Higher Education

Benchmarking Higher Education System Performance

The scope of contemporary higher education is wide, and concerns about the performance of higher education systems are widespread. The number of young people with a higher education qualification is expected to surpass 300 million in OECD and G20 countries by 2030. Higher education systems are faced with challenges that include expanding access, containing costs, and ensuring the quality and relevance of provision. The project on benchmarking higher education system performance provides a comprehensive and empirically rich review of the higher education landscape across OECD countries, taking stock of how well they are performing in meeting their education, research and engagement responsibilities.

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Notes

[1] This includes about 9 000 students following programmes below the bachelor's level (ISCED 5), educated in vocational colleges (*fagskole*), which are not considered part of the higher education system.

[2] A wider discussion of the topics covered in this note, as well as many other topics spanning the resourcing, missions and performance of higher education can be found in the synthesis report for the project in (OECD, 2019[2]).

[3] The minister for higher education and research in Norway is responsible for higher education from the bachelor's level (ISCED 6) to the doctoral level (ISCED 8).

[4] Approximately 85% of higher education students were enrolled in public institutions in 2016.

[5] Two-year vocational college education programmes (*fagskole*).

[6] Countries that participated in PIAAC in either 2012 or 2015.

[7] The correlation coefficient of the two series as presented in Figure 12.11 is -0.22.

[8] The assumptions are used to estimate suitable multipliers for the projected attainment time series. For example, iterating a cumulative increase in the entry rate of 1 percentage point per year between 2018-2028 on a standard set of test data indicates that attainment would start to be impacted from 2021, and attainment levels would eventually increase by 9.3% over the baseline level by 2030, once the time lag to acquire a qualification and the rates of non-completion are taken into account.

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reading. Crucially, Norway has one of the widest gaps in expectation of 15 year-olds to complete higher education, as recorded in PISA 2015; 71% of girls expected to obtain a higher qualification, compared to just 52% of boys, one of the largest gaps in the 57 participating countries (Borgonovi, Ferrara and Maghnouj, 2018[7]).

Tackling the completion gap between genders will therefore require policy responses that begin much earlier in the lifecycle. For Norway, policy responses could include school-based initiatives, creating stronger national visibility on the issue of gender gaps in outcomes to encourage more research, and strengthening policy evaluation mechanisms (Borgonovi, Ferrara and Maghnouj, 2018[7]).. Norway recently submitted a Green Paper on gender differences in pathways and results to address gender equity issues arising at lower levels of education, which also includes some policy recommendations related to access in higher education (Norwegian Ministry of Education and Research, 2019[30]).

Supporting first-generation students

First-generation or first-in-family students (those who do not have an immediate family member who has attended higher education) face additional hurdles to completion over and beyond financial constraints. For example, they may be less likely to understand expectations of teaching staff and what is required of higher education students, and be less likely to have awareness of the career advice and other services available to them (Collier and Morgan, 2008[31]; Pasero, 2018[32]). Identifying the specific challenges faced by first-generation students and providing support mechanisms designed to overcome these challenges can help increase the retention of these students in higher education.

Most programmes designed to provide additional assistance to first-generation students are organised at the institutional level, and include supports ranging from specialist support staff to extra advice sessions for first-in-family students. However, governments can incentivise institutions to provide assistance in a number of ways, such as providing targeted financial contributions, considering the student supports available as part of the assessment of institutional performance, or funding research to identify the most promising types of interventions. For example, in the UK, the government has created a "Student Opportunity" fund available to institutions, which is intended to be used specifically on widening participation and completion from groups who are more likely not to achieve study success (European Commission, 2015[33]).

Norway's policy responses to date have focused on providing incentives to both students and institutions to stimulate quicker completion of studies, such as an ability for students to convert a portion of their student loan into a grant if they complete quickly, and including completion rates as an indicator in the funding formula for higher education institutions. However, these initiatives so far appear to not have achieved the desired level of improvement (Koutsogeorgopoulou, 2016[29]). The wide variety of contributing factors indicated in Figure 12.23 could indicate the need for a more multi-dimensional policy framework that extends beyond the provision of financial incentives.

One of the key policy responses in recent years to improving completion has been to strengthen student social support and peer mentoring during the transition into higher education and throughout the duration of their studies. A range of social support practices are in place across the OECD, including programmes that provide mentoring during the first year of study from more senior students and specialist counsellors (OECD, 2018[1]).

However, universal social supports could be further supplemented with specific initiatives that provide additional focus on certain groups who are more at risk of disengaging from the system, such as, in the Norwegian case, older students, males and students from families with lower levels of parental education.

Understanding non-completion of older students

The higher prevalence of non-completion of older students in Norway does not appear to have a clear explanation or be as well researched as non-completion for other groups of students. Common identified barriers to non-completion for older students include financial constraints or balancing attendance in higher education with other personal commitments, such as caring for children or elderly relatives.

Norway has a long-standing policy of ensuring that older students are able to access higher education, through the use of quotas and alternative access arrangements for students who do not meet the traditional entry requirements (see Chapter 2 of (OECD, 2019[2])). Furthermore, institutions can be more selective in admissions to high-demand courses, while they accept all eligible applicants to low-demand courses. This could create a situation where older students are disproportionately represented in less desirable or less labour market-relevant programmes, or fields of study where there are fewer incentives to complete.

The large share of non-completion in Norway has also been linked to the intentions of the older cohort only to study specific subjects and not pursue a qualification; Norway's continuing education system should be able to play a more prominent role in meeting the needs of students who do not intend to pursue a full qualification. Norway already has a well-developed continuing education system, which allows students to pursue individual courses on a non-credit or credit basis and count credits achieved towards a degree (see Chapter 7 of (OECD, 2019[2])). Norway could conduct some further investigation of the objectives of older students when accessing higher education, to inform how they could most efficiently be realised.

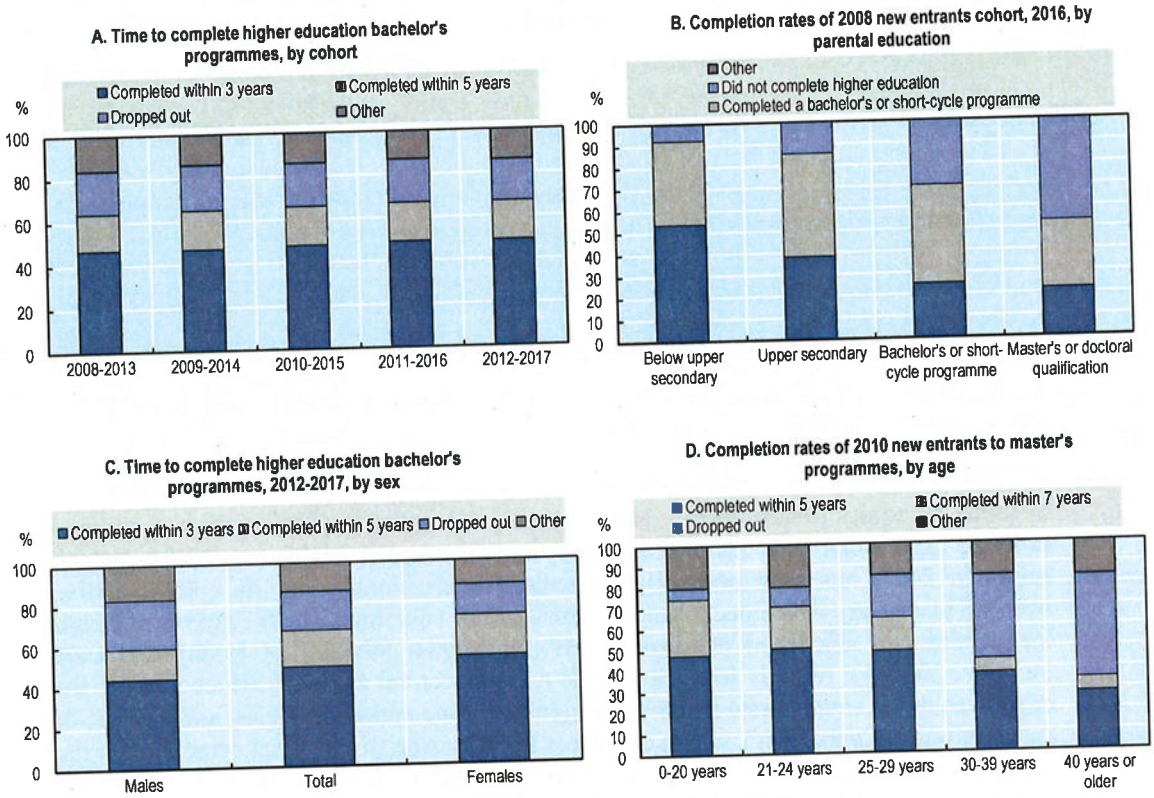
Closing the gap between male and female students

The completion gap between male and female students is the culmination of a series of achievement and attitudinal gaps that open up at earlier education levels in Norway. For example, in Norway, 15 year-old girls have higher career ambitions, and boys (particularly boys of lower socio-economic status) make much slower progress in

The on-time completion rate for males is almost 10 percentage points lower than that of females for bachelor's level qualifications (44%, compared to 53% for females), and one-quarter of males eventually drop out of their programme. The probability of completing education is also heavily related to age of the student. For example, less than half of students aged over 30 entering a 5-year master's programme are able to complete the programme within 7 years, and more than 40% of them drop out entirely (Figure 12.23).

Furthermore, there is a strong relationship between the probability of dropping out and the educational attainment of students' parents. In the 2008 cohort of entrants, students whose parents did not have upper secondary education were more than twice as likely to drop out of education compared to students whose parents had attained a short-cycle or bachelor's level qualification (Figure 12.23).

Figure 12.23. Completion rates from selected programmes of study by entry cohort and selected student characteristics



Source: Adapted from Statistics Norway (2019[21]), *StatBank Norway*, www.ssb.no/en/statbank.

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Recent OECD analysis identifies a number of factors underlying Norway's low completion rates, including the ability of non-completing students to still achieve employment in the robust labour market without a qualification, the low cost of participation, inadequate career guidance and the presence of a large older cohort which may not be interested in pursuing a qualification to completion, but instead may be interested only in studying a particular subject (OECD, 2018[1]).

years, including Australia, where the policy targets completion as well as access (Box 12.3).

Box 12.3. The Australian Strategy for promoting equity in higher education

The Higher Education Participation and Partnerships Programme (HEPPP) aims to ensure that Australians from low socio-economic backgrounds who have the ability to study at university have the opportunity to do so. Through its participation and partnerships components, HEPPP provides funding to assist universities in undertaking activities and implementing strategies that increase access to undergraduate courses for people from low socio-economic backgrounds, as well as in improving their retention and completion rates. Partnerships are created with primary and secondary schools, VET institutions, universities and other stakeholders to raise the aspirations and build the capacity of disadvantaged students to participate in higher education. Funding for the Participation and Partnerships Programme is provided to universities based on the number of enrolled students from low socio-economic backgrounds.

An additional component, the National Priorities Pool, funds projects that target and support building an evidence base for future equity policies, testing new equity interventions at the national and institutional levels, and improving implementation of HEPPP at these levels. A 2016 evaluation found that HEPPP has positively influenced the quantity and rigour of higher education equity activities and policies overall. It concluded that HEPPP provided wide-ranging support to a large number of students and institutions between 2010 and 2015. Some 2 679 projects were implemented at the 37 eligible universities. Over 310 000 students have participated in HEPPP projects, with additional students supported in schools and other institutions. In addition, at least 2 913 partner organisations participated in HEPPP outreach activities.

Source: OECD (2018[26]), *Education Policy Outlook 2018: Putting Student Learning at the Centre*, https://dx.doi.org/10.1787/9789264301528-en.

In terms of equity policy design, Norway could also take inspiration from a national example. The Norwegian national strategy to reduce social health inequalities, which began in 2007, has been positively recognised internationally for its comprehensive nature. The strategy developed a suite of interventions covering different aspects of health inequalities and associated national targets (Norwegian Ministry of Health and Care Services, 2007[27]). Notable features include a cross-sectoral approach which embeds the objectives of the strategy into a number of ministries and areas of policies, and an ethic of "proportional universalism", which combines the provision of universal benefits with the recognition that additional efforts should also be directed towards the most vulnerable groups in society (Van der Wel, Dahl and Bergsli, 2016[28]).

Achieving higher completion rates

According to national data, while completion rates have improved slightly in the most recent cohort of entrants, still less than half of students in bachelor's level programmes complete the programme in the prescribed time (Figure 12.23). There are also important differences in completion rates for different subgroups of students, with older students, males and those without tertiary-educated parents particularly at risk.

The smaller gap in the probability of enrolling in higher education among young people residing in different regions relative to many other countries could be attributed to Norway's long tradition of targeted policy to ensure regional equity of access and preserve the spatial patterns of population distribution, in order to reduce brain drain to urban areas. These policies include generous public support and maintaining a highly decentralised institutional structure, which ensures that regional access to higher education remains well-established, even after a recent wave of institutional mergers (OECD, 2016[14]).

While targeted policies for equity between regions as well as special supports for students with disabilities and other special needs exist, the approach to tackling socio-economic gaps in access in Norway has been more general in nature, by universally providing financial support to students and public subsidies so students do not have to pay tuition fees (Table 12.4). While universal supports ensure that students do not face basic financial barriers to access, gaps in access have nevertheless persisted in Norway.

Table 12.4. Policies to broaden access in higher education in Norway (2017)

Tuition is free in public higher education institutions
Universal system of student loans, some of which can be converted into grants under certain conditions
Part-time students (with an intended study load of 50% or higher) are eligible for public grants and loans
Historical role of distance learning for widening participation (8% of Norwegian students were enrolled in online distance programmes in 2015)
National survey on the state of digitalisation and distance learning in higher education carried out every few years
Most public higher education institutions in Norway offer some programmes in flexible mode (online, mixed mode, part-time)
Special provisions (additional financial support and study flexibility) available for students with children and students with a disability or special educational needs

Source: Adapted from OECD (2019[2]), *Benchmarking Higher Education System Performance*, https://doi.org/10.1787/be5514d7-en.

This may imply that more targeted policies are required to increase the proportion of students from lower socio-economic backgrounds who are able to progress to higher education. Many of these targeted policies may be school-based in nature. For example, policy efforts in the early part of the decade have been focused heavily on improving Norway's below average upper secondary completion rate (OECD, 2015[24]). While some progress has been made, the latest national figures show that around one-quarter of Norwegian students still do not complete upper secondary education within the prescribed time (Statistics Norway, 2019[21]). This can severely limit the possibilities for growing entry rates into higher education over time.

Progress could also be made by investigating other types of policy interventions rather than the default principal policy instrument of financial support. Recent international research into equity policies has suggested that the most common non-monetary policy responses used by governments include outreach and bridging programmes, affirmative action programmes or special admissions criteria for disadvantaged groups (Salmi, 2018[25]). There is a growing realisation among governments that a more comprehensive policy mix that aims to remove both financial and non-financial barriers may be more likely to succeed. Increasingly, governments are also providing incentives directly to institutions to encourage them to broaden access for students (Salmi, 2018[25]).

Norway could consider developing a comprehensive national educational equity strategy and targets to ensure that inequalities do not become more embedded and can reduce over time. Many OECD countries have developed such comprehensive strategies in recent

resources annually in students who will eventually not attain a qualification (see Chapter 8 of (OECD, 2019[2])).

12.5.4. Implications for policy

One of the central objectives of education policy in Norway is that education should be universally accessible, and Norway is strongly committed to achieving full inclusiveness and equity in higher education (OECD, 2016[14]). Norway works to achieve this objective by providing generous universal benefits. However, more targeted policy initiatives may deliver increases in entry and completion rates, which will ultimately result in more opportunities to achieve higher education for a larger proportion of the Norwegian population.

Achieving higher entry rates

Given that entry rates are already high relative to other OECD countries, Norway's best potential for increasing rates in the future may be to focus on groups who appear to face greater barriers to accessing higher education. Despite being one of the more equitable countries in the OECD in access to higher education, certain subgroups of the young population in Norway enter higher education in lower proportions and are vulnerable to not making the same economic and social progress as their peers. In 2014, Norwegian 18-24 year-olds whose parents did not attain higher education were 40% less likely to themselves enter higher education than others in the same age cohort. In Norway, as in most other countries, young people whose parents do not have a higher education qualification are more likely to advance to short-cycle post-secondary education than are other individuals in the same age group.

