

GERMANY

Germany has traditionally been one of the OECD's top performers in science, technology and innovation. With a mature national innovation system, including a number of large, well-established research institutions and firms, it has a large and growing share in total OECD high- and medium-high-technology exports, and is the fourth most intensive patenter in the OECD area (adjusted for population). However, its productivity performance has been slipping against the leading OECD countries. Extracting greater benefits from existing innovation capabilities will be essential to boost productivity and maintain high living standards.

Germany aims to reach the EU Lisbon Strategy target of 3% of GDP invested in R&D by 2010, and in 2006, gross domestic expenditure on R&D (GERD) reached 2.53% of GDP. Business performs 70% of GERD, followed at a distance by the higher education sector (16.3%). In 2002-04, 4.4% of small and medium-sized enterprises (SMEs) and 22.4% of large firms collaborated with higher education on innovation.

For human resources in science and technology (HRST) performance is mixed. More than 30% of new degrees in Germany are awarded in science and engineering (compared to an OECD average of 23%), and a higher than average number of graduates also receive doctorates in these subjects. As in Denmark, Switzerland and Sweden, over 35% of total employment is in HRST occupations. However, the tertiary graduation rate is among the lowest in the OECD area, potentially narrowing the skills base for innovative activities. Compared to similar

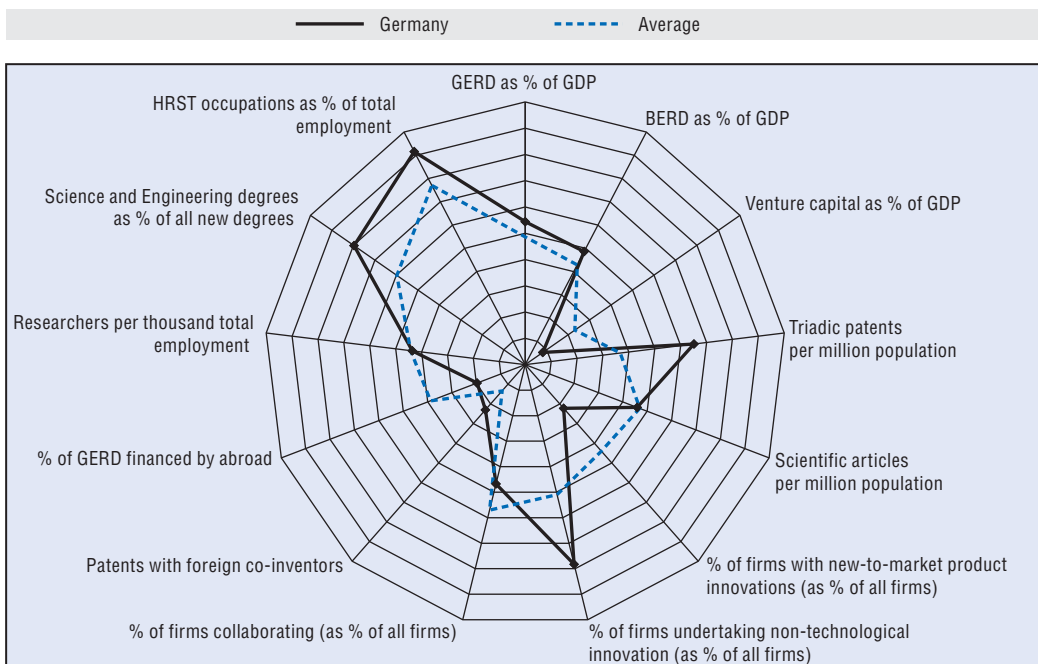
OECD countries, the number of R&D personnel and researchers has grown very slowly.

In-house product innovation is high and many firms also perform non-technological innovation. Germany shows particular strength in environmental science – almost one-quarter of environmental technology patent applications to the European Patent Office, and almost one-fifth of the technologies sold worldwide in the sector, originate in Germany.

Germany has a wide range of policies to support innovation. The federal government's High-Tech Strategy (launched in 2006) is a national strategy which encompasses all ministries. It sets out strategies for 17 "future fields" and aims at translating ideas from basic technologies as rapidly as possible into marketable products, services and processes. In February 2008, the federal government launched an Internationalisation Strategy to attract researchers, students and foreign investment with a strong focus on R&D. Under the Initiative for Excellence, Germany is providing project funding to support graduate schools, "excellence clusters" and frontier research at universities. Several new policies address tertiary graduation rates, including the Higher Education Pact 2020 and the Qualifications Initiative.

A key challenge is to accompany innovation-specific policies with broader reforms that continue to lower regulatory and administrative barriers to entrepreneurship and to foster competition to further bolster the environment for innovative activity. In addition, improving outcomes from the education system will be crucial for generating and absorbing new technologies.

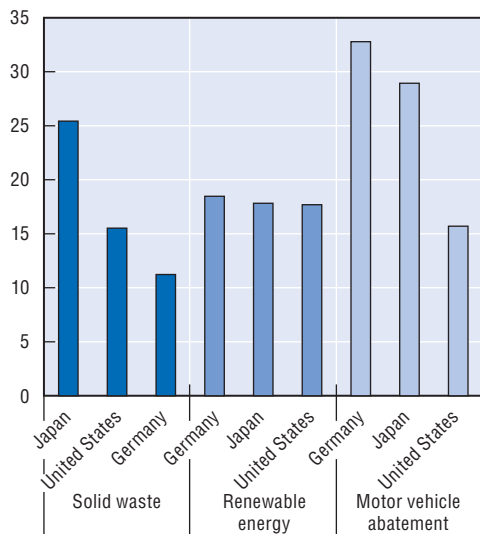
Science and innovation profile of Germany



StatLink <http://dx.doi.org/10.1787/452612130756>

Shares in environmental technology patents filed under the Patent Co-operation Treaty

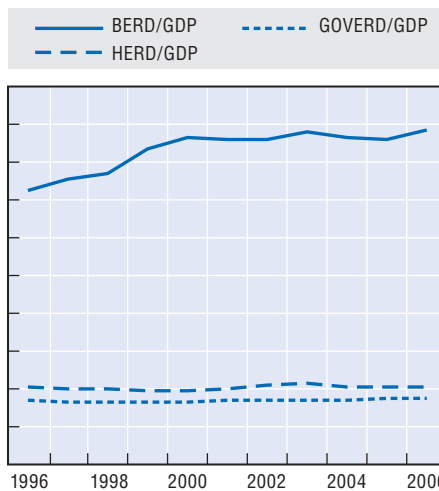
Top three countries, 2000-04



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R&D expenditure, 1996-2006

As a percentage of GDP



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