
INNOVATION UNION SCOREBOARD 2010

The Innovation Union's performance scoreboard for Research and Innovation

The IUS report, its annexes and the indicators' database are available at <http://www.proinno-europe.eu/metrics>

Disclaimer:

The views expressed in this report, as well as the information included in it, do not necessarily reflect the opinion or position of the European Commission and in no way commit the institution.

This report has been prepared by the Maastricht Economic and social Research and training centre on Innovation and Technology (UNU-MERIT).

1. EXECUTIVE SUMMARY

A new depart

This is the first edition of the Innovation Union Scoreboard (IUS). Based on the previous European Innovation Scoreboard (EIS), the new tool is meant to help monitor the implementation of the Europe 2020 Innovation Union¹ flagship by providing a comparative assessment of the innovation performance of the EU27 Member States and the relative strengths and weaknesses of their research and innovation systems.

The former list of 29 indicators in the EIS 2009 has been replaced with a new list of 25 indicators², which better capture the performance of national research and innovation systems considered as a whole. 19 of the previous 29 indicators have been carried over from last year's edition, of which 12 indicators have not been changed, 2 indicators have been merged, and 5 indicators have been partly changed by using broader or narrower definitions or different denominators. Taking into account the merging of 2 indicators, 18 indicators of the IUS 2010 are equivalent to those of the EIS 2009 and in addition 7 new indicators have been introduced. Annex E includes a comparative table with the two sets of indicators.

While some of the indicators of the IUS (such as public R&D expenditure) can be more easily influenced by policy intervention than others (such as SMEs innovating in-house), the overall ambition of the European Innovation Scoreboard is to inform policy discussions at national and EU level, by tracking progress in innovation performance within and outside the EU over time.

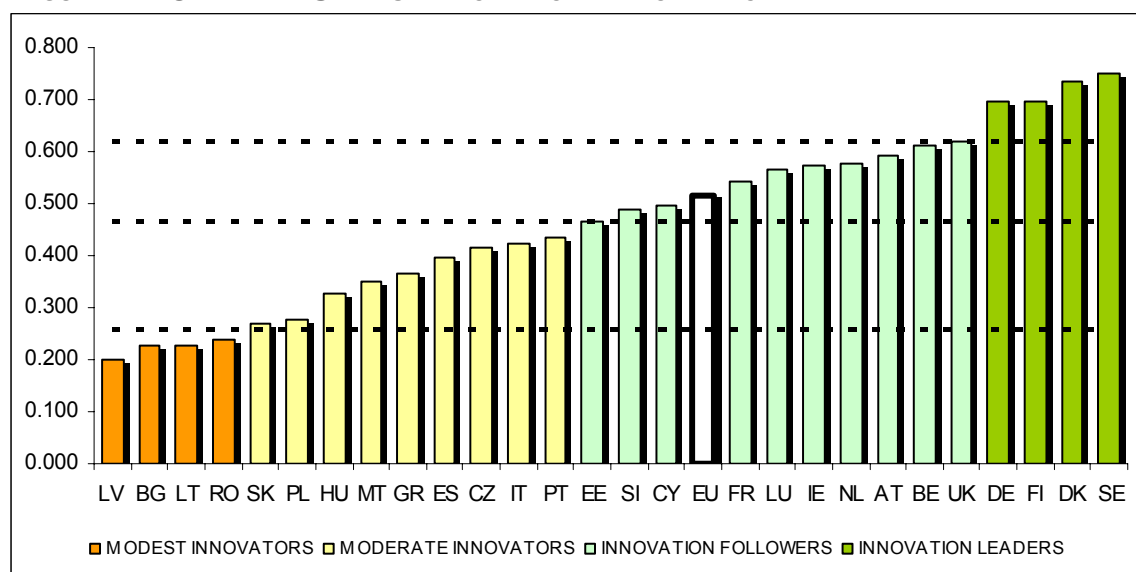
The IUS uses the most recent statistics from Eurostat and other internationally recognised sources as available at the time of analysis. International sources have been used wherever possible in order to improve comparability between countries. It is important to note that the data relates to actual performance in 2007 (4 indicators), 2008 (10 indicators) and 2009 (10 indicators). As a consequence the IUS 2010 may not fully capture the possible impact of the economic and financial crisis on innovation performance. Data for indicator 3.1.3 "High-growth innovative enterprises as a percentage of all enterprises" is not sufficiently available yet and therefore only 24 of the 25 indicators have been used in producing the composite innovation indicator.

The IUS 2010 includes innovation indicators and trend analyses for the EU27 Member States, as well as for Croatia, Iceland, the Former Yugoslav Republic of Macedonia, Norway, Serbia, Switzerland and Turkey. It also includes comparisons based on a more reduced set of indicators between the EU27, the US, Japan and the BRIC (Brazil, Russia, India and China) countries.

¹ See http://ec.europa.eu/research/innovation-union/pdf/innovation-union-communication_en.pdf

² See Annex C for the definition of indicators

FIGURE 1: EU MEMBER STATES' INNOVATION PERFORMANCE



Note: Average performance is measured using a composite indicator building on data for 24 indicators going from a lowest possible performance of 0 to a maximum possible performance of 1. Average performance in 2010 reflects performance in 2008/2009 due to a lag in data availability. The performance of Innovation leaders is 20% or more above that of the EU27; of Innovation followers it is less than 20% above but more than 10% below that of the EU27; of Moderate innovators it is less than 10% below but more than 50% below that of the EU27; and for Modest innovators it is below 50% that of the EU27.

Performance groups

The main findings of the IUS 2010 are:

Based on their average innovation performance across 24 indicators, the Member States fall into **four performance groups** (see thresholds in footnote of Figure 1): Innovation leaders, Innovation followers, Moderate innovators and Modest innovators (see section 3.1):

- Denmark, Finland, Germany, Sweden all show a performance well above that of the EU27. These countries are the **Innovation leaders**.
- Austria, Belgium, Cyprus, Estonia, France, Ireland, Luxembourg, Netherlands, Slovenia and the UK all show a performance close to that of the EU27. These countries are the **Innovation followers**.
- The performance of Czech Republic, Greece, Hungary, Italy, Malta, Poland, Portugal, Slovakia and Spain is below that of the EU27. These countries are **Moderate innovators**.
- The performance of Bulgaria, Latvia, Lithuania, Macedonia and Romania is well below that of the EU27. These countries are **Modest innovators**.

Bulgaria, Estonia, Malta, Romania, Portugal and Slovenia are the growth leaders with an average annual growth rate well above 5%. There continues to be **a steady convergence**, where less innovative Member States have – on average – been growing faster than the more innovative Member States. This convergence process however seems to be slowing down (see section 3.2 and Annex G). While the Moderate and Modest innovators clearly catch-up to the higher performance level of both the Innovation leaders and Innovation followers, there is no convergence between the different Member States within these 2 lower performance groups. Convergence between the Member States does take place within the Innovation leaders and in particular within the Innovation followers convergence. Between-group convergence thus seems to be stronger than within-group convergence.

What do innovation leaders have in common?

Countries at the top of the ranking for the composite innovation indicator share a number of strengths in their national research and innovation systems. While there is not one single way to reach top innovation performance, most innovation leaders perform very well in Business R&D expenditures and other innovation indicators related to firm activities. All of the innovation leaders have higher than average scores in the Public-private co-publications per million population indicator, what points in the direction of good linkages between the science base and businesses. All European top innovators also excel in the commercialisation of their technological knowledge, as demonstrated by their good performance on the indicator License and patent revenues from abroad.

Furthermore, the overall good performance of the innovation leaders reflects a balanced national research and innovation system. While each country has its own specificities, policy responses should attempt not only to address relative weaknesses in national research and innovation systems, but also to have more balanced performances across all categories of indicators.

International comparison

Of the non-EU European countries, Switzerland is the overall innovation leader outperforming all Member States (section 4.1). Switzerland's growth performance is also above that of the EU27 and displays an exceptional performance in Intellectual assets and in most of the Economic effects indicators.

The **US and Japan are holding their lead** over the EU27 (Figure II) (see section 4.2 for detail). This result is derived from a performance comparison based on a smaller set of 12 of the IUS indicators. The same comparison also shows that the **EU27 is holding its lead towards India and Russia**, but has been **losing part of its lead towards Brazil and China**.

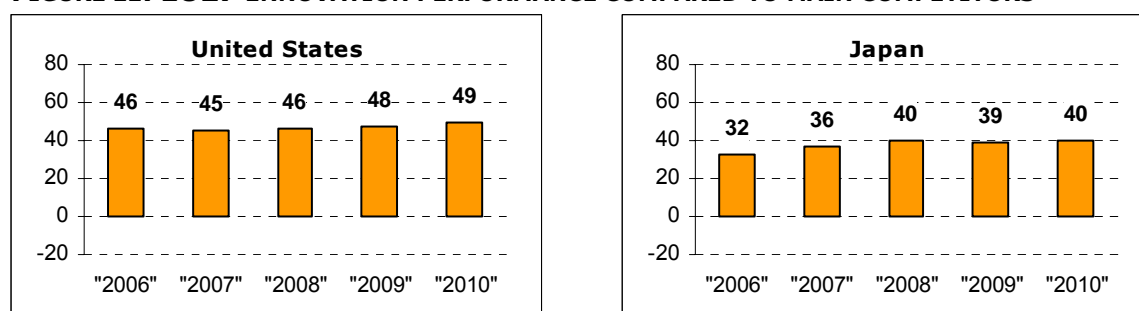
A good part of the performance gap in favour of the US can be explained by higher scores in License and patent revenues from abroad, Public-private co-publications, Tertiary education and Business R&D expenditure Trends show that the US performance is improving faster notably as regards New doctorate degrees, License and patent revenues and International co-publications. However, the EU outperforms the US in indicators such as Public R&D expenditure and Knowledge-intensive services exports and its performance is growing faster in 6 indicators, including Public R&D expenditures and PCT patent applications in societal challenges.

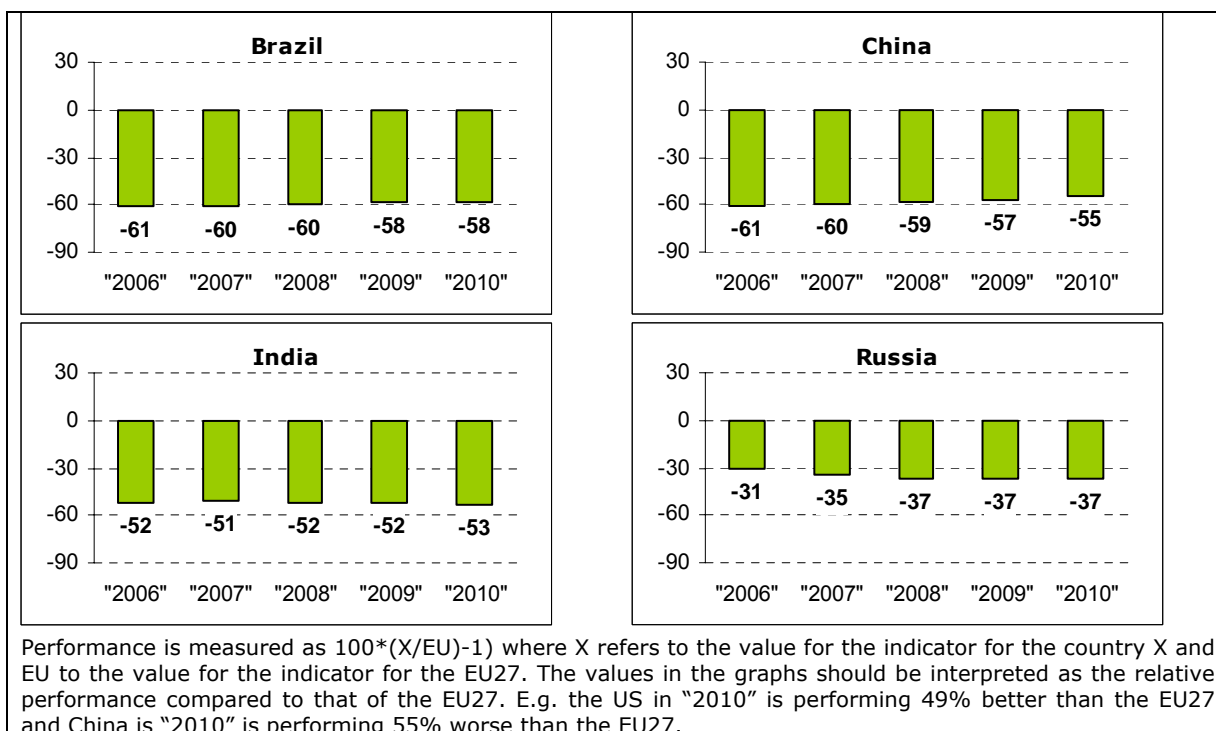
The US innovation performance reflects an innovation system characterised by good levels of tertiary education, good linkages between the public science system and the private sector, strong private investment in R&D and a successful commercialisation of technological knowledge.

Less marked, but not decreasing either is the performance lead of Japan over the EU27. Japan's performance is clearly ahead in Business R&D expenditure and is growing faster than the EU in this field.

Compared to China and Brazil, the EU still has a clear innovation performance lead. Based on a common set of 12 indicators, this lead, however, is declining fast.

FIGURE II: EU27 INNOVATION PERFORMANCE COMPARED TO MAIN COMPETITORS





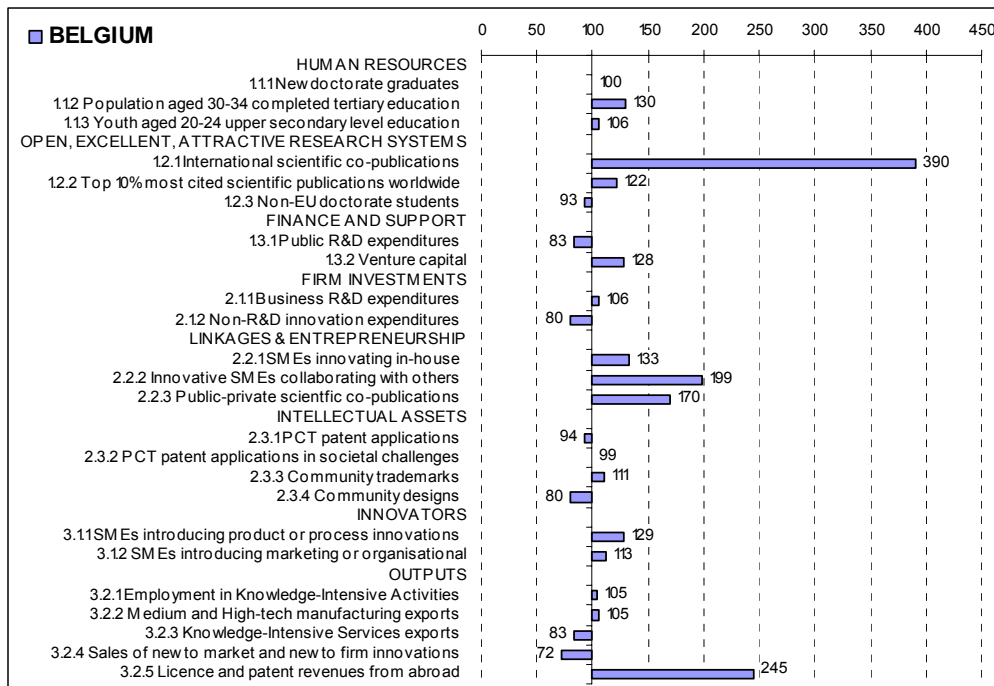
Special theme: Public sector innovation

Public sector innovation is a subject which is attracting increasing policy attention. In preparation for the forthcoming European Public Sector Innovation Scoreboard the 2010 Innobarometer was dedicated to public sector innovation. The survey, conducted among 4000 European organisations in public administration, shows that innovation in public services is widespread (see section 5). Within Europe, two out of three organisations active in public administration introduced a new or significantly improved service in the last 3 years. Innovations improved the work of public administrations and the reported positive effects of innovation included improved user access to information, improved user satisfaction, more targeted services, faster delivery of services, simplified administration and improved working conditions or employee satisfaction.

The survey shows that single most important driver of innovation in the public sector was the introduction of new laws and regulations, with 48% of respondents at the EU level indicating that this was a very important factor. Also, the likelihood of service innovation increased linearly with the size of the institution.

2. COUNTRY PROFILES

In this section for each country a more detailed country profile is shown highlighting for each country's relative strengths and weaknesses in innovation performance and its main drivers of innovation growth. For each country detailed data tables are available from the INNO Metrics website (<http://www.proinno-europe.eu/metrics>)

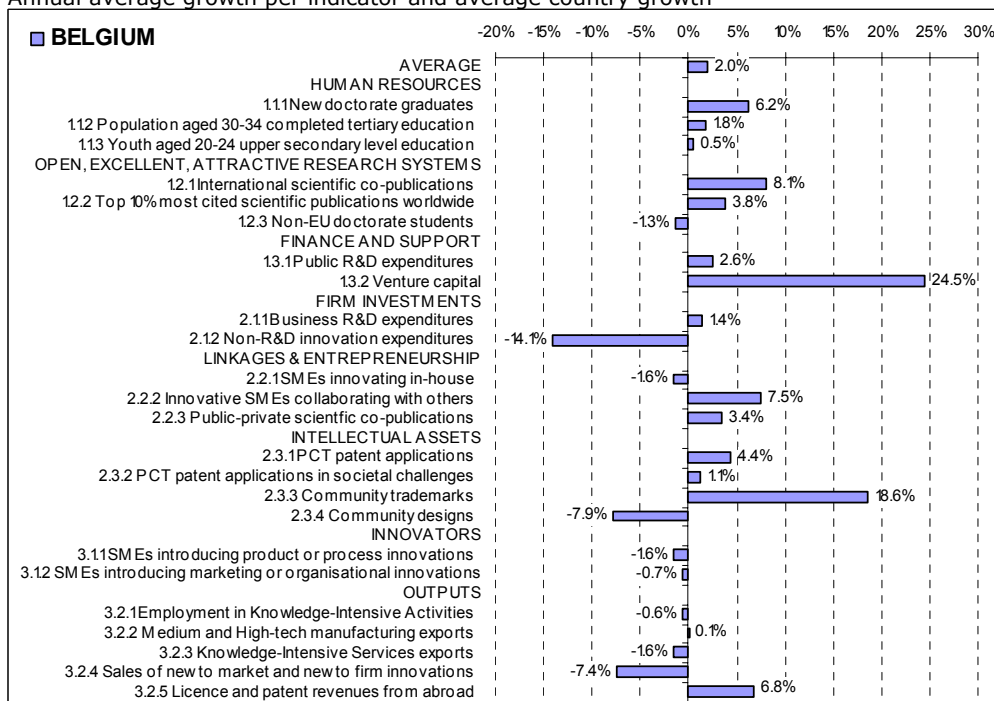


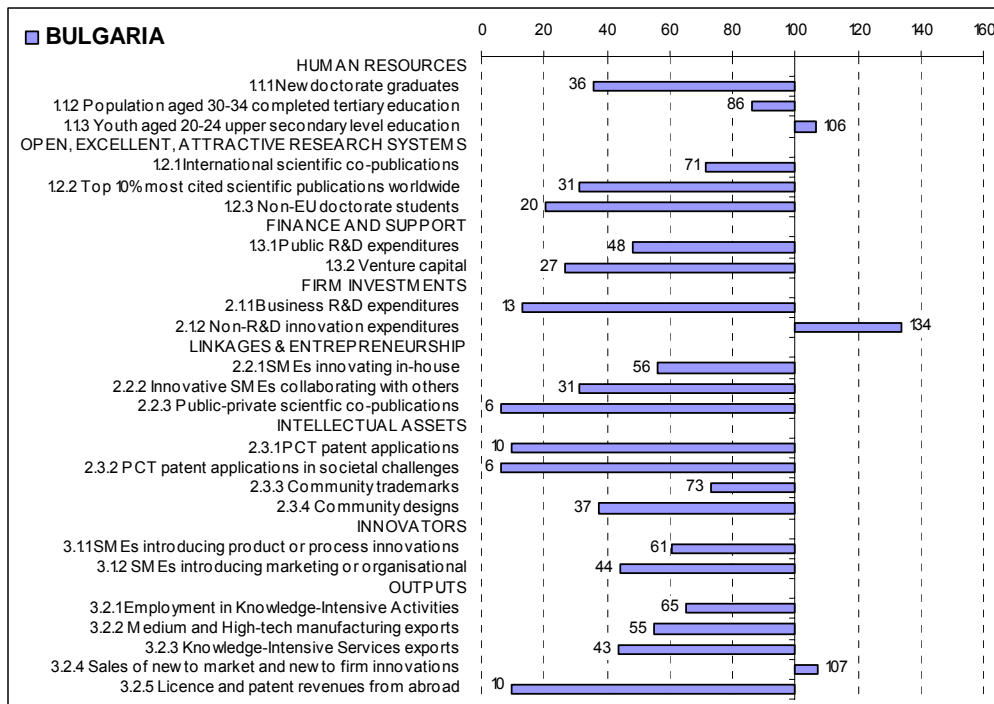
Indicator values relative to the EU27 (EU27=100).

Belgium is one of the innovation followers with an above average performance. Relative strengths are in Human resources, Open, excellent and attractive research systems and Linkages & entrepreneurship. Relative weaknesses are in Firm investments, Intellectual assets and Outputs.

High growth is observed for Venture capital and Community trademarks. A strong decline is observed for Non-R&D innovation expenditure, Community designs and Sales of new products. Growth performance in Human resources, Open, excellent and attractive research systems, Finance and support, Linkages & entrepreneurship and Intellectual assets is above average. In the other dimensions it is below average.

