

# NEWSLETTER on STI Data and Indicators

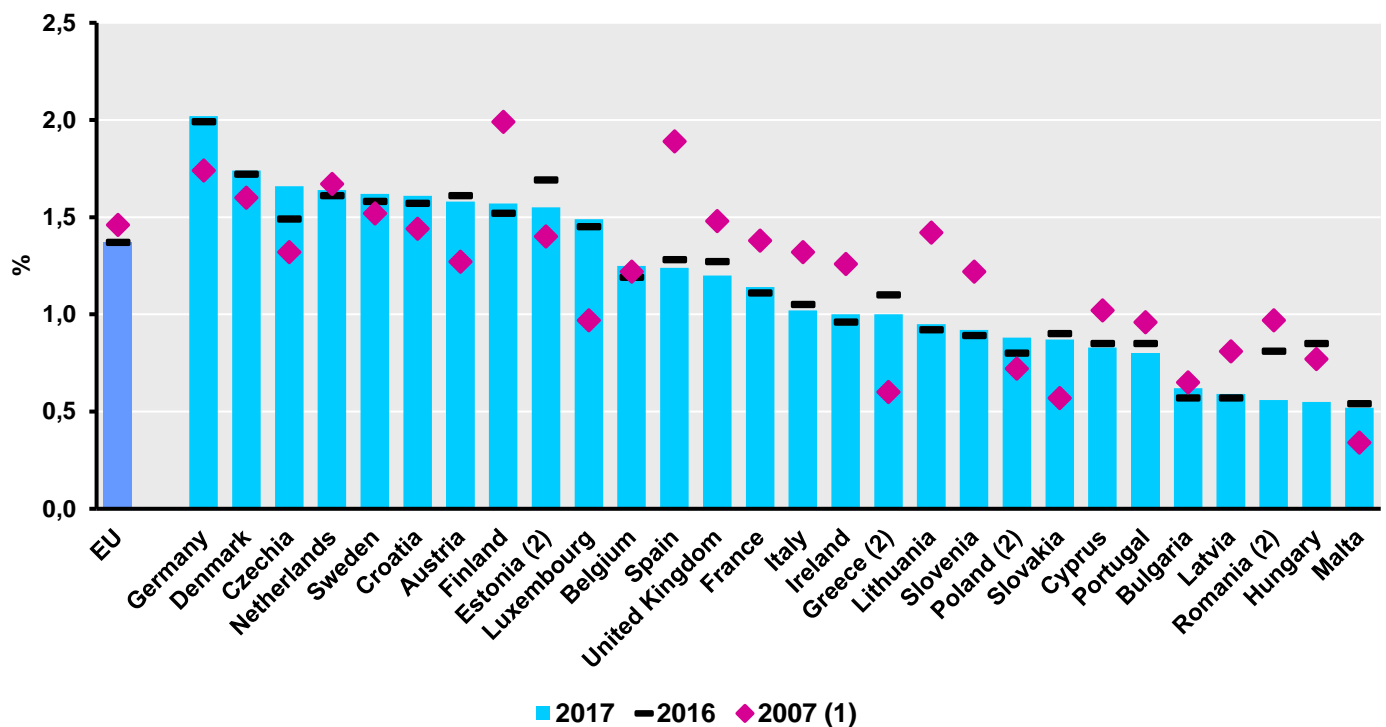
DG RTD, A4, Analysis and monitoring of national research policies

## 1. Eurostat data on government budget allocations for R&D

In October Eurostat published 2017 results on government budget appropriations or outlays on R&D (GBARD). According to Eurostat, allocations for R&D remained stable compared to 2016 at 1.37% of general government expenditure (but down from 1.46 in 2007; the GDP share of GBARD is about half of that). The

share increased in a slight majority of Member States, with the strongest increase in pp in Czechia (+0.16), Belgium (+0.06), Finland (+0.05), and Bulgaria (+0.05). The share decreased by 0.05 pp or more in Hungary, Portugal and the UK (breaks in series in EE, EL, PL, RO).

