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Malaysia

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MALAYSIA

Malaysia is a dynamic emerging economy in Southeast Asia, with average growth at 4.1% between 2009 and 2012 and gross national income of USD 22 280 per capita in 2012. In 2013, the government announced the National Science, Technology and Innovation Policy (NSTIP) (2013-20), which provides strategic guidelines for STI policy and investment for Malaysia's transition to an innovation economy by 2020. The Prime Minister subsequently announced the Science for Action (S2A) for the implementation of the NSTIP, as one of the key strategic thrusts of the country's 11th Plan (2016-20).

Hot issue 1: Strengthening public R&D capacity and infra-structures. Malaysia's expenditure on public R&D, at 0.46% of GDP, is at the lower end of the OECD middle range (Panel 1^a) and comparable to that of China (0.47%) and Russia (0.46%). Between 2001 and 2011, science and engineering articles produced by Malaysia increased by 16% a year, slightly faster than the increase of China's (15.6%). Going forward, the government envisages a public research sector that serves as a solid knowledge base and an effective diffusion channel within the national innovation system. To this end, the National Science and Research Council (NSRC) made several recommendations in 2013; to create a Research Management Agency under the NSRC to improve the management of public research; to establish an industry research nexus as a platform for public research and industry collaboration in order to improve the relevance and marketability of public research; to review, restructure and realign PRIs; and to enhance human capital and related funding and improve the research ecosystem and culture. Public spending on R&D continue to increase, with USD 428.6 million (MYR 600 million) allocated to five research universities in the 2013 budget for high-impact research in strategic fields such as nanotechnology, automotive technology, biotechnology and aerospace.

Hot issue 2: Improving overall human resources, skills and capacity building. While Malaysia spends a large share of GDP on higher education (Panel 1^b), there is room for improvement in overall investment in human capital and in the workforce's industrial skill development. In addition, Malaysia needs to develop, attract and retain the highly skilled to further strengthen the human resource base.

In 2013, the Ministry of Education (MOE) launched the Malaysia Education Blueprint (2013-25), which aspires to improve the Malaysian education system in terms of access, quality, equity, unity and efficiency. One of its major thrusts is to strengthen STEM throughout the education system. To enhance the supply of high-end STI personnel, the blueprint sets a target of producing 60 000 Malaysian PhDs by 2025. To this end, the government launched the MyBrain15 programme, which offers three types of scholarships: MyMaster, MyPhD and Industrial PhD. Wide-ranging measures to enhance the innovative skills of the workforce, intensify STI brain gain and brain circulation, improve the talent management system and develop a dynamic career for researchers are also being implemented.

