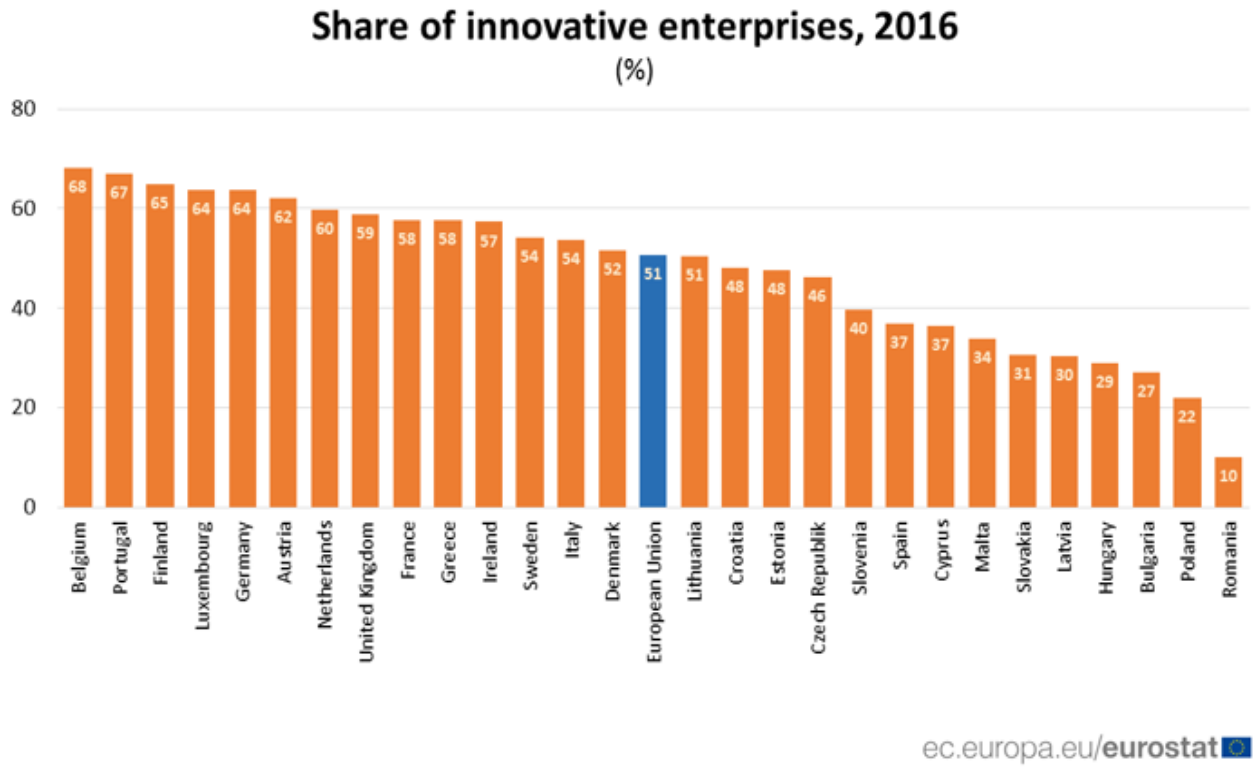
Issue March 2019

NEWSLETTER on STI Data and Indicators

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

1. Eurostat data on the Community Innovation Survey (CIS) 2016

On 12 March, Eurostat published the full results of the Community Innovation Survey 2016 (which was carried out in 2017). Key results were shown on the Eurostat website under *What's new*, including a graph on the share of innovative enterprises by Member State (see below). According to Eurostat, around half (51%) of EU enterprises with 10 or more employees reported innovation activities during the period 2014-2016, slightly more than in the period 2012-2014 (49%). The highest proportions of enterprises with innovation activity were recorded in Belgium (68% of enterprises), Portugal (67%), Finland (65%), Luxembourg (64%) and Germany (64%). The lowest shares were reported in Romania (10%), Poland (22%), Bulgaria (27%) and Hungary (29%). Particularly strong increases compared to the 2014 survey were reported for Estonia, Portugal, Finland and Croatia.



