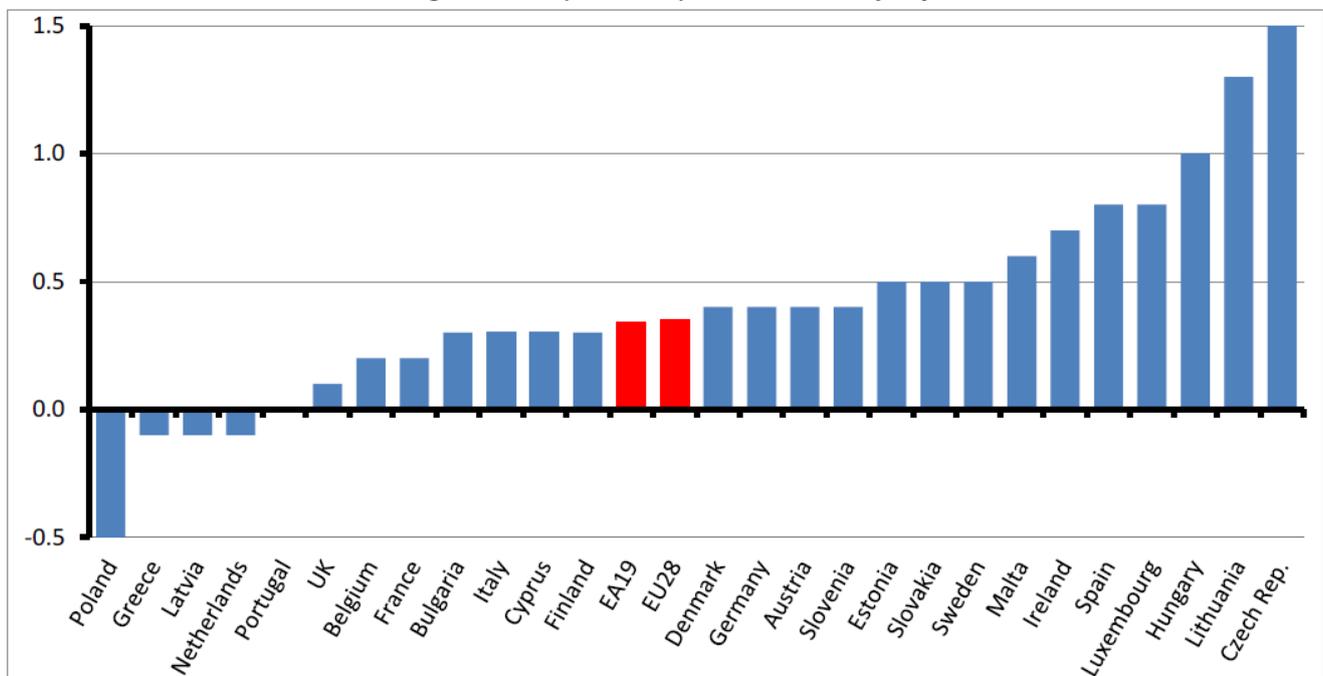


# NEWSLETTER on STI Data and Indicators

DG RTD, A4, Analysis and monitoring of national research policies

## 1. Eurostat data on employment growth

**Member States' growth rates for employment in the first quarter of 2016**  
% change over the previous quarter, seasonally adjusted



Croatia and Romania: data not available

On 14 June 2016 Eurostat published data on employment growth in the first quarter of 2016 (see chart above). Employment went up by 0.3% in the Euro area and in the EU. Growth was strongest in the Czech Republic (which currently has the lowest unemployment rate in the EU), Lithuania and Hungary. Compared to the same quarter of 2015 growth rates were highest in Malta (3.7%), Spain (3.2%), Hungary (2.9%) and Luxembourg (2.9%). Compared to the first quarter 2015 employment increased in all Member States except Romania (-0.5%). On an EU level employment is now approaching the pre-crisis peak reached in the first quarter 2008.

While total employment grew by 1.4% compared to the first quarter 2015, it declined in agriculture, forestry and fishing (-2.1%) and in construction (-0.8%). Employment increased in manufacturing (1.0%) and in the services sector (professional and support service activities 3.1%, real estate activities 2.9%, financial and insurance activities 2.7%, trade, transport, accommodation, tourist services 2.0%, information and communication 2.0%, arts entertainment and administration 1.8%, and other public services 1.2%), confirming a long-term shift from the primary and secondary sector to the tertiary sector.