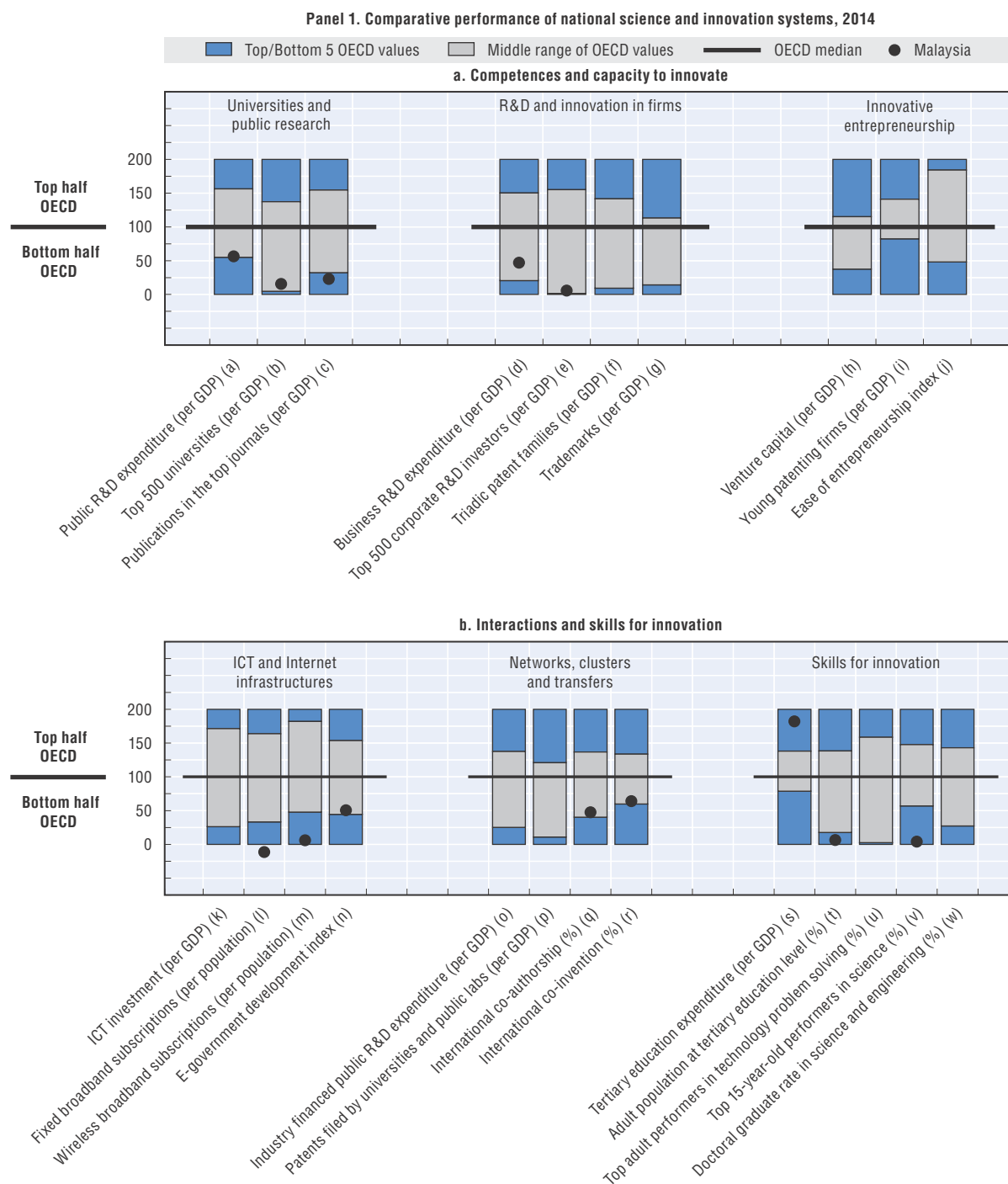
Hot issue 3: Encouraging innovation in firms and supporting entrepreneurship and SMEs. While Malaysia has achieved robust economic growth in the past half-century, moving from a primary sector to a multi-sector economy with high-technology manufacturing and services, the country's STI capabilities need to be further developed. The government's 10th Malaysia Plan (2011-15), which aims to make Malaysia an innovation-led economy, promotes the private sector as the main driver of growth through increased private-sector investment and commitment to STI. Several measures to promote industrial innovation, including fiscal and financial incentives, support to consortia and clusters, public-private partnerships, and the promotion of science-industry linkages and knowledge transfer have been introduced. The government has allocated R&D funds, e.g. the TechnoFund, ScienceFund, InnoFund, Technology Acquisition Fund (TAF) and others, to various agencies and ministries.

Hot issues 4: Improving the governance of the innovation system and policy. Malaysia has adopted a quadruple helix approach to improve interactions among government, academia, industry and society in order to implement the nation's STI policies, programmes and priorities more effectively. However, as many agencies continue to be engaged in STI policy making, funding and programming, a central body is needed to oversee and co-ordinate at the national level. One of the objectives of S2A is to strengthen public services and governance to ensure an ecosystem that will

Key figures, 2013

| Economic and environmental performance | MYS | OECD | Gross domestic expenditure on R&D | MYS | OECD |
|--|--------|--------|-----------------------------------|---------|-----------|
| Labour productivity | | | GERD | | |
| GDP per hour worked, USD PPP, 2013 | n.a. | 47.7 | Million USD PPP, 2011 | 4 953 | 1 107 398 |
| (annual growth rate, 2008-13) | n.a. | (+0.8) | As a % of total OECD | n.a. | 100 |
| Green productivity | | | GERD intensity and growth | | |
| GDP per unit of CO ₂ emitted, USD, 2011 | 2.1 | 3.0 | As a % of GDP, 2011 | 1.07 | 2.40 |
| (annual growth rate, 2007-11) | (+0.4) | (+1.8) | (annual growth rate, 2008-11) | (+14.6) | (+2.0) |
| Green demand | | | GERD publicly financed | | |
| NNI per unit of CO ₂ emitted, USD, 2011 | n.a. | 3.0 | As a % of GDP, 2011 | 0.47 | 0.77 |
| (annual growth rate, 2007-11) | n.a. | (+1.6) | (annual growth rate, 2008-11) | (+28.7) | (+2.8) |