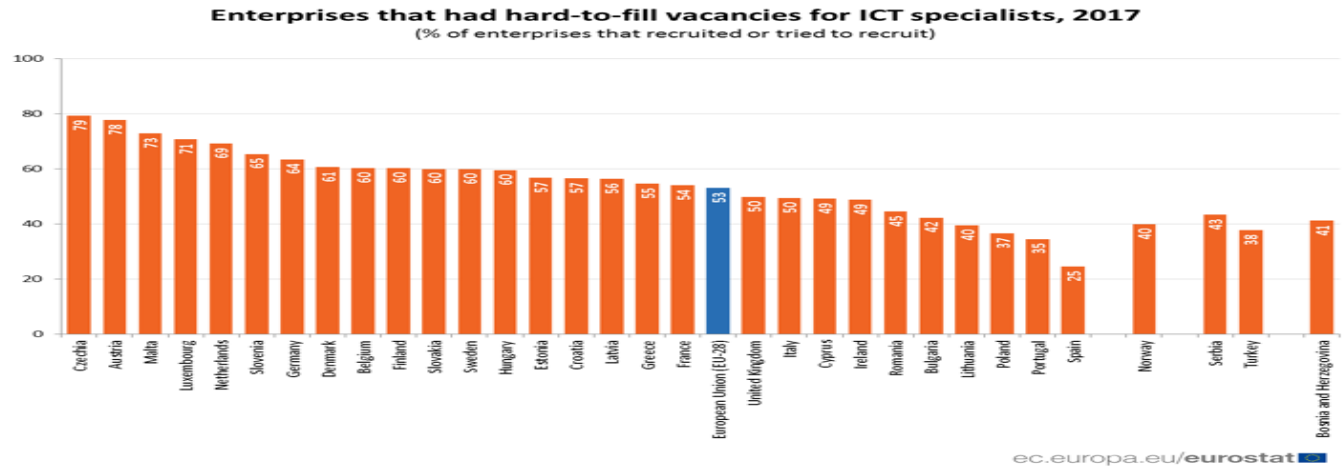
More info: https://ec.europa.eu/eurostat/web/products-eurostat-news/-/DDN-20190312-1?inheritRedirect=true&redirect=%2Feurostat%2Fnews%2Fwhats-new

2. Eurostat data on enterprises with vacancies for ICT specialists

On 27 March, Eurostat published a chart showing the share of enterprises that had hard to fill vacancies for ICT specialists. According to Eurostat during 2017, 9 % of EU enterprises recruited or tried to recruit ICT specialists and 5 % reported having hard-to-fill vacancies for jobs requiring relevant ICT skills. Over half (53%) of all enterprises that recruited or tried to recruit ICT specialists hence had difficulties in filling these vacancies.

Czechia (79 %) and Austria (78 %) were the EU Member States with the highest proportions of businesses finding it difficult to recruit ICT specialists in 2017. In contrast, the proportion was below 40 % in Poland (37 %), Portugal (35 %) and Spain (25 %).

During 2017, 10 % of EU enterprises provided professional training to their ICT specialists, and twice as many (20 %) provided ICT training for their other staff.