For the foreign-born young population, the gap in access to higher education is smaller, yet foreign-born 18-24 year-olds are still around 20% less likely to enter higher education than are native-born peers. However, it should be noted that there are higher levels of intergenerational educational mobility for the native-born children of immigrants in Norway than in many other countries. Native-born children of non-natives are just 10% less likely to achieve a higher education qualification than children with native-born parents (OECD, 2017[22]).

There are also gaps in access for students living in different regions of Norway, although these gaps are smaller than in many other countries. There is about a 10% gap in the probability of 18-24 year-olds from Oslo and Akershus enrolling in bachelor's and long first degree programmes compared to those from the rest of Norway (Table 12.3).

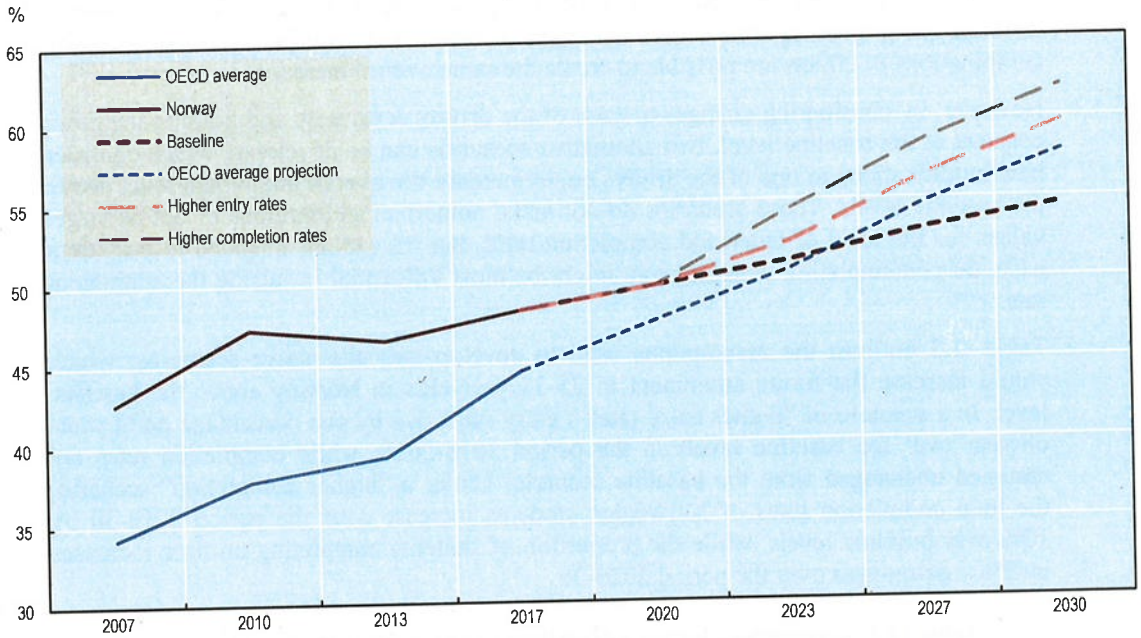
Table 12.3. Relative probability of accessing bachelor's and long first degree programmes for 18-24 year-olds coming from rural or intermediate regions (2015)

Country	Australia	Chile	Germany	Norway	Poland	Sweden
Relative probability (18-24 year-olds from urban regions = 1.00)	0.81	0.70	0.90	0.91	0.60	0.82

Note: The definitions of rural, intermediate and urban regions are taken from the OECD (2011[23]) Regional Typology. Regions classified as rural or intermediate are those with low population density (below 150 inhabitants per square kilometre); at least 15% of the population living in counties or municipalities with low population density; and without any urban centre of more than 500 000 inhabitants representing at least 25% of the regional population. In Norway, this definition implies that the regions of Oslo and Akershus are classified as urban, and the rest of the country as rural or intermediate.
Source: Indicators of Education Systems (INES) Survey on Equity in Higher Education.

In the baseline scenario, if the recent rates of increase observed for both Norway and the OECD average continue into the future, higher education attainment in the younger population would slip below the OECD average by around 2023 (Figure 12.22). This could have an impact in the long term on the supply of skilled personnel to the Norwegian labour market and could require skills gaps to be met by, for example, greater levels of inward migration. It would also imply that other OECD countries move ahead of Norway in having a highly qualified population, and could become more competitive in attracting investment at the same time as Norway is working to diversify its economy away from oil and gas.

Figure 12.22. Future scenarios for higher education attainment levels of 25-34 year-olds, Norway and OECD



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While raising entry rates by 10 percentage points would be an achievement, the dividends on the levels of qualifications in the population would only fully pay off over a longer period (without a parallel improvement in completion). This is due to the time between entry and graduation, high non-completion rates, and the time it would take for the increased flows of graduates to work through the cohort. This "higher entry rates" scenario would therefore lead to an estimated increase of 9.3% in educational attainment over the baseline level by 2030 (Table 12.2).

The "higher completion" scenario would have the greatest impact on raising Norway's educational attainment levels in the shorter term. If the proportion of students completing on time gradually improves over the coming period, and overall completion rises by 10%, then Norway could increase attainment levels of 25-34 year-olds by an estimated 13.4% (Table 12.2) to more than 60% by 2030 (Figure 12.22). This would also be the more efficient option for Norway, as Norway is already currently investing significant financial

12.5.3. Scenarios for future developments to 2030

The starting point for the projection is the proportion of the population aged 25-34 with higher education in both Norway and the OECD in 2017. A baseline scenario assumes that attainment of higher education for 25-34 year-olds will continue to increase in Norway at a similar rate to the recent past, i.e. over the period 2007-2017 (approximately 13%). The baseline scenario also makes a similar assumption for the OECD average rate of increase (which was approximately 30% over 2007-2017).

The attainment rate in the population has two key drivers: the proportion of the population that is able to access and participate in higher education (entry rates) and the proportion of new entrants able to successfully complete a higher education programme and achieve a qualification (completion rates). While the baseline scenario by default assumes some positive changes to entry and/or completion rates in order to achieve the increase in attainment, the complexity of interplay between the two factors creates a difficulty in projecting their individual impacts within the baseline scenario, as many combinations of effects are possible to create the same overall increase.

However, by considering changes to each of the drivers separately and holding the other constant at the baseline level, two alternative scenarios can be developed which consider how modifications to one of the drivers could increase the overall attainment level above the baseline levels. These scenarios do not make numerical assumptions or define target values for the level of entry and completion rates, but instead are intended to provide a basis for contemplating which factors might be most influential in raising the attainment rate.

Table 12.2 outlines the assumptions used to develop two alternative scenarios, which would increase the future attainment in 25-34 year-olds in Norway above the baseline level. In a scenario of "higher entry rates", entry rates rise by one percentage point year-on-year over the baseline levels in the period 2018-2028, while completion rates are assumed unchanged from the baseline scenario. Under a "higher completion" scenario, the total completion rates of Norwegian students increase over the period 2018-30 by 10% over baseline levels, while the proportion of students completing on-time increases by 2% year-on-year over the period 2020-30.

Table 12.2. Assumptions for the calculations of alternative attainment scenarios

Scenario name	Change in entry rates into higher education	Change in completion rates for higher education programmes	Estimated impact on attainment rates[9]
Higher entry rates	Entry rates rise year-on-year by one percentage point between 2018 and 2028 (10 percentage points in total)	No change from the baseline scenario	Increase in attainment of 9.3% over baseline levels by 2030
Higher completion	No change from the baseline scenario	Overall completion rates increase by 10%, with 2% year-on-year increase in on-time completion from 2020-2030	Increase in attainment of 13.4% over baseline levels by 2030

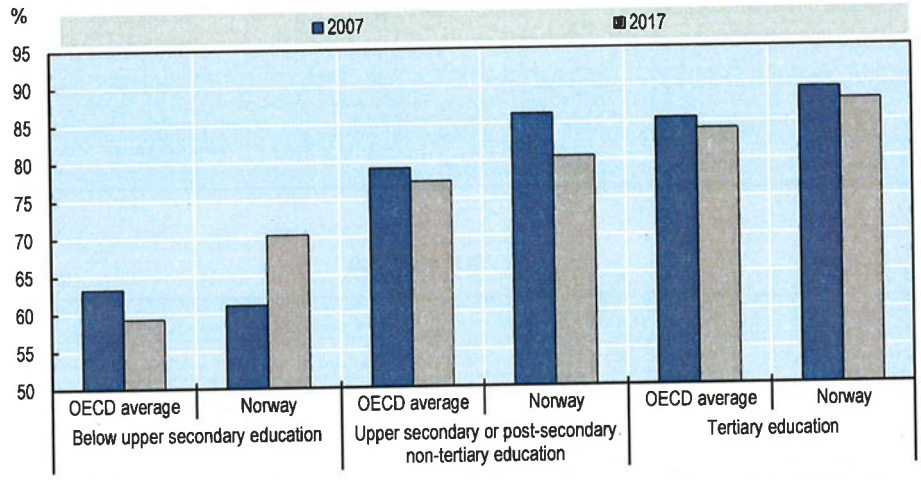
Source: OECD calculations based on current and recent entry, completion and attainment rates

These assumptions on entry rates and completion rates are iterated over a set of simple test data to produce estimates of the proportion by which educational attainment would rise beyond the baseline levels under each of these conditions during 2018-30, taking into account the time delay to acquire a qualification, and rates of non-completion.[8]

On one hand, lower rates of increase in attainment relative to other countries may be somewhat expected for Norway, given its higher starting point in 2008. However, as Figure 12.20 shows, there are examples of countries with even higher starting points, such as Canada or Korea, that have also been able to maintain or increase these higher levels over the period 2008-2017. In addition, as Figure 12.20 shows, some other countries with similar levels of attainment to Norway in 2008 have increased at a faster pace (e.g. Ireland and the United Kingdom), or have now exceeded the levels of Norway despite starting from a much lower base in 2008 (Switzerland).

This slowing progress could be a source of concern in Norway given the value placed on higher education in society, the evidence of strong social benefits of higher education and Norway's central policy principle that education should be universally accessible. While young people without a higher education qualification still generally enjoy relatively good labour market outcomes in Norway compared to many OECD countries, their outcomes are not as positive as for those with higher education, and employment prospects may be more volatile over time (Figure 12.21).

Figure 12.21. Employment rates of 25-34 year-olds by level of education (2007 and 2017)



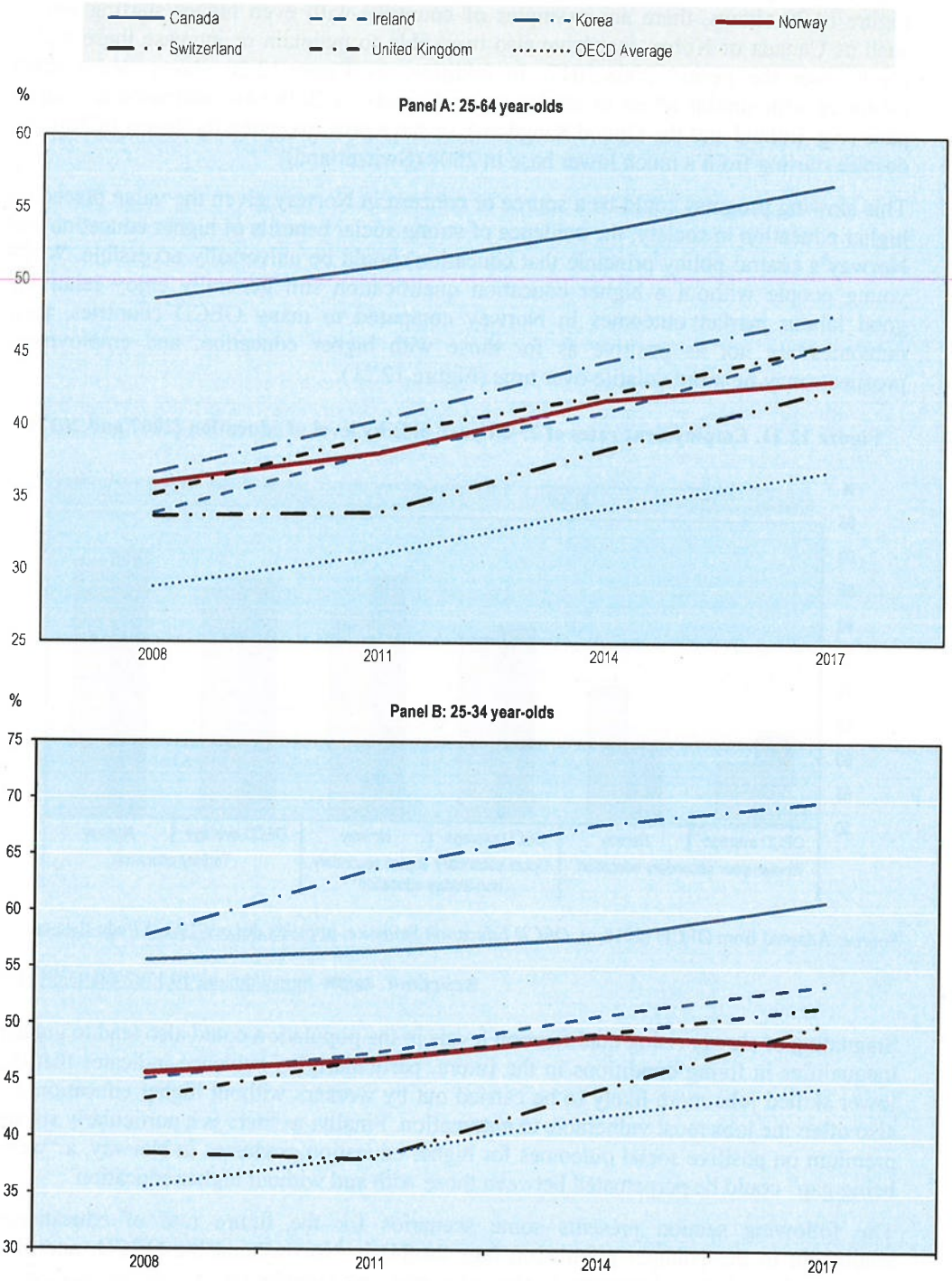
Source: Adapted from OECD (2018[4]), *OECD Education Statistics*, http://dx.doi.org/10.1787/edu-data-en.

StatLink https://doi.org/10.1787/888933943495

Stagnating or slowly rising qualification levels in the population could also lead to greater inequalities in living conditions in the future, particularly as evidence indicates that the lower skilled jobs more likely to be carried out by workers without higher education are also often the jobs most vulnerable to automation. Finally, as there is a particularly strong premium on positive social outcomes for higher education graduates in Norway, a "well-being gap" could be perpetuated between those with and without higher education.

The following section presents some scenarios for the future rate of educational attainment in the younger population (age 25-34) in Norway and the OECD, and also considers how further increases in the entry rate and completion rate in Norway could influence the educational attainment rate in the future.

Figure 12.20. Trends in higher educational attainment in the population (2008-2017)

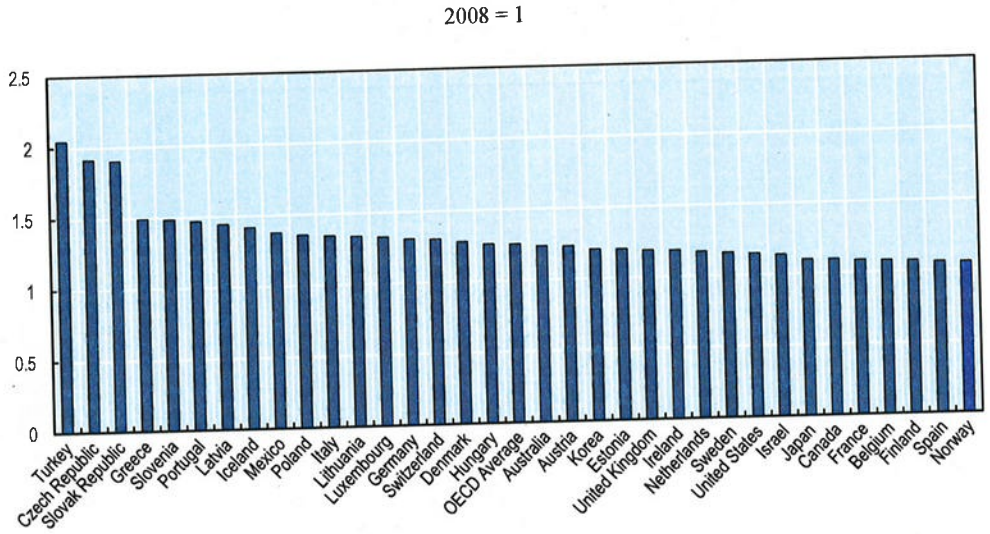


Source: Adapted from OECD (2018[4]), *OECD Education Statistics*, http://dx.doi.org/10.1787/edu-data-en.

