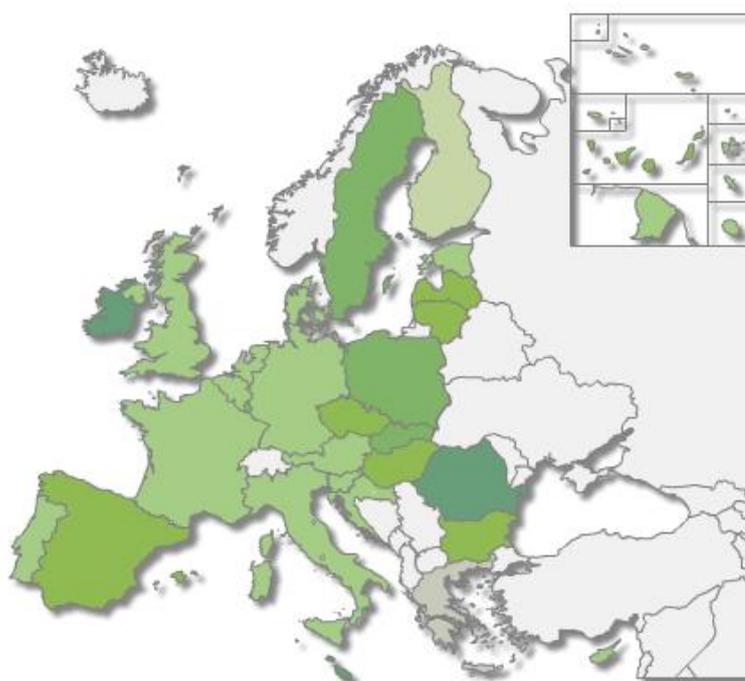


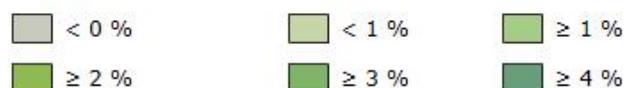
NEWSLETTER on STI Data and Indicators

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

1. European Commission spring economic forecast



Legend : GDP Growth forecast 2016



On 3 May 2016 the Commission (ECFIN) published the **spring 2016 European Economic Forecast**. It expects economic growth in Europe to remain modest following a slowdown in the performances of key trading partners. GDP growth in the EU is forecast to decrease from 2.0% in 2015 to 1.8% in 2016 before reaching 1.9% in 2017. Ireland (4.9%), Romania (4.2%) and Malta (4.1%) are expected to show the highest growth in 2016, while Greece (-0.3%) remains in recession. In 2017

Luxembourg (3.9%), Romania (3.7%) and Ireland (3.7%) are forecast to show the highest growth, while Greece is expected to emerge from its long recession (2.7%). The moderate pace of improvement in labour markets is expected to continue, with the EU unemployment rate forecast to decrease from 9.4% in 2015 to 8.9 % in 2016 and 8.5% in 2017.

More info: http://ec.europa.eu/economy_finance/eu/forecasts/2016_spring_forecast_en.htm

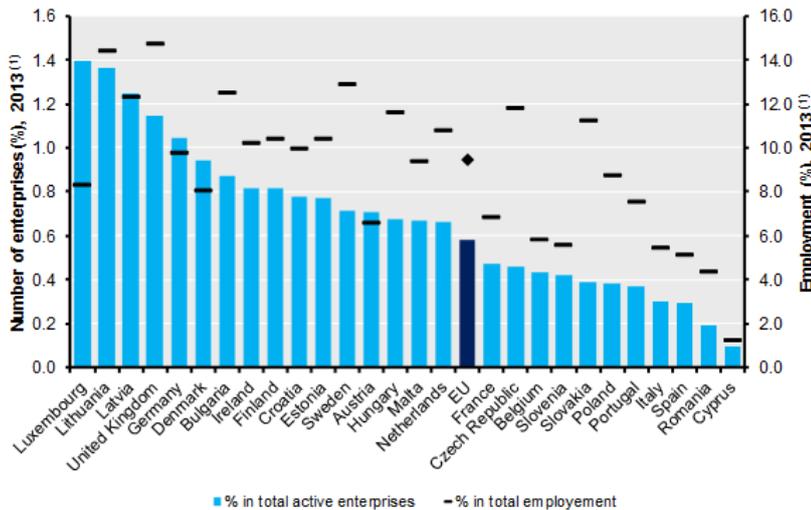
2. Eurostat data on high growth enterprises

