SOUTH AFRICA

South Africa's science and innovation profile shows some distinct strengths. The country's trade in high-technology industries increased by 4 percentage points between 1997 and 2007, indicating a shift away from primary production. During 2002-04, a very high 61% of firms engaged in non-technological innovation, and an above-average 21% introduced new-to-market product innovations. In 2008 the country had a relatively low 110 scientific articles per million population, but scientific publications have grown by an average annual 4.5% since 1998, placing it among the 20 fastest-growing countries in this respect.

Almost one in every four firms collaborated on innovation activities in 2002-04. Although gross expenditure on R&D (GERD) financed from abroad declined from 13.6% in 2005 to 11% in 2007, this is the highest of all non-OECD countries analysed here. The 11% of Patent Cooperation Treaty (PCT) patent applications with foreign co-inventors during 2005-07 is also above average.

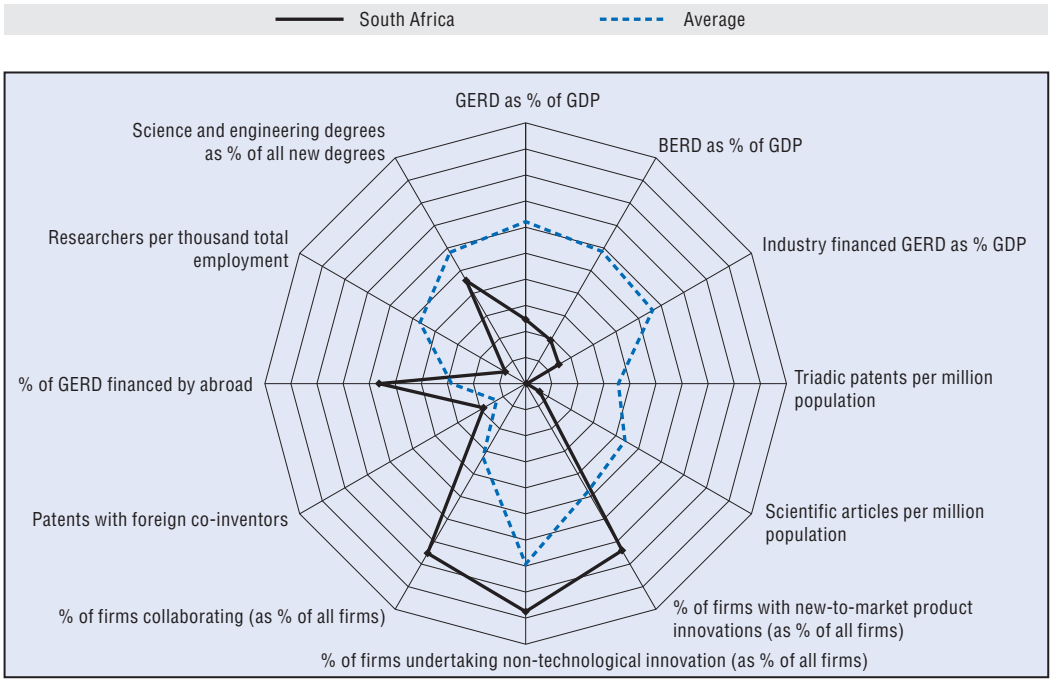
GERD rose from 0.73% of GDP in 2000 to 0.9% in 2007 and increased, in real terms, at a strong annual compound rate of 8.4% between 1997 and 2007. Industry financed 43% of GERD in 2007, down from 56% in 2001, while the share funded by government increased to 46% over the same period. Industry-financed GERD was 0.4% of GDP in 2007. In November 2006, South Africa introduced an enhanced R&D tax incentive which included a 150% tax deduction on current expenditure. Business expenditure on R&D (BERD) remained steady at 0.53% of GDP in 2005 and 2006. The country had less than one triadic patent per million population, well below average, and its share in triadic patent families in 2007 was also small. However, it is active in patent development in waste management, water pollution and renewable energy.

South Africa's indicators for human resources in science and technology (HRST) are weak. It has 1.5 researchers per thousand employment and a small 16% of science and engineering degrees in all new degrees.

With the global commodities boom, GDP growth was robust from 2004 to 2008, but slowed in 2008. In 2009 GDP fell by 1.8%. Unemployment remains high and outdated infrastructure continues to constrain growth. GDP per capita was 22% relative to the United States in 2009.

Three major innovation policy and related legislative developments have taken place from 2008 to 2010. South Africa's Ten-Year Innovation Plan (TYIP): 2008-2018 has commenced, with five "grand challenges": to strengthen the country's bio-economy; to develop space science and technology; to focus on energy security; to engage in efforts to address climate change; and to contribute to a greater understanding of the role of science in stimulating growth and development. In addition, the Technology Innovation Agency (TIA) was established to be operational in 2013, and work on a National Space Agency is currently under way.

Science and innovation profile of South Africa



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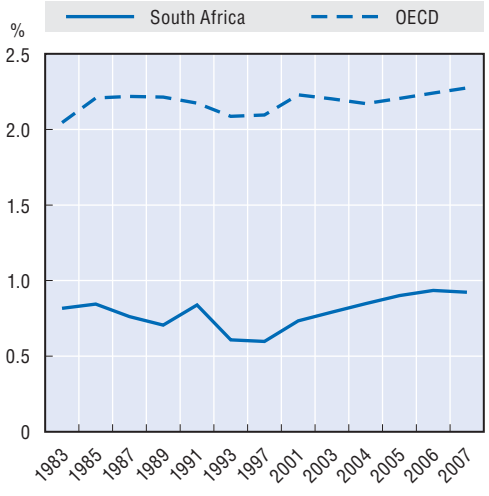
Gross expenditure on R&D

As a percentage of GDP, 1983-2007



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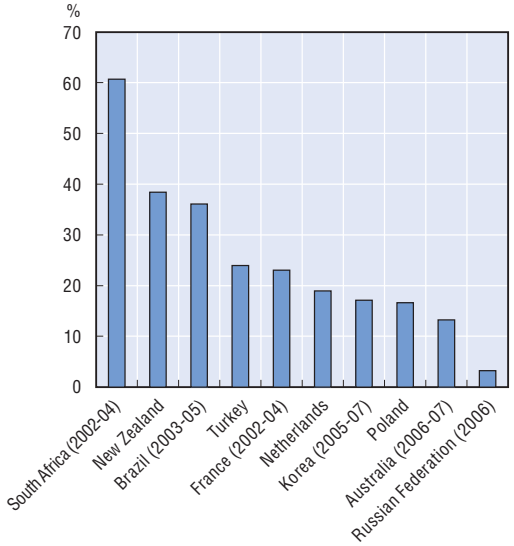
Firms undertaking non-technological innovation

As a percentage of all firms, 2004-06



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