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Argentina

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ARGENTINA

The Argentinian government recognises that innovation is a key source of growth and currently concentrates its efforts in several areas.

Hot issue 1: Innovating to address social challenges (including inclusiveness). Argentina focuses on resolving the challenges of social exclusion. The Ministry of Science, Technology and Productive Innovation (MINCYT) has made addressing social challenges a priority in its guidelines for the development of the country's innovation system. In 2009, MINCYT created Argentinian Sectoral Fund (FONARSEC), a fund mainly financed by grants from the World Bank and the Inter-American Development Bank, which also supports innovation initiatives that foster social inclusion.

Hot issue 2: Improving co-ordination of and participation in governance. Many public bodies are involved in Argentina's STI system. MINCYT, with a budget of USD 1 443 million (ARS 4 994 million) in 2013, has a central role in managing innovation investments and R&D institutions. Agencies such as the National Research Council (CONICET) and the National Agency for the Promotion of Science and Technology (ANPCYT) distribute government grants for research. The Evaluation and Quality Assurance Unit (UEAC) of the National Agency for the Promotion of Science and Technology and the National Directorate of Programmes and Projects of the Undersecretary of Institutional Evaluation conduct evaluations with a view to quality assurance. To improve co-ordination, MINCYT's allocation of resources has been progressively aligned over the last five years with policies from other ministries and agencies through the Scientific and Technological Cabinet (GACTEC), an inter-ministerial body in charge of formulating S&T policy. The Federal Council on Science and Technology (COFECYT) acts as an advisory board for maintaining policy coherence among federal, provincial and local governments, and for safeguarding regional interests in MINCYT's allocation of resources. In March 2013, MINCYT presented its national STI strategic plan, *Argentina Innovadora 2020*, which seeks to optimise and articulate the country's public and private STI efforts.

Hot issue 3: Targeting priority areas/sectors. Sectoral funds constitute the backbone of Argentina's S&T policy. Most of ANPCYT's budget focuses on the strategic knowledge areas and business sectors identified in the *Argentina Innovadora 2020* plan. FONSOFT is a trust fund to support ICT, in which Argentina hopes to develop a comparative advantage. The FONARSEC fund supports development of target technologies (e.g. bio- and nano-technology) and sectors (e.g. energy, health and agro-industry).

Hot issue 4: Increasing overall human resources, skills and capacity building. Argentina spent 1.47% of GDP on tertiary education in 2011, a level close to the OECD median (Panel 1^s). However, performance of 15-year-olds in science is well below the OECD median (Panel 1^v) and points to shortcomings in the quality of education. The share of doctoral graduates in S&E is also well below the OECD median (Panel 1^w). To improve the supply of human resources for STI, two programmes, *Becas Bicentenario* and *Becas TICs*, provide up to 30 000 scholarships a year for tertiary education for low-income students.

CONICET funds domestic doctoral programmes and post-doctoral training and provides grants to support knowledge transfer between universities and the private sector. The government also has programmes targeting Argentina's diaspora. Since its inception in 2004, more than 1 000 scientists had returned to Argentina as part of the RAICES programme as of 2013. These efforts have led to an increased supply of younger researchers, with the share of researchers under 40 rising from 41% in 2003 to nearly 48% in 2011. Furthermore, to improve the performance of Argentina researchers, ANPCYT's PITEC and PAE programmes support public-private partnerships in research projects aimed at increasing the contribution of research to Argentina's economy, including addressing pressing socio-economic challenges.