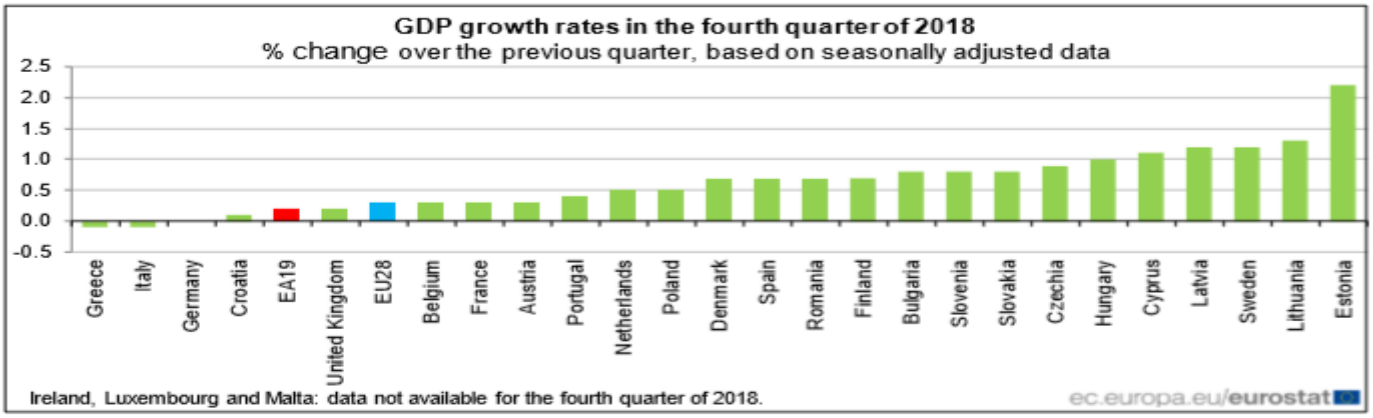


More info: https://ec.europa.eu/eurostat/web/products-eurostat-news/-/DDN-20190327-1?inheritRedirect=true&redirect=%2Feurostat%2F

3. Eurostat data on GDP growth rates, fourth quarter 2018

On 7 March 2019, Eurostat published GDP aggregates and employment estimates for the fourth quarter of 2018.

Compared to the previous quarter, GDP increased fastest in Estonia, Lithuania and Sweden, all countries with low third quarter growth rates (in Sweden Q3 growth was even negative). In Greece, on the other hand, the strong third quarter was one of the reasons why Q4 growth was negative. In Italy, a decline in Q4 followed a decline in Q3. With two consecutive quarters with negative growth, Italy was technically in recession. Germany was close to it, a decline in Q3 was followed by a stagnation in Q4. Croatia's economy is also decelerating, but still showing some slight growth.



More info: https://ec.europa.eu/eurostat/documents/2995521/9643458/2-07032019-AP-EN.pdf/dabf231d-dddd-4e9e-9812-12189a19871d

4. EPO patent data 2018

On 12 March, the European Patent Office (EPO) published results for the year 2018.

Patent applications at the EPO increased in 2018 by 4.6%, compared to a growth of 4.7% in 2017 and a decline by 0.6% in 2016.

47% of applications are filed by EPO countries. The leading EPO country is Germany (26 700 applications, + 4.7%), followed by France (10 300, -2.8%), the Netherlands (7 100, + 1.4%), UK (5 700, + 7.8%) and Italy (4 400, +0.9%). The EU countries with the strongest growth in patent applications are Lithuania (+54.2%) and Portugal (+46.7%).

The leading country as regards EPO patent applications is the US (43 600 applications, + 2.7%). Other important non-EPO applicant countries are Japan (22 600 applications, +3.9%), China (9 400, +8.8%) and South Korea (7 300, +19.0%). On a per capita basis Switzerland leads (956 applications per million inhabitants), followed by the Netherlands and Denmark.

