

HIGHER EDUCATION IN SWEDEN 2018 STATUS REPORT

Introduction

Higher education is Sweden's largest public sector in terms of the number employed and the concern of many stakeholders. It is important that discussions about higher education, and decisions that affect the way it functions, are based on factual knowledge.

Higher Education in Sweden – 2018 status report is a short English version of the annual statistical report on higher education in Sweden, published by the Swedish Higher Education Authority (Universitetskanslersämbetet, UKÄ). The ambition is to provide accurate information about the status of Sweden's higher education. Here you will find answers to questions such as:

- How well is Sweden doing from an international perspective?
- How much does the Swedish state invest in higher education and the research undertaken at the country's HEIs?
- How many students acquire qualifications from higher education in Sweden?

This report is based on the statistical data continually reported by the HEIs to Statistics Sweden as well as on the data reported directly to UKÄ in connection with the submission of their annual reports to the Government.

Initially, the report summarises some indicators for Swedish higher education from an international perspective and, under the heading *Facts about higher education in Sweden*, provides a basic description of the structure of Swedish higher education and the regulatory framework. The report then outlines developments prior to and including the fiscal year of 2017 for public-sector and independent HEIs. The last chapter presents key data about students, staff and finance for each HEI.



Anders Söderholm
Director General

**Higher Education in Sweden
2018 Status Report**

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SWEDEN IN AN INTERNATIONAL PERSPECTIVE

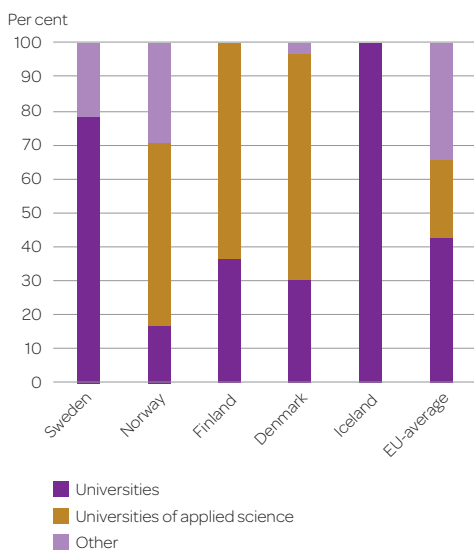


INTERNATIONAL DATA ON education can be used to put the progress of Swedish higher education into perspective. The Organisation for Economic Co-operation and Development (OECD), Eurostat and other international organisations regularly publish indicators at the level of individual countries. In addition, a data base of higher education institutions (HEIs) in Europe is under construction, intended to elucidate differences as well as similarities of higher education in different countries.

Higher education in Europe

Here we use data from the European Tertiary Education Register (ETER) to describe European higher education institutions. The Register contains information on a little more than 2,800 universities, colleges and other HEIs, in 36 European countries.

Figure 1. Categories of higher education institutions in the Nordic countries as well as the estimated average for the EU. Source: ETER.



ETER classifies HEIs into different categories according to a standardised model of classification. In this model, academic universities

are separated from so called universities of applied science. The latter are only found in countries that have a binary system of higher education, separating academic higher education from applied. On average, a little less than a quarter of HEIs in the 28 EU countries are classified as universities of applied science. Sweden and Iceland have a homogenous system of higher education, which sets them apart from the rest of the Nordic countries. Norway, Finland, and Denmark have binary systems. In Sweden, the same regulation applies to all higher education.

In Sweden, Norway and Denmark, a majority of universities and university colleges are public-sector HEIs, while approximately half of Finnish and Icelandic institutions are independent education providers (referred to as Government dependent providers by the OECD). With few exceptions, Swedish independent education providers are small. In the 28 EU countries, on average, private institutions are more prevalent than in the Nordic countries.

Classification of education

To make it possible to compare international data on education, international organisations have used UNESCO's International Standard Classification of Education (ISCED) since the mid 1970's.

Since countries organise their systems of education differently, no comparison will be perfect. For instance, the same type of education may be classified as "short-cycle tertiary" (ISCED 5) in one country, but classified as "Bachelor's or equivalent higher education" (ISCED 6) in another country. As a consequence, higher education (ISCED 6-8) makes up a varying proportion of all tertiary education (ISCED 5-8). In addition, educational systems have changed over time. In recent years the so called Bologna

process, whereby many countries have tried to make their higher education more comparable, is one example of such change.

Educational attainment in OECD countries

The level of education has risen considerably in OECD countries in the last decades, as a result of expansion of higher education, in Sweden and in many other countries. In OECD countries, on average 27 per cent of the adult population (25–64 years) had at least two years of tertiary education in 2006. In 2016 the proportion had increased by 10 percentage points, to 37 per cent. The educational level of the Swedish population also increased in the ten-year period, from almost 31 to 41 per cent who had a tertiary education.

In 2006 the level of education did not differ greatly between women and men in OECD countries on average – 27 per cent of women and 26 per cent of men had at least two years of tertiary education. Ten years later, in 2016, these percentages had risen, and with 38 and 33 per cent, respectively,

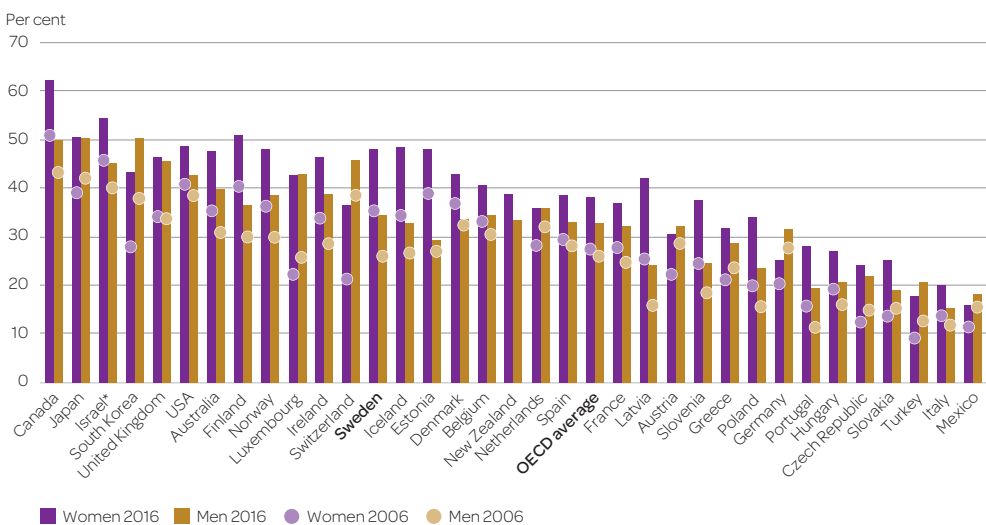
there was a clear difference in favour of women.

In Sweden women were better educated than men in 2006 and the difference has grown. In 2006, 35 per cent of the women of Sweden's adult population and 26 per cent of the men had at least two years of tertiary education. The corresponding shares in 2016 were 48 per cent for women and just under 35 per cent for men.

In all countries where women were better educated than men in 2006, the differences between women and men have increased. In educational attainment men fall ever more behind women. Judging by this, women will eventually be better educated than men in all OECD countries.

