Issue May 2018

NEWSLETTER on STI Data and Indicators

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

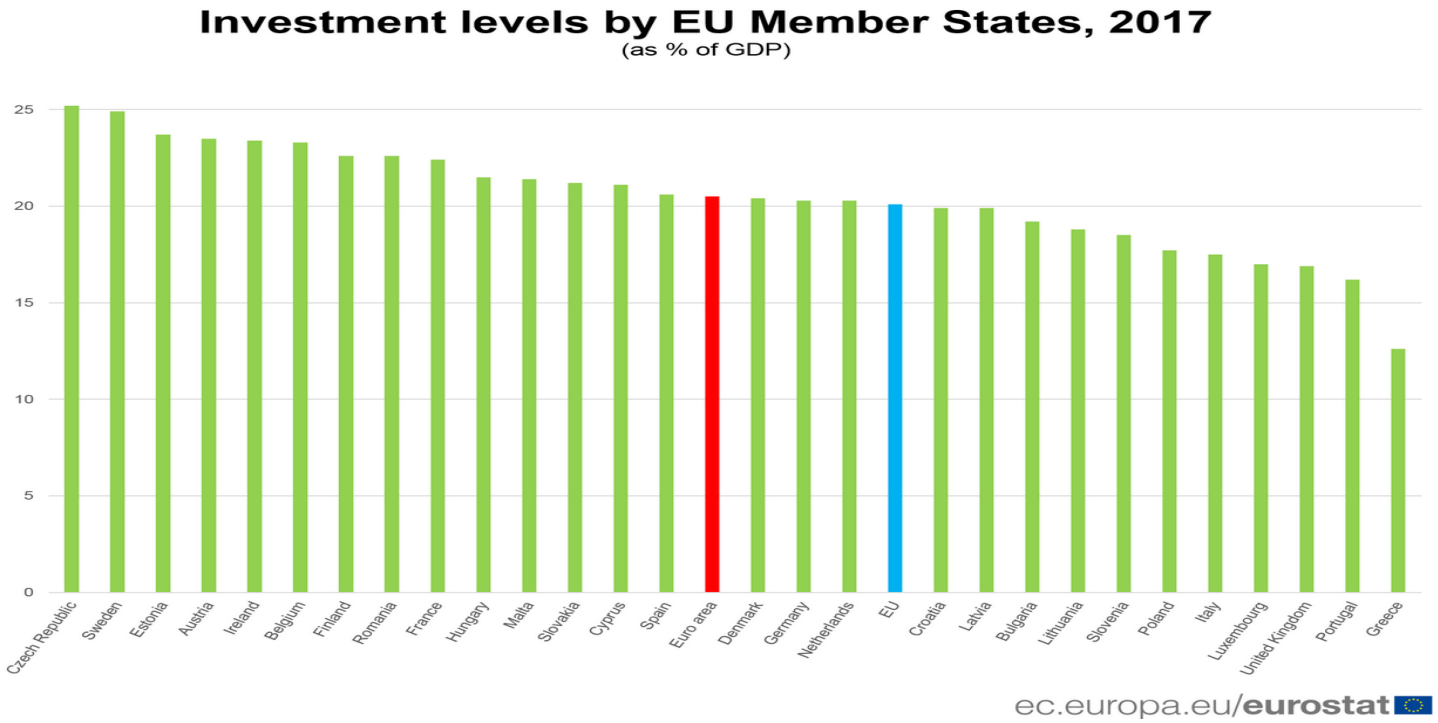
1. Eurostat data on investment levels in EU Member States

On 14 May, Eurostat published data on investment levels in the EU Member States.

According to Eurostat, in 2017 total investment from the public and private sectors by EU Member States amounted to about €3100 billion, or 20.1% of GDP, compared with 22.4% in 2007, just before the economic crisis. Construction accounted for about half of these investments followed by machinery, equipment & weapons systems (31%) and intellectual property products (19%). The intellectual property products category has shown the largest increase in investment in the last decade.