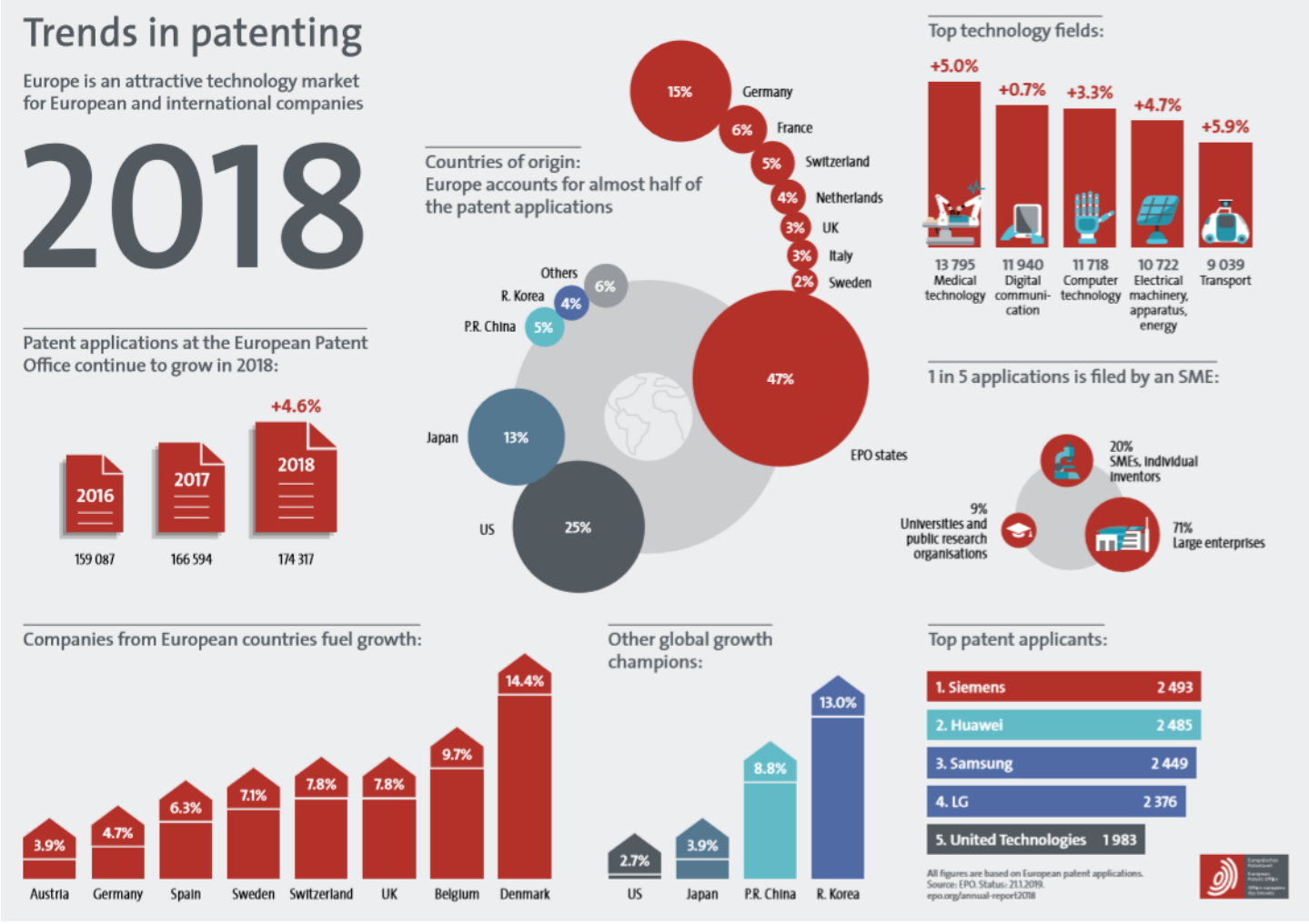
The top technology fields in 2018 were medical technology (13 800 applications, +5.0%), digital communications (11 900, +0.7%) and computer technology (11 700, +3.3%). The fields with the strongest growth were pharmaceuticals (+13.9%), chemical engineering (+12.4%), control (+12.2%) and biotechnology (+12.1%).

71% of patents were filed by large enterprises, 20% by SMEs and individual inventors and 9% by universities and public research organisations.

The largest applicant was the German company Siemens (2 493 applications), followed by Huawei (China), Samsung and LG (both South Korea). The other EU companies in the top 10 are Philips, Ericsson and Robert Bosch. The three US companies in the Top 10 are United Technologies, Qualcomm and General Electric.

Interestingly, while car companies are among Europe's largest R&D investors, no European automobile company is on the list of the top 50 patent applicants.

However, two research organisations CEA (France) and Fraunhofer (Germany) are among the top 50 applicants.



