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Technological activities and innovation diffusion in the EU and interactions with the Neighbouring regions

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OBJECTIVE

The general objective of this Work Package is to investigate on the innovative performance of countries and regions in the European Union (EU27) and in the 16 European Neighbouring Countries (ENC). We aim at understanding to what extent this performance depends on the one hand on the endogenous ability in knowledge creation and on the other hand on the absorptive capacity to adopt and imitate other regions' innovations taking advantages of various form of research and technological networks.

In particular we analyse how internal and external factors (such as human capital, social capital, institutions, public policies, spatial spillovers) affect the innovation activities and, consequently, the regional economic performances. Moreover, we focus on the process of innovations diffusion and research networking in order to assess to what extent the EU and EN countries have established valuable collaboration procedures. Throughout the analysis we will devote specific attention to the economic dynamics of those countries (and regions) which have recently entered the EU (EU12) in order to conjecture on the evolution process which may involve in the near future the neighboring countries due to the reinforcement of the integration process. In all the contributions the ultimate purpose of the research activities has been to derive useful policy recommendations at both the European and the EN countries level.

MAIN RESULTS AND POLICY IMPLICATIONS

A first general consideration remarked in several studies concerns the lack of adequate information on innovation creation, diffusion and adoption in the ENC which partly prevents a complete analysis of the phenomenon. Thus more effort should be devoted by the Community Statistical Offices to interact with ENC in providing homogeneous and comparable data on technological activities, starting with the Community Innovation Survey.

The key element emerged from all the contributions is that the capacity of a territory to innovate does not depend only on the internal creation of new knowledge but it is also affected by its capacity to absorb and efficiently exploit the knowledge available outside. In other words innovation creation and adoption have been proved to be concurrent phenomena and therefore the policy measures should aim at supporting both aspects.

The role of internal R&D activities in creating new knowledge appears largely conditioned, especially for the developing economies, by some pre-existing endowments and features of the territories considered. In general, the key factor to promote innovation in a certain region is a good endowment of human capital given its strong and pervasive role in determining both the internal creation and the external absorption of knowledge. Therefore policies should focus on actions aimed at increasing the endowments of well-educated labour force. This is true especially for those lagging areas, like the ENC, where the internal capacity to produce new technologies is not competitive in the international scenario and thus they need to implement an imitation strategy absorbing external knowledge which requires as necessary condition the availability of internal human capital.

Another common conclusion of the research papers concerns the evidence that firms and territories are more able to develop technological competences (by creating them internally or absorbing from outside) when they can exploit a wide range of transmission channels which go beyond the usual geographical proximity. The presence of a-spatial relationships like institutional, historical, cultural, cognitive, social and organizational links has been proved to facilitate the exchange of knowledge. Therefore, any policy intervention cannot overlook the presence of such multifaceted phenomenon and therefore policies should support the formation of dense specialised networks among regional innovation systems. In this respect it is important to eliminate or lessen all the institutional and trade barriers which hamper the exchange of capital goods and, more generally, the connections and transmission of knowledge among firms in different countries.

Looking at specific policies to promote internal innovation activity, it is important to design and implement them in relation to the development stage of each country. Accordingly, in the ENC an intervention based on business incubators rather than technoparks would be more suitable since the latter requires the presence of a knowledge intensive environment with more innovative entrepreneurship. Another relevant issue is the jurisdiction's complementary in R&D financial support which highlights the importance of world-wide cooperation for public R&D in order to maximise its benefits on private R&D.

Looking specifically at the role of innovation related networks, a specific attention should be devoted to favour the creation of a-spatial channels for knowledge flows in order to increase regional productivity. This can be done through incentives to the participation of ENC's universities and research centers in EU Framework Program. To encourage international research cooperation there is the urgent need to improve the administrative context and to reduce legal barriers which hamper international collaboration. Moreover, it would be important to promote training courses on innovation management and entrepreneurship involving academic or innovation related institutions in EU and ENC. In general, it is recommended to encourage joint activities between universities and research centers in ENC and EU providing the appropriate framework conditions and incentives. For example, EU can extend incentives for twinning arrangements between higher education or research centers in EU and ENC for young researchers training and mobility (such as joint graduation and doctoral programmes, international fellowship programmes, co-supervising PhD theses). Finally, to encourage firms alliances (Merger and Acquisition, Joint Venture and Strategic Alliances) among companies located in the ENC and in EU, which act as a valuable channel of interactions and knowledge flow, the ENP should try to design specific instruments devoted to decrease the risk connected to uncertainty and instability which often characterize the neighbouring economies.

More generally, the EU is required to continue and reinforce its policy aimed at supporting the neighbouring countries in their ongoing process towards more open and competitive internal markets and towards more democratic, efficient and transparent institutions.

Overall, all studies have highlighted the existence of several channels of interregional spillovers and externalities, which calls for a coordinated strategy able to attain the optimal social outcome with differentiated interventions. It is increasingly clear that there is no “one size fits all” policy and that regions need to set different targets to be achieved with diverse instruments. This interpretative scenario is crucial for regions in ENC since it enlarges the potential basin of knowledge externalities which may help their technological catching up with respect to advanced regions in the European Union.