SWITZERLAND

Switzerland has enjoyed a rebound in economic growth but economy-wide productivity growth continues to lag, particularly in sectors with weak exposure to international competition (*e.g.* network industries). Faced with high labour costs and global competition, maintaining its lead in innovation is important for the country's future growth.

Although Switzerland ranks among the top OECD performers, R&D intensity has only recently increased after a period of near stagnation. In 2004, total spending on R&D represented 2.9% of GDP, behind Sweden, Finland and Japan but ahead of countries such as Austria and Denmark. Business expenditure on R&D (BERD) accounts for over 70% of the total and is dominated by multinationals, which invest more abroad than at home. BERD expanded by one-third in real terms between 1996 and 2004, more than the EU average but below rates in Sweden and Japan or catch-up countries such as Spain.

Public funding of R&D is average by international standards, at about 0.66% of GDP in 2004, and is strongly oriented towards universities and basic research. Indeed, basic research accounts for 28% of gross domestic expenditure on R&D, more than in the United States. Moreover, national data show that industry spends 10% of its R&D budget on (in-house) basic research.

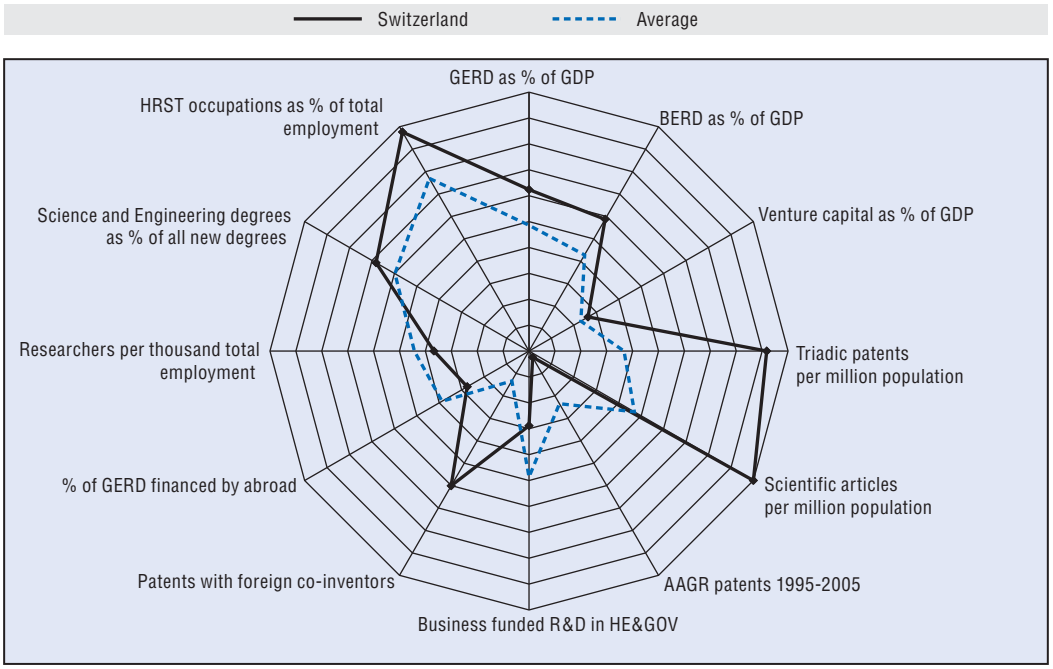
Switzerland has strong vocational and upper secondary professional schools but a smaller, albeit well-financed, university sector with a small number of graduates by international standards. Some 26% of tertiary-level graduates take degrees in science and engineering, above the OECD average, but few are women. Switzerland awards a high share of PhD degrees relative to its population, and 37% are granted to women. Foreign students account for 42% of students enrolled in PhD programmes.

Swiss scientific and innovation performance is world-class, but has slipped recently *vis-à-vis* EU competitors. Although it leads the OECD in scientific publishing, Switzerland's research portfolio is highly specialised (life sciences, physics, chemistry). It stands just behind Japan in patenting, although the absolute number of patents is stagnating. Raising the innovativeness of small and medium-sized enterprises (SMEs) in sheltered sectors and fostering entrepreneurship remains a challenge.

Venture capital expenditure (0.13% of GDP in 2006) is just above the OECD average (0.11% of GDP), and most is expansionary capital in high-technology sectors rather than early-stage financing of new start-ups.

In response to a 2006 OECD review, the government has increased public funding for research and innovation (CHF 21.2 billion for 2008-11) and adopted a new constitutional framework for improving co-ordination in the education system, as well as new financing tools to increase competitive funding. It has also created new public/private partnerships (CTI KTT) to improve science-industry relations, especially with SMEs, and introduced measures to further enhance international collaboration at EU level and beyond.

Science and innovation profile of Switzerland



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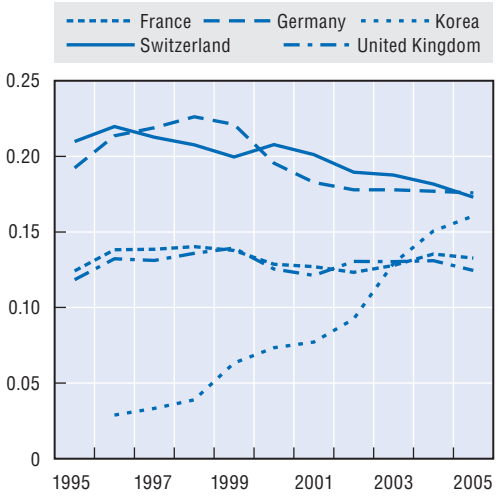
Ratio of triadic patent families to industry-financed R&D, 1995-2005

Percentage



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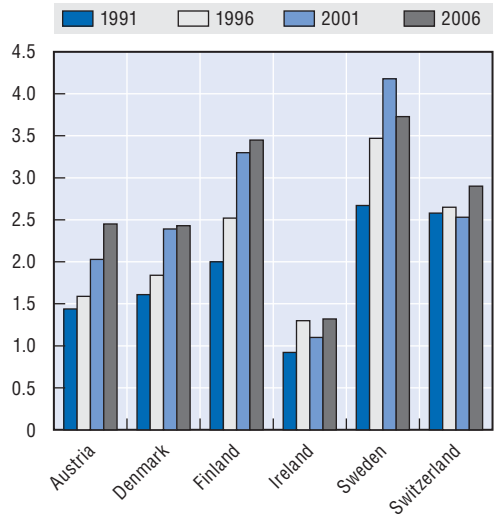
Gross domestic expenditure on R&D

As a percentage of GDP



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