More info: https://www.epo.org/about-us/annual-reports-statistics/annual-report/2018/statistics.html

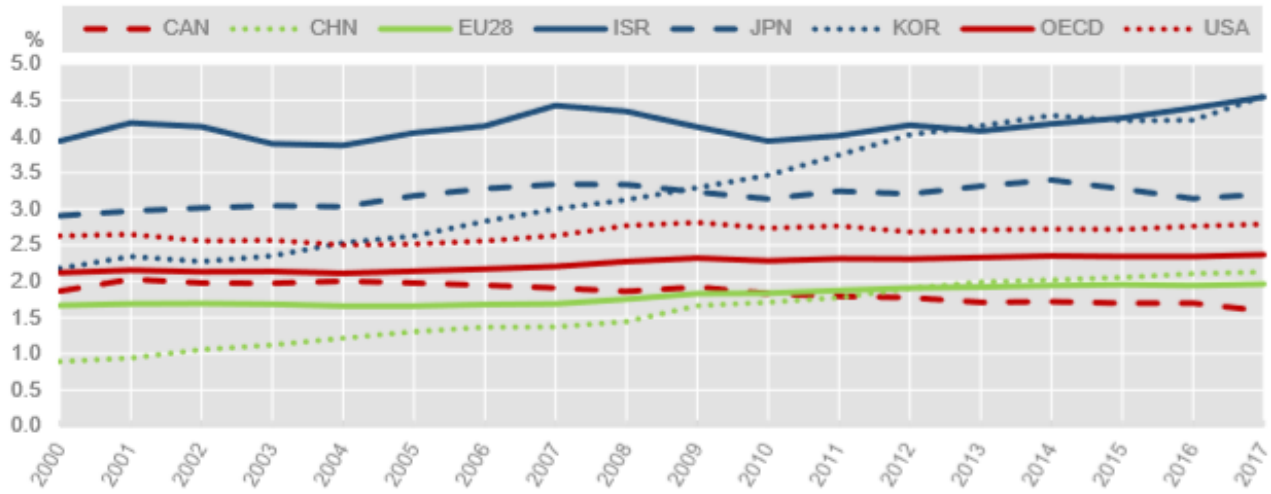
5. OECD update of Main Science and Technology Indicators

At the end of February, the OECD updated its *Main Science and Technology Indicators*.

Among the key figures updated is R&D intensity (R&D expenditure as a % of GDP). The two leading OECD countries for this indicator are Israel and South Korea, each with an R&D intensity of 4.55% in 2017. Japan (3.20%) and the US (2.79%) each had a higher R&D intensity than the EU (1.96% according to the OECD, 2.07% according to Eurostat). China has in recent years overtaken the EU (2.13% in 2017). The EU also performs below the OECD average of 2.37%. The data also show a shift to R&D performed by business, which now represents 70% of all R&D performed in OECD countries.

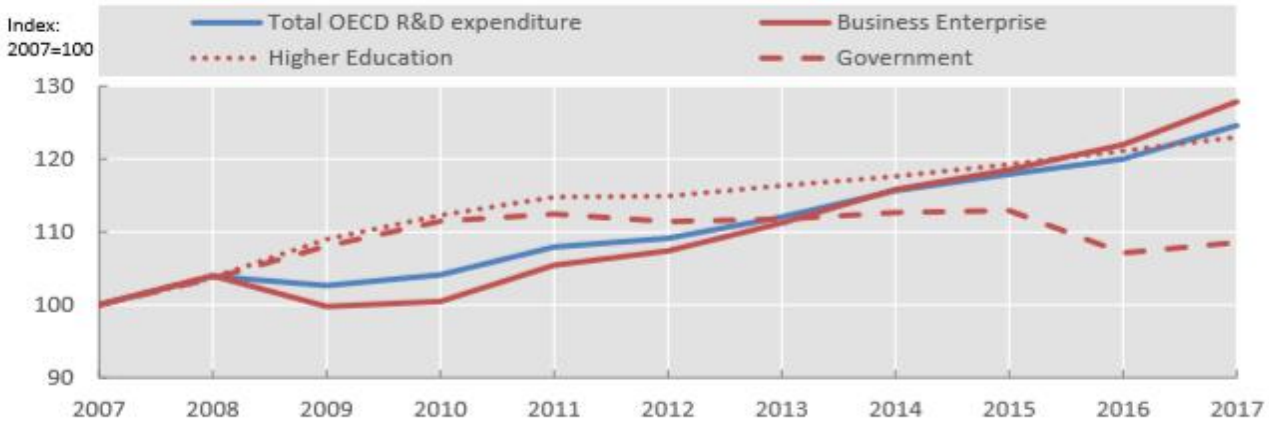
While R&D performed by business increased by 28% between 2007 and 2017, growth amounted to 23% for Higher Education and only 9% for the Government sector. As regards the number of researchers (full-time equivalents, FTE), the data show that the EU value has increased by 3.6% in 2017 to reach 1.96 million, compared to 1.37 million in the US (2016), 1.74 million in China (+2.9%), 0.66 million in Japan (+1.6%) and 0.38 million in South Korea (+6.0%).