**More info:** <http://ec.europa.eu/eurostat/documents/2995521/7481744/2-14062016-BP-EN.pdf/d67f714a-9cbb-43cb-891f-c621e292efce>

## 2. IMD World Competitiveness Scoreboard

On 30 May 2016 the Lausanne based IMD published the 2016 edition of the *World Competitiveness Scoreboard*.

According to the Scoreboard China-Hong Kong has replaced the United States as the most competitive economy in 2016, while Switzerland moved from rank 4 to rank 2. Sweden (rank 5; 4 positions up) is the best-ranked EU country in 2016, followed by Denmark (rank

6, 2 ranks up) and Ireland (rank 7, 9 places up). According to the IMD ranking Germany, Lithuania Romania (all -2) Portugal (-3) Luxembourg (-5) and Greece (-6) lost positions, while the Netherlands (+7), Latvia (+6), Slovakia (+6), Slovenia (+6), Bulgaria (+5), Spain (+3), Italy (+3), the Czech Republic (+2), Hungary (+2) and the UK (+1) improved their rank compared to the year before (see IMD chart below).

### The IMD World Competitiveness Scoreboard 2016

WCY 2016	Country	WCY 2015	Change	WCY 2016	Country	WCY 2015	Change
1	China Hong Kong	2	+1	31	Estonia	31	-
2	Switzerland	4	+2	32	France	32	-
3	USA	1	-2	33	Poland	33	-
4	Singapore	3	-1	34	Spain	37	+3
5	Sweden	9	+4	35	Italy	38	+3
6	Denmark	8	+2	36	Chile	35	-1
7	Ireland	16	+9	37	Latvia	43	+6
8	Netherlands	15	+7	38	Turkey	40	+2
9	Norway	7	-2	39	Portugal	36	-3
10	Canada	5	-5	40	Slovak Republic	46	+6
11	Luxembourg	6	-5	41	India	44	+3
12	Germany	10	-2	42	Philippines	41	-1
13	Qatar	13	-	43	Slovenia	49	+6
14	Taiwan	11	-3	44	Russia	45	+1
15	UAE	12	-3	45	Mexico	39	-6
16	New Zealand	17	+1	46	Hungary	48	+2
17	Australia	18	+1	47	Kazakhstan	34	-13
18	United Kingdom	19	+1	48	Indonesia	42	-6
19	Malaysia	14	-5	49	Romania	47	-2
20	Finland	20	-	50	Bulgaria	55	+5
21	Israel	21	-	51	Colombia	51	-
22	Belgium	23	+1	52	South Africa	53	+1
23	Iceland	24	+1	53	Jordan	52	-1
24	Austria	26	+2	54	Peru	54	-
25	China Mainland	22	-3	55	Argentina	59	+4
26	Japan	27	+1	56	Greece	50	-6
27	Czech Republic	29	+2	57	Brazil	56	-1
28	Thailand	30	+2	58	Croatia	58	-
29	Korea Rep.	25	-4	59	Ukraine	60	+1
30	Lithuania	28	-2	60	Mongolia	57	-3
				61	Venezuela	61	-

More info: <http://www.imd.org/wcc/news-wcy-ranking/>

## 3. IRF data on industrial robot sales 2015

On 14 April the *International Federation of Robotics* (IFR) published data on the industrial robots market 2015.

According to IFR in 2015 240,000 industrial robots were sold worldwide, a growth of 8 percent compared to the year before. The greatest demand was again registered by the automotive industry. 60% of industrial robots were sold in Asia, with China (66,000, +16%) being the biggest market, followed by Japan and South Korea. Nearly 50, 000 industrial robots were sold in Europe (+9%), with Eastern Europe (+29%) among the fastest growing industrial robot markets world wide. 34 000

industrial robots were sold in North America (incl. Mexico), 11% more than in 2014. Articulated robots are the most sold robot type (150,000 units in 2015, annual growth of 16% since 2010).