In 2017, the Czech Republic had the highest investment level of all EU countries (25.2% of GDP), followed by Sweden (24.9%). Estonia (23.7%), Austria (23.5%), Ireland (23.4%), Belgium (23.3%), Finland and Romania (both 22.6%) and France (22.4%). The lowest ratio of investment to GDP was recorded by Greece (12.6%), followed by Portugal (16.2%), the United Kingdom (16.9%), Luxembourg (17.0%), Italy (17.5%) and Poland (17.7%).

Between 2007 and 2017 the ratio of investment to GDP decreased in 24 Member States, with the strongest declines in Latvia (19.9% in 2017 compared to 36.4% in 2007, or -16.5 pp), Greece (-13.4 pp), Estonia (-12.9 pp), Romania (-12.5 pp), Spain (-10.4 pp) and Slovenia (-10.3 pp).The main factor behind that was a decline in construction (decline by 10 pp in several countries).
On the other hand, the ratio increased slightly in the same period in Sweden (from 23.9% of GDP in 2007 to 24.9% in 2017, or +1.0 pp), Austria (+0.6 pp) and Germany (+0.2 pp), while remaining almost stable in Belgium (+0.1 pp).



More info: http://ec.europa.eu/eurostat/web/products-eurostat-news/-/DDN-20180514-1?inheritRedirect=true&redirect=%2Feurostat%2Fnews%2Fwhats-new

2. Eurostat data on employment in manufacturing

The Eurostat Labour Force Survey shows an increase in employment in manufacturing in the period 2010-2016, after a long decline in the preceding years. While total employment in manufacturing in the EU increased from 2010 to 2016 by 2.3% (0.75 million), there are big differences between sectors.

Although there was an overall decline in employment in low-technology sectors, some low-tech sectors such as food products (with an employment of 4.6 million the largest sector within manufacturing), beverages, and leather and related products showed an increase. Employment in medium-low technology sectors declined with the exceptions of rubber and plastic products and the repair and installation of machinery and equipment. Employment increased in all medium-high technology sectors with the exception of chemicals and chemical products. Motor vehicles (+20.0%) and machinery and equipment (+16.3%) are the sectors with the strongest growth in employment. Employment also expanded in all of the high-tech sectors (pharmaceuticals, computer, electronic and optical products, air & spacecraft).

The manufacturing sector accounts for 15.4 % of total employment in the EU. The Member States with the highest shares are the Czech Republic (27.8%) and Slovenia (25.2%) and those with the lowest shares are Cyprus (7.1%) and Luxembourg (4.2%). Within manufacturing specific low-tech sectors are over-represented in some Member States, such as food products in Greece and Cyprus, wearing apparel in Bulgaria and Romania, leather and related products in Portugal, wood and wood products in Latvia and Estonia, paper and paper products in Finland and Sweden. Ireland shows high shares of manufacturing employment in high-tech sectors such as pharmaceuticals, and computer and electronic products.