Annual average growth per indicator and average country growth

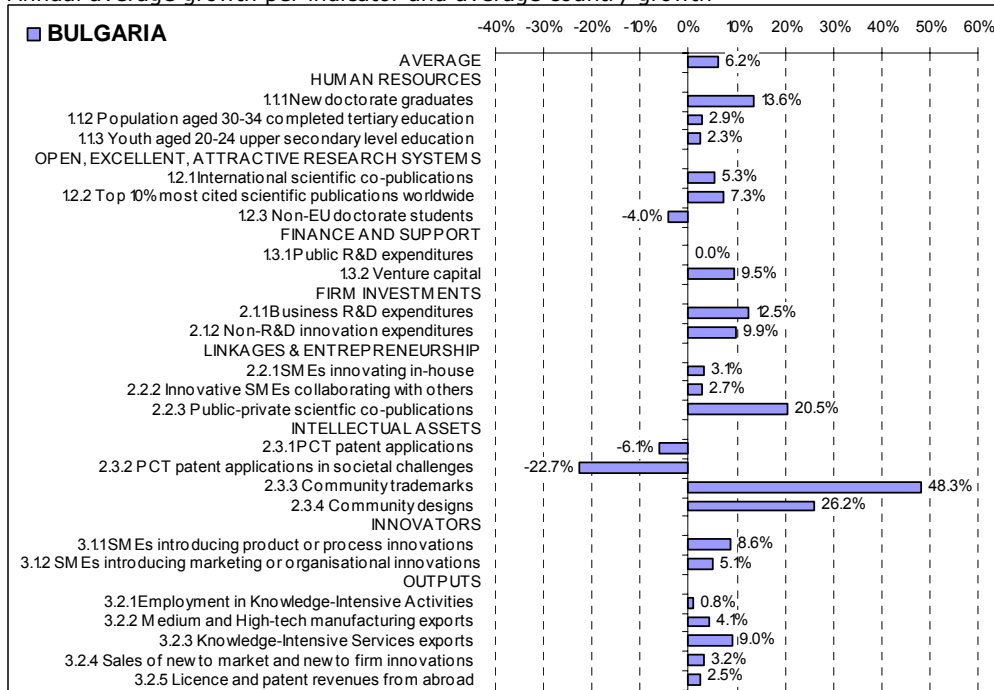


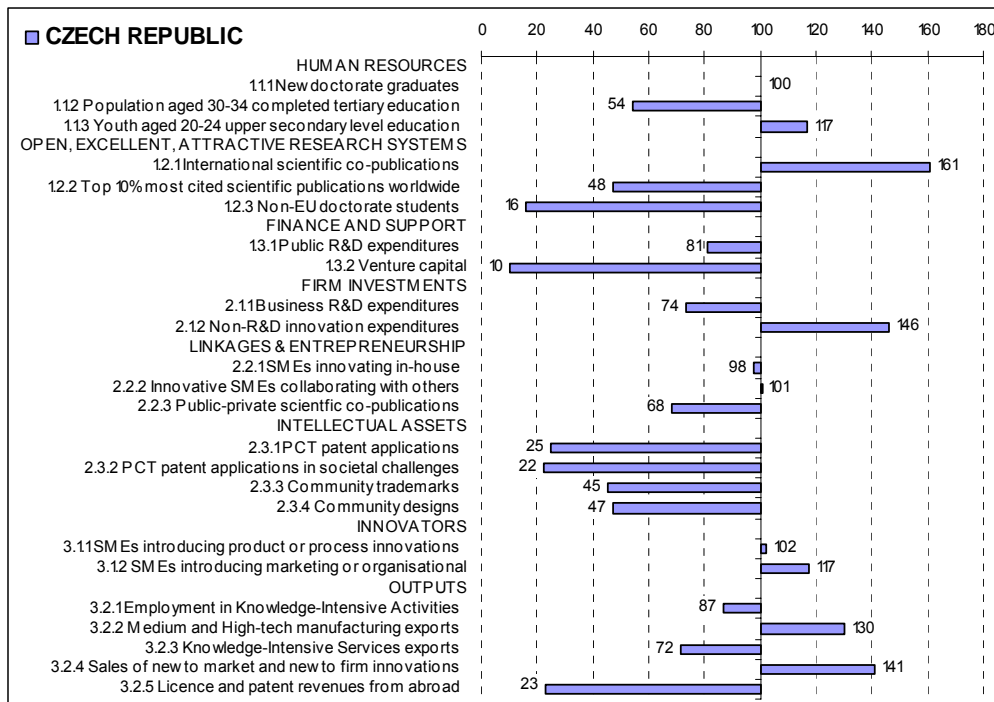


Indicator values relative to the EU27 (EU27=100).

Bulgaria is one of the modest innovators with a below average performance. Relative strengths are in Human resources. Relative weaknesses are in Linkages & entrepreneurship, Intellectual assets and Innovators. High growth is observed for Community trademarks and Community designs. A strong decline is observed for PCT patents in societal challenges. Growth performance in Linkages & entrepreneurship and Intellectual assets is above average. In the other dimensions it is below average.

Annual average growth per indicator and average country growth

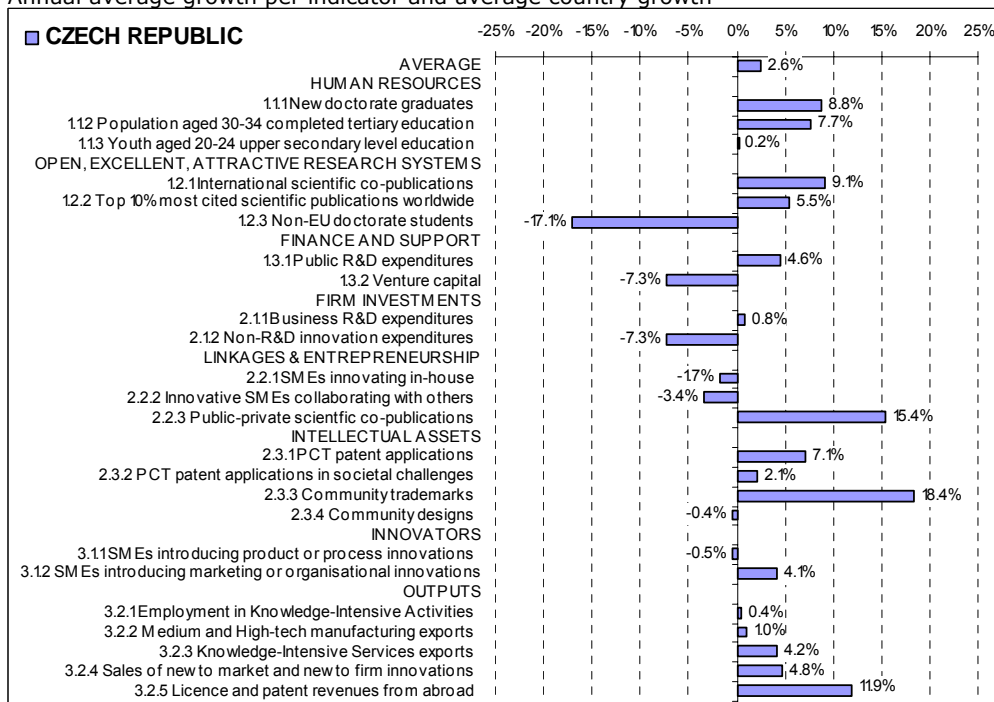


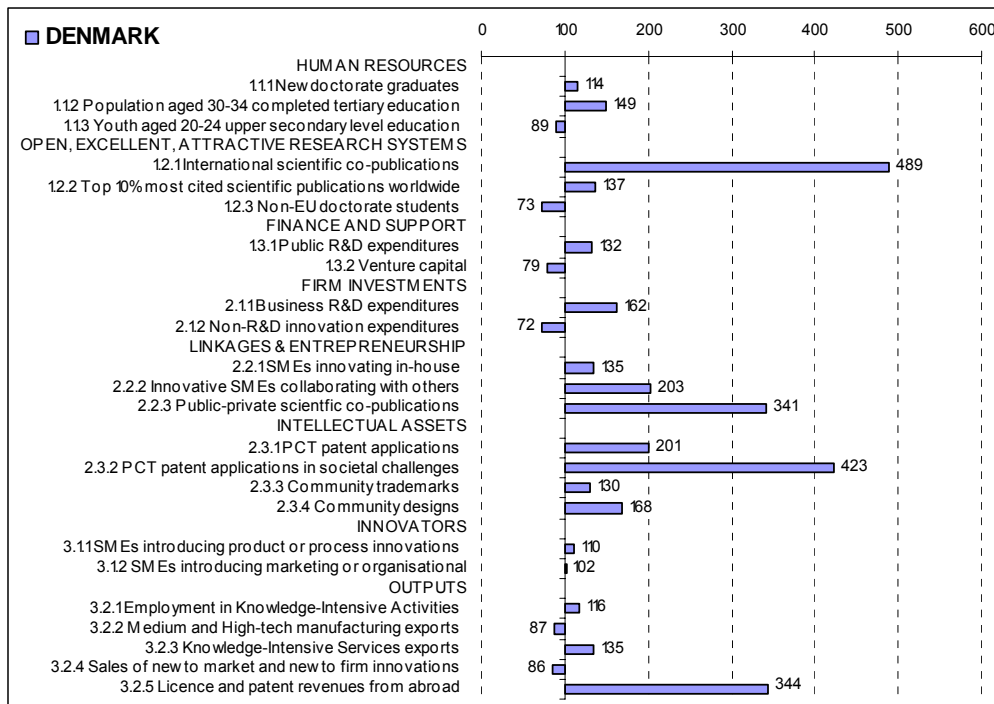


Indicator values relative to the EU27 (EU27=100).

Czech Republic is one of the moderate innovators with a below average performance. Relative strengths are in Human resources, Firm investments, Innovators and Outputs. Relative weaknesses are in Open, excellent and attractive research systems, Finance and support and Intellectual assets. High growth is observed for Community trademarks and Public-private co-publications. A strong decline is observed for Non-EU doctorate students. Growth performance in Human resources and Intellectual assets is above average. In the other dimensions it is below average.

Annual average growth per indicator and average country growth

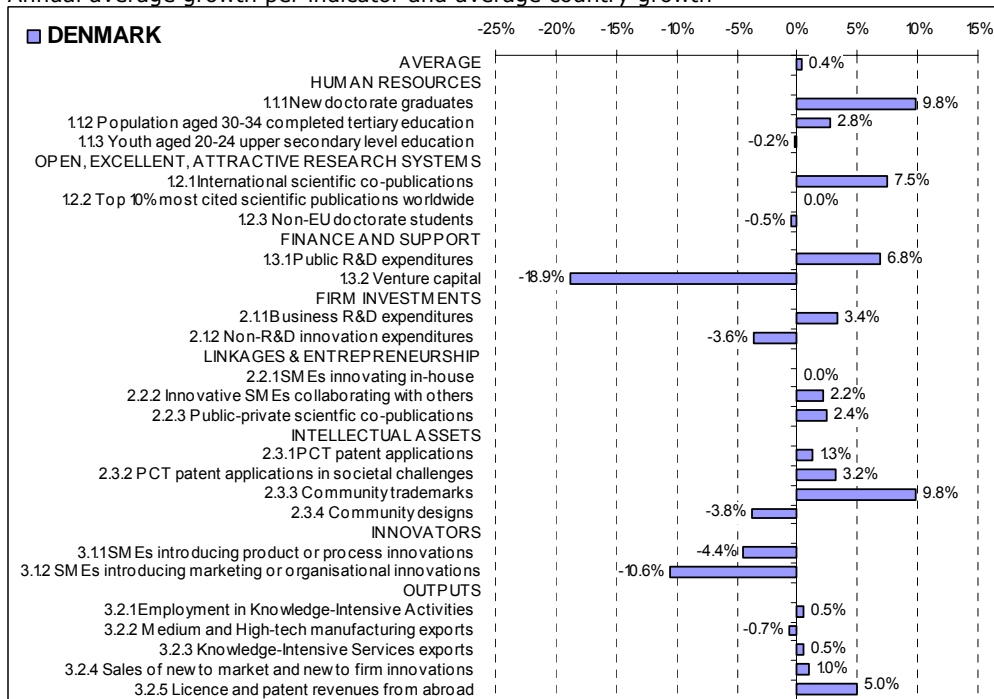


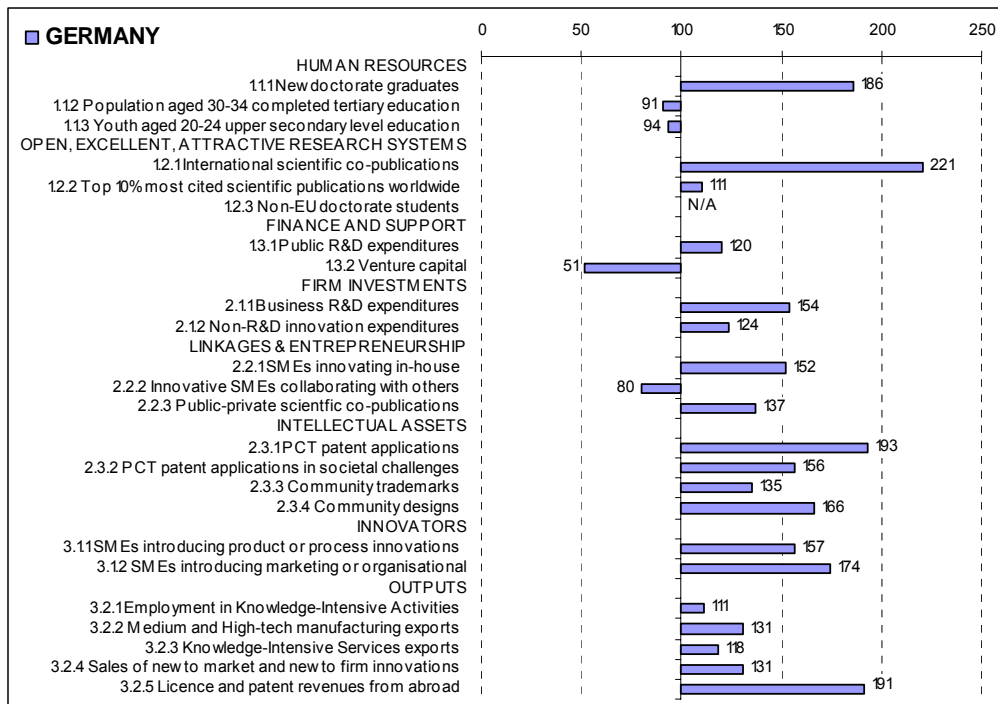


Indicator values relative to the EU27 (EU27=100).

Denmark is one of the innovation leaders with an above average performance. Relative strengths are in Open, excellent and attractive research systems, Linkages & entrepreneurship and Intellectual assets. Relative weaknesses are in Finance and support, Innovators and Outputs. High growth is observed for New doctorate graduates and Community trademarks. A strong decline is observed for Venture capital and SMEs introducing marketing or organizational innovations. Growth performance in Human resources, Open, excellent and attractive research systems, Linkages & entrepreneurship and Intellectual assets is above average. In the other dimensions it is below average.

Annual average growth per indicator and average country growth



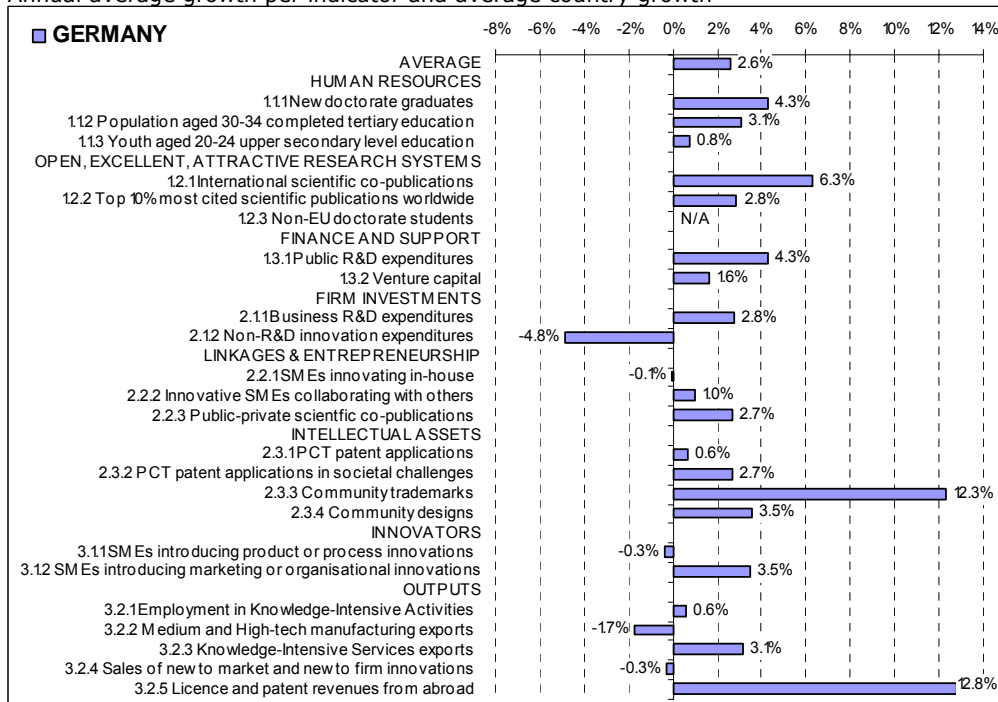


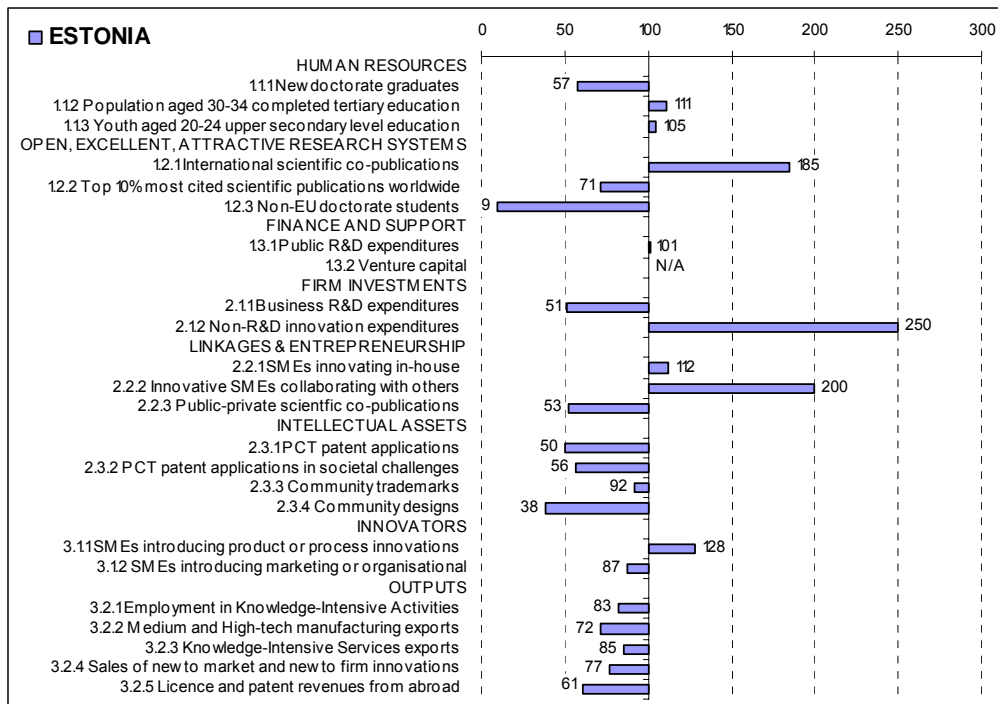
Indicator values relative to the EU27 (EU27=100).

Germany is one of the innovation leaders with an above average performance. Relative strengths are in Intellectual assets, Innovators and Outputs. Relative weaknesses are in Human resources, Finance and support and Linkages & entrepreneurship.

High growth is observed for Community trademarks. A strong decline is observed for Non-R&D innovation expenditure. Growth performance in Human resources, Open, excellent and attractive research systems and Intellectual assets is above average. In the other dimensions it is below average.

Annual average growth per indicator and average country growth

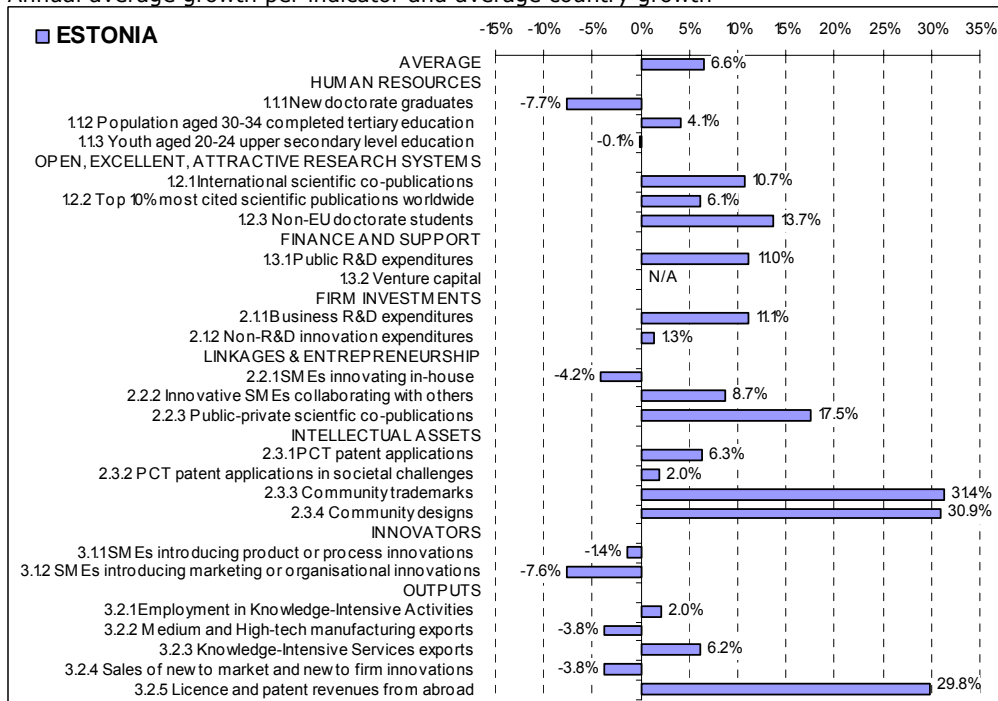


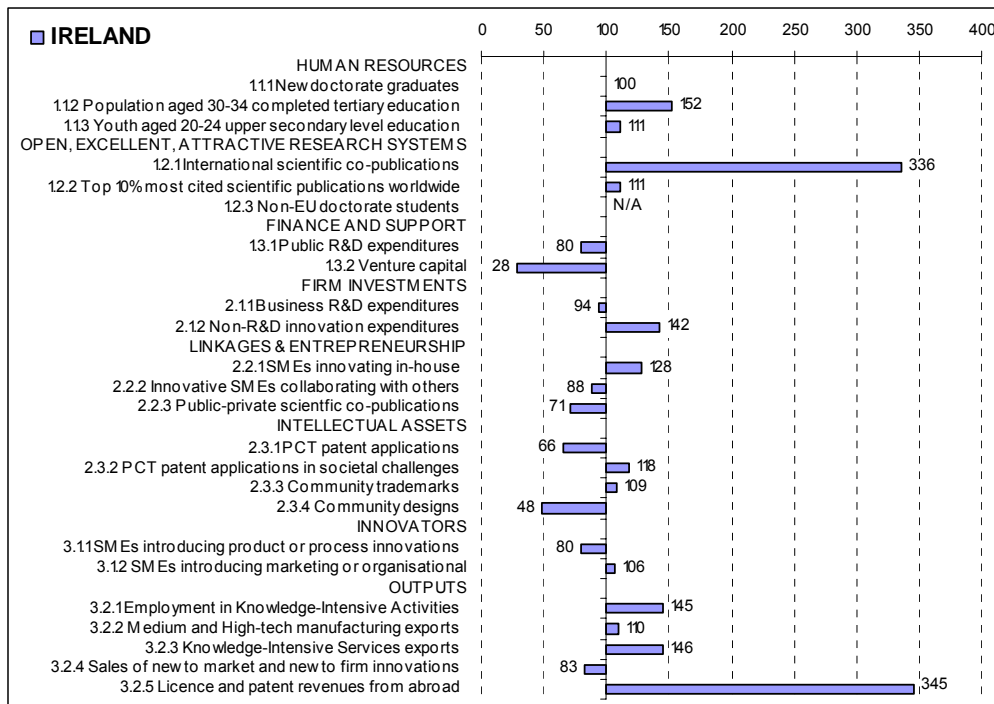


Indicator values relative to the EU27 (EU27=100).