Figure 9.30. Science and innovation in Malaysia



Note: Normalised index of performance relative to the median values in the OECD area (Index median = 100).

facilitate the development and uptake of S&T. The government recently established the National Science, Technology and Industry Council, which aims to rationalise the many science- and industry-based councils. Additionally, there are plans to establish a National Science and Research Board to co-ordinate the STI strategies of different agencies and align them with national strategies and priorities in addition to strengthening the management of STI programmes. Because the country's evaluation capabilities are weak, assessments of STI policies and programmes are not regularly undertaken.

Highlights of the Malaysian STI system

New challenges: The National Science and Research Council (NSRC) has established nine R&D priority areas: biodiversity, cybersecurity, energy security, environment and climate change, food security, medical and health care, plantation crops and commodities, transport and urbanisation, and water security. The Green Technology Financing Scheme (GTFS) was established in 2010 to accelerate the expansion of the green technology industry by improving access to bank credit financing. USD 2.5 billion (MYR 3.5 billion) in bank credit is available for use by 2015. Currently 127 projects are financed with a total of USD 1.26 billion (MYR 1.77 billion). In addition, several grassroots innovation schemes have been introduced in recent years to exploit the rich potential opportunities arising from the knowledge/practices of traditional communities. Under the NSTIP, an Innovation Inclusive Roadmap will be prepared to address the concerns of disadvantaged and low-income communities.

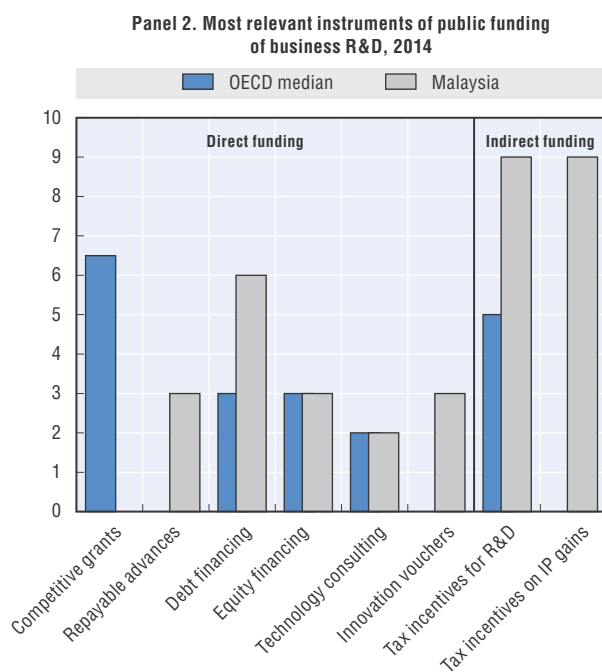
New sources of growth: The New Economic Model, unveiled in 2010, selected 12 national key economic areas (NKEAS), chosen on the basis of their potential to raise income and promote Malaysia's global competitiveness over the coming decade, such as: oil, gas and energy; palm oil and rubber; business services; electronic and electrical; education; and health care. Policy interventions are mainly implemented in the spirit of public-private partnerships, with public agencies mandated to provide eco-systems that are conducive to innovation and commercialisation, while business entities are expected to foster business and entrepreneurial agendas.

Innovative entrepreneurship: Industrial innovation has been limited and confined to the more dynamic export-oriented

firms. Fewer than 10% of SMEs engage in R&D although they constitute almost 95% of manufacturing establishments. To help build a more entrepreneurial culture, courses on basic entrepreneurship skills have been made compulsory in all undergraduate programmes. Launched recently, the Malaysian Global Innovation and Creativity Centre (MaGIC) initiative with USD 35.7 million (MYR 50 million), helps domestic and international entrepreneurs to start and grow their businesses in Malaysia.