Additional info from other sources: KUKA, based in Augusburg/Bavaria (revenue in 2014 € 2.1 bn, 12,000 employees) is one of the largest EU industrial robot manufacturers. KUKA produces about 20 000 robots per year, of which 5000 in China. In May 2016 Chinese Midea group offered to buy KUKA for € 4.5 bn.

More info: <http://www.ifr.org/news/ifr-press-release/industrial-robots-post-a-new-sales-record-in-2015-806/>

## 4. Akamai data on broadband

On 22 March 2016 Akamai, an American Internet Content Delivery Network (CDN) services company, published its 2015 *State of the Internet Report*. This report contains data on average connection speeds by country. The data show South Korea as the country with the highest average Internet speed (26.7 Mbps), followed by Sweden and Norway. Japan and Hong Kong are other Asian economies in the top 10, albeit with lower growth rates than leading European countries (in Hong Kong speed stagnated in 2015). Global average speed amounted to 5.6 Mbps, an increase of 23% compared to the year before.

Some central and eastern European countries such as Latvia (16.7 Mbps), not shown in the table below, the Czech Republic (15.9) and Romania (13.2) perform relatively well. Romania is interestingly the only non-

Asian country in the top 10 of average peak connection speed (73.6 Mbps), which is led by Singapore, Hong Kong and South Korea.

Germany is doing reasonably well as regards average connection speeds, despite its low fibre to the home penetration rate, often seen as bottleneck to higher speed.

EU countries with relatively low average speeds include France and Italy. Both are also lagging behind in the 4 Mbps broadband adoption rate. The Netherlands (96%) and Denmark (94%) are the leading EU Member States in terms of 4 Mbps adoption rate, the Netherlands (64%) and Belgium (61%) in terms of the 10 Mbps adoption rate and Sweden (23%) and Latvia (18%) in terms of the

Global Rank	Country/Region	Q4 2015 Avg. Mbps	QoQ Change	YoY Change
2	Sweden	19.1	9.3%	30%
3	Norway	18.8	14%	65%
5	Netherlands	17.0	8.7%	20%
8	Switzerland	16.7	2.8%	15%
9	Finland	16.6	12%	37%
10	Denmark	16.1	15%	36%
11	Czech Republic	15.9	9.2%	29%
15	Belgium	14.2	11%	31%
17	United Kingdom	13.9	6.8%	27%
19	Romania	13.2	0.9%	14%
22	Germany	12.9	12%	46%
23	Ireland	12.8	2.7%	0.7%
24	Hungary	12.6	19%	45%
25	Slovakia	12.5	12%	53%
27	Austria	12.3	8.4%	26%
29	Portugal	12.1	14%	51%
30	Spain	12.1	17%	48%
32	Israel	11.6	3.8%	9.2%
33	Russia	11.6	14%	30%
36	Poland	11.0	3.9%	25%
44	France	8.9	9.4%	26%
51	Italy	7.4	14%	33%
53	United Arab Emirates	6.9	2.2%	21%
63	Turkey	6.3	0.8%	8.9%
90	South Africa	4.1	11%	26%

Figure 28: Average Connection Speed by EMEA Country

Global Rank	Country/Region	% Above 4 Mbps	QoQ Change	YoY Change
2	Netherlands	96%	0.8%	4.9%
7	Denmark	94%	0.4%	1.9%
8	Israel	94%	0.1%	1.6%
9	Switzerland	94%	0.5%	0.8%
11	Belgium	93%	2.1%	6.8%
12	Sweden	93%	1.2%	6.5%
15	Hungary	92%	2.9%	13%
16	Austria	92%	1.2%	5.4%
17	Romania	91%	-2.6%	2.3%
19	Finland	91%	0.3%	9.1%
23	Russia	90%	3.4%	10%
24	Norway	90%	2.2%	12%
25	Germany	89%	2.3%	11%
26	United Kingdom	89%	2.1%	7.8%
27	Czech Republic	88%	2.8%	4.8%
28	Spain	88%	4.5%	13%
35	United Arab Emirates	86%	1.4%	39%
36	Poland	86%	-2.1%	3.5%
38	Portugal	86%	0.5%	14%
40	Slovakia	85%	0.4%	24%
47	Ireland	79%	3.0%	15%
48	Italy	78%	10%	29%
49	France	78%	4.4%	11%
52	Turkey	77%	-0.6%	21%
90	South Africa	27%	23%	40%