Estonia is one of the innovation followers with a close to average performance. Relative strengths are in Human resources, Firm investments and Linkages & entrepreneurship. Relative weaknesses are in Open, excellent and attractive research systems, Intellectual assets and Outputs. High growth is observed for Community trademarks, Community designs and License and patent revenues from abroad. A relatively strong decline is observed for New doctorate students and SMEs introducing marketing or organizational innovations. Growth performance in Open, excellent and attractive research systems and Intellectual assets is above average. In the other dimensions it is below average.

Annual average growth per indicator and average country growth

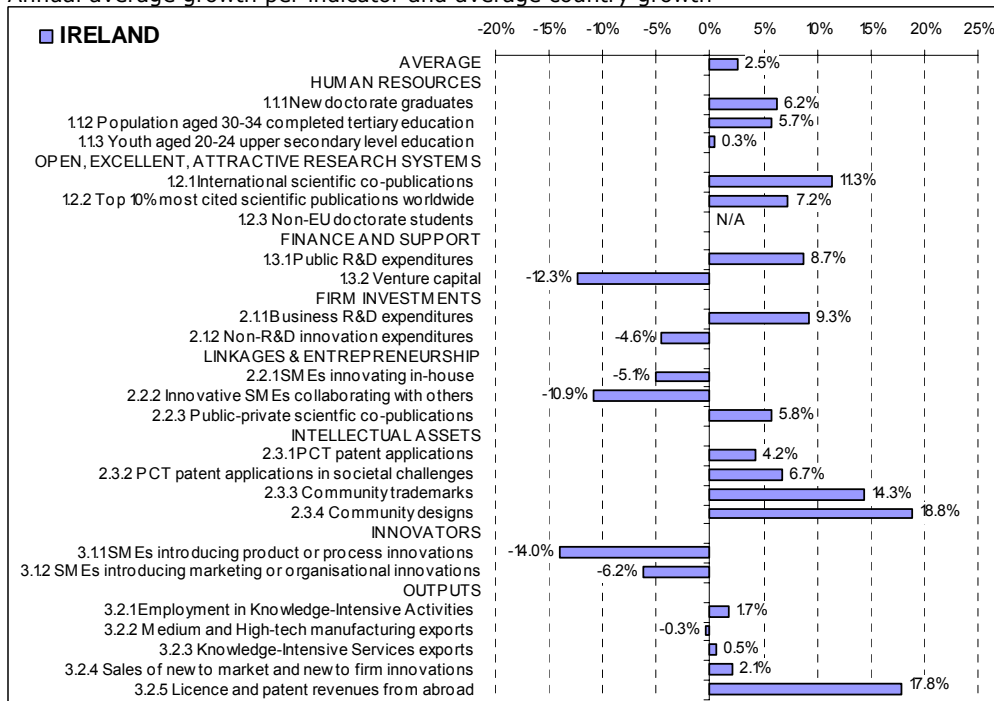


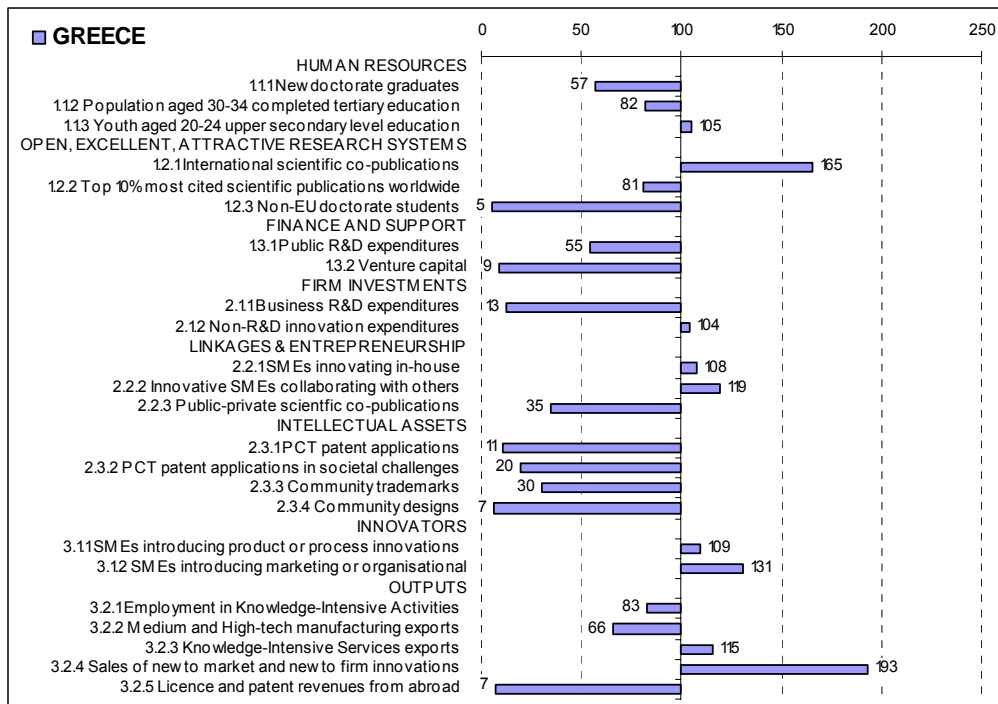


Indicator values relative to the EU27 (EU27=100).

Ireland is one of the innovation followers with an above average performance. Relative strengths are in Human resources, Open, excellent and attractive research systems and Outputs. Relative weaknesses are in Finance and support, Linkages & entrepreneurship, Intellectual assets and Innovators. High growth is observed for Community trademarks, Community designs and License and patent revenues from abroad. A strong decline is observed for SMEs introducing product or process innovations. Growth performance in Human resources, Open, excellent and attractive research systems, Intellectual assets and Outputs is above average. In the other dimensions it is below average.

Annual average growth per indicator and average country growth

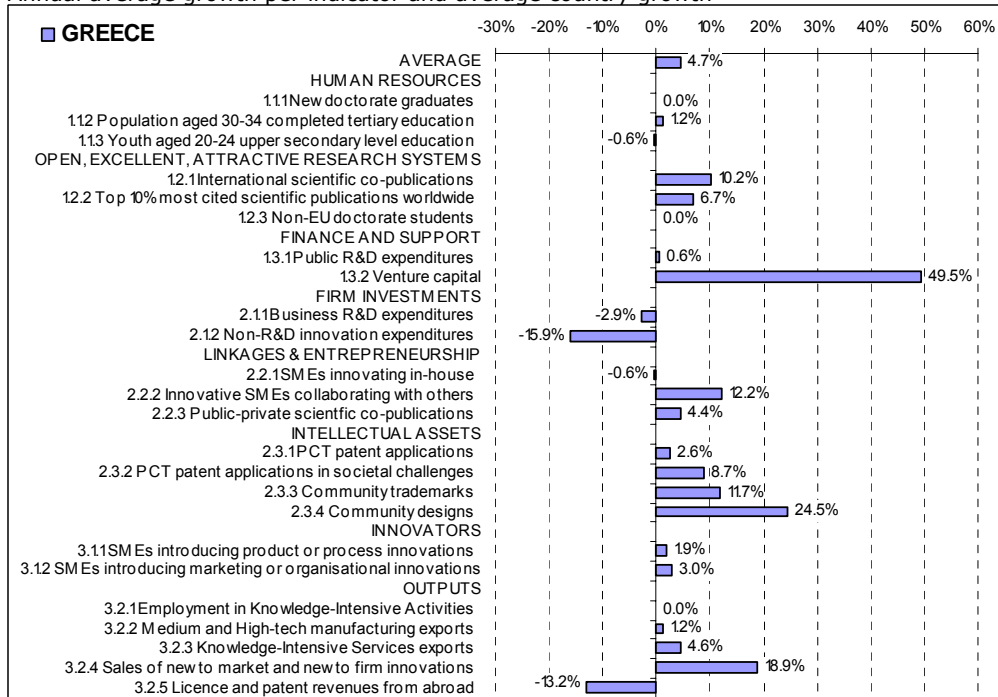


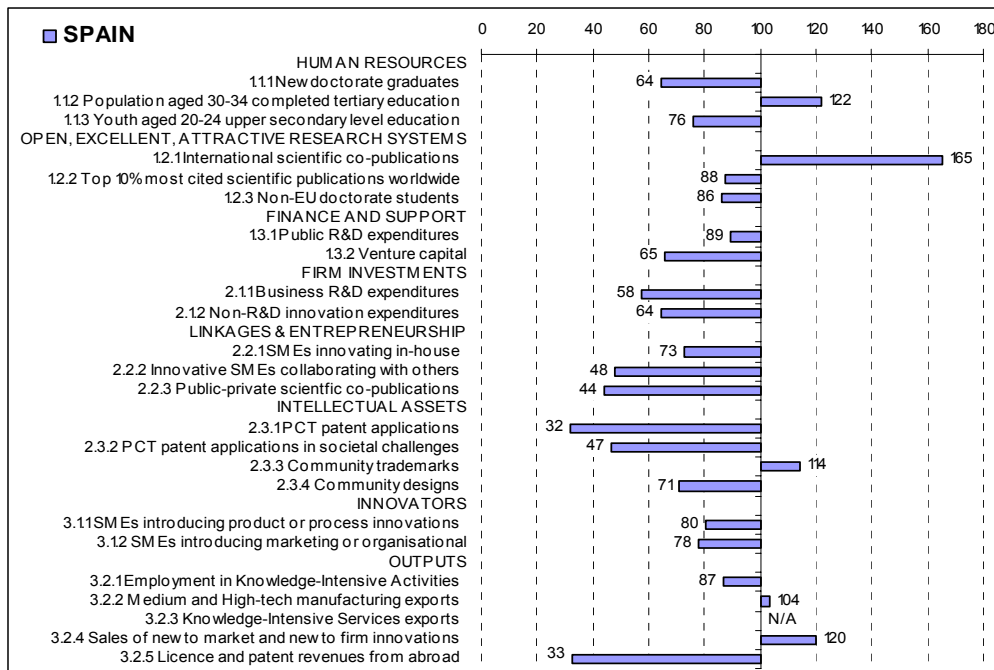


Indicator values relative to the EU27 (EU27=100).

Greece is one of the moderate innovators with a below average performance. Relative strengths are in Human resources, Innovators and Outputs. Relative weaknesses are in Finance and support, Firm investments and Intellectual assets. High growth is observed for Venture capital, Community designs and Sales of new products. A relatively strong decline is observed for Non-R&D innovation expenditure and License and patent revenues from abroad. Growth performance in Finance and support and Intellectual assets is above average. In the other dimensions it is below average.

Annual average growth per indicator and average country growth

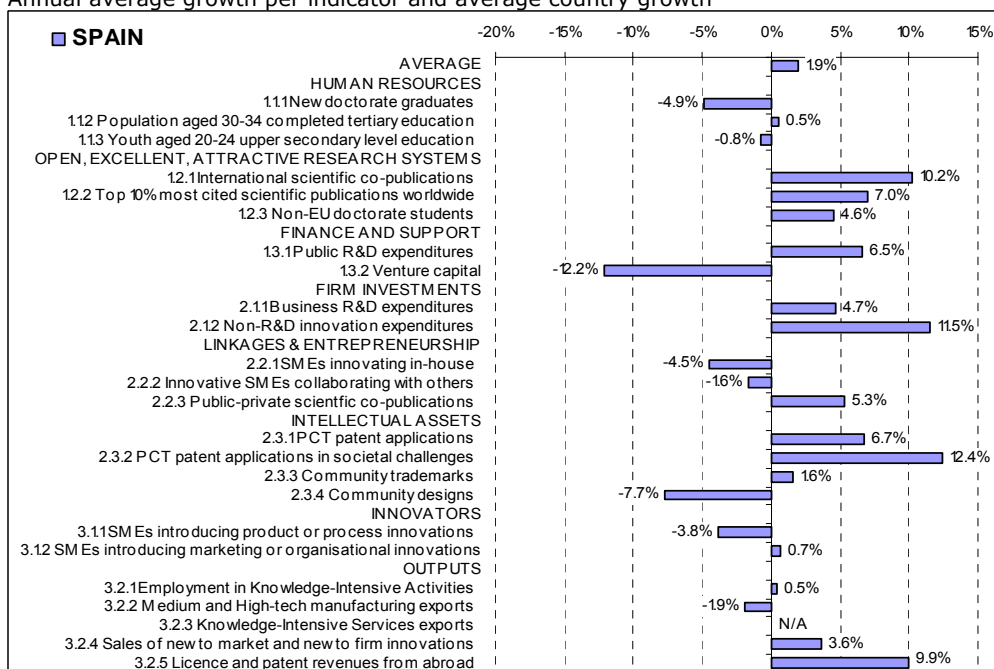


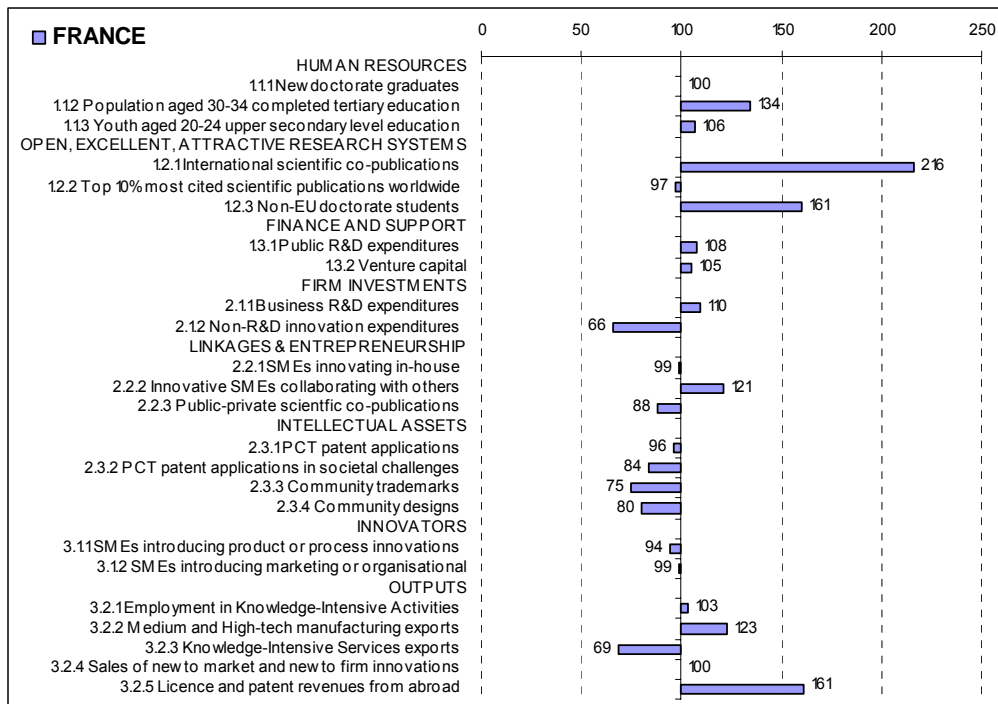


Indicator values relative to the EU27 (EU27=100).

Spain is one of the moderate innovators with a below average performance. Relative strengths are in the indicator on international scientific publications and in the dimensions Finance and support and Outputs (except on License and patent revenues from abroad). Relative weaknesses are in Firm investments, Linkages & entrepreneurship, Intellectual assets and Innovators. High growth is observed for International co-publications, Non-R&D innovation expenditure, PCT patent applications in societal challenges and Licence and patent revenues from abroad). The strongest decline is observed for Venture capital. Growth performance in Open, excellent and attractive research systems is above average. Growth in all indicators related to Intellectual assets is also above average except for Community designs. In the dimensions Linkages and entrepreneurship, Innovators and Outputs, growth in the individual indicators presents no clear overall trend

Annual average growth per indicator and average country growth

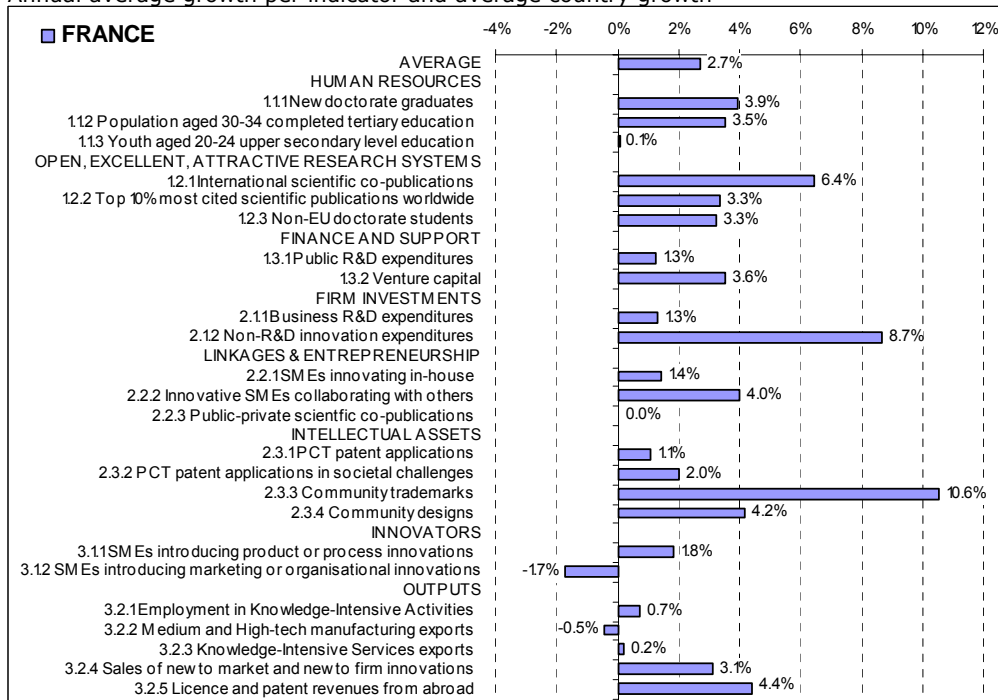


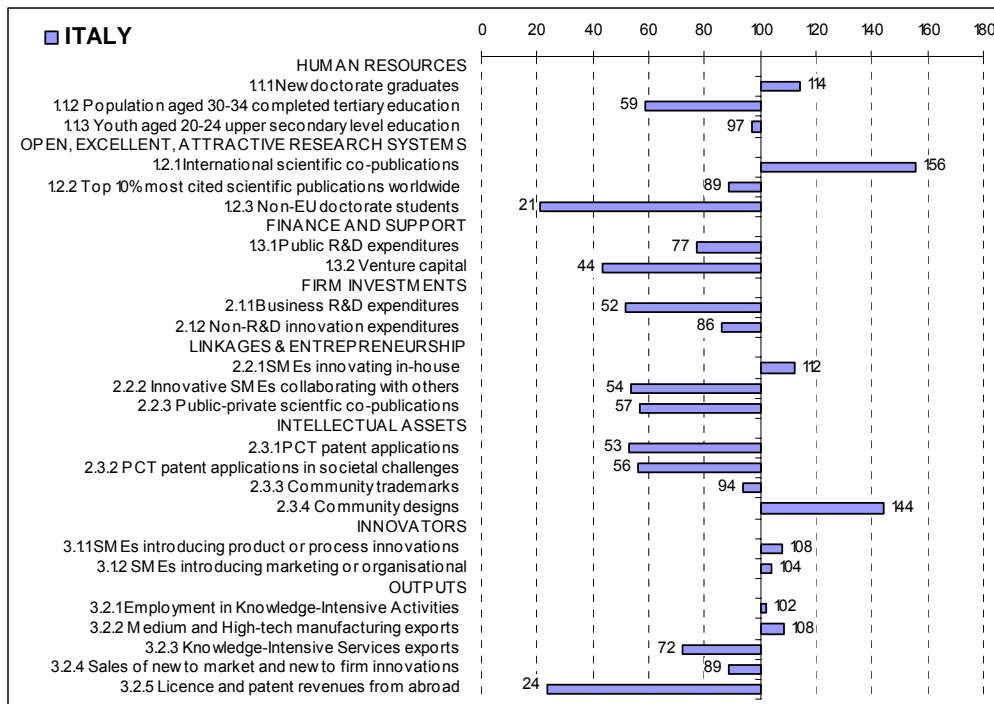


Indicator values relative to the EU27 (EU27=100).

France is one of the innovation followers with an above average performance. Relative strengths are in Human resources, Open, excellent and attractive research systems, Finance and support and Outputs. Relative weaknesses are in Firm investments, Linkages & entrepreneurship, Intellectual assets and Innovators. High growth is observed for Non-R&D innovation expenditure, Community trademarks and License and patent revenues from abroad. Growth performance in Open, excellent and attractive research systems and Intellectual assets is above average. In the other dimensions it is below average.