Technology transfer and commercialisation: Malaysia's R&D landscape includes PRIs and research-based universities. All public research universities are required to play a role in addressing societal welfare and/or commercialisation of research. The ScienceFund, InnoFund and TechnoFund, which are under the Ministry of Science, Technology and Innovation (MOSTI), promote the commercialisation potential of public-funded R&D outputs. Under the 10th Malaysia Plan, the MOE has launched the Knowledge Transfer Programme to facilitate the transfer of expertise and research findings through projects undertaken jointly by academia, industry and the community. To date, a total of 254 projects funded with some USD 25.7 million (MYR 36 million) have been launched with industry contributing about a quarter of the sum.

Globalisation: Chaired by the prime minister and formed by global industry leaders and renowned international experts, the Global Science and Innovation Advisory Council (GSIAC) is being set up as a sounding board for Malaysia's STI efforts. Key programmes initiated through this platform include the Malaysian Biomass Initiative, Smart Communities, and Human Capital Building. Existing programmes have been improved through the adoption of globally recognised best practices. International strategic collaborations were also forged, including the STEM Program (MOE and UKM), the Nobelist Mindset (PermataPintar™) and My Body is Fit and Fabulous (Ministry of Health). Malaysia has shared its STI development experience with developing countries and has contributed through financial and other support to international organisations such as the Commonwealth Partnership for Technology Management (CPTM), the Organization of Islamic Conference (OIC), and the International Science, Technology Innovation Centre for South-South Cooperation under the auspices of UNESCO (ISTIC), among others.



Note: Policy information comes from country responses to the OECD STI Outlook policy questionnaires 2014. Malaysia's response is available in the OECD STI Outlook Policy Database, edition 2014 at <http://qdd.oecd.org/Table.aspx?Query=F740E8F7-02C4-4A72-B953-9C5A65E8F709>.

Source: See reader's guide and methodological annex.

StatLink  <http://dx.doi.org/10.1787/888933152306>

STI country profiles reader's guide

The country profiles (CPs) in the 2014 *OECD STI Outlook* (STIO) are designed to provide a concise overview of science, technology and innovation (STI) policy and performance in OECD members and selected non-OECD economies. Each country profile is based on information gathered from the country's response to the OECD STIO policy questionnaires 2012 and 2014, as well as various additional OECD and non-OECD sources.

Headings in the country profiles are linked to the STIO policy profiles, which examine the main global STI policy trends across countries. Issues featuring in both the policy and country profiles are: i) innovation policy governance; ii) new sources of growth; iii) new challenges; iv) universities and public research; v) innovation in firms; vi) innovative entrepreneurship; vii) technology transfer and commercialisation; viii) clusters and smart specialisation; ix) globalisation; and x) skills for innovation.

The table of key figures presents indicators on the country's economic performance (labour productivity), environmental performance (green productivity and demand), the size of its R&D system as measured by gross domestic expenditure on R&D (GERD), the degree of public commitment to S&T as measured by the share of GERD that is publicly financed, and the changes in these indicators over the past five years. In the text, all amounts are given both in USD in purchasing power parities (PPP) of the relevant year (if available) and in national currencies.

Panel 1 contains a double figure that sheds light on the strengths and weaknesses of the country's STI performance. It uses indicators on the country's national innovation system and performance with respect to: universities and public research, business R&D and innovation, innovative entrepreneurship, information and communication technology (ICT) and Internet infrastructure, networks, clusters and transfers, and skills for innovation. The dot for each indicator positions the country relative to the OECD median and to the top and bottom five OECD countries. Non-OECD countries are also compared to the OECD benchmarks, and may fall out of the range indicated in the figure (e.g. below the lowest OECD country). All indicators are normalised (by GDP and population cohorts) to take account of the size of the economy and the relevant population cohorts, and are presented as indices (OECD median = 100) for benchmarking purposes.

Panel 2 shows the structural composition of business expenditure on R&D (BERD) in terms of performance of the main industry sectors, firm size and firms' national affiliation. It reflects the country's industry structure and its business innovation efforts. Panel 3 presents the country's revealed technological advantage (RTA), as measured by international patent applications filed under the Patent Cooperation Treaty (PCT) in three key technology fields (bio- and nano-technology, ICTs, and environment-related technologies). It also shows the number of patents filed by universities and public research institutions in these fields.