**Total government budget allocations for R&D (GBARD) as % of general government expenditure, 2007, 2016 and 2017**



Source: DG Research and Innovation - Unit for Reforms and Economic Impact - Country intelligence

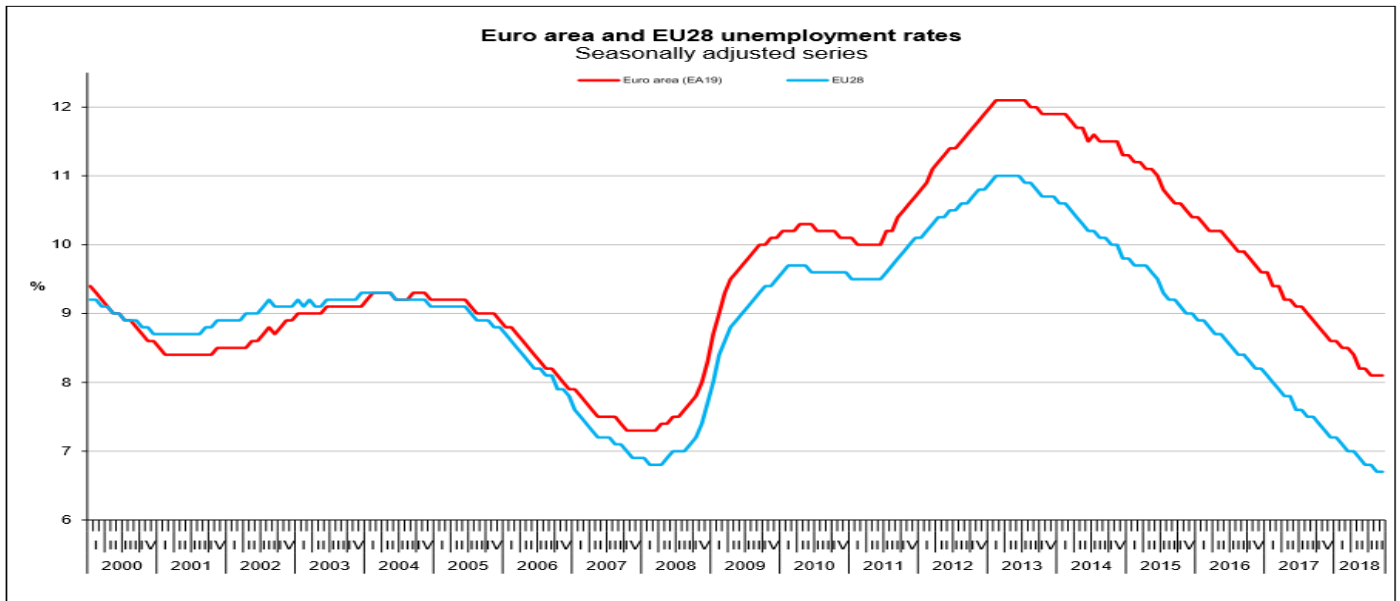
Data: Eurostat, Notes: <sup>(1)</sup>HR: 2008. <sup>(2)</sup>EE, EL, PL, RO: Break in series in 2017.

More info: <https://ec.europa.eu/eurostat/data/database>

## 2. Eurostat data on unemployment

On 31 October 2018, **Eurostat** published the September 2018 *unemployment data*. According to Eurostat, the EU28 unemployment rate was 6.7% in October 2017, the lowest rate recorded in the **EU28** since the start of

Eurostat monthly unemployment series in January 2000. The rate was stable since August and down from 7.5% in September 2017.