Annual average growth per indicator and average country growth

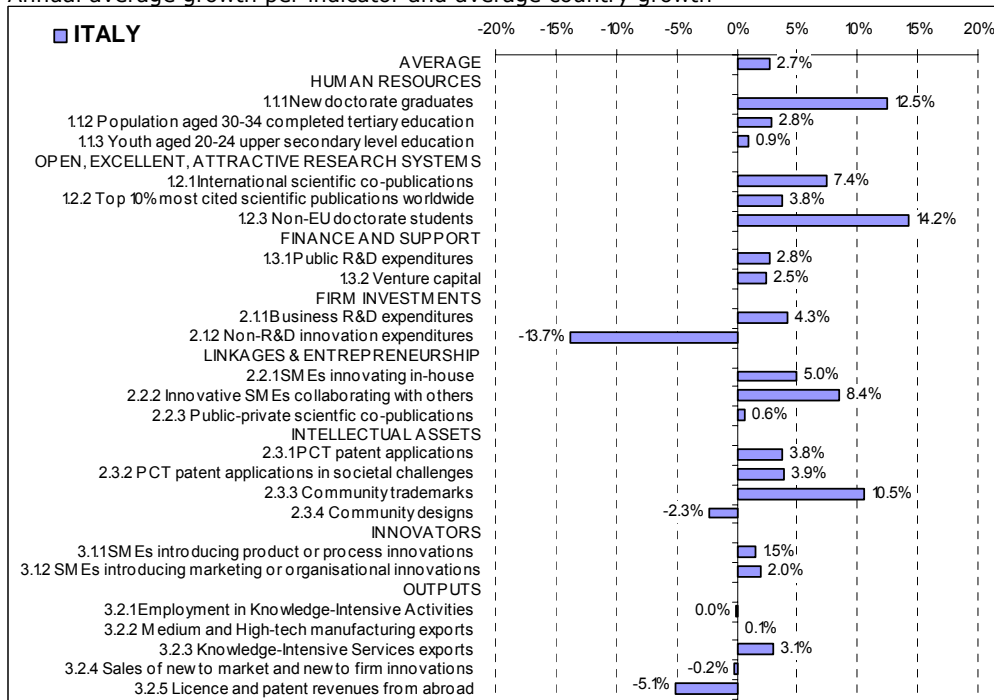


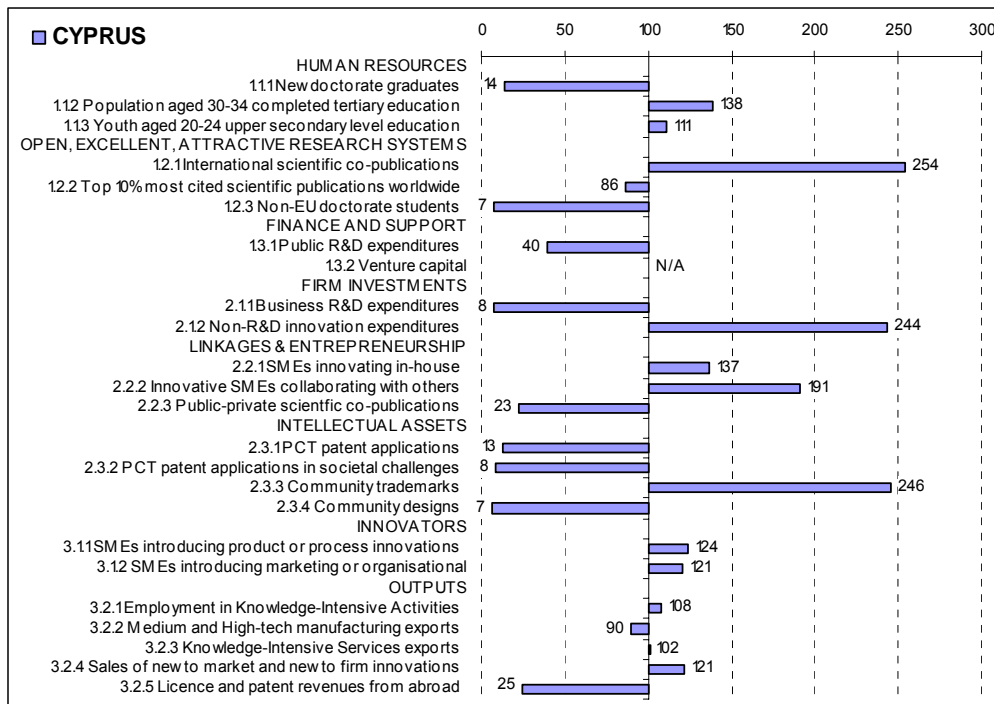


Indicator values relative to the EU27 (EU27=100).

Italy is one of the moderate innovators with a below average performance. Relative strengths are in Intellectual assets, Innovators and Outputs. Relative weaknesses are in Firm investments and Linkages & entrepreneurship. High growth is observed for New doctorate graduates, Non-EU doctoral students and Community trademarks. A strong decline is observed for Non-R&D innovation expenditure. Growth performance in Open, excellent and attractive research systems, Linkages & entrepreneurship and Intellectual assets is above average. In the other dimensions it is below average.

Annual average growth per indicator and average country growth

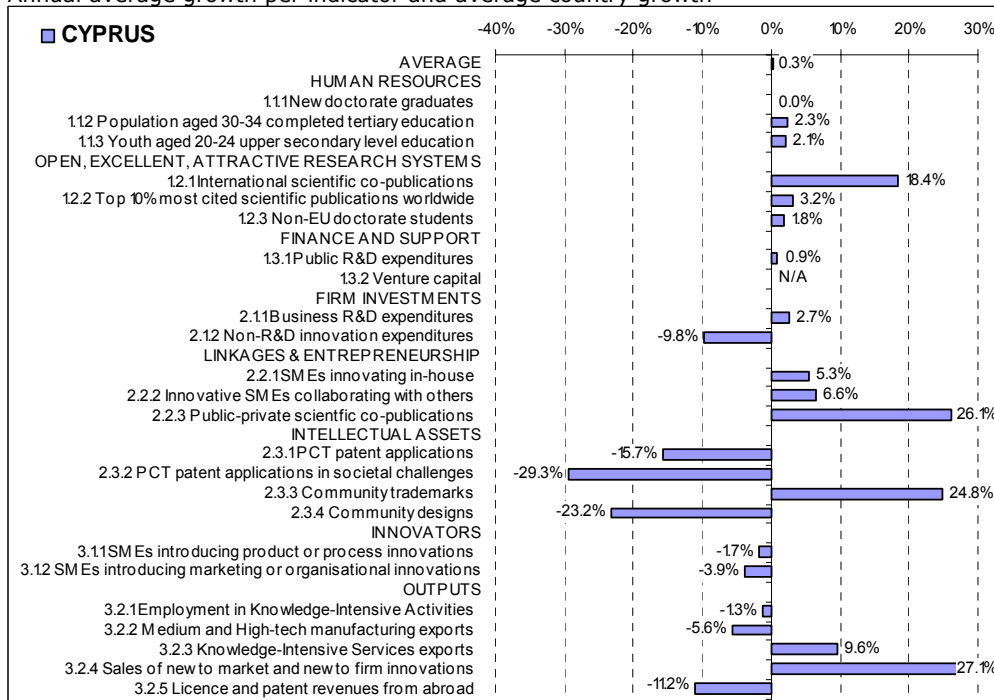


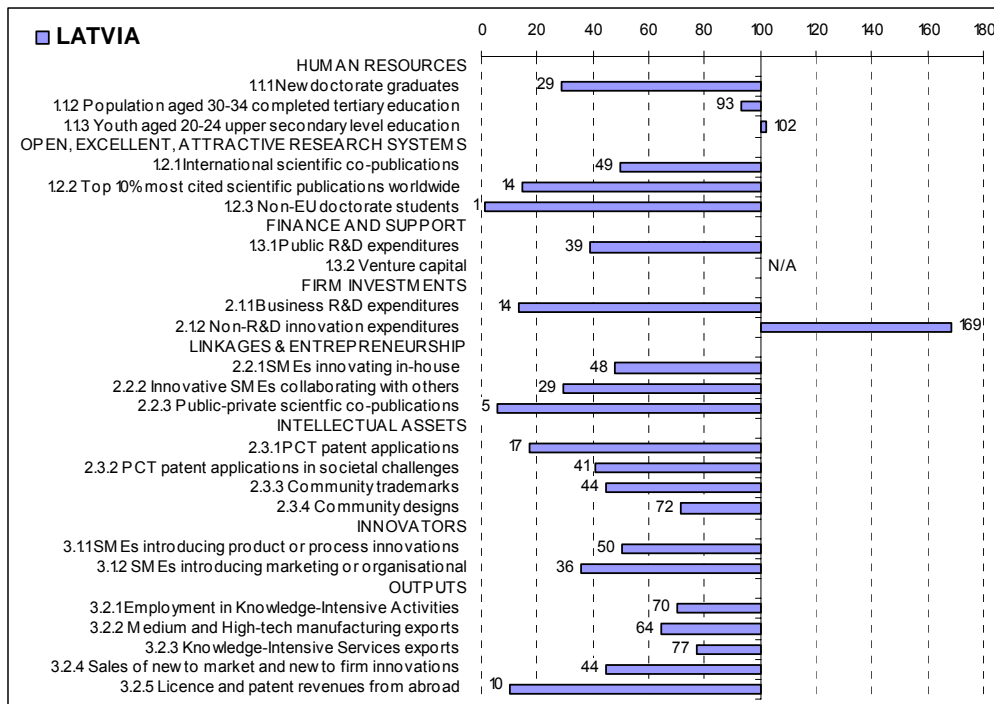


Indicator values relative to the EU27 (EU27=100).

Cyprus is one of the innovation followers with a close to average performance. Relative strengths are in Innovators and Outputs. Relative weaknesses are in Open, excellent and attractive research systems and Intellectual assets. High growth is observed for Public-private co-publications, Community trademarks and Sales of new products. A strong decline is observed for PCT patent applications in societal challenges and Community designs. Growth performance in Human resources, Open, excellent and attractive research systems and Linkages & entrepreneurship and Intellectual assets is above average. In the other dimensions it is below average.

Annual average growth per indicator and average country growth



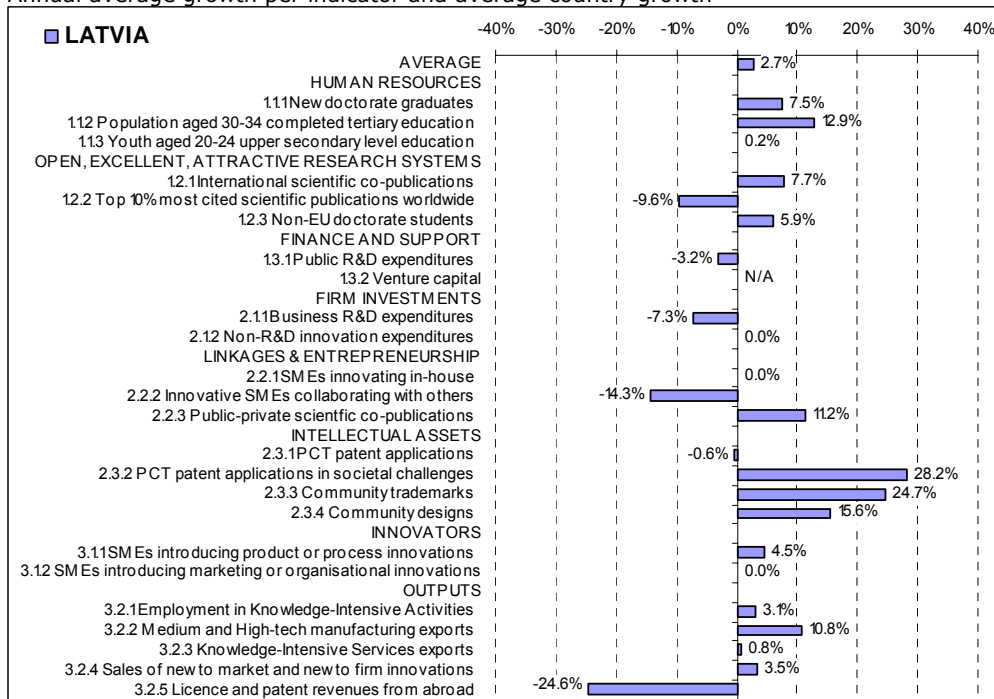


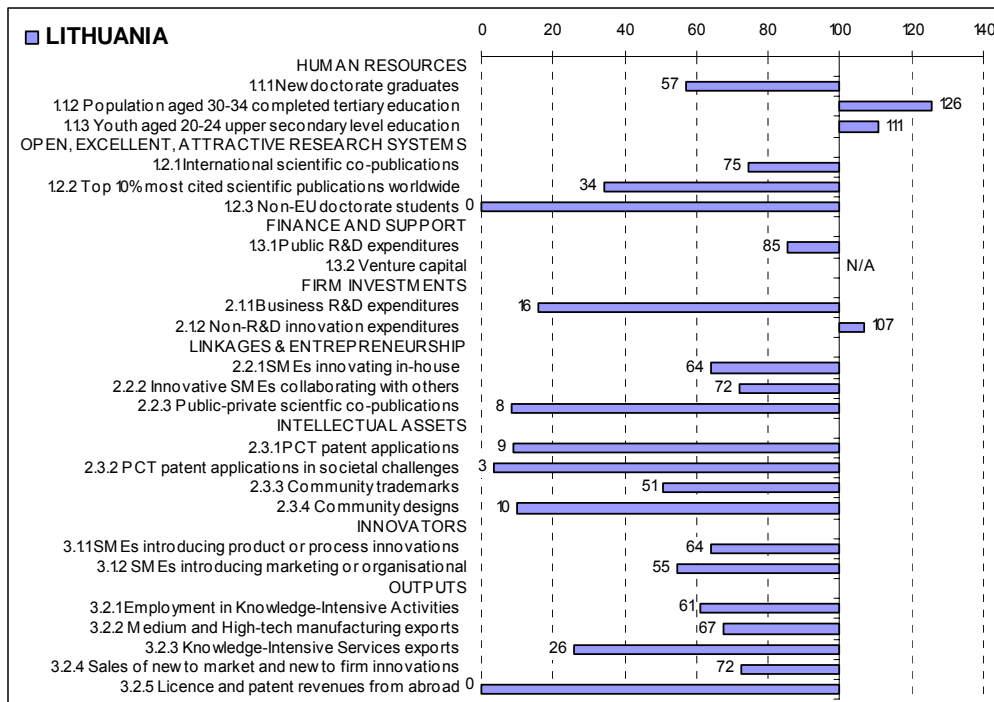
Indicator values relative to the EU27 (EU27=100).

Latvia is one of the modest innovators with a below average performance. Relative strengths are in Human resources and Finance and support. Relative weaknesses are in Open, excellent and attractive research systems, Linkages & entrepreneurship and Innovators.

High growth is observed for PCT patent applications in societal challenges and Community trademarks. A strong decline is observed for Most cited publications, Innovative SMEs collaborating with others and License and patent revenues from abroad. Growth performance in Finance and support and Intellectual assets is above average. In the other dimensions it is below average.

Annual average growth per indicator and average country growth



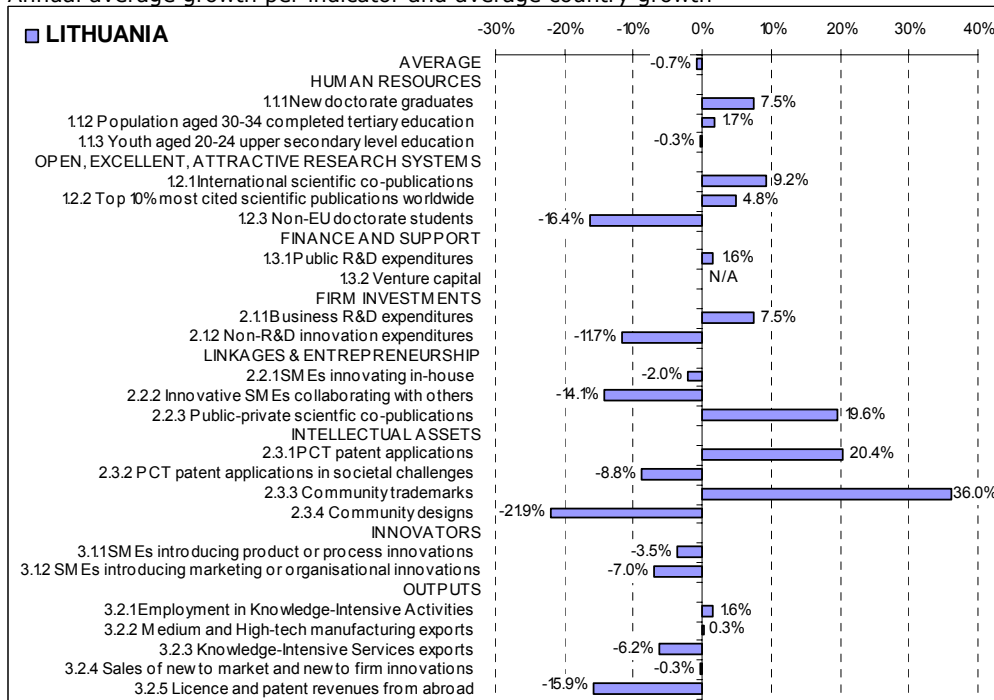


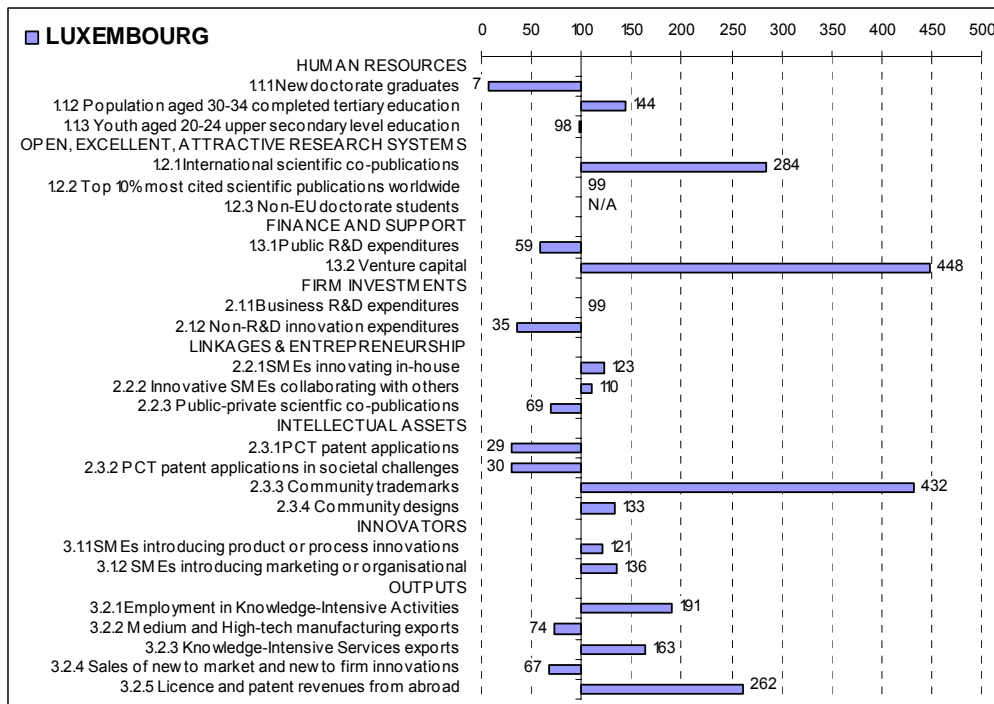
Indicator values relative to the EU27 (EU27=100).

Lithuania is one of the modest innovators with a below average performance. Relative strengths are in Human resources and Finance and support. Relative weaknesses are in Open, excellent and attractive research systems, Intellectual assets, Innovators and Outputs.

High growth is observed for Public-private co-publications, PCT patent applications and Community trademarks. A strong decline is observed for Non-EU doctorate students and Community designs. Growth performance in Human resources and Intellectual assets is above average. In the other dimensions it is below average.

Annual average growth per indicator and average country growth



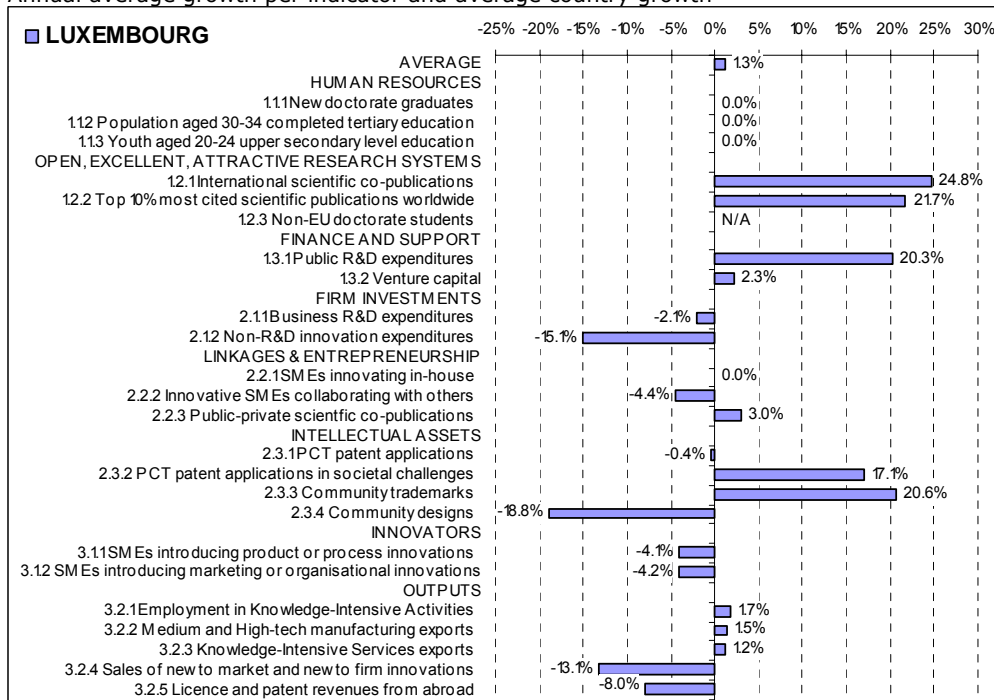


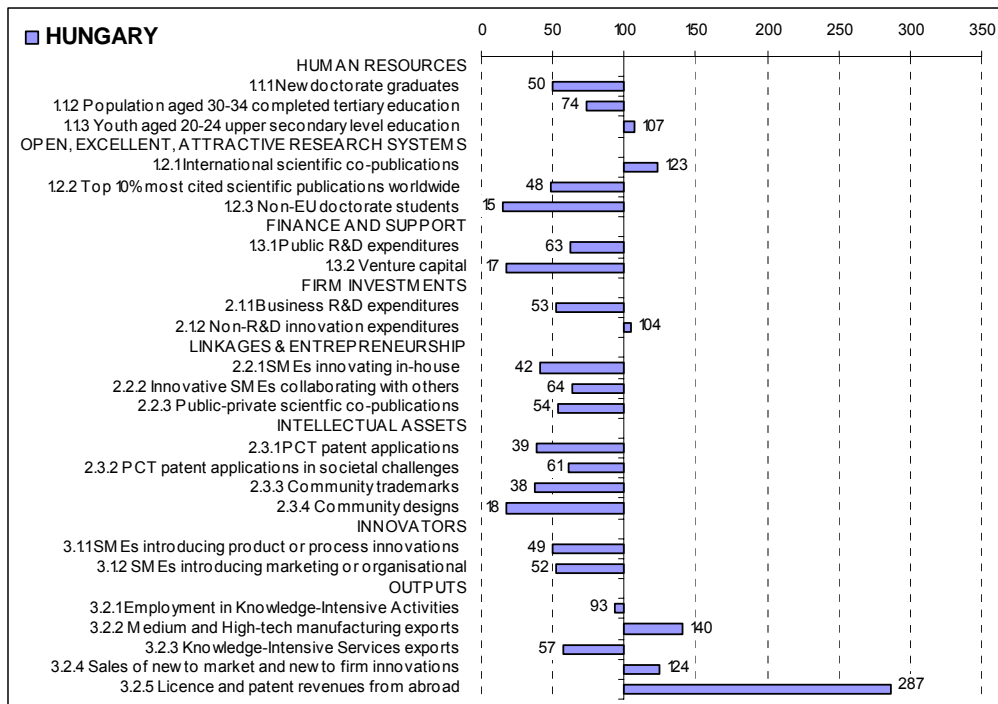
Indicator values relative to the EU27 (EU27=100).

Luxembourg is one of the innovation followers with an above average performance. Relative strengths are in Open, excellent and attractive research systems, Innovators and Outputs. Relative weaknesses are in Firm investments and Linkages & entrepreneurship.

