

## Poland

Poland proved to be remarkably resilient in the face of the 2009 financial crisis and has continued to grow strongly and catch up with other OECD countries in terms of GDP per capita. The annual growth rate of the country's GDP averaged 3.1% from 2007 to 2014. GERD increased from 0.56% to 0.94% of GDP between 2004 and 2014, but it is still below the OECD average (2.38%). The government aims to attain GERD of 1.7% of GDP by 2020. To continue its convergence with the most affluent OECD countries, Poland needs to strengthen its public research system, enhance business innovation and improve the innovation skills of the workforce. The main catalysers for the country's strategic direction and policy action are the Strategy for Innovation and Efficiency of the Economy - Dynamic Poland 2020 (2013-20), the Entrepreneurship Development Programme (EDP) and the National Research Programme (NRP). Furthermore, the Smart Growth Operational Programme (2014-20) has been launched to boost the innovativeness and competitiveness of the economy by funding investment in research, development and innovation, with the support of the European structural funds.

### **Hot Issues: Promoting structural adjustment and new approaches to growth**

Productivity has been rising quickly in Poland. On the other hand, only 62.0% of the working-age population were employed in 2014, compared to the OECD average of 65.7%. Indicators on skills for innovation are below the OECD median. The new government is focusing on raising the workforce's skills to boost productivity and the economy's ability to absorb modern technologies. Given the scale of Poland's demographic problems, a better integration of immigrants into the domestic labour market would offer potential fiscal and productivity benefits to the economy. The OECD has also noted the potential productivity increases that could come from aligning product market regulations in network industries, retail distribution and professional services with the average of the three best-performing OECD countries. In addition to labour and product market reforms, Poland needs more investment in innovation to maintain growth. In line with the priorities of Horizon 2020, the National Research Programme makes innovation one of the main objectives for the Polish economy. Measures will therefore be taken to improve the legal and institutional environment for growth, to increase access to finance, and to promote intellectual capital investments and innovation and closer links between science and the economy.

### **Improving the design and implementation of STI policy (including experimentation)**

In 2016, a national council for innovation was launched to co ordinate the many research and innovation policies that Poland has implemented over the years. This inter-ministerial co ordination is welcome, as research and innovation policies have evolved in a piecemeal and overlapping manner in recent years.

### **Targeting innovative entrepreneurship and SMEs**

Polish enterprises, especially SMEs, show relatively little interest in investing in R&D. BERD was only 0.44% of GDP in 2014, far below the OECD median. The ease of entrepreneurship has improved, and is now around the OECD median, but venture capital for innovation is still below the OECD median, and innovation output, as measured by the number of patents and trademarks registered, is weak. To boost business innovation and to support entrepreneurship and SMEs, new instruments have been introduced and existing ones revised. The Development Projects (2012-15) under the Operational Programme Innovative Economy promote industrial R&D. The Technological Credit initiative provides financial support for SMEs to adopt and integrate new technologies into the production line. The Smart Growth Operational Programme also provides financial support for R&D by SMEs through competitive grants, with allocation being decided approximately 60 days following the closure of the bidding.

### **Reforming public research (including university research)**

Although the patenting activity of Poland's universities and PRIs is around the OECD median, in

terms of public R&D expenditure and international publications it falls at the lower end of the mid range of OECD countries. Industry-science relations are underdeveloped. Major reforms to improve the efficiency and quality of the PRIs and universities were introduced in the early 2010s. The policy mix for public research has remained stable since then. In 2012, additional resources were allocated on a competitive basis to promote high-quality research and teaching. The PRIs and universities are encouraged to compete for the status of being a leading national research centre (KNOW), which gives access to additional funding in order to enhance scientific and research potential, develop R&D personnel, create attractive working conditions for research, build a strong and recognisable brand, and increase researchers' remuneration and scholarships for PhD and undergraduate students. The centres are chosen in selected fields of knowledge through evaluations carried out by independent commissions with the participation of international experts. Furthermore, the NRP addressed the importance of improving and modernising R&D infrastructures and made several sources of funding available for this purpose. The Polish S&T Fund and the EU Structural Funds have increased financing for investments in research infrastructure. The KNOW also receive priority when they apply for funds to upgrade infrastructure. In August 2013, the EDP introduced an obligation to prepare a draft law on corporate income tax to support R&D.

### **Selected Highlights: New challenges**

To address challenges such as health and the environment, the government has introduced strategic R&D programmes such as STRATEGMED (2013-18) and INNOMED (2013-2018) for health and BIOSTRATEG (2014-19) for the natural environment, agriculture and forestry. Polish industry relies heavily on coal as an energy source, and the government supports research on renewables and the low emission economy through the Blue Gas - Polish Shale Gas Programme (2012-17) and on energy production technologies through the GEKON programme (2013-16). The GREEN EVO Programme also promotes Polish environmental technologies. The National Action Plan on Sustainable Public Procurement (2013-16) aims to encourage contracting authorities to incorporate environmental and social issues into public tenders.