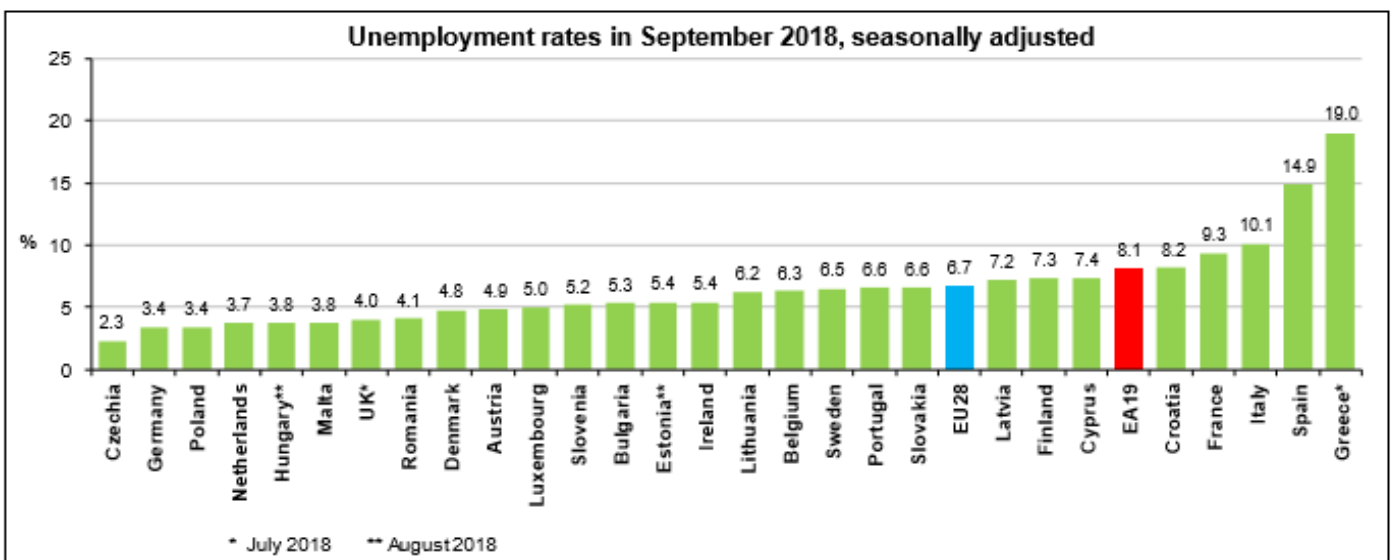


Among the Member States, the lowest unemployment rates in September 2018 were recorded in Czechia (2.3%), Germany (3.4%) and Poland (3.4%). The highest unemployment rates were observed in Greece (19.0% in August 2017) and Spain (14.9%).

Compared with a year ago, the unemployment rate decreased in all Member States, except Estonia where it remained stable. The largest decreases were registered in Cyprus and Croatia.

16.6 million men and women were unemployed in the EU28 in September 2018, of which 3.3 million young

persons (under 25). The unemployment rate for females (6.9%) was slightly higher than the rate for males (6.6%). In September 2018, the youth unemployment rate was 14.9% in the EU28, down from 16.5% in September 2017. The lowest youth unemployment rates were observed in Germany (6.3%) and Czechia (6.3%), while Greece (37.9% in July 2018), Spain (34.3%) and Italy (31.6%) had the highest rates. Since the majority of young people under 25 are still in education or training the share of unemployed among all young people is, however, much lower.



**More info:** <https://ec.europa.eu/eurostat/documents/2995521/9350663/3-31102018-BP-EN.pdf/64eda794-2c0a-434e-952f-ded23f894d48>

### 3. WEF Global Competitiveness Report 2018

On 16 October the Geneva based **World Economic Forum** (WEF) published the 2018 edition of its *Global Competitiveness Report*. The report assesses 137 economies (including all 28 EU countries) according to more than 100 indicators. Statistical sources include the United Nations, World Bank, OECD, but also an Executive Opinion Survey carried out by WEF and producing data not available from other sources, but with a sample size of on average below 100 responses per country (and hence limited validity). The indicators are arranged into 12 pillars, including an innovation pillar with 10 indicators (diversity of workforce, state of cluster development, international co-inventions, multi-stakeholder cooperation, scientific publications, patent applications, R&D expenditures, quality of research institutions, buyer sophistication, trademark applications).