In February 2016, Eurostat released provisional 2014 data on the **number of high growth enterprises** in Europe (growth of 10% or more in employment, on average per year, in the last three years). The number of high growth enterprises in the EU increased by 1.3% between 2013 and 2014 to reach a total of around 147,000 in 2014. The highest increases occurred in Cyprus (28.3%, though from a low base), Spain (24.2%), Poland (21.2%) and Malta (15.8%). Countries with the strongest decline in high growth enterprises in 2014

include Romania (-19.6%), the Netherlands (-18.6%), Finland (-11.7%) and Lithuania (-10.5%).

The 2013 data show Luxembourg, Lithuania and Latvia as the countries with the highest shares of high growth enterprises in all active enterprises, while Italy, Spain Romania and Cyprus have the lowest shares. Germany has the highest absolute number of high growth enterprises, followed by the UK. Lithuania and the UK have the highest shares of employment in high growth enterprises, Romania and Cyprus have the lowest.

Share of high growth enterprises (growth by 10% or more) in total active enterprises



Source: DG Research and Innovation - Unit for the Analysis and Monitoring of National Research Policies
 Data: Eurostat (SBS)
 Note: (1) IE: 2012; EU average does not include EL; elements of estimation were involved in the compilation of the data.

High growth enterprises (growth by 10% or more)

| | 2013 | 2014 | Growth rate (%) |
|-------------------|---------|---------|-----------------|
| EU ⁽¹⁾ | 145 199 | 147 095 | +1.3 |
| Cyprus | 46 | 59 | +28.3 |
| Spain | 8 712 | 10 816 | +24.2 |
| Poland | 7 758 | 9 401 | +21.2 |
| Malta | 203 | 235 | +15.8 |
| Hungary | 3 186 | 3 547 | +11.3 |
| United Kingdom | 24 435 | 26 785 | +9.6 |
| Croatia | 1 135 | 1 244 | +9.6 |
| Portugal | 2 902 | 3 122 | +7.6 |
| Denmark | 2 044 | 2 182 | +6.8 |
| Czech Republic | 4 470 | 4 682 | +4.7 |
| Luxembourg | 421 | 421 | 0.0 |
| France | 15 073 | 15 060 | -0.1 |
| Bulgaria | 2 854 | 2 826 | -1.0 |
| Italy | 11 703 | 11 412 | -2.5 |
| Austria | 3 065 | 2 968 | -3.2 |
| Slovakia | 1 561 | 1 511 | -3.2 |
| Belgium | 2 504 | 2 366 | -5.5 |
| Latvia | 1 208 | 1 132 | -6.3 |
| Germany | 30 987 | 29 009 | -6.4 |
| Slovenia | 570 | 532 | -6.7 |
| Sweden | 5 138 | 4 669 | -9.1 |
| Estonia | 612 | 550 | -10.1 |
| Lithuania | 2 151 | 1 926 | -10.5 |
| Finland | 2 333 | 2 060 | -11.7 |
| Netherlands | 6 946 | 5 656 | -18.6 |
| Romania | 1 319 | 1 061 | -19.6 |
| Ireland | 1 863 | : | : |

3. Times Higher Education Reputation ranking 2016

On 4 May 2016, *Times Higher Education* published the 2016 edition of the **World Reputation Ranking of higher education institutions**, which is based on a survey of over 10,000 academics. The US private universities Harvard, MIT and Stanford top the list, followed by the universities of Cambridge and Oxford in the United Kingdom (both ranked lower than in 2015). The other EU higher education institutions in the top 30 are Imperial College London, University College London and the London School of Economics. Peking University moved into the top 30 in 2016, and this brings the number of Asian institutions in the top 30 to 5 (the others being Tsinghua University in Beijing, University of Tokyo, Kyoto University and National University of Singapore). The majority of the most prestigious universities (18 out of 32) are, however, still US based.