StatLink https://doi.org/10.1787/888933943476

higher education qualification over the period 2008-2017 of all OECD countries (6% compared to the OECD average of 25%) (Figure 12.19).

Figure 12.19. Increase in higher education attainment of the population aged 25-34 (2017)

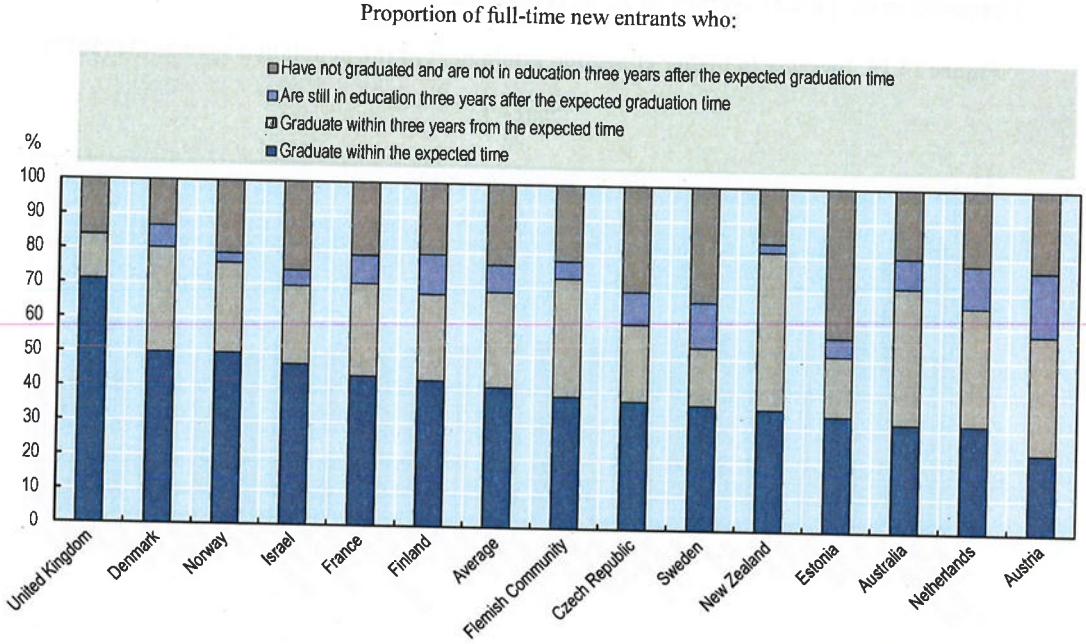


Source: Adapted from OECD (2018[4]), *OECD Education Statistics*, http://dx.doi.org/10.1787/edu-data-en.

StatLink https://doi.org/10.1787/888933943457

The extent to which other OECD countries are catching up is particularly evident for the younger age cohorts. In 2008, Norway had the fourth highest proportion of 25-34 year-olds with a higher education qualification in the OECD. Between 2008 and 2017, the gap between Norway and the OECD average has narrowed substantially (Figure 12.20).

Figure 12.18. Completion and non-completion rates of bachelor's level programmes (2014)



Note: The year of reference is the expected graduation date plus three years. Countries are ranked in descending order of the proportion of new entrants graduating within the expected time.
Source: Adapted from OECD (2016[19]), *Education at a Glance 2016: OECD Indicators*, http://dx.doi.org/10.1787/eag-2016-en.

StatLink https://doi.org/10.1787/888933943438

Financial issues are often cited as a reason for students to leave higher education before completion; high proportions of non-completing students may be even more concerning in the context of the robust financial support package available to students in Norway.

National data also suggest that while completion rates are improving, progress is slow; of the cohort of first-time students enrolling in a bachelor's degree in 2008, around 63.5% completed a qualification within five years. For the same cohort beginning in 2012, 67% completed a qualification within five years; equating to a 3.5 percentage point increase over the period 2008-2012. Over the same period, the percentage of students who dropped out of the course either in the first year or subsequent years has remained stable at just under 20% (Statistics Norway, 2019[21]).

....with the result that higher entry rates are not translating into the same levels of increase in attainment observed in other OECD countries over the past decade

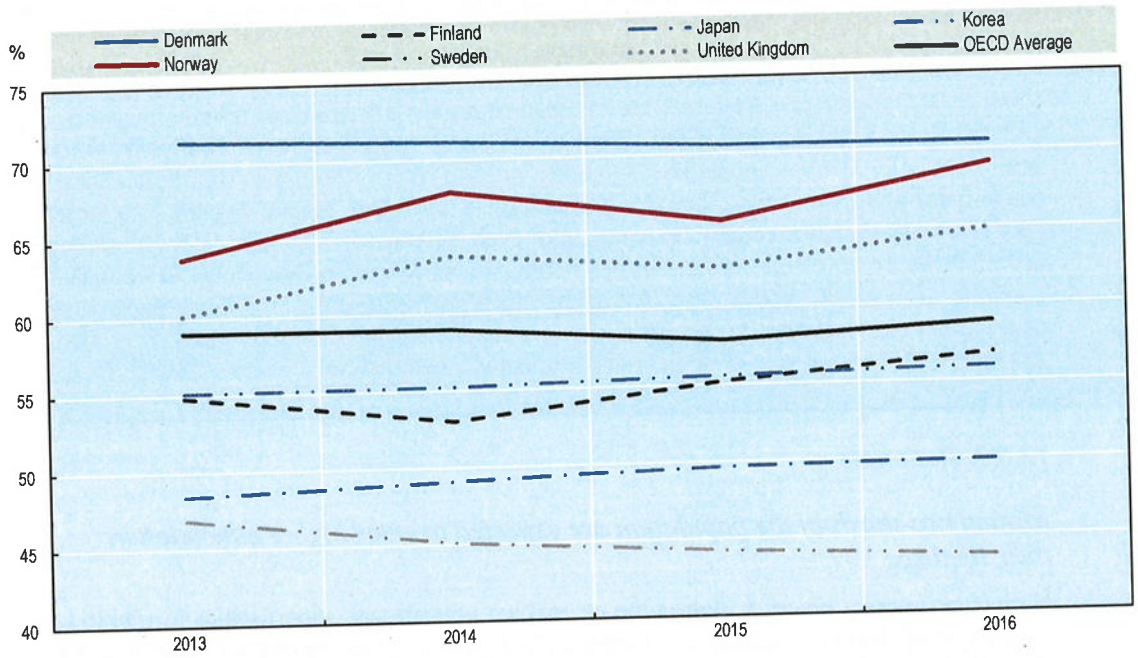
In 2017, among OECD countries, Norway had the tenth highest proportion of the population that had achieved a higher education qualification, for both 25-64 year-olds and the younger cohort of 25-34 year-olds. However, in recent years, with rates of completion only slowly rising, Norway appears to have struggled to further increase the proportion with higher education qualifications at the same rate as many other OECD countries. Norway had the smallest increase in the share of young population with a

20% had still not completed their studies three years after the theoretical duration or had left and were no longer in education.

As Figure 12.18 shows, while the on-time completion rates are similar to or higher than in most of the countries included in the data collection, they were substantially lower than in the United Kingdom. While comparable data on completion are not available for a wider set of OECD countries, graduation rates from the bachelor's level of education in Norway are also lower than might be expected given the high entry rates in Norway; in 2016 the graduation rate from bachelor's level, at 38%, was just above the OECD average of 40% (OECD, 2018[20]). In the same year, the entry rate into bachelor's level education was 69%, compared to the OECD average level of 59% (Figure 12.17).

Figure 12.17. Entry rates to bachelor's level programmes, selected countries (2013-2016)

Sum of age-specific entry rates, including international students



Source: Adapted from OECD (2018[41]), *OECD Education Statistics*, http://dx.doi.org/10.1787/edu-data-en.

StatLink https://doi.org/10.1787/888933943419

Short and medium-term scenarios are likely to be more accurate and useful to the decision-making process of policymakers. The scenario exercise presented in Section 12.5.1 therefore focuses on the immediate decade ahead (i.e. up to 2030), and is developed using the following steps:

- statement of a subject area or issue of national policy concern and the rationale for the concern
- outline of the assumptions used to develop the set of future scenarios
- explanation of the likely impact of the assumptions on future trends
- discussion of implications for policy.

12.5.1. Progress in higher education attainment in Norway has been slowing, and other countries are catching up

Box 12.2. Summary of policy concern

Norway has long been considered one of the most highly educated countries in the world, and still ranks in the top ten of OECD countries overall on educational attainment in the adult population. However, despite high entry rates in recent years, the rate of increase of educational attainment has slowed significantly in the most recent decade, and other OECD countries have caught up with, and even surpassed, Norway. Without policy action, Norway may risk falling further behind in the future as other OECD countries continue to increase opportunities for achieving higher education at a faster pace. This could affect Norway's future competitiveness and slow the timeframe for Norway to meet its central educational goal of achieving fully inclusive education.

12.5.2. Rationale

Around two-thirds of the population are expected to enter higher education in their lifetimes...

Norwegian society places a high value on making educational opportunities available to citizens at all levels of education. Financial barriers to accessing higher education are low. Students do not pay tuition fees, and are eligible for up to eight years of financial support from the Norwegian government. As a result, entry rates (the expected rates of entry into higher education, if current trends continue into the future) are higher than the OECD average. Based on current age-specific entry rates, more than two-thirds of young Norwegians can be expected to enter bachelor's level education over the course of their lives, and this rate has been increasing in recent years (Figure 12.17). Entry rates are higher in Norway than in all other Nordic countries except Denmark, and in other countries with high levels of educational attainment such as Japan, Korea and the United Kingdom (Figure 12.17).

...but many students can take a long time to complete or do not complete at all...

Non-completion and late completion of studies is a significant issue in Norway, although not as serious as in some neighbouring countries. Still, a 2014 data collection covering 14 OECD countries indicated that only about half of Norwegian students complete their studies at the bachelor's level within the theoretical programme duration, while more than

Furthermore, international net flows of scientific authors over the period 2002-2016 are positive in favour of Norway. For every 100 researchers, Norway had a net positive inflow of nine researchers in total over the period, suggesting that Norway is a relatively attractive destination for researchers from abroad (Figure 12.20).

However, this indicator also shows that relatively fewer Norwegian researchers choose to gain an international experience abroad. High inward flow could be due to the favourable terms and conditions available for researchers in Norway. At the same time, these conditions could have an adverse impact on brain circulation (the inflows and outflows of highly qualified or talented individuals between jurisdictions) by making the prospect of moving abroad less attractive for Norwegian academics.

Norway is a leader in providing open access to knowledge

Making research results widely available can have many benefits, including more efficient science due to less duplication of endeavours, engaging a wider audience and a greater number of participants in the scientific process, and fostering greater levels of collaboration (OECD, 2019[2]). Norway is a leader among OECD countries in making the results of research widely accessible. It ranks in the top quartile in open access to scientific documents, with around 30% of documents published in 2016 being available through some form of open access.

This relatively high rate could be linked to national structures and initiatives. For example, the Research Council of Norway requires grantees to publish scientific results in open access journals, and the Council also has a dedicated funding scheme for promoting open access, running over the period 2015-2019 (see Chapter 7 (OECD, 2019[2])).

12.5. Scenarios for policy

This section of the note extends the comparisons drawn in the previous sections by looking forward, and presenting a set of scenarios relevant to the future of Norway's higher education system. The purpose of these scenarios is to provide evidence-based conjectures about future trends in areas of national policy importance, which can stimulate debate and support policy-planning exercises (Box 9.1).

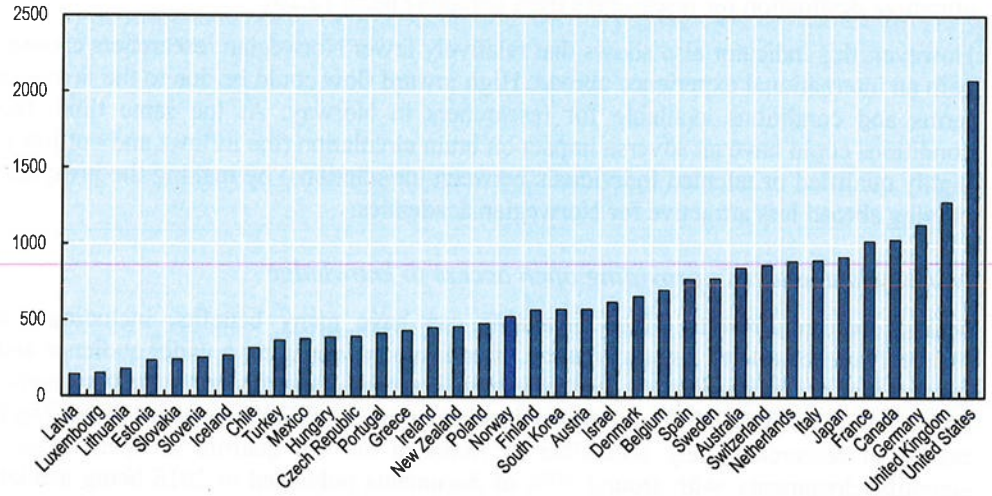
Box 12.1. Scenario development for policy analysis

Governments plan for the future of higher education in the context of a number of sources of uncertainty. Scenarios can be defined as descriptions of hypothetical futures that could occur and that, although somewhat speculative in nature, are nonetheless internally consistent and causally coherent (OECD, 2006[18]). The development of scenarios can provide support to national discussions on contextual and systemic trends, highlight possible consequences of current circumstances on higher education and the economy, and outline the main available policy directions.

In a context of increasing complexity in societies and economies, more emphasis is being placed on anticipatory exercises in the policy process (OECD, 2015[19]). Contemplating different policy scenarios can feed into the development of broad long-term strategic planning for higher education systems or pre-policy research related to particular policy topics.

Figure 12.16. H-index for OECD research and development systems (1996-2017)

Based on citations of publications on Scopus



Note: Designed to measure both productivity and quality at the individual level, the H index is defined as the highest number of publications that have been cited at least an equal number of times (Hirsch, 2005[17]). For example, an H Index of 10 implies that the author has 10 papers that have been cited at least 10 times.
Source: Adapted from Scimago Lab (2019[16]), *Scimago Journal & Country Rank*, www.scimagojr.com/.

StatLink https://doi.org/10.1787/888933943400

Norway includes bibliometric indicators as part of the decision process for allocation of higher education funding, to create incentives for researchers to publish their work. Bibliometric information is verified or provided by public research organisations through the Current Research Information System in Norway (CRISTIN), an integrated national research information system (see Chapter 6 of (OECD, 2019[2])).

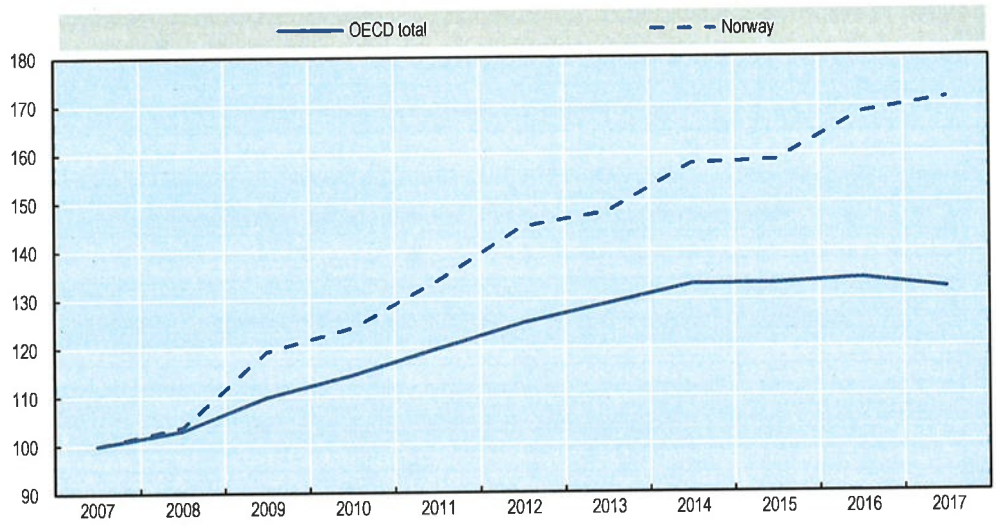
Beyond bibliometrics, other indicators attempt to measure the translation of research into innovative products and processes. For example, data on patent applications can provide a measure of the impact of research on the creation of goods and services that provide benefits to society. In general, across the OECD, the proportion of patent applications originating from the higher education sector tends to be low (less than 10% in the majority of OECD countries). However, Norway has a lower rate than the OECD median level of patent applications, as measured by the proportion of Patent Cooperation Treaty applications originating from the higher education sector between 2010 and 2016 (Table 12.1), with less than 6% of total patent applications coming from the higher education sector over this period.

