

Nordic Newsletter, December 2019

More R&D in the Nordic countries, but the investments account for a smaller share of GDP

Frøydis Steine

Preliminary figures¹ show that the Nordic region spent more than NOK 433 billion on research and development (R&D) in 2018, about NOK 23 billion more than in 2017 (current prices). This corresponds to a 6 per cent increase. As in previous years, Sweden is still the largest in the Nordic region. Sweden's R&D expenditure in 2018 was NOK 182 billion. This equals 3.34 per cent of the country's GDP. The R&D expenditure in Norway in 2018 was NOK 73 billion, amounting to 2.07 per cent of GDP.

Sweden is still on top, but Denmark and Finland have the largest growth

Distribution of total R&D expenditure in the Nordic countries in 2018 was quite similar between the five countries as in 2017. Sweden is still the largest country (42 per cent), followed by Denmark (23 per cent), Finland (17 per cent), Norway (17 per cent) and Iceland (1 per cent). All five countries experienced growth in R&D expenditure in 2018, compared with the previous year. The R&D expenditure in Denmark and Finland increased the most among the Nordic countries

from 2017 to 2018, with 7 per cent in both countries (current prices). The growth in Norway was 6 per cent during the same period, while Sweden and Iceland had a similar increase as the Nordic region overall (5 per cent).

Compared to population figures, Sweden used the most R&D among the Nordic countries in 2018, closely followed by Denmark. Next is Finland and Norway. They used about the same amount per capita. Iceland used the least R&D per capita in 2018. See values for each country below.

