



European Innovation Scoreboard **2024** Country Profile **Poland**

European Innovation Scoreboard 2024 – Country profile Poland

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**Emerging Innovator**Summary innovation index (relative to EU in 2017): **72.5**Rank: **27**Change vs 2023: **▲ 3.3** Change vs 2017: **▲ 13**

Poland is an Emerging Innovator with performance at 65.9% of the EU average in 2024. Performance is above the average of the Emerging Innovators (48%). Performance is increasing more than the EU (+10%).

Indicator	Performance relative to the EU in 2024	Performance change 2017-2024	Performance change 2023-2024
SUMMARY INNOVATION INDEX	65.9	13.0	3.3
Human resources	72.2	16.8	16.2
New doctorate graduates	34.5	0.0	11.6
Population with tertiary education	117.3	26.9	27.5
Population involved in lifelong learning	65.3	31.6	9.2
Attractive research systems	37.5	18.6	-7.8
International scientific co-publications	44.7	28.9	1.0
Scientific publications among the top 10% most cited	51.6	19.2	4.3
Foreign doctorate students as a % of all doctorate students	9.2	8.3	-41.8
Digitalisation	80.1	18.4	4.6
Broadband penetration	88.1	39.4	11.7
Individuals with above basic overall digital skills	68.8	-2.7	-2.7
Finance and support	61.7	15.7	-4.6
R&D expenditure in the public sector	62.3	-4.9	-4.9
Venture capital expenditures	46.4	-1.2	-9.3
Direct and indirect government support of business R&D	80.2	64.5	0.9
Firm investments	62.2	-4.8	0.4
R&D expenditure in the business sector	63.9	36.9	4.5
Non-R&D innovation expenditures	83.6	-44.4	-6.2
Innovation expenditures per person employed	40.9	-8.5	3.3
Use of information technologies	99.1	51.0	31.4
Enterprises providing ICT training	113.3	84.1	44.0
Employed ICT specialists	85.2	19.3	19.3
Innovators	45.5	34.9	0.0
SMEs introducing product innovations	43.1	29.7	0.0
SMEs introducing business process innovations	47.5	40.1	0.0
Linkages	73.3	27.2	-11.9
Innovative SMEs collaborating with others	49.3	27.0	0.0
Public-private co-publications	56.6	29.3	-2.4
Job-to-job mobility of HRST	100.0	26.5	-26.4
Intellectual assets	85.9	-2.4	0.2
PCT patent applications	40.6	-0.3	2.9
Trademark applications	92.8	12.9	0.5
Design applications	151.0	-16.8	-3.5
Employment impacts	59.3	32.2	27.3
Employment in knowledge-intensive activities	73.0	16.9	15.6
Employment in innovative enterprises	47.8	46.4	38.0
Sales impacts	60.4	6.2	2.5
Exports of medium and high technology products	75.1	0.1	4.1
Knowledge-intensive services exports	49.0	11.8	-3.8
Sales of new-to-market and new-to-firm innovations	55.0	8.5	8.7
Environmental sustainability	60.3	-9.8	-7.3
Resource productivity	49.6	23.9	6.5
Air emissions by fine particulates	77.2	12.0	-2.5
Environment-related technologies	46.8	-68.3	-25.4

Relative strengths

- Design applications
- Population with tertiary education
- Enterprises providing ICT training

Relative weaknesses

- Foreign doctorate students as a % of all doctorate students
- New doctorate graduates
- PCT patent applications

Strong increases since 2017

- Enterprises providing ICT training
- Direct and indirect government support of business R&D
- Employment in innovative enterprises

Strong decreases since 2017

- Environment-related technologies
- Non-R&D innovation expenditures
- Design applications

Strong increases since 2023

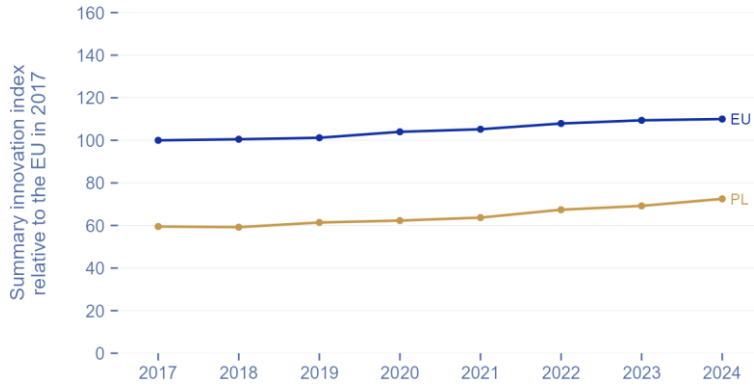
- Enterprises providing ICT training
- Employment in innovative enterprises
- Population with tertiary education

Strong decreases since 2023

- Foreign doctorate students as a % of all doctorate students
- Job-to-job mobility of HRST
- Environment-related technologies

Footnote: The first data column shows scores relative to the EU in 2024, with colour codes indicating performance levels. The subsequent columns show performance changes over time, with scores relative to the EU in 2017, coloured in purple for positive change and red for negative change. As reference years differ between the first column (2024) and the last two columns (2017), scores cannot be directly compared or subtracted across these columns.