There is a high level of international collaboration

Norway has achieved one of the highest levels among OECD countries of internationalisation of the higher education R&D sector, according to bibliometric indicators included in the benchmarking exercise. International scientific collaboration between Norway and other countries (measured by joint authorship of research papers by researchers based in different jurisdictions) was in the top quartile of OECD countries in 2015, with 34% of Norwegian scientific outputs having at least one foreign author.

Figure 12.15. Increase in the volume of scientific production (2007-2017)

Based on whole counts of citable documents in the Scopus database (2007=100)

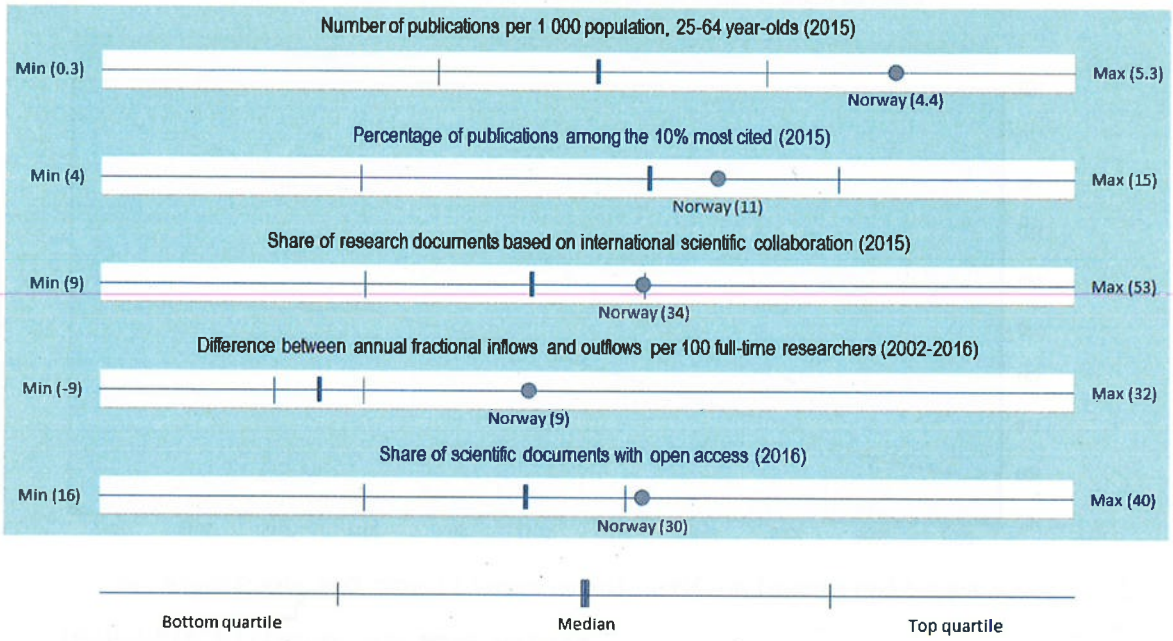


Source: Adapted from Scimago Lab (2019[16]), *Scimago Journal & Country Rank*, www.scimagojr.com/.

StatLink https://doi.org/10.1787/888933943381

Norway also ranks around the median of OECD countries in the numbers of highly cited documents that it has produced (Figure 12.16). The 'H-index' is a bibliometric indicator, which counts the number of scientific documents, *h*, which have also been cited at least *h* times in other scientific documents. When aggregated to country level, it can give an indication of the relative impact of the body of research produced in a country. Norway scores around the median OECD level on this indicator, with an H-index of 526 (meaning 526 Norwegian scientific publications have been cited by other authors at least 526 times), a similar level to neighbouring Finland, though below the other Nordic countries.

Figure 12.14. Where does Norway stand in the OECD distribution? Internationalisation and knowledge production



Note: The indicators represented in this chart are a subset of the indicators presented in Table 12.1. The coloured circle represents Norway's position in the OECD distribution. The circle is not coloured when data are available for less than half of the OECD countries (the minimum number of countries with available data is 14). For more information on methodological issues and metadata, see OECD (2019[2]) and the references cited therein. Follow the *Statlink* to download the data underlying the calculation of the scorecard.
Source: Adapted from OECD (2019[2]), *Benchmarking Higher Education System Performance*, https://doi.org/10.1787/be5514d7-en.

StatLink https://doi.org/10.1787/888933943362

Bibliometric time series data for Norway also show that Norway has increased its volume of publications in recent years by more than the total proportion across the OECD (Figure 12.15). The volume of publications increased by 70% over the period 2007-2017, while total volume across the OECD increased by less than 30% over the same period. Overall, Norway ranked 30th in the world and 22nd among OECD countries in total volume of scientific output in 2017 (Scimago Lab, 2019[16]).

……*but the impact of scientific production is closer to median levels*

Citations of scientific publications by other authors are often used as a proxy to measure the impact of a scientific document on the work of other researchers, as they indicate that other researchers have taken note of the work and have incorporated the knowledge into further research. Norway was above the OECD median level for the proportions of publications that were in the top 10% most cited in 2015, with 11% of all scientific publications produced in Norway ranked among the top 10% of cited publications in the world, compared to the OECD median level of 10.3%. This could indicate that publications from Norway create slightly more of an impact with other researchers compared to the majority of OECD countries.

long-term plans for research and higher education have accordingly provided for further increases in investment in R&D. (Norwegian Ministry for Education and Research, 2015[5]; 2018[15]). In the most recent plan, covering the period 2019-2028, focus areas for investment include boosting research in enabling and industrial technologies, and increasing the benefits of research for renewal and restructuring in business and industry. Norway also has a long-term roadmap for investing in the physical infrastructure necessary to underpin research and development in the country. The long-term plan 2018-2028 lays out the investment plan for buildings, equipment and other infrastructure in the research and higher education sector (Norwegian Ministry for Education and Research, 2018[15]).

There are favourable terms and conditions for researchers

There are good prospects for skilled researchers in the Norwegian R&D system,.Terms and conditions for researchers are favourable; most Norwegian academics have public servant status with associated benefits and job stability. This helps to ensure that a career in research is an attractive option in Norway; the concentration of researchers in the labour force was among the highest in OECD countries in 2016 (in the top quartile). There is also a slightly higher concentration of doctorate holders in the Norwegian population than in general across the OECD, with 1.1% of the population having attained this level of education in 2017, compared to the OECD median of 1.0%.

Norway also appears to be a particularly attractive destination for doctorate holders from other countries to pursue their careers, compared to many OECD countries. Results from the OECD Careers of Doctorate Holders survey show that around 37% of all doctorate holders in Norway are foreign citizens, one of the highest rates of all countries responding to the survey.

12.4.2. Internationalisation and knowledge production

Bibliometric indicators are the metrics most commonly used to compare the performance of countries on the quantity and quality of the scientific production of their research institutions. Despite methodological limitations, they represent the best available indicators of comparative research performance across countries (see Chapter 6 of (OECD, 2019[2])). Figure 12.14 provides an overview of the position of Norway on bibliometric indicators related to internationalisation of research and the production of scientific knowledge.

Norway has increased the volume of scientific production at a greater pace than other OECD countries.....

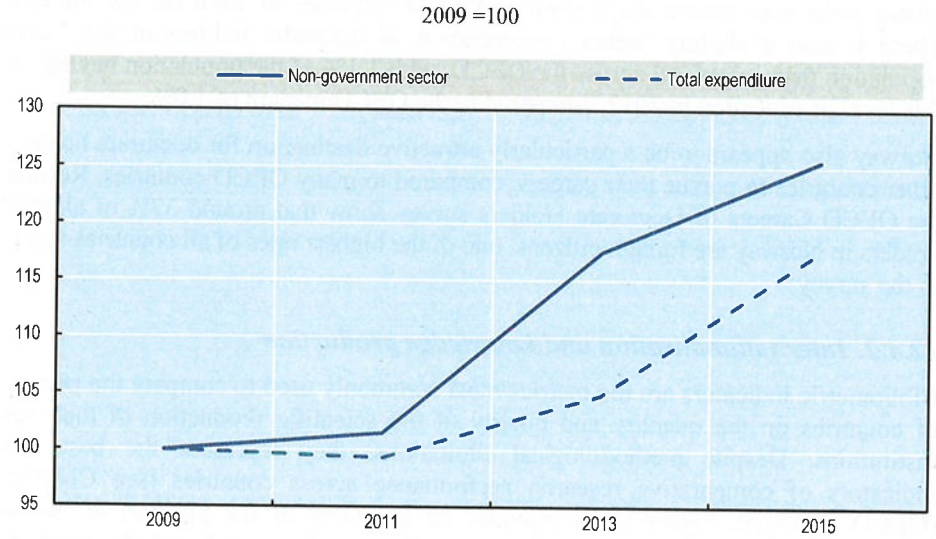
Norway is a high achiever in terms of the volume of scientific knowledge produced, ranking in the top quartile of OECD countries on this indicator, with 4.4 publications per 1000 of the population aged 25-64 in 2015, far above the OECD median level of 2.8 publications per 1000 people. This level of productivity reflects the significantly increased investment in the research and development system in recent years, and the greater than average proportion of researchers in the population in Norway (Figure 12.14).

StatLink https://doi.org/10.1787/888933943324

Government funds are the key source of revenue for the higher education sector. Funding from other sources (international, business, private non-profit and the higher education sector) makes up less than 5% of the overall funding for higher education R&D. For example, Norway is below the median of OECD countries in the percentage of business enterprise funding for R&D, with just 3.1% of funding coming from the business sector in 2016 (Figure 12.12).

The funding of R&D in Norway is also notable for stability and steady growth over time. Overall funding was stable during the last decade before beginning to increase incrementally as of 2012, and increased by more than 15% in total between 2009 and 2015 (Figure 12.13). The share of funding from non-government sources, though small, has also been keeping pace with the overall increase over time, with 25% more funding invested by these sources in 2015 than in 2009.

Figure 12.13. Trends in expenditure on higher education R&D in Norway (2009-2015)



Source: Adapted from OECD (2019[13]), *OECD Science, Technology and R&D Statistics*, https://doi.org/10.1787/strd-data-en.

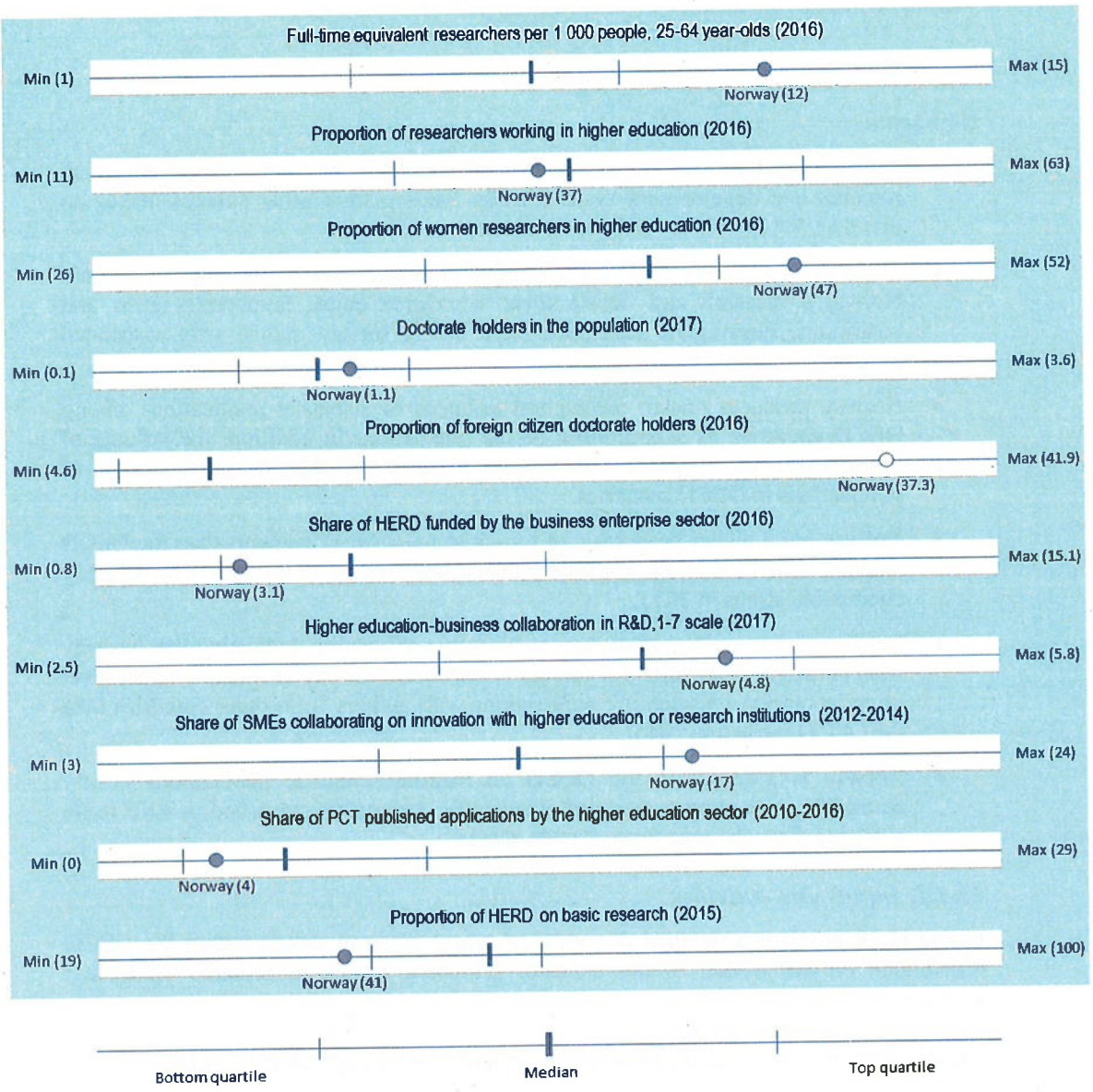
StatLink https://doi.org/10.1787/888933943343

Norway also has one of the lowest levels of international funding of research and development across OECD countries. Many European countries have been able to boost international investment in higher education R&D through securing financing from EC funds for R&D, such as Horizon 2020. However, Norway, though also eligible for funding, appears to have had less success overall in securing Horizon 2020 funds compared to many other countries. While the proportion of successful applications is higher than in many other countries over the period 2014-2016, the numbers of applications for funding are substantially lower than neighbouring countries of similar size, such as Denmark and Finland (see Chapter 6 of (OECD, 2019[2])).

The R&D sector is likely to continue to increase in its importance to the Norwegian economy in the coming decade as the economy diversifies (OECD, 2016[14]). Recent

The substantial investment in higher education therefore also extends to research and development, and Norway is in the top quartile of OECD countries on the proportion of expenditure on higher education R&D activities (Table 12.1).

Figure 12.12. Where does Norway stand in the OECD distribution? Research inputs and activities



Note: The indicators represented in this chart are a subset of the indicators presented in Table 12.1. The coloured circle represents Norway's position in the OECD distribution. The circle is not coloured when data are available for less than half of the OECD countries (the minimum number of countries with available data is 14). For more information on methodological issues and metadata, see OECD (2019[21]) and the references cited therein. Follow the *Statlink* to download the data underlying the calculation of the scorecard.
Source: Adapted from OECD (2019[21]), *Benchmarking Higher Education System Performance*, https://doi.org/10.1787/be5514d7-en.

Other data also indicate that higher education attainment in Norway is associated with more positive social outcomes. According to PIAAC data, higher education graduates are also more likely to trust others than upper secondary graduates, with a larger difference in trust than the OECD median level. Higher education graduates (25-64 year-olds) were also 4 percentage points less likely to report having depression than upper secondary or post-secondary non-tertiary education graduates (OECD, 2017[12]), a difference which was slightly above the median of OECD countries with available data.

