



# 2014 Innovation Union Scoreboard

While the EU and all its Member States have become more innovative in recent years, the innovation gap within the EU remains wide. **Nordine Es-Sadki** and **Hugo Hollanders** of the Maastricht Economic and Social Research Institute on Innovation and Technology provide insights into the factors driving innovation in Europe and how Member States can improve their performance

### BENCHMARKING EUROPE'S INNOVATION PERFORMANCE

The Innovation Union Scoreboard is the monitoring tool the EC uses for measuring the innovation performance of EU Member States. The Scoreboard uses 25 indicators measuring different aspects of the innovation process to capture the enablers or main drivers of innovation external to companies, companies' innovation activities and innovation outputs. Data are taken from official international sources like Eurostat and the Organisation for Economic Co-operation and Development (OECD). The indicators measure the availability of highly skilled employees, government and companies' R&D expenditures, the availability of venture capital, companies' in-house capabilities to innovate, patent applications, trademark and industrial design registration, the share of companies that innovate, employment and export of high-tech and knowledge-intensive activities, and license and patent revenues from abroad.

### FOUR PERFORMANCE GROUPS IN EUROPE

Using an average measure for their innovation performance, countries are classified into four different performance groups. Denmark, Finland, Germany, Sweden and Switzerland are the 'innovation leaders' with innovation performance well above that of the EU. The 'innovation followers' have innovation performance above or close to that of the EU and include Austria, Belgium, Cyprus, Estonia, France, Ireland, Luxembourg, The Netherlands, Slovenia and the UK, among others. The performance of the 'moderate innovators' is below that of the EU. In this group, we mostly find countries in Eastern and Southern Europe: Croatia, Czech Republic, Greece, Hungary, Italy, Lithuania, Malta, Poland, Portugal, Slovakia and Spain, but also Norway. The 'modest innovators' perform well below the EU and include Bulgaria, Latvia, Romania and Turkey.

The Scoreboard shows that the most innovative countries all have balanced innovation systems with no clear weaknesses. Differences in performance across all Member States are smallest in human resources but relatively large in the international competitiveness of the science base and business innovation cooperation.

Overall, the annual average growth rate of innovation performance for the EU at large reached 1.7 per cent from 2006-13 with all Member States improving their innovation performance. Growth has been fastest in Estonia, Latvia and Portugal and smallest in Croatia, Sweden and the UK. With less innovative countries growing faster than more innovative countries, differences in performance have become less but the speed of this process of convergence is slowing down.

### INTERNATIONAL COMPETITORS

A comparison with several major international competitors shows that the EU is trailing behind Japan, South Korea and the US, but it has a significant lead over Brazil, China, India and Russia. Indicators that capture business activity as measured by R&D expenditures in the business sector, patent applications and educational attainment show that the top innovation leaders – US, Japan and South Korea – are particularly dominating the EU.

Over time, the US has consistently been more innovative than the EU, but the performance lead has become smaller. Between 2006 and 2009, the US innovation index was about 30 per cent higher

than that of the EU, but since 2009, the US's lead has nearly halved; it was 17 per cent in 2013. Relative US strengths are in the share of its population with a completed tertiary education, US enterprises spending about 40 per cent more on R&D and in commercialising new technologies with higher license and patent revenues compared to the EU.

Also, Japan has been consistently more innovative than the EU. The Japanese innovation index reached a peak in 2008, being 28 per cent higher than that of the EU. The performance lead started to decline after 2008 and in 2013 it was only half that of 2008. Japan has similar strengths as the US with a more highly educated workforce and enterprises spending twice as much on R&D as those in the EU.

### BECOMING MORE INNOVATIVE

Europe is clearly improving its innovation performance, but, although reduced, the gap with the US and Japan remains. What Europe needs to close the gap further is to create the right conditions for companies to grow and innovate. Europe should reduce existing barriers for companies doing business, and it should stimulate a stronger demand for innovative goods and services, with governments taking the lead by demanding innovative solutions in their procurement activities.

We need more companies introducing innovations, and companies need to increase their R&D expenditures. Governments can provide better stimuli, following the example of the EC's Horizon 2020 programme, which is acting to promote collaboration in research and innovation between companies, and between companies, universities and research institutes. If we can create a Europe that is more innovation-friendly, it will be just a matter of time before Europe will surpass the US and Japan as the most innovative economic power.