High growth is observed for International co-publications, Most cited publications, PCT patent applications in societal challenges, Community trademarks. A strong decline is observed for Non-R&D innovation expenditure, Community designs and Sales of new products. Growth performance in Open, excellent and attractive research systems and Intellectual assets is above average. In the other dimensions it is below average.

Annual average growth per indicator and average country growth

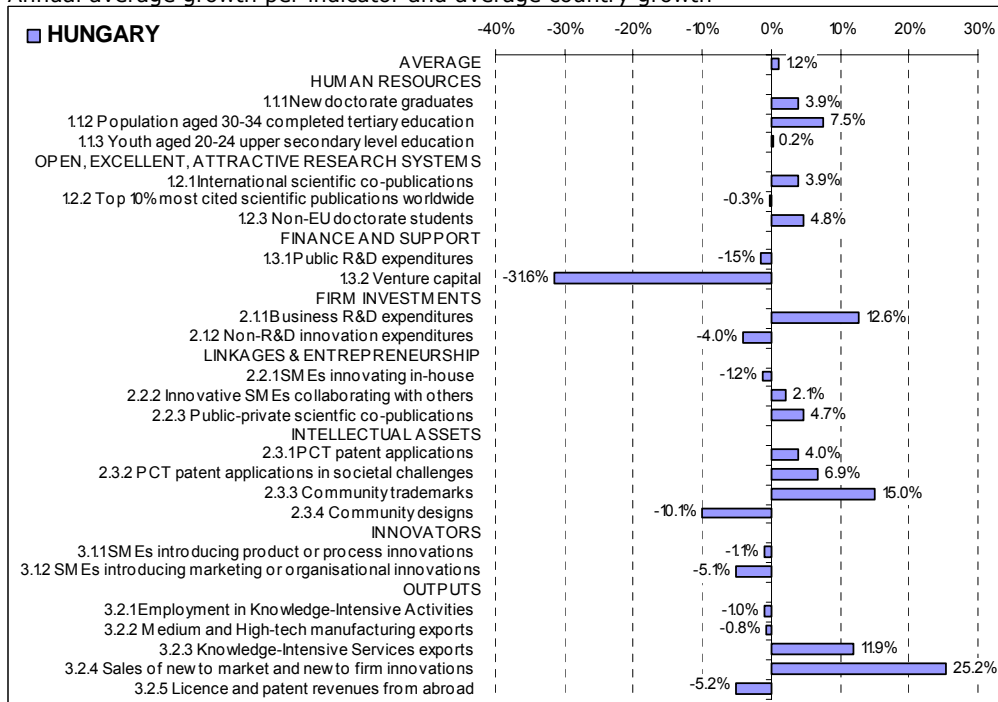


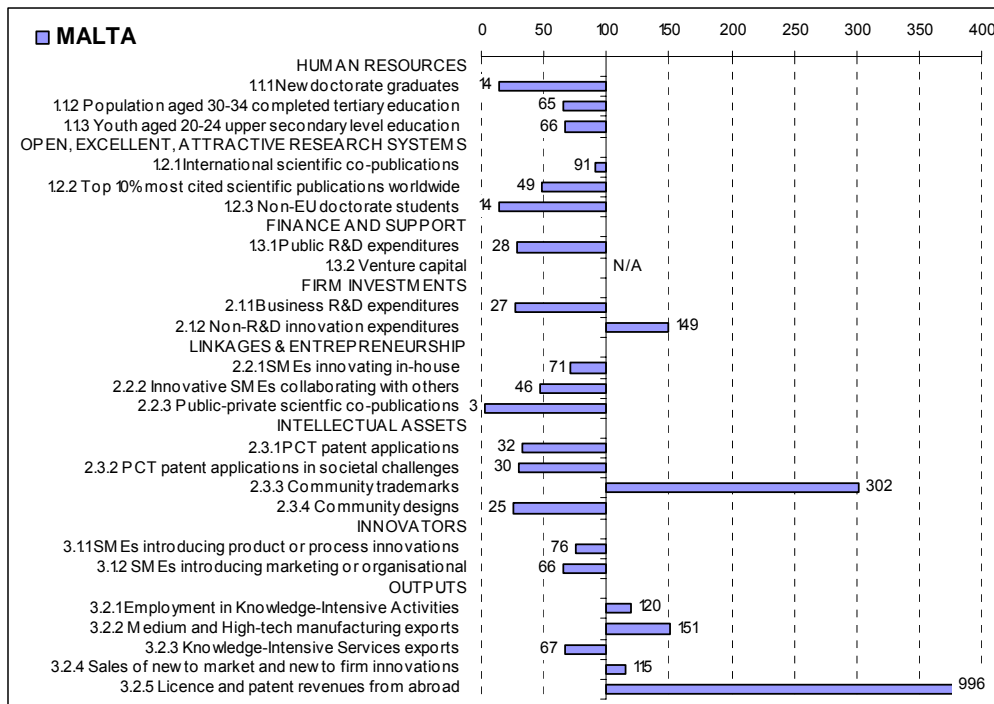


Indicator values relative to the EU27 (EU27=100).

Hungary is one of the moderate innovators with a below average performance. Relative strengths are in Outputs. Relative weaknesses are Open, excellent and attractive research systems, Finance and support, Firm investments, Linkages & entrepreneurship, Intellectual assets and Innovators. High growth is observed for Community trademarks and Sales of new products. A strong decline is observed for Venture capital and Community designs. Growth performance in Intellectual assets and Outputs is above average. In the other dimensions it is below average.

Annual average growth per indicator and average country growth

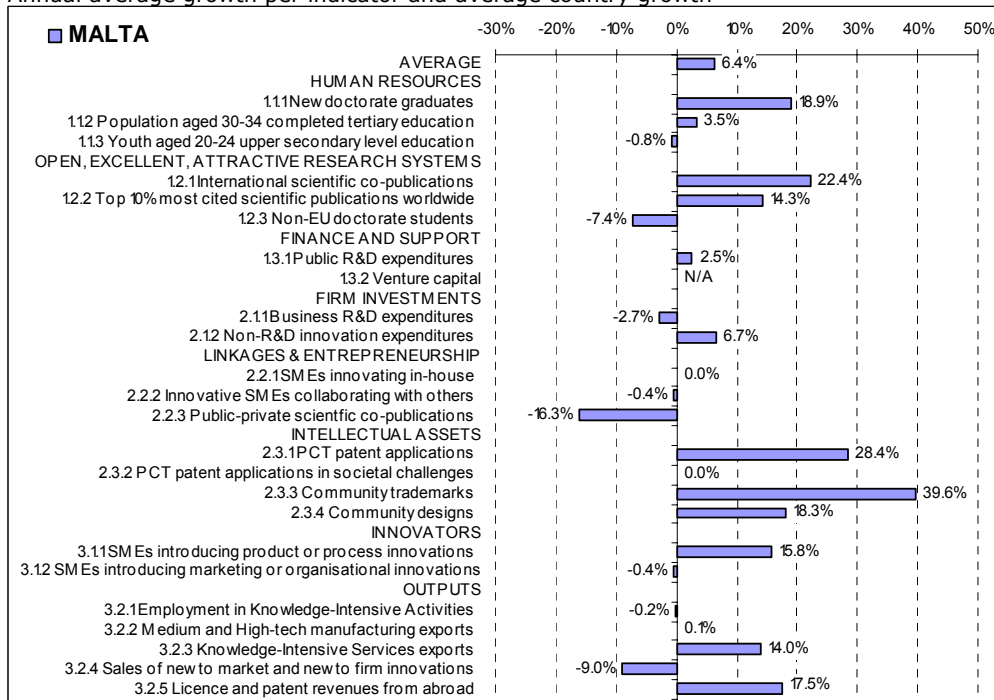


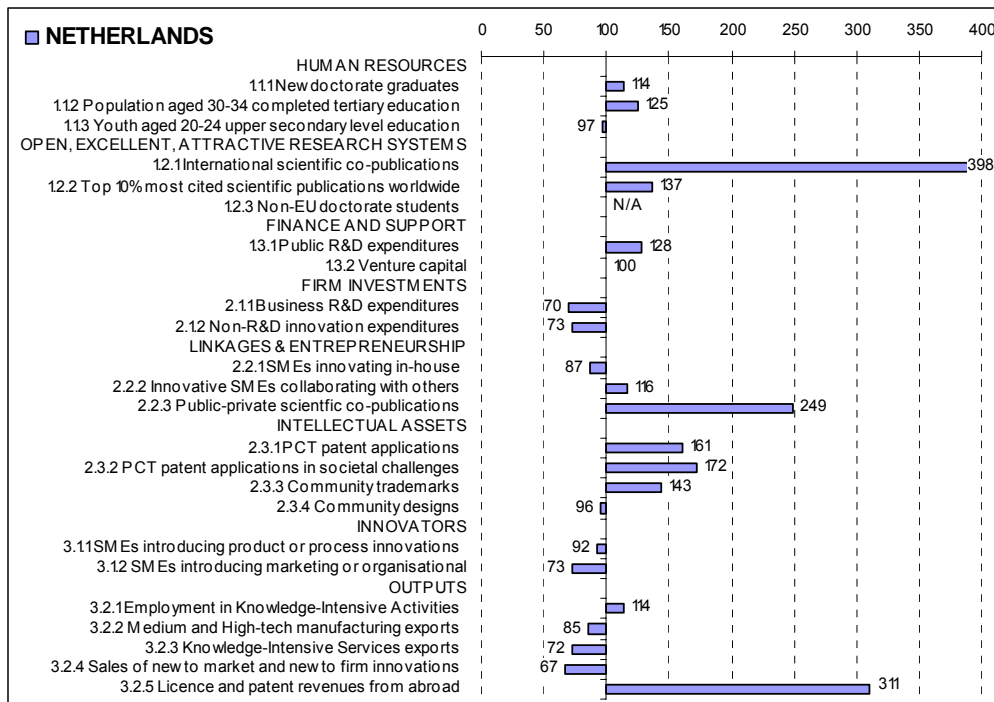


Indicator values relative to the EU27 (EU27=100).

Malta is one of the moderate innovators with a below average performance. Relative strengths are in Open, excellent and attractive research systems and Intellectual assets. Relative weaknesses are Human resources, Open, excellent and attractive research systems, Finance and support, Linkages & entrepreneurship and Innovators. High growth is observed for Community trademarks and License and patent revenues from abroad. A strong decline is observed for Public-private co-publications. Growth performance in Intellectual assets is above average. In the other dimensions it is below average.

Annual average growth per indicator and average country growth



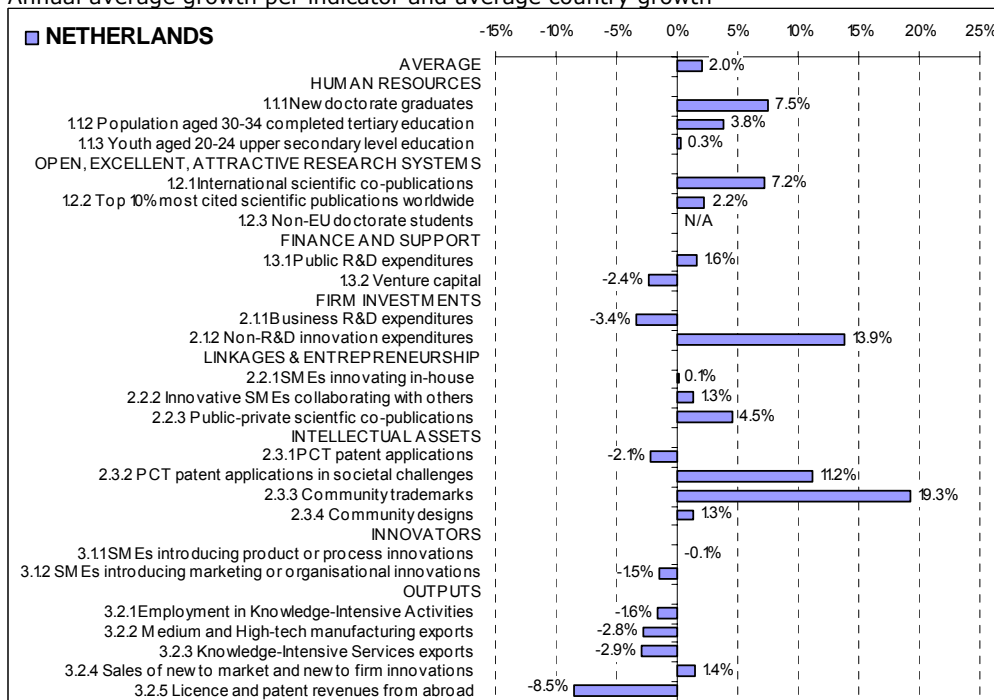


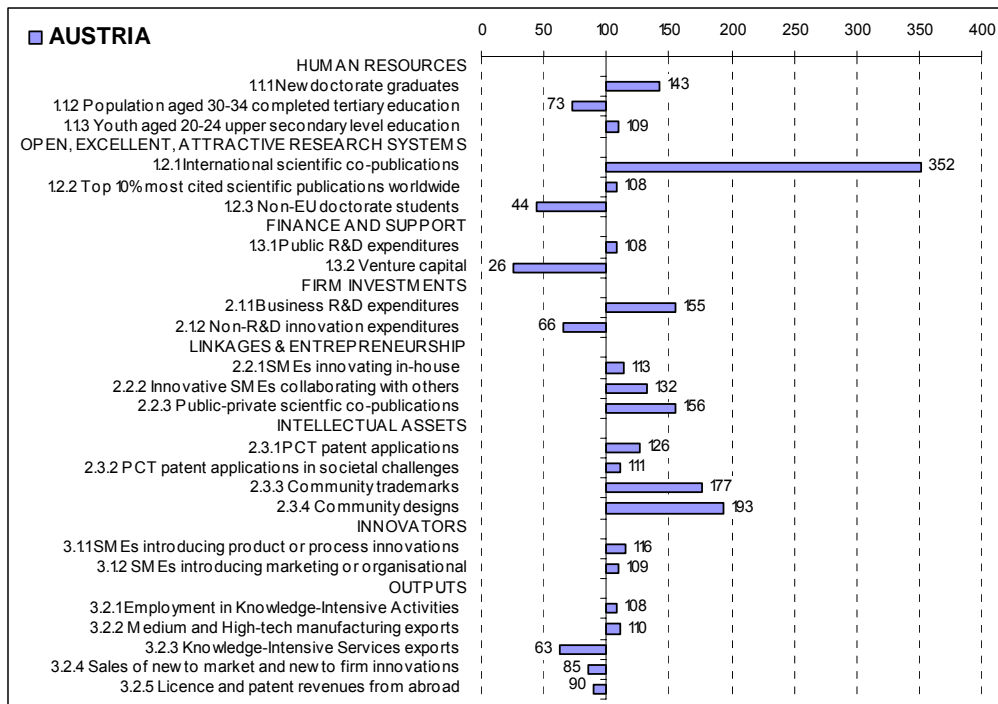
Indicator values relative to the EU27 (EU27=100).

The **Netherlands** is one of the innovation followers with an above average performance. Relative strengths are in Open, excellent and attractive research systems, Finance and support and Intellectual assets. Relative weaknesses are in Firm investments and Innovators.

High growth is observed for Non-R&D innovation expenditure, PCT patent applications in societal challenges and Community trademarks. Growth performance in Human resources, Open, excellent and attractive research systems and Intellectual assets is above average. In the other dimensions it is below average.

Annual average growth per indicator and average country growth

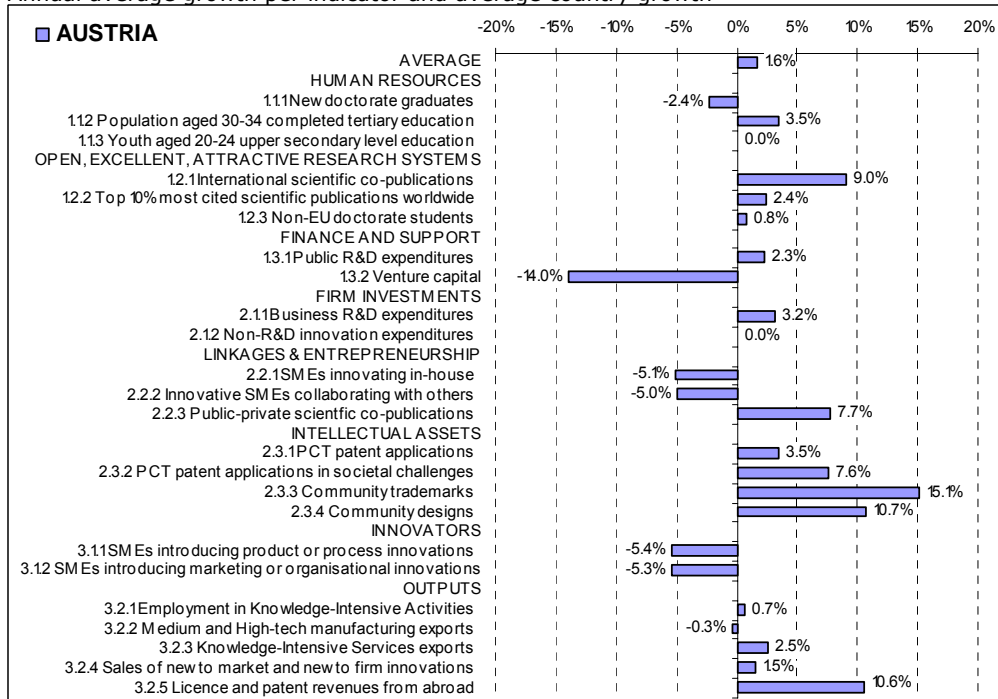


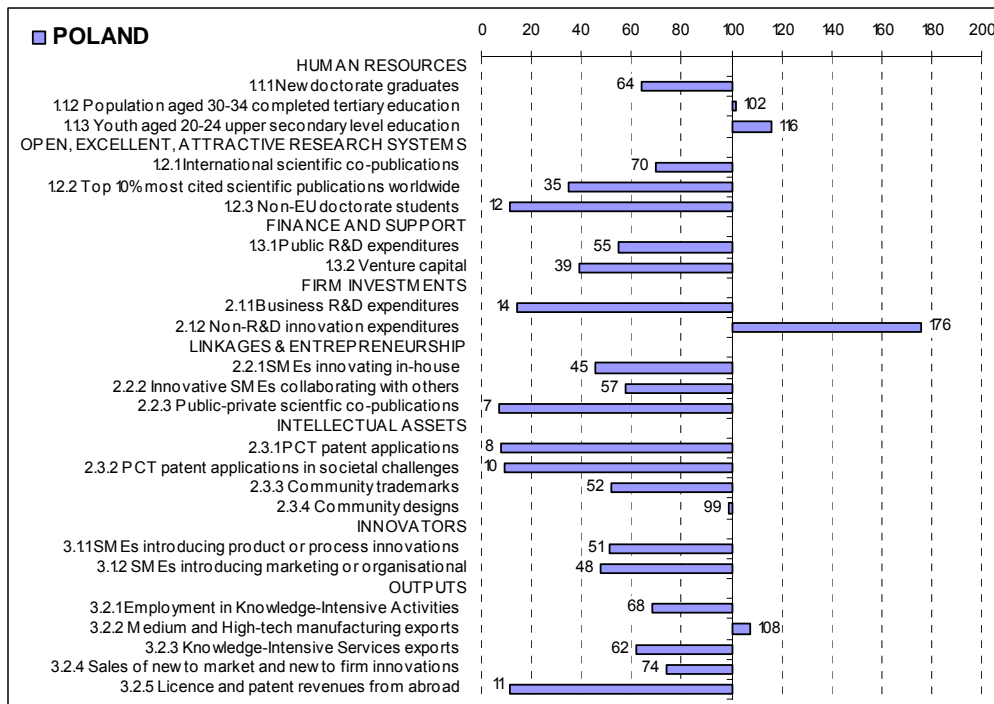


Indicator values relative to the EU27 (EU27=100).

Austria is one of the innovation followers with an above average performance. Relative strengths are in Open, excellent and attractive research systems, Linkages & entrepreneurship and Intellectual assets. Relative weaknesses are in Outputs. High growth is observed for Community trademarks and License and patent revenues from abroad. A strong decline is observed for Venture capital. Growth performance in Open, excellent and attractive research systems, Intellectual assets and Outputs is above average. In the other dimensions it is below average.

Annual average growth per indicator and average country growth

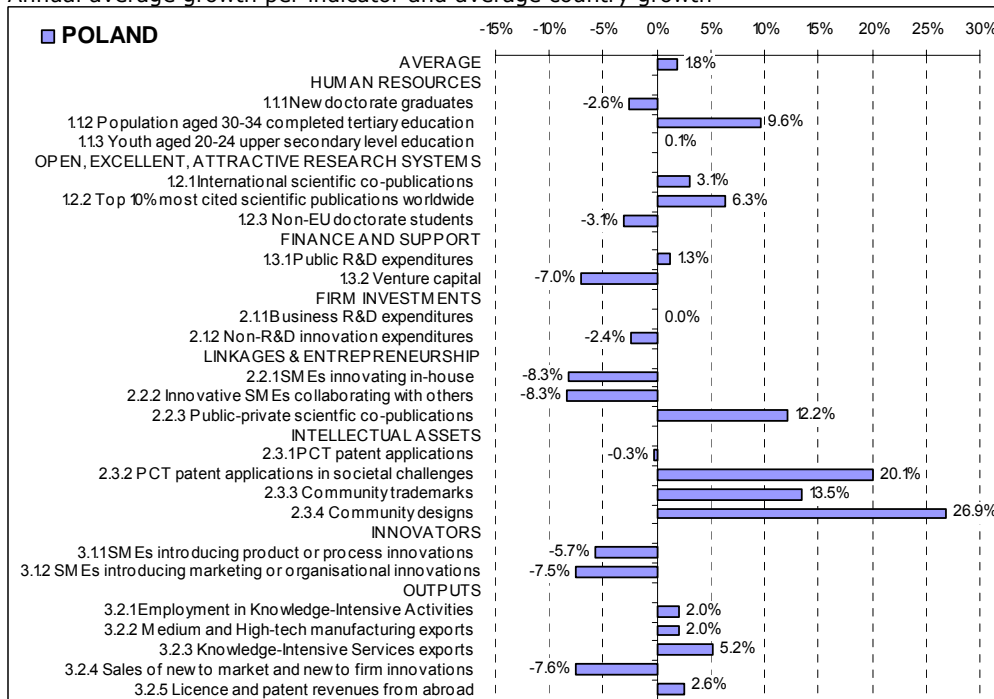


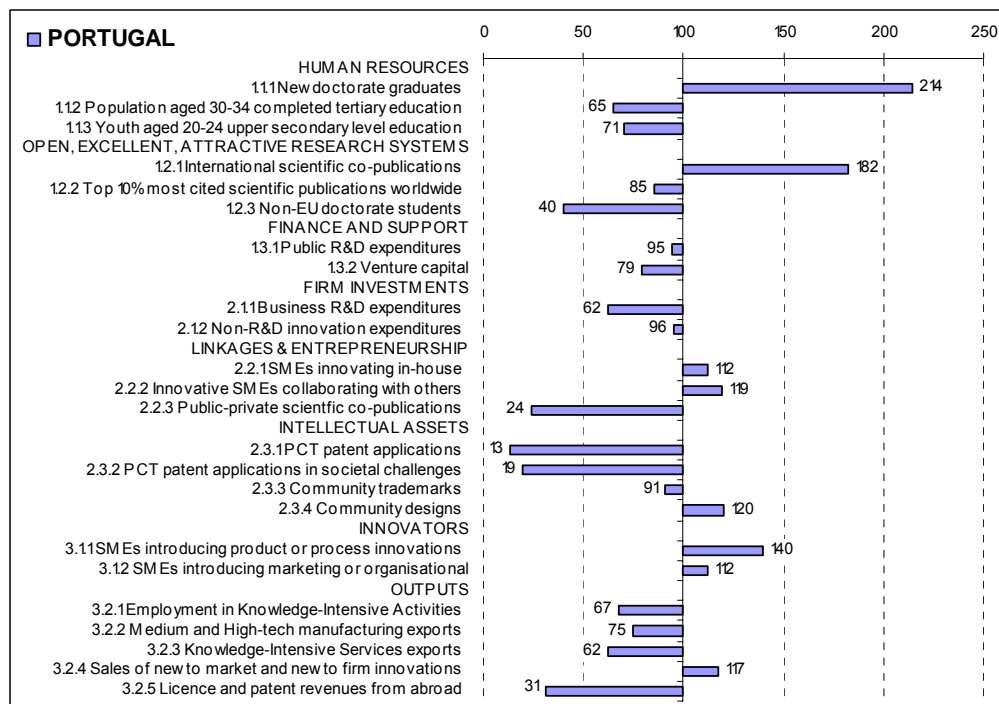


Indicator values relative to the EU27 (EU27=100).

