European Commission

European Innovation Scoreboard **2024** Country Profile **Belgium**

Innovation

European Innovation Scoreboard 2024 – Country profile Belgium

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European Innovation Scoreboard 2024 Country profile Belgium

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Directorate-General for Research and Innovation
2024 Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs EN

BELGIUM

Strong Innovator

Summary innovation index (relative to EU in 2017): **136**
Rank: **6**

Change vs 2023: ▼ -0.2 Change vs 2017: ▲ 15.1

Belgium is a Strong Innovator with performance at 123.6% of the EU average in 2024. Performance is above the average of the Strong Innovators (111.3%). 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	**123.6**	**15.1**	**-0.2**
Human resources	**113.2**	**0.7**	**-0.6**
New doctorate graduates	113.1	0.0	0.0
Population with tertiary education	137.5	-5.4	-8.4
Population involved in lifelong learning	85.6	9.2	8.2
Attractive research systems	**134.6**	**-24.3**	**-3.1**
International scientific co-publications	179.7	48.5	-2.7
Scientific publications among the top 10% most cited	122.6	-17.2	-2.2
Foreign doctorate students as a % of all doctorate students	112.5	-106.8	-6.1
Digitalisation	**107.4**	**-0.6**	**0.8**
Broadband penetration	109.9	-10.1	-6.8
Individuals with above basic overall digital skills	104.0	8.5	8.5
Finance and support	**138.6**	**43.5**	**5.6**
R&D expenditure in the public sector	127.9	31.2	8.2
Venture capital expenditures	120.4	42.7	7.2
Direct and indirect government support of business R&D	174.0	62.1	-0.4
Firm investments	**140.3**	**41.7**	**-5.1**
R&D expenditure in the business sector	159.0	47.4	0.0
Non-R&D innovation expenditures	87.6	5.2	-15.4
Innovation expenditures per person employed	168.8	74.2	0.0
Use of information technologies	**139.1**	**-0.4**	**-2.0**
Enterprises providing ICT training	160.9	5.7	2.5
Employed ICT specialists	117.6	-6.5	-6.5
Innovators	**161.6**	**48.4**	**0.0**
SMEs introducing product innovations	146.2	3.1	0.0
SMEs introducing business process innovations	173.9	91.0	0.0
Linkages	**167.9**	**15.9**	**-8.0**
Innovative SMEs collaborating with others	206.3	27.0	0.0
Public-private co-publications	270.6	54.5	-2.2
Job-to-job mobility of HRST	93.8	-11.7	-17.6
Intellectual assets	**89.1**	**-3.3**	**-1.7**
PCT patent applications	99.9	-1.8	4.4
Trademark applications	92.4	2.0	-7.8
Design applications	68.0	-9.5	-5.1
Employment impacts	**141.2**	**13.6**	**7.3**
Employment in knowledge-intensive activities	124.7	-1.2	-2.4
Employment in innovative enterprises	155.6	27.2	16.5
Sales impacts	**90.2**	**17.6**	**0.3**
Exports of medium and high technology products	76.1	0.7	6.1
Knowledge-intensive services exports	88.2	5.9	-2.8
Sales of new-to-market and new-to-firm innovations	116.4	60.6	-4.7
Environmental sustainability	**106.4**	**18.8**	**1.9**
Resource productivity	164.5	66.8	25.7
Air emissions by fine particulates	99.2	3.6	0.3
Environment-related technologies	63.2	2.6	-14.5

Emerging Innovators Moderate Innovators Strong Innovators Innovation Leaders

Relative strengths

- Public-private co-publications
- Innovative SMEs collaborating with others
- International scientific co-publications

Relative weaknesses

- Environment-related technologies
- Design applications
- Exports of medium and high technology products

Strong increases since 2017

- SMEs introducing business process innovations
- Innovation expenditures per person employed
- Resource productivity

Strong decreases since 2017

- Foreign doctorate students as a % of all doctorate students
- Scientific publications among the top 10% most cited
- Job-to-job mobility of HRST