In 2018, the United States came out as the most competitive country, followed by Singapore and Germany (ranked 5<sup>th</sup> in 2017). Switzerland, the top performer in 2017 now ranks 4<sup>th</sup>, followed by Japan and the Netherlands (ranked 4<sup>th</sup> in 2017). Other EU countries in the top 10: the UK (8), Sweden (9), and Denmark. Finland follows on rank 11.

Croatia is the lowest ranked EU country (68), with Greece (57), Romania (52) and Bulgaria (51) also ranking low.

The top ranked United States comes out as top performer in the pillars Labour market, Financial system and Business dynamics. Spain comes out as the world's best performing country in the pillar Health, Finland in Skills. New Zealand is the best performer as regards Institutions, Singapore as regards Infrastructure and Product Market, South Korea in ICT Adoption, the United Arab Emirates in Macroeconomic Stability and China when it comes to Market Size.

As regards the Innovation pillar Germany comes out as the best performer (although not ranked number one in any of the 10 underlying indicators), followed by the US, Switzerland, Taiwan and Sweden.

Croatia (63) is the lowest ranked EU country in the pillar Innovation, with Romania (57) and Latvia (52) also ranking low.

Rank	Economy	Score <sup>a</sup>	Diff. from 2017 <sup>b</sup>	
			Rank	Score
1	United States	85.6	–	+0.8
2	Singapore	83.5	–	+0.5
3	Germany	82.8	–	+0.2
4	Switzerland	82.6	–	+0.2
5	Japan	82.5	+3	+0.9
6	Netherlands	82.4	–1	+0.2
7	Hong Kong SAR	82.3	–	+0.3
8	United Kingdom	82.0	–2	–0.1
9	Sweden	81.7	–	+0.1
10	Denmark	80.6	+1	+0.7
11	Finland	80.3	+1	+0.5
12	Canada	79.9	–2	–0.1
13	Taiwan, China	79.3	–	+0.1
14	Australia	78.9	+1	+0.7
15	Korea, Rep.	78.8	+2	+0.8
16	Norway	78.2	–2	–0.8
17	France	78.0	+1	+0.6
18	New Zealand	77.5	–2	–0.6
19	Luxembourg	76.6	+3	+0.6
20	Israel	76.6	–	+0.4
21	Belgium	76.6	–2	–
22	Austria	76.3	–1	+0.2
23	Ireland	75.7	–	–0.3
24	Iceland	74.5	–	–0.1
25	Malaysia	74.4	+1	+1.1
26	Spain	74.2	–1	+0.4
27	United Arab Emirates	73.4	–	+1.1
28	China	72.6	–	+0.9
29	Czech Republic	71.2	–	+0.3
30	Qatar	71.0	+2	+0.6
31	Italy	70.8	–	+0.3
32	Estonia	70.8	–2	–
33	Chile	70.3	+1	+0.9
34	Portugal	70.2	–1	+0.5
35	Slovenia	69.6	–	+1.1
36	Malta	68.8	–	+0.3
37	Poland	68.2	–	+0.2
38	Thailand	67.5	+2	+1.3
39	Saudi Arabia	67.5	+2	+1.6
40	Lithuania	67.1	–2	+0.7

Charts: screenshots from WEF website

**More info:** <http://reports.weforum.org/global-competitiveness-index-2017-2018/>

## 4. World Bank Doing Business Report 2018 edition

On 31 October 2018 the World Bank published the 2019 edition of its annual *Doing Business* report. *Doing Business* measures regulations affecting 11 areas of the life of a business: starting a business, dealing with construction permits, getting electricity, registering property, getting credit, protecting minority investors, paying taxes, trading across borders, enforcing contracts, resolving insolvency and labour market regulation.