Low tech / Medium-low tech / Medium-high tech / High-tech	EU employment in Manufacturing sectors(C) (thousand persons)			Employment by sector as % of total employment in manufacturing		Sectors employment as share of total employment in manufacturing in Member States in 2016 (%)			
	2010	2016	change (%)	2010	2016	Highest shares		Lowest shares	
Manufacturing (manufacture of..)	**33 766**	**34 511**	**2.3**	**100**	**100**	**CZ (27.8)**	**SI (25.2)**	**CY (7.1)**	**LU (4.2)**
Food products	4 319	4 599	6.5	12.8	13.3	EL (33.6)	CY (32.6)	SK (7.6)	SI (6.3)
Beverages	448	457	2.0	1.3	1.3	MT (6.7)	CY (3.9)	NL (0.9)	SE (0.7)
Tobacco products	60	54	-9.0	0.2	0.2	EL (0.9)	BE (0.6)	IT (0.1)	FR (0.1)
Textiles	731	645	-11.7	2.2	1.9	LU (7.3)	PT (5.9)	HR (0.8)	IE (0.7)
Wearing apparel	1 348	1 171	-13.2	4.0	3.4	BG (21.1)	RO (13.2)	NL (0.4)	SE (0.3)
Leather and related products	445	501	12.6	1.3	1.4	PT (7.3)	RO (4.8)	DE (0.3)	NL (0.3)
Wood and of products of wood and cork	1 141	1 029	-9.8	3.4	3.0	LV (21.2)	EE (15.8)	NL (1.6)	DE (1.4)
Paper and paper products	677	628	-7.3	2.0	1.8	FI (5.3)	SE (5.1)	IE (0.8)	RO (0.5)
Printing / Reproduction of recorded media	1 026	821	-20.0	3.0	2.4	MT (5.9)	CY (5.4)	BG (1.2)	RO (0.6)
Coke and refined petroleum products	221	188	-14.9	0.7	0.5	BE (1.3)	EL (1.2)	DE (0.3)	CZ (0.3)
Chemicals and chemical products	1 363	1 337	-1.8	4.0	3.9	BE (8.1)	NL (5.9)	HR (2.1)	IE (1.6)
Basic pharmaceutical prod. and preparations	812	848	4.4	2.4	2.5	IE (16.2)	DK (9.2)	RO (0.5)	SK (0.4)
Rubber and plastic products	1 594	1 659	4.1	4.7	4.8	LU (19.1)	SI (6.7)	IE (2.7)	LV (1.9)
Other non-metallic mineral products	1 414	1 298	-8.2	4.2	3.8	CY (8.5)	PT (5.4)	IE (2.7)	SE (2.5)
Basic metals	1 270	1 167	-8.1	3.8	3.4	LU (16.4)	AT (5.4)	HR (0.8)	PT (0.8)
Fabricated metal products / Weapons	3 665	3 647	-0.5	10.9	10.6	SI (18.2)	CY (14.0)	RO (5.8)	MT (5.4)
Computer, electronic and optical products	1 520	1 549	1.9	4.5	4.5	MT (11.7)	IE (10.2)	PT (1.4)	EL (1.1)
Electrical equipment	1 383	1 400	1.3	4.1	4.1	SI (9.8)	EE (7.2)	LV (1.5)	IE (0.7)
Machinery and equipment n.e.c.	2 940	3 420	16.3	8.7	9.9	DK (19.1)	DE (17.1)	MT (1.7)	EL (1.6)
Motor vehicles, trailers and semi-trailers	2 814	3 377	20.0	8.3	9.8	SK (19.7)	CZ (16.5)	DK (1.0)	EL (0.5)
Other transport equipment / Ai r &spacecraft	997	1 064	6.8	3.0	3.1	UK (6.7)	FR (6.1)	BG (0.9)	SI (0.6)
Furniture	1 246	1 191	-4.5	3.7	3.4	LT (14.1)	EE (7.4)	DE (1.6)	FR (1.6)
Other manufacturing / Medical instrum.	1 112	1 167	4.9	3.3	3.4	NL (14.1)	MT (9.2)	SK (1.1)	RO (0.6)
Repair and inst. of machinery and equipment	1 220	1 335	9.4	3.6	3.9	UK (7.9)	MT (6.3)	DE (1.8)	SK (1.5)

Source: DG Research and Innovation - Unit for the Analysis and Monitoring of National Research and Innovation Policies Data: Eurostat (LFS data)

More info: http://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:High-tech_classification_of_manufacturing_industries
http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=lfsa_egan22d&lang=en

3. IMD World Competitiveness rankings 2018

On 23 May, the ***IMD*** published the **World Competitiveness Ranking 2018**.
This ranking is based on 340 criteria, of which 143 are based on hard data, 115 are based on survey data (from an Executive Opinion Survey) and 82 are based on background data.
In the 2018 ranking, the US is revealed to be the most competitive country (3 places up on 2017), overtaking last year's top three (Hong Kong, Switzerland, Singapore). The best EU performer is the Netherlands on rank 4 (one position up), followed by Denmark (+1), Sweden, and Luxembourg (-3). The lowest ranked EU countries are Slovakia (55, -4), Greece (57), and Croatia (61, -2), the latter is along with Mongolia and Venezuela among the three lowest performers of the 63 economies assessed.