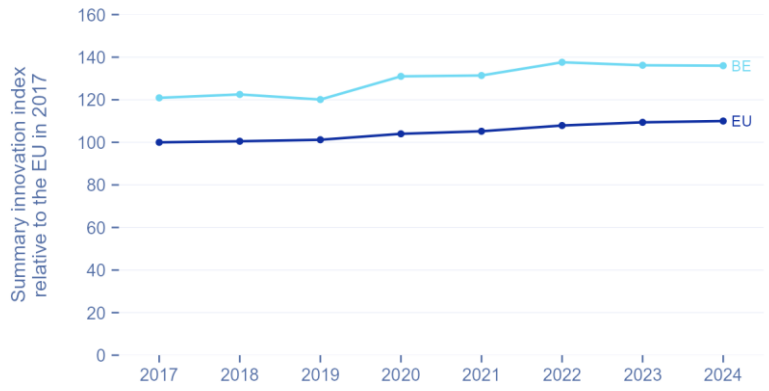
Strong increases since 2023

- Resource productivity
- Employment in innovative enterprises
- Individuals with above basic overall digital skills

Strong decreases since 2023

- Job-to-job mobility of HRST
- Non-R&D innovation expenditures
- 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.*



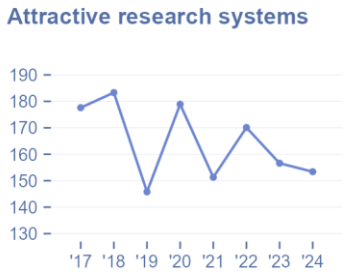
Summary innovation index

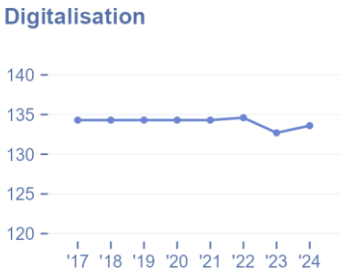
The line chart shows the evolution of the innovation performance of Belgium over time, relative to the performance of the EU in 2017.

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

Framework conditions

Belgium's performance on framework conditions is above the EU average in all three dimensions, notably in attractive research systems (134.6% of the EU average in 2024). The main weakness is the share of population involved in lifelong learning (85.6% of the 2024 EU level), which however has been improving over the last years (+9.2%-points since 2017). Adult participation in learning remains low in Belgium, in particular for the low skilled. For the other human resource indicators, Belgian performance is amongst the top in the EU, with the share of (25-34 years) population having completed tertiary education rising from 45% in 2017 to 50% in 2023 (according to raw data). Belgium's research system is amongst one of the most attractive in the EU, although with a decline since 2017 due to a weakening performance in both top cited scientific publications (-17.2%-points) and notably in the share of foreign doctorate students (-106.8%-points). Belgium's digitalisation level is at 107.4% of the EU average in 2024, despite a slight decline for broadband penetration in recent years (-10.1%-points since 2017).

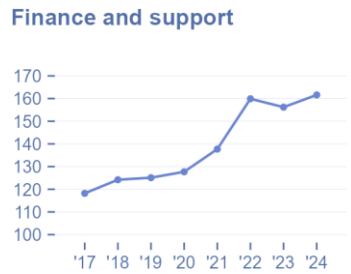


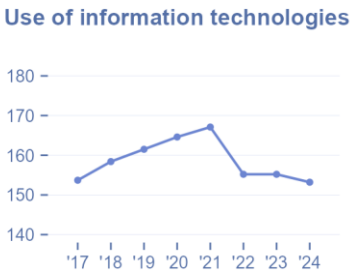


Investments

Belgian performance on investments is particularly impressive in the last eight years, with a significant increase for all indicators whether in the public or private sector. Notably, Belgium ranks first among EU Member States in Innovation expenditures per person employed, second in R&D expenditure in the business sector, and third in Direct and indirect government support of business R&D. This underlines a commitment by the Belgian authorities (at both federal and regional levels) to increase support for R&D. Belgium however performs below the EU average (at 87.6% of 2024 EU level) in non-R&D innovation expenditures, which may be due to an impact of the Covid period on activity.

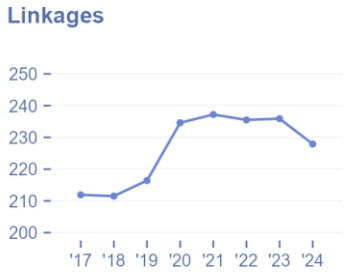
In terms of the use of information technologies, the highly digitalised nature of the Belgian economy is evident and while the recent data shows a small dip, the share of employed ICT specialists in total employment has risen from 4.9% in 2017 to 5.4% in 2023 (according to the raw data).