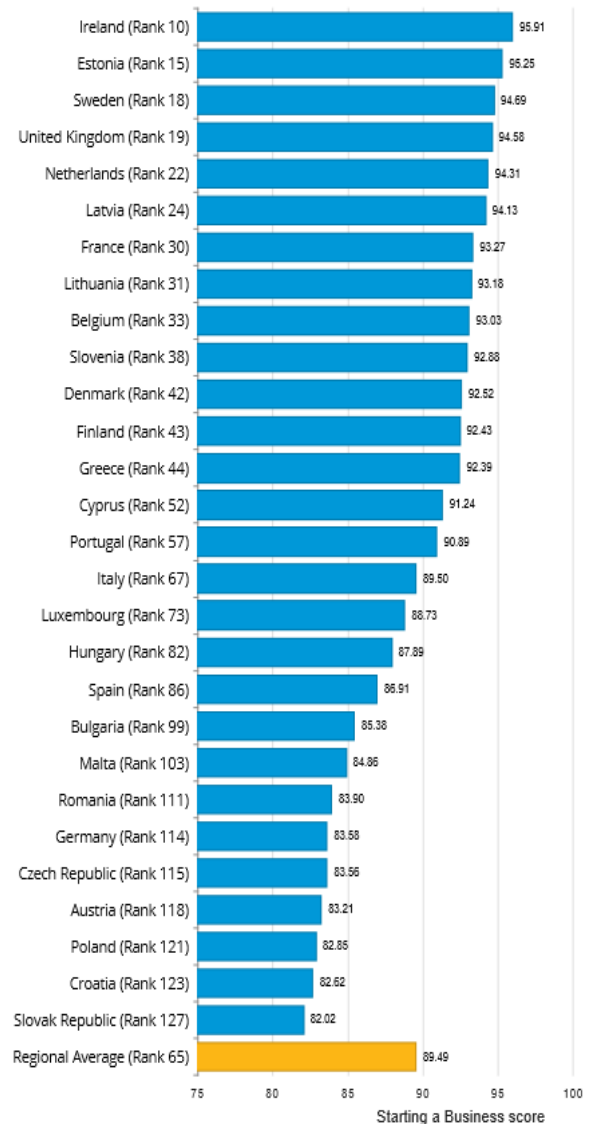
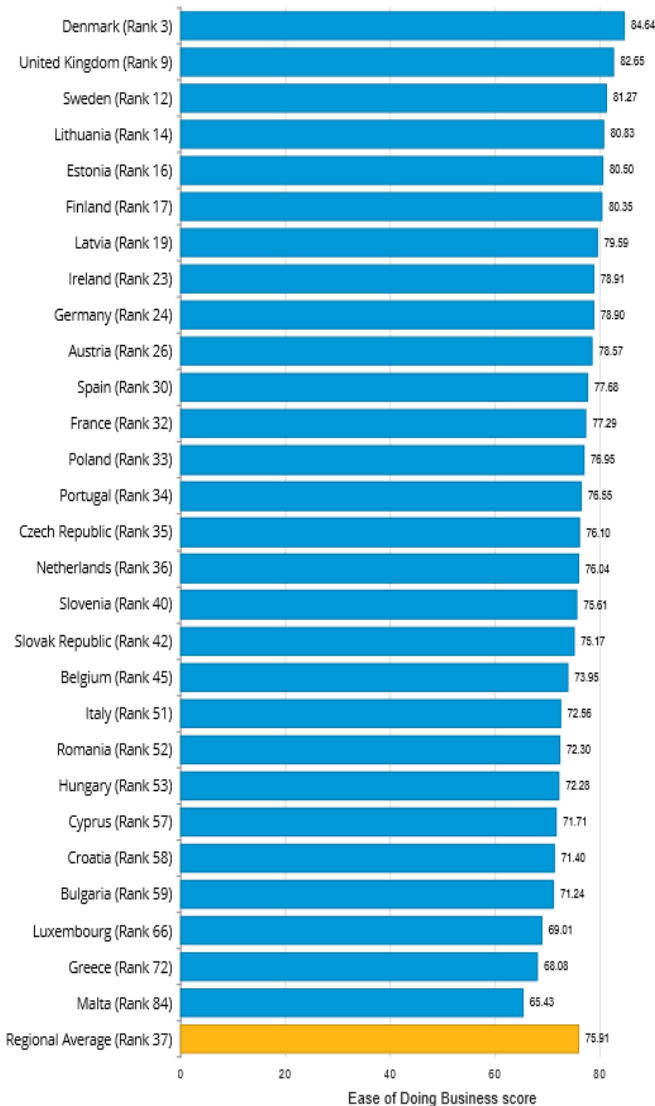
While New Zealand is the leading country worldwide in the ease of doing business, Denmark comes out as top performer in the EU, followed by the UK and Sweden, while Lithuania, Estonia, Finland and Latvia also rank in the top 20 worldwide.

