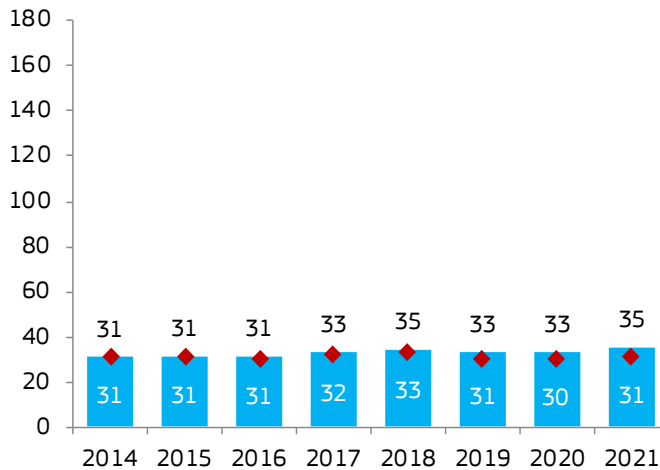




### Romania is an Emerging Innovator.

Over time, performance relative to the EU has remained the same.



■ Relative to EU in base year ◆ Relative to EU in same year

**Structural differences** with the EU are shown in the table below including, compared to the EIS 2020, new information on different types of (innovating) enterprises (Innovation profiles) and environmental indicators.

	RO	EU
<b>Performance and structure of the economy</b>		
GDP per capita (PPS)	20,400	30,800
Average annual GDP growth (%)	0.4	-2.5
Employment share Manufacturing (NACE C) (%)	18.8	16.5
of which High and Medium high-tech (%)	33.9	37.9
Employment share Services (NACE G-N) (%)	32.4	41.2
of which Knowledge-intensive services (%)	26.8	35.1
Turnover share SMEs (%)	42.0	36.5
Turnover share large enterprises (%)	42.7	45.7
Foreign-controlled enterprises – share of value added (%)	15.9	11.8
<b>Business and entrepreneurship</b>		
Enterprise births (10+ employees) (%)	2.2	1.0
Total Entrepreneurial Activity (TEA) (%)	10.8	6.7
FDI net inflows (% GDP)	2.9	2.0
Top R&D spending enterprises per 10 million population	0.0	16.2
Buyer sophistication (1 to 7 best)	2.8	3.7
<b>Innovation profiles</b>		
In-house product innovators with market novelties	2.4	10.7
In-house product innovators without market novelties	5.0	12.3
In-house business process innovators	3.5	11.0
Innovators that do not develop innovations themselves	3.4	11.6
Innovation active non-innovators	0.2	3.3
Non-innovators with potential to innovate	29.4	19.9
Non-innovators without disposition to innovate	56.0	31.3
<b>Governance and policy framework</b>		
Ease of starting a business (0 to 100 best)	73.0	76.5
Basic school entrepreneurial education and training	2.4	2.0
Govt. procurement of advanced tech. products	2.5	3.5
Rule of law (-2.5 to 2.5 best)	0.4	1.1
<b>Climate change indicators</b>		
Circular material use rate	1.6	11.7
Greenhouse gas emissions intensity of energy consumption	86.3	86.6
Eco-Innovation Index	57.0	100.0
<b>Demography</b>		
Population size	19.4	446.7
Average annual population growth (%)	-0.5	0.1
Population density	83.7	108.8

Romania's strengths are in *Sales impacts*, *Digitalisation* and *Environmental sustainability*. The top-3 indicators include Medium and high-tech goods exports, Broadband penetration, and Venture capital expenditures.

Recent performance increases are observed for International scientific co-publications, Most-cited publications, Foreign doctorate students, Broadband penetration, and Innovative SMEs collaborating with others. Romania has an above share of Non-innovators without disposition to innovate and is showing below average scores on the Climate change related indicators.

Romania	Relative to EU		
	2021 in 2021	2014 in 2021	
<b>SUMMARY INNOVATION INDEX</b>	<b>31.2</b>	<b>31.0</b>	<b>35.1</b>
<b>Human resources</b>	<b>13.2</b>	<b>39.6</b>	<b>14.0</b>
Doctorate graduates	22.1	77.0	19.6
Population with tertiary education	10.9	13.2	14.0
Lifelong learning	4.0	5.6	4.4
<b>Attractive research systems</b>	<b>35.0</b>	<b>22.3</b>	<b>39.4</b>
International scientific co-publications	36.1	30.0	47.4
Most cited publications	40.5	19.8	39.8
Foreign doctorate students	24.0	17.7	28.5
<b>Digitalisation</b>	<b>61.8</b>	<b>57.4</b>	<b>85.5</b>
Broadband penetration	100.0	104.9	151.7
People with above basic overall digital skills	4.5	0.0	5.6
<b>Finance and support</b>	<b>28.7</b>	<b>24.7</b>	<b>34.2</b>
R&D expenditures in the public sector	3.6	21.1	3.5
Venture capital expenditures	72.6	28.3	122.0
Government support for business R&D	12.5	27.3	14.5
<b>Firm investments</b>	<b>7.2</b>	<b>17.1</b>	<b>8.7</b>
R&D expenditure in the business sector	16.3	11.0	18.1
Non-R&D Innovation expenditures	0.0	40.4	0.0
Innovation expenditures per employee	6.3	4.7	8.4
<b>Use of information technologies</b>	<b>26.1</b>	<b>11.1</b>	<b>30.2</b>
Enterprises providing ICT training	6.7	0.0	6.7
Employed ICT specialists	42.9	23.8	57.1
<b>Innovators</b>	<b>3.8</b>	<b>9.7</b>	<b>5.2</b>
Product innovators (SMEs)	7.8	0.0	11.0
Business process innovators (SMEs)	0.0	18.2	0.0
<b>Linkages</b>	<b>16.0</b>	<b>15.1</b>	<b>21.5</b>
Innovative SMEs collaborating with others	13.4	0.0	19.7
Public-private co-publications	46.2	35.9	51.8
Job-to-job mobility of HRST	0.0	10.3	0.0
<b>Intellectual assets</b>	<b>32.8</b>	<b>22.0</b>	<b>28.4</b>
PCT patent applications	6.3	4.7	5.5
Trademark applications	56.9	47.0	59.8
Design applications	26.1	12.6	17.9
<b>Employment impacts</b>	<b>10.3</b>	<b>4.4</b>	<b>10.5</b>
Employment in knowledge-intensive activities	23.2	10.7	25.3
Employment in innovative enterprises	0.0	0.0	0.0
<b>Sales impacts</b>	<b>79.9</b>	<b>55.9</b>	<b>81.4</b>
Medium and high tech goods exports	100.8	92.1	110.4
Knowledge-intensive services exports	61.3	46.7	64.9
Sales of innovative products	72.4	19.4	63.0
<b>Environmental sustainability</b>	<b>38.2</b>	<b>61.4</b>	<b>39.8</b>
Resource productivity	10.6	7.7	15.7
Air emissions by fine particulate matter	66.4	59.9	70.6
Environment-related technologies	19.5	95.3	14.7

The colours show normalised performance in 2021 relative to that of the EU in 2021: dark green: above 125%; light green: between 100% and 125%; yellow: between 70% and 100%; orange: below 70%. Normalised performance uses the data after a possible imputation of missing data and transformation of the data.