ISCED 2011 makes it possible to study the educational level of the population in greater depth. Tertiary education is divided into shorter studies (ISCED 5), studies leading to a level corresponding to a Bachelor qualification (ISCED 6), Master qualification (ISCED 7) and Doctoral (third-cycle) qualification (ISCED 8). The share of the adult population (aged 25 – 64 years)

Figure 2. Proportion of women and men (ages 25–64) with at least two years of tertiary education 2006 and 2016. Source: OECD Stat.



with tertiary education varies between OECD countries, from less than 20 per cent in Mexico, Italy, and Turkey, to 50 per cent or more in Canada, Japan, and Israel. The OECD average was 37 per cent in 2016, with the highest frequency for Bachelor level qualifications (ISCED 6).

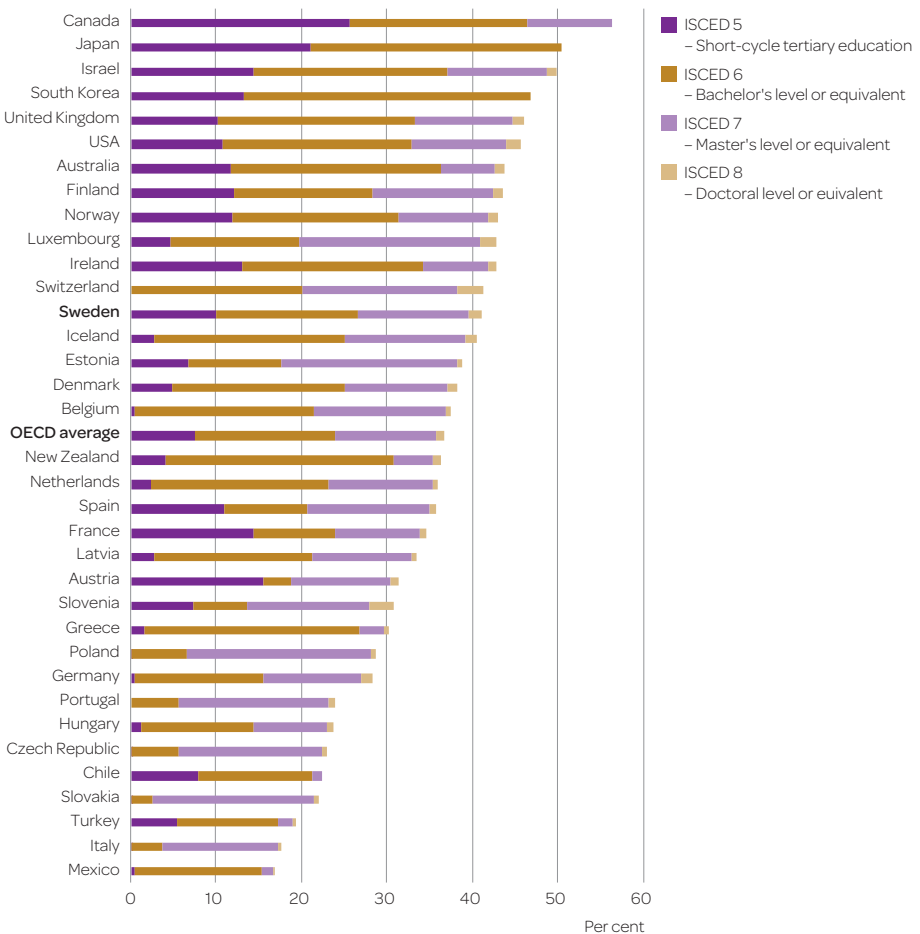
Of the Swedish adult population, 41 per cent had a tertiary education in 2016, which makes Sweden rank 13 of OECD countries. Comparing Sweden with the other Nordic countries, the educational level is lower than in Norway or Finland, but higher than

in Iceland or Denmark. An analysis of the share of the Swedish population that has a tertiary education (41 per cent) shows that, like the average OECD country, the Bachelor level (ISCED 6) has the highest frequency, 17 per cent. Thirteen per cent had a Master level (ISCED 7) and 2 per cent a doctoral level education (ISCED 8). The remaining 10 per cent had a shorter tertiary education (ISCED 5).

A relatively large share of the Swedish population are third-cycle graduates; the average for OECD countries is 1 per cent.

Figure 3. Percentage of 25–64-year-olds with tertiary education in OECD countries, by level of tertiary education (2016). For Canada, Japan, South Korea and Chile some education is included in other levels.

Source: Figure A 1.1 in Education at a Glance 2017.



Tertiary education entrants

The average age of tertiary education entrants in OECD countries was 22 years in 2015 and more than 80 per cent were younger than 25 years. In Sweden, the average age of these entrants was 24 years, so higher than the OECD average. Also, the proportion of entrants under the age of 25 years was lower in Sweden than in OECD countries. Iceland and Denmark show the same age pattern, while Norway and Finland resemble the OECD averages.

International students constituted 11 per cent of tertiary entrants in OECD countries in 2015, as they also did in Sweden. It should be noted, however, that exchange students are not included. Of the Nordic countries, Iceland had the largest proportion of international students, 20 per cent, and Norway the smallest, 4 per cent.

Fields of study vary between countries

Entrants in tertiary education (ISCED 5-8) without previous tertiary studies choose different fields of study in different OECD countries. UNESCO's Fields of Education and Training (ISCED-F) is used internationally to classify studies.

The most frequent field chosen by entrants in OECD countries in 2015 was Business, administration and law, followed by Engineering, manufacturing and construction, with 23 and 16 per cent, respectively. Business, administration and law was chosen by women and men to approximately the same degree, while the percentage of men choosing Engineering, manufacturing and construction was three times greater than the percentage of women. This was also true for all Nordic countries. Health and welfare, instead, was dominated by women – the percentage of women in this field was three to four times greater than the percentage of men.

In Sweden, the most frequent tertiary field of study was Engineering, manufacturing and construction, with 19 per cent of entrants, including programmes leading to the two professional qualifications Bachelor of Science in Engineering and Master of Science in Engineering. This was a little more than the 16 per cent average of OECD countries.

The second most frequent field of study in Sweden was Health and welfare which includes studies leading to a Bachelor of Science in Nursing, with 16 per cent of entrants. This field also was more frequent in Sweden than in other OECD countries (13 per cent). Finland and Denmark, however, had an even greater percentage of entrants in this field, 22 and 19 per cent, respectively.

It is worth repeating that countries may classify similar studies differently.