12.4. Research and engagement

Highlights

- Government funds are the key source of revenue in Norway's higher education research and development system, while funding from other sources makes up less than 5% of total revenue in the sector.
- There is a relatively high concentration of researchers in the population, and Norway's research and development workforce enjoy favourable terms and conditions. Norwegian academics have public servant status, with associated benefits.
- Norway produces one of the highest volumes of scientific publications among OECD countries as a proportion of the population. In addition, the volume of publications has increased over time at a faster rate than the total volume of publications in OECD countries.
- Norway has a higher proportion of top-cited scientific documents than the OECD median, with 11% of all scientific publications ranking in the top 10% of highly cited publications in 2015.
- Net flows of scientific researchers to Norway are positive, indicating that Norway is an attractive destination for foreign researchers. Norway also had a higher level of collaboration on scientific publications with authors from other countries than the OECD median in 2015.
- Norway is a leader in the OECD on making scientific publications openly accessible, with almost one-third of scientific documents published in 2016 made available through some form of open access.

12.4.1. Inputs and activities

Figure 12.12 provides a detailed overview of where Norway stands within the OECD distribution on the section of the indicator scorecard related to research inputs and activities.

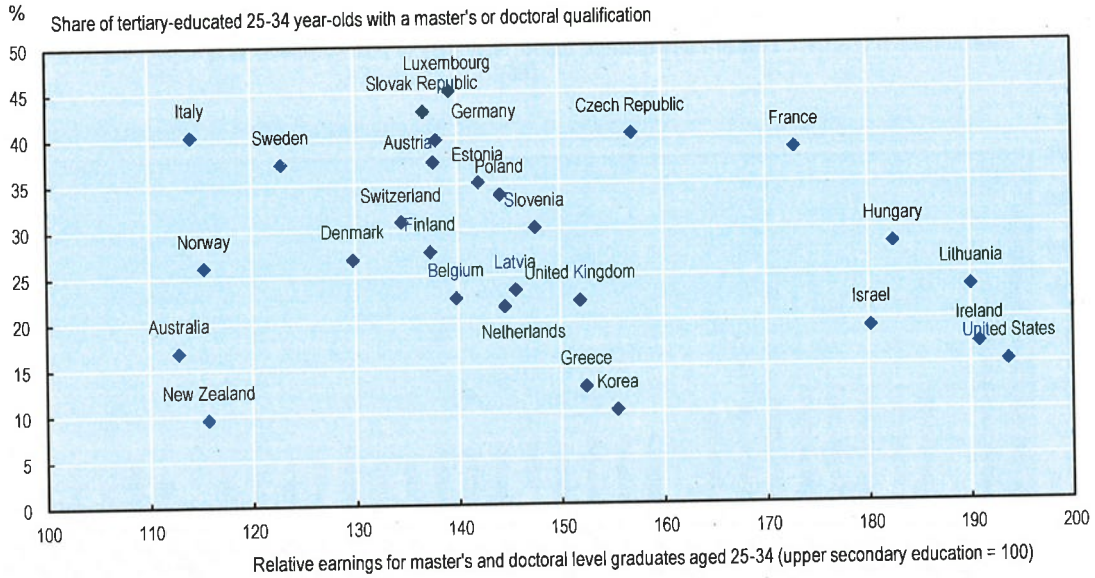
Public investment in research and development is on an upward trajectory

As discussed in Section 12.1, Norway invests heavily in higher education, having one of the largest proportions of public expenditure on higher education in the OECD. Norway also has a well-resourced national R&D system, consisting of three sectors of performance: industry, research institutes and higher education institutions. The recent increases in investment in the research and development sector as a whole (GERD) have pushed Norway from a country with average levels of investment in 2006 to its current position as a high performer relative to other countries in the OECD.

level qualification. Graduates aged 25-34 at master and doctoral levels with full-time, full-year earnings enjoyed an earnings premium of 15% over those with only upper secondary education in 2016. This was also one of the lowest earnings differentials in OECD countries.

Lower relative earnings could also be linked to the relatively high proportion of young adults with a higher education qualification in Norway. However, there is no positive correlation between higher education levels in the population and higher relative earnings in general across OECD countries.[7] Figure 12.11 demonstrates the relationship between education levels in the population and relative earnings across OECD countries. Graduates with master's or doctoral degrees in Norway, Austria, New Zealand and Italy all earn a premium of 15-20% over upper secondary or post-secondary non-tertiary level graduates, despite having substantially different proportions of the population that had reached that level of attainment. Smaller potential economic gains from higher education could potentially reduce the attractiveness of the option of pursuing higher education.

Figure 12.11. Share of tertiary-educated 25-34 year-olds with advanced degrees (2017) and relative earnings (2016)



Source: Adapted from OECD (2018[4]), *OECD Education Statistics*, http://dx.doi.org/10.1787/edu-data-en.

StatLink https://doi.org/10.1787/888933943305

There appear to be very positive social outcomes of higher education

While the economic benefits of higher education in Norway may be relatively small, evidence from PIAAC shows that the increase in indicators of positive social outcomes for higher education graduates compared to those without higher education is among the largest in the OECD countries. The proportion of participants in PIAAC who reported themselves to be in good health was 3.5 percentage points higher for higher education graduates than for upper secondary graduates, in the top quartile of the PIAAC participating countries.

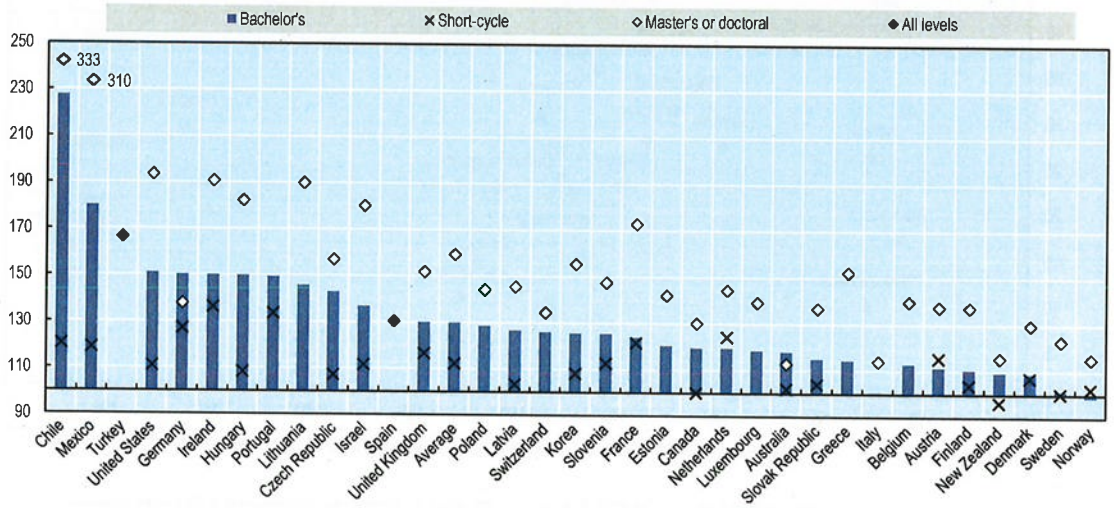
Higher education creates a moderate employment premium but a relatively low earnings premium for graduates

Norwegian graduates from bachelor's level programmes enjoyed an average employment premium of around 7 percentage points compared to those who had achieved only an upper secondary qualification in 2017. This was a similar premium to the median of OECD countries. Norway also has one of the more positive outlooks for younger graduates, with very little unemployment or inactivity in the cohort of graduates aged 18-29. In total, 94% of Norwegian young graduates were either employed or in education in 2016, one of the highest values in the OECD, and well above the median value.

However, on average, young bachelor's level graduates with full-time, full-year earnings did not earn more than upper secondary graduates. The full-time, full-year earnings of bachelor's level graduates aged 25-34 was at 99% of the average equivalent earnings of the same age cohort with only upper secondary or post-secondary non-tertiary education in 2016. This was the lowest earnings premium for bachelor's level graduates among OECD countries (Figure 12.10).

Figure 12.10. Relative earnings of 25-34 year-olds, selected education levels (2016)

Average earnings of full-time, full-year 25-34 year-old workers with a bachelor's degree compared to those with an ISCED level 5 or master's qualification (upper secondary or post-secondary non-tertiary education = 100)



Note: The average for bachelor's and master's graduates is calculated across countries with available data for both series, while the average for short-cycle graduates is calculated separately.
Belgium, Canada, Chile, Czech Republic, Finland, Spain: Year of reference 2015.
Czech Republic, Slovak Republic, Switzerland, United States: Index 100 refers to upper secondary and post-secondary non-tertiary levels of education.
Denmark, Italy, Lithuania, the Netherlands: Year of reference 2014.
Ireland, Latvia, Luxembourg, Mexico, and Turkey: Earnings net of income tax.
Source: Adapted from OECD (2018[4]), *OECD Education Statistics*, http://dx.doi.org/10.1787/edu-data-en.

StatLink https://doi.org/10.1787/888933943286

The low earnings premium for young bachelor's level graduates may be partially because many students in Norway opt for longer-cycle programmes that lead directly to a master's

The adult population is relatively well educated, and basic skills among graduates are above the OECD median

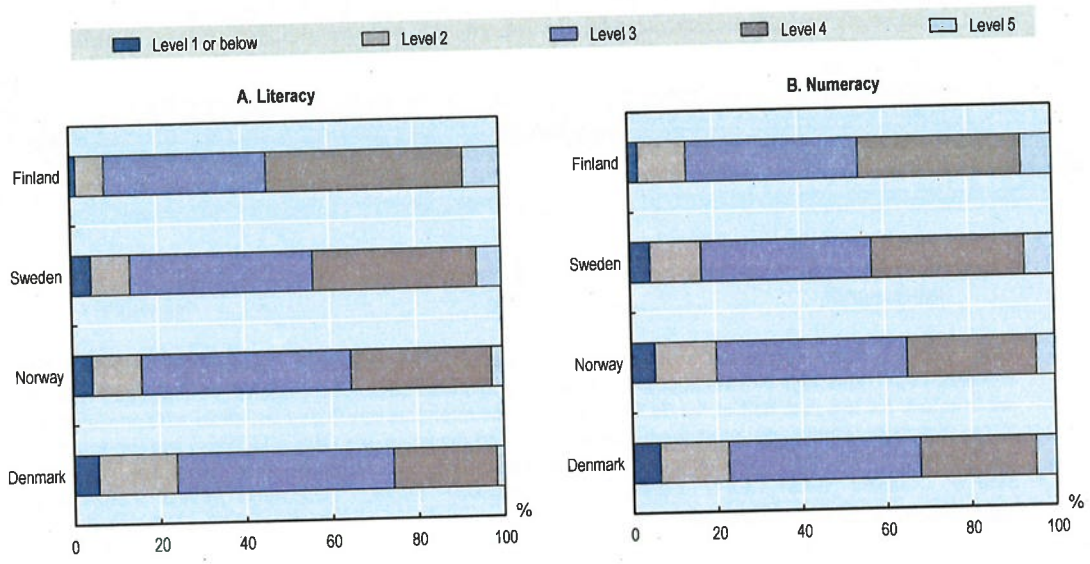
Internationally comparable measures of higher education learning outcomes are not currently available. However, the OECD Survey of Adult Skills can provide some insight into the cognitive and workplace skills of young graduates. These data allow for the performance assessment of higher education graduates in basic skills such as literacy and numeracy.

Graduates in Norway demonstrate a higher level of literacy and numeracy skills than the median of countries participating in the OECD Survey of Adult Skills (PIAAC).[6] The proportion of graduates younger than 35 with level 3 literacy skills or above, at 84%, was above the median level (76%). Similarly, the proportion of graduates with numeracy skills at level 3 or above is 80%, compared to the median level of 69% for participating countries.

While the proportion of higher-skilled graduates is greater than average, there is also a cohort of graduates in Norway with much lower basic skills. Around one in five graduates under the age of 35 has low numeracy skills, while around one in six has low literacy skills, according to PIAAC. While these levels of low skills are below OECD average levels, they are larger in many cases than in neighbouring countries (Figure 12.9). A significant proportion of low-skilled graduates could be attributed to a weakness in the ability of the higher education system to increase the skills of graduates, or to a loss of skills experienced by graduates who are working in jobs with a large number of routine tasks and low autonomy (OECD, 2018[8]).

Figure 12.9. Proficiency distribution among higher education graduates, 16-34 year-olds (2012 or 2015)

Percentage of graduates at the different levels of proficiency in literacy and numeracy



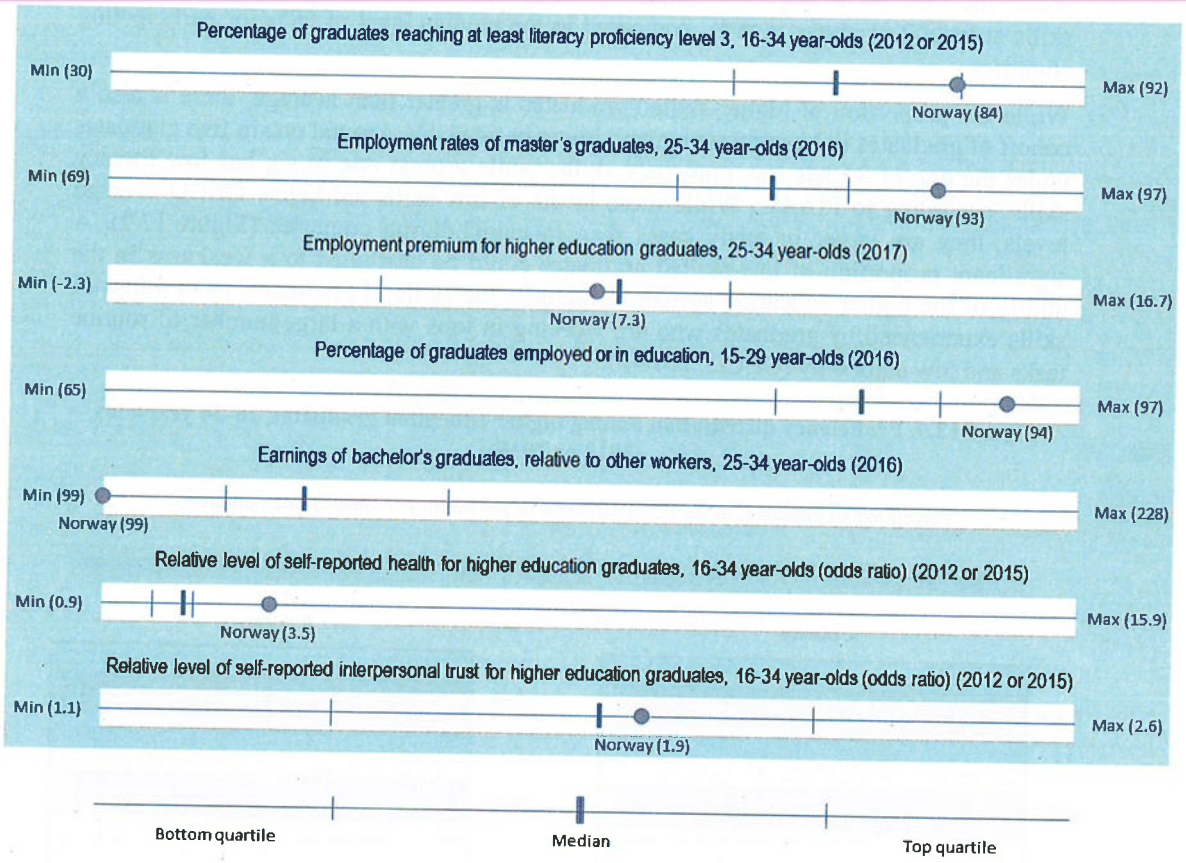
Source: OECD (2018[11]), *OECD Survey of Adult Skills*, www.oecd.org/skills/piaac/data/.

StatLink https://doi.org/10.1787/888933943267

12.3.2. Graduate outcomes

Despite high levels of higher education attainment, graduate outcomes remain relatively strong in Norway, though the returns on investment in higher education are smaller than in most OECD countries (Figure 12.8). Norwegian graduates are more likely to be employed than those with only upper secondary qualifications, with an employment premium around the median OECD level. There are very low rates of unemployment or inactivity for young graduates. However, on average, there appears to be no earnings premium for young full-time bachelor's graduates compared to those with only upper secondary educational attainment.

