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Israel

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ISRAEL

Israel stands out on a number of innovation indicators. At 4.65% of GDP it has the world's highest R&D intensity, over twice the OECD average of 2.26%. The intensity of business R&D expenditure is also higher than in all OECD countries, at 3.64% of GDP in 2006. Israel has the fifth highest number of scientific articles per million population, after Switzerland, Sweden, Denmark and Finland. It is also among the leaders in the number of triadic patent families per capita; however, in absolute terms it accounts for less than 1% of all triadic patent families, on a par with Australia and Belgium. In addition, Israel has a strong information and communication technology sector which accounts for about 20% of total industrial output, 9% of business sector employment, and a large share of the output growth of Israeli industry.

Israel's innovation system is a key driver of economic growth and competitiveness. While the success of the Israeli system is primarily attributable to vibrant business sector innovation and a strong entrepreneurial culture, the government has also played an instrumental role in financing innovation, especially in SMEs, and in providing well-functioning framework conditions for innovation, including venture capital (VC), incubators, strong science-industry links, and quality university education. For example, Israel reportedly has around 70 active VC funds, which raised EUR 963 million in 2005 and EUR 437 million in 2006. It has 24 technology incubators, 16 of which are privately owned.

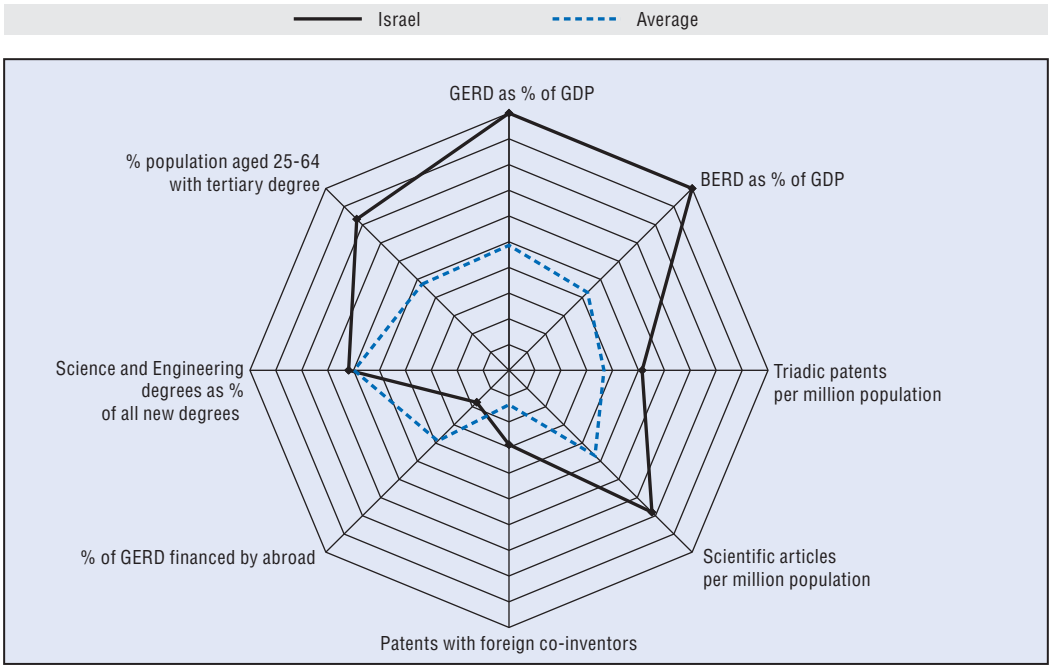
The available indicators on human resources for S&T show no shortages. The tertiary education attainment ratio is the third highest worldwide, behind only Russia and Canada, and the share of graduates in science and engineering, at 24.3%, is at a level commonly observed in advanced OECD countries.

Yet, Israel also faces some challenges. The strong reliance on the high-technology sector provides a narrow base for economic growth. Promoting innovation by SMEs and in non-high-technology industrial and services sectors is particularly important.

Maintaining efficiency in R&D expenditure is another challenge. With high R&D intensity, it is important to ensure that project selection remains rigorous, with a focus on net economic benefits. The Office of the Chief Scientist, the main government agency to support R&D (with a budget of EUR 223 million in 2006 and EUR 219 million in 2007), has funded one out of five project proposals in recent years. A further challenge is how to identify and invest in future technologies, including biotechnology and nanotechnology, that have strong potential.

Recent government initiatives include the amendment in 2005 of the law on R&D to allow overseas transfers of know-how resulting from publicly funded research, the establishment of several new programmes for SMEs and traditional industries, as well as the creation of a EUR 21 million fund for nanotechnology and a EUR 25 million fund for biotechnology. A new programme for the development and commercialisation of water technologies was introduced, and additional instruments for the water and renewable energy fields are being developed. Israel has also signed R&D co-operation agreements with innovative regions in foreign countries and major multinational companies; these will help it to build stronger links with innovation partners.

Science and innovation profile of Israel



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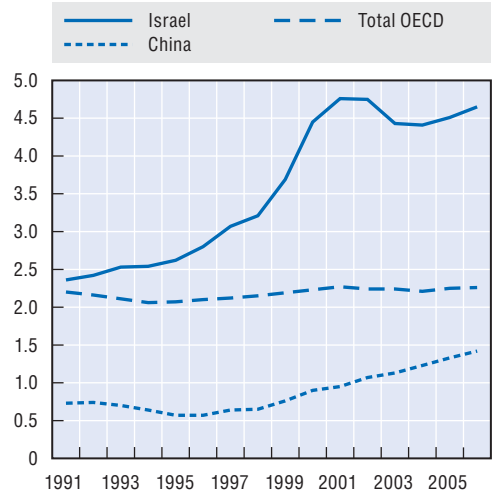
R&D intensity, 1991-2006

As a percentage of GDP



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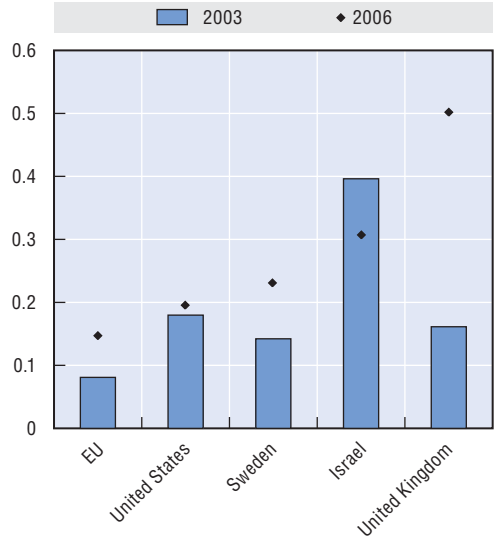
Venture capital, 2003 and 2006

As a percentage of GDP



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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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