R&D intensity: Gross Domestic Expenditure on R&D as a percentage of GDP, 2000-2017



Source: OECD Main Science and Technology Indicators Database, February 2019. http://oe.cd/msti

R&D expenditure trends in OECD countries, 2007-2017



Source: OECD Main Science and Technology Indicators (MSTI) Database, February 2019. http://oe.cd/msti

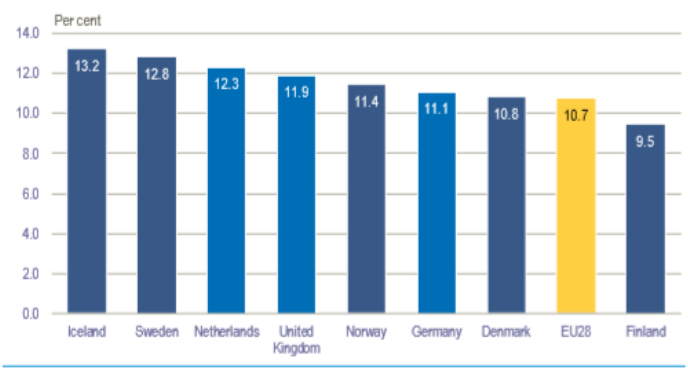
More info: http://www.oecd.org/sti/msti2019.pdf

6. Publication 'Scale-ups in the Nordics' by Nordic Innovation

In February 2019, the five statistical offices of the Nordic countries together with *Nordic Innovation* published '*Scale-ups in the Nordics-Statistical portrait 2008-2016'*, an indicator based overview on high-growth enterprises in Northern Europe.

The publication is based on Eurostat and national data. It contains a chart showing the share of high-growth enterprises (enterprises with at least 10 persons employed and an average annual growth in employment of 10% or more over a three year period). Iceland has the highest share of high-growth enterprises (13.2% in 2016) in the Nordics, followed by Sweden (12.8%), while Finland (9.5%) has the lowest share and is the only Nordic country below the EU average of 10.7%

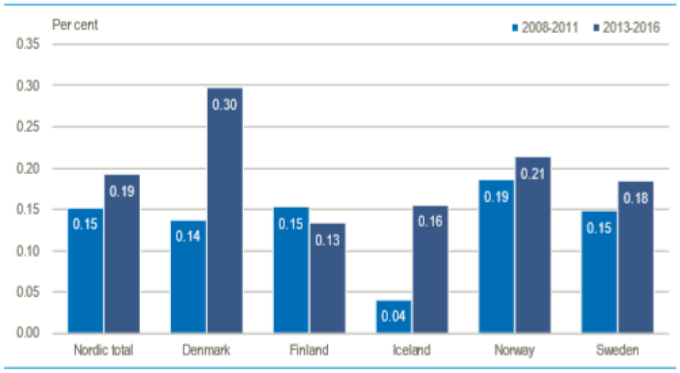
Share of high growth enterprises of total stock of enterprises with 10 or more full time employees in the business economy, 2016