The EU Member States with the most improved rankings include Austria (+7), Portugal (+6), Slovenia (+6) Hungary (+5) and Poland (+4).
According to IMD 'Economic growth, reduction of government debt and increased business productivity enable Austria to move up. Portugal's upsurge is due to growth in economic activities paired with a positive turn in perceptions about institutional efficiency including greater governmental transparency.
Poland's progress comes after GDP growth, a rise in the export of commercial services and an improvement in the management of government debt. Hungary boosts its competitiveness partly because of a reduction in corporate taxes and growth in overall productivity. Slovenia rises thanks to a remarkable positive shift in its domestic economy and the enhancement of public budget.'

2018	Country	2017	Change
1	USA	4	+3
2	Hong Kong SAR	1	-1
3	Singapore	3	-
4	Netherlands	5	+1
5	Switzerland	2	-3
6	Denmark	7	+1
7	UAE	10	+3
8	Norway	11	+3
9	Sweden	9	-
10	Canada	12	+2
11	Luxembourg	8	-3
12	Ireland	6	-6
13	China Mainland	18	+5
14	Qatar	17	+3
15	Germany	13	-2
16	Finland	15	-1
17	Taiwan	14	-3
18	Austria	25	+7
19	Australia	21	+2
20	United Kingdom	19	-1
21	Israel	22	+1
22	Malaysia	24	+2
23	New Zealand	16	-7
24	Iceland	20	-4
25	Japan	26	+1
26	Belgium	23	-3
27	Korea Rep.	29	+2
28	France	31	+3
29	Czech Republic	28	-1
30	Thailand	27	-3
31	Estonia	30	-1
32	Lithuania	33	+1

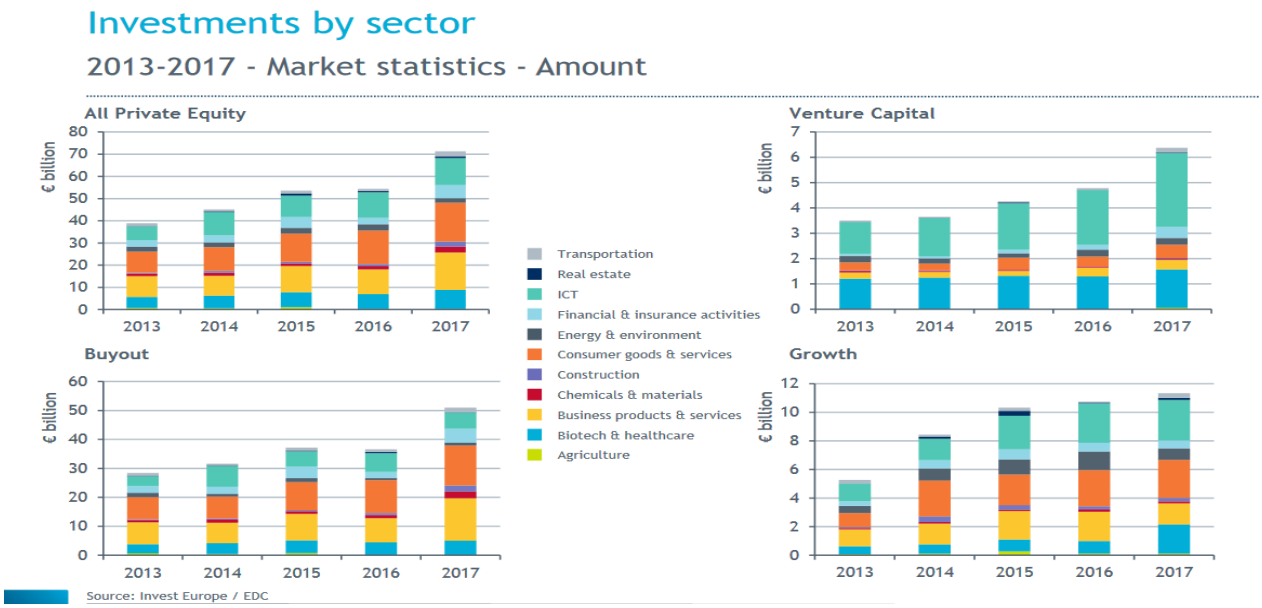
2018	Country	2017	Change
33	Portugal	39	+6
34	Poland	38	+4
35	Chile	35	-
36	Spain	34	-2
37	Slovenia	43	+6
38	Kazakhstan	32	-6
39	Saudi Arabia	36	-3
40	Latvia	40	-
41	Cyprus	37	-4
42	Italy	44	+2
43	Indonesia	42	-1
44	India	45	+1
45	Russia	46	+1
46	Turkey	47	+1
47	Hungary	52	+5
48	Bulgaria	49	+1
49	Romania	50	+1
50	Philippines	41	-9
51	Mexico	48	-3
52	Jordan	56	+4
53	South Africa	53	-
54	Peru	55	+1
55	Slovak Republic	51	-4
56	Argentina	58	+2
57	Greece	57	-
58	Colombia	54	-4
59	Ukraine	60	+1
60	Brazil	61	+1
61	Croatia	59	-2
62	Mongolia	62	-
63	Venezuela	63	-