Figure 30: 4 Mbps Broadband Adoption by EMEA Country

Results for Europe/Middle East/Africa region, Source: Akamai

**More information:** <https://www.akamai.com/us/en/our-thinking/state-of-the-internet-report/>

## 5. Thomson Reuters ranking of Europe's most innovative universities

On 14 June 2016 Thomson Reuters published its first ranking of *Europe's most innovative universities*, based on 10 different metrics, focussing on academic papers and patent filings. KU Leuven came out on top, followed by Imperial College London, the University of Cambridge, the EPFL Lausanne and the Technical University of Munich. Germany has the largest number of universities

on this list (24), followed by the UK (17) France (16). And Spain (10). Ireland has the highest number of institutions per population (3 for less than 5 million people). In total 60 institutions are located in western Europe, 24 in northern Europe (incl. UK, IRL), 15 in southern Europe, but only 1 in eastern Europe (the Jagiellonian University of Krakow).

**More info:** <http://www.reuters.com/article/us-innovative-stories-europe-idUSKCN0Z00CT>

## 6. Miscellaneous results from national data sources

### a) South Korea: Statistical Office data show a rapid aging of the population

Data from the Korean Statistical Office (KOSIS) show a rapid aging of the South Korean population. As a result of lower fertility, a higher life expectancy and lower net migration the South Korean population is, similar to Japan, aging even more quickly than that of the EU. The share of the population aged 65 and older in South Korea is forecast to more than double in the next 20 years, from 13.1% in 2015 to 28.4% in 2035.

In 2014 South Korea had a fertility rate (children/woman) of 1.24, the lowest in the OECD, after Portugal. Korean parents invest heavily in the education of their children, but many families can afford to do so for one

**More info:** <http://kosis.kr/eng/>

child only. Life expectancy in South Korea (already among the 10 best countries worldwide) is progressing rapidly. It increased from 80.8 years in 2010 to 81.9 in 2013 and 82.4 years in 2014. The South Korean population (2015: 50.8 million) is forecast (medium scenario) to start to decline in 2030, after peaking at 52.2 million. The working age population (15-64) will already start to decline from 2018 onwards, first by about 100,000 per year and later accelerating to 400,000 per year.

It is expected that the rapid aging of the population will weigh down Korean economic growth in the future.

### b) Germany: data on regional R&D intensity show Baden-Württemberg as top performer

In March 2016 the German Statistical Office and the Stifterverband published R&D intensity data at a German Länder level for the year 2014. Baden-Württemberg with its car and machinery industry has by far the highest R&D intensity (4.91% of GDP) in Germany. Other Länder with high R&D intensity levels are Berlin (high levels of government and higher education spending), Bayern and Niedersachsen, where Volkswagen, the company with the highest R&D spending worldwide, is headquartered. All the eastern Länder are below the German average. However, Saarland in the Southwest has the lowest R&D intensity. As regards government R&D spending Berlin and Bremen show the highest levels. Both Länder and Saxony also show high levels of higher education R&D spending. Business R&D intensity is highest in Baden-Württemberg, at over twice the German average. Bayern (BMW and Siemens) and Hessen also perform above the German average in business R&D spending. North Rhine-Westphalia, with the Ruhr area as a former industrial heartland of Germany, has relatively low levels of business R&D spending. Data on regional GDP growth released in February 2016 show the top R&D spenders Baden-Württemberg and Berlin also had the fastest GDP growth in 2015 (3.1% and 3.0% respectively).

**More info:**

<https://www.destatis.de/DE/ZahlenFakten/GesellschaftStaat/BildungForschungKultur/ForschungEntwicklung/Tabellen/BIPBundeslaenderSektoren.html>