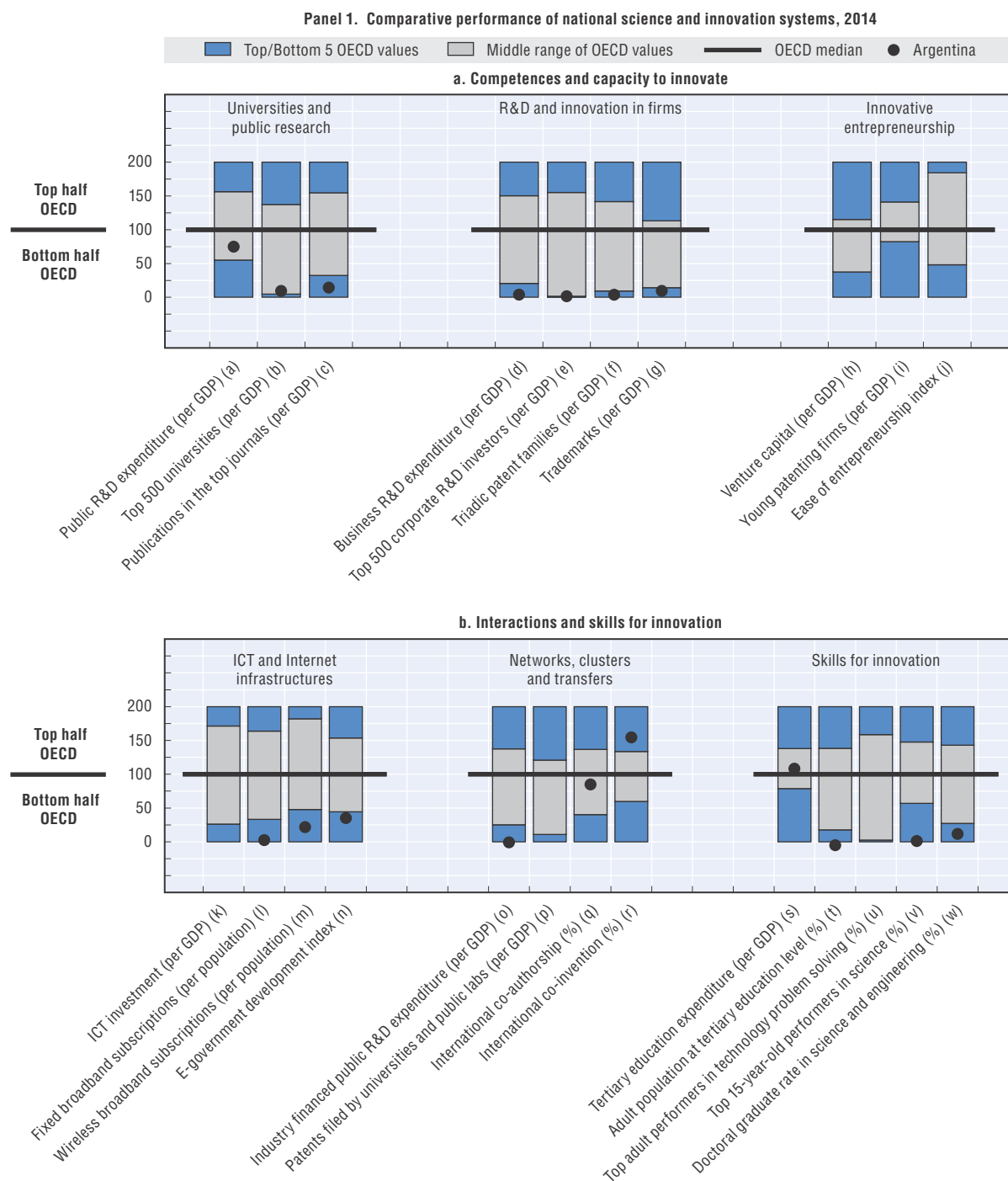
Highlights of the Argentinian STI system

Universities and public research: In addition to efforts to improve the skills base described above, MINCYT has invested in the country's R&D infrastructure needs. In 2013, as part of its Work Plan for Science and Technology, four

Key figures, 2013

Economic and environmental performance	ARG	OECD	Gross domestic expenditure on R&D	ARG	OECD
Labour productivity			GERD		
GDP per hour worked, USD PPP, 2013	n.a.	47.7	Million USD PPP, 2012	5 447	1 107 398
(annual growth rate, 2008-13)	n.a.	(+0.8)	As a % of total OECD, 2012	0.5	100
Green productivity			GERD intensity and growth		
GDP per unit of CO ₂ emitted, USD, 2011	3.4	3.0	As a % of GDP, 2012	0.74	2.40
(annual growth rate, 2007-11)	(+3.8)	(+1.8)	(annual growth rate, 2007-12)	(+13.7)	(+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	0.48	0.77
(annual growth rate, 2007-11)	n.a.	(+1.6)	(annual growth rate, 2007-11)	(+15.2)	(+2.8)

Figure 9.1. Science and innovation in Argentina



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

new buildings of a total 11 122 square metres of R&D infrastructure, including the new headquarters for the national DNA databank and nanotechnology offices and laboratories, were completed. This represents a 17% increase in R&D surface compared to 2007.

Innovation in firms: With BERD of 0.16% of GDP in 2012, well below the OECD median (Panel 1^d), Argentina lags far behind the OECD in innovation performance, triadic patents (Panel 1^f) and trademark registrations (Panel 1^g). To improve innovation performance, government programmes target key knowledge areas and sectors to improve the quality of human capital for research and innovation and the articulation between public research and industry.

ICT and Internet infrastructures: Argentina's Internet infrastructure and use is below OECD levels (Panel 1^{l, m, n}). Some 10.9% of Argentinians had a fixed broadband subscription, a higher share than in Brazil (9.2%) but below that of Chile (12.4%). About 21% of Argentina's inhabitants are wireless broadband subscribers, leading Mexico (10.8%), but trailing Brazil (37.3%). Argentina's e-government development index is still low with respect to the OECD median.