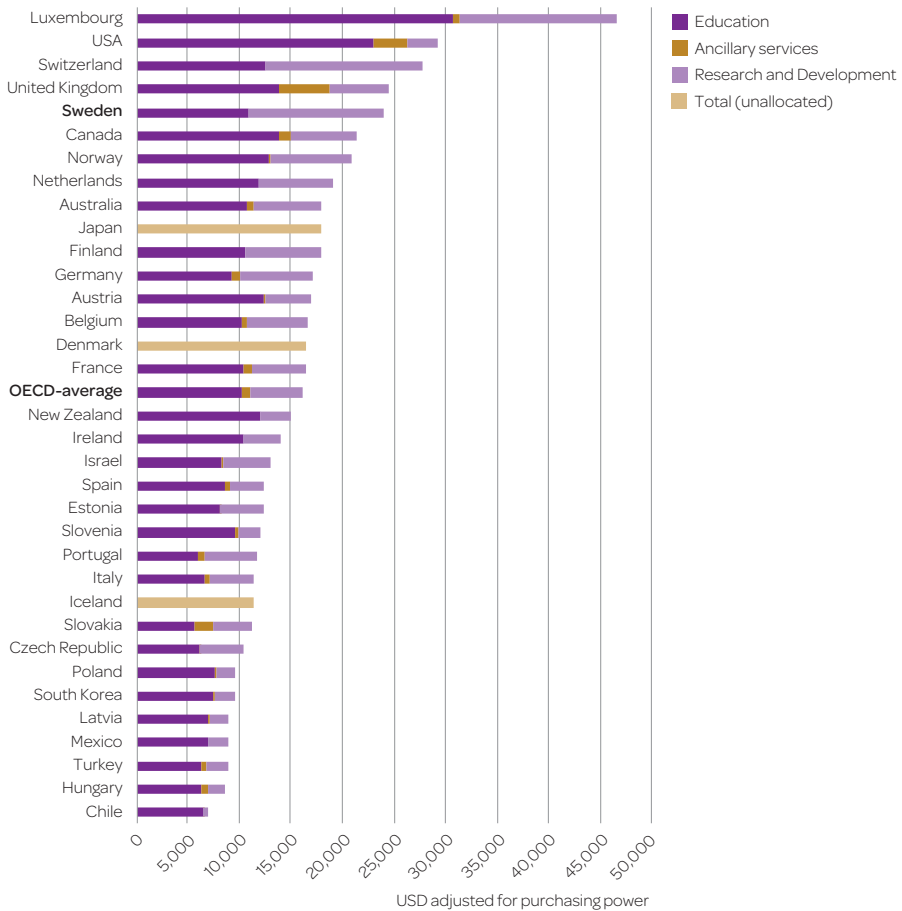
Investment in tertiary education

Raising the educational level of the population, as well as the quality of studies offered, requires investing in education. A number of indicators are used by OECD to demonstrate investment in education at different levels, and the results are published annually.

Investments are measured as expenditure. The size of this expenditure varies considerably between countries, depending, among other things, on educational structure. In some countries, e.g. Sweden and Switzerland, a great deal of R&D is performed at HEIs. In these two countries more than half of the total expenditure of HEIs is spent on R&D. This inclusion of R&D expenditure is the reason that the expenditure per student is relatively high in Sweden, in comparison with other countries.

The expenditure of tertiary education varies considerably between countries. The expenditure per student for the educational institutions varies from 7,000 US dollars

Figure 4. Expenditure per student by service, USD adjusted for purchasing power. Expenditure by educational institutions for tertiary education (ISCED 5-8) and research in HEIs in OECD countries in 2014. Data for Greece is missing. For Ireland, Canada, Luxembourg, Poland, Switzerland, and Slovakia data only refer to public HEIs.



(adjusted for purchasing power) in Chile to more than 25,000 US dollars in Luxembourg, the US, and Switzerland. In Sweden, ranked as number five, the total expenditure per student was 24,100 US dollars in 2014, more than half of which was expenditure of research.

On average, OECD countries spend 31 per cent of their total expenditure of education on R&D, but with considerable variation between countries.

Expenditure in relation to GDP

Differences in financial conditions of OECD countries as well as national priorities also account for the large variation in expenditure per student. To what degree education is financed by public funds or by tuition fees also varies. Another indicator, the expenditure on tertiary education of higher education institutions in relation to the country's GDP, may be used in addition to the expenditure per student. Using "expenditure per student" as indicator puts Luxembourg at the very top, while "expenditure in relation to GDP" puts the country at the

very bottom. Approximately the reverse relationship holds for Chile.

In 2014, OECD countries invested between 0.5 and 2.7 per cent of their GDP in tertiary education and research, carried out by HEIs. The average investment was 1.6 per cent, of which 1.1 percentage point was publicly funded. Public funding varied between 0.5 and 1.7 percentage points. The United States, Canada, South Korea and Chile made the largest investments in education and research carried out by HEIs, measured as share of GDP. In these countries funding is mainly private, to a large extent by tuition fees.

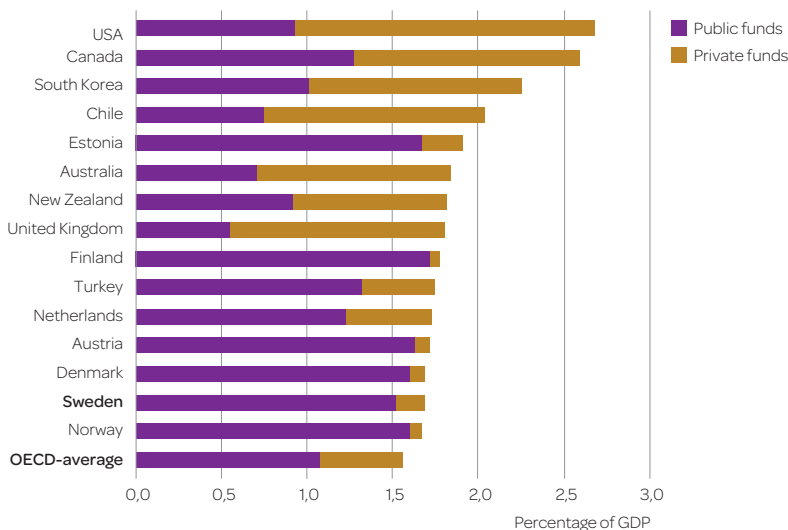
In Sweden, 1.7 per cent of the GDP was invested in education and research in 2014, of which 0.2 percentage points was private funds. These private funds mainly refer to funding of research – tuition fees from paying students only account for a marginal part of private funding, as yet. The 1.7 per cent places Sweden, along with Denmark and Norway, a little above the OECD average.

In terms of the share of GDP spent on tertiary education only, excluding research, the list of OECD countries is headed by Finland and Estonia (1.7 per cent), followed by Austria, Norway and Denmark (1.6 per cent). With 1.5 per cent of GDP spent on tertiary education, Sweden ranks as number six.

As was mentioned before, educational systems vary between countries, making comparisons difficult. Public funding may be underestimated in countries where there are state loans or grants to cover tuition fees. These may be paid to the institution directly, or to the student, who then pays the institution.

The Nordic countries have relatively generous student loans and grants, to cover living costs. Unlike countries where supplying accommodation is the responsibility of the HEI, housing is paid for by the student, which complicates a comparison of institutional spending.

Figure 5. Expenditure on educational institutions as a percentage of GDP 2014.



ISCED – INTERNATIONAL CLASSIFICATION OF EDUCATION AND EDUCATIONAL ATTAINMENT

The structure of the educational systems of the OECD countries differs and, to enable international comparison since the 1970s, countries have used the *International Standard Classification of Education* (ISCED) to categorise their educational programmes. The United Nations Educational, Scientific and Cultural Organization (UNESCO) is responsible for ISCED and, after a comprehensive revision of the classifications, a new ISCED classification is used today (ISCED 2011) with the levels 0–8. One important change in ISCED 2011 is that tertiary education is now divided according to the Bologna system.

ISCED 2011 places tertiary education (higher education and other post-secondary education of at least two years duration) in levels 5–8. Level 5 corresponds to shorter periods of study (of at least two years) that are considerably more complex than programmes at upper-secondary level. Level 6 comprises longer (3–4 years) periods of study that often focus more on theory than those at level 5, such as Bachelor's degree programmes. Level 7 courses and programmes (Master's degree programmes) are considerably more complex than those at level 6 and often more specialised. The total period of study before the award of a level 7 qualification can vary between 5 and 8 years. Level 8 is devoted to the doctoral level and a research project, including dissertations. The

cumulative length of ISCED 8 is at least 7 years (Doctoral degree).

