

Nordic Newsletter from NIFU March 2019

More R&D in all Nordic countries

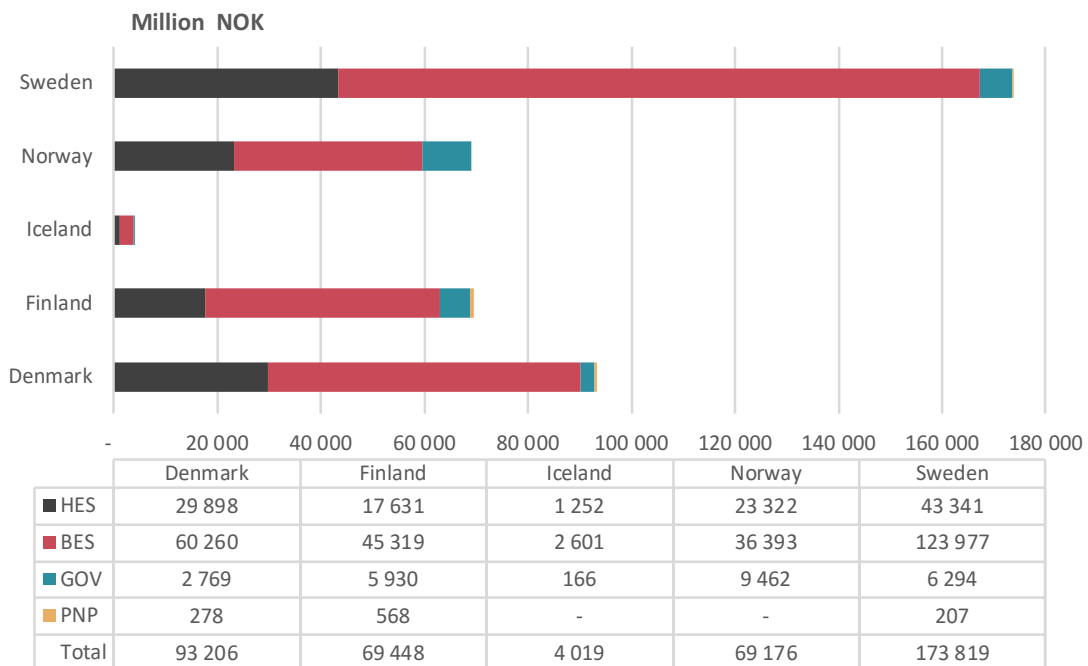
Mona Nedberg Østby

The Nordic countries invested a total of nearly 410 billion NOK in research and development (R&D) in 2017. In current prices R&D expenditure increased by 27 billion NOK, or 7 per cent, from 2016, and all countries displayed growth. Sweden continues to hold the top position among the Nordic countries, with R&D expenditure of 174 billion NOK, equaling 3.40 per cent of the country's GDP. R&D expenditure in Norway amounts to 2.09 per cent of GDP, which is record high.

Rising trends, especially in Sweden and Norway

As in previous years Sweden accounted in 2017 for the greater part of total Nordic R&D expenditure, with 42 per cent. Denmark stood for 23 per cent of the total, Finland and Norway 17 per cent each, and Iceland merely 1 per cent. R&D expenditure grew more in Sweden and Norway in 2017 (9 per cent) than the Nordic total, and their relative shares increased. The increase from 2016 was 8 per cent in Iceland, 5 per cent in Finland and 4 per cent in Denmark.

