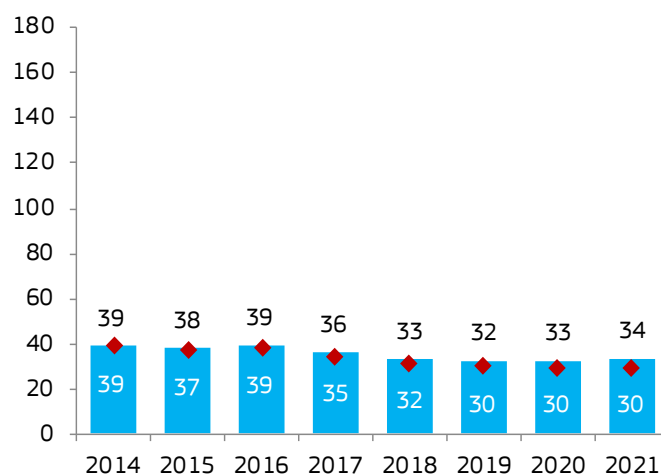




### Ukraine is an **Emerging Innovator**.

Over time, performance relative to the EU has decreased.



■ 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.

	UA	EU
<b>Performance and structure of the economy</b>		
GDP per capita (PPS)	6,440	30,800
Average annual GDP growth (%)	-1.9	-2.5
Employment share Manufacturing (NACE C) (%)	12.5	16.5
of which High and Medium high-tech (%)	n/a	37.9
Employment share Services (NACE G-N) (%)	34.5	41.2
of which Knowledge-intensive services (%)	n/a	35.1
Turnover share SMEs (%)	n/a	36.5
Turnover share large enterprises (%)	n/a	45.7
Foreign-controlled enterprises – share of value added (%)	n/a	11.8
<b>Business and entrepreneurship</b>		
Enterprise births (10+ employees) (%)	n/a	1.0
Total Entrepreneurial Activity (TEA) (%)	n/a	6.7
FDI net inflows (% GDP)	3.2	2.0
Top R&D spending enterprises per 10 million population	0.0	16.2
Buyer sophistication (1 to 7 best)	3.3	3.7
<b>Innovation profiles</b>		
In-house product innovators with market novelties	n/a	10.7
In-house product innovators without market novelties	n/a	12.3
In-house business process innovators	n/a	11.0
Innovators that do not develop innovations themselves	n/a	11.6
Innovation active non-innovators	n/a	3.3
Non-innovators with potential to innovate	n/a	19.9
Non-innovators without disposition to innovate	n/a	31.3
<b>Governance and policy framework</b>		
Ease of starting a business (0 to 100 best)	69.1	76.5
Basic school entrepreneurial education and training	n/a	2.0
Govt. procurement of advanced tech. products	3.0	3.5
Rule of law (-2.5 to 2.5 best)	-0.7	1.1
<b>Climate change indicators</b>		
Circular material use rate	n/a	11.7
Greenhouse gas emissions intensity of energy consumption	n/a	86.6
<b>Demography</b>		
Population size	42.0	446.7
Average annual population growth (%)	-0.6	0.1
Population density	77.4	108.8

For Ukraine data availability is limited with data missing for 12 indicators. The country is still included in the EIS for historical reasons but if data availability does not improve the country is likely to be excluded from future EIS reports.

Due to limited data availability a discussion of strengths or recent developments has only limited value and is therefore excluded.

Ukraine	Relative to EU 2021 in 2021	Relative to EU 2014 in 2014	Relative to EU 2021 in 2021
<b>SUMMARY INNOVATION INDEX</b>	<b>29.8</b>	<b>38.9</b>	<b>33.6</b>
<b>Human resources</b>	<b>31.8</b>	<b>45.2</b>	<b>33.7</b>
Doctorate graduates	28.5	33.8	25.3
Population with tertiary education	N/A	N/A	N/A
Lifelong learning	N/A	N/A	N/A
<b>Attractive research systems</b>	<b>17.3</b>	<b>8.9</b>	<b>19.5</b>
International scientific co-publications	12.1	0.0	15.8
Most cited publications	10.4	0.0	10.2
Foreign doctorate students	36.8	38.9	43.7
<b>Digitalisation</b>	<b>72.0</b>	<b>106.1</b>	<b>99.7</b>
Broadband penetration	60.1	97.0	91.1
People with above basic overall digital skills	N/A	N/A	N/A
<b>Finance and support</b>	<b>17.7</b>	<b>32.2</b>	<b>21.1</b>
R&D expenditures in the public sector	2.9	28.2	2.8
Venture capital expenditures	24.5	27.4	41.3
Government support for business R&D	27.7	41.0	32.1
<b>Firm investments</b>	<b>41.0</b>	<b>50.8</b>	<b>49.6</b>
R&D expenditure in the business sector	16.0	29.2	17.8
Non-R&D Innovation expenditures	82.3	82.3	93.5
Innovation expenditures per employee	N/A	N/A	N/A
<b>Use of information technologies</b>	<b>23.4</b>	<b>31.3</b>	<b>27.1</b>
Enterprises providing ICT training	25.3	29.3	25.3
Employed ICT specialists	N/A	N/A	N/A
<b>Innovators</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
Product innovators (SMEs)	N/A	N/A	N/A
Business process innovators (SMEs)	N/A	N/A	N/A
<b>Linkages</b>	<b>10.1</b>	<b>3.0</b>	<b>13.7</b>
Innovative SMEs collaborating with others	4.5	6.6	6.6
Public-private co-publications	21.0	0.4	23.6
Job-to-job mobility of HRST	N/A	N/A	N/A
<b>Intellectual assets</b>	<b>9.8</b>	<b>4.5</b>	<b>8.5</b>
PCT patent applications	12.9	14.1	11.2
Trademark applications	13.0	0.0	13.6
Design applications	1.6	0.3	1.1
<b>Employment impacts</b>	<b>78.2</b>	<b>68.6</b>	<b>79.6</b>
Employment in knowledge-intensive activities	87.8	82.7	96.0
Employment in innovative enterprises	N/A	N/A	N/A
<b>Sales impacts</b>	<b>37.5</b>	<b>45.6</b>	<b>38.2</b>
Medium and high tech goods exports	24.0	49.7	26.4
Knowledge-intensive services exports	66.0	62.3	69.9
Sales of innovative products	18.5	20.3	16.0
<b>Environmental sustainability</b>	<b>44.4</b>	<b>124.6</b>	<b>46.3</b>
Resource productivity	N/A	N/A	N/A
Air emissions by fine particulate matter	N/A	N/A	N/A
Environment-related technologies	59.0	119.3	44.3

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.