to sustain the sector as a whole.

Conclusions

In this chapter we have first described the surge of regional innovation policy and then focused on one particular shortcoming of these policies that has received relatively little attention: the innovation paradox (Oughton et al. 2002). It refers to the observed fact that lagging regions have least capacities to make effective use of the policy instruments created to increase innovation potential. We have used the case study of the Portuguese moulds industry not only to analyse in detail how the innovation paradox can be observed empirically, but also to show that it is time to revisit it. On the basis of that case study and in line with what Lagendijk (2011) has recently suggested, we see three ways out of the innovation paradox. First, we need to develop a realistic approach to opportunities in structurally weak regions, which means that in these kind of regions we cannot expect highly innovative high-tech industries to emerge. Instead, the focus should be on realistic opportunities and in that sense smart specialization might be a good strategy to follow. Second, we need to avoid looking at the region as a bounded, relatively closed economic entity (Hassink and Klaerding 2012). By having a relational, unbounded view of the regional economy, which includes analyses of the integration of the regional economy in both national and international research networks, as well as its position in global production networks, we disclose development opportunities that lie outside of the region. Third, from a governance perspective, a vertical, multilevel governance model is necessary, in addition to a horizontal (regional) model of coordination and collaboration. Regional innovation policy should be an integral part of the multilevel governance approach to innovation. The effectiveness of innovation policy, particularly in structurally weak regions, results from the interaction between these scales of activity. We would caution against reifying one of these levels, and instead emphasize their interdependence (Lagendijk 2011).
Notes

1 In English: National Strategic Reference Framework – determines the national strategy for the distribution of EU Strategic and Cohesion funds.

Bibliography


Beira, E. and Gomes, N., 2007: Indústria de moldes no Norte de Portugal. PROTAGONISTAS uma coleção de testemunhos. CENTIMFE. Oliveira dos Azeméis.


The regional innovation paradox revisited


