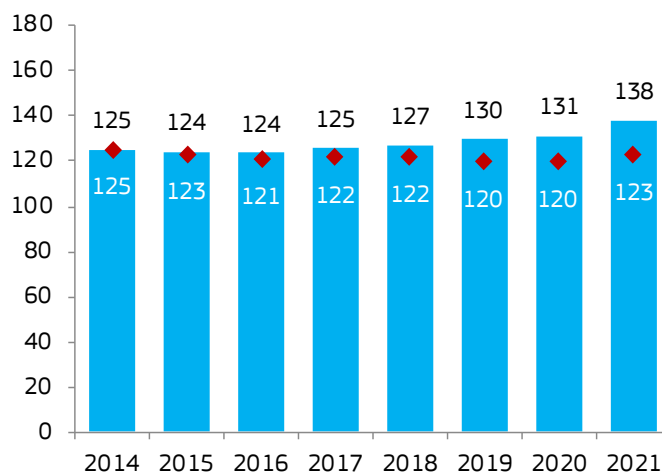




Germany is a Strong Innovator.

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.

	DE	EU
Performance and structure of the economy		
GDP per capita (PPS)	37,800	30,800
Average annual GDP growth (%)	-2.3	-2.5
Employment share Manufacturing (NACE C) (%)	19.4	16.5
of which High and Medium high-tech (%)	52.0	37.9
Employment share Services (NACE G-N) (%)	39.6	41.2
of which Knowledge-intensive services (%)	35.7	35.1
Turnover share SMEs (%)	34.1	36.5
Turnover share large enterprises (%)	54.9	45.7
Foreign-controlled enterprises – share of value added (%)	12.6	11.8
Business and entrepreneurship		
Enterprise births (10+ employees) (%)	0.7	1.0
Total Entrepreneurial Activity (TEA) (%)	6.0	6.7
FDI net inflows (% GDP)	3.2	2.0
Top R&D spending enterprises per 10 million population	26.1	16.2
Buyer sophistication (1 to 7 best)	4.6	3.7
Innovation profiles		
In-house product innovators with market novelties	9.9	10.7
In-house product innovators without market novelties	15.4	12.3
In-house business process innovators	13.2	11.0
Innovators that do not develop innovations themselves	25.2	11.6
Innovation active non-innovators	4.0	3.3
Non-innovators with potential to innovate	17.9	19.9
Non-innovators without disposition to innovate	14.2	31.3
Governance and policy framework		
Ease of starting a business (0 to 100 best)	79.5	76.5
Basic school entrepreneurial education and training	2.0	2.0
Govt. procurement of advanced tech. products	4.6	3.5
Rule of law (-2.5 to 2.5 best)	1.6	1.1
Climate change indicators		
Circular material use rate	11.9	11.7
Greenhouse gas emissions intensity of energy consumption	92.3	86.6
Eco-Innovation Index	123.0	100.0
Demography		
Population size	83.0	446.7
Average annual population growth (%)	0.2	0.1
Population density	234.6	108.8

Germany's strengths are in *Intellectual assets*, *Innovators* and *Employment impacts*. The top-3 indicators include PCT patent applications, Employment in innovative enterprises, and Design applications.

The most recent performance increase is due to improved performance on the indicators using innovation survey data, and most strongly for Innovative SMEs collaborating with others, and Product and Business process innovators.

Germany has an above average share of Innovators that do not develop innovations themselves and is showing close to average scores on the Climate change related indicators.

Germany	Relative to EU 2021 in 2021	Relative to EU 2014 in 2014	Relative to EU 2021 in 2021
SUMMARY INNOVATION INDEX	122.6	125.2	137.9
Human resources	98.2	91.4	104.1
Doctorate graduates	151.9	134.5	134.5
Population with tertiary education	60.9	38.0	78.5
Lifelong learning	73.7	77.8	81.1
Attractive research systems	91.6	94.5	103.1
International scientific co-publications	92.2	102.1	120.9
Most cited publications	107.4	115.2	105.6
Foreign doctorate students	63.3	41.4	75.1
Digitalisation	111.9	117.3	154.8
Broadband penetration	95.6	94.9	144.9
People with above basic overall digital skills	136.4	144.4	166.7
Finance and support	92.2	94.2	109.9
R&D expenditures in the public sector	147.3	133.3	142.1
Venture capital expenditures	81.1	69.3	136.4
Government support for business R&D	40.8	58.3	47.2
Firm investments	141.4	151.1	170.8
R&D expenditure in the business sector	151.8	150.4	168.5
Non-R&D Innovation expenditures	141.5	152.5	160.8
Innovation expenditures per employee	141.3	150.8	186.5
Use of information technologies	114.3	145.8	132.0
Enterprises providing ICT training	126.7	173.3	126.7
Employed ICT specialists	103.6	114.3	138.1
Innovators	152.0	143.3	208.0
Product innovators (SMEs)	147.3	180.2	207.9
Business process innovators (SMEs)	156.5	110.9	208.2
Linkages	137.8	136.0	185.8
Innovative SMEs collaborating with others	124.6	136.4	182.7
Public-private co-publications	148.5	149.4	166.5
Job-to-job mobility of HRST	141.1	125.6	202.6
Intellectual assets	153.1	160.5	132.7
PCT patent applications	208.6	222.4	181.0
Trademark applications	110.2	116.8	115.7
Design applications	155.8	148.9	106.7
Employment impacts	143.0	140.4	145.6
Employment in knowledge-intensive activities	113.4	128.0	124.0
Employment in innovative enterprises	166.7	149.2	161.0
Sales impacts	123.3	121.6	125.6
Medium and high tech goods exports	125.9	134.5	138.0
Knowledge-intensive services exports	114.3	126.6	121.0
Sales of innovative products	131.8	98.7	114.6
Environmental sustainability	118.6	118.5	123.4
Resource productivity	122.3	117.2	181.2
Air emissions by fine particulate matter	123.3	128.0	131.1
Environment-related technologies	105.6	107.2	79.3

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.