First-cycle programmes in Sweden, such as Bachelor's programmes, are classified as level 6 and second-cycle programmes, for instance 60 and 120-credit Master's degrees, as level 7, while doctoral and licentiate degrees are placed in ISCED 8. Some shorter higher education programmes and programmes offered within the framework of higher vocational education that are longer than two years are classified as level 5.

For educational attainment in Sweden, level 5 includes studies in freestanding courses within higher education equal to 2–3 years of study and higher vocational education and shorter higher education courses and programmes. Level 6 includes at least three years of study in higher education corresponding to a Bachelor's degree (without requiring the award of a qualification). Level 7 includes at least four years of study, corresponding to and leading to the award of a Master's degree.

When comparing different countries, care should be taken in how data is interpreted. OECD averages are affected, for instance, by an increase in the number of OECD countries and also by the fact that not all of these countries provide complete statistics.

FACTS ABOUT HIGHER EDUCATION IN SWEDEN



The structure of higher education and qualifications

Sweden is one of approximately 50 countries collaborating in the Bologna Process, which aims to ensure comparability in the standards and quality of higher education qualifications.

Cycles

All courses, programmes and qualifications are placed in one of three cycles: first, second or third. There is progression, that is to say, each cycle is based on the one before. The formal requirements that distinguish these cycles are specified in the Higher Education Act.

Courses and programmes

All first and second-cycle education consist of courses that may be combined to form programmes. In addition to programmes that lead to the award of qualifications, higher education in Sweden offers a wide range of freestanding courses, many of them offered as distance learning. Students may select their own combination of these courses. If these combinations meet stipulated requirements, a qualification may be awarded.

Higher education credits (HE credits)

An academic year that comprises 40 weeks of full-time study corresponds to 60 HE credits. The number of HE credits awarded for each course is determined by the amount of study normally required to attain its objectives. The HE credits awarded in higher education in Sweden may be compared to European Credit Transfer and Accumulation System (ECTS) credits, where 60 ECTS credits are attained after one academic year of full-time study. Here, HE credits are simply referred to as credits.

There are three categories of qualifications which all have the same academic status:

1. general qualifications
2. qualifications in the fine, applied and performing arts
3. professional qualifications.

Both general qualifications and qualifications in the fine, applied and performing arts are awarded within the first, second or

Table 1. Structure of Swedish higher education qualifications.

First-cycle qualifications
General qualifications
Higher Education Diploma (120 HE credits)
Degree of Bachelor (180 HE credits)
Qualifications in the fine, applied and performing arts
Higher Education Diploma (120 HE credits)
Degree of Bachelor in Fine Arts (180 HE credits)
Professional qualifications
There are 32 different first-cycle professional qualifications, for example Bachelor of Science in Nursing (180 HE credits), Bachelor of Science in Engineering (180 HE credits) and Higher Education Diploma in Dental Hygiene (120 HE credits).
Second-cycle qualifications
General qualifications
Degree of Master (60 HE credits)
Degree of Master (120 HE credits)
Qualifications in the fine, applied and performing arts
Degree of Master in Fine Arts (60 HE credits)
Degree of Master in Fine Arts (120 HE credits)
Professional qualifications
There are 22 different second-cycle professional qualifications, for example Master of Architecture (300 HE credits), Postgraduate Diploma in Midwifery (90 HE credits) and Master of Science in Medicine (330 HE credits).
Third-cycle qualifications
General qualifications
Degree of Licentiate (120 HE credits)
Degree of Doctor (240 HE credits)
Qualifications in the fine, applied and performing arts
Degree of Licentiate in Fine Arts (120 HE credits)
Degree of Doctor in Fine Arts (240 HE credits)

third cycles. Professional qualifications are awarded within the first and second cycles and mainly in the regulated professions. A majority of professional qualifications awarded in the second cycle do not require a previous, first-cycle qualification and the programmes leading to their award cover both cycles. Swedish higher education differs from higher education in many other countries in this respect.

Teaching methods

Higher education normally consists of self-study, classroom instruction, seminars and lectures, but many courses also include laboratory sessions or field studies. Students are frequently asked to work in groups.

Government funding but a high degree of autonomy

The mission of the HEIs is to offer education based on scholarship or artistic practice and on proven experience. They are also required to undertake research or artistic research and development work. Most of the publicly financed research in Sweden is undertaken within institutions of higher education, which means that over half of the HEIs' operations, in terms of funding, consists of research and third-cycle programmes. There is considerable variation between HEIs, though, older universities undertaking more extensive research than younger universities or university colleges.

Also, in what is sometimes referred to as third stream activities, HEIs must interact with the surrounding community, provide information about their operations and act to ensure that benefits are derived from their research.

In Sweden, public-sector HEIs have considerable autonomy within a system of management by objectives. Overall responsibility for higher education and research

rests with the Swedish Parliament (Riksdag) and the Government. These decide on the regulations that apply to the higher education sector, primarily the Higher Education Act and the Higher Education Ordinance (see fact box). In addition to laying down objectives and guidelines, they also allocate resources to the HEIs. Within these parameters, the HEIs are relatively free to decide on their own organisation, how they use resources, and their course offerings.

Certain general principles, laid down in the Higher Education Act, apply to research: research issues may be freely selected, methodologies freely developed, and results freely published.

REGULATION OF THE HIGHER EDUCATION SECTOR

Higher education in Sweden is governed by the Higher Education Act and the Higher Education Ordinance.

The Higher Education Act is enacted by the Swedish Parliament and regulates the HEIs' operations. The Act contains basic regulations about studies offered by HEIs. For instance, it sets out what should characterise courses and programmes at different levels and stipulates freedom of research. It provides a framework for the organisation and governance of the HEIs, and states that every HEI must have a board of governors and a vice-chancellor. It also contains regulations about the duties of teachers as well as provisions about student influence. In addition, HEIs must foster equality of opportunity and broaden recruitment.

Further provisions are laid down in the Higher Education Ordinance, issued by the Government. For instance, the Ordinance states that students must be given the opportunity to influence their studies. The Ordinance contains regulations on entrance qualifications and selection for courses and programmes, as well as the appointment of teachers and doctoral students. It also includes regulations on course and programme syllabuses, grades and qualifications.

Allocation of resources to higher education institutions

The Swedish Parliament decides on funding for the HEIs. Resources are allocated to the institutions for first and second-cycle courses and programmes on the basis of the number of students enrolled in each cycle (expressed in terms of full-time equivalents, FTEs) and the number of credits attained by the students (annual performance equivalents, APEs). The funding per FTE and APE varies for different disciplinary domains. Technology and engineering, for example, receive more than social science. Every year the Government caps the funding of courses and programmes of each HEI by setting a maximum amount, the funding cap.

Direct funding for research and third-cycle courses and programmes is based mainly on past allocations, but, since 2009, a proportion of the funding they already receive as well as all new resources has been allocated on the basis of two quality indicators. One of these takes publications and citations into account, the other research funding from external sources.

Accreditation and quality assurance

Higher education is offered by public-sector HEIs and (to a much smaller extent) by independent education providers. There are some 30 public-sector HEIs and they account for approximately 90 per cent of the total number of FTEs. The Swedish Parliament decides on the establishment of public-sector HEIs while the Government decides whether an HEI has full university status. Those that lack full university status have only limited powers to award third-cycle qualifications and somewhat limited powers to award second-cycle qualifications. There is no difference, however, in the status of the qualifications awarded.