Emerging Innovators Moderate Innovators Strong Innovators Innovation Leaders



Summary innovation index

The line chart shows the evolution of the innovation performance of Poland over time, relative to the performance of the EU in 2017.

Footnote: All performance scores (SII and dimensions below) are relative to that of the EU in 2017.

Framework conditions

Poland's performance in the dimension of human resources has improved since 2017, and progress is particularly notable over the last two years. The country performs well above the EU average in tertiary education (117.3% of 2024 EU average), ranking as the top Emerging Innovator for that indicator, with a significant increase (+27.5%-points) in the last year. However, the Polish academic sector struggles to attract foreign doctorate students, ranking second last among EU Member States (9.2% of 2024 EU average), with a significant decrease (-41.8%-points) since 2023.

The attractiveness of Poland's research system is lower than the EU average (at 37.5% of the 2024 EU average). This is evidenced by its low proportion of foreign students and low international co-publications, where Poland, despite recent progress, remains at 44.7% of the EU average in 2024, ranking third last among EU Member States for that indicator.

Poland's digitalisation is lagging behind, although broadband penetration has steadily improved in recent years. According to the European Semester Report (2024), funding under the Recovery and Resilience Facility (RRF) and cohesion policy support investments will contribute to the expansion of ultrafast broadband internet coverage for households and schools in areas with market failures.

Human resources



Attractive research systems



Digitalisation



Investments

The current public R&D expenditure in Poland is low at 0.53% of GDP and has been consistently below the EU average over the past few years (at 62.3% of the EU average in 2024). Similarly, venture capital expenditures have also been stagnating (-1.2%-points since 2017). However, business R&D expenditure is increasing, and Poland ranks first among Emerging Innovators, but below the EU average (63.9% of the EU average in 2024). This improvement can be attributed to Poland's enhancing R&D tax incentives, fostering private investment in the sector (European Semester Report 2024). On the other hand, non-R&D innovation expenditures are decreasing (-44.4%-points since 2017). Lastly, regarding enterprises providing ICT training, Poland surpasses the EU average (113.3% of the 2024 EU average), ranking first among Emerging Innovators, with a significant increase since 2017 (+84.1%-points).

Finance and support



Firm investments



Use of information technologies



Innovation activities

According to the European Semester Report (2024), low levels of R&D expenditure and limited science-business cooperation affect Poland’s innovation capacity. This is reflected in CIS data where Polish SMEs are well below the EU average in the introduction of product and business process innovations (at 43.1% and 47.5% of the EU average in 2024, respectively). Poland’s difficulty in collaboration is reflected by its low rate of innovative SMEs collaborating with others. This is coupled by the low number of public-private co-publications, ranking third last among EU Member States (at 56.6% of the EU average in 2024). According to the European Semester Report (2024), firms in Poland have one of the lowest average shares of investment in intangible assets. One of the underlying factors is poor links between science and business, which limits the uptake of research output in the economy. According to the Global Innovation Index (2023), Poland reveals a notable capacity to export creative goods, and this strength is reflected in Poland’s remarkable performance in design applications, ranking third among EU Member States (at 151.0% of the EU average in 2024), despite facing challenges since 2017 (-16.8%-points).

Innovators



Linkages



Intellectual assets



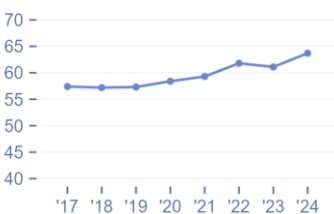
Impacts

Employment impacts in Poland have been on the rise since 2017, with notable improvement in the last year. Sales impacts are also improving, although there have been some difficulties in the exports of knowledge-intensive services recently (-3.8%-points since 2023). Poland shows moderate performance in sales impact compared to other EU Member States, at 60.4% of the EU average in 2024 for that dimension. In terms of environmental sustainability, Poland has experienced a decrease in overall performance (-9.8%-points). According to the European Semester Report (2024), with the support of cohesion funds and the Recovery and Resilience Plan (RRP), Poland aims to develop and apply innovations in environmental technologies, renewable energy and the circular economy.

Employment impacts



Sales impacts



Environmental sustainability



Structural differences

Performance and structure of the economy

Poland has the highest GDP per capita among all Emerging Innovators, at 79% of the EU average, with a robust growth rate. Employment in manufacturing and services is comparable to the EU average, although Poland's employment share in high and medium high-tech sectors is below the EU average. Poland faces economic challenges: according to the European Semester Report (2024), price stability in Poland is set to remain one of the key issues over the coming years, having a significant impact on the cost of living and influencing economic stability. Additionally, labour shortages persist, particularly in high-skilled sectors, which could hinder further economic growth and innovation capacity.