More info: https://www.imd.org/wcc/world-competitiveness-center-rankings/world-competitiveness-ranking-2018/

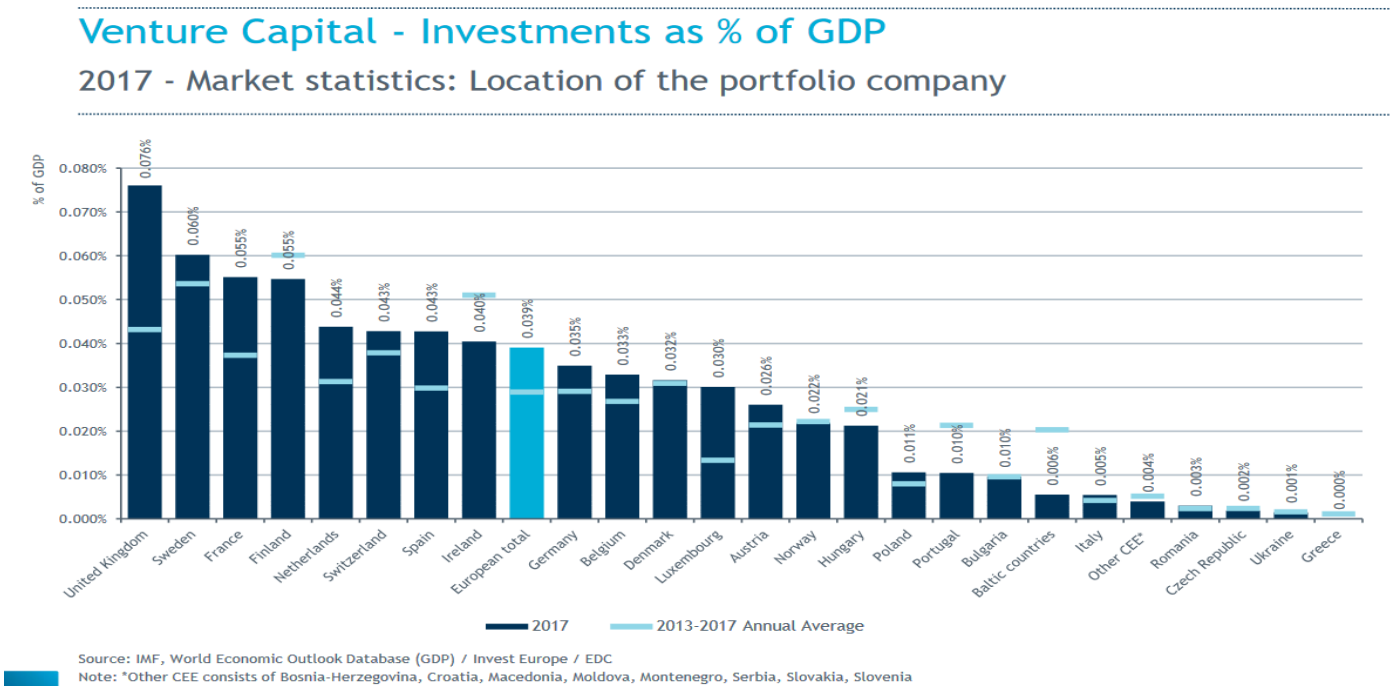
4. Invest Europe Private Equity 2017 report