Independent education providers are permitted to offer higher education courses and programmes if they are granted degree-awarding powers. There is no accreditation of institutions. In Sweden there are three independent HEIs entitled to award either all or some third-cycle qualifications. There are also nine independent education providers entitled to award first-cycle, and in some cases second-cycle qualifications, as well as four independent education providers entitled to award qualifications in psychotherapy.

A complete list of HEIs in Sweden can be found on page 69.

Degree-awarding powers

In Sweden, accreditation of higher education takes the form of granting degree-awarding powers. The regulations that apply vary depending on what types of HEI and qualifications they refer to: public-sector HEIs that lack full university status have less extensive powers but are not as restricted as the independent higher education providers, which have to make separate applications for each qualification they wish to award. However, all HEIs and independent higher education providers have to apply for entitlement to award professional qualifications and qualifications in the fine, applied and performing arts.

With the exception of independent higher education providers, who apply to the Government, applications for degree-awarding powers are appraised by UKÄ. These powers are granted indefinitely, unless there are grounds for revoking them.

Quality assurance

Responsibility for the quality of higher education is regulated in the Higher Education Act. HEIs are obliged to ensure that high standards are attained in courses and programmes as well as in research. Quality

assurance procedures are also the shared concern of staff and students.

By evaluating the quality of studies leading to the award of first, second and third-cycle qualifications and quality assurance procedures, UKÄ ensures that HEIs are accountable. These evaluations have been performed in cycles of six or four years. The current cycle will run from 2017 until 2022. It will include appraisals of degree-awarding powers, audits of the HEIs' internal quality assurance procedures, evaluation of studies leading to the award of qualifications, and thematic evaluations. Failure to meet quality standards may result in degree-awarding powers being revoked.

Admission to higher education

Sweden has a more uniform system of admission to higher education than many other countries. National admission regulations are laid down in the Higher Education Act and the Higher Education Ordinance and in regulations issued by the Swedish Council for Higher Education. The vast majority of admissions are pooled. The Swedish Council for Higher Education is responsible for pooled admissions on behalf of the HEIs, but the individual HEIs make the official decision to admit students. There is one single joint official website for applications to higher education institutions in Sweden, www.universityadmissions.se. Information is also available on the website www.studera.nu.

Detailed national regulation applies mainly to the admission of HE entrants to first-cycle courses and programmes. There are also regulations on admission to second- and third-cycle courses and programmes, but these are less comprehensive. Specific prior knowledge is required for admission to higher education. There are general as well as specific admission requirements. General

requirements apply to all courses and programmes in higher education: specific (additional) requirements are also demanded for many courses and programmes.

Fulfilment of the entry requirements does not guarantee admission. If there are more applicants than can be admitted, selection criteria are used. All first-cycle courses and programmes, apart from those that lead to the award of qualifications in the fine, applied and performing arts, use more or less the same criteria. These are based mainly on final school grades or results from the Swedish Scholastic Aptitude Test (högskoleprovet). The Higher Education Ordinance lists what selection criteria may be invoked. It also contains regulations on the evaluation of final school grades.

Applying for third-cycle studies leading to the award of a Licentiate degree or Doctoral degree is more similar to applying for a position. Admission is only possible if the student has been appointed to a doctoral studentship or awarded a research grant, unless the student has some other form of guaranteed funding for the entire period of study. Normally, funding can only be provided for the official period of study. This means that Doctoral programmes have to be completed in four full years, Licentiate programmes in two.

Cost of studying

Tuition fees

For a long time, Sweden was one of the few countries in Europe in which higher education was completely free of charge. In 2011, the Higher Education Act was changed to the effect that while higher education is free for Swedish citizens and for citizens of the EU/EEA countries and Switzerland, citizens of other countries have to pay an application fee and tuition fees for first and second-cycle studies, unless they are taking part in an exchange programme. In calculating tuition

fees, the HEIs must ensure that they cover the full cost of the instruction provided as well as counselling, health services and other types of student service. They do not have to cover accommodation and living expenses.

Financial support

The majority of students in Sweden finance their studies with the help of financial support from the state to cover their living expenses. There are minimum performance requirements in terms of the number of credits achieved for continued financial support. Student finance consists of a combination of study grants and study loans. In 2017, the grant portion of student finance for an academic year of 40 weeks amounted to SEK 28,480 and the loan ceiling to SEK 71,680. The maximum total available Government-sponsored student finance for an individual student pursuing full-time studies thus amounted to SEK 100,160 in 2017. Students may receive this financial support for a maximum of twelve semesters or six academic years. Repayment of the loan element is based on an annuity system and in normal cases the total debt should be repaid in

25 years or less, or before the borrower reaches the age of 60.

It is possible to qualify for financial aid for studies abroad. Such aid is normally only available to Swedish citizens, however.

Residents who are not Swedish citizens are normally only entitled to financial support for studies if they have moved to Sweden for some other reason than to study here. Otherwise they are considered to be international students and have to finance their studies themselves.

Annex 2 to the Higher Education Ordinance and annexes to the Ordinance for the Swedish University of Agricultural Sciences and the Ordinance for the Swedish National Defence College are known as Qualifications Ordinances and contain the descriptors for all qualifications awarded in higher education in Sweden.

In addition to legislation, the Government exercises control of agencies in the higher education sector through directives which specify the tasks to be undertaken and the reports it expects.

GOVERNMENT AGENCIES IN THE HIGHER EDUCATION SECTOR

A number of agencies are accountable to the Ministry of Education and Research

Universitetskanslersämbetet (the Swedish Higher Education Authority (UKÄ), www.uka.se) exercises supervision of the HEIs, which means ensuring their compliance with the statutes and regulations that apply to higher education. UKÄ also reviews the quality of higher education and the efficiency and effectiveness of the use of resources and public funding at the HEIs. UKÄ is also responsible for the official statistics on the higher education sector.

Universitets- och högskolerådet (the Swedish Council for Higher Education (UHR), www.uhr.se) issues further regulations, for example concerning the admission of applicants with grades

awarded abroad, and is responsible for pooled admissions on behalf of the HEIs. UHR also evaluates educational qualifications awarded outside Sweden and brokers international exchanges.

Överklagandenämnden (the Higher Education Appeals Board, www.onh.se) reviews decisions on admission to higher education.

Vetenskapsrådet (the Swedish Research Council, www.vr.se) is the largest funding agency for basic research, in addition to being an advisor to the Government on research policy.

Centrala studiestödsnämnden (CSN, www.csn.se) approves and distributes state financial support for students, including both grants and loans.

TRENDS AND DEVELOPMENTS



First and second-cycle courses and programmes

This section describes higher education as a process - admission, attendance and graduation. The process involves first and second-cycle students in different population: applicants, those admitted, HE entrants, registered students and graduates.

Applications and admissions

To be admitted to higher education the student has to meet entry requirements pertaining to the specific course or programme. The number of qualified applicants, however, may considerably exceed the number accepted. The higher education institution, HEI, then has to select applicants.

