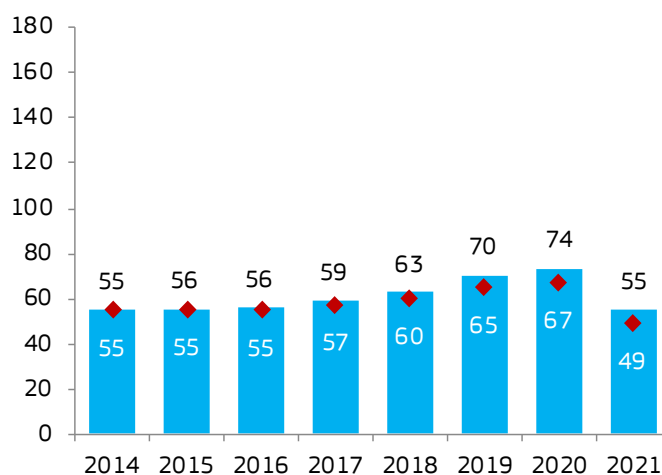




Turkey is an Emerging Innovator.

Over time, performance relative to the EU has decreased, in particular in 2021.



■ 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.

| | TR | EU |
|---|--------|--------|
| Performance and structure of the economy | | |
| GDP per capita (PPS) | 19,400 | 30,800 |
| Average annual GDP growth (%) | 0.1 | -2.5 |
| Employment share Manufacturing (NACE C) (%) | 18.5 | 16.5 |
| of which High and Medium high-tech (%) | 19.7 | 37.9 |
| Employment share Services (NACE G-N) (%) | 34.4 | 41.2 |
| of which Knowledge-intensive services (%) | 19.9 | 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 |
| Business and entrepreneurship | | |
| Enterprise births (10+ employees) (%) | 3.5 | 1.0 |
| Total Entrepreneurial Activity (TEA) (%) | 14.2 | 6.7 |
| FDI net inflows (% GDP) | 1.4 | 2.0 |
| Top R&D spending enterprises per 10 million population | 0.2 | 16.2 |
| Buyer sophistication (1 to 7 best) | 3.5 | 3.7 |
| Innovation profiles | | |
| In-house product innovators with market novelties | 11.9 | 10.7 |
| In-house product innovators without market novelties | 7.7 | 12.3 |
| In-house business process innovators | 8.6 | 11.0 |
| Innovators that do not develop innovations themselves | 1.7 | 11.6 |
| Innovation active non-innovators | 6.1 | 3.3 |
| Non-innovators with potential to innovate | 36.0 | 19.9 |
| Non-innovators without disposition to innovate | 28.1 | 31.3 |
| Governance and policy framework | | |
| Ease of starting a business (0 to 100 best) | 74.3 | 76.5 |
| Basic school entrepreneurial education and training | 1.8 | 2.0 |
| Govt. procurement of advanced tech. products | 3.5 | 3.5 |
| Rule of law (-2.5 to 2.5 best) | -0.3 | 1.1 |
| Climate change indicators | | |
| Circular material use rate | n/a | 11.7 |
| Greenhouse gas emissions intensity of energy consumption | 90.8 | 86.6 |
| Demography | | |
| Population size | 82.0 | 446.7 |
| Average annual population growth (%) | 1.4 | 0.1 |
| Population density | 106.2 | 108.8 |

Turkey's strengths are in *Digitalisation*, *Sales impacts* and *Linkages*. The top-3 indicators include Job-to-job mobility of HRST, Government support for business R&D, and Broadband penetration.

The strong decline in innovation performance in 2021 is due to reduced performance on the indicators using innovation survey data, Enterprises providing ICT training, Job-to-job mobility of HRST, PCT patent and Design applications, and Environment-related technologies.

| Turkey | Relative to EU 2021 in 2021 | Relative to EU 2014 in 2014 | Relative to EU 2021 in 2021 |
|--|-----------------------------|-----------------------------|-----------------------------|
| SUMMARY INNOVATION INDEX | 49.1 | 55.0 | 55.3 |
| Human resources | 44.9 | 17.6 | 47.6 |
| Doctorate graduates | 22.1 | 8.1 | 19.6 |
| Population with tertiary education | 66.0 | 0.0 | 85.1 |
| Lifelong learning | 48.5 | 53.3 | 53.3 |
| Attractive research systems | 41.0 | 28.6 | 46.2 |
| International scientific co-publications | 17.9 | 4.8 | 23.5 |
| Most cited publications | 57.7 | 47.5 | 56.7 |
| Foreign doctorate students | 44.5 | 19.3 | 52.8 |
| Digitalisation | 83.2 | 72.3 | 115.1 |
| Broadband penetration | 93.3 | 118.3 | 141.4 |
| People with above basic overall digital skills | 68.2 | 16.7 | 83.3 |
| Finance and support | 64.6 | 57.0 | 76.9 |
| R&D expenditures in the public sector | 36.4 | 49.1 | 35.1 |
| Venture capital expenditures | N/A | N/A | N/A |
| Government support for business R&D | 94.6 | 49.5 | 109.4 |
| Firm investments | 62.5 | 94.4 | 75.5 |
| R&D expenditure in the business sector | 44.7 | 26.0 | 49.6 |
| Non-R&D Innovation expenditures | 42.7 | 234.2 | 48.5 |
| Innovation expenditures per employee | 38.6 | 50.9 | 50.9 |
| Use of information technologies | 22.3 | 35.6 | 25.8 |
| Enterprises providing ICT training | 40.0 | 66.7 | 40.0 |
| Employed ICT specialists | 7.1 | 0.0 | 9.5 |
| Innovators | 56.7 | 104.9 | 77.6 |
| Product innovators (SMEs) | 60.1 | 63.6 | 84.8 |
| Business process innovators (SMEs) | 53.6 | 141.2 | 71.3 |
| Linkages | 66.5 | 80.3 | 89.7 |
| Innovative SMEs collaborating with others | 41.0 | 40.1 | 60.1 |
| Public-private co-publications | 17.1 | 7.3 | 19.2 |
| Job-to-job mobility of HRST | 114.3 | 164.1 | 164.1 |
| Intellectual assets | 15.9 | 11.4 | 13.8 |
| PCT patent applications | 22.9 | 17.0 | 19.9 |
| Trademark applications | 19.2 | 13.1 | 20.2 |
| Design applications | 3.0 | 4.8 | 2.1 |
| Employment impacts | 25.9 | 51.2 | 26.3 |
| Employment in knowledge-intensive activities | 9.8 | 0.0 | 10.7 |
| Employment in innovative enterprises | 38.8 | 87.5 | 37.5 |
| Sales impacts | 66.2 | 82.8 | 67.4 |
| Medium and high tech goods exports | 76.9 | 53.7 | 84.3 |
| Knowledge-intensive services exports | 41.5 | 23.6 | 43.9 |
| Sales of innovative products | 84.3 | 191.3 | 73.3 |
| Environmental sustainability | 49.7 | 28.6 | 51.7 |
| Resource productivity | 60.8 | 43.8 | 90.1 |
| Air emissions by fine particulate matter | N/A | N/A | N/A |
| Environment-related technologies | 60.7 | 28.9 | 45.6 |

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.