Panel 4 gives an overview of the country's policy mix for public R&D, i.e. the orientation and funding modes of public research. It also illustrates changes in the policy mix for R&D over the past five years. Finally, Panel 5, a new feature in STIO 2014, reflects the balance and relative importance of various government measures to support business R&D and innovation. It is based on the country's self-assessment in its reply to the OECD STIO 2014 policy questionnaire.

Further details on the methodology, data sources and descriptions of indicators used in the country profile are provided in Annex 9.A. Data, metadata as well as the original sources and databases of the indicators used in the STIO 2014 are accessible at the statistical portal IPP.Stat (cut-off date: 8 July 2014).

Abbreviations used in the country profiles

| | |
|-------|---|
| BERD: | Business expenditure on research and development |
| EU: | European Union |
| FDI: | Foreign direct investment |
| GDP: | Gross domestic product |
| GERD: | Gross expenditure on research and development |
| HEIs: | Higher education institutions |
| IPRs: | Intellectual property rights |
| MNEs: | Multinational enterprises |
| PRIs: | Public research institutes |
| R&D: | Research and development |
| S&E: | Science and engineering |
| SSS: | Smart specialisation strategy (also known as 3S) |
| STI: | Science, technology and innovation |
| S&T: | Science and technology |
| 3S: | See SSS |
| STEM: | Science, technology, engineering and mathematics |
| USD: | United States dollars (converted using the purchasing power parities of the relevant year) |
| VC: | Venture capital |

Synthetic table

Table 9.1. **Comparative performance of national science and innovation systems, 2014**

Country relative position: in the top 5 OECD or above (★), in the middle range on par or above OECD median (▲), in the middle range below OECD median (△) and in the bottom 5 OECD or below (○)