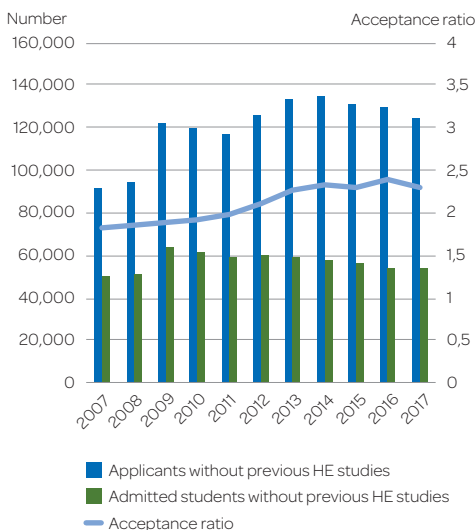
For the autumn semester of 2017 there were 124,900 applicants for first or second-cycle courses and programmes who had never previously studied in higher education. This was 4 per cent less than the 129,500 applicants a year before. There was a strong

increase in the number of applicants in 2009, coinciding with there being a large number of 19-year-olds in the population, on the one hand, and deteriorating labour market prospects, on the other. The number of applicants without higher education experience stayed at a high level in the following years, peaking in the autumn semester of 2014, with 135,300 applicants without higher education experience. From 2015 the number of applicants has declined slightly.

Of applicants without previous higher education studies for the autumn of 2017, 59 per cent were women and 41 per cent men. The proportions of women and men have been fairly stable in the 2007-2017 period.

In the autumn of 2017 the largest age group among applicants with no previous experience of higher education was the 19-year-olds, and this has been the case for the past ten years. These 19-year-olds constituted 22 per cent of the applicants in the autumn of 2017, the same proportion as in the previous autumn semester. The number of 19-year-olds in the population is now expected to rise in the several coming years. As a result, the number of applicants is expected to rise, provided the interest in higher education does not decline.

Figure 6. Number of applicants and admitted students without previous HE studies as well as acceptance ratio autumn semesters 2007-2017. Acceptance ratio is shown on the right.



Lower acceptance ratio for students without higher education experience

Of the 124,900 applicants without higher education experience who applied for first or second-cycle studies in the autumn of 2017, 54,100 were admitted, 57 per cent women and 43 per cent men. The number admitted has decreased over time from a peak of 64,500 admitted in the autumn of 2009.

There were also fewer applicants without higher education experience for every student admitted in autumn 2017 compared with the year before. The ratio of applicant to admitted decreased from 2.4

to 2.3. This ratio has been relatively stable over time, albeit with a slight tendency to increase. In 2007, the first year in the 2007-2017 period, the ratio was 1.8.

The number of applicants admitted to their first choice course or programme is arguably a better measure of the availability of higher education. Of the total number of admitted applicants with no previous experience of higher education, 62 per cent were admitted to their first choice course or programme in the autumn of 2017. This proportion peaked in the autumn of 2007 (71 per cent) and hit the lowest point in autumn 2014 (54 per cent).

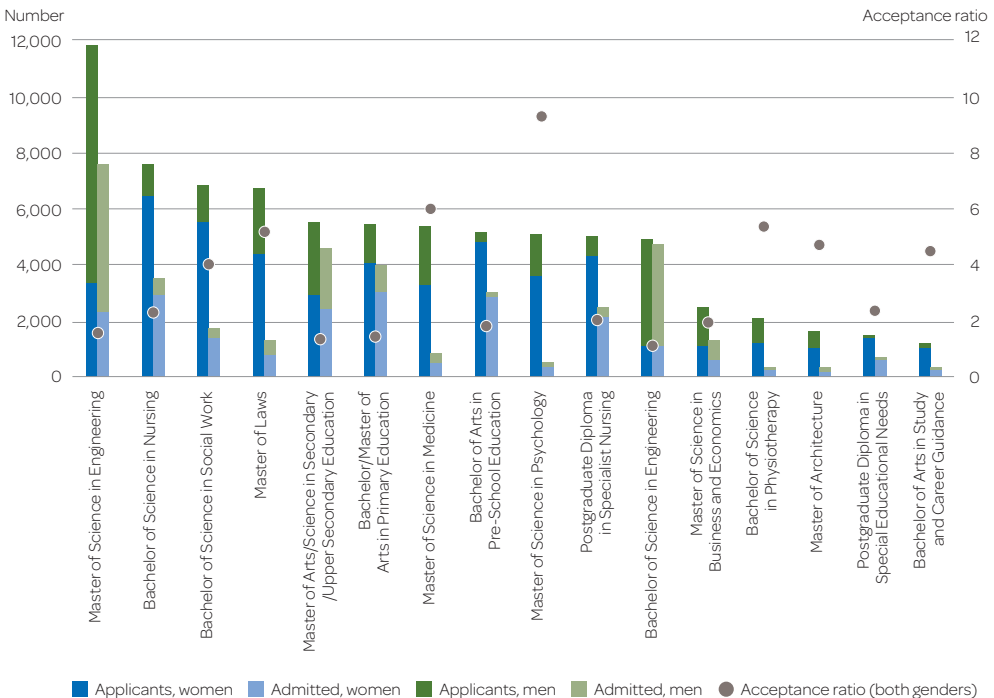
Fewer applicants for study programmes

Applicants without previous higher education studies are only part of the whole population of applicants. In the autumn of

2017 there were a total of 165,100 qualified first choice applicants, applying for study programmes. Of these, 87,800 applied for programmes leading to the award of a professional qualification (professional qualification programmes), while 77,600 applied for programmes leading to the award of a general qualification (general qualification programmes) or a qualification in the fine, applied and performing arts. Applications may be for first or second-cycle programmes. First-cycle programmes attracted 63,000, and second-cycle programmes 14,700, qualified first choice applicants.

Among the 87,800 qualified first choice applicants for professional qualification programmes, programmes leading to the award of a Master of Science in Engineering attracted the largest number of applicants (11,840, or 13 per cent). In second to fourth

Figure 7. Qualified first choice applicants and numbers admitted, by gender, as well as acceptance ratio of professional qualification programmes with more than 1,000 qualified first choice applicants, autumn 2017. Acceptance ratio is shown on the right.



place came programmes leading to the award of a Bachelor of Science in Nursing (7,630 or 9 per cent), a Bachelor of Science in Social Work (6,840 or 8 per cent) and a Master of Laws (6,770 or 8 per cent), respectively. However, programmes in education drew the largest number of applicants – when combining the programmes leading to a teaching qualification, the sum was 16,850 first choice applicants in the autumn of 2017. Education thus attracted 19 per cent of all qualified first choice applicants for professional qualification programmes.

Of the applicants for professional qualification programmes, 42,600 were admitted. The acceptance ratio, i.e., the number of qualified first choice applicants in relation to the number of admitted, varied greatly between programmes. Of programmes with at least 1,000 qualified first choice applicants, the acceptance ratio in the autumn of 2017 was highest for the programme leading to the award of a Master of Science in Psychology (9.1). In second, third and fourth place came the programmes leading to the award of a Master of Science in Medicine (5.9), a Bachelor of Science in Physiotherapy (5.3) and a Master of Laws (5.1).

There were fewer applicants in the autumn of 2017 than in the autumn of 2016 for many professional qualification programmes. Several of the programmes that decreased the most belong to a group of programmes that the Government has declared to be of political priority. Programmes leading to a qualification as a nurse, or a pre-school or secondary school teacher, are in this group, with declining application numbers of 11 per cent, 10 per cent and 5 per cent, respectively.

Many applicants for Specialist Nursing programmes

Other programmes instead showed an increase in the number of applicants.

With 15 per cent more applicants in the autumn of 2017 compared with the previous autumn, the programme leading to the award of a Postgraduate Diploma in Specialist Nursing had the largest increase. The programme leading to the award of a Postgraduate Diploma in Special Educational Needs increased also and had 9 per cent more applicants.