Business and entrepreneurship

Poland features a strong enterprise birth rate but shows weak entrepreneurial activity, much lower than the EU average. The country has the lowest number of enterprises among the top R&D investors in the EU, far below the EU average (although data for most Emerging Innovators is missing). Despite this, FDI net inflows in Poland are higher than the EU average, though relatively low when compared to other Emerging Innovators. This dichotomy underscores Poland's ongoing efforts to strengthen its entrepreneurial ecosystem and attract higher levels of R&D investment. The European Semester Report (2024) highlights the role of cohesion policy funds in enhancing Poland's competitiveness and providing support to entrepreneurs.

Innovation profiles

Poland has a lower percentage of enterprises introducing product innovations developed in-house and not previously offered by competitors compared to the EU average. The country's innovation challenges are further highlighted by a high percentage of non-innovators without a disposition to innovate, which is twice that of the EU average. According to the Global Innovation Index (2023), Poland's performance relative to its GDP is below expectations for its level of development.

Governance and policy framework

Poland has the lowest basic-school entrepreneurial education and training among EU Member States. While it maintains a relatively high performance in rule of law, particularly compared to other emerging innovators, it falls below the EU average. Innovation procurement as a share of total public procurement remains low. According to the European Semester Report (2024), Poland's public procurement system is considered a key weakness: it attracts too few bidders, especially for a country of its size, and the procedures are often lengthy and complex. Digitalising these processes could potentially alleviate these challenges.

Climate change

Poland exhibits a lower circular material use rate and a lower eco-innovation index compared to the EU average. Additionally, the country emits more greenhouse gases compared to the EU. The European Semester Report (2024) outlines that Poland aims to bolster its environmental efforts with the assistance of cohesion funds and the Recovery and Resilience Plan (RRP). These initiatives will focus on advancing innovations in environmental technologies and promoting a transition towards a circular economy. As part of these efforts, Poland plans to discontinue public subsidies for coal-fired heat sources under its National Air Protection Programme.

Demography

Poland is a democratic and parliamentary republic located in Central Europe. With a population of approximately 37 million inhabitants, the country is facing a demographic decline. According to the European Semester Report (2024), Poland also faces significant regional disparities and an ageing and shrinking population, which pose various socioeconomic challenges for the nation.

Structural indicators

The table below presents some structural differences between Poland and the EU.

	PL	EU
Performance and structure of the economy		
GDP per capita	79	100
Average annual GDP growth (2021-2023 average)	2.9	1.9
Employment share Manufacturing	19.2	15.8
Employment share High and Medium high-tech	27.4	37.9
Employment share Services	35.8	39.8
Employment share Knowledge-intensive services	25.7	28.6
Turnover share SMEs	13.8	12.6
Turnover share large enterprises	44.9	49.6
Foreign-controlled enterprises – share of value added	18.5	13.3
Business and entrepreneurship		
Enterprise births	1.3	0.8
Total Entrepreneurial Activity	2	6.8
FDI net inflows	4.6	1.9
Top R&D spending enterprises	0.2	8.4
Buyer sophistication	3.3	3.6
Innovation profiles		
In-house product innovators with market novelties	5.9	11.7
In-house product innovators without market novelties	8.2	13.7
In-house business process innovators	14	17.6
Innovators that do not develop innovations themselves	3.1	6.1
Innovation active non-innovators	3.8	4.2
Non-innovators with potential to innovate	4.2	17.8
Non-innovators without disposition to innovate	61	30.6
Governance and policy frameworks		
Corruption Perceptions Index	55	64
Basic-school entrepreneurial education and training	1.9	2.6
Government procurement of advanced technology products	3	3.4
Rule of law	0.5	1
Innovation procurement as a share of total public procurement	4.3	9.2
Climate change		
Circular material use rate	8.3	11.5
Greenhouse gas emissions intensity of energy consumption	84	82.8
Eco-Innovation Index	67.4	121.5
Demography		

	PL	EU
Population size (in millions)	36.9	447
Average annual population growth (2021-2023 average)	-0.4	0.3
Population density	122.7	109

References

The country's relative strengths and weaknesses for each indicator, compared to other EU Member States and neighbouring countries, can be found in [Annex B](#).

European Commission (2024), European Semester Report, 2024 Country Report - Poland

World Intellectual Property Organization (WIPO) (2023). Global Innovation Index 2023: Innovation in the face of uncertainty. Geneva: WIPO. DOI:10.34667/tind.48220

This report provides the Country profile from the 2024 European Innovation Scoreboard for Poland

Studies and reports

