Issue August 2018

NEWSLETTER on STI Data and Indicators

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

1. Eurostat data on trade balance

On 27 August, *Eurostat* published a graph on the EU trade balance in goods and services 2000-2017.
Between 2000 and 2008 the trade balance of goods and services was negative in most years (with a record € -150 bn in 2008). In the period 2009-2011 exports and imports of goods and services were almost balanced. After 2012, however, every subsequent year saw a new record in the EU trade surplus, with 2017 reaching a surplus of € 325 bn.
Regarding trade in goods, there was a continuous deficit in trade between the EU and the rest of the world between 2000 and 2012. However, since 2013 (€ 42 billion) a surplus was recorded in each year, with an upward trend and in 2017 the surplus reached € 137 bn.
Regarding trade in services between the EU and the rest of the world, there was a continuous and growing surplus between 2000 and 2017. Whereas in 2000 the surplus for services stood at € 15 bn, it reached € 188 bn in 2017.

In 2017 the EU country with the biggest trade surplus for goods and services (in € bn) was Germany (244.5), followed by Ireland (89.3), the Netherlands (79.1) and Italy (51.8). Only 6 EU Member States had a trade deficit in 2017: The United Kingdom (-29.4), France (-21.7), Romania (-4.0), Greece (-0.9), Cyprus (-0.4) and Latvia (-0.4). Of the countries covered by Eurostat Turkey had the biggest trade deficit in 2017 (-34.3).
Data from the *United States Census Bureau* furthermore show for the US, for the year 2017, a goods trade deficit of US$ 808 (€ 715 bn) and a services trade surplus of US$ 255 bn (€ 226 bn), which resulted in a goods and services trade deficit of US$ 552 (€ 489 bn), the largest in the world.
Data for China (from IMF) show for 2017 a goods trade surplus of € 397 bn and a services trade deficit of € 221 bn (UNCTAD data for 2016). China has the highest goods and services trade surplus after Germany.

More info: https://ec.europa.eu/eurostat/web/products-eurostat-news/-/WDN-20180827-1?inheritRedirect=true&redirect=%2Feurostat%2Fnews%2Fwhats-new

2. Eurostat data on GDP growth

On 15 August 2018, *Eurostat* published GDP growth rates for the second quarter of 2018.
Compared with the same quarter of the previous year growth (in %) was strongest in Poland (5.0), Hungary (4.4), Latvia (4.2) and Romania (4.2). However, no results for Q2 were available for the high growth countries Ireland and Malta. EU countries with the slowest growth were Denmark (0.8), Italy (1.1) and the UK (1.3). Compared to the previous quarter, Romania (1.4), Slovakia (1.0) and Sweden (1.0) had the strongest growth, while growth was weakest in France (0.2) and Italy (0.2).
While quarter on quarter growth rates fluctuated strongly in most Member States, Ireland shows a clear deceleration of growth in recent quarters, while Sweden shows some acceleration.

Growth rates of GDP in volume
(based on seasonally adjusted* data)