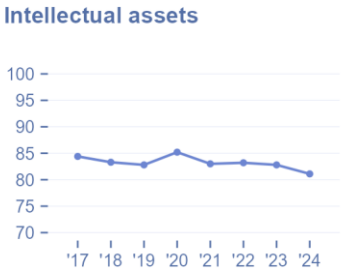




Innovation activities

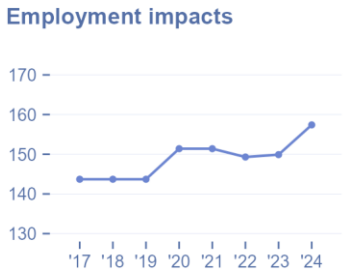
Belgian performance on innovation activities is extremely strong relative to the EU, except for intellectual assets and notably design applications (at 68.0% of the EU average in 2024 and declining). Remarkably, Belgium ranks second among EU Member States in SMEs introducing business process innovations, at 173.9% of the EU average in 2024. Research suggests a persistence over time for Belgium to specialise in patenting in more mature technologies (Cheliout, 2020), with Belgium lagging in digital innovations and other fast-growing fields. There has also been a decline between 2019-2020 (latest data) of job-to-job mobility of HRST. However, this last indicator is somewhat outdated and may not reflect more recent trends and the effect of Covid.

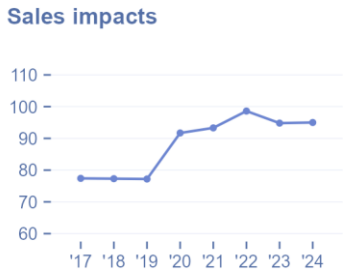


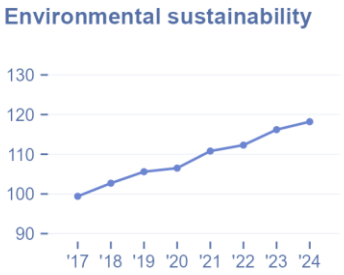


Impacts

Broadly speaking, the trends for impact of innovation activities in Belgium is positive – notably ranking first among EU Member States in Employment in innovative enterprises – with a few points of attention including a slight dip in employment in knowledge intensive activities (from 46.1% in 2021 to 45.2% in 2023) and weaker performance in environment-related technologies (-14.5%-points since 2023). The latter is particularly concerning given that Belgium's overall 'eco-innovation index' performance is already significantly below the EU average and that there is a need to close an investment gap in environmental transformation of the economy. However, Belgium has improved in environmental sustainability overall (+18.8%-points since 2017), especially due to a significant improvement in resource productivity (+66.8%-points).







Structural differences

Performance and structure of the economy

The Belgian economy has proven relatively resilient in recent years maintaining an average annual growth rate of GDP above the EU average. The main contribution to growth has been domestic expenditure, and this is expected to remain the case in the coming years (NBB 2023 and 2024 Economic forecast for Belgium). In 2023, Belgian GDP per capita was the sixth highest in the EU (above Germany and below Austria in the ranking). Future growth is threatened by the economy hitting labour supply limits, due to the working age population barely increasing after 2024, and one of the lowest employment rates in the EU (NBB, 2023).

While the share of manufacturing is below the EU average, the high and medium high-tech manufacturing sector employment share is close to the EU average and the Belgian economy is characterised by a higher share of employment in services and particularly knowledge-intensive services than the EU rate.

SMEs account for 99.2% of enterprises (above the EU average) and the relative importance of SMEs is reflected in the turnover share of SMEs which is above the EU average. However, the Belgian economy is highly open with a share of exports of goods and services in GDP well above the EU average. Moreover, the share of foreign controlled enterprises in value added is significantly above the EU average, underlining Belgium's position as a central hub for multinationals operating in the core European markets.

Business and entrepreneurship

The entrepreneurial dynamics of the Belgium economy are close to those of the EU, with a rate of enterprise births slightly above average. Perhaps due to a relatively higher share of foreign enterprises in the economy, but also due to the reconfiguration of global supply chains and a shift towards more cost-competitive European locations (eastern and southern Europe) for manufacturing and back-office operations, the rate of net FDI inflows has been significantly lower than EU average. The relatively advanced nature of the Belgium economy is exemplified by the rate of top R&D spending enterprises and the buyer sophistication of the economy – both well above EU average. This provides a good basis for innovators to develop, test and launch new products and services.

Innovation profiles

No data is available for Belgium.