Although most applications are for studies in the autumn semester, in many cases it is possible to apply to the spring semester. Comparing the spring semester of 2018 with the spring of 2017, most professional qualification programmes had fewer qualified first choice applicants. The programme leading to the award of a Bachelor of Science in Nursing had the largest number of such applicants but 14 per cent fewer than the preceding spring semester. The number of applicants for the programme leading to the award of a Postgraduate Diploma in Specialist Nursing, on the other hand, increased by 47 per cent between the springs of 2017 and 2018.

Higher education entrants

Not everyone who is admitted actually starts studying. That said, almost 90 per cent of students admitted to the autumn semester of 2016 registered and became higher education entrants.

In the academic year of 2016/17, a little over 85,950 new entrants, i.e. students without previous higher education studies, began first or second-cycle studies at Swedish HEIs. The number of Swedish entrants declined for the seventh consecutive year, albeit a little less than in the last few years, whereas the number of incoming entrants increased for the third year in a row.

A declining number of Swedish entrants combined with an increasing number of incoming students has led to the latter

being a growing proportion of entrants. Incoming students were a little over 27 per cent of the total number of entrants, a little more than the preceding academic year. However, incoming students account for a much smaller proportion of the total student population since their average study time is shorter than that of Swedish students.

Of the total number of Swedish entrants, 36,900 (59 per cent) were women and 25,500 (41 per cent) men. Over time the numbers have tended to decline, with 21 per cent and 24 per cent decreases for women and men respectively after a record high in the academic year of 2009/10. The number of incoming men increased by 200, while incoming women increased by a little less than 350, resulting in the two groups numbering 11,100 and 12,450, respectively.

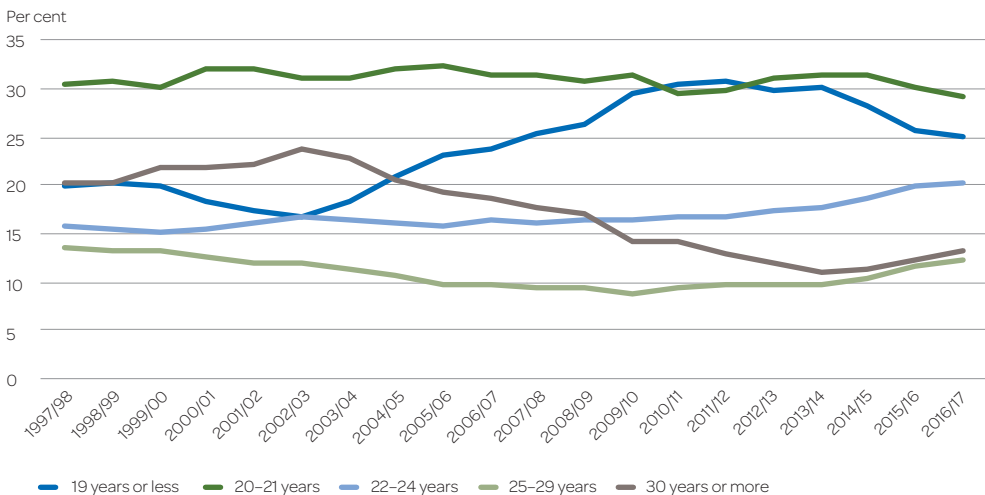
Barely 13 per cent of all 19-year-olds (born in 1997) had started higher education studies in 2016. The proportion had declined three years running and this was the lowest proportion so far of all the cohorts born in the 1990s. The proportion of 24-year-olds (born in 1992) who had begun higher education studies in the 2016 follow-up was considerably larger, however.

Of the 1992 cohort, a little under 44 per cent had begun higher education studies. The proportion starting studies by the age of 24 years has been relatively constant in the last few years, between 43 and 45 per cent of the cohorts born in 1980s and 1990s.

The decreasing number of young students has resulted in a higher median age for Swedish higher education entrants. In the academic year of 2016/17 the median age of these entrants was 21.8 years (women) and 21.4 years (men). Compared with the academic year of 2015/16, the median age was 0.2 and 0.1 year higher for women and men, respectively.

Women and men differ greatly in the proportion who begin higher education studies either in Sweden, or abroad with Swedish study loans. Furthermore, the gap between women and men widens with every cohort. Those born in 1992 were studied at age 19 years as well as at age 24 years. Of the younger men 14 per cent had begun higher education studies, as compared to 17 per cent of the women, while at 24 years of age 36 per cent of the men and 52 per cent of the women had begun studying.

Figure 8. Percentage of Swedish HE entrants in different age groups academic years 1997/98–2016/17.



Declining number of entrants to freestanding courses

For the past several years the number of Swedish entrants to professional qualification programmes has grown while the number of entrants to freestanding courses has declined. Continuing this trend the number of Swedish freestanding course entrants decreased by 1,280 in the academic year of 2016/17, resulting in an almost halved number in seven years, from 34,800 to 17,750 students. This trend also applied to incoming entrants, with a decrease from 16,110 to 15,820 entrants to freestanding courses. The result is that almost every second entrant to a freestanding course was an incoming student.

In the academic year of 2016/17, 27,740 Swedish students, a little less than 45 per cent of the total number of Swedish higher education entrants, started a professional qualification programme. This was an increase of 900 students compared with the previous academic year. There were only 620 incoming entrants to these programmes in the academic year of 2016/17.

Entrants to general qualification programmes accounted for 28 per cent (24,020) of higher education entrants. Of these, 7,110 were incoming entrants, increasing their proportion by 12 per cent compared with the previous academic year.

Fewer entrants to general qualification programmes

Entrants with no previous higher education studies only form part of the total number of entrants. In this section we describe the development of the total number of programme entrants. Many programme entrants have studied before – entrants to Masters' programmes, for instance, are not admitted unless they fulfil the requirement of first-cycle studies.

Programmes leading to the award of a Bachelor degree are the largest general

qualification programmes, numbering 25,150 entrants in the academic year of 2016/17. This was on a par with the previous year, but 580 entrants fewer than the two years before that. The gender distribution was fairly even, 57 per cent women and 43 per cent men, and this has been the typical distribution for many years. Incoming entrants accounted for 4 per cent of entrants to programmes leading to the award of a Bachelor degree in the academic year of 2016/17.

The number of entrants in the second cycle was 4,060 and 14,110 to programmes leading to the award of a Master qualification (one year) and Master qualification (two years), respectively. Comparing these numbers with the preceding year, the two-year Master degree programmes increased by 700 entrants while the one-year Master degree programmes decreased by a little more than 200 entrants. The proportion of incoming entrants is high in both programmes, 36 per cent (one-year Master degree programmes) and 40 per cent (two-year Master degree programmes).

No change in the number of entrants to professional qualification programmes

The number of programme entrants to professional qualification programmes was approximately the same in 2016/17 as in 2015/16. Over the past several years the number of such entrants has increased; since the academic year 2012/13 the number has increased by 3,000 entrants.

There are fifty-odd professional qualification programmes but the difference in size between them is considerable. There were more than ten programmes with fewer than 100 entrants in the academic year of 2016/17. The single largest programme, leading to the award of a Master of Science in Engineering, had 7,220 entrants in the academic year of 2016/17, but all teacher qualification programmes

combined were larger, with more than 14,000 entrants. The total number of entrants to the eleven largest professional qualification programmes was more than 39,700 in the academic year of 2016/17, corresponding to a little over 80 per cent of the total number of entrants to such programmes. Of the larger professional qualification programmes, programmes leading to the award of a Master of Science in Business and Economics grew more in size than any other compared with the preceding year (10 per cent). Programmes leading to the award of a Master of Laws had the largest drop in relation to their size (6 per cent). There were no other major changes in size among the larger professional qualification programmes.