| Rank | Title | Teaching | Research | Overall |
|------|---|----------|----------|---------|
| 1 | Harvard University United States of America | 100.0 | 100.0 | 100.0 |
| 2 | Massachusetts Institute of Technology United States of America | 70.0 | 89.4 | 84.1 |
| 3 | Stanford University United States of America | 70.9 | 81.8 | 78.8 |
| 4 | University of Cambridge United Kingdom | 73.0 | 71.9 | 72.2 |
| 5 | University of Oxford United Kingdom | 69.1 | 67.0 | 67.6 |

More info: <https://www.timeshighereducation.com/world-university-rankings>

4. Invest Europe data on venture capital investments

Venture Capital - Investments as % of GDP

2015 - Market statistics: Location of the portfolio company



Source: IMF, World Economic Outlook Database (GDP) / Invest Europe / PEREP_Analytics

Invest Europe (which until 1 October 2015 was the *European Venture Capital Association*) published its **Europe Private Equity 2015** report on 6 May 2016. It shows that in 2015, while total fundraising reached €47.6bn, venture capital fundraising increased by 8% to €5.3bn - the highest level since 2008.

The total amount of equity investment in European companies increased in 2015 by 14% to €47.4bn. Venture capital investment increased by 5% to €3.8bn. The amount of venture capital invested was greater across all stages, led by seed investments with an increase of 18%. Almost 2,800 companies received venture capital investments, a reduction of 12% on the previous year, which indicates a trend towards larger financing rounds.

More info: <http://www.investeurope.eu/media/476271/2015-European-Private-Equity-Activity.pdf>

With regard to venture capital investments as % of GDP (market statistics, based on the location of the portfolio company) Finland, Sweden and Ireland are the best performers, while Romania, the Czech Republic and Greece have the lowest levels of performance. Austria and Portugal have improved strongly in 2015 compared to the 2011-15 average.

When taking into account industry statistics (by location of private equity firm, data which were used in the Innovation Union Scoreboard before switching to market statistics in 2016), Denmark, Luxembourg and Finland perform best.

5. Mercer quality of living survey (cities)

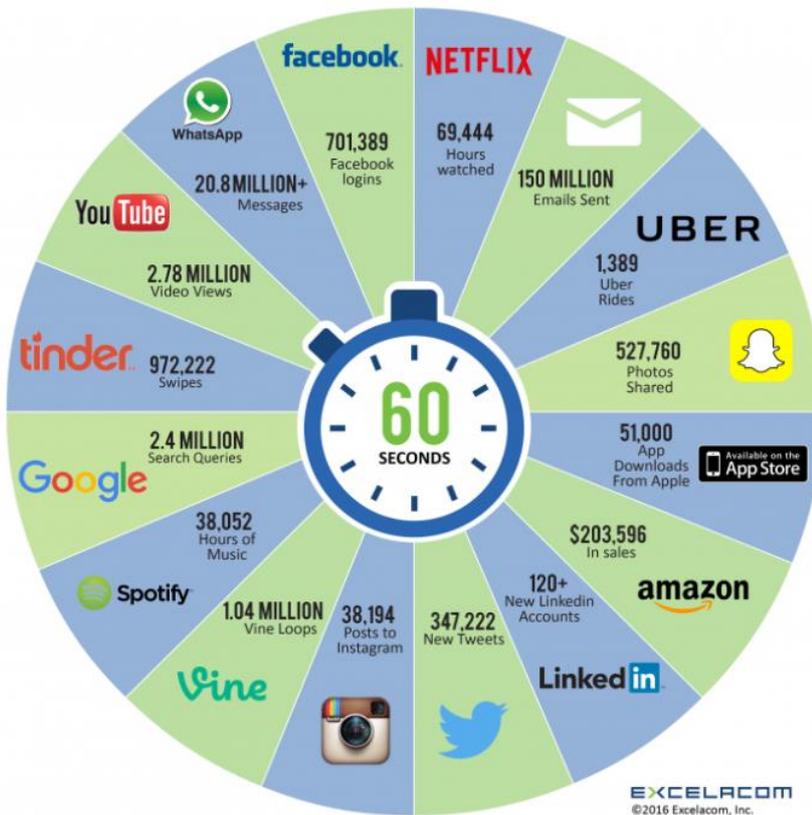
On 23 February 2016, *Mercer* published the 2016 edition of its annual **quality of living ranking** of cities. The ranking is based on a quality of living data collection and is designed to enable multinational companies and other employers to compensate employees when placing them on international assignments (hardship premium recommendations). Living conditions are analysed according to 39 factors and for 230 cities. Personal safety is one of the key factors determining expat quality of living. Other factors are medical and health considerations, schools and education, and the natural environment. The 2016 survey shows that Western