Governance and policy framework

The Belgian governance system provides a relatively strong framework for innovators with a corruption perception index, placing the country well above the EU average in a group of countries with Estonia and Ireland (above France and the UK). Rule of law is also well above the EU average confirming the relatively secure environment for innovators (property rights, etc.).

Government procurement of advanced technology products is relatively stronger than EU average, providing an incentive to innovators to develop products and services for the public sector (with government expenditure in Belgium accounting for a larger share of GDP than the EU average). Innovation procurement expenditure is largely in line with the EU average, which might point to room for improvement as it could be expected to be higher given the relative sophistication of the Belgian economy.

Climate change

Belgian's performance on the three structural indicators measuring the transition of the economy and society towards a more environmentally sustainable trajectory is mixed. While circular material use has improved and is well above the EU average, there remains an investment gap and Belgium would benefit from investing more in sustainable water management and pollution prevention (European Commission, 2024). In particular, more measures would be beneficial to reduce waste and phase out unsustainable disposal practices. The material footprint increased significantly in 2022, reaching 15.9 tonnes per capita, above the EU average.

While the greenhouse gas intensity of Belgium's energy consumption has been declining, substantial fossil fuel-based greenhouse gas emissions remain. Faster decarbonisation is required to reach Belgium's 2030 emissions reductions target under the EU Effort Sharing Regulation (NBB, 2024).

In the 2022 Eco-Innovation Index, Belgium was ranked among the catching up countries, along with a number of Eastern European countries. Notable indicators explaining this low ranking include "Government environmental & energy R&D appropriations and outlays" (at 35.8% of EU performance), as well as "employment and value-added in environmental protection and resource management activities" (Eco-Innovation Index Country Report, 2022).

Demography

On 1 January 2024, the Belgian population was around 11,763,650 inhabitants, a population growth of 0.57% or 66,093 inhabitants during 2023, higher than the average of the last 10 years, i.e. 0.53%. There are significant regional differences in demographic trends with growth in the Flemish region (0.6% over last 10 years) and Brussel-Capital region (0.73%) higher than in the Walloon region (0.33%) (STATBEL, 2024).

Belgian's population change is driven by two trends: the natural balance (births-deaths) which has been on a downward trend for several years; secondly, the international migration balance (the difference between the number of immigrations and emigrations) which was positive in 2023 (+66,349). This is in line with expectations, but the 2023 balance is slightly more positive than the average of the last 10 years. This can be explained by a larger number of international immigrations notably due to the war in Ukraine. In 2020 and 2021, 0.3% and 0.2% of emigrants respectively had Ukrainian nationality, increasing to 4.6% in 2022 and 5.9% in 2023 (STATBEL, 2024).

The population density of Belgium is significantly higher than the EU average, however, again, there are significant differences across the three regions: the Flemish region has a population density of 497 inhabitants/km^2; the Walloon region of 218 inhabitants/km^2 and the Brussels-Capital Region of 7,642 inhabitants/km^2. The latter region also has a larger share of young people (-18 years) and working age population.

Structural indicators

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

	BE	EU
Performance and structure of the economy		
GDP per capita	119.3	100
Average annual GDP growth (2021-2023 average)	2.2	1.9
Employment share Manufacturing	11.4	15.8
Employment share High and Medium high-tech	37.3	37.9
Employment share Services	40.9	39.8
Employment share Knowledge-intensive services	32.8	28.6
Turnover share SMEs	15.2	12.6
Turnover share large enterprises	39.4	49.6
Foreign-controlled enterprises – share of value added	15.6	13.3
Business and entrepreneurship		
Enterprise births	0.9	0.8
FDI net inflows	0.6	1.9
Top R&D spending enterprises	11	8.4
Buyer sophistication	4.4	3.6
Innovation profiles		
In-house product innovators with market novelties		11.7
In-house product innovators without market novelties		13.7
In-house business process innovators		17.6
Innovators that do not develop innovations themselves		6.1
Innovation active non-innovators		4.2
Governance and policy frameworks		
Corruption Perceptions Index	73	64
Government procurement of advanced technology products	3.5	3.4
Rule of law	1.3	1
Innovation procurement as a share of total public procurement	9.1	9.2
Climate change		
Circular material use rate	23	11.5
Greenhouse gas emissions intensity of energy consumption	85.4	82.8
Eco-Innovation Index	99.8	121.5
Demography		
Population size (in millions)	11.6	447
Average annual population growth (2021-2023 average)	0.8	0.3
Population density	379.9	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.

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

Studies and reports