Figure 12.8. Where does Norway stand in the OECD distribution? Graduate outcomes



Note: The indicators represented in this chart are a subset of the indicators presented in Table 12.1. The coloured circle represents Norway's position in the OECD distribution. The circle is not coloured when data are available for less than half of the OECD countries (the minimum number of countries with available data is 14). For more information on methodological issues and metadata, see OECD (2019[2]) and the references cited therein. Follow the *Statlink* to download the data underlying the calculation of the scorecard.

Source: Adapted from OECD (2019[2]), *Benchmarking Higher Education System Performance*, https://doi.org/10.1787/be5514d7-en.

StatLink https://doi.org/10.1787/888933943248

Wide differences in access by socio-economic background persist

Young people without tertiary-educated parents in the age group of 18-24 years-old were about 40% less likely than other individuals in the same age group to enter a bachelor's or long first degree programme in 2015. Despite Norway being one of the more egalitarian societies in the OECD (OECD, 2018[8]), this continued wide gap in access indicates that important barriers to entering higher education remain for people from lower socio-economic backgrounds (see Section 12.5.1). Nonetheless, Norway was, together with Slovenia, the country where this gap was the smallest among 16 OECD countries with available data (see Chapter 5 of (OECD, 2019[2])).

The participation gap observed in access to bachelor's level or long first degree programmes was reversed for ISCED 5 level programmes, which in Norway are offered solely by vocational colleges.[5] In 2015, young people aged 18-24 whose parents did not obtain higher education were 14% more likely to enter these type of programmes than other individuals of the same age. A similar reversal can be observed in some other jurisdictions, for example Chile and Slovenia. This evidence suggests that tertiary vocational programmes in Norway can play a part in widening access to higher education, along with the other available alternative pathways into the higher education system (see Chapter 2 of (OECD, 2019[2])).

Three-quarters of new entrants to bachelor's programmes graduate on time or within three years from the expected time

A 2014 OECD survey shows that half of students who started full-time bachelor's programmes graduated within the expected time in Norway, placing it in the top quartile of 14 OECD countries with available data (OECD, 2016[9]). An additional one-quarter of the bachelor's new entrants completed their bachelor's programmes within three years after the expected graduation year, while approximately 20% of the bachelor's new entrants had not graduated and were not in education, which is one percentage point below the median of OECD countries with available data.

Female students enrolled in bachelor's programmes were four percentage points more likely to complete their study within the expected time than male students were, as was the case in most OECD countries. In addition, nearly 60% of part-time students in bachelor's programmes completed their study within the expected time, which was nine percentage points higher than the completion rate for full-time students.

The share of international students is low compared to other OECD countries

Norway had one of the lowest shares of international students at all levels of higher education among OECD countries in 2016. International students accounted for 7% of enrolments at the master's level in 2016, which was half of the OECD median of 14%. The government has implemented some measures to increase the number of international students. For example, legislation first granted the right to teach in a foreign language in 2002, and the share of modules taught in languages other than Norwegian had since increased to around 20% in 2016 (language studies excluded) (Norwegian Ministry of Education and Research, 2017[10]). The government has also set a target that 20% of students should have an international experience by 2020. In the longer term, the target is to increase the share significantly, up to 50%.

Relatively large and increasing entry and completion rates in recent years among OECD countries have led to a relatively highly qualified workforce. By 2017, in Norway around 43% of the population aged 25-64 had attained a higher education qualification. In the younger age group (25-34 year-olds), nearly half had completed higher education, which was above the OECD median level of 45%, though the slowing rate of attainment in recent years means that Norway's position within the OECD is changing (see Section 12.5).

In Norway, gender equity in higher education attainment was achieved at a much earlier stage than in general across the OECD, and women began to surpass men in higher education attainment a decade earlier than in other OECD countries, starting with cohorts who were born after 1956 (Borgonovi, Ferrara and Maghnouj, 2018[7]). The gender gap has continued to widen; the proportion of women aged 25-64 with a higher education qualification was 48% in 2017, 9 percentage points higher than that of men in Norway (OECD, 2018[4]).

A relatively large share of students in Norway is enrolled in long first degree programmes

One-quarter of all higher education students were enrolled at the master's or doctoral level in 2016, in line with the OECD median. This includes students in long first degree programmes (integrated bachelor's/master's long-cycle study), i.e. programmes with a cumulative theoretical duration (at the higher education level) of at least five years that do not require prior higher education for admission. In Norway, long first degrees exist in a number of disciplines, such as medicine, psychology and teacher education. Students undertaking long first degree programmes in Norway accounted for 11% of new entrants in 2016, above the OECD median and Finland (both 6%), but well below Sweden (26%).

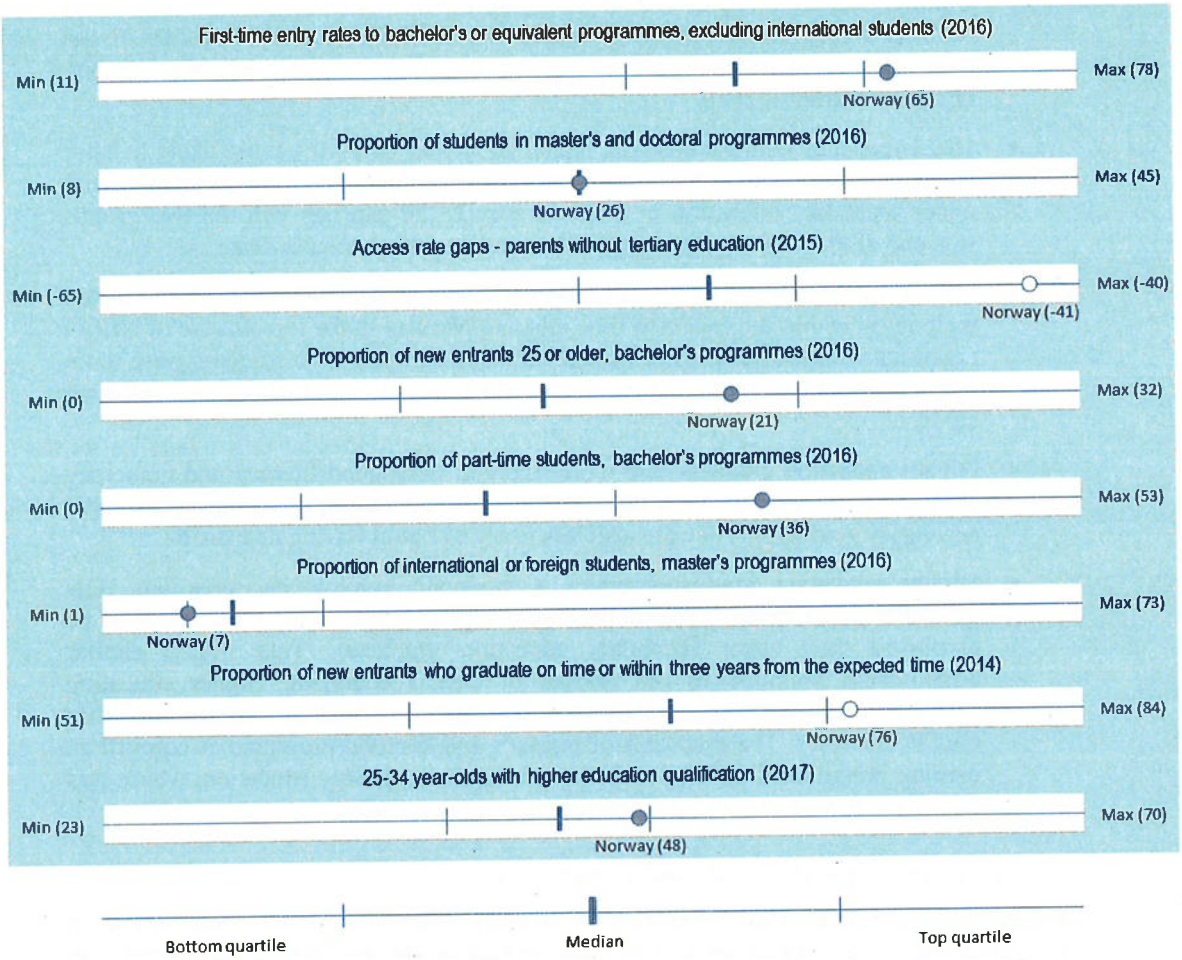
Inclusive access policies in Norway

Promoting inclusive access is an important higher education policy goal in Norway. This is related to the social and economic principles underlying the "Nordic model", an approach to government, economy, labour market, and skills favoured in Norway and its neighbouring countries, which places a strong emphasis on social inclusion (OECD, 2018[1]). Inclusive access is also related to the geography of Norway, a large country with sparsely populated areas, requiring active work to lower geographic barriers to participation and widen access to higher education.

Norway has a relatively large proportion of part-time students and new entrants older than 24

The availability of programmes with flexible study options, along with the low financial barriers to higher education, may be one reason why people older than 24 accounted for 21% of new entrants to bachelor's programmes in Norway in 2016, 7 percentage points above the OECD median. Norway also has a relatively large share of part-time students (i.e. students with an intended study load lower than 75% of a full-time load). Over one-third of students were enrolled on in bachelor's programmes on a part-time basis in 2016, placing Norway in the top quartile among OECD countries.

Figure 12.7. Where does Norway stand in the OECD distribution? Access, student profile, completion



Note: The indicators represented in this chart are a subset of the indicators presented in Table 12.1. The coloured circle represents Norway's position in the OECD distribution. The circle is not coloured when data are available for less than half of the OECD countries (the minimum number of countries with available data is 14). For more information on methodological issues and metadata, see OECD (2019[2]) and the references cited therein. Follow the *Statlink* to download the data underlying the calculation of the scorecard.
Source: Adapted from OECD (2019[2]), *Benchmarking Higher Education System Performance*, https://doi.org/10.1787/be5514d7-en.

StatLink https://doi.org/10.1787/888933943229

Access to higher education is widespread in Norway

The limited financial burden on households in Norway helps to create greater universal opportunities for access to higher education. Around two-thirds of young Norwegians are expected to enter a bachelor's or equivalent programme over the course of their life, if current enrolment patterns remain unchanged in the future. These high entry rates place Norway in the top quartile of OECD countries for the expected share of the population who will enter programmes leading to advanced qualifications.

- Norway has a relatively large share of part-time students and mature students. Over one-third of students were enrolled part-time in 2016 (in the top quartile). In addition, mature students (25 or older) accounted for 21% of new entrants to bachelor's programmes in 2016 (above the median). Norway had one of the lowest shares of international students at all levels of higher education among OECD countries in 2016.
- 18-24 year-olds with parents with higher education were 40% more likely to enter bachelor's or long first degree programmes than their cohorts with parents with upper secondary education in 2015. However, the gap between the two groups was one of the smallest among OECD countries with available data.
- Half of students who entered full-time bachelor's programmes in 2014 completed their study within the expected time, placing Norway in the top quartile of OECD countries with available data. Female students and part-time students were more likely to graduate within the expected time than male students and full-time students.
- Higher education graduates are more likely to have good literacy and numeracy skills, and to report to be in good health and trust others, as compared to upper secondary graduates. They are also less likely to report having depression.
- Higher education graduates enjoy a moderate employment premium. The graduates of bachelor's programmes were 7 percentage points more likely to be employed than upper secondary education graduates. This was a similar employment premium to the median of OECD countries. Higher education graduates, however, have a relatively low earning premium as compared to other OECD countries. The graduates of master's and doctoral programmes enjoyed an earning premium of 15% over those with upper secondary education, which was one of the lowest earnings differences in OECD countries.

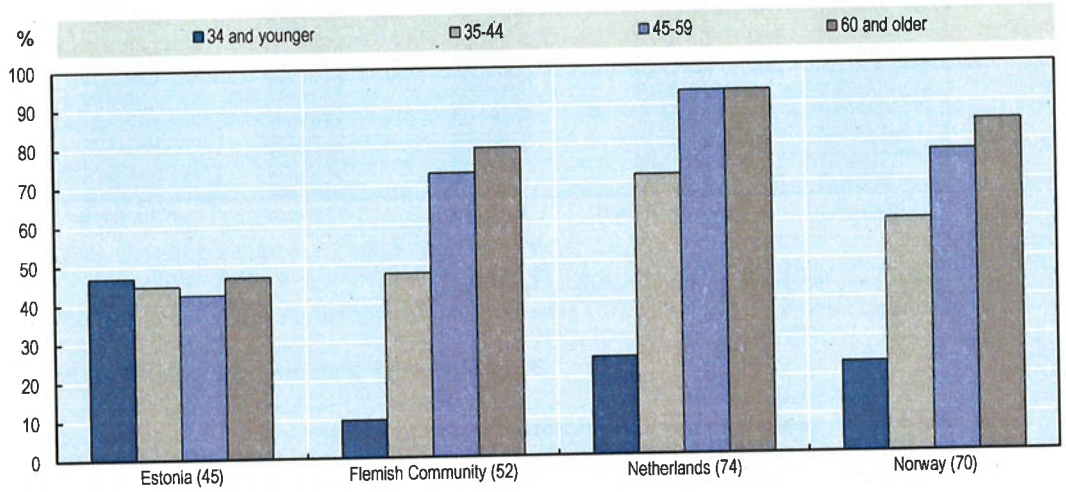
12.3.1. Access, student profile and completion

Figure 12.7 shows the relative position of Norway within the OECD distribution on indicators related to entry of students to higher education, student profile and completion of studies.

There is evidence that job insecurity in Norway, as in many other OECD countries, is a greater concern for younger academic staff. The share of teaching staff with a permanent contract differed considerably across the different age groups in 2016. While approximately 80% of academic staff older than age 60 had an ongoing contract, this proportion dropped to just 20% for staff aged less than 35 years-old.

Figure 12.6. Share of teaching staff with permanent contracts, by age (2016)

Academic staff with teaching duties, excluding doctoral students.
The share of staff with permanent contracts across all ages is reported in brackets.



Source: Adapted from OECD (2019[2]), *Benchmarking Higher Education System Performance*, https://doi.org/10.1787/be5514d7-en.

StatLink https://doi.org/10.1787/888933943210

The academic staff-to-student ratio is one of the highest among OECD countries

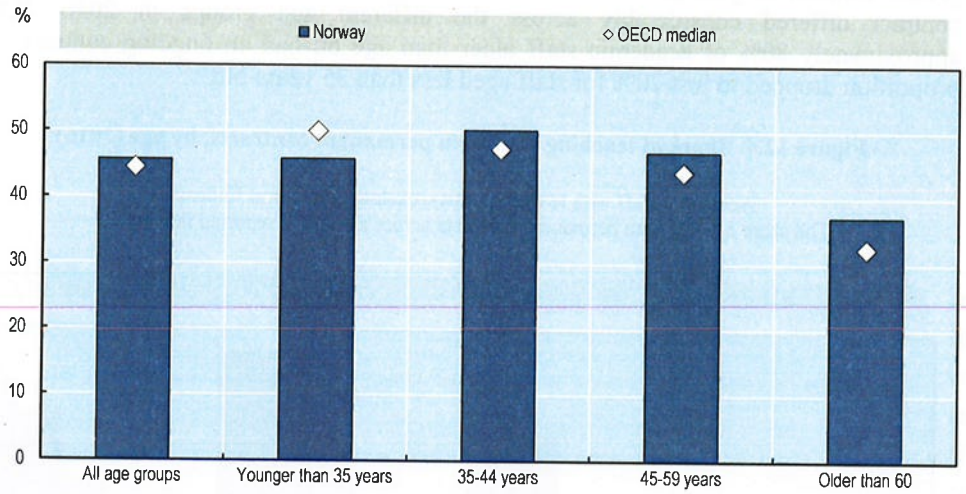
The ratio of academic staff-to-student in Norway was 0.1 in 2016, implying a ratio of around 10 students for every academic staff member. This was one of the most favourable ratios among OECD countries, and could theoretically indicate that academic staff are more likely to have greater time to interact with students, helping them to learn and develop. However, while the staff-student ratio is often used as a proxy for quality in higher education, it is important to note that this indicator does not take into account other important factors that impact the contact time between students and academic staff, such as relative proportions of time academic staff allocate to teaching, research and other activities.

12.3. Education

Highlights

- Over two-thirds of young Norwegians are expected to enter bachelor's level education at least once in their lifetime based on current enrolment patterns, placing Norway in the top quartile of OECD countries.

