

Key enabling technologies foster economic growth, especially in low-tech EU regions

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KETs comprise micro/nano electronics, nanotechnology, photonics, advanced materials, industrial biotechnology and advanced manufacturing systems. Credit: © EU, 2015

A first-time analysis finds that key enabling technologies (KETs) – such as nano electronics or industrial biotechnologies – directly boost EU regions' growth, particularly those which lag behind in innovation. Comparison with specialisation in fast growing technologies (FGTs),

which have the power to disrupt markets, shows that FGTs only indirectly affect regional growth, through the impact on regions' innovation performances (patents' growth), according to a [recent JRC report](#).

The study was carried out to enhance the understanding of how KETs affect regional innovation and [economic growth](#) in the context of smart specialisation, which is a strategic approach to regional economic development. There have been only very limited evidence of the capability of EU regions to specialise in KETs so far and no direct evidence on their actual impact on regional innovation and [economic growth](#).

The results of the study confirm and reinforce the important role that KETs may play to meet the European Commission priority on boosting growth and creating more jobs. Regions specialised in KETs are concentrated in Central Europe, while specialisation in FGTs prevails in Scandinavian countries and the UK, according to the report. An analysis of the evolution of regions' technological specialisation over time shows that trailing regions have increased their relative specialisation in KETs with respect of leader regions. In contrast, the latter have increased their relative specialisation in FGTs.

In addition, the study suggests that key enabling technologies often spread across bordering regions. In particular, a pattern of technological diffusion from Germany towards East Europe has taken place for KETs.

The study focused on two periods, 1996-1999 and 2008-2011. In the first period 68 regions were specialised in KETs, most of them located in Germany (19), Belgium (8), France (7), the Netherlands (5) and Austria (4). The KETs in these regions were also geographically concentrated, while this was not the case with KETs in Italy, Spain, the UK, Czech Republic and northern European countries. In 2008-2011, the number of

regions specialised in KETs increased from 68 to 82 of which 34 were new entrants. The comparison showed there was a relatively high degree of mobility.

In 1996-1999, 71 regions were specialised in FGTs, which fell to 67 regions in 2008-2011. A comparison shows increased concentration of FGTs in northern Europe and the UK.

Publication of this news coincides with a conference on European innovation ecosystems: good governance and effective support for smart specialisation organised jointly by the Committee of the Regions and the European Commission. One of the sessions, organised by the JRC and the European Association of Research and Technology Organisations (EARTO) focuses on how research and technology are transferred into productivity and competitiveness, and how they stimulate regional innovation, differentiation and development.

Provided by European Commission, Joint Research Centre

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