

89.7 Moderate Innovators

Italy	Performance relative to EU in 2022	Performance change 2015-2022	Performance change 2021-2022
<b>SUMMARY INNOVATION INDEX</b>	<b>91.6</b>	<b>17.4</b>	<b>-2.9</b>
<b>Human resources</b>	<b>64.1</b>	<b>-4.8</b>	<b>0.0</b>
Doctorate graduates	85.2	-11.4	0.0
Population with tertiary education	21.1	0.0	0.0
Lifelong learning	90.0	0.0	0.0
<b>Attractive research systems</b>	<b>98.6</b>	<b>21.2</b>	<b>4.7</b>
International scientific co-publications	87.1	51.5	15.1
Most cited publications	111.8	7.8	1.6
Foreign doctorate students	87.9	22.4	1.5
<b>Digitalisation</b>	<b>75.2</b>	<b>9.5</b>	<b>9.5</b>
Broadband penetration	66.7	18.2	18.2
People with above basic overall digital skills	86.4	0.0	0.0
<b>Finance and support</b>	<b>79.6</b>	<b>30.0</b>	<b>-3.6</b>
R&D expenditures in the public sector	66.7	1.6	8.1
Venture capital expenditures	65.1	7.0	5.2
Government support for business R&D	115.8	91.9	-28.5
<b>Firm investments</b>	<b>82.1</b>	<b>26.2</b>	<b>3.9</b>
R&D expenditure in the business sector	59.5	7.8	0.8
Non-R&D Innovation expenditures	85.9	3.7	-27.0
Innovation expenditures per employee	98.0	66.2	37.8
<b>Use of information technologies</b>	<b>68.5</b>	<b>16.3</b>	<b>-13.0</b>
Enterprises providing ICT training	68.8	31.3	-25.0
Employed ICT specialists	68.2	0.0	0.0
<b>Innovators</b>	<b>115.2</b>	<b>47.2</b>	<b>-37.6</b>
Product innovators (SMEs)	112.3	32.5	-35.0
Business process innovators (SMEs)	117.8	62.8	-40.4
<b>Linkages</b>	<b>90.6</b>	<b>53.2</b>	<b>-2.1</b>
Innovative SMEs collaborating with others	113.9	79.2	-16.2
Public-private co-publications	143.1	82.6	21.5
Job-to-job mobility of HRST	50.0	17.6	0.0
<b>Intellectual assets</b>	<b>105.4</b>	<b>6.0</b>	<b>0.4</b>
PCT patent applications	78.3	2.1	0.4
Trademark applications	107.1	24.0	4.4
Design applications	140.5	-3.0	-2.6
<b>Employment impacts</b>	<b>107.1</b>	<b>10.1</b>	<b>-13.3</b>
Employment in knowledge-intensive activities	101.3	0.0	0.0
Employment in innovative enterprises	111.7	19.4	-25.6
<b>Sales impacts</b>	<b>88.6</b>	<b>14.7</b>	<b>-0.8</b>
Medium and high-tech goods exports	86.7	-3.2	-4.6
Knowledge-intensive services exports	79.5	21.7	28.3
Sales of innovative products	102.8	30.0	-29.6
<b>Environmental sustainability</b>	<b>117.6</b>	<b>5.8</b>	<b>-1.0</b>
Resource productivity	187.9	37.4	0.7
Air emissions by fine particulate matter	104.8	7.7	0.7
Environment-related technologies	67.2	-17.9	-4.4

The second column shows performance relative to that of the EU in 2022. Colours next to the column show matching colour codes: dark green: above 125% of the performance of the EU in 2022; 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. The next columns show performance change over time between 2015 and 2022 and between 2021 and 2022, with scores relative to those of the EU in 2015. Positive performance changes are shown in green, negative performance changes in red.

**ITALY** is a **Moderate Innovator** with performance at 91.6% of the EU average. Performance is above the average of the Moderate Innovators (89.7%). Performance is increasing (17.4%-points) at a rate higher than that of the EU (9.9%-points). The country's performance gap to the EU is becoming smaller.

### Relative strengths

- Resource productivity
- Public-private co-publications
- Design applications
- Business process innovators
- Government support for business R&D

### Relative weaknesses

- Population with tertiary education
- Job-to-job mobility of HRST
- R&D expenditure in the business sector
- Venture capital expenditures

### Strong increases since 2015

- Government support for business R&D
- Public-private co-publications
- Innovative SMEs collaborating with others

### Strong decreases since 2015

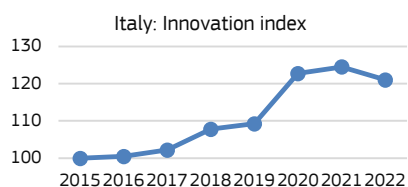
- Environment-related technologies
- Doctorate graduates
- Medium and high-tech goods exports

### Strong increases since 2021

- Innovation expenditures per employee
- Knowledge-intensive services exports
- Public-private co-publications