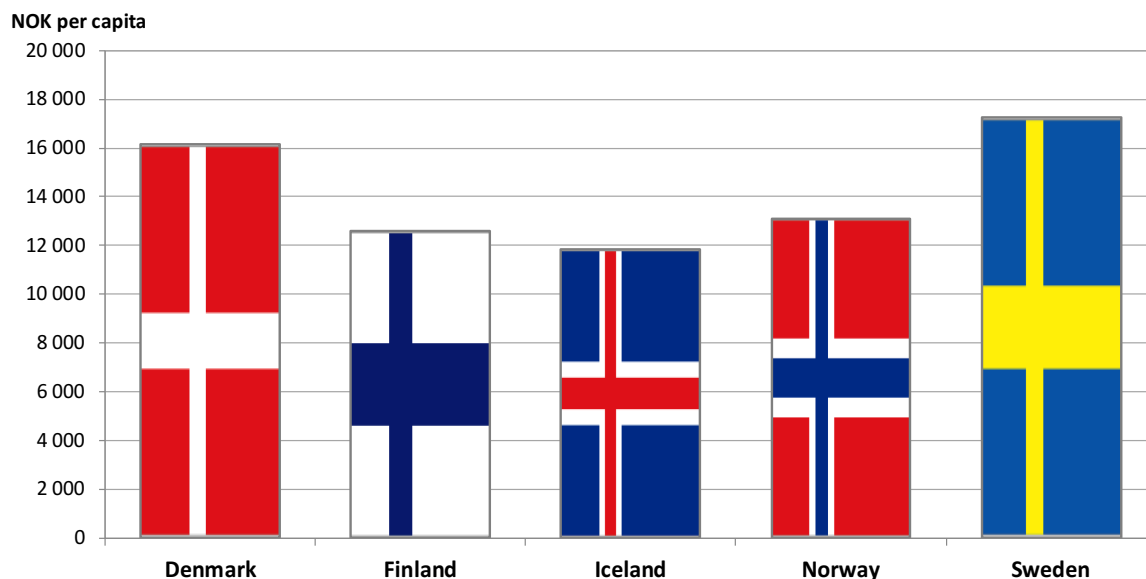
Figure 1: R&D expenditure by sector in the Nordic countries, 2017. Million NOK.



HES: higher education sector, BES: business enterprise sector, GOV: government sector, PNP: private non-profit sector
 Source: National R&D statistics, OECD MSTI 2018/2

As shown in the figure below, Sweden also spent more on R&D per inhabitant than the other Nordic countries, 17 255 NOK, whereas Iceland spent least.

Figure 2: R&D expenditure per capita in the Nordic countries in 2017. NOK.



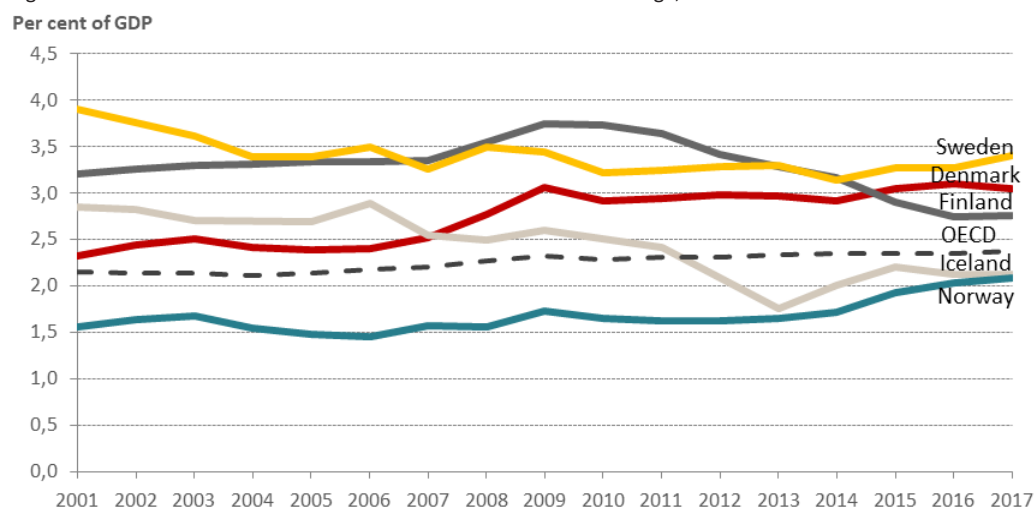
Source: National R&D statistics, OECD MSTI 2018/2