Luxembourg, Greece and Malta rank lowest.

Ireland is the best performer when it comes to the ease of starting a business, followed by Estonia and Sweden. Austria, Poland, Croatia and Slovakia rank lowest in the ease of starting a business.

On the important indicator 'days to start a business' Denmark, Estonia, France and the Netherlands perform best (3.5 days in each country). In Poland (37 days), Romania (35), Slovakia (26.5), Czechia (24.5), Bulgaria (23), Croatia (22.5) and Austria (21) it takes on average the longest to start a business. The total tax and contribution rate according to the report is lowest in Luxembourg (20.5%), Croatia (20.6%) and Cyprus (22.2%) and highest in France (60.4%), Belgium (57.7%) and Italy (53.1%).

How economies in European Union (EU) rank on the ease of starting a business



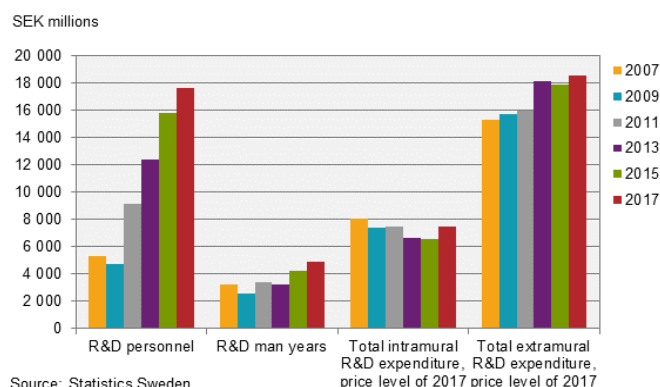
More information: <http://www.doingbusiness.org/>

## 5. Miscellaneous results from national data sources

### Sweden: Public R&D expenditure growing in 2017

On 12 October 2018 Statistics Sweden published key data on STI up to 2017, including figures on government spending on R&D. The data show a surge in R&D personnel employed by the public sector and a growth in intramural R&D expenditure compared to 2015. However, intramural R&D spending was still lower in absolute terms than in 2007. Extramural public R&D expenditure (nearly 60% going to higher education institutions, about 10% to enterprises) increased both compared to 2015 and to 2007.

**More info:** <https://www.scb.se/en/finding-statistics/statistics-by-subject-area/education-and-research/research/research-and-development-in-sweden/>



### Finland: R&D expenditure slightly recovering

On 25 October Statistics Finland published 2017 results and 2018 estimates on R&D expenditure by sector as well as data on R&D intensity. In 2017 R&D expenditure by the government sector and by higher education increased faster than business R&D, whose share fell from 65.8% to 65.3 % of total R&D expenditure. The share of higher education increased by 6.5 percentage points since 2009, while the share of business decreased at the same time by about 6 percentage points. The share of the government sector decreased slightly since 2009.

Between 2009 and 2017 R&D intensity in Finland decreased by one percentage point (or 0.6 bn €), the steepest decrease in absolute terms in the EU. As a result Finland lost its number one position in R&D intensity and now ranks only fifth (after SE, AT, DK, DE) in the EU. In 2017 R&D intensity slightly recovered, but is expected to fall again in 2018.