Poland is one of the moderate innovators with a below average performance. Relative strengths are in Human resources and Outputs. Relative weaknesses are in Open, excellent and attractive research systems, Linkages & entrepreneurship, Intellectual assets and Outputs. High growth is observed for PCT patent applications in societal challenges, Community designs and License and patent revenues from abroad. A relatively strong decline is observed for SMEs innovating in-house and Innovative SMEs collaborating with others. Growth performance in Intellectual assets and Outputs is above average. In the other dimensions it is below average.

Annual average growth per indicator and average country growth



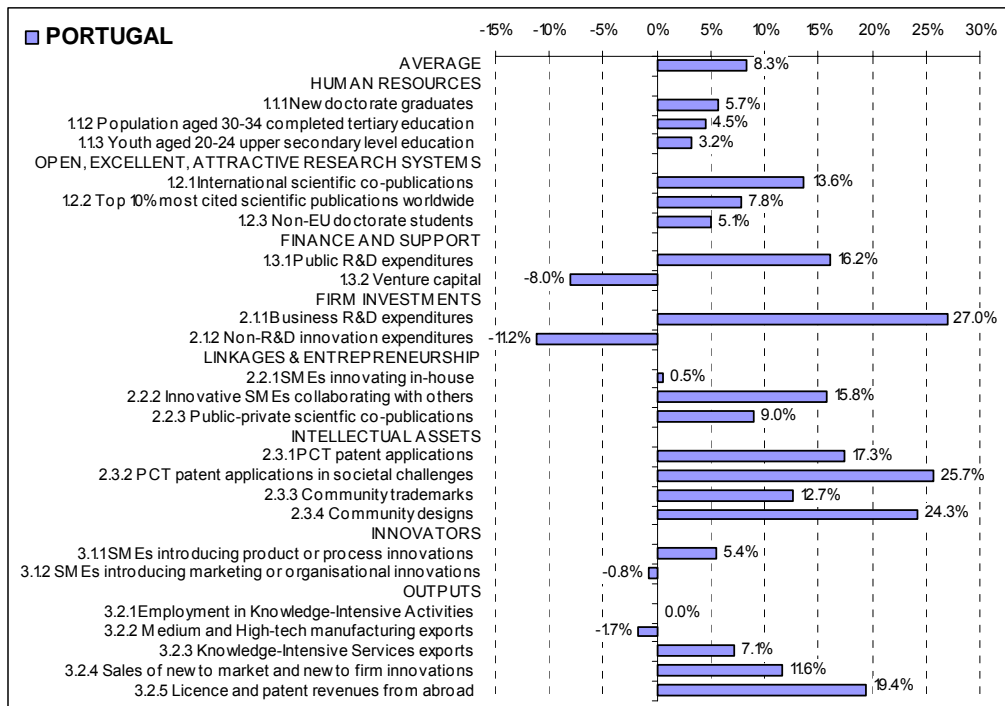


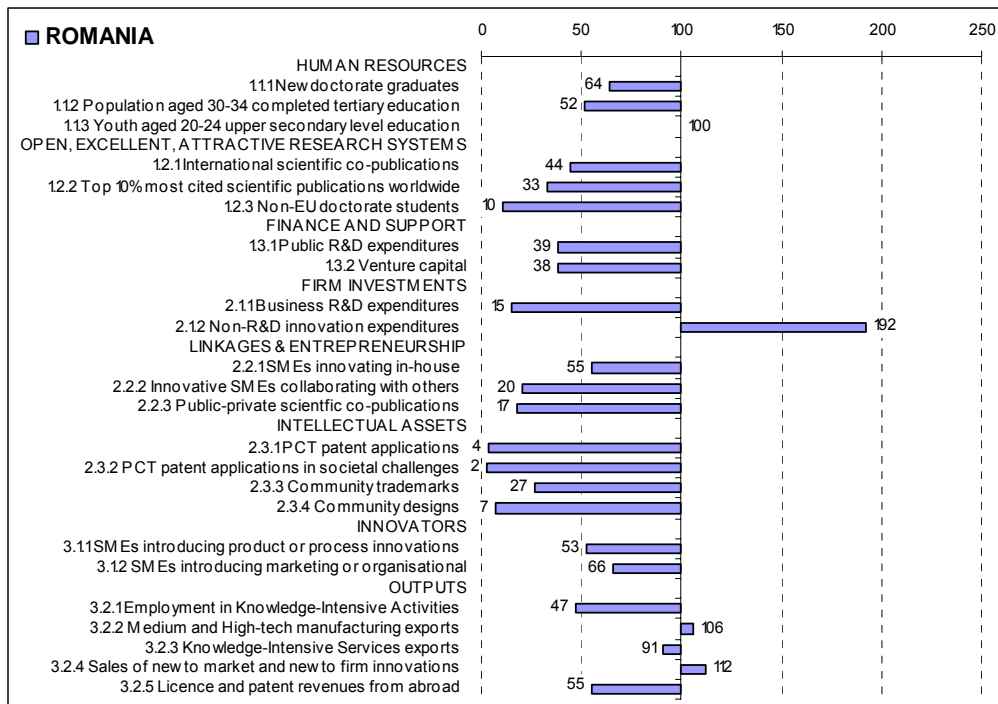
Indicator values relative to the EU27 (EU27=100).

Portugal is one of the moderate innovators with a below average performance. Relative strengths are in Open, excellent and attractive research systems, Finance and support and Innovators. Relative weaknesses are in Firm investments, Intellectual assets and Outputs.

Positive growth is observed for most indicators, and in particular for Business R&D expenditure, PCT patent applications in societal challenges and Community designs. A substantial decline can be observed for Venture capital and Non-R&D innovation expenditure over the 5 year reference period, although Venture capital has almost doubled in 2009 with respect to 2008. Growth performance in Open, excellent and attractive research systems, Linkages & entrepreneurship and Intellectual assets is above average. In the other dimensions it is below average.

Annual average growth per indicator and average country growth

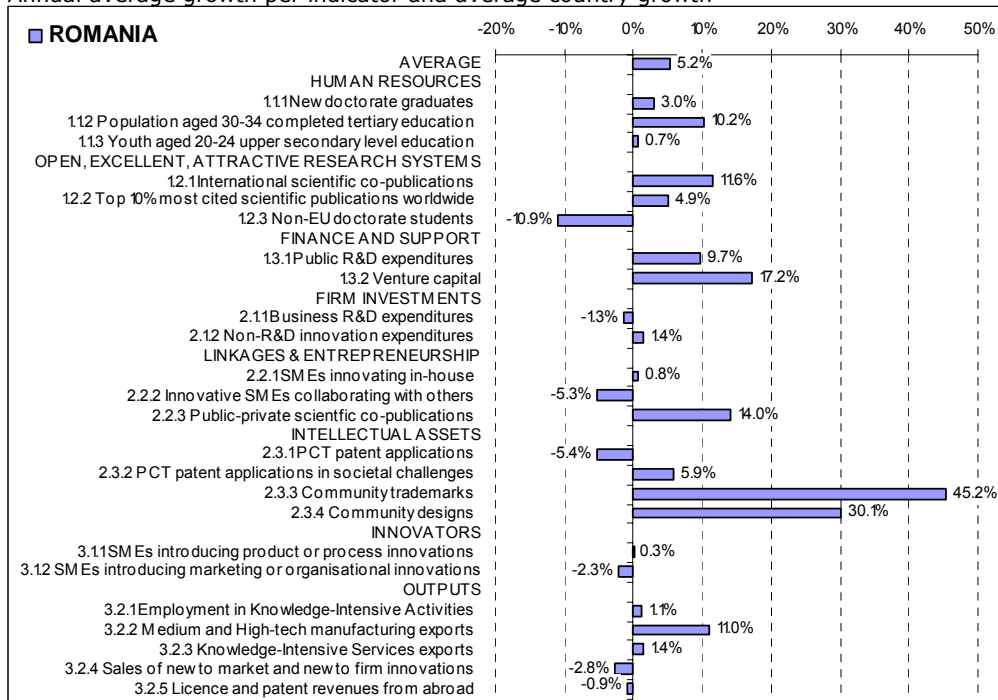


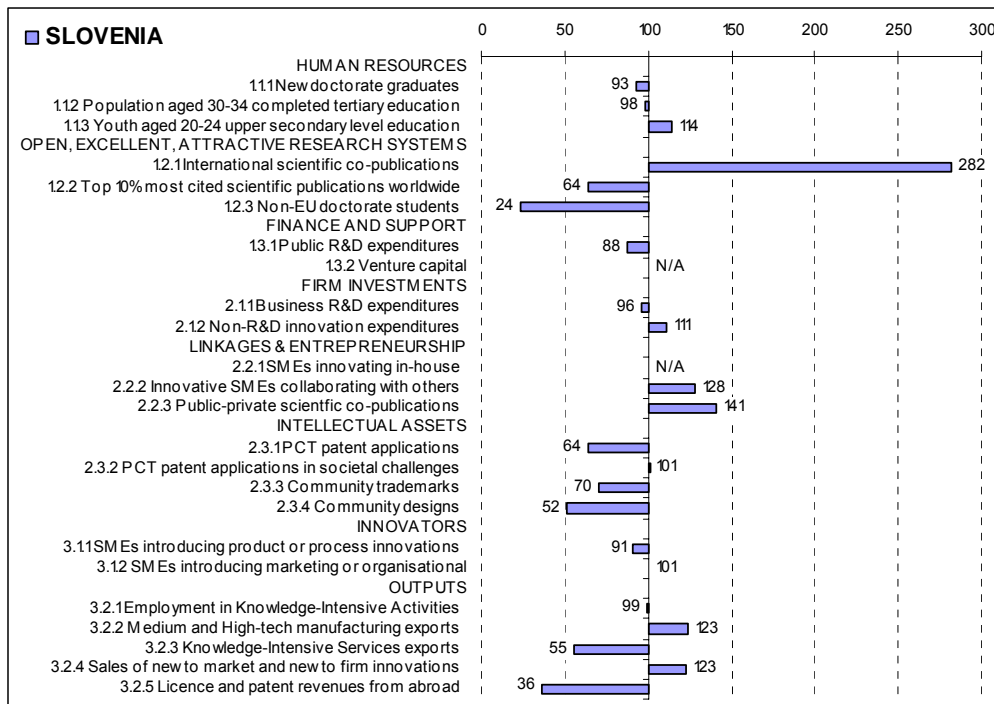


Indicator values relative to the EU27 (EU27=100).

Romania is one of the modest innovators with a below average performance. Relative strengths are in Finance and support and Outputs. Relative weaknesses are in Open, excellent and attractive research systems, Linkages & entrepreneurship, Intellectual assets and Innovators. High growth is observed for Public R&D expenditure, Community trademarks and Community designs. A strong decline is observed for Non-EU doctorate students. Growth performance in Finance and support and Intellectual assets is above average. In the other dimensions it is below average.

Annual average growth per indicator and average country growth

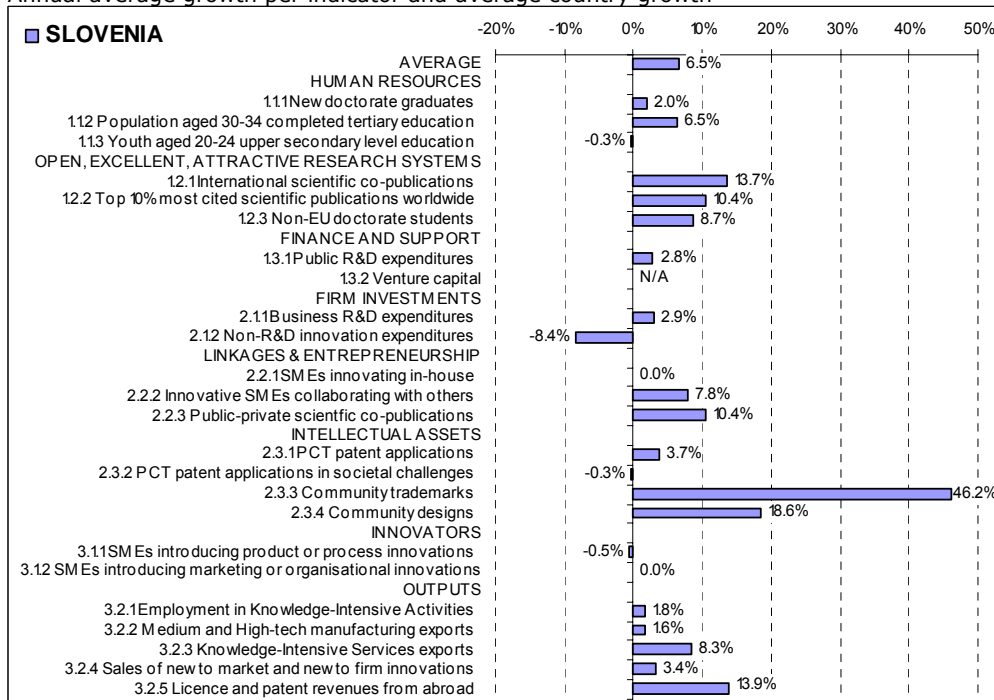


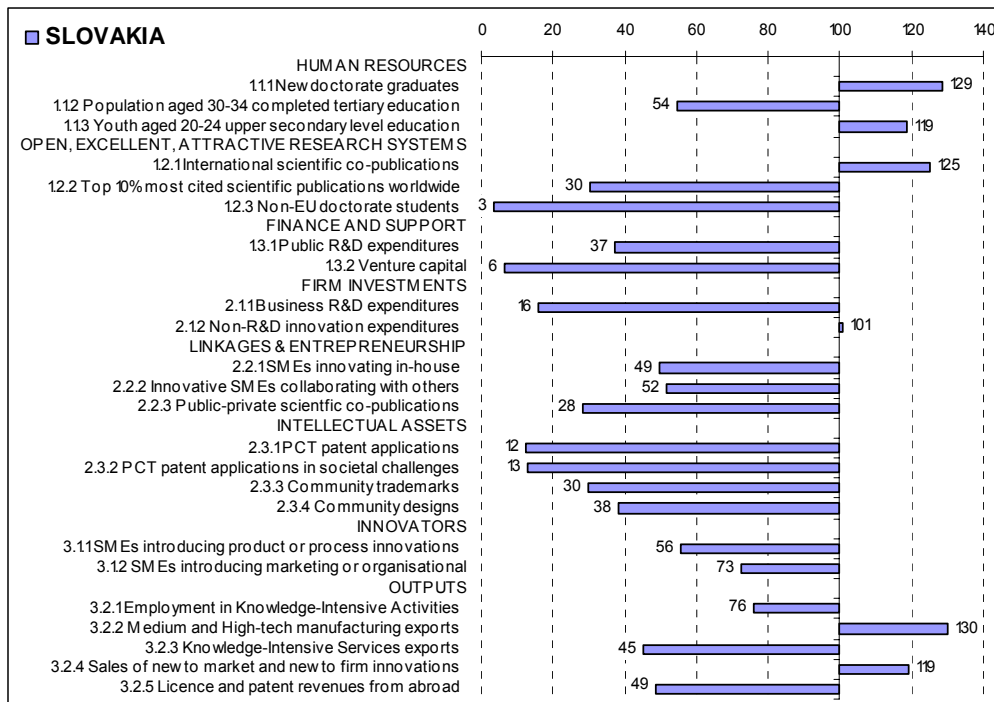


Indicator values relative to the EU27 (EU27=100).

Slovenia is one of the innovation followers with a below average performance. Relative strengths are in Human resources and Outputs. Relative weaknesses are in Firm investments and Intellectual assets. High growth is observed for Community trademarks, Community designs and License and patent revenues from abroad. A strong decline is observed for Non-R&D innovation expenditure. Growth performance in Open, excellent and attractive research systems, Linkages & entrepreneurship and Intellectual assets is above average. In the other dimensions it is below average.

Annual average growth per indicator and average country growth

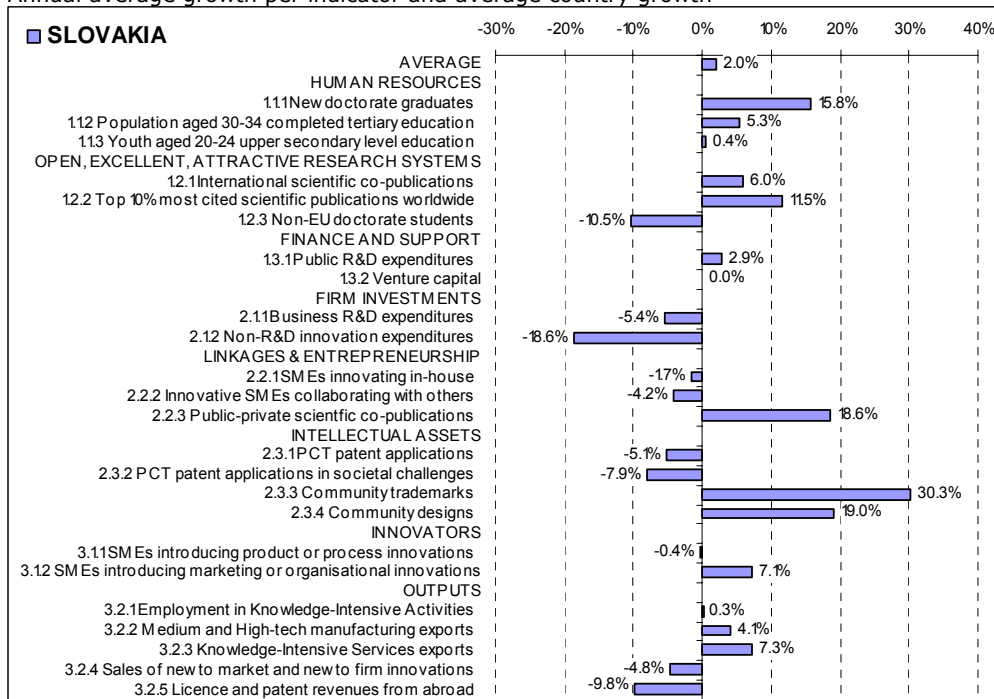


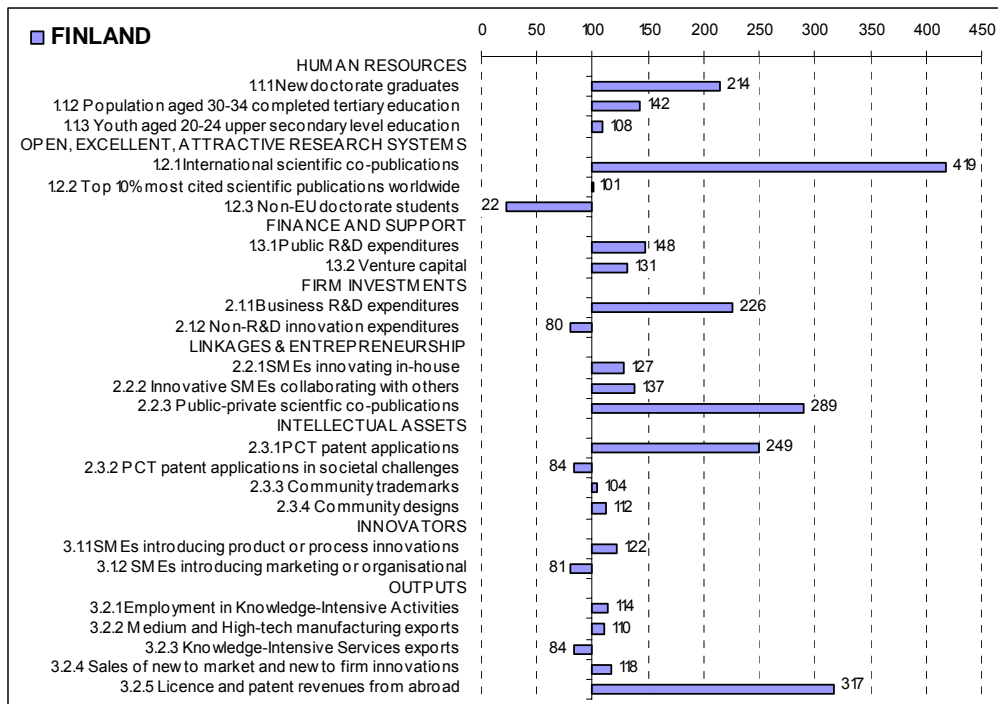


Indicator values relative to the EU27 (EU27=100).

Slovakia is one of the moderate innovators with a below average performance. Relative strengths are in Human resources and Outputs. Relative weaknesses are in Open, excellent and attractive research systems, Finance and support, Firm investments, Linkages & entrepreneurship, Intellectual assets and Innovators. High growth is observed for Public-private co-publications, Community trademarks and Community designs. A strong decline is observed for Non-EU doctorate students and Non-R&D innovation expenditure. Growth performance in Human resources, Linkages & entrepreneurship and Intellectual assets is above average. In the other dimensions it is below average.