Source: Eurostat: High Growth enterprises [bd_gpm_r2]

Another graph shows the share of scale-ups (defined in the publication as enterprises with 10 or more full-time equivalent employees and with a turnover of at least 2 million € at the beginning of the observation period and with an average annual growth of at least 20% over a three year period). As regards scale-ups, Denmark leads in the Nordics with 0.30% of enterprises in 2013-16, followed by Norway (0.21%) and Sweden (0.18%), while Finland has the lowest share (0.13%)
While the share quadrupled between the periods 2008-2011 and 2013-2016 in Iceland and doubled in Denmark, Finland is the only country, where it declined. Of the 3 000 Nordic scale-ups in 2013-16, 13 % had their main activity in manufacturing, 16% in construction and 21% in wholesale.

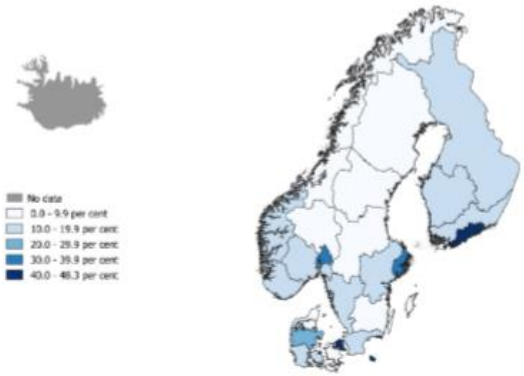
Scale-ups as share of total stock of enterprises within the non-financial business economy, start year of the growth period



National scale-ups broken down by regions in the start year of the growth period (2013-2016)

The scale-up enterprises are mainly located in the capital region of each country. Helsinki-Uusimaa has 48% of Finnish scale-ups, Stockholm region 45% of scale-ups of the country, Greater Copenhagen 40% and Oslo 38%.

In Nordic countries most scale-ups are part of a group (dependent enterprises), ranging from 78% of scale-ups in Sweden, 73% in Denmark and Norway and 67% in Iceland. Finland is the only Nordic country where most scale-ups are independent (only 43% dependent).



More info: http://norden.diva-portal.org/smash/get/diva2:1295424/FULLTEXT02.pdf

7. Miscellaneous results from national data sources

Italy: lowest number of births ever recorded

On 7 February 2019, the Statistical Office of Italy (ISTAT) published estimates of key demographic data for the country for the year 2018.
Every year since 2015 ISTAT has had to announce the lowest number of births ever recorded in Italy. This was again the case this year as the number of births declined in 2018 by 2% compared to the previous year, to 449 000. At 7.4 births per 1 000 persons Italy probably had the lowest crude birth rate in Europe in 2018 (among OECD countries only South Korea has a lower birth rate).
Net migration to Italy (about 190 000) somehow compensated for the birth deficit (-187 000). While there was a net influx of 260 000 foreigners, more Italians left the country (120 000) than returned (40 000). The population is estimated to have declined by 90 000 (partly as a result of register corrections), to reach 60.4 million, of which 5.2 million are foreigners.

More info: https://www.istat.it/en/archivio/226922

Switzerland: World's largest exporter of blood

Switzerland's export statistics inlcude some surprises. Firstly, Switzerland is the largest exporter of gold (refinery of imported gold) world wide. Its role in trading, vaulting and refining precious metals is also a key reason, why the Swiss share of medium-high and high-tech exports is below that of other innovation leaders. Switzerland is also the world's largest exporter of blood. This is mostly blood plasma and plasma-based products and included in the statistics on exports of pharmaceuticals (hence counted as high-tech exports). Blood, including its component plasma, is mostly collected in the US, where, unlike in many other countries, financial compensation of donors is allowed. The US exports 16 million litres of blood plasma per year. The main Swiss production site is in Berne (CSL Behring plant), where over 5 million litres of blood plasma are fractionated and transformed into different medical products. In 2018, Swiss blood exports increased by 3.4% (while gold exports declined) to reach nearly 26 bn €. The second largest blood exporter worldwide is Germany, whilst Ireland and Belgium are also among the top 5 exporters.