R&D as share of GDP went up, except for Denmark

R&D expenditure as share of GDP increased in all Nordic countries from 2016 to 2017, except for Denmark. Sweden has since 2013 held the highest R&D share of GDP among the Nordic countries, and it rose further from 3.27 in 2016 to 3.40 in 2017. R&D expenditure in Denmark has amounted to more than 3 per cent of GDP since 2015, but the share decreased from 3.10 per cent in 2016 to 3.05 per cent in 2017. After being in the lead among the Nordic countries for several years, Finland's R&D share of GDP started to

decline in 2010. The downward trend may now have turned, as the country's R&D expenditure amounted to 2.76 per cent of GDP in 2017 (2.74 per cent in 2016). This share has been varying over the last years in Iceland as well, but increased slightly from 2.12 per cent in 2016 to 2.13 per cent in 2017. Norway continues to be the Nordic country with the lowest R&D expenditure as share of GDP. In 2016 the share passed 2 per cent (2.03) for the first time and rose to 2.09 per cent of GDP in 2017.

Figure 3: R&D as share of GDP in the Nordic countries and OECD average, 2001–2017. Per cent.



Source: National R&D statistics, OECD MSTI 2018/2

Highest growth in the business sector

The business sector performs most R&D in the Nordic countries. The sector spent a total of nearly 269 billion NOK on R&D in 2017, which was an increase of 10 per cent from 2016 in current prices. In Sweden the business sector stands for 71 per cent of the country's R&D expenditure, compared to 65 per cent in Denmark, Finland and Iceland. Norway has the smallest business sector in relative terms, constituting 53 per cent of total R&D in the country.

More R&D in Danish and Norwegian universities

The higher education sector in the Nordic countries spent a total of more than 115 billion NOK on R&D in 2017. That is an 8 per cent increase from 2016, much stronger than the previous year's 5 per cent increase. R&D expenditure at both Danish and Norwegian universities grew by 13 per cent (current prices). The increase from 2016 was 6 per cent in Iceland, 5 per cent in Finland and 1 per cent in Sweden. The higher education sectors in Norway, Denmark and Iceland account for more than 30 per cent of total R&D expenditure in each country (Norway in the lead with 34 per cent). That is a larger share compared to 25 per cent in both Sweden and Finland.

Growth in R&D FTEs, decline in Sweden

The number of full-time equivalents (FTEs) dedicated to R&D rose from 2016 to 2017 in Denmark, Finland and Norway. Sweden, on the other hand, displayed a decline, nevertheless after a sharp rise the previous year. In Finland, the number of FTEs has fallen over the last years in line with R&D expenditure, but increased in 2017. 2017 figures for Iceland are not available.

Table 1: Number of full-time equivalents in R&D in the Nordic countries, 2015–2017.

Country	2015	2016	2017
Denmark	60 243	62 780	63 340
Finland	50 367	47 429	48 999
Iceland	2 941	3 247	-
Norway	42 409	43 918	46 761
Sweden	82 151	90 692	89 268

Source: National R&D statistics, OECD MSTI 2018/2

IN THIS NEWSLETTER NIFU has gathered the most updated figures from the Nordic producers of R&D statistics, as well as OECDs Main Science and Technology Indicators (MSTI 2018/2). All the Nordic countries apply OECDs guidelines for collecting and using R&D statistics (Frascati Manual), with some national adaptations. The Nordic producers of R&D statistics, in Norway represented by Statistics Norway and NIFU, cooperate on methodology issues to improve the comparability of the figures. Please refer to the webpages of the individual institutions:

- Denmark: Statistics Denmark www.dst.dk/en
- Sweden: Statistics Sweden www.scb.se/en/
- Finland: Statistics Finland www.stat.fi/index_en.html
- Iceland: Statistics Iceland www.statice.is/
- Norway: Statistics Norway www.ssb.no/en and NIFU www.nifu.no/en/

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.

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