On 3 May 2018, ***Invest Europe*** published the **2017 European Private Equity Activity report**. The Invest Europe database covers more than 1 250 European private equity firms, or over 89% of the €640bn in capital under management in Europe. The report shows that the total equity amount invested in European companies in 2017 increased by 29% year-on-year, to reach €71.7bn, the second highest amount on record and only 4% below the peak of 2007.

According to the report the number of companies receiving investment increased by 7% to almost 7 000, of which 87% were SMEs.
Venture Capital investment increased by 34% to a ten-year high of €6.4bn, surpassing 2008's amount by 13%. Nearly 3 800 companies were venture-backed, an 8% increase.



In 2017, Venture Capital investments as a % of GDP were highest in the UK (and strongly up compared to the 2013-2017 average), followed by Sweden, France and Finland (where they were lower than in previous years), the Netherlands, Spain and Ireland - all countries above the European Average. Venture Capital investments as a % of GDP were also high in Latvia (the graph only shows the Baltics as a whole) but were relatively low in Italy and Greece. Venture Capital investments as a % of GDP were lower in Denmark than in other Nordic countries and are not progressing.



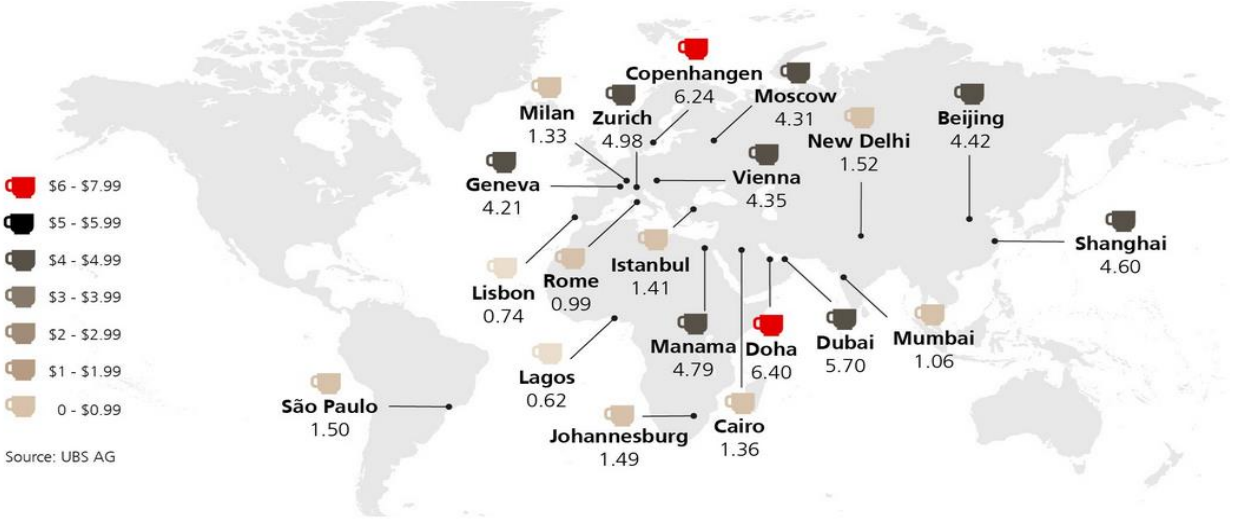
More info: https://www.investeurope.eu/news-opinion/publications/#i

5. UBS Prices and Earnings 2018

On 29 May, the Swiss bank **UBS** published the 2018 edition of its **Prices and Earnings** study. Results are based on a standardised survey on the prices of 128 goods and services, and earnings for 15 professions in 77 cities worldwide, which was carried out January-April 2018. According to this study, Geneva is the city with the highest gross wages in the world (131.5% of the New York level, which has been set as 100), and is followed by Zurich, Luxembourg and Los Angeles. When it comes to net wages Zurich is clearly in the lead (153.8), followed by Geneva and Luxembourg.
The EU city with the lowest wages in the survey is Sofia (gross 17.3, net 19.5). However, the results differ when differences in price levels (Zurich being the most expensive city worldwide), are taken into account. As regards net annual income Los Angeles leads in terms of purchasing power, followed by Zurich, Miami, Geneva and Luxembourg. Luxembourg is the world leader in gross hourly pay, Zurich in net hourly pay. As regards income in purchasing power, Zagreb is the EU city in the study with the lowest performance, followed by Bucharest and Riga.

