



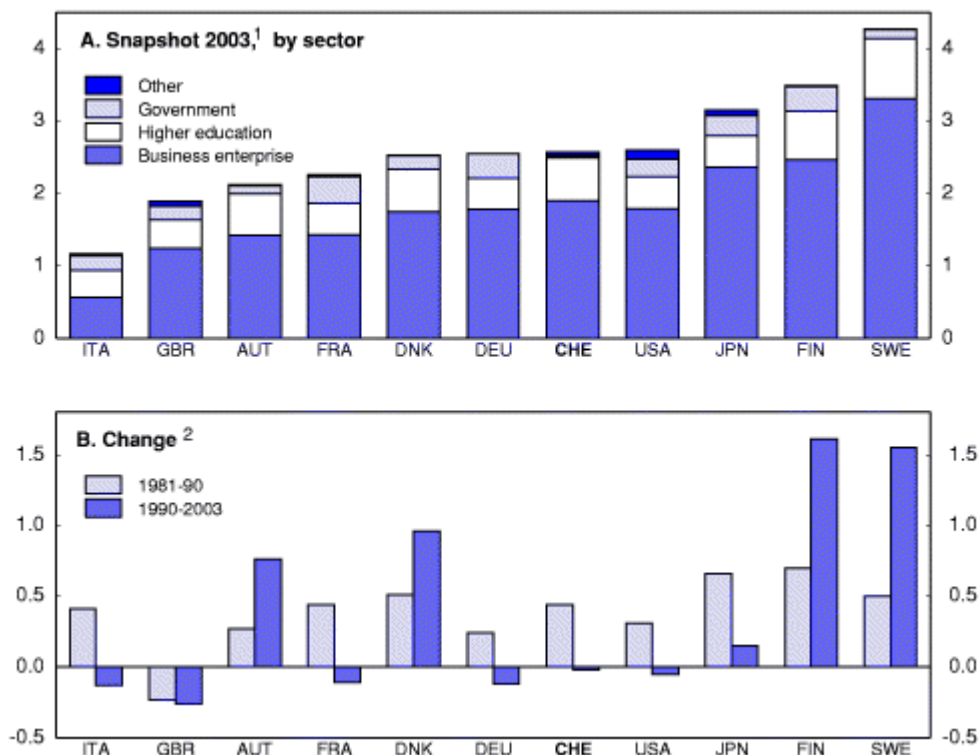
## Economic Survey of Switzerland 2006: Innovation: areas for improvement

The following OECD assessment and recommendations summarise Chapter 5 of the [Economic Survey of Switzerland 2006](#) published on 6 January 2006.

### What are the main challenges for the Swiss innovation system?

Due to very high labour costs, Switzerland needs to maintain a top position in innovation performance to preserve its competitiveness and living standard. On balance, its innovation performance has been amongst the best. Among others, the country occupies a top position in knowledge-intensive market services which attracts many people trained in science and engineering and related to this it is also a heavy user of ICT. However, innovation performance has weakened somewhat in recent years. The weakening resulted to some extent from the protracted economic slowdown, but there are areas in which policy reform could strengthen innovation. The increased globalisation of R&D poses a challenge for Switzerland, as multinationals account for an important part of domestic R&D. Moreover, there are signs that innovativeness is lacking in small firms in sheltered service sectors. *Although maintaining the nation's attractiveness for multinationals remains important, boosting the innovative capacity of SMEs and removing obstacles to their growth should move up the policy agenda. This would require improving conditions for entrepreneurship and better bridging the gap between fundamental and applied research.* Another challenge facing the Swiss innovation system is the growing knowledge economy and increased competition from emerging countries. Due to the emphasis on vocational education, participation in tertiary education is quite low in international comparison. *Efforts to reform the university system and further upgrade average educational attainment should be pursued steadfastly.*

**Although remaining strong, innovation performance has weakened in the 90's**  
Gross domestic expenditure on R&D in per cent of GDP



1. 2002 for Austria, Denmark and Italy; 2001 for Sweden and 2000 for Switzerland.  
2. Or closest period where data are available.

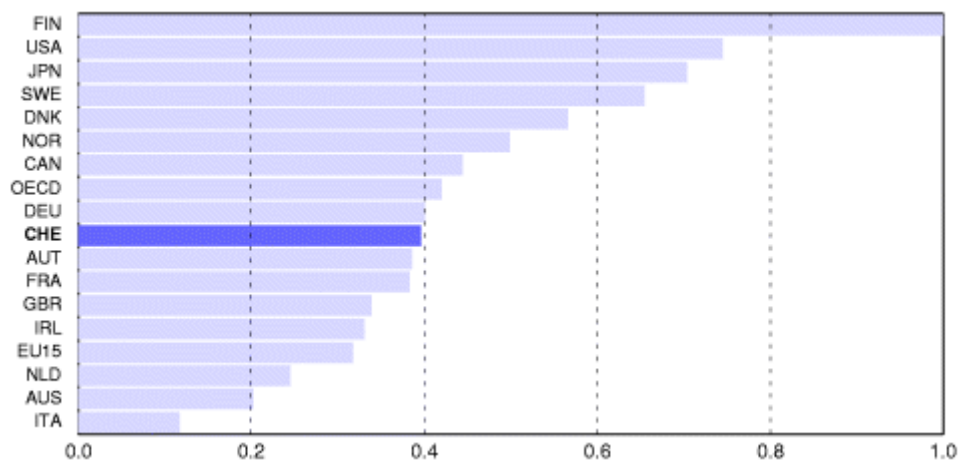
Source: OECD (2005), Main Science and Technology Indicators, Vol. 1.