European cities top the quality of living ranking, with Vienna ranked number 1. Other EU cities in the top 10 are Munich (4), Düsseldorf (6), Frankfurt (7) and Copenhagen (9). The two Swiss cities Zurich (2) and Geneva (8) are also in the top 10. Prague (67) is the highest ranked city in Central and Eastern Europe. The highest ranked cities in North America, East Asia, and the Middle East and Africa region are respectively: Vancouver (5), Singapore (26) and Dubai (75). Minsk (190) is the lowest ranked European city on the list, while Baghdad (230) ranks lowest worldwide.

More info: <http://www.mercer.com/newsroom/western-european-cities-top-quality-of-living-ranking-mercero.html>

6. Excelacom graph on a minute on the Internet

2016 What happens in an INTERNET MINUTE?



On 29 February 2016 US consultancy *Excelacom* released the 2016 edition of its infographic 'What happens in an Internet Minute' showing the worldwide usage of various Internet related services during one minute.

All of the services listed, except Spotify (Sweden), are US based (all on the West coast, mostly in Silicon Valley, WhatsApp and Instagram are part of Facebook, Youtube belongs to Google/Alphabet).

The 2015 version of the graph (shown on the right) still included Skype as an additional Europe based service (Skype is headquartered in Luxembourg and its developers are mostly based in Estonia; it was bought by Microsoft in 2011).

Compared to 2015 Spotify (186% increase), Uber (100% increase) and Amazon (70 %) showed the strongest increase in usage.

The number of e-mails sent is on the other hand declining.

2015 results

What happens in an INTERNET MINUTE?



More info: <http://www.excelacom.com/resources/blog/2016-update-what-happens-in-one-internet-minute>

5. Miscellaneous results from national data sources

a) Spain: COTEC Report on research and innovation in Spain

The report from COTEC on research and innovation in Spain in 2016 shows a negative evolution of the main indicators of innovation in Spain since the 2009 crisis. On the other hand a COTEC index on the performance of the Spanish innovation system based on expert opinions shows that the index bottomed out in 2012 and has been increasing since.

According to the report, spending on R&D has decreased almost every year since 2009. In 2014, the last year for which final figures are available, total R&D spending was equal to 1.23% of Gross Domestic Product (GDP) and amounted to €12,821 million, showing a decrease of 1.5% in 2014. However, this rate of decline was lower than the rates of decline between in 2013 (2.6%) and 2012 (4.1%). Private sector spending fell by 1.8% with respect to 2013, while the government and higher education sectors both reduced spending by 1.1%, according to COTEC.

According to the report, total spending on R&D by Spanish companies fell for the sixth consecutive year in 2014 to 6,784 million euros, 1.8% less than in 2013, representing a decrease in business R&D spending of 16% from the peak reached in 2008. The private sector finances 47.1 % of R&D performed in Spain, compared to an EU average of 54% and of 60% for the OECD countries. The Spanish innovation system is characterized by a high share of business R&D performed by SMEs, which accounted for 54.4% of total business R&D spending in 2008, and 46.3% in 2014.