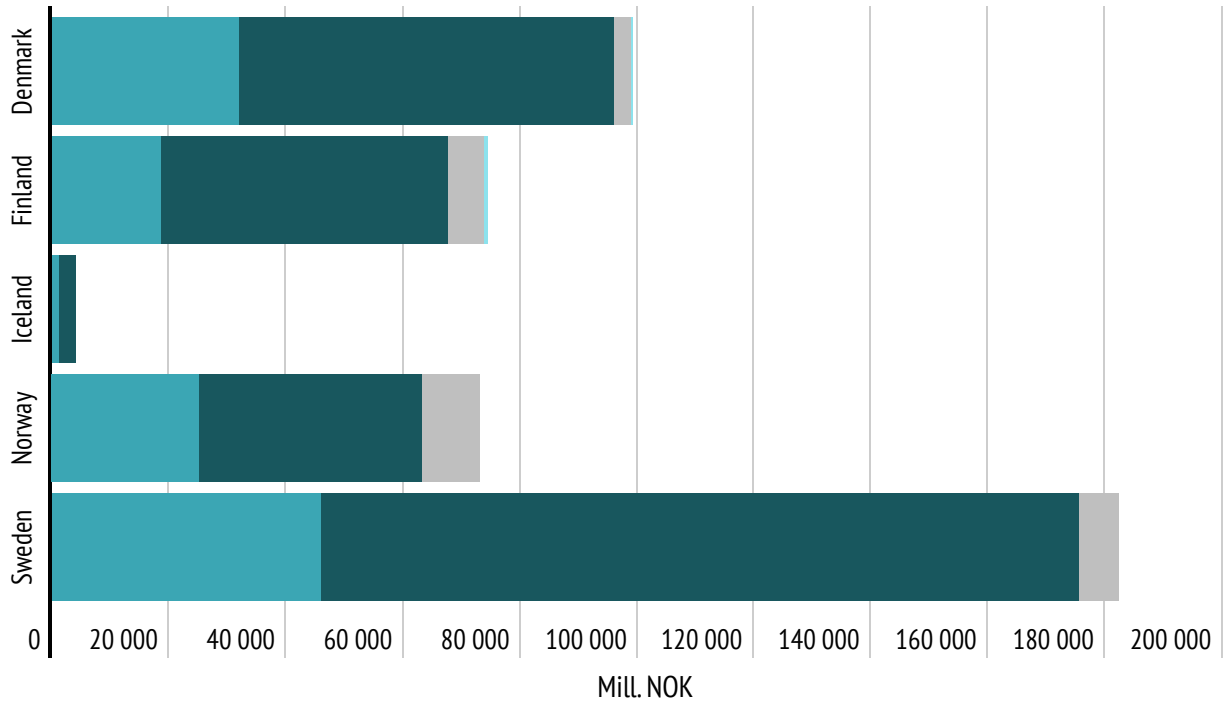


Size of each country in the figure reflects total R&D expenditures in 2018. * Sweden: NOK 182 290 mill. Denmark: NOK 99 280 mill. Finland: NOK 74 400 mill. Norway: NOK 73 180 mill. Iceland: NOK 4 170 mill.



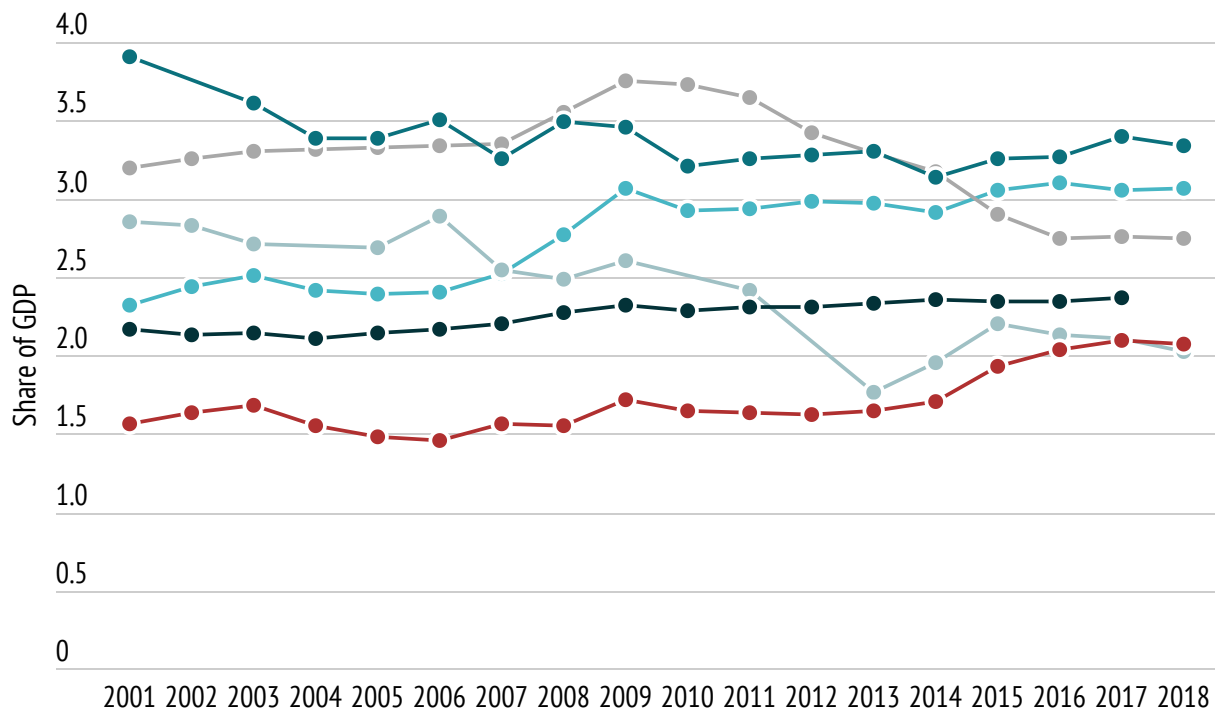
Denmark: NOK 17 130. Finland: NOK 13 490. Iceland: NOK 11 820. Norway: NOK 13 770. Sweden: NOK 17 915.

R&D expenditures in the Nordic countries by performing sector.⁴ 2018.* Mill. NOK.



● Higher education sector ● Business enterprise sector ● Government ● PNP sector

R&D expenditures as share of GDP in the Nordic countries and average for the OECD. 2001–2018*. Per cent.