### **Technology transfers and commercialisation**

To improve the commercialisation of research results, participants in the Development Projects (2012-15) must sign a consortium agreement between research organisations and enterprises. The BRIDGE VC (2013-17) programme supports the commercialisation of public R&D results. Since 2013, the pilot Innovation Voucher projects have supported experienced entrepreneurs who collaborate with the research sector. OCEAN, a new research data centre, is funded by the National Centre for Research and Development (NCBiR). It aims at providing an e infrastructure for the storage of open data as well as facilities and expertise for big data analysis.

### **Clusters and regional policies**

Poland has developed national and regional smart specialisation strategies through consultation with stakeholders and foresight exercises. Several strategies aim to promote the development of cluster policy, such as the Strategy for Innovation and the National Economy's Effectiveness (SIEG) and the Enterprises Development Programme (PRP). Seven clusters currently have the status of Key National Cluster. New sectoral innovation programmes include INNOLOT (2013-18), TECHMATSTRATEG for new material technology, and INNOSBZ for automated systems, while INNOTEXTILE provides innovation support for the textile industry and INNOCHEM for the chemical industry.

### **Globalisation**

Polish innovative firms are better integrated in international innovation networks than their academic counterparts. The MOBILITY PLUS initiative supports academic researchers who work abroad for periods of 6 to 36 months. Support for the internationalisation of innovative firms has focused on the internationalisation of SMEs and improvements in competitiveness.

### **Skills for innovation**

Expenditure on higher education as a share of GDP is just below the OECD median, and Polish 15 year-olds perform above the OECD median in science. However, adults with tertiary qualifications, adults' technical problem-solving skills, and the share of PhD graduates in science and engineering are all below the OECD median. Programmes supporting skills development include the TOP 500 Innovators (2013-15) and the LIDER programme (2009-17), and education in entrepreneurship has been made compulsory in Polish universities. The Higher Education and Science Development Programme for 2015-2030 aims to increase the quality of education and research while orienting them towards social and economic needs.

**Benchmark:** <http://innovationpolicyplatform.org/STICharting/benchmark.htm?iso=PL> [1]

**BERD:** <http://innovationpolicyplatform.org/STICharting/BERD.htm?iso=PL> [2]

**IPM:** [http://innovationpolicyplatform.org/STICharting/IPM\\_FUND.htm?iso=PL](http://innovationpolicyplatform.org/STICharting/IPM_FUND.htm?iso=PL) [3]

**RTA:** <http://innovationpolicyplatform.org/STICharting/RTA.htm?iso=PL> [4]

**Other STI Outlook Resources:** [e-Outlook Homepage](#) [5]

[STIO Highlights](#) [6]

[Printable Poland 2016 Country Profile](#) [7]

[STIO Country Profiles Reader's Guide](#) [8]

[Methodological Annex to the 2016 OECD STIO Country Profiles](#) [9]

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## Links

[1] <http://innovationpolicyplatform.org/STICharting/benchmark.htm?iso=PL>

[2] <http://innovationpolicyplatform.org/STICharting/BERD.htm?iso=PL>

[3] [http://innovationpolicyplatform.org/STICharting/IPM\\_FUND.htm?iso=PL](http://innovationpolicyplatform.org/STICharting/IPM_FUND.htm?iso=PL)

[4] <http://innovationpolicyplatform.org/STICharting/RTA.htm?iso=PL>

[5] <https://www.innovationpolicyplatform.org/sti/e-outlook>

[6] [https://www.innovationpolicyplatform.org/system/files/STIO%20Key%20messages\\_0.pdf](https://www.innovationpolicyplatform.org/system/files/STIO%20Key%20messages_0.pdf)

[7] [http://www.oecd-ilibrary.org/science-and-technology/oecd-science-technology-and-innovation-outlook-2016/poland\\_sti\\_in\\_outlook-2016-81-en](http://www.oecd-ilibrary.org/science-and-technology/oecd-science-technology-and-innovation-outlook-2016/poland_sti_in_outlook-2016-81-en)

[8] [http://www.oecd-ilibrary.org/science-and-technology/oecd-science-technology-and-innovation-outlook-2016/sti-country-profiles-reader-s-guide\\_sti\\_in\\_outlook-2016-44-en](http://www.oecd-ilibrary.org/science-and-technology/oecd-science-technology-and-innovation-outlook-2016/sti-country-profiles-reader-s-guide_sti_in_outlook-2016-44-en)

[9] [http://www.oecd-ilibrary.org/science-and-technology/oecd-science-technology-and-innovation-outlook-2016/methodological-annex-to-the-2016-oecd-sti-outlook-country-profiles\\_sti\\_in\\_outlook-2016-95-en](http://www.oecd-ilibrary.org/science-and-technology/oecd-science-technology-and-innovation-outlook-2016/methodological-annex-to-the-2016-oecd-sti-outlook-country-profiles_sti_in_outlook-2016-95-en)

[10] <https://innovationpolicyplatform.org/system/files/sti-outlook-2014-poland.pdf>

[11] <http://www.enterprisesurveys.org/~media/GIAWB/EnterpriseSurveys/Documents/Profiles/English/Poland-2013.pdf>