	Percentage change compared with the previous quarter				Percentage change compared with the same quarter of the previous year			
	2017		2018		2017		2018	
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
EA19	0.7	0.7	0.4	**0.4**	2.8	2.8	2.5	**2.2**
EU28	0.7	0.6	0.4	**0.4**	2.8	2.6	2.4	**2.2**
Member States								
Belgium	0.2	0.5	0.3	**0.3**	1.6	1.9	1.5	**1.3**
Bulgaria	0.9	0.7	0.9	**0.8**	3.9	3.5	3.6	**3.4**
Czech Republic	0.5	0.7	0.5	**0.5**	5.1	5.0	4.2	**2.3**
Denmark	-0.8	0.9	0.4	**0.3**	1.1	1.3	-0.6	**0.8**
Germany	0.6	0.5	0.4	**0.5**	2.7	2.8	2.0	**1.9**
Estonia	0.1	2.1	-0.1	**:**	4.2	5.1	3.8	**:**
Ireland	4.5	2.8	-0.6	**:**	13.0	5.4	10.0	**:**
Greece	0.5	0.2	0.8	**:**	1.5	2.0	2.3	**:**
Spain	0.7	0.7	0.7	**0.6**	3.1	3.1	3.0	**2.7**
France	0.7	0.7	0.2	**0.2**	2.7	2.8	2.2	**1.7**
Croatia	0.6	0.0	0.2	**:**	3.1	2.3	1.5	**:**
Italy	0.3	0.3	0.3	**0.2**	1.7	1.6	1.4	**1.1**
Cyprus	1.0	1.0	1.0	**0.8**	3.9	4.0	4.0	**3.9**
Latvia	1.5	0.3	1.5	**0.8**	6.2	4.8	4.8	**4.2**
Lithuania	0.5	1.4	0.9	**0.9**	3.6	3.8	3.6	**3.7**
Luxembourg	1.8	0.1	2.0	**:**	3.2	1.8	5.1	**:**
Hungary	1.0	1.3	1.2	**0.9**	4.3	4.9	4.7	**4.4**
Malta	2.2	-0.2	0.6	**:**	7.7	4.7	4.2	**:**
Netherlands**	0.6	0.9	0.6	**0.7**	3.0	2.9	3.0	**2.7**
Austria	0.7	0.8	0.9	**0.5**	3.4	3.5	3.4	**3.0**
Poland	1.4	1.0	1.6	**0.9**	5.5	4.4	5.0	**5.0**
Portugal	0.6	0.7	0.4	**0.5**	2.4	2.4	2.1	**2.3**
Romania	2.2	0.3	0.1	**1.4**	8.4	6.6	4.3	**4.2**
Slovenia	1.1	1.9	0.6	**:**	5.0	6.0	5.0	**:**
Slovakia	0.9	0.9	1.0	**1.0**	3.5	3.6	3.7	**3.9**
Finland	0.3	0.8	1.2	**0.5**	2.4	2.8	3.0	**2.9**
Sweden	0.7	0.8	0.8	**1.0**	2.6	2.9	3.3	**3.3**
United Kingdom	0.4	0.4	0.2	**0.4**	1.7	1.3	1.2	**1.3**
Other countries								
Iceland	3.1	0.6	1.1	**:**	3.4	1.3	5.2	**:**
Norway	0.7	-0.3	0.6	**:**	3.6	1.6	2.1	**:**
Switzerland	0.7	0.6	0.6	**:**	1.2	2.0	2.4	**:**
United States	0.7	0.6	0.5	**1.0**	2.3	2.5	2.6	**2.8**

: Data not available.
* The seasonal adjustment does not include a calendar adjustment for Slovakia and Iceland.
** Percentage change compared with the same quarter of the previous year calculated from calendar adjusted data.

More info: https://ec.europa.eu/eurostat/documents/2995521/9105264/2-14082018-BP-EN.pdf/e28c60ea-1ad0-47fd-b7e1-668cdb9ba016

3. Shanghai Academic Ranking of World Universities 2018

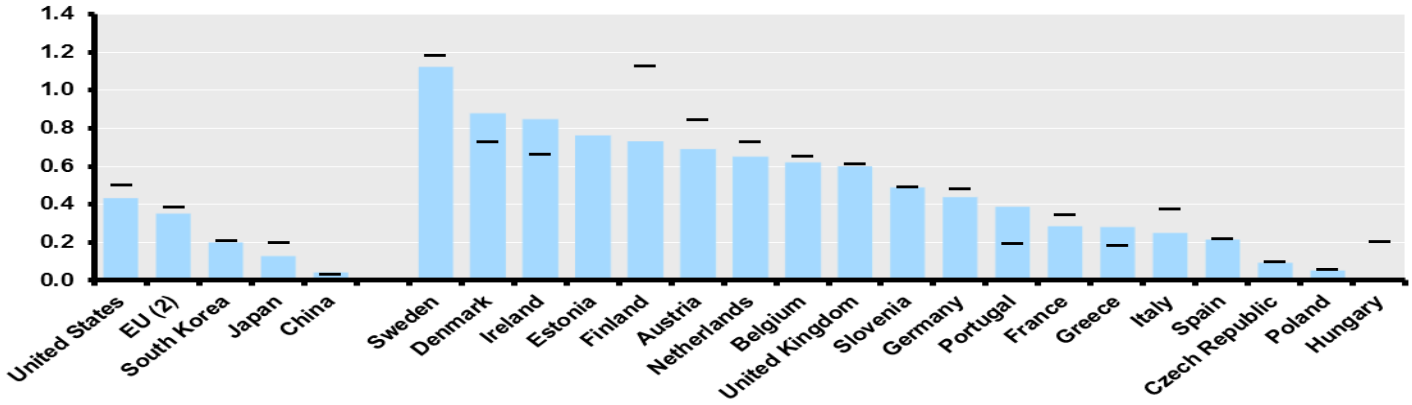
On 15 August, the Shanghai Ranking Consultancy released the 2018 edition of its annual **Academic Ranking of World Universities**. This ranking has been carried out since 2003 and was originally commissioned by the Chinese government to monitor the planned rise of key Chinese universities (Beijing U and Tsinghua).