More info: http://www.worldstopexports.com/switzerlands-top-10-exports/

Die Top 10 Länder nach Export von Blut in 2017

#	Land	In Mrd. €	Weltmarktanteil
1	Schweiz	24,9	18,0 %
2	Deutschland	22,0	15,9 %
3	USA	18,0	13,0 %
4	Irland	17,6	12,7 %
5	Belgien	12,6	9,1 %
6	Großbritannien	8,6	6,2 %
7	Niederlande	6,9	5,0 %
8	Italien	5,6	4,0 %
9	Frankreich	4,8	3,5 %
10	Österreich	2,8	2,0 %

Quelle:
International Trade Centre (ITC).
Neue Zürcher Zeitung (NZZ).

Poland: EU's tallest building under construction

With 10 buildings having a height of 140 m or more, Warsaw currently ranks 4th among EU cities, after London (28), Paris (21) and Frankfurt (18), in terms of the number of tall buildings. The tallest building in Warsaw is still the Palace of Culture and Science (256 m), built in 1955, the 10th highest building in the EU. However, construction of the 310 m office building Varso Tower has started in 2017. When completed in 2020 it will be the EU's tallest building. In addition five other buildings with a height of more than 140 m will be completed in Warsaw by 2020. Warsaw willtherefore remain as one of the four EU cities (without the UK three) with the highest number of high rise buildings, ahead of Madrid, Milan and Rotterdam, which currently have six tall buildings (> 140 m) each and which will have seven each by the end of 2020.

More info: https://en.wikipedia.org/wiki/List_of_tallest_buildings_in_the_European_Union

Calendar of data releases and indicator based publications
Update of: 25/3/2019 (
grey= already published)

2019	Eurostat data updates	Commission indicator based reports	Data and indicator based reports of other organisations
January			Bloomberg Innovation Index INSEAD Global Talent Competitiveness Index
February	Community Innovation Survey (2016 data) Tertiary attainment (2018, prov.) High growth enterprises data (provisional, 2017)	Winter forecast (ECFIN)	OECD MSTI statistics (R&D expenditure)
March	R&D expenditure data update (revision of preliminary 2017 results)		European Patent Office , annual results OECD R&D Statistics OICA world motor vehicle production data
April	Education headline indicators (LFS, 2018 results)		Reuters Most Innov. Institutions Internet Minute (Excelacom/Allaccess)
May	High-tech trade (2018) Education enrolment, graduates Knowledge-int. activities (2018)	Spring Forecast (ECFIN) DESI index (CNECT)	Invest Europe European Private Equity Report IMD World Competitiveness Yearbook
June	Education spending Employment high-tech (2018) HRST education inflows (2017)	European Innovation Scoreboard (GROW/RTD) Regional Innovation Scoreboard (GROW/RTD)	Times Higher Ed. Reputations Ranking IRF Industrial robot sales
July			UNESCO UIS STI stats release WIPO/Cornell/INSEAD Global Innovation Index
August			Academic Ranking of World Universities (Shanghai)
September	Final high growth ent. data (2017) Economic data on high-tech (2018)	Europe 2020 publication (ESTAT)	OECD Education at a Glance
October	GBARD (2018 preliminary)	Education Monitor (EAC)	WEF Global Competitiveness Index World Bank Doing Business
November	R&D intensity (2018 preliminary, 2017 final) Knowledge-int. activities (2018) Employment high-tech (2018)	Autumn Forecast (ECFIN) Annual Growth Survey (ECFIN) Draft Joint Employment Report (EMPL)	Top500.org: Top 500 Supercomputer list OECD STI Outlook (2-yearly)
December	ICT household data (2019) ICT enterprise data (2019) HRST stocks (2018)	Industrial R&D Investment Scoreboard (JRC)	WIPO World Intellectual Property Indicators UNDP/MBRF Global Knowledge Index

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