● Denmark ● Finland ● Iceland ● Norway ● Sweden ● OECD

As the only Nordic country, Denmark increases its R&D share of GDP

R&D expenditure as share of GDP decreased in all the Nordic countries from 2017 to 2018, except for Denmark. Despite a lower level in Sweden compared to the previous year (from 3.40 per cent in 2017 to 3.34 per cent in 2018), Sweden's R&D expenditure as share of GDP was highest among the Nordic countries in 2018. Denmark has had a steady increase in R&D expenditure as share of GDP since the early 2000s, and since 2015 the share has been above 3 per cent of GDP. After a decline from 2016 (3.10 per cent) to 2017 (3.05 per cent), the R&D expenditure as share of GDP increased again to 3.07 per cent in 2018. Finland's R&D expenditure as share of GDP has long been among the highest in the Nordic region but declining since 2010. Since 2016, the proportion has remained at a stable level (2.74 per cent in 2018). Among the Nordic countries, Norway and Iceland have had the lowest R&D expenditure as share of GDP for several years. The R&D share in 2018 was 2.07 per cent in Norway and 2.02 per cent in Iceland. Thus, both countries remain above 2 per cent.

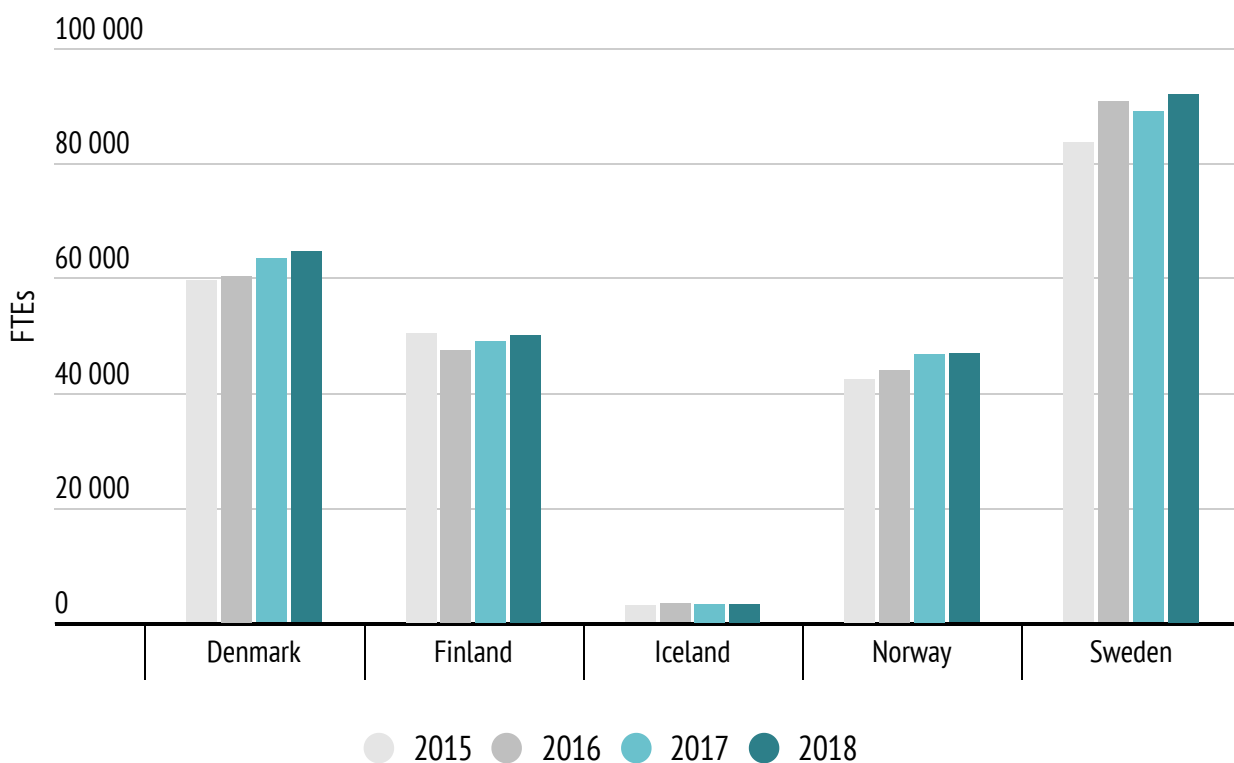
Business enterprises carried out far more than half of all R&D in the Nordic