R&D intensity 2014 (% of GDP)	Total	Government	Higher education	Business
Germany	2.90	0.43	0.51	1.95
Baden-Württemberg	4.91	0.44	0.51	3.96
Berlin	3.65	1.19	0.93	1.52
Bayern	3.17	0.30	0.42	2.45
Niedersachsen	2.96	0.40	0.53	2.03
Hessen	2.88	0.26	0.41	2.22
Bremen	2.83	1.08	0.71	1.05
Sachsen	2.66	0.72	0.80	1.14
Hamburg	2.33	0.49	0.51	1.34
Thüringen	2.17	0.50	0.61	1.06
Rheinland-Pfalz	2.16	0.14	0.42	1.60
Nordrhein-Westfalen	2.01	0.36	0.52	1.13
Mecklenburg-VP.	1.91	0.73	0.69	0.49
Brandenburg	1.61	0.79	0.36	0.46
Schleswig-Holstein	1.55	0.40	0.37	0.78
Sachsen-Anhalt	1.48	0.50	0.55	0.44
Saarland	1.41	0.41	0.43	0.57

### c) Research & Technology Report expects Austrian R&D intensity reaching rank 3 in EU in 2016

In June the Austrian Government published the 2016 edition of the annual *Research and Technology Report*. The report provides an assessment of national and international trends in science, research and innovation. It shows R&D spending trends, including an estimate for 2016 and looks at Austria's position in international innovation assessments, such as the European Innovation Scoreboard.

The report estimates that R&D spending intensity in Austria will increase in 2016 by 2.9% (to € 10.7 bn) and RD intensity will reach 3.07% of GDP, the highest in the EU after Finland and Sweden. As regards the European Innovation Scoreboard, which has not yet been published for 2016, the report expects Austria to improve by two ranks in the summary index.

**More info:** [http://wissenschaft.bmwf.gv.at/uploads/tx\\_contentbox/FTB\\_2016\\_Druckversion\\_01.pdf](http://wissenschaft.bmwf.gv.at/uploads/tx_contentbox/FTB_2016_Druckversion_01.pdf)

## Calendar of data releases and indicator based publications

Update of: 14/6/2016 (grey= already published)

2016	Eurostat data updates	Commission indicator based reports	Data and indicator based reports of other organisations
<b>January</b>			Transparency International Corruption Perception Index Bloomberg Innovation Index
<b>February</b>	Tertiary attainment (2015, prov.) High growth enterprises data (provisional, 2014) IPR (patent 2013, CTM 2014 and RCD 2014)	Winter forecast (ECFIN) DESI indicator (CNECT)	OECD R&D expenditure data Excelacom Internet Minute
<b>March</b>	R&D intensity (2014 update) GBAORD final (2014)	She Figures (online version; RTD) Science, Research and Innovation performance report (RTD)	European Patent Office , EPO annual results (2015) Reuters Most Innov. Institutions OICA world motor vehicle production data
<b>April</b>	Education headline indicators (LFS)		
<b>May</b>	High tech trade (2015) Venture capital (2015) Education enrolment, graduates Knowledge-int. activities (2015)	Spring Forecast (ECFIN) Skills forecast (Cedefop)	Invest Europe 2015 European Private Equity Report Times Higher Ed. Reputations Ranking IMD World Competitiveness Yearbook
<b>June</b>	Education spending Employment high-tech (2015) HRST education inflows (2014)	Europe 2020 publication (ESTAT)	
<b>July</b>	IPR (Patents, 2013), Community Trademarks (2015), RC Designs (2015)	Innovation Union Scoreboard (GROW)	UNESCO UIS STI stats release
<b>August</b>			Academic Ranking of World Universities (Shanghai)
<b>September</b>	GBAORD (2015 preliminary) Final high growth enterprise data (2014) Economic data on high-tech (2015)		WIPO/Cornell/INSEAD Global Innovation Index WEF Global Competitiveness Index
<b>October</b>			OECD STI Scoreboard (2-yearly) World Bank Doing Business
<b>November</b>	R&D intensity (2015 preliminary, 2014 final) Knowledge-int. activities (2015) CIS 2014 Employment high-tech (2015) IPR Statistics (CTM 2015 and RCD 2015)	Autumn Forecast (ECFIN) Education Monitor (EAC) European Competitiveness report (GROW) Industrial R&D Investment Scoreboard (JRC) Annual Growth Survey (ECFIN)	Top500.org: Top 500 Supercomputer list OECD Education at a Glance
<b>December</b>	ICT household data (2016) ICT enterprise data (2016) HRST stocks (2015)	Joint Employment Report (EMPL)	WIPO World Intellectual Property Indicators BDI/Telekom (German) Innovation Indicator

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