UNITED STATES

Following a period of robust expansion since 2001, economic growth in the United States slowed at the end of 2007. The diffusion of information and communication technologies (ICTs) continues to fuel productivity growth, especially in the business services sector.

The United States is an innovation powerhouse, but its lead is increasingly challenged from some of its main international trading partners and emerging economies. R&D intensity fell slightly to 2.6% of GDP in 2006, down from 2.7% of GDP in 2001, although total R&D expenditure expanded in real terms to USD 344 billion, led by increases in business sector R&D spending (USD 208 billion in 2006). The share of R&D performed by government has fallen (to 11.1% in 2006), while that of the higher education sector has grown (to 14.3% in 2006 compared to 12.1% in 2001).

In the United States, the majority of business R&D spending is by manufacturing firms in high-technology sectors (63% of total manufacturing R&D is high-technology compared to 47% in the EU and 43% in Japan). At the same time, the US share of total OECD technology exports fell between 1996 and 2005 while that of Germany and Korea increased. Since the early 1990s services R&D has been growing at a rapid rate – exceeding that for manufacturing R&D. In 2003, services R&D had expanded to account for 36% of total business R&D.

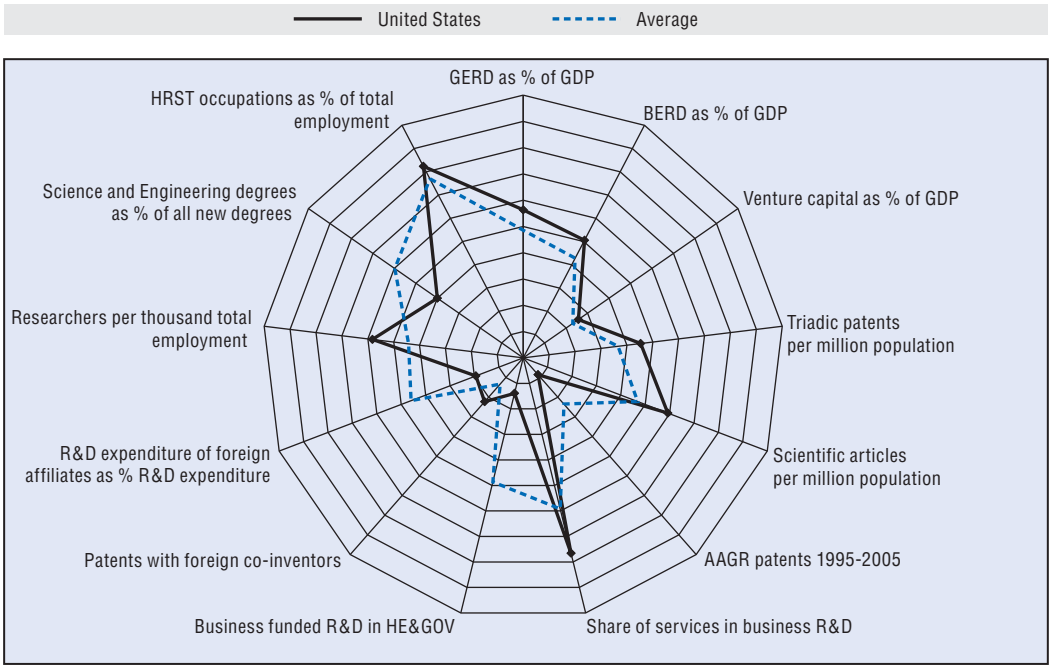
The United States has 1.4 million researchers, or 9.6 per 1 000 total employment, but growth has slowed relative to dynamic economies in the EU and in China. In 2005, S&E degrees in the United States accounted for just over 15% of all new degrees compared to around 25% in Japan and close to 40% in Korea and China. Participation in S&E education by women and minorities in the United States is low, notably at the graduate level, and is only partially offset by the large number of foreign students: in 2006, 38% of all S&E doctorates were awarded to foreigners, with more than two-thirds from Asia.