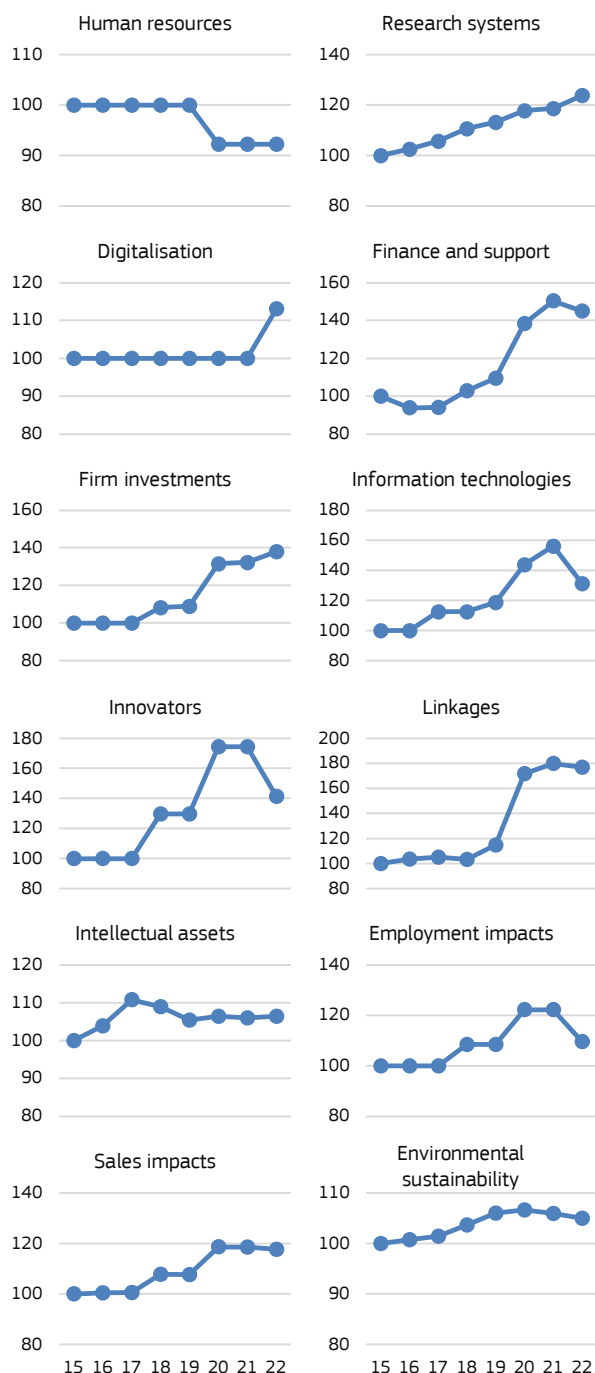
### Strong decreases since 2021

- Business process innovators
- Product innovators
- Sales of innovative products



The graph on the left shows the evolution of **innovation performance over time** against the performance of the country in 2015. Innovation performance has been improving consistently over time until 2021 with the highest rate of increase in 2020. Performance declines in 2022.

The graphs below show the evolution of innovation performance in the different **innovation dimensions** against the performance of the country in 2015. Performance has increased strongest in Finance and support, Innovators and Linkages. Performance also increased for most other dimensions, except for Human resources where it declined.



Performance is measured relative to that of the country in 2015 (=100).

**Structural differences** with the EU are shown below:

- Italy has lower per capita income and a slower growing economy. Manufacturing and business services takes up a larger share of the economy, with SMEs accounting for a larger share of turnover.
- Enterprise births add positively to the innovation climate, Entrepreneurial activity, FDI net inflows and top R&D spenders add negatively.
- Italy has a higher share of In-house product innovators without market novelties.
- Ease of starting a business, entrepreneurial training and government procurement are below the EU average as drivers of research and innovation.
- Italy shows a mixed performance on Climate change related indicators with a lower share of material resources coming from recycled waste materials but an above average score on environmental innovation.

	IT	EU
<b>Performance and structure of the economy</b>		
GDP per capita (PPS)	29,600	31,200
Average annual GDP growth (%)	-1.0	-0.4
Employment share Manufacturing (NACE C) (%)	18.6	16.4
of which High and Medium high-tech (%)	34.2	38.0
Employment share Services (NACE G-N) (%)	44.7	41.1
of which Knowledge-intensive services (%)	37.8	35.8
Turnover share SMEs (%)	41.1	34.8
Turnover share large enterprises (%)	37.4	48.2
Foreign-controlled enterprises – share of value added (%)	7.1	11.7
<b>Business and entrepreneurship</b>		
Enterprise births (10+ employees) (%)	1.1	1.0
Total Entrepreneurial Activity (TEA) (%)	3.2	7.3
FDI net inflows (% GDP)	0.8	1.0
Top R&D spending enterprises per 10 mln. population	6.6	18.3
Buyer sophistication (1 to 7 best)	3.8	3.7
<b>Innovation profiles</b>		
In-house product innovators with market novelties	10.0	10.7
In-house product innovators without market novelties	22.3	12.3
In-house business process innovators	16.0	11.0
Innovators that do not develop innovations themselves	8.4	11.6
Innovation active non-innovators	5.2	3.3
Non-innovators with potential to innovate	7.4	19.9
Non-innovators without disposition to innovate	30.8	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	3.4	3.5
Govt. procurement of advanced tech. products	2.9	3.5
Rule of law (-2.5 to 2.5 best)	0.3	1.1
<b>Climate change indicators</b>		
Circular material use rate	5.1	12.2
Greenhouse gas emissions intensity of energy consumption	81.9	82.8
Eco-Innovation Index	106.5	100.0
<b>Demography</b>		
Population size	59.6	447.0
Average annual population growth (%)	-0.5	0.1
Population density	202.6	108.8