The business enterprise sector performs the most R&D in the Nordic countries. In 2018, the sector invested NOK 282 billion on R&D in the five countries combined (65 per cent of total R&D expenditure). This corresponds to a growth of 5 per cent in current prices from 2017. The business enterprise sector accounted for 71 per cent of total R&D expenditure in Sweden in 2018, 66 per cent in Finland and 64 per cent in Denmark and Iceland. The share of R&D carried out by the sector in Norway was lowest among the Nordic countries, 52 per cent of the country's total R&D expenditure.²

Weaker growth in the higher education sector

The higher education sector in the Nordic region spent more than NOK 123 billion on R&D in 2018. This corresponds to a growth of 7 per cent (in current prices) from 2017 to 2018, a weaker growth compared to the previous year (8 per cent). The higher education sector accounted for 34 per cent of total R&D expenditure in Norway, 32 per cent in Denmark and Iceland and 25 per cent in Sweden and Finland.

Number of FTEs in the Nordic countries. 2015–2018*.



From 2017 to 2018, R&D expenditure in the higher education sector increased by 8 per cent in Norway, 5 per cent in Sweden and 4 per cent in Denmark and Finland (current prices). Iceland had the smallest increase, with a 3 per cent growth in R&D expenditure in the higher education sector. All the Nordic countries, except for Sweden, experienced a weaker growth from 2017 to 2018, compared to the previous year.

More R&D FTEs in all the Nordic countries

The Nordic countries reported more than 256 000 R&D full-time equivalents (FTE) in 2018. In the last four years, the number of R&D FTEs has increased by 2–3 per cent each year. The trend continues, as the number of R&D full-time equivalents in the Nordic countries increase with 2.2 per cent from 2017 to 2018. Compared to the previous year, the number of R&D FTEs increased in Denmark, Finland, and Sweden in 2018. Norway also experienced an increase from 2017 to 2018, but less than the other countries.³

Endnotes

1. The overview is based on preliminary figures for 2018 and will be updated when final figures for all countries and sectors are ready (early 2020).
2. In international comparisons, the business-oriented part of the institute sector in Norway is included in the business enterprise sector.
3. Number of R&D FTEs is not measured every year in Iceland. Latest figures available are from 2017.
4. The PNP (private non-profit) sector is small in the Nordic countries. The sector is covered by R&D surveys for the government in Denmark, Finland and Norway and the R&D survey for the business enterprise sector in Iceland. Sweden conducts a separate survey for the PNP sector.

* Preliminary figures for 2018

In this newsletter, NIFU has collected the most up-to-date figures from the Nordic countries' producers of R&D statistics, as well as the OECD's Main Science and Technology Indicators (MSTI 2019/1). All the Nordic countries base their compilation of R&D statistics on the OECD guidelines for R&D statistics (the Frascati manual). The Nordic producers of R&D statistics, in Norway represented by Statistics Norway and NIFU, work together on methodological issues to make the statistics as comparable as possible. Links to the various countries' producers of R&D statistics are found here:

Denmark: Danmarks statistik www.dst.dk

Sweden: Statistiska centralbyrån www.scb.se

Finland: Statistikcentralen www.stat.fi

Island: Hagstofa www.hagstofa.is

Norway: Statistisk sentralbyrå www.ssb.no and NIFU www.nifu.no

NIFU

Nordisk institutt for studier av
innovasjon, forskning og utdanning

Nordic Institute for Studies in
Innovation, Research and Education

NIFU is an independent social science research institute, organized as a non-profit foundation. The institute aims to be a leading European research organization for studies of innovation, research and education at all levels. NIFU collect, analyze and disseminate national statistics and indicators for R&D and innovation, and are active participants in statistical cooperation at European and international levels.

NIFU

PB 2815 Tøyen, NO-0608 Oslo
www.nifu.no | post@nifu.no