US output of scientific publications is second only to the EU and is world-class in fields such as nanosciences, environmental sciences and biosciences, which have benefited from large increases in federal research funding (*e.g.* through the National Institutes of Health). The United States retains its lead in innovation in critical sectors such as pharmaceuticals and ICTs, in which it invests more than any other OECD country. Since 1995, however, growth in triadic patent filings has slowed while other countries continue to catch up.

The federal policy framework for research and innovation was recently strengthened by the *America Competes Act* of 2007, which follows on the American Competitiveness Initiative (ACI) of 2006. The main policy focus is on increased support for basic research, particularly in key physical science and engineering areas, in order to tackle global challenges such as energy and climate change, and on support for human resources in science and technology. However, budgetary cuts – owing to growing federal deficits – have resulted in slower than anticipated spending increases in the main federal research agencies.

Federal support to industry performed R&D in 2005 reached USD 22.5 billion (not including another USD 2.4 billion for industry managed federal labs), while the federal R&D tax credit accounted for more than USD 5 billion in foregone tax revenue in 2005.

Science and innovation profile of the United States



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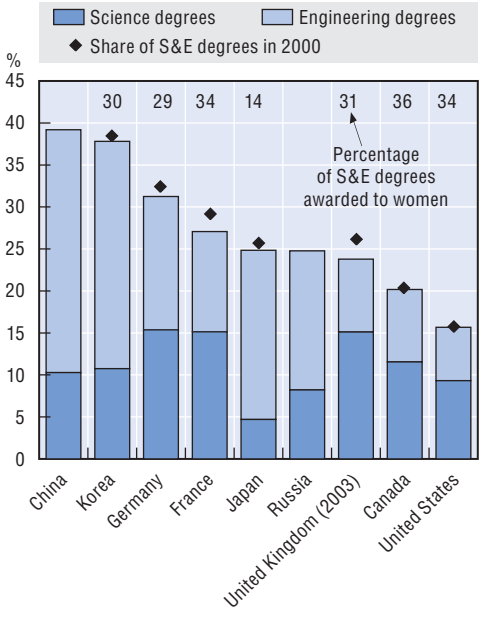
Science and engineering degrees, 2005

As a percentage of total new degrees



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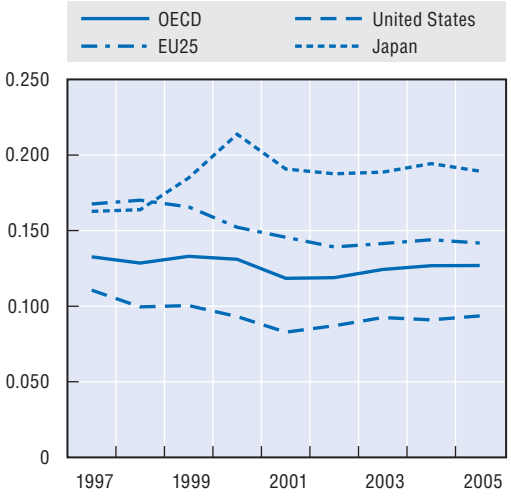
Ratio of triadic patent families to industry-financed R&D: main OECD regions, 1995-2005



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Chapter 3

Science and Innovation: Country Notes

This chapter complements Chapters 1 and 2 by providing an individual profile of the science and innovation performance of each OECD country, as well as observers to the OECD Committee on Science and Technology Policy (Brazil, Chile, China, Israel, Russia and South Africa), in relation to their national context and current policy issues. The graphs enable countries to see some of their relative strengths and weaknesses as compared to other countries' performance.

The common indicators in the first (radar) graphs were selected on the basis of current policy issues. They focus on research and innovation inputs, scientific and innovation outputs, linkages and networks, including international linkages, and human resources. A standard set of indicators is used; however, when data are not available, alternative indicators may be applied. The annex provides a full list and description of the indicators, methodological notes and data sources.

For each indicator in the radar graph, the country with the maximum value is set at 100, taking into account all OECD and non-OECD countries with available data. The average is calculated by taking into account all OECD countries with available data (non-OECD countries are excluded from the average). The annex provides further details.

The radar graphs are accompanied by country-specific figures that further illustrate national characteristics and underpin policy-specific comments. The selection of comparator countries in these graphs aims to highlight the general position of the focal country and, in some instances, data on other countries may also be shown.

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