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## Benchmarking innovation

The 2014 Innovation Union Scoreboard creates a Summary Innovation Index that draws on 25 different indicators divided into three broad areas:

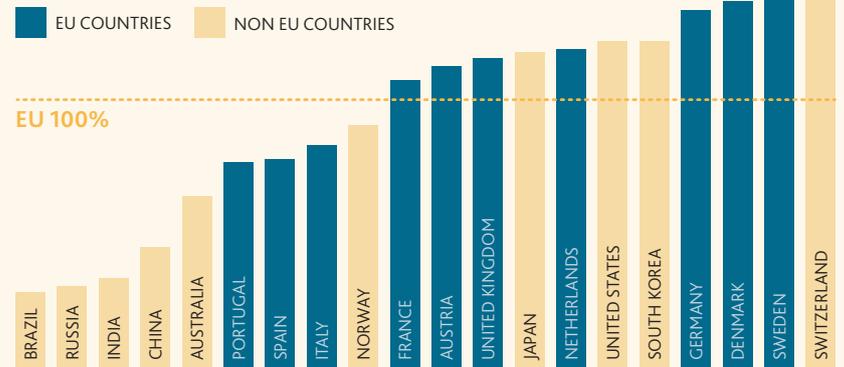
**ENABLERS** – the basic building blocks that allow innovation to take place. These include human resources, open, excellent and attractive research systems, and finance and support

**FIRM ACTIVITIES** – these capture innovation efforts in European firms. They include firm investments, linkages and entrepreneurship, and intellectual assets

**OUTPUTS** – describes how innovation translates into benefits both innovators and the economy

## Comparing innovation performance

To help Member States assess areas to focus on to boost their innovation performance, the EC commissions the Innovation Union Scoreboard annually. Here, *International Innovation* provides a look at how some European countries – in addition to some countries outside of the EU – stacked up the baseline average of the EU-27 over the last year



## Performance over time

The Scoreboard analysed innovation performance over an eight-year period and made several insights about the performance of Europe as a whole as well as for individual Member States



### INNOVATION LEADERS

*Innovation performance well above that of the EU average*

Performance has improved strongest for Germany, at an average annual rate of

**1.3%**

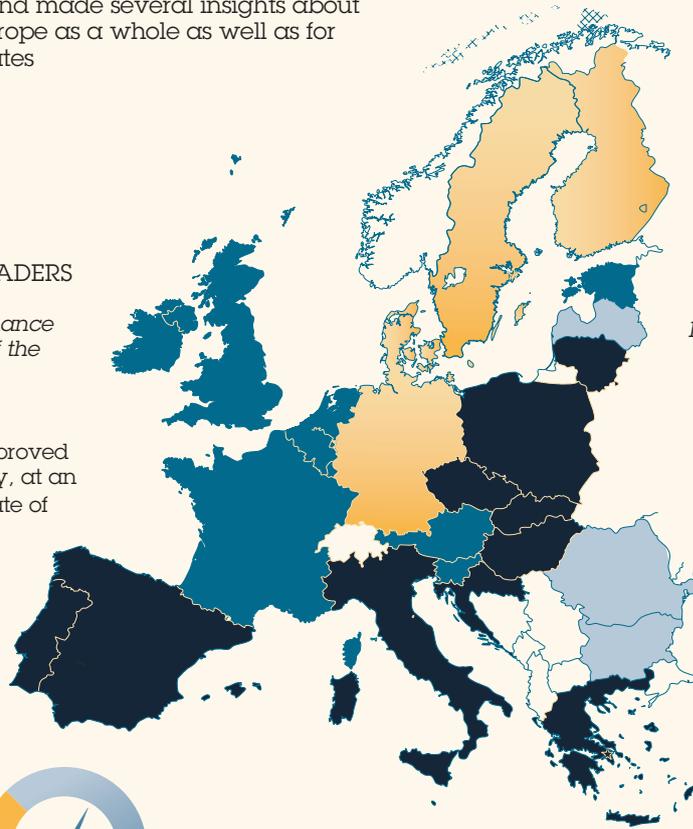


### INNOVATION FOLLOWERS

*Innovation performance above or close to that of the EU average*

Growth performance for Estonia has improved the strongest, at an average annual rate of

**3.7%**



### MODEST INNOVATORS

*Innovation performance below that of the EU average*

Latvia **3.5%** Bulgaria **2.5%**

have seen a higher improvement in their innovation performance compared to the EU

### MODERATE INNOVATORS

*Innovation performance well below the EU average*

Portugal and Malta experienced rapid increases between **2006** and **2010**