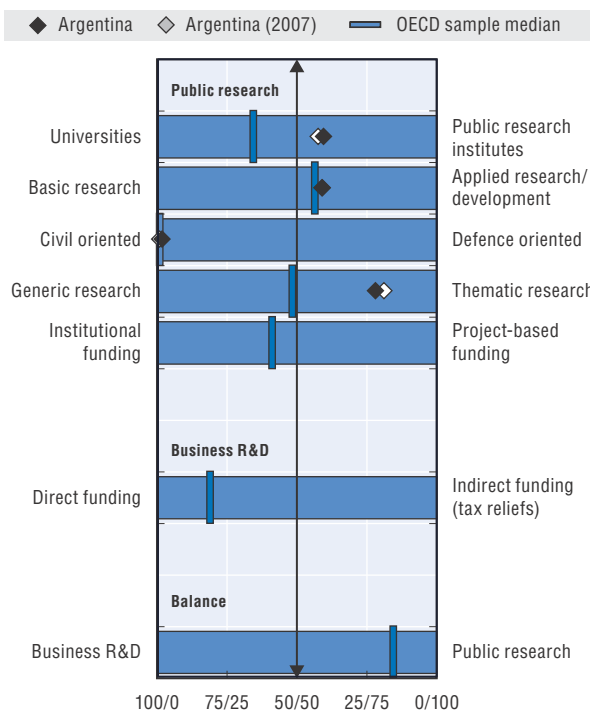
Clusters and smart specialisation: The government aims to reduce the regional gap in STI capacity by increasing share of GERD performed by the 19 least R&D-intensive provinces from 28% in 2011 to 37% in 2020. COFECYT disbursed

USD 38 million (ARS 113 million) in 2012 to work towards this goal.

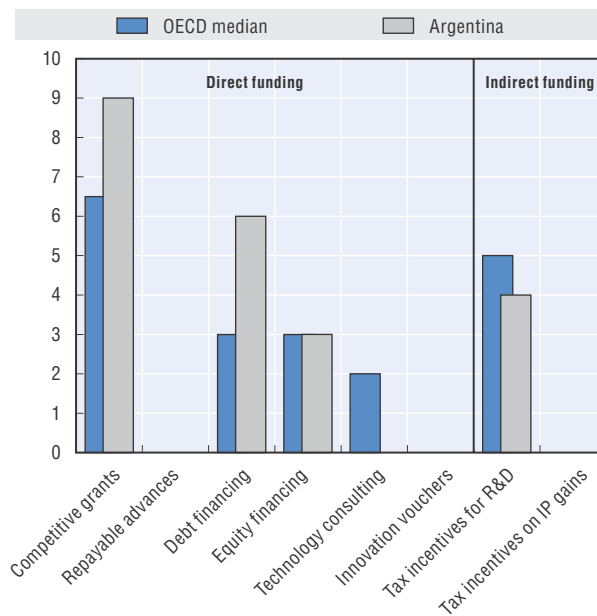
Globalisation: International co-authorship of scientific publications is close to the OECD median (Panel 1^q). International co-patenting (Panel 1^r) is considerably above the OECD median. More generally, the government seeks to foster international co-operation in S&T. To this end, it has established partnerships and recently increased the number of co-operative projects and programmes with Brazil, Chile, Mexico, the United States and Canada as well as France, Belgium, the United Kingdom, Germany, the Netherlands and Italy.

Recent developments in STI expenditures: Argentina spent 0.74% of GDP on R&D in 2012, considerably below the OECD median. The government finances the majority of GERD (0.48% of GDP), and its contribution grew by 15.2% a year over 2007-12, marginally faster than the overall annual growth of GERD (14.6%) over the same period. While low compared to the OECD median, Argentina's public R&D spending at 0.57% of GDP (Panel 1^a) is higher than that of Chile (0.14%) or Mexico (0.25%). BERD stood at 0.16% of GDP and grew moderately compared to 2004 (0.14%). MINCyT is currently evaluating the means of measuring private R&D; preliminary results indicate that BERD may have been somewhat underestimated.

Panel 2. Allocation of public funds to R&D, by sector, type and mode of funding, 2012



Panel 3. Most relevant instruments of public funding of business R&D, 2014



Note: Policy information comes from country responses to the OECD STI Outlook policy questionnaires 2014 and 2012. Argentina's responses are available in the OECD STI Outlook Policy Database, edition 2014 at <http://qdd.oecd.org/Table.aspx?Query=7534DEC8-6D3D-4D19-B320-69E375B75D82>.

Source: See reader's guide and methodological annex.

StatLink <http://dx.doi.org/10.1787/888933152019>

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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