Group	Index History 1978 to 2018		Gross	Net
1 Geneva		131.5	**131.5**	133.1
2 Zurich		129.8	**129.8**	153.8
3 Luxembourg		111.3	**111.3**	110.9
4 Los Angeles		101.7	**101.7**	107.8
5 Copenhagen		101.3	**101.3**	92.3
6 Oslo		100.6	**100.6**	95.4
7 **New York***		100.0	**100.0**	100.0
8 Miami		91.8	**91.8**	103.1
9 Vienna		89.7	**89.7**	81.2
10 Chicago		89.6	**89.6**	94.9
11 Toronto		86.7	**86.7**	87.3
12 Munich		86.3	**86.3**	87.0
13 Stockholm		85.8	**85.8**	78.1
14 Frankfurt		85.7	**85.7**	86.4
15 Montreal		80.9	**80.9**	73.5
16 Sydney		80.2	**80.2**	90.8
17 Tokyo		79.2	**79.2**	85.3
18 Berlin		77.3	**77.3**	79.0
19 Dublin		76.9	**76.9**	82.5
20 Helsinki		75.2	**75.2**	74.5

The difference in price levels are shown, amongst others, by a graph on the price of a cup of coffee in different cities. While a cup of coffee costs 6.24 $ in Copenhagen, it is only 0.99 $ in Rome and 0.74 $ in Lisbon.



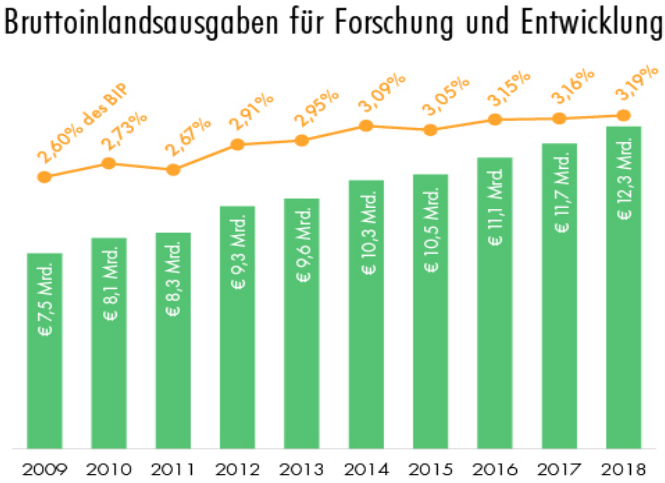
More info: https://www.ubs.com/microsites/prices-earnings/en/