Annual average growth per indicator and average country growth



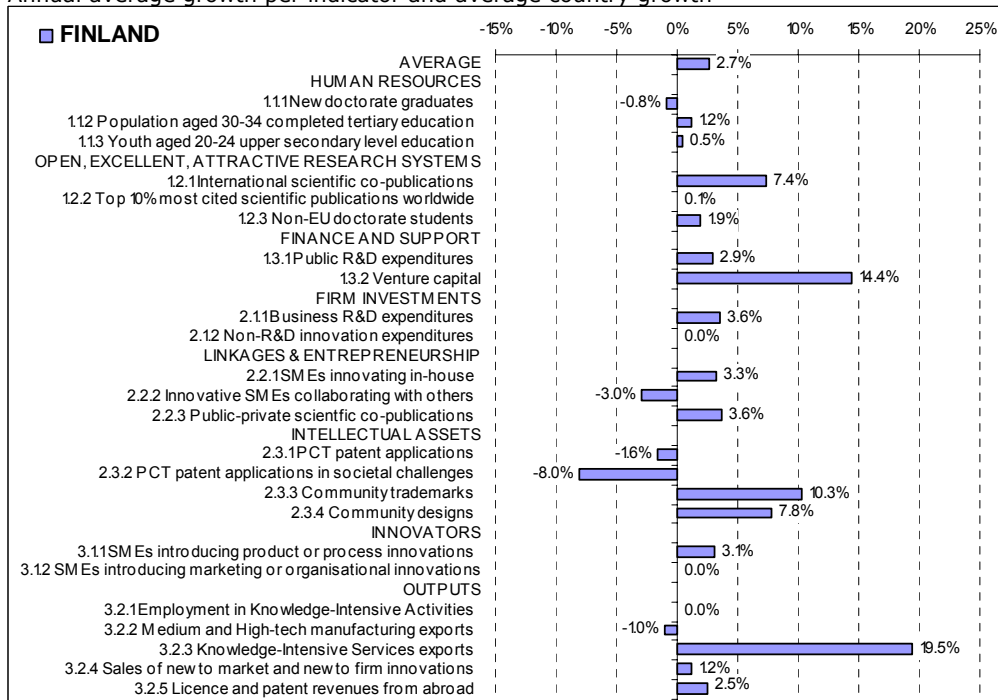


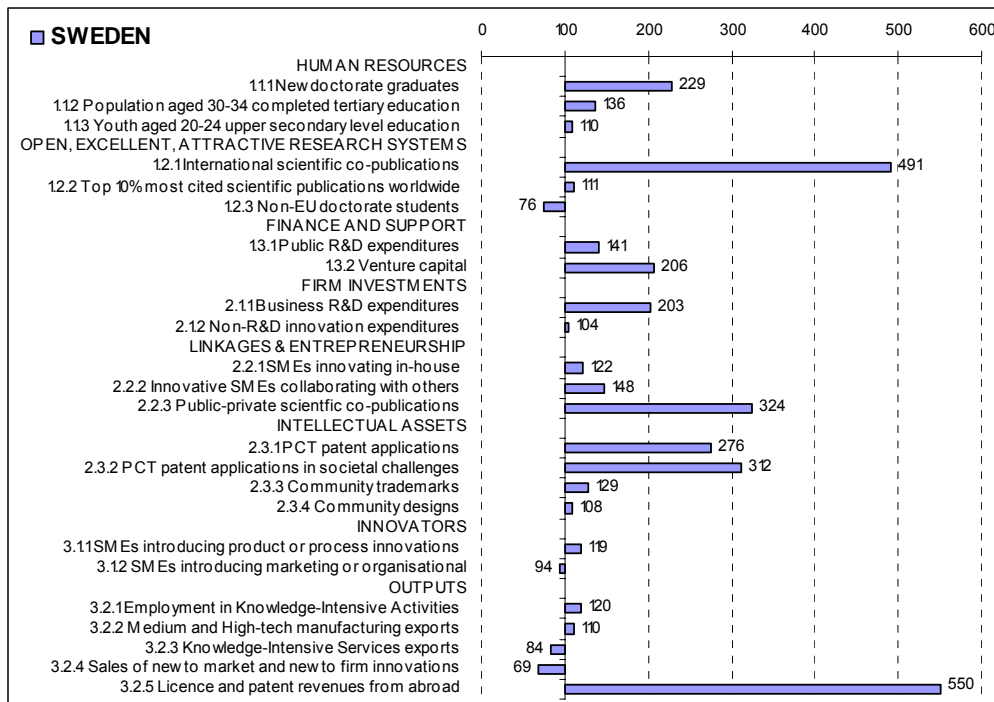
Indicator values relative to the EU27 (EU27=100).

Finland is one of the innovation leaders with an above average performance. Relative strengths are in Human resources, Finance and support and Linkages & entrepreneurship. Relative weaknesses are in Intellectual assets, Innovators and Outputs.

High growth is observed for Venture capital and Knowledge-intensive services exports. A strong decline is observed for PCT patent applications in societal challenges. Growth performance in Finance and support and Intellectual assets is above average. In the other dimensions it is below average.

Annual average growth per indicator and average country growth

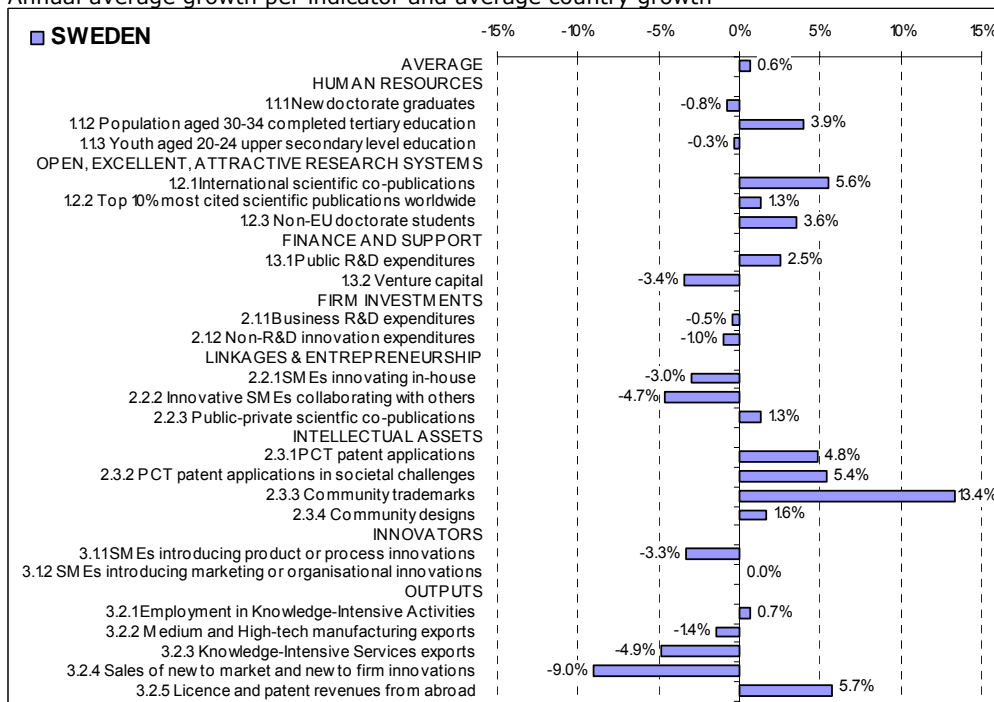


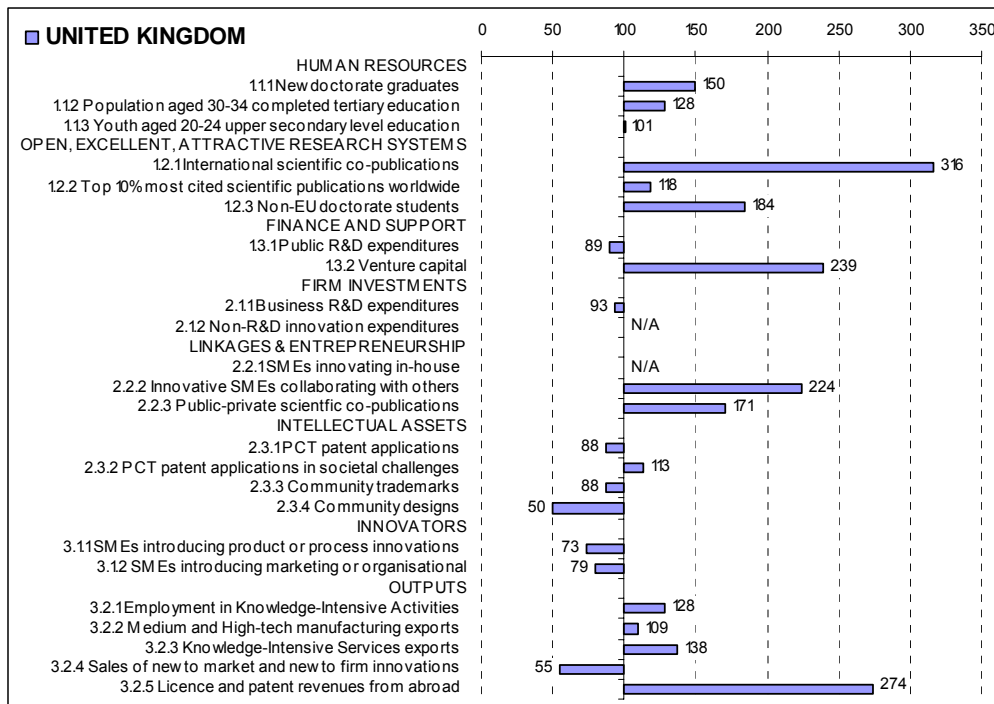


Indicator values relative to the EU27 (EU27=100).

Sweden is one of the innovation leaders with an above average performance. Relative strengths are in Human resources, Open, excellent and attractive research systems and Finance and support. Relative weaknesses are in Firm investments, Innovators and Outputs. High growth is observed for Community trademarks. A strong decline is observed for Sales of new products. Growth performance in Open, excellent and attractive research systems and Intellectual assets is above average. In the other dimensions it is below average.

Annual average growth per indicator and average country growth





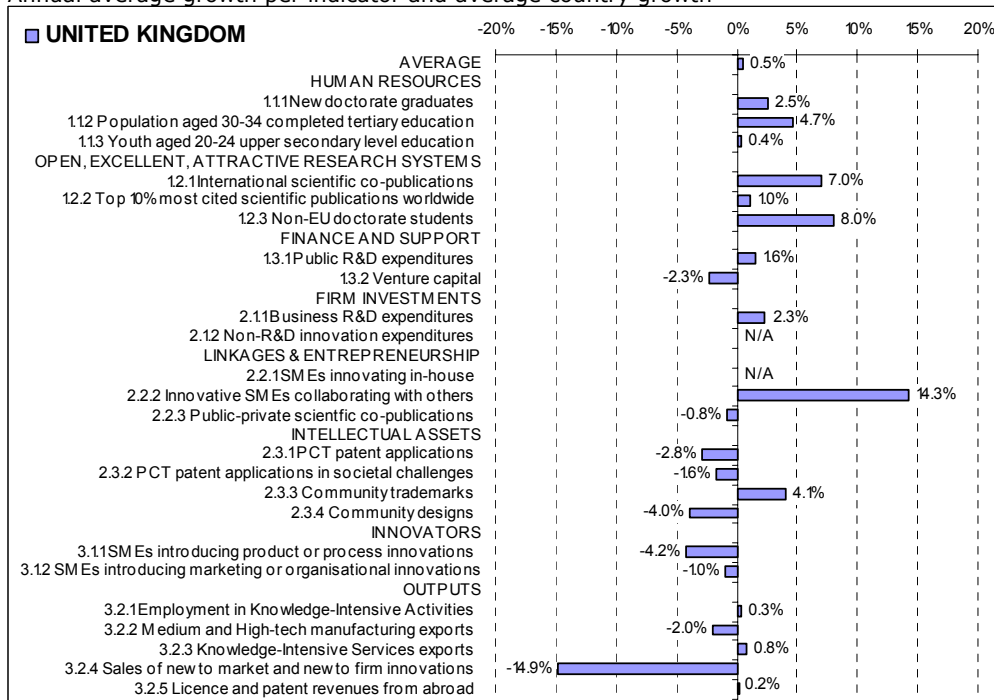
Indicator values relative to the EU27 (EU27=100).

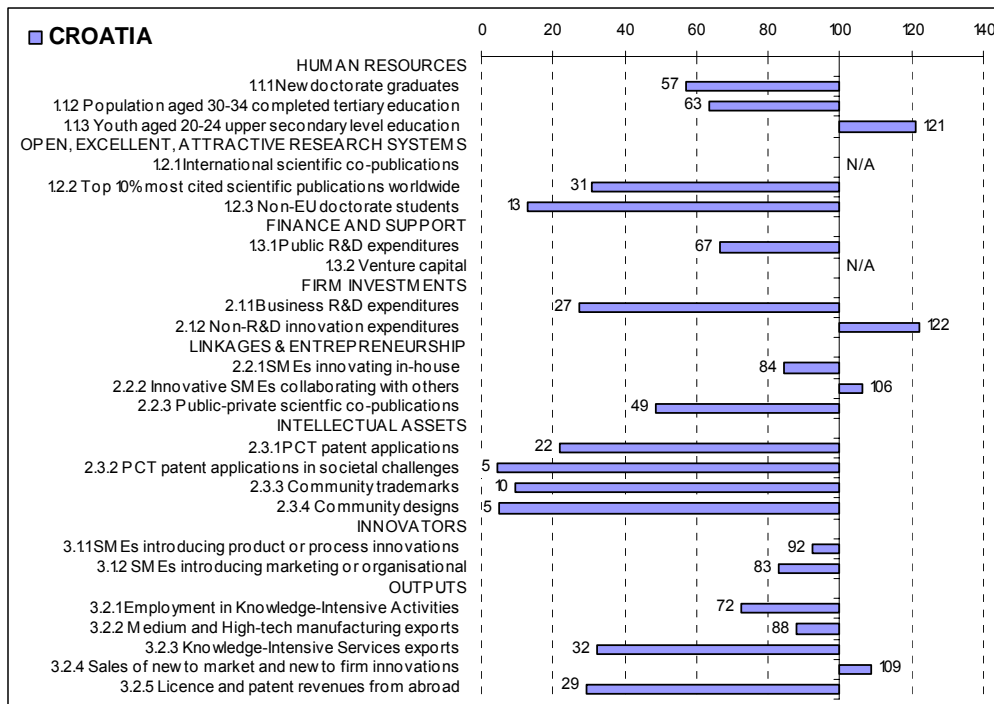
The **United Kingdom** is one of the innovation followers with an above average performance.

Relative strengths are in Human resources and Open, excellent and attractive research systems. Relative weaknesses are in Intellectual assets and Innovators.

High growth is observed for Venture Innovative SMEs collaborating with others. A strong decline is observed for Sales of new products. Growth performance in Human resources, Open, excellent and attractive research systems, Firm investments and Linkages & entrepreneurship is above average. In the other dimensions it is below average.

Annual average growth per indicator and average country growth

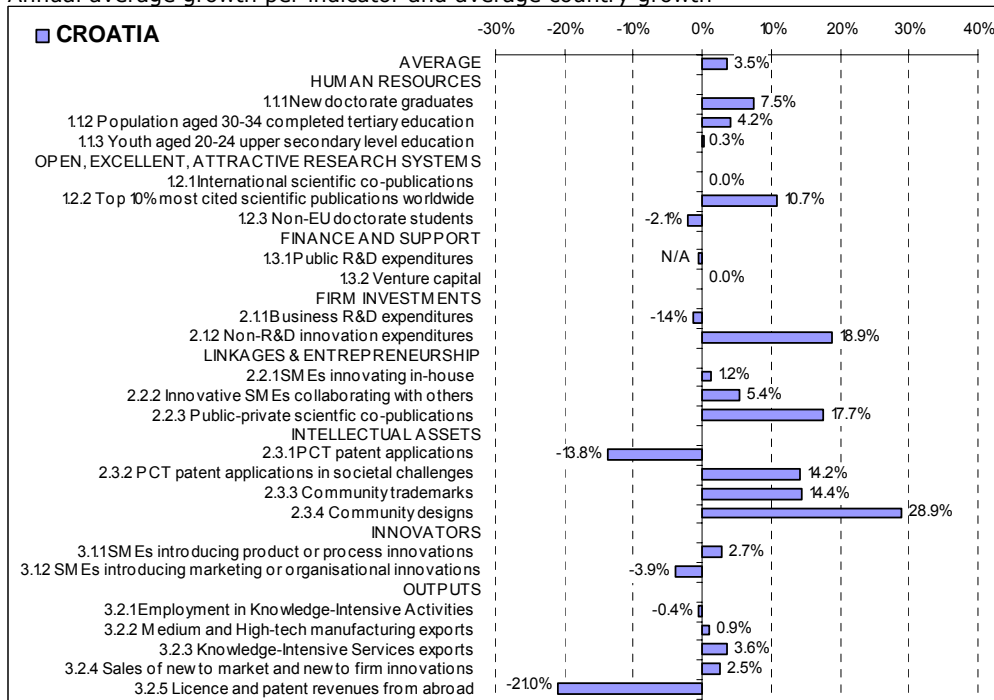


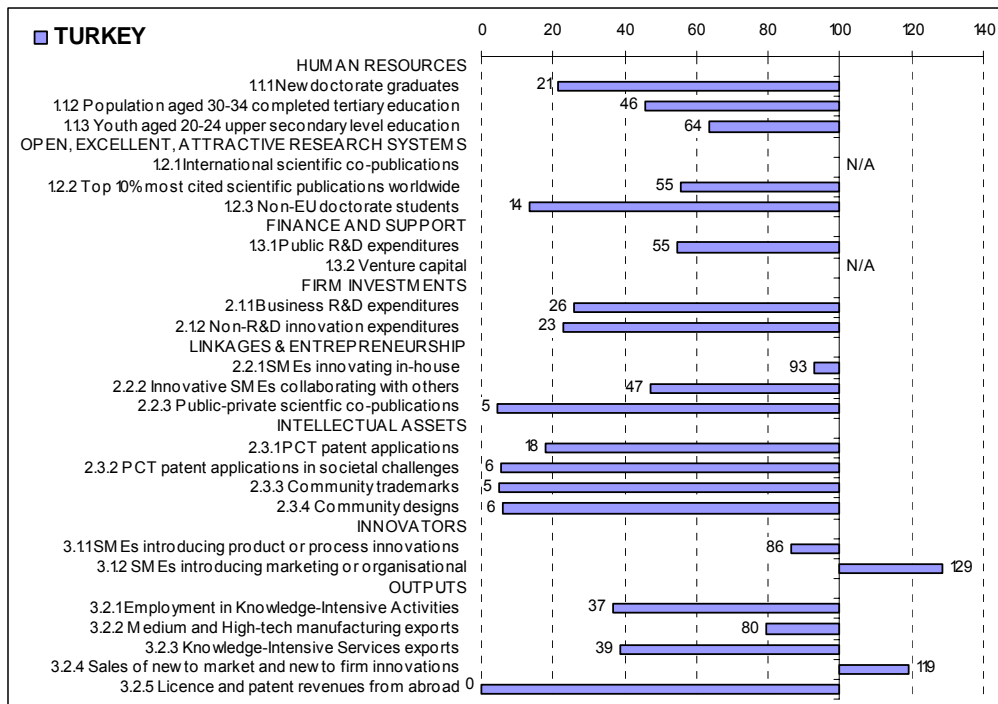


Indicator values relative to the EU27 (EU27=100).

Croatia is one of the moderate innovators with a below average performance. Relative strengths are in Human resources, Innovators and Outputs. Relative weaknesses are in Open, excellent and attractive research systems and Intellectual assets. High growth is observed for Non-R&D innovation expenditure, Public-private co-publications and Community designs. A strong decline is observed for PCT patent applications and License and patent revenues from abroad. Growth performance in Firm investments, Linkages & entrepreneurship and Intellectual assets is above average. In the other dimensions it is below average.

Annual average growth per indicator and average country growth



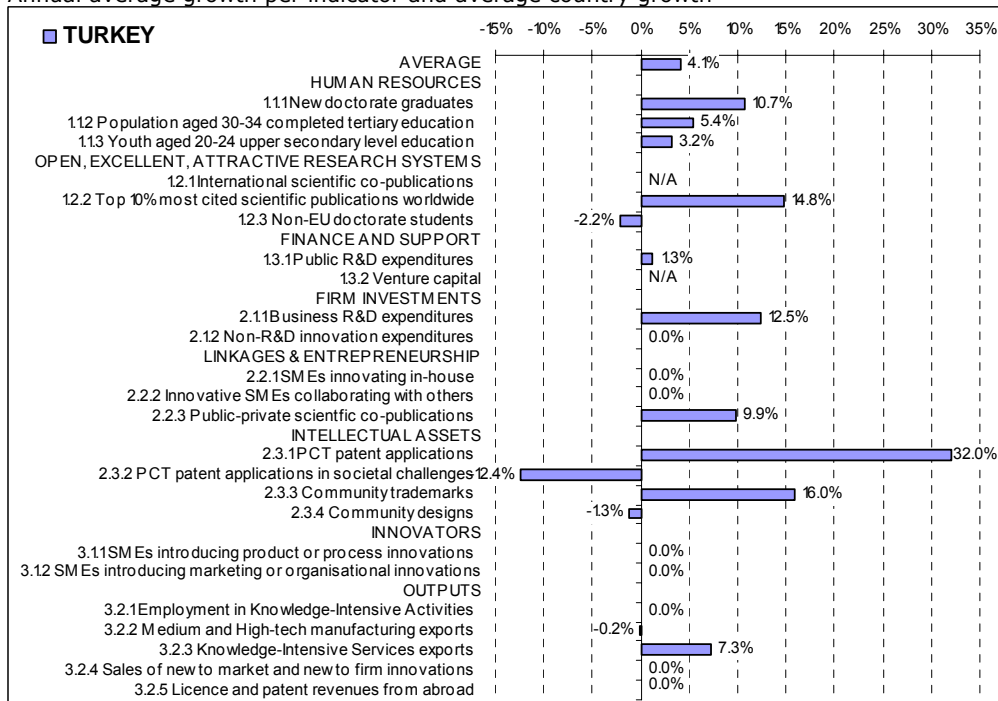


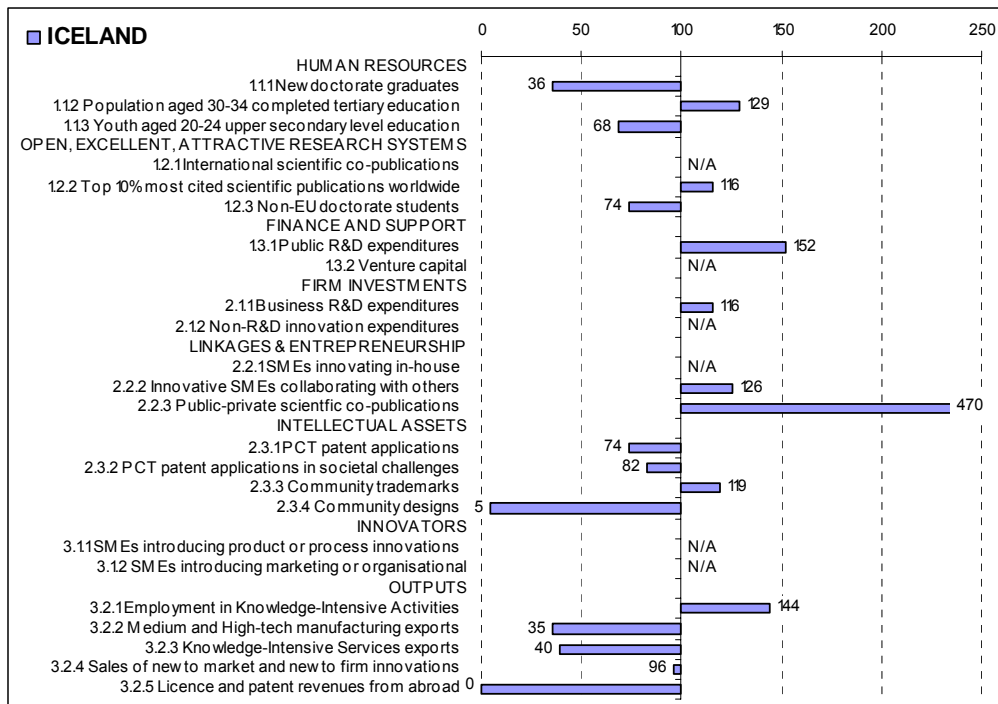
Indicator values relative to the EU27 (EU27=100).

