AUSTRALIA

Australia's innovation landscape is dynamic and displays a number of strengths. Gross expenditure on R&D (GERD) has grown since 2000 to a record 1.97% of GDP in 2006. Business expenditure on R&D (BERD) was 1.2% of GDP in 2007, below the OECD average that year of 1.6%. The share of GERD financed by industry increased from 54.3% to 58.3% from 2004 to 2006, while the share financed by government fell from 40.3% to 37.3%. Industry financed 96% of BERD in 2007, up from 89% in 2001. In 2006, the services sector performed 40% of BERD. Based on a broad definition of venture capital, venture capital intensity (0.13% of GDP) exceeded the average in 2008. Based on a narrower definition (excluding private equity), however, this ratio has fallen in recent years.

The number of triadic patents increased by almost 6% between 1998 and 2008, to 14.6 per million population. However, at 0.6% of the world share of triadic patent families, this is below the OECD average. This result can be ascribed to the nature of the resource and agricultural sectors, combined with a decline in the high-technology manufacturing sector due to global competition. Scientific publications were well above the OECD average in 2008, with 1 448 scientific articles per million population, or nearly 2% of world output.

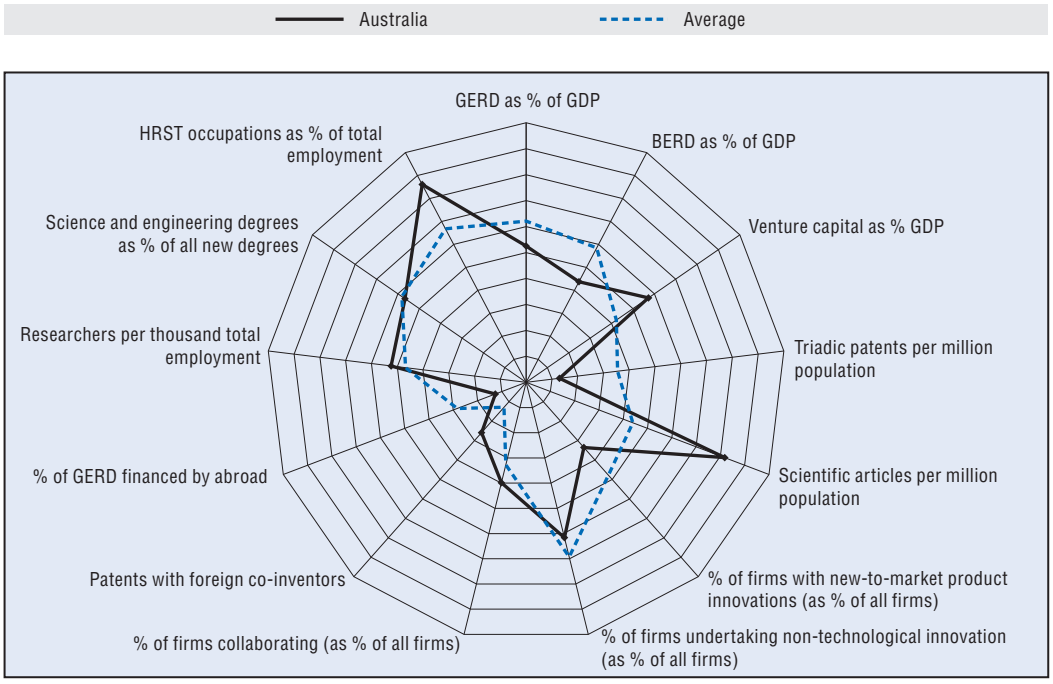
Innovation linkages indicators vary. Around 12% of firms collaborated with an external partner during 2006-07 and a comparatively high 15.6% of patents were developed with foreign co-inventors during 2005-07. Australian firms rank comparatively low on in-house product innovation and non-technological innovation, but comparatively better on in-house process innovation. By firm size, a relatively low 28% of SMEs and 40% of large firms undertook non-technological innovation in 2006-07. In 2006, a relatively low 2.4% of GERD was financed by abroad.

Science and engineering graduates in total university degrees (20.4%) are close to the OECD average. Human resources in science and technology (HRST) occupations as a share of total employment declined from 38% in 2004 to 36% in 2008 but remain above average and are distributed equally between men and women. Researchers per thousand total employment edged up to 8.5 in 2006.

Australia's economy averted a technical recession in 2008 and 2009. Real GDP increased by 1.4% in 2009, and the unemployment rate was a comparatively low 5.6%. Relative to the United States, GDP per capita was above average (82%) in 2008, while GDP per hour worked exceeded the OECD average by 4 percentage points.

The government's innovation agency, the Department of Innovation, Industry, Science and Research, published its *Powering Ideas* in mid-2009, outlining a ten-year reform agenda to make Australia more productive and competitive, supported by a substantial boost in funding. Looking forward, the key policy issues include developing an integrated approach to science and innovation and improving links with global research and innovation systems.

Science and innovation profile of Australia



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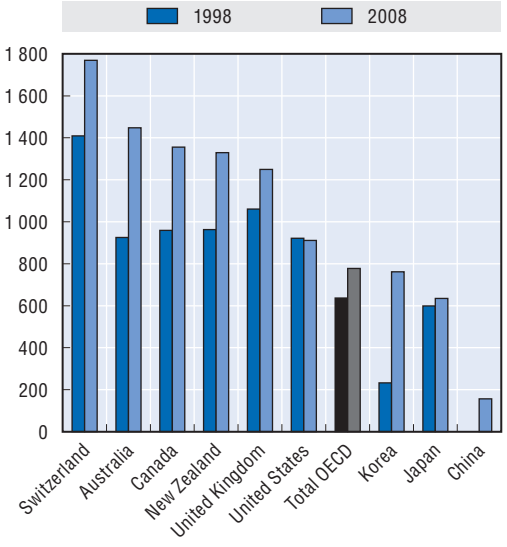
Scientific articles published

Per million population, 1998 and 2008



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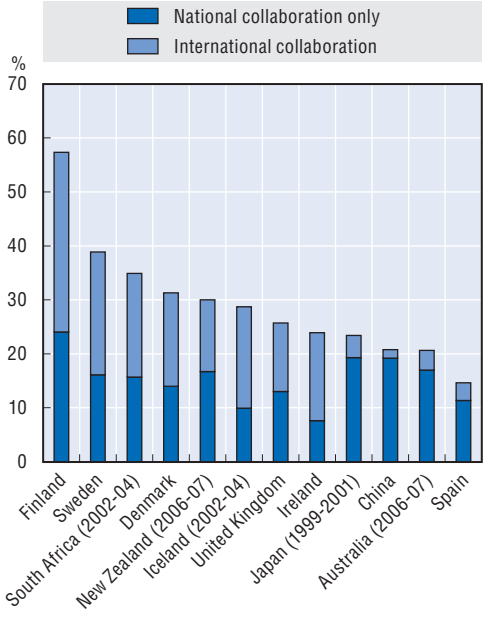
Firms with collaboration on innovation

As a percentage of innovative firms, 2004-06



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