| | | Competences and capacity to innovate | | | | | | | | | |
|--------------------|------|--------------------------------------|--------------------------------|---|------------------------------------|---|-----------------------------------|----------------------|-----------------------------|---------------------------------|--------------------------------|
| | | Universities and public research | | | R&D and innovation in firms | | | | Innovative entrepreneurship | | |
| | | Public R&D expenditure (per GDP) | Top 500 universities (per GDP) | Publications in the top-quartile journals (per GDP) | Business R&D expenditure (per GDP) | Top 500 corporate R&D investors (per GDP) | Triadic patent families (per GDP) | Trademarks (per GDP) | Venture capital (per GDP) | Young patenting firms (per GDP) | Ease of entrepreneurship index |
| | | PUB_XGDP | UNI500_GDP | PUB25_GDP | BE_XGDP | CORPRD500_GDP | PTRIAD_GDP | TRDMRK_GDP | VC_XGDP | PTYG_GDP | EASE_I |
| | | (a) | (b) | (c) | (d) | (e) | (f) | (g) | (h) | (i) | (j) |
| Argentina | ARG | △ | △ | ○ | ○ | ○ | ○ | ○ | | | |
| Australia | AUS | ▲ | ▲ | ▲ | ▲ | △ | △ | ▲ | △ | | ▲ |
| Austria | AUT | ▲ | ★ | ▲ | ▲ | ▲ | ▲ | △ | △ | ★ | ▲ |
| Belgium | BEL | △ | ▲ | ▲ | ▲ | △ | ▲ | △ | ▲ | △ | △ |
| Brazil | BRA | | △ | ○ | | △ | ○ | ○ | | | △ |
| Canada | CAN | ▲ | ▲ | ▲ | △ | △ | ▲ | ★ | ★ | ○ | ▲ |
| Chile | CHL | ○ | △ | ○ | ○ | ○ | ○ | △ | | | △ |
| China | CHN | △ | △ | ○ | ▲ | △ | △ | ○ | | | ○ |
| Colombia | COL | ○ | ○ | ○ | ○ | | | | | | |
| Costa Rica | CRI | ○ | ○ | ○ | ○ | ○ | | | | | |
| Czech Republic | CZE | ▲ | △ | △ | △ | △ | △ | △ | ○ | | △ |
| Denmark | DNK | ★ | ▲ | ★ | ▲ | ★ | ▲ | ▲ | ▲ | | ▲ |
| Estonia | EST | ▲ | | ▲ | ▲ | ○ | △ | △ | ▲ | | ▲ |
| Finland | FIN | ★ | ★ | ▲ | ★ | ★ | ★ | ▲ | ★ | ★ | ▲ |
| France | FRA | ▲ | △ | △ | ▲ | ▲ | ▲ | ▲ | ▲ | △ | ▲ |
| Germany | DEU | ★ | ▲ | △ | ▲ | ▲ | ★ | ▲ | ▲ | ★ | ▲ |
| Greece | GRC | ○ | △ | △ | ○ | △ | ○ | ○ | ○ | | △ |
| Hungary | HUN | ○ | △ | △ | △ | △ | △ | ○ | △ | | △ |
| Iceland | ISL | ★ | ○ | ★ | ▲ | ▲ | △ | ★ | | | △ |
| India | IND | △ | ○ | ○ | ○ | ○ | △ | ○ | | | ○ |
| Indonesia | IDN | | ○ | ○ | ○ | | ○ | ○ | | | △ |
| Ireland | IRL | △ | ▲ | ▲ | △ | ▲ | ▲ | ▲ | ★ | ○ | △ |
| Israel | ISR | △ | ★ | ▲ | ★ | ▲ | ▲ | ▲ | ★ | | ○ |
| Italy | ITA | △ | △ | △ | △ | △ | △ | △ | ○ | ▲ | ★ |
| Japan | JPN | ▲ | △ | ○ | ★ | ▲ | ★ | △ | △ | ○ | ▲ |
| Korea | KOR | ▲ | △ | △ | ★ | ▲ | ▲ | ▲ | ▲ | | △ |
| Latvia | LVA | △ | ○ | ○ | ○ | | △ | | | | |
| Lithuania | LTU | △ | ○ | ○ | ○ | | △ | | | | |
| Luxembourg | LUX | ○ | ○ | △ | △ | ★ | ▲ | ★ | △ | | △ |
| Malaysia | MYS | △ | △ | ○ | △ | △ | | | | | |
| Mexico | MEX | ○ | ○ | ○ | ○ | ○ | ○ | △ | | | ○ |
| Netherlands | NLD | ▲ | ▲ | ★ | ▲ | ▲ | ▲ | ▲ | ▲ | ▲ | ★ |
| New Zealand | NZL | △ | ★ | ▲ | △ | △ | △ | ★ | △ | | ★ |
| Norway | NOR | ▲ | ▲ | △ | △ | ▲ | △ | △ | △ | ▲ | △ |
| Poland | POL | △ | △ | △ | ○ | ○ | △ | ○ | ○ | | ○ |
| Portugal | PRT | △ | ▲ | ▲ | △ | △ | △ | △ | △ | | ▲ |
| Russian Federation | RUS | △ | ○ | ○ | △ | △ | ○ | ○ | △ | | △ |
| Slovak Republic | SVK | △ | ○ | ○ | ○ | ○ | ○ | ○ | | | ★ |
| Slovenia | SVN | △ | ▲ | ▲ | ▲ | △ | △ | △ | △ | | △ |
| South Africa | ZAF | ○ | △ | ○ | △ | △ | △ | △ | △ | | ○ |
| Spain | ESP | △ | △ | △ | △ | △ | △ | △ | ○ | ○ | ○ |
| Sweden | SWE | ★ | ★ | ★ | ★ | ★ | ★ | ▲ | ▲ | ★ | △ |
| Switzerland | CHE | ▲ | ▲ | ★ | ▲ | ★ | ★ | ★ | ▲ | ★ | ▲ |
| Turkey | TUR | △ | ○ | ○ | △ | △ | ○ | ○ | | | ○ |
| United Kingdom | GBR | △ | ▲ | ▲ | △ | ▲ | ▲ | ▲ | ▲ | △ | ▲ |
| United States | USA | ▲ | △ | △ | ▲ | ▲ | ▲ | ▲ | ★ | ○ | ★ |
| EU28 | EU28 | ▲ | ▲ | ★ | ▲ | △ | ▲ | △ | ▲ | ▲ | |

Table 9.1. **Comparative performance of national science and innovation systems, 2014 (cont.)**

