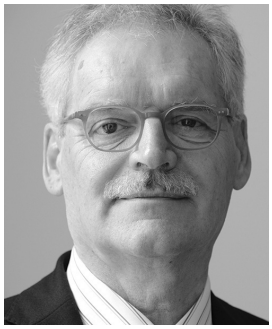

Alexander Eickelpasch, Research Associate in the Department of Firms and Markets at DIW Berlin

FIVE QUESTIONS FOR ALEXANDER EICKELPASCH

»Policy needs to strengthen transregional networking of private and public research«

1. How large is Germany's research and development (R&D) workforce, and which regions have the highest concentration of R&D activity? In 2013, the German R&D workforce amounted to 589,000 people. We find a strong concentration in the two regions (so-called *Raumordnungsregionen*) of Stuttgart and Munich, with 19 percent of the workforce based there. Germany's most densely populated regions are home to 62 percent of all R&D personnel, which means we have a strong spatial concentration in urban areas overall.

2. Where has R&D increased over the past few years, and where has it decreased? To answer such a question, we typically compare the number of researchers with the number of total employees in a given area—this is the idea behind the concept of "R&D intensity." Taking this into account, most regions with a large number of R&D personnel also have a high level of R&D intensity. This is the case not only in R&D-heavy Stuttgart and Munich, but also in Braunschweig. Overall, the German R&D workforce increased by 25 percent between 2003 and 2013, with the most significant growth taking place in Heilbronn, Bielefeld, Freiburg, Ulm, and Cologne. Düsseldorf, Aachen, and Bonn experienced below-average growth, and Darmstadt actually saw a decrease in the number of R&D employees. When it comes to R&D intensity, however, the results are a bit different: among the large regions, the winners here are Cologne, Dresden, Heilbronn, and Ulm. Munich and Berlin—two of the top regions—saw a drop in R&D intensity, as did Darmstadt, Aachen, and Karlsruhe.

3. What kinds of organizations lead when it comes to R&D: research institutes, universities, or businesses in the private sector? The private sector accounts for 61 percent of all R&D personnel. The remaining 39 percent work in universities and research facilities—and most of these, including the Fraunhofer Society and the Helmholtz Association, are publicly funded. From 2005 onward, R&D staff in universities and research institutes experienced a sharp increase of at least 30 percent, while R&D staff in the private sector grew by only 20 percent. This development is primarily due to the fact that in 2005, the Federal Government began implementing major academic initiatives such as the Pact for Research and Innovation, the German Universities Excellence Initiative, and the University Pact.

4. Are public and private R&D activities concentrated in different areas? If so, to what extent? R&D in public research facilities is usually more concentrated in densely populated areas than is R&D in universities or the private sector: 22 percent of R&D personnel working in public research facilities are based in Berlin and Munich, for example. Munich and Berlin also account for 14 percent of the R&D in universities, while 23 percent of R&D personnel in the private sector are concentrated in other regions, such as Stuttgart. So it's not always the case that private research is being conducted in areas where public research is taking place.

5. Since spatial proximity creates synergy effects, do the differences in distribution hinder innovation potential? That is an important issue. Policy aims to link research results from public research more closely with local companies and corporate research activities—this typically falls under the concept of regional innovation or cluster policy. We have found that an area with a high concentration of public research does not necessarily have a high concentration of private research as well. In our opinion, policy should respond directly to this fact, and not just promote the link between regional actors. It should also consider the extent to which it is useful to promote the transregional networking of research facilities, universities, and local businesses or to strengthen the local economy related to R&D.

Interview by Erich Wittenberg

DIW Berlin — Deutsches Institut
für Wirtschaftsforschung e. V.
Mohrenstraße 58, 10117 Berlin
T +49 30 897 89 -0
F +49 30 897 89 -200

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