The number of Chinese universities in the top 500 has more than tripled since 2005 to reach 62 (of which 11 are in Taiwan and Hong Kong), while the number of US and Japanese institutions has decreased notably. The number of top ranked EU universities has also declined.

Sweden, Denmark and Ireland are the EU Member States with the highest number of top ranked institutions per million inhabitants. The highest ranked EU university is Cambridge (rank 3). Outside the UK, the university of Copenhagen (29) ranks highest in the EU.

EU Member States with no university in the top 500, but institutions in the top 1000 include Cyprus, Croatia, Lithuania and Luxembourg with one university each, Slovakia and Romania with two each and Hungary with five.

Number of top 500 universities in Shanghai ranking per million inhabitants, 2010 (-) and 2018

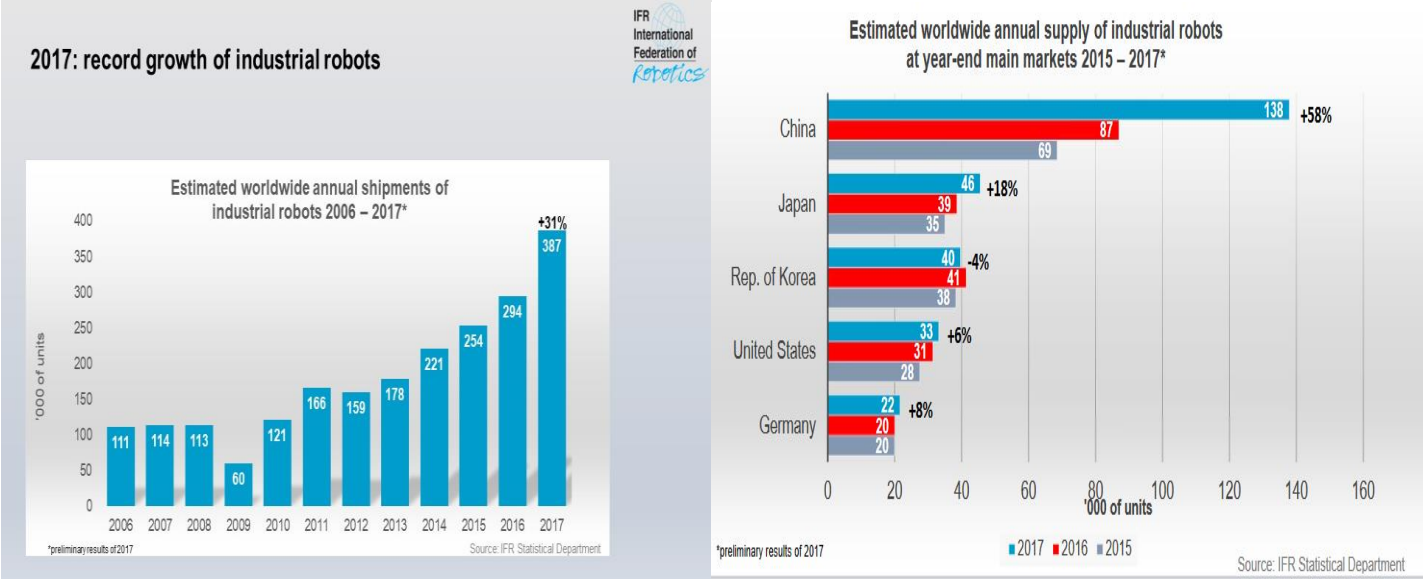


Country/Region	Number of top 500 universities in 2018 (change to 2017/2005)		Number of top 100 universities in 2018 (change to 2017/2005)		Top ranked university (Rank)
UK	39	(+1/-1)	8	(-1/-3)	U Cambridge (3)
Germany	36	(-1/-4)	4	(-/-1)	U Heidelberg (47)
France	19	(-1/-2)	3	(-/-1)	Sorbonne (Paris) (36)
Italy	15	(-1/-8)	0	(-/-1)	U Milan (151-200)
Netherlands	11	(-1/-1)	4	(-/+2)	U Utrecht (51)
Sweden	11	No change	3	(-/-1)	Karolinska (44)
Spain	10	(-1/+1)	0		U Barcelona. (151-200)
Belgium	7	No change	2	(-/+2)	U Ghent (61)
Austria	6	(+2/-)	0	(-/-1)	U Vienna (151-200)
Denmark	5	No change	2	(-/+1)	U Copenhagen (29)
Portugal	4	(-1/+3)	0		U Lisbon (151-200)
Finland	4	(-1/-1)	1		U Helsinki (57)
Ireland	4	(+1/+1)	0		Trinity College (151-200)
Greece	3	(-/+1)	0		National U Athens (301-400)
Poland	2	(-/-1)	0		Warsaw U (301-400)
Slovenia	1	(-/+1)	0		U Ljubljana (401-500)
Czech Republic	1	No change	0		Charles U Prague (201-300)
Estonia	1	(-/+1)	0		University of Tartu (301-400)
EU 28	**179**	**(-3/-10)**	**27**	**(-1/-4)**	**U Cambridge (3)**
USA	139	(+4/-29)	46	(-2/-7)	Harvard U (1)
China	62	(+5/+44)	3	(+1/+3)	Tsinghua U (45)
Japan	16	(-1/-18)	3	(-/-2)	Tokyo U (22)
South Korea	10	(-2/+2)	0		Seoul National U (101-150)

Source: DG Research and Innovation - Unit for the Analysis and Monitoring of National Research and Innovation Policies
Data: Shanghai rankings (http://www.shanghairanking.com/)

More info: http://www.shanghairanking.com/

4. IRF Robot Statistics