Country relative position: in the top 5 OECD or above (★), in the middle range on par or above OECD median (▲), in the middle range below OECD median (△) and in the bottom 5 OECD or below (○)

| | | Interactions and skills for innovation | | | | | | | | | | | | |
|--------------------|------|--|--|---|------------------------------|--|---|---------------------------------|--------------------------------|--|--|--|---|---|
| | | ICT and Internet infrastructures | | | | Networks, clusters and transfers | | | | Skills for innovation | | | | |
| | | ICT investment (per GDP) | Fixed broadband subscribers (per population) | Wireless broadband subscribers (per population) | E-government readiness index | Industry financed public R&D expenditure (per GDP) | Patents filed by universities and public labs (per GDP) | International co-authorship (%) | International co-invention (%) | Tertiary education expenditure (per GDP) | Adult population at tertiary education level (%) | Top adult performers in technology problem solving (%) | Top 15 year-old performers in science (%) | Doctoral graduate rate in science and engineering (%) |
| | | ICTINV_XGDP | FBBAND_HAB | WBBAND_HAB | EGOV_I | PUB_BEF_XGDP | PATPRI_XGDP | INTCOA_XSA | COPAT_XPCT | TER_XGDP | ADTERPOP_XT | TOPAD_PST_XAD | TOP15_SCI_XT | PHDR_SCIENG_XCOH |
| | | (k) | (l) | (m) | (n) | (o) | (p) | (q) | (r) | (s) | (t) | (u) | (v) | (w) |
| Argentina | ARG | ○ | ○ | ○ | ○ | ○ | | △ | ★ | ▲ | ○ | | ○ | ○ |
| Australia | AUS | ▲ | △ | ★ | ▲ | ▲ | ▲ | △ | △ | ▲ | ▲ | ▲ | ★ | ▲ |
| Austria | AUT | ▲ | △ | ▲ | △ | ▲ | △ | ★ | ▲ | △ | △ | △ | △ | ▲ |
| Belgium | BEL | ▲ | ▲ | △ | △ | ▲ | ▲ | ★ | ★ | △ | ▲ | | ▲ | ▲ |
| Brazil | BRA | | ○ | △ | ○ | | △ | ○ | △ | ○ | ○ | | ○ | ○ |
| Canada | CAN | △ | ▲ | △ | ▲ | ▲ | ▲ | △ | ▲ | ★ | ★ | ▲ | ▲ | ▲ |
| Chile | CHL | | ○ | ○ | △ | ○ | △ | ▲ | △ | ★ | ○ | | ○ | ○ |
| China | CHN | | ○ | ○ | ○ | ▲ | △ | ○ | ○ | | ○ | | | ○ |
| Colombia | COL | | ○ | ○ | △ | | | ▲ | △ | ★ | △ | | ○ | |
| Costa Rica | CRI | | ○ | ○ | ○ | | | ★ | ★ | | △ | | ○ | |
| Czech Republic | CZE | △ | △ | △ | ○ | △ | △ | △ | ▲ | △ | △ | △ | △ | △ |
| Denmark | DNK | ★ | ★ | ★ | ★ | △ | ★ | ▲ | ▲ | ▲ | △ | ★ | △ | ▲ |
| Estonia | EST | | △ | ▲ | △ | △ | | ▲ | ★ | ▲ | ▲ | ○ | ★ | △ |
| Finland | FIN | △ | ▲ | ★ | ▲ | ★ | ▲ | ▲ | △ | ★ | ▲ | ★ | ★ | ★ |
| France | FRA | △ | ★ | △ | ▲ | △ | ★ | ▲ | △ | ▲ | △ | | ▲ | ▲ |
| Germany | DEU | △ | ▲ | △ | ▲ | ★ | ▲ | △ | △ | △ | △ | ▲ | ▲ | ★ |