### Entrepreneurship and tertiary education: room for improvement?

Boosting product market competition would go a long way towards raising incentives to innovate, especially in sheltered sectors and by small firms. Moreover, the larger size of the domestic market, due to the removal of local barriers, could stimulate firms to grow in some sectors. Administrative burdens are also an important obstacle to entrepreneurship, especially due to the lack of co operation among cantons. The government's initiative to simplify administration goes in the right direction. But more should be done to modernise public administration by increasing the use of information and communication technology. A third obstacle to entrepreneurship is the bankruptcy law which in situations relevant for new undertakings extends de facto creditors' claims against a bankrupt entrepreneur indefinitely. Beyond its deterrent effect on the creation of businesses, entrepreneurs are less likely to take risks and may refrain from expanding their activities, in particular if it would require using bank credits. There is therefore a need to reform the bankruptcy law. Finally, equity financing and venture capital still play only minor roles in the financing of new ventures and innovation projects. Although this could reflect low demand, as entrepreneurs want to retain control of their business and refrain from risk-taking, there is room to improve framework conditions for such modes of financing. Current proposals to reduce the double taxation of dividends, and hence the cost of equity financing, could be more ambitious. The government's plan to introduce a tax-transparent company structure for venture capitalists goes in the right direction, while restrictions on pension fund investments in venture capital should be relaxed and initial public offerings facilitated.

The quite low participation in tertiary education results in a limited domestic supply of scientists and engineers. This is compensated to some extent by large inflows of foreign scientists and engineers and substantial R&D activity in other countries. *However, if Switzerland is to keep its position in the global value chain, there is a need to expand tertiary education, especially at university level.* Significant efforts have already been made by upgrading vocational education at the secondary school level and creating universities of applied sciences which made it possible to conclude vocational education at university level. *This strategy should be pursued by further strengthening vocational curricula and continued reform within and among universities of applied science.* The authorities are currently preparing a reform of the whole university system, which will improve the quality and efficiency of university education – by reducing, for example, the time required to complete studies. Key elements include a consolidation and specialisation of the very fragmented university landscape, the introduction of a standard cost-related education subsidy per student in each field, and the development of quality assessments. While this reform faces resistance from universities, which may have to undergo restructuring, it is necessary nonetheless. The implementation of the Bologna process, which aligns the structure of studies with other European universities, will also put increased pressure on Swiss universities to raise the attractiveness of their studies to both Swiss and foreign students. *In addition to a more efficient use of public resources, more private resources could be tapped. Raising tuition fees for tertiary education should be studied, though the latter should be accompanied by a loan system with income-contingent repayments.* Tuition fees would also contribute to induce quality enhancements in the university system through pressures from students' choices. Another Swiss specificity is the under-representation of women in tertiary education, especially in sciences and engineering. *The incentives facing women to undertake tertiary education may be reduced by limited career prospects; adopting more favourable family-work reconciliation policies could help in this respect. However, specific efforts may also be needed to stimulate women's interest in sciences and engineering from an early age, since the share of women in these fields is extremely low in international comparison. Finally, more policy attention should be devoted to lifelong learning, which is key in a knowledge society. Measures such as promoting the recognition of qualifications, creating a time entitlement to adult education and training and providing some financial support would raise participation in such human capital development.*

**The share of researchers in total employment could be raised**  
In per cent of total employment, 2003(1)



1. 2000 for Switzerland, United States and OECD; 2002 for Australia, Austria, Canada, Denmark, France, Italy and EU15.

Source: OECD (2005), Main Science and Technology Indicators, Vol. 1.

### Can innovation-specific policies be enhanced?

Switzerland stands out in not providing direct financial support for business R&D. This seems appropriate, given the already very high level of business R&D and hence the risk of large deadweight losses. The country also has a very strong basic research capacity, which is only partly funded by the public sector. One main source of concern is the availability of sufficient public resources for research and the difficulty in fulfilling spending priorities on education and research in recent budgets, due to fiscal consolidation and mandatory increases in social spending. Public funding is important to sustain basic research, which is widely available, and to support the transfer of technology between academics and businesses. *To preserve the world-class research and education outputs of several tertiary education institutions in Switzerland, national public funding for research must be given a high priority. Enhanced co operation at the international level should not endanger national research funding. Beyond this, there is a need to better bridge the gap between fundamental research and the market. This should be achieved through boosting the funding of R&D at public research institutions by substantially increasing the resources of the Commission for Technology and Innovation (CTI).* CTI finances R&D for the business sector at Swiss public research organisations according to a public-private partnership model for innovation in products and services. The commission's bottom-up approach to strengthen technology transfers between academics and firms, its coaching services for start-ups as well as its nation-wide education programme for would-be entrepreneurs, go in the right direction.

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Return to the [Economic Survey of Switzerland 2006](#)

A printer-friendly [Policy Brief](#) (pdf format) can also be downloaded. It contains the OECD assessment and recommendations, but not all of the charts included on the above pages.

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For further information please contact the Switzerland Desk at the OECD Economics Department at [webmaster@oecd.org](mailto:webmaster@oecd.org). The OECD Secretariat's report was prepared by Claude Giorno and Florence Jaumotte under the supervision of Peter Jarrett.

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