Turkey is one of the modest innovators with a below average performance. Relative strengths are in Open, excellent and attractive research systems and Innovators. Relative weaknesses are in Human resources, Firm investments and Intellectual assets.

High growth is observed for Business R&D expenditure and PCT patent applications. A strong decline is observed for PCT patent applications in societal challenges. Growth performance in Human resources, Open, excellent and attractive research systems, Firm investment, and Intellectual assets is above average. In the other dimensions it is below average.

Annual average growth per indicator and average country growth

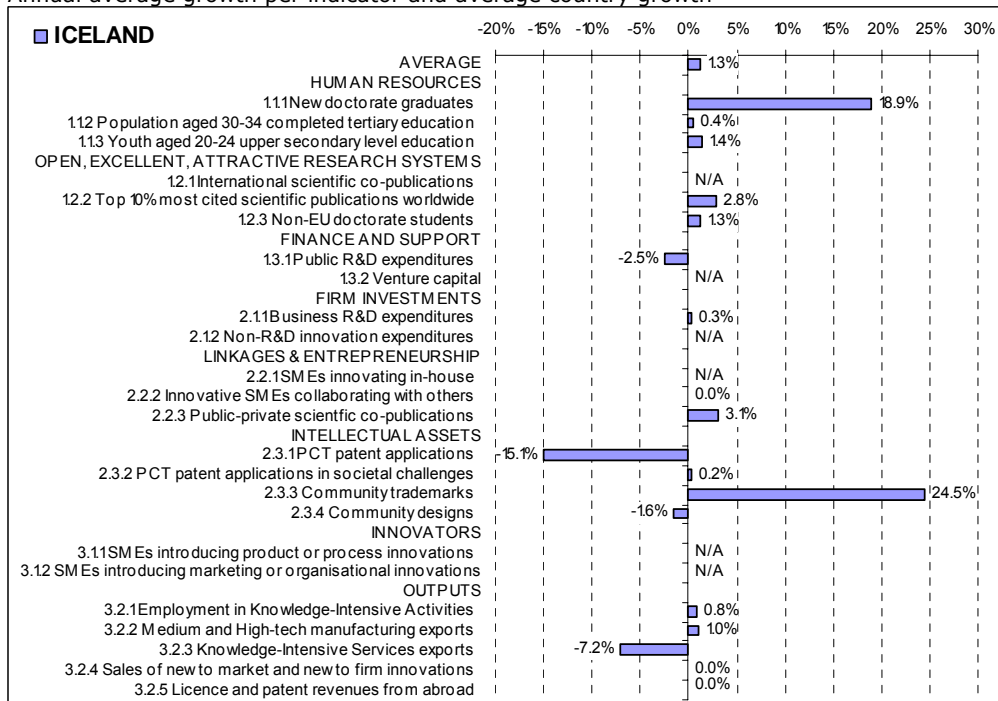


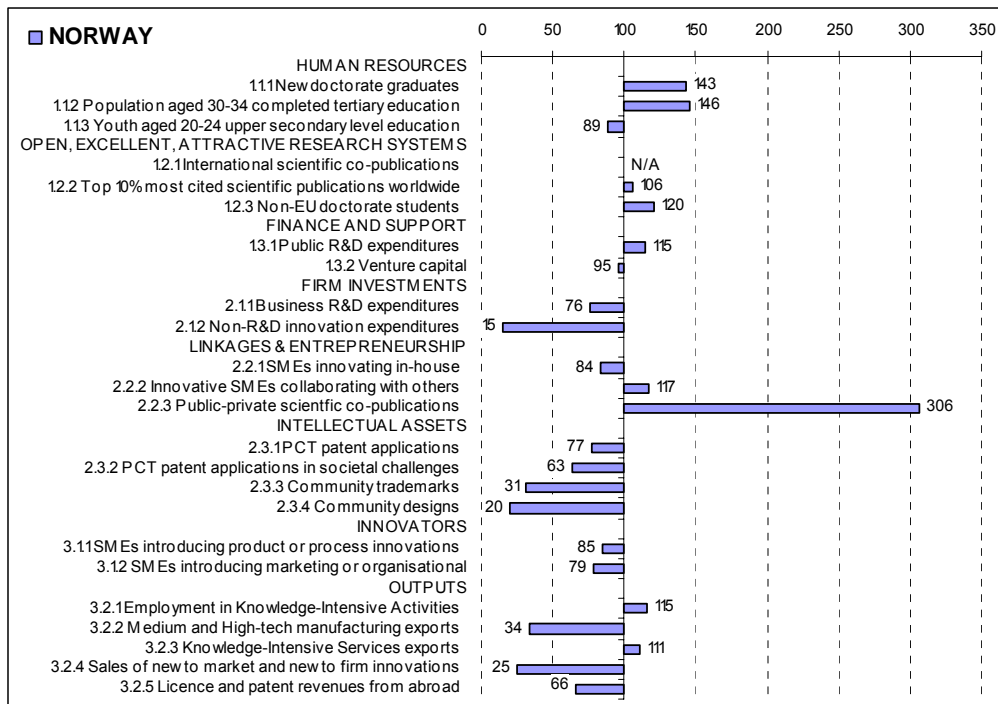


Indicator values relative to the EU27 (EU27=100).

Iceland is one of the innovation followers with a below average performance. Relative strengths are in Open, excellent and attractive research systems, Finance and support, Firm investments and Linkages & entrepreneurship. Relative weaknesses are in Intellectual assets and Outputs. High growth is observed for New doctorate students and Community trademarks. A strong decline is observed for PCT patent applications and Knowledge-intensive services exports. Growth performance in Human resources, Open, excellent and attractive research systems and Intellectual assets is above average. In the other dimensions it is below average.

Annual average growth per indicator and average country growth

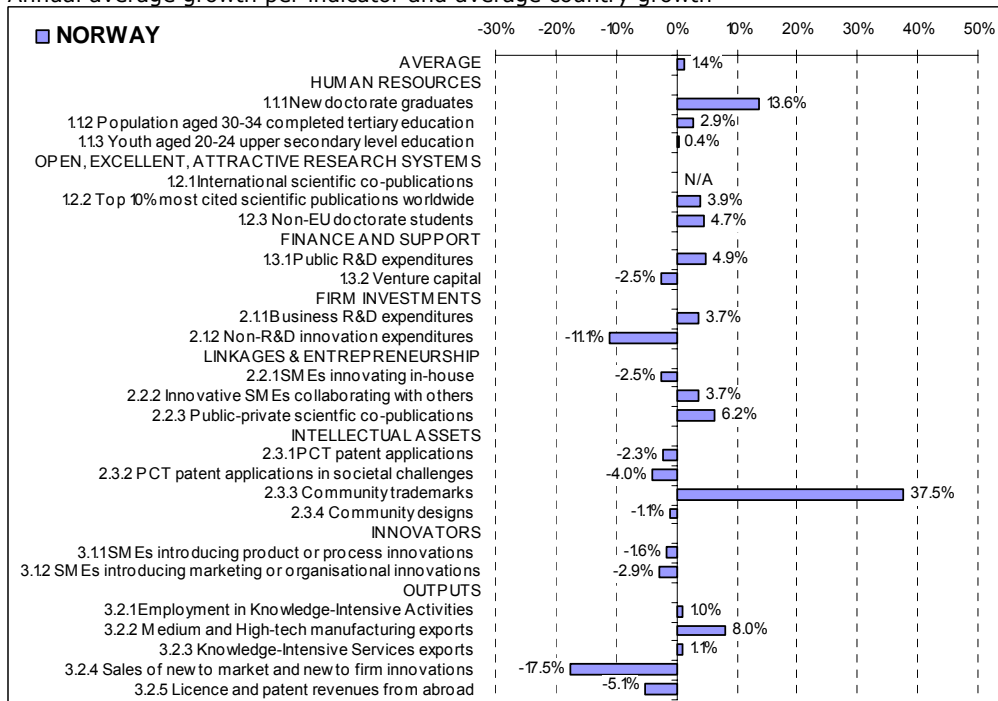


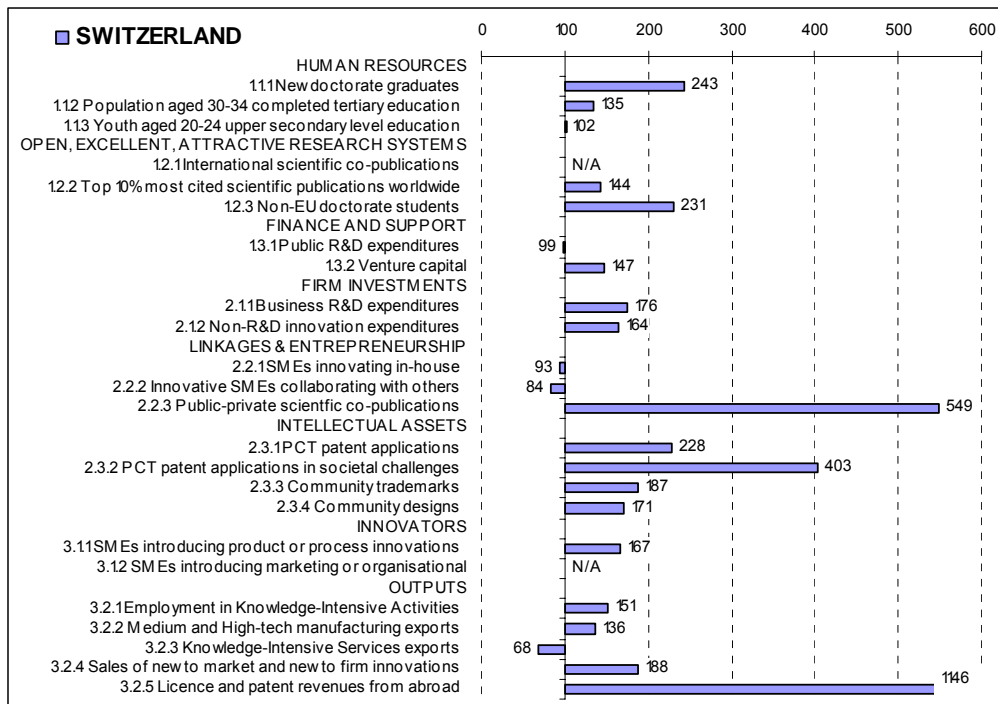


Indicator values relative to the EU27 (EU27=100).

Norway is one of the moderate innovators with a below average performance. Relative strengths are in Human resources, Open, excellent and attractive research systems, Finance and support and Linkages & entrepreneurship. Relative weaknesses are in Firm investments, Intellectual assets, Innovators and Outputs. High growth is observed for New doctorate graduates and Community trademarks. A strong decline is observed for Non-R&D innovation expenditure and Sales of new products. Growth performance in Human resources, Open, excellent and attractive research systems and Intellectual assets is above average. In the other dimensions it is below average.

Annual average growth per indicator and average country growth

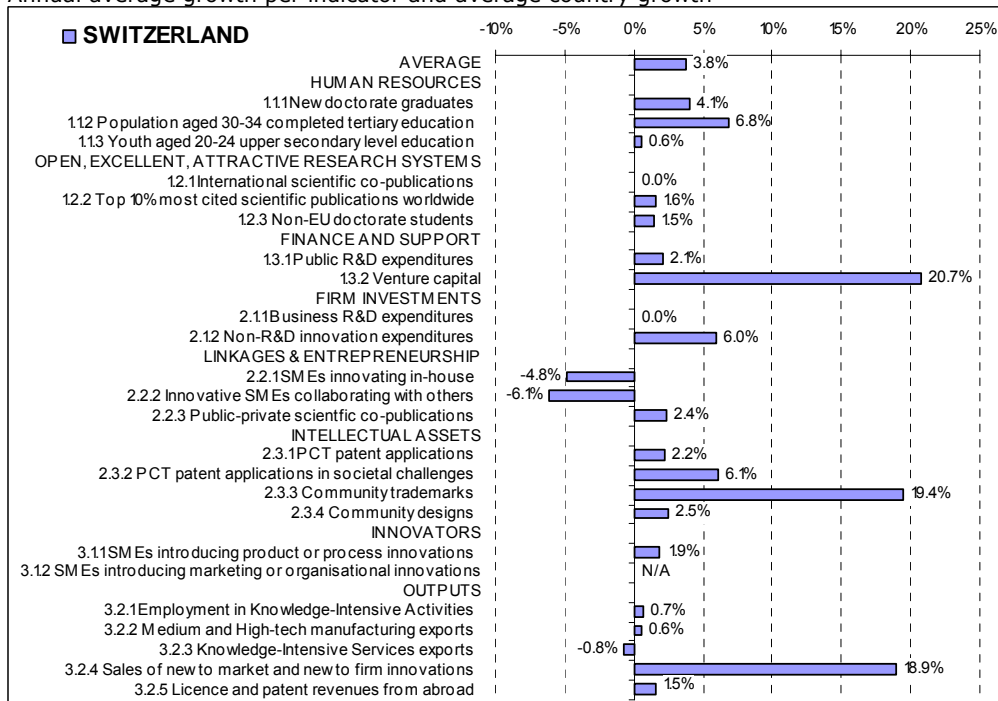


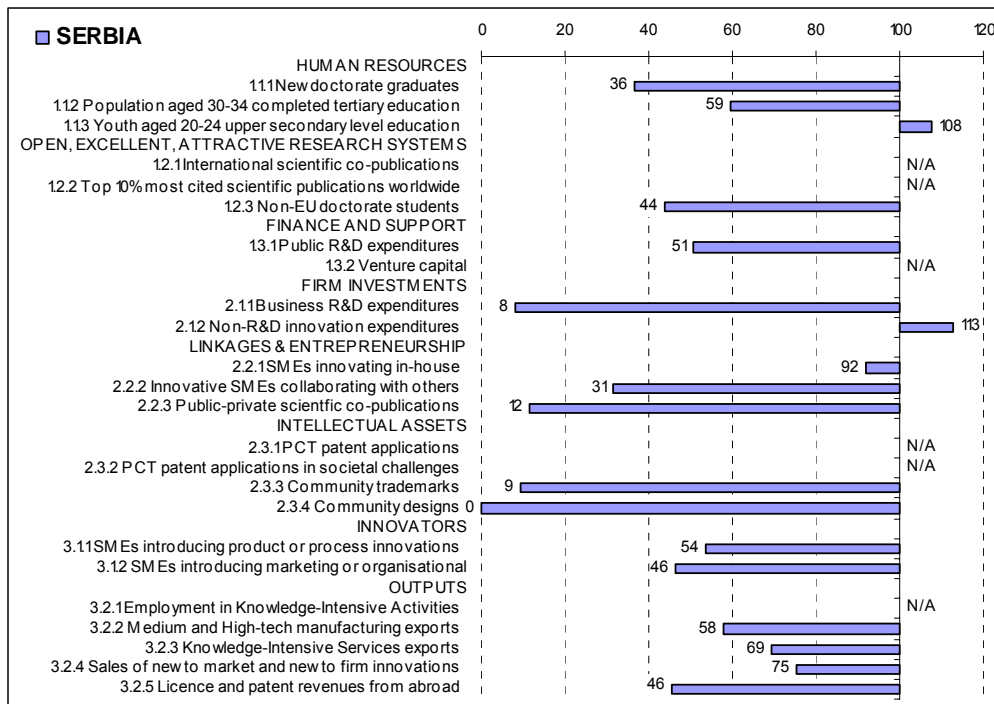


Indicator values relative to the EU27 (EU27=100).

Switzerland is one of the innovation leaders with an above average performance. Relative strengths are in Open, excellent and attractive research systems, Intellectual assets, Innovators and Outputs. Relative weaknesses are in Finance and support and Linkages & entrepreneurship. High growth is observed for Venture capital, Community trademarks and Sales of new products. A relatively strong decline is observed for SMEs innovating in-house and Innovative SMEs collaborating with others. Growth performance in Finance and support, Intellectual assets and Outputs is above average. In the other dimensions it is below average.

Annual average growth per indicator and average country growth

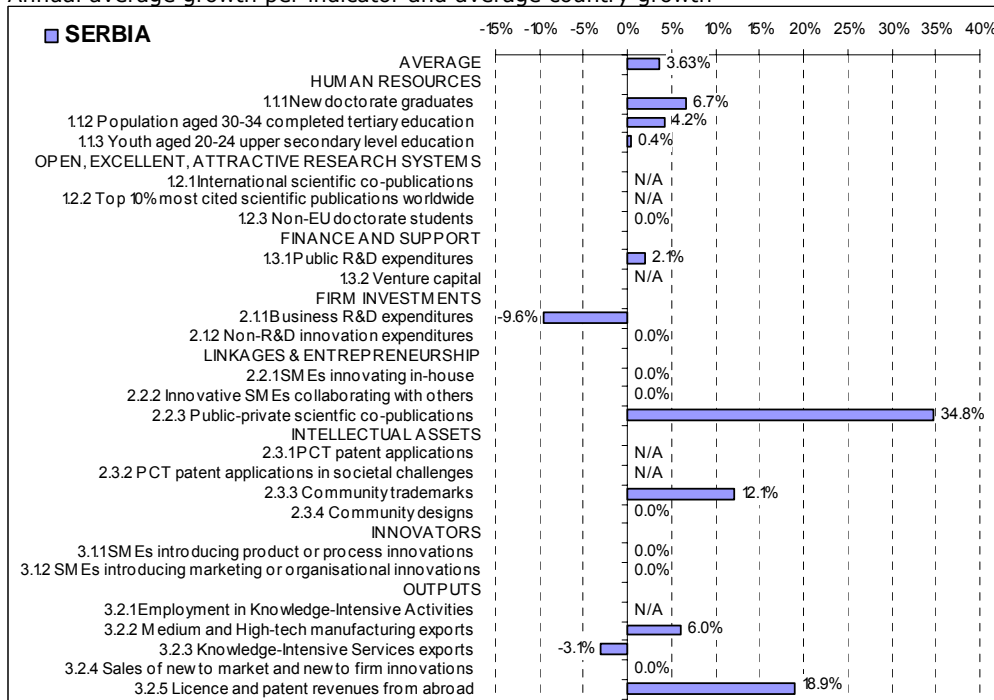


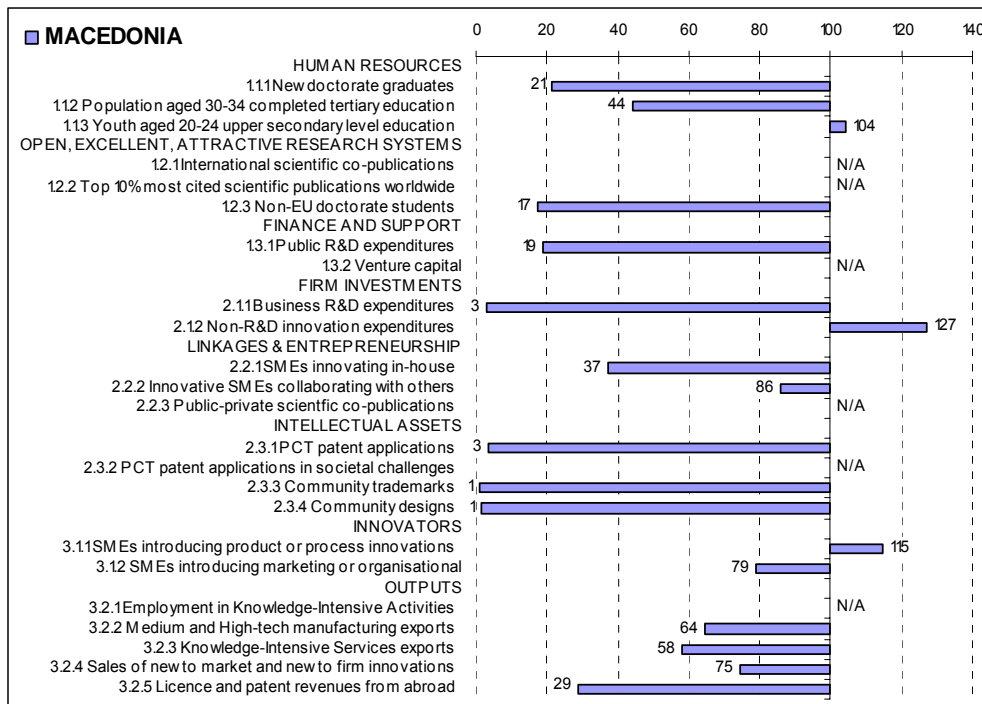


Indicator values relative to the EU27 (EU27=100).

Serbia is one of the modest innovators with a below average performance. Relative strengths are in Human resources, Open, excellent and attractive research systems and Outputs. Relative weaknesses are in Intellectual assets and Innovators. High growth is observed for Public-private co-publications, Community trademarks and License and patent revenues from abroad. A strong decline is observed for Business R&D expenditure, Community designs and Sales of new products. Growth performance in Linkages & entrepreneurship, Intellectual assets and Outputs is above average. In the other dimensions it is below average.

Annual average growth per indicator and average country growth





Indicator values relative to the EU27 (EU27=100).

The Former Yugoslav Republic of Macedonia is one of the modest innovators with a below average performance.

Relative strengths are in Innovators. Relative weaknesses are in Open, excellent and attractive research systems, Finance and support and Intellectual assets.

High growth is observed for New doctorate graduates, Knowledge-intensive services exports and License and patent revenues from abroad. A strong decline is observed for PCT patent applications and Community trademarks. Growth performance in Human resources, Firm investments and Outputs is above average, Growth performance in Finance and support and Intellectual assets is below average.

Annual average growth per indicator and average country growth