On 20 June, the *International Federation of Robotics (IRF)* released data on industrial robot sales in 2017. According to IRF, sales increased in 2017 by 31% to reach 387 000 industrial robots. China saw the largest growth (58%), with sales amounting to 138 000 units in 2017, one third of worldwide sales. Sales in Japan, the second largest market, increased by 18% to 46,000 units. Sales in South Korea, ranked third (and leading in robots/employee), declined by 4%. Sales in the US, the fourth biggest market, increased by 6 percent to 33,000 robots. Sales in Germany, the biggest market in the EU, grew by 8 percent to 22,000 robots. Italy (+19%) and France (+16%) are two other EU Member States among the world's 10 largest robot markets, which include also Taiwan (+44%), Vietnam, which has a very rapid growth (+410%), and Mexico (+7%). About one third of robot supply in 2017 was to the automotive industry (125,000 units, +21%), and another third was to the electronics industry (116 000, +27%). The operational stock of industrial robots is estimated to have reached 2.06 million in 2017 (of which about half a million are in Europe), nearly twice the 2010 figure (1.06 million) and is expected to grow to over 3 million by 2020.

Many of the largest industrial robot producers are based in Japan, with Fanuc, which claims to have installed 400,000 industrial robots worldwide, in the lead, followed by Yaskawa (360,000) and Mitsubishi (80,000). In Europe two important robot manufacturers are headquartered in Switzerland: ABB, created in 1988 by a merger of Swedish company Asea and Swiss company BBC, and Stäubli (Staubli) a company, which was founded already in 1892. With 300,000 units installed worldwide and with sales of € 7 bn in 2016, ABB is, according to Statista, the world's largest robot manufacturer in terms of turnover.
Kuka, headquartered in Augsburg/Bavaria, is the only large industrial robot manufacturer based in the EU. However, in 2016, Kuka was acquired by the Chinese electric appliance manufacturer Midea. Another German company, Dürr (based in Stuttgart). has a turnover of over € 0.5 bn the field of industrial robotics.

More info: https://ifr.org/ifr-press-releases/news/industrial-robot-sales-increase-worldwide-by-29-percent

5. People

Aileen Lee

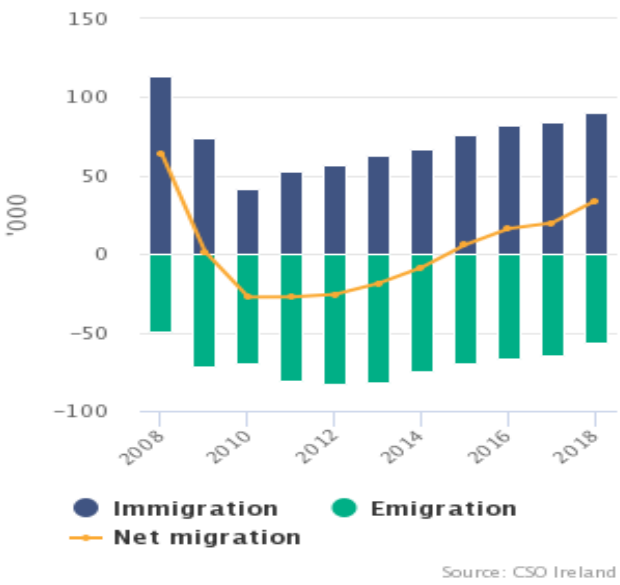
American seed investor Aileen Lee (*1970) is credited with having coined (or at least popularised) the investment term 'unicorn'. In 2013 she analysed the start-up and tech ecosystem and spotted a rapidly expanding group of start-ups valued at more than US $1 bn, which she called 'unicorns' due to their 'rarity' (see also SRIP 2018 Report of RTD, page 253). She published her findings in the TechCrunch Article *'Welcome to the Unicorn Club: Learning from Billion-dollar Start-ups*'.
In 2015 *Bloomberg Business* coined the term '*decacorn*', for a unicorn with a valuation of at least $ 10 bn. In 2016 yet another term came up, '*soonicorn*' (popular especially in media in India) for a company that is expected to reach unicorn status soon.