**More info:**

[http://www.stat.fi/ti/tkke/2017/tkke\\_2017\\_2018-10-25\\_kat\\_001\\_en.html](http://www.stat.fi/ti/tkke/2017/tkke_2017_2018-10-25_kat_001_en.html)

Table 1. R&D expenditure by performer sector and GDP share of R&D expenditure in 2009 to 2017 and estimate for 2018

Year	Sector						Total		Share of R&D in GDP <sup>2)</sup>
	Business enterprise sector		Government sector <sup>1)</sup>		Higher education sector		EUR mil.	%	
	EUR mil.	%	EUR mil.	%	EUR mil.	%	EUR mil.	%	%
2009	4 847,2	71,4	656,5	9,7	1 282,8	18,9	6 786,5	100	3,75
2010	4 854,5	69,6	692,0	9,9	1 424,8	20,4	6 971,3	100	3,73
2011	5 047,4	70,5	684,4	9,6	1 431,8	20,0	7 163,7	100	3,64
2012	4 695,0	68,7	662,2	9,7	1 474,6	21,6	6 831,9	100	3,42
2013	4 602,4	68,9	643,6	9,6	1 438,1	21,5	6 684,2	100	3,29
2014	4 409,5	67,7	613,1	9,4	1 489,5	22,9	6 512,1	100	3,17
2015	4 047,3	66,7	543,1	8,9	1 480,5	24,4	6 070,9	100	2,90
2016	3 901,7	65,8	534,6	9,0	1 489,8	25,1	5 926,1	100	2,74
2017	4 028,3	65,3	577,7	9,4	1 567,2	25,4	6 173,2	100	2,76
2018 <sup>3)</sup>	4 156,0	65,8	583,3	9,2	1 572,5	24,9	6 311,8	100	2,70

## 6. Methodological developments: new edition of Oslo Manual released

On 22 October 2018 the OECD published the fourth edition of the **Oslo Manual**, a common publication with Eurostat containing guidelines for collecting, reporting and using data on innovation. The Oslo Manual is an important source for the definition of the different types of business sector innovation and a methodological basis for enterprise surveys on innovation, including the Community Innovation Survey of Eurostat.

A first edition of the Oslo Manual was published in 1992, a second edition in 1997 and a third one in 2005.

In addition there is the **Frascati Manual** on data on research and experimental development (<http://www.oecd.org/sti/inno/frascati-manual.htm>),

the first edition of which was released in 1963, with the 7<sup>th</sup> edition being published in autumn 2015. Finally there is a **Canberra Manual** on human resources devoted to S&T from 1995 (currently no plans for an update).



**More info:**

<http://www.oecd.org/science/oslo-manual-2018-9789264304604-en.htm>

<b>Calendar of data releases and indicator based publications</b>			
<i>Update of: 30/10/2018 (grey= already published)</i>			
<b>2018</b>	<b>Eurostat data updates</b>	<b>Commission indicator based reports</b>	<b>Data and indicator based reports of other organisations</b>
<b>January</b>			Bloomberg Innovation Index
<b>February</b>	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)
<b>March</b>	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
<b>April</b>	Education headline indicators (LFS)		Reuters Most Innov. Institutions Internet Minute (Excelacom/Allaccess)
<b>May</b>	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
<b>June</b>	Education spending Employment high-tech (2017) HRST education inflows (2016)	European Innovation Scoreboard (GROW/RTD)	Times Higher Ed. Reputations Ranking IRF Industrial robot sales
<b>July</b>			UNESCO UIS STI stats release WIPO/Cornell/INSEAD Global Innovation Index
<b>August</b>			Academic Ranking of World Universities (Shanghai)
<b>September</b>	Final high growth ent. data (2016) Economic data on high-tech (2017)	Europe 2020 publication (ESTAT)	OECD Education at a Glance
<b>October</b>	GBARD (2017 preliminary)		WEF Global Competitiveness Index  World Bank Doing Business
<b>November</b>	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)
<b>December</b>	ICT household data (2018) ICT enterprise data (2018) HRST stocks (2017)	Industrial R&D Investment Scoreboard (JRC)	WIPO World Intellectual Property Indicators

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