| Greece | GRC | ○ | △ | △ | △ | △ | ○ | △ | ▲ | ▲ | △ | | ○ | △ |
| Hungary | HUN | | △ | ○ | △ | ▲ | ○ | ▲ | ▲ | ○ | △ | | △ | ○ |
| Iceland | ISL | | ▲ | ▲ | △ | ★ | | ★ | ▲ | ○ | ▲ | | △ | △ |
| India | IND | | ○ | ○ | ○ | | △ | ○ | ▲ | ○ | | | | |
| Indonesia | IDN | | ○ | ○ | ○ | | | ▲ | ★ | ○ | ○ | | ○ | ○ |
| Ireland | IRL | ○ | △ | ▲ | △ | ○ | ★ | ▲ | ▲ | ▲ | ▲ | ○ | ▲ | ▲ |
| Israel | ISR | | △ | △ | ▲ | ▲ | ★ | △ | △ | ▲ | ★ | | △ | ▲ |
| Italy | ITA | △ | △ | △ | △ | ○ | △ | △ | ○ | ○ | ○ | | △ | △ |
| Japan | JPN | ★ | ▲ | ▲ | ▲ | △ | ▲ | ○ | ○ | ▲ | ★ | ▲ | ★ | △ |
| Korea | KOR | ▲ | ★ | ★ | ★ | ▲ | ★ | ○ | ○ | ★ | ★ | ○ | ▲ | △ |
| Latvia | LVA | | △ | △ | △ | ▲ | | △ | ★ | ▲ | △ | | ○ | △ |
| Lithuania | LTU | | △ | ○ | △ | ★ | | △ | △ | | ▲ | | △ | |
| Luxembourg | LUX | ○ | ▲ | ▲ | ▲ | △ | △ | ★ | ★ | ○ | ▲ | | ▲ | |
| Malaysia | MYS | | ○ | ○ | △ | | | △ | △ | ★ | ○ | | ○ | |
| Mexico | MEX | ○ | ○ | ○ | ○ | ○ | ○ | △ | ▲ | △ | ○ | | ○ | ○ |
| Netherlands | NLD | ▲ | ★ | ▲ | ★ | ★ | ▲ | ▲ | △ | ▲ | △ | ★ | ▲ | △ |
| New Zealand | NZL | ★ | ▲ | ▲ | ▲ | ★ | △ | ▲ | △ | ▲ | ▲ | | ★ | ▲ |
| Norway | NOR | | ▲ | ▲ | ▲ | ▲ | △ | ▲ | △ | ▲ | ▲ | ★ | △ | ▲ |
| Poland | POL | | ○ | ▲ | ○ | △ | △ | ○ | ★ | △ | △ | ○ | ▲ | ○ |
| Portugal | PRT | ▲ | △ | ○ | △ | ○ | ○ | △ | ▲ | △ | ○ | | ○ | △ |
| Russian Federation | RUS | | ○ | △ | △ | ★ | ○ | ○ | △ | △ | ★ | | ○ | ○ |
| Slovak Republic | SVK | ○ | ○ | △ | ○ | △ | | △ | ▲ | ○ | △ | ○ | △ | ▲ |
| Slovenia | SVN | △ | △ | △ | △ | ▲ | △ | △ | △ | △ | △ | | ▲ | ▲ |
| South Africa | ZAF | | ○ | ○ | ○ | △ | △ | △ | △ | ○ | ○ | | | ○ |
| Spain | ESP | △ | △ | △ | △ | ▲ | ▲ | △ | △ | △ | △ | | △ | △ |
| Sweden | SWE | ★ | ▲ | ★ | ▲ | ▲ | ○ | ▲ | △ | ▲ | ▲ | ★ | △ | ★ |
| Switzerland | CHE | ★ | ★ | △ | ▲ | ▲ | ▲ | ★ | ★ | △ | ▲ | | ▲ | ★ |
| Turkey | TUR | | ○ | ○ | ○ | ▲ | ○ | ○ | ○ | △ | ○ | | ○ | ○ |
| United Kingdom | GBR | ▲ | ▲ | ▲ | ★ | △ | ▲ | △ | ▲ | △ | ▲ | | ▲ | ★ |
| United States | USA | ▲ | ▲ | ▲ | ★ | △ | ▲ | ○ | ○ | ★ | ★ | △ | △ | △ |
| EU28 | EU28 | △ | ▲ | ▲ | | △ | ▲ | ▲ | ▲ | | △ | | △ | ▲ |

Note: Non-OECD countries are also compared to OECD countries and may therefore be out of range (e.g. lower than the lowest OECD country). They appear in this table with top five and bottom five OECD values

Israel: "The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law."

Source: See references and methodological annex of the OECD STI Outlook 2014 country profiles.

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