On the positive side the number of scientific papers with Spanish authors more than doubled from 40.000 in 2004

More info: <http://www.cotec.es/pdfs/COTEC-informe-2016.pdf>

b) Sweden: Stockholm tops the list of fast growing European cities

Sweden is one of the EU countries with the highest population growth rates. A positive natural change (surplus of births) plus a strong net migration are contributory factors. Population has grown in the recent past by around 100,000 (more than 1%) per year. A considerable part of Swedish population growth is hereby concentrated in the Stockholm region.

In October 2015, the Swedish Chamber of Commerce published the results of a study, which listed the cities in Europe forecast to grow fastest between now and 2020. Stockholm with an expected population growth of 11% (the municipality will increase from 912,000 to 1,012,000

More info: <http://www.thelocal.se/20151016/stockholm-is-fastest-growing-city-in-europe>

to more than 85.000 in 2014 and Spain now ranks 11th in the world. With regard to patents, there was a decline both in national patent applications and Spanish PCT patent applications. PCT patents grew strongly until 2010 and then gradually declined until 2014 to reach the levels of 2008. Applications for the protection of industrial designs on the other hand showed strong growth.

In 2014 in Spain, total employment in R&D was equal to 200,233 (full-time equivalents, FTE) of which 122,235 were researchers. This represents a decrease of 1.5% compared to the previous year, and places Spain 1.1 points below the European average in terms of number of researchers per thousand employees in 2014.

Two of the biggest problems facing the Spanish educational system are failure at school and early school leaving. The share of early school leavers in Spain is much higher than both the EU average and the average for OECD countries.

Social innovation has grown rapidly in Spain in the last five years, with the establishment of entities exclusively dedicated to the promotion and encouragement of social innovation, social investment funds, and consolidated platforms for new enterprises. However, the movement is still emerging and initiatives are modest. The three main challenges for social innovation in Spain are the financing of projects, the creation of strategic alliances and the development of public-private partnerships. Deficiencies are the absence of a regulatory framework conducive to innovation, and an education system that does not encourage innovation and critical thinking.

inhabitants) was first, followed by Copenhagen, Oslo, London and Helsinki. In November 2015, the Department for Growth and Regional Planning of the County of Stockholm forecast the population of the region of Stockholm to increase by 17% by 2024 to reach 2.58 million (from 2.2 million in 2015). The flipside of the growth is an increasing shortage of affordable properties on the housing market.

In April 2016 two Swedish entrepreneurs from Spotify wrote an open letter stating that the company's ability to attract the best talent in the world was endangered by the lack of affordable rental properties in the capital.

Calendar of data releases and indicator based publications

Update of: 25/5/2016 (grey= already published)

| 2016 | Eurostat data updates | Commission indicator based reports | Data and indicator based reports of other organisations |
|------------------|---|--|--|
| January | | | Transparency International Corruption Perception Index Bloomberg Innovation Index |
| February | 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 |
| March | 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 |
| April | Education headline indicators (LFS) | | |
| May | High tech trade (2015) Venture capital (2015) Education enrolment, graduates Knowledge-int. activities (2015) | Spring Forecast (ECFIN) Skills forecast (Cedefop) Europe 2020 publication (ESTAT) | Invest Europe 2015 European Private Equity Report Times Higher Ed. Reputations Ranking IMD World Competitiveness Yearbook |
| June | Education spending Employment high-tech (2015) HRST education inflows (2014) | | |
| July | IPR (Patents, 2013), Community Trademarks (2015), RC Designs (2015) | Innovation Union Scoreboard (GROW) | UNESCO UIS STI stats release |
| August | | | Academic Ranking of World Universities (Shanghai) |
| September | 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 |
| October | | | OECD STI Scoreboard (2-yearly) World Bank Doing Business |
| November | 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 |
| December | 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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