Miscellaneous results from national data sources

Austria: further growth in R&D intensity expected for 2017 and 2018

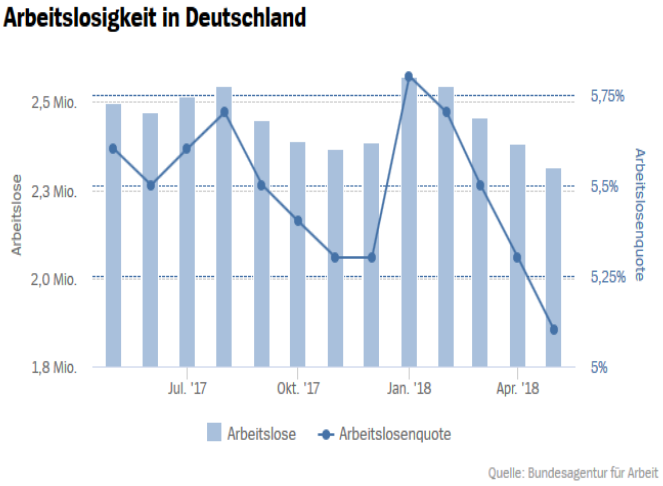
According to estimates of R&D expenditure released by *Statistik Austria* on 19 April 2018, R&D expenditure in Austria increased from €11.1 bn in 2016 to €11.7 bn in 2017 and will further increase to €12.3 bn in 2018.
In 2018, R&D spending by the central government is expected to reach €3.56 bn (+4.1% in nominal terms compared to 2017), spending by the regions €0.53 bn (+5.4%), spending by companies €6.11 bn (+6.8%) and spending from abroad €1.95 bn (+4.7%). R&D intensity (% of GDP) is expected to increase from 3.15% in 2016 (3.09% according to Eurostat) to 3.16% in 2017 and to 3.19% in 2018 (Austria has a 3.76% R&D intensity target for 2020).

More info: https://www.statistik.at/web_de/presse/116038.html



Germany: Lowest unemployment since unification

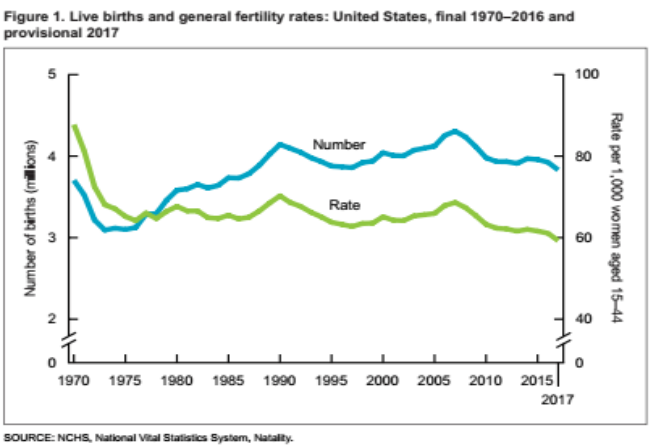
On 30 May 2018, the *Federal Employment Agency* of Germany (Bundesagentur für Arbeit) released data for May 2018 showing that the number of unemployed in Germany has fallen to its lowest level since unification (in 1990). The number decreased by 68 000 compared to April 2018 and by 182 000 compared to May 2017 to reach a level of 2.315 million in May 2018. The number of employment vacancies has increased by 8 000 since April to reach 793 000. The unemployment rate fell from 5.3% in April to 5.1% in May (it should be noted that Eurostat data, which are based on harmonised surveys, show lower figures than national data based on administrative sources). Although the unemployment rate in eastern Germany is above the national average (6.8% compared to 4.7% in western Germany), Bremen is the Land with the highest unemployment rate (9.8%). Bavaria (2.7%) and Baden-Württemberg (3.1%) are the German Länder with the lowest unemployment rates.



More info: https://statistik.arbeitsagentur.de/Navigation/Startseite/Startseite-Nav.html

USA: Lowest fertility level on record

On 21, May the National Center for Health Statistics of the US published a report with provisional data on births in the US in 2017. The provisional number of births for the US was 3.85 million in 2017, down 2% from 2016 and the lowest number in 30 years. The general fertility rate was 60.2 births per 1000 women aged 15-44, down 3% from 2016 and a record low for the US. The total fertility rate (TFR, the hypothetical lifetime births per woman), which is often used in international comparison, was 1.76 in 2017, the lowest since 1978. While the US TFR is still higher than the EU average, there has been in recent years a trend of convergence, a result of falling US fertility rates.



More info: https://apps.npr.org/documents/document.html?id=4465343-U-S-Birth-Rate-Report-CDC-2017

Calendar of data releases and indicator based publications
Update of: 30/5/2018 (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)	DESI indicator (CNECT)	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)	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)	OECD MSTI publication Times Higher Ed. Reputations Ranking WIPO/Cornell/INSEAD Global Innovation Index
July			UNESCO UIS STI stats release OECD Education at a Glance
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
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) (ERA Progress Report)	WIPO World Intellectual Property Indicators

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