6. Miscellaneous results from national data sources

Ireland: Net migration increases, population grows

On 28 August, the Central Statistical Office of Ireland (CSO), published population and migration estimates for the year ending April 2018. Compared to the year before immigration increased, while emigration decreased. Net migration thus grew sharply. For the first time since 2009 there were more Irish nationals returning than leaving the country. Net inward migration among non-Irish nationals increased from 23,200 in 2017 to 33,900 in 2018. Non-Irish nationals from outside the EU accounted for 30,900 (34.2%) of total immigrants and 10,000 (17.8%) of total emigrants. 20,100 immigrants arrived from the UK while only 11,400 emigrants left Ireland to live in the UK. In April 2018, there were 593,600 non-Irish nationals resident in Ireland, accounting for 12.2% of the total population.
The number of births in the period was 61,200, twice as high as the the number of deaths (30,700), resulting in a natural increase in the population of 30,500. The combined effect of natural increase and positive net migration resulted in an overall increase in the population of 64,500, bringing it to 4.86 million in April 2018.

Figure 1 Migration



Source: CSO Ireland

More info: https://www.cso.ie/en/releasesandpublications/er/pme/populationandmigrationestimatesapril2018/

Slovenia: Fewer enterprises with innovation activities

On 26 April 2018, the Statistical Office of Slovenia published data on innovation activities in enterprises.

The data show fewer innovation active enterprises in the period 2014–2016 compared to 2012–2014. The share of enterprises with innovation activities decreased from about 46% in 2012-14 to 40% in 2014-16. While the share of enterprises with only technological innovation was nearly stable (about 11%), the share of enterprises with only non-technological innovation declined from 12.8% to 8.5%. Small enterprises (10-49 employees) had the lowest share of innovation active enterprises (34%), while 56% of the medium sized enterprises and 83% of large enterprises (250+ employees) were innovation active in the period 2014-16.

Innovation activity of the enterprises, Slovenia

	2012–2014	2014–2016
	number	
Enterprises - total	4,157	4,440
Enterprises with innovation activity	**1,906**	**1,767**
only technological	457	503
only non-technological	534	379
technological and non-technological	915	885
Non-innovative enterprises	**2,251**	**2,673**

Source: SURS

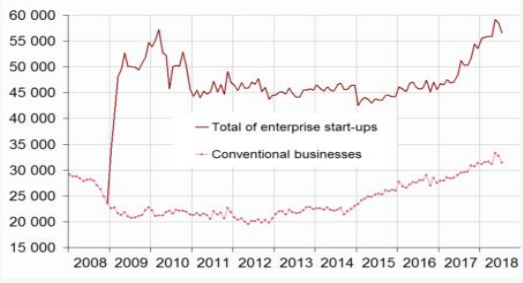
More info: http://www.stat.si/StatWeb/en/News/Index/7359

France: Number of business start-ups down

On 24 August 2018, the French Statistical Office (INSEE) published July results on the number of business start-ups.

According to INSEE in July 2018, the number of business births for all enterprises dropped once again (−3.3% after −1.1% in June, seasonally and working-day adjusted). Conventional businesses start-ups shrunk by 3.9% and micro-entrepreneurs' registrations by 2.5%. However, these short term trends should not be over-interpreted, since rates were still clearly higher than in the years before and close to the peak reached in 2010 and there has been a clear upward trend since 2015.

Graph1 – Monthly business start-ups (SA-WDA *)



* Seasonally and working-day adjusted data

Source: INSEE, REE (Sirene)

More info: https://www.insee.fr/en/statistiques/3601588

Calendar of data releases and indicator based publications
Update of: 30/8/2018 (grey= already published)

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

Contact for more information: Richard Deiss (unit A4, Tel 64881), Dermot Lally (55614)