Figure 12.5. Share of women among academic staff in higher education, by age group (2016)



Note: Data exclude independent private institutions for Norway.
Source: Adapted from OECD (2018[4]), *OECD Education Statistics*, http://dx.doi.org/10.1787/edu-data-en.

StatLink https://doi.org/10.1787/888933943191

Teaching staff earn more than the national average salary

Higher education current expenditure covers goods and services consumed within the current year to sustain the activities of institutions. It includes compensation of personnel (both academic and administrative) as well as other costs, for example, for general supplies and for contracted services such as building cleaning and maintenance. Norway spent over two-thirds of its higher education current expenditure on staff in 2015, which was just above the median of OECD countries.

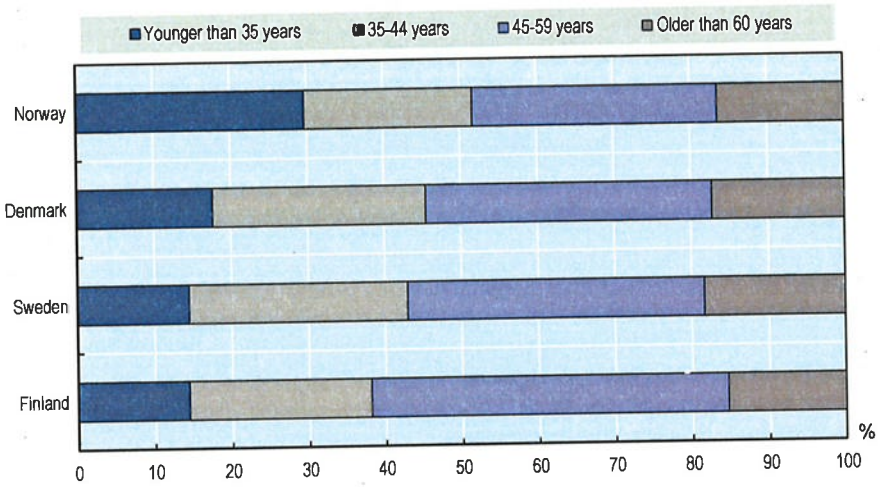
The average annual salary for teaching staff (academic staff with teaching duties) in Norway was approximately USD 61 000 in 2014, which was above the median of OECD countries with available data (USD 55 000) and the average salary in Norway in the same year (USD 51 000) (OECD, 2019[6]). Almost all employees at public higher education institutions have civil servant status; therefore, their salaries and other working conditions are determined based on public sector regulations.

Over two-thirds of teaching staff have a permanent contract

Balancing the need to maximise efficiency in the academic workforce and the importance of ensuring high-quality working conditions is a key policy concern in many OECD higher education systems. In 2016, the share of teaching staff with a permanent contract was 70% (Figure 12.6). This proportion was the second highest among the four jurisdictions participating in the benchmarking exercise. The high share of teaching staff with an ongoing contract indicates high job security. However, this may also signal that higher education institutions in Norway have less flexibility as employers; they may find it more difficult than in other jurisdictions to adjust their staff profile to fluctuations in enrolments.

in other OECD countries. In Norway, doctoral candidates have a contract with the higher education institution in which they study, the Research Council of Norway, a company or a public employer. Doctoral candidates employed by a higher education institution on a four-year contract are required to allocate part of their time to the work of the higher education institution through activities such as teaching.

Figure 12.4. Share of academic staff in higher education, by age group (2016)



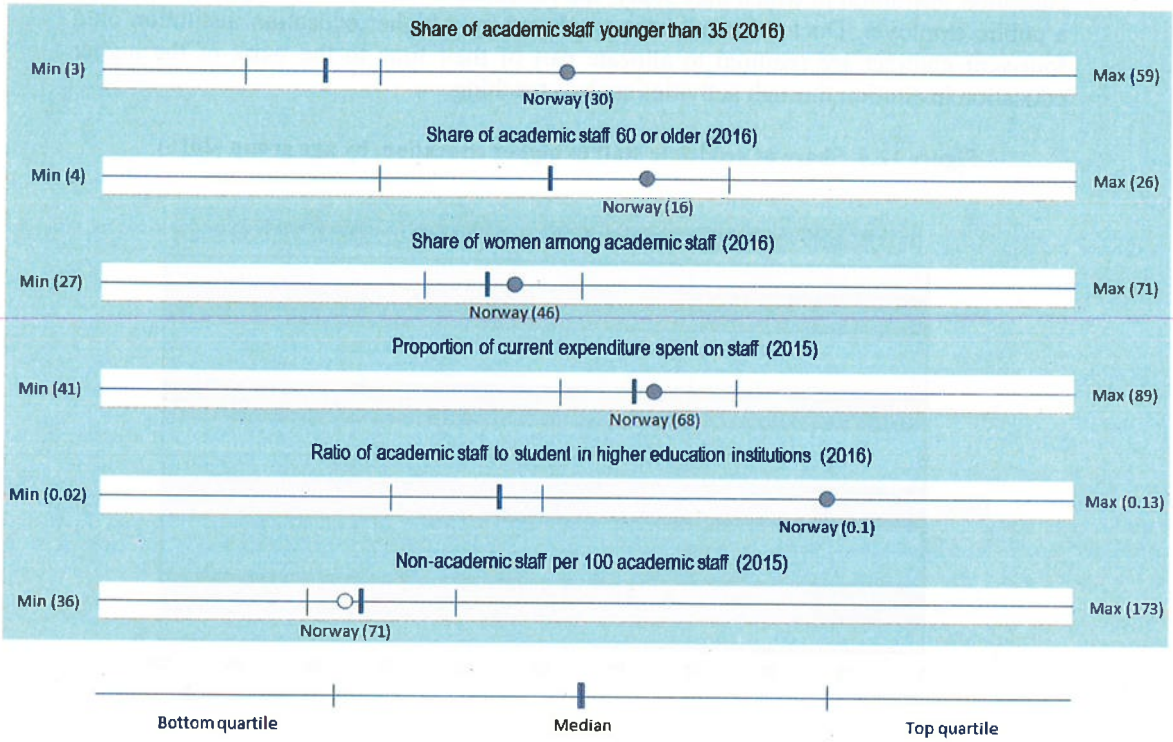
Note: Data exclude independent private institutions for Norway.
Source: OECD (2018[4]), *OECD Education Statistics*, http://dx.doi.org/10.1787/edu-data-en.

StatLink https://doi.org/10.1787/888933943172

Gender parity in academic staff has almost been achieved, particularly in younger age groups

The overall share of women among academic staff was 46% in 2016, placing Norway above the median of OECD countries (Figure 12.5). However, the share of women among academic staff younger than 35 in Norway was around 5 percentage points lower than the OECD median. All age groups up to 60 had a gender gap of 4 percentage points or less, while the oldest age group (older than 60 years) had a gender gap of 13 percentage points. This equity among age groups may reflect long-standing policies to encourage gender equity in employment in Norway (OECD, 2019[2]). Currently, all public institutions are obliged by law to take active steps to promote gender equality.

Figure 12.3. Where does Norway stand in the OECD distribution? Human resources



Note: The indicators represented in this chart are a subset of the indicators presented in Table 12.1. The coloured circle represents Norway's position in the OECD distribution. The circle is not coloured when data are available for less than half of the OECD countries (the minimum number of countries with available data is 14). For more information on methodological issues and metadata, see OECD (2019[2]) and the references cited therein. Follow the *Statlink* to download the data underlying the calculation of the scorecard.
Source: Adapted from OECD (2019[2]), *Benchmarking Higher Education System Performance*, https://doi.org/10.1787/be5514d7-en.

StatLink https://doi.org/10.1787/888933943153

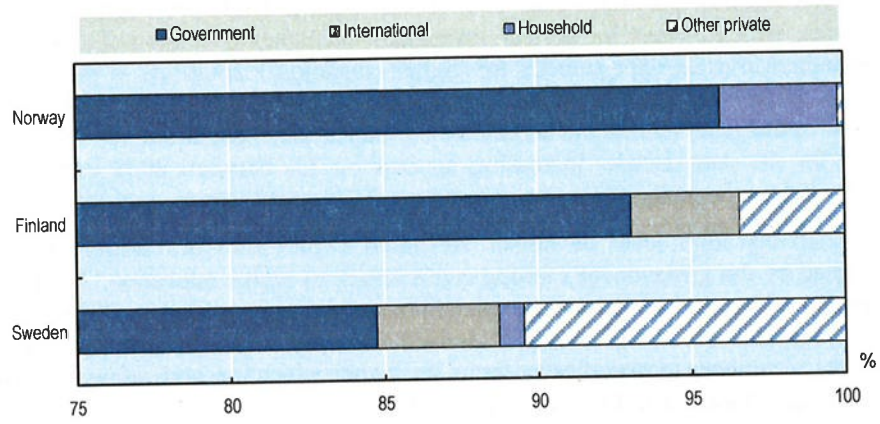
Norway has been successful in attracting younger talent to academia

The academic staff structure in Norway is well defined and includes professors, associate professors, docents, lecturers, postdoctoral fellows and doctorate research fellows (OECD, 2019[2]). Norway had a relatively high proportion of academic staff younger than 35 in 2016, which, at 30%, was in the top quartile of OECD countries and higher than in many neighbouring countries (Figure 12.4).

This may reflect the relatively stable funding environment for R&D in Norway and the success of recent policy initiatives. For example, the Research Council of Norway has been trying to make an academic career more attractive to young talent, including initiatives promoting interest in science among young people (e.g. the Science Knowledge Project for children (*Nysgjerrigper*) and the *Proscientia* project) (OECD, 2019[2]).

The high share of younger academic staff may also be partly related to the fact that, in Norway, doctoral candidates are classified as academic staff, which is not always the case

Figure 12.2. Share of higher education expenditure, by source (2015)



Source: OECD (2018[4]), *OECD Education Statistics*, http://dx.doi.org/10.1787/edu-data-en.

StatLink https://doi.org/10.1787/888933943134

There is a strong emphasis on research and development in the funding model

Gross domestic expenditure on research and development (GERD) was 2% of Norway's GDP in 2016, slightly above the OECD median level, and increased from 2007 levels when GERD was around 1.6% of GDP. Norway, along with many other European countries, has committed to further increase GERD to 3% of GDP by 2030 (Norwegian Ministry for Education and Research, 2015[5]).

Higher education expenditure on research and development (HERD) made up about one-third of total expenditure on research and development activities in Norway in 2016, with the remainder allocated to the two other main R&D sectors (public research institutes and the business enterprise sector). The level of HERD as a proportion of GDP in Norway (0.7%) is in the top quartile of OECD countries, and is similar to the proportions of GDP invested in neighbouring Nordic countries.

In addition, Norway allocated over 40% of higher education expenditure per student on R&D activities in 2015, which was one of the higher shares of allocation within the OECD (in the top quartile). Key recent investments include the creation of 500 new fully funded PhD positions between 2015 and 2018 (Norwegian Ministry for Education and Research, 2015[5]), and a commitment to greatly expand capital investment through the Norwegian Research Infrastructures Roadmap (OECD, 2019[2]).

12.2.2. Human resources

Figure 12.3 provides a detailed overview of Norway's position in the OECD distribution on the scorecard indicators related to human resources.

Higher education expenditure per student was approximately USD 21 000 in 2015, which was one of the highest among OECD countries. This can be partly explained by Norway's relatively wealthy position, with one of the highest GDP per capita among OECD countries, which allows for greater investment in higher education. This resource-rich environment creates opportunities for higher education institutions to be able to invest more in improving their activities. Norway maintained the high rate of investment per student in the years after the economic crisis. Education expenditure per student has been stable for the past decade, increasing in total by 2% between 2008 and 2015, a rate slightly below the median increase across the OECD over the same period.

The relatively high level of higher education expenditure per student may also be explained by the government's strong commitment to higher education. The government spent 4% of its total government expenditure on higher education in 2015, placing it in the top quartile of OECD countries. Indeed, Norway is one of the few countries that appoints a minister to specifically focus on higher education and research[3] (Norwegian Ministry of Education and Research, 2018[3]).

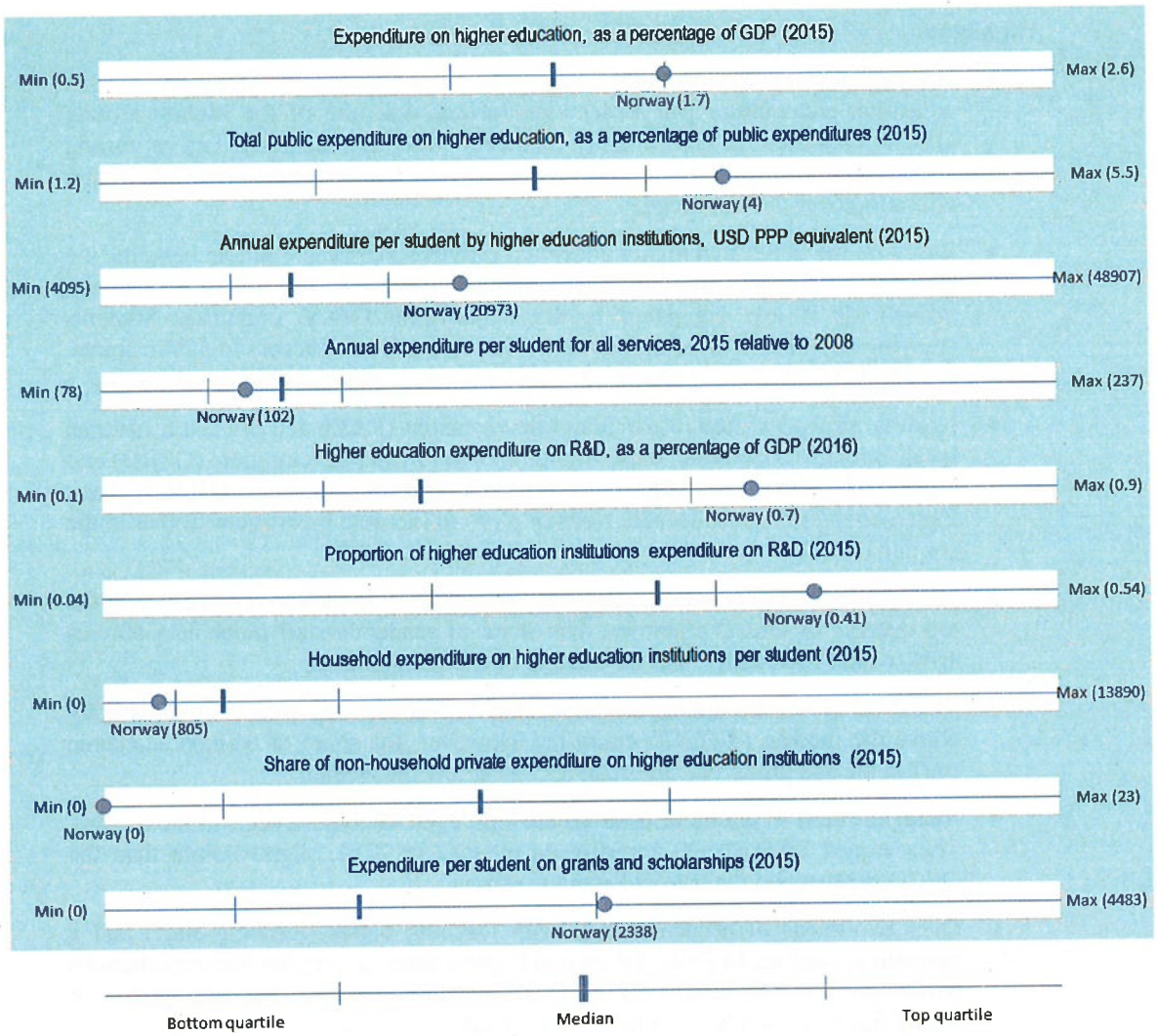
The government finances almost all expenditure on higher education

Virtually all (96%) of the financial resources for higher education in Norway came from the government in 2015, the highest share among OECD countries. Household expenditure on higher education was USD 800 in 2015, in the bottom quartile and one of the lowest levels in OECD countries. Students enrolled in public institutions pay no tuition fees.[4] In addition, public loans and grants are available in order to help students cover their living expenses. The average amount of public expenditure on grants, scholarships and loans per student in Norway was nearly USD 7 900 in 2015, which was the second highest among OECD countries. Of this amount, about 70% was spent on the student loan system (USD 5 600) while the remainder was spent on grants and scholarships (USD 2 300).

All students admitted to accredited higher education programmes are eligible to receive a 'basic support' package, which amounts to up to NOK 110 000 per year for a maximum of eight years (except for exceptional circumstances, see (OECD, 2019[2])). The basic support is a loan; however, part of it can be converted into a grant for students who live away from their parents and complete their programme within the expected time.

The Norwegian higher education system receives almost no support from other non-household private entities (Figure 12.2). In 2015, the share of funding from other private entities was the lowest among OECD countries (0.2%), considerably different from some other Nordic countries, e.g. Finland (3.4%) and Sweden (10.5%).

Figure 12.1. Where does Norway stand in the OECD distribution? Financial resources



Note: The indicators represented in this chart are a subset of the indicators presented in Table 12.1. The coloured circle represents Norway's position in the OECD distribution. The circle is not coloured when data are available for less than half of the OECD countries (the minimum number of countries with available data is 14). For more information on methodological issues and metadata, see OECD (2019[21]) and the references cited therein. Follow the *Statlink* to download the data underlying the calculation of the scorecard.
Source: Adapted from OECD (2019[21]), *Benchmarking Higher Education System Performance*, https://doi.org/10.1787/be5514d7-en.

StatLink https://doi.org/10.1787/888933943115

Expenditure per student is one of the highest among OECD countries

Norway spent 1.7% of its GDP on higher education institutions in 2015, placing it in the top quartile of OECD countries. This is a similar proportion to other Nordic countries (i.e. Denmark, Finland and Sweden), which as a group tend to devote relatively high levels of expenditure to social services.

12.2. Financial and human resources

Highlights

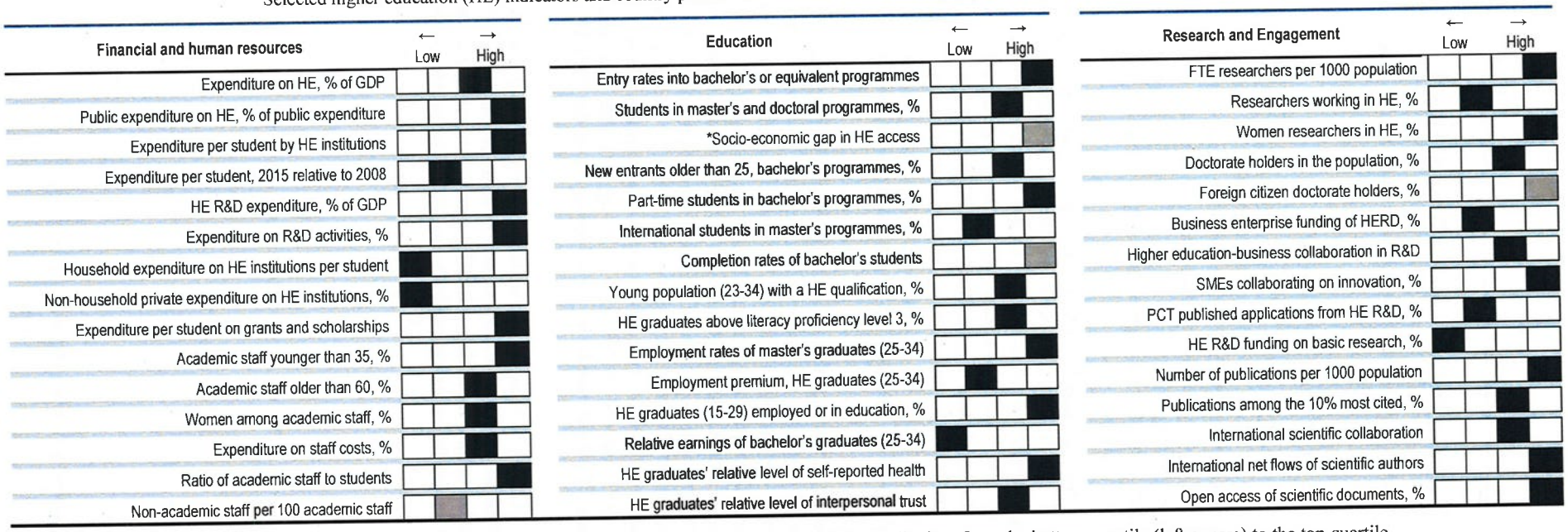
- Norway devotes considerable financial resources to higher education. Higher education expenditure per student in Norway was one of the highest among OECD countries in 2015. The relatively wealthy economy and a strong commitment to higher education has enabled Norway to invest greatly in higher education over the last decade.
- Based on the belief that higher education provides substantial public benefits, the government finances most of higher education expenditure, and the burden on households is low compared to the majority of OECD countries. Students studying at public institutions pay no tuition fees and have access to public grants, scholarships and loans, allowing all eligible students to access higher education.
- Norway also prioritises research and development (R&D) activities at a national level. Both gross domestic expenditure on research and development (GERD) and higher education expenditure on research and development (HERD) have increased over the past decade. Norway plans to increase investment further in the coming decade.
- Nearly one-third of academic staff was younger than 35 in Norway in 2016, in the top quartile of OECD countries. The share of academic staff older than 60 was 16%, which was higher than the median of OECD countries.
- The share of women among academic staff in Norway was 46% in 2016, slightly above the median of OECD countries. However, the share of women academic staff in the age group younger than 35 was below the median.
- Academic staff in public institutions are employed as civil servants in most cases. They earned USD 61 000 annually on average in 2014, slightly more than the OECD median and the national average salary.
- Over two-thirds of academic staff with teaching duties (teaching staff) had a permanent contract in 2016, the second highest share among the four jurisdictions participating in the benchmarking exercise. However, less than one-quarter of young teaching staff had a permanent contract.

12.2.1. Financial resources

On the portion of the scorecard related to financial resources, Norway appears in the top quartile on many of the indicators, demonstrating the relatively high levels of resources invested in higher education compared to many other OECD countries. Figure 12.1 shows a more detailed view of the financial resources indicators for Norway presented in the scorecard (Table 12.1).

Table 12.1. Higher Education system benchmarking: Norway

Selected higher education (HE) indicators and country position in the OECD distribution (by quartile). Reference year range: 2005-2017



Note: The coloured square below each value represents Norway's position in the OECD distribution, from the bottom quartile (left square) to the top quartile (right square). The square is shaded in grey (instead of black) when data are available for less than half of the OECD countries (the minimum number of countries with available data is 14). No coloured square means that data are missing for Norway. For more information on methodological issues and metadata, see OECD (2019[21]) and the references cited therein. Follow the *statlink* to download the data underlying the calculation of the scorecard.
*For the indicator 'socio-economic gap in HE access': the top quartile implies that the difference between 18-24 year-olds with tertiary-educated parents and those with non-tertiary-educated parents is smaller.
Source: Adapted from OECD (2019[21]), *Benchmarking Higher Education System Performance*, https://doi.org/10.1787/be5514d7-en.

StatLink https://doi.org/10.1787/888933943096

recent long-term plan heavily emphasises initiatives that aim to improve the quality of teaching and learning in higher education, reflecting the growing focus internationally on the need to ensure high quality learning experiences for students in higher education.

12.1.3. Norway's higher education scorecard

Table 12.1 shows a summary of the relative position of Norway within OECD countries according to a set of 45 indicators spanning the resourcing, education, research and engagement functions of higher education, in a scorecard format where each box relates to one of the quartiles of the OECD distribution. These indicators are drawn from the compilation of evidence in the synthesis report of the OECD Benchmarking Higher Education Systems Performance project,[2] in which Norway participated during 2017-2018.

As can be seen in the scorecard, Norway has one of the best-resourced higher education systems in the OECD, and performs highly in general in the education, research and engagement missions, according to the indicators presented. Particular strengths include the levels of expenditure per student, including financial support directly to students for grants and scholarships, for which the levels in Norway are in the top quartile of OECD countries. Norway also spends more on higher education research and development than most OECD countries, and has one of the highest proportions of academic staff younger than 35, indicating successful policies to attract young researchers.

The scorecard also demonstrates the strength of employment prospects for higher education graduates in Norway. Employment rates for graduates with a master's degree are among the highest in the OECD. However, the relative returns on higher education are lower than in many other OECD countries, with an employment premium below the OECD median level, and one of the lowest differences in earnings between those who have and do not have a higher education qualification. This can reduce the incentives for students to enter and complete higher education programmes, and while today Norway benefits one of the most educated populations in the OECD, the scenario exercise presented in Section 12.5 suggests that this could possibly change in the future if recent trends in both Norway and the OECD as a whole continue.

The portion of the scorecard related to research and engagement shows that while Norway has one of the lowest levels of investment in basic research in the OECD, it is a leader in many other areas, including scientific production, attracting international talent and making scientific research publicly available for wider societal benefit.

12.1. Higher education performance in Norway

12.1.1. Introduction

This country note draws on the evidence base of the OECD Benchmarking Higher Education System Performance project to review the performance of the higher education system in Norway. Its purpose is to assist Norway in taking stock of where it stands in relation to other OECD member countries on different aspects of higher education and to provide input into future national policy planning processes.

This stocktaking exercise is supported in this note in two ways. First, a scorecard of 45 indicators is presented, which highlights Norway's position within the OECD. This scorecard draws on the evidence compiled during the benchmarking exercise and is organised into three domains: financial and human resources; education; and research and engagement. The first sections of this note contain a brief discussion of the Norwegian higher education system's position within these three domains.

The final section of the note contains a policy scenario exercise. Topics chosen for scenarios in the benchmarking country notes are issues that appear to present important policy challenges for jurisdictions and are likely to persist for the near future. Assumption choices used for the scenarios take into account recent trends in Norway and across the OECD. Following the presentation of the scenarios, a set of policy options are examined that could be feasible responses to the challenges under discussion and consideration is given to how successful action might orient the system towards the achievement of more positive scenarios.

12.1.2. Context and structure of higher education in Norway

Norway is one of the most developed OECD countries, with one of highest rates of GDP per capita and one of the lowest levels of government debt. This means that Norway has been able to maintain spending on higher education in the years following the economic crisis. Employment rates are relatively high, and Norway is one of the more egalitarian countries in the OECD, with income inequality among the lowest in OECD countries.

Because of this favourable context, students in Norway are well supported and there are high levels of investment in the education systems at all levels. In total, more than 275 000 students in Norway are enrolled in higher education programmes.[1] Higher education is offered in universities (*universitet*), university colleges (*høgskole*), specialised university institutions (*vitenskapelig høgskole*) and private institutions. In recent decades, the system has moved from a previously binary structure to a more unitary system, and the system has been consolidated through a series of institutional mergers, which aim to enhance efficiency and competitiveness while maintaining geographic coverage (OECD, 2018[11]).

In Norway, higher education is considered a public good, encouraging economic development and fostering inclusiveness and equality in society. Based on this belief, the government finances most of higher education expenditure. There are many pathways into the higher education system in Norway for potential students of all ages and backgrounds, and there is a generous system of student financial support with a low burden on households compared to most other OECD countries.

Higher education policy is regularly reviewed and updated in Norway, and long-term plans for education and research are issued approximately every 4 years. The most

Chapter 12. Benchmarking Higher Education System Performance: Norway

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Notes

[1] The statistics for the Netherlands on R&D and education expenditure report the intended allocation of funding, rather than the actual spending by institutions. The statistical reporting conventions differ by country (see Chapter 3 of OECD (2019[1])).

[2] Household expenditure on higher education institutions includes tuition fees, other fees charged for educational services (e.g. registration fees and laboratory fees) and fees paid to institutions for lodging, meals and other welfare services. However, the amount of other (non-tuition) fees is small relative to tuition fees in the Netherlands.

[3] It should be noted that the ETER data on which this indicator is based exclude funding for the Centres of Expertise, organisations associated with UAS and devoted to stimulating cooperation with private and public partners in research and training.

[4] according to calculations from national administrative data

[5] Based on a random sample of 100 000 documents in the Elsevier Scopus database.

[6]It should be noted that in the Netherlands, external candidates are excluded from the calculation of entry rates, which causes an underestimate of the true entry rate given the relatively large proportions of external candidates in these jurisdictions. See (Chapter 6 of (OECD, 2019[1])

[7] Based on OECD analysis of a random sample of 100 000 documents in the Elsevier Scopus database. See Chapter 7 of (OECD, 2019[1]).

[8] These consist of the 13 research universities, the Open University of the Netherlands and four smaller, more specialised institutes for theological or humanistic study.

[9] This proportion was computed based on the background questionnaire of the OECD Survey of Adult Skills (PIAAC) national data file for the Netherlands. Data includes master's graduates in universities.

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Commission, 2019[32]) or individual agreements between institutions. If UAS could play a role in doctoral education, they could also seek ways to promote joint supervision arrangements for master's and doctoral students with institutions in other countries, such as through the *cotutelle* model in use in some European countries, including Norway.

International partnerships can also enhance regional co-operation, which is an important part of the UAS mission in the Netherlands. For example, Estonia is working to strengthen links with neighbouring countries by offering higher education programmes of joint regional interest (see the Estonia country note).

Box 11.6. *Cotutelle* arrangements as a means of internationalisation

Cotutelle is an agreement on joint supervision of the doctoral degree level. Such agreements can be reached between the two co-operating institutions, the PhD candidate and the candidate's supervisors. A *cotutelle* agreement must always be reached on the individual level, but institutional agreements can also be made on *cotutelle* co-operation. The candidate receives a diploma from each of the institutions.

Cotutelle agreements across national boundaries are possible in many OECD jurisdictions, including Australia, France, Norway and Switzerland. Joint supervision agreements can act as a vehicle to promote a greater international profile for institutions, enhance brain circulation and increase the numbers of doctoral graduates with less commitment of resources from any one institution.

While master's programmes exist in UAS, they are relatively rare compared to the university sector. Master's programmes comprise 13% of programmes offered at UAS, while 63% of all programmes offered in universities are at the master's level (Netherlands Association of Universities of Applied Sciences (VH) and Association of Universities in The Netherlands (VSNU), 2018[22]). This may imply a greater role for UAS in providing master's programmes in the future, given the proportion of overall enrolments in master's programmes in general in the Netherlands, which is lower than the OECD average and many European countries (Chapter 2 of (OECD, 2019[1])).

Moreover, the majority of master's programmes in the Netherlands are only available in English, and the government is committed to ensuring that every graduate from a bachelor's level programme should have access to at least one master's programme in their field of study in Dutch in the future. Further encouraging and developing capacity in UAS (where programmes remain primarily taught in Dutch) to offer a wider range of appropriate master's programmes could lead to an increase in demand for studies in UAS.

Similarly, a general increase in demand, as foreseen in the default "base case" scenario, could also boost the demand and the numbers of the population eligible for doctoral training. The Netherlands appears to have a lower capacity to produce doctoral graduates compared to many other OECD countries (see Section 4), and currently, responsibility for doctoral education lies only with the universities. The rationale for restricting graduate programmes to only one sector in the Netherlands could be reviewed in light of current practices in the Netherlands and other jurisdictions.

Demand is high across Europe for doctoral education that is industry-focused (European Commission, 2017[29]). The Netherlands has already demonstrated an ability to introduce highly differentiated research activities in the UAS sector through the creation of the lector position and the establishment of Centres of Expertise for practice-based research (Chapter 6 of (OECD, 2019[1])). In the future, the Netherlands could build on these achievements and use them as a vehicle to create mechanisms for more advanced practice-based graduate programmes to be carried out in UAS under strict conditions (such as having a suitable staff profile), or give UAS a greater role in providing doctoral education, as is the case in Germany (Box 11.4).

Building capacity for a wider range of graduate programmes could also promote greater internationalisation of the UAS sector. The low level of internationalisation has been previously indicated by UAS students as one of the least satisfying aspects of their education experience (Studiekeuze123, 2018[30]).

Internationalisation can be promoted in UAS in many innovative ways, other than by switching programmes completely to the English medium of instruction. The concept of "internationalisation at home" has gained some policy attention in the Netherlands in recent years, and implies offering a more international orientation to higher education beyond increasing the numbers of international students. This can be achieved by creating a more internationally-focused curriculum, offering a section of a study programme in another language, or enrolling in online courses in a foreign higher education institution (Beelen and Jones, 2015[31]).

Internationalisation in UAS could also be encouraged by creating new partnerships with institutions in other countries through the joint provision of programmes, thus improving the circulation of international students. International partnerships between institutions are becoming increasingly commonplace, either in the framework of supranational programmes such as the Erasmus Mundus joint master's initiative (European