In 2015 the Government started a successive expansion of higher education with the purpose of increasing the number of entrants to programmes leading to qualifications that are in high demand. Teacher qualification programmes are a priority along with programmes leading to nursing, midwifery and specialist nursing qualifications. In 2017 further resources were invested in teacher and pre-school teaching

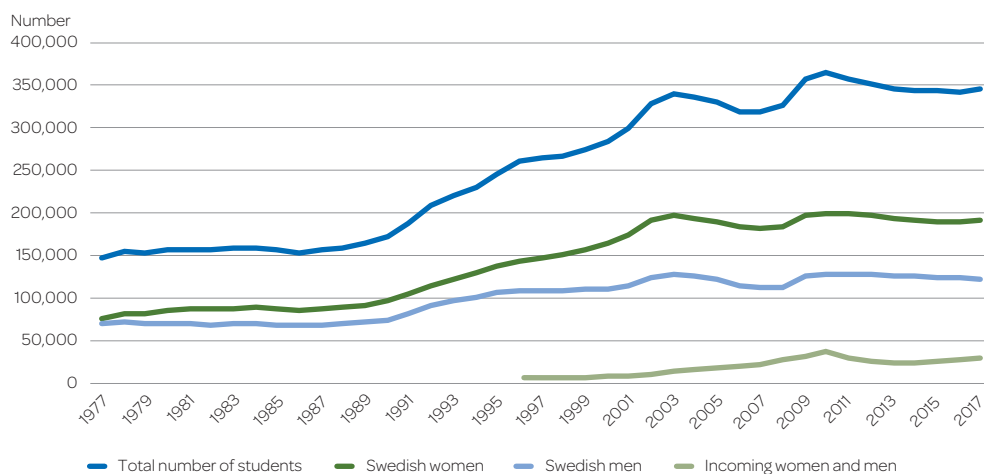
qualification programmes. Compared with the year before, the number of entrants increased to programmes leading to nursing, midwifery and pre-school teaching qualifications, but decreased to programmes leading to a specialist nursing qualification, as well as to programmes leading to several teaching qualifications.

The total student population in higher education

Entrants are only part of the total student population. In addition to entrants there are students who continue their studies from one year to the next and students returning after a period of absence. In the autumn of 2017 there were a total of 345,500 registered students enrolled in first or second-cycle courses or programmes. Of these, 30,400 were incoming students, corresponding to a little under 9 per cent of the total number of students.

Between the autumns of 2016 and 2017 the number of registered students increased by 2,300, less than 1 per cent. The increase in 2017 was the first increase for several years. However, whereas the number of Swedish

Figure 9. Registered students in first and second-cycle courses and programmes by semester, autumn semester 1977–2017.



students decreased by 150 there were 2,450 incoming students more in 2017 than in 2016. While the number of Swedish men decreased, the number of Swedish women increased.

From a longer perspective the number of students registered in Swedish HEIs is still high. When almost all post-secondary education was incorporated into higher education as part of a 1977 higher education reform, the number of students increased, almost reaching 160,000 by the early 1980s. The expansion of higher education continued in the 1990s, and in the beginning of the new millennium the number of students increased from 173,000 to 340,000. In the autumn of 2010 there were 365,000 higher education students, but in the years since HEIs have adapted to altered financial situations and the number of students has decreased.

In the 1977 reform training to be a teacher or nurse were changed into higher education programmes. Since these programmes had a majority of women students, the ratio of women to men shifted and there has been a majority of women among higher education students since. As of the first years of the millennium the proportions have stayed at 38-40 per cent men and 60-62 per cent women.

Social sciences and law the most popular areas

Higher education studies are usually pursued on campus. In the autumn of 2017 273,300 students (79 per cent) were enrolled in courses and programmes that were fully campus-based. Remaining students were enrolled in distance learning, fully (17 per cent) or partially (4 per cent). The two groups combined numbered 72,300 students. Distance learning is defined as a method of study where teachers and students are separated in the main in time and/or space. Distance learning has been

developed to make education more accessible and to broaden the recruitment base of HEIs. In the last two autumn semesters the number of distance students has grown. In the autumn of 2017, 58,300 students exclusively attended distance learning, an increase by 600 compared with the previous year and by 1,000 compared with the two previous years. While the number of women distance students grew, the number of men declined.

Students are registered in courses within subject areas. In the academic year of 2016/17, as in previous years, by far the largest area was social sciences and law, counting 206,000 students. This area was more than twice the size of the second largest area, humanities and theology (a little over 93,600 students). With 12,000 students, the fine, applied and performing arts was the smallest area. The relative sizes of the areas have been approximately the same in the last few years. With engineering and technology as well as natural sciences as the only exceptions, the proportion of women was greater than that of men. The natural sciences area had the most even gender ratio with 45 per cent women and 55 per cent men. The most uneven gender ratios were found in health sciences, including nursing (84 per cent women) and engineering and technology (66 per cent men).

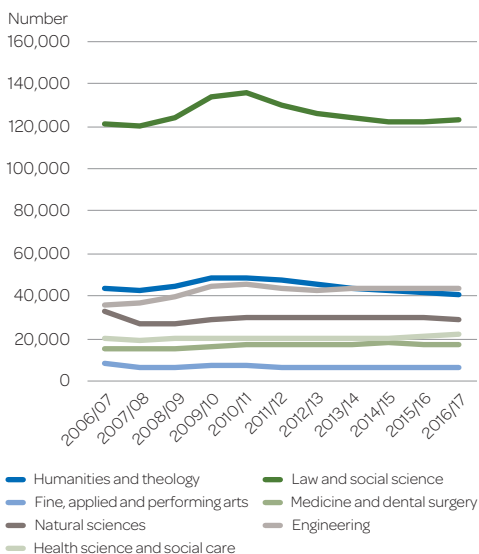
Just over 26 per cent of the students were enrolled in second-cycle courses and programmes in the academic year of 2016/17, which is on a par with the previous year. Medicine and dentistry had the largest proportion of second-cycle students, just under 33 per cent, up 2 percentage points from the year before. Humanities had the smallest proportion of second-cycle students, just over 9 per cent, on a par with the year before. Long-term, there is an overall increase in the proportion of second-cycle students.

Student population volume measured in FTEs

In addition to the number of registered students, the expansion of higher education can be expressed in terms of the number of full-time equivalents, or FTEs. Here the focus is on the volume of courses and programmes, rather than on the students. FTEs are calculated by dividing the total number of credits for which all students have been registered by the number of credits a full-time student is expected to attain in one academic year. As not all students enrol for full-time study, the number of FTEs is lower than the number of registered students.

In the academic year of 2016/17 there were 293,800 first and second-cycle FTEs, as compared to 294,300 in 2015/16. The number of FTEs has declined every academic year from a peak in 2010/11. Going back to the early 1990s, however, the number of FTEs has grown strongly. By the early 2000s the number had more than doubled, from approximately 150,000 to 300,000 FTEs, to reach the 293,800 of 2016/17.

Figure 10. Number of FTEs per subject area academic years 2006/07–2016/17.



Programmes leading to the award of a professional qualification comprised 46 per cent of the total programme and course offering in the academic year of 2016/17, while programmes leading to the award of a general qualification or a qualification in the fine, applied and performing arts comprised 30 per cent and 1 per cent, respectively. Freestanding courses accounted for the remaining 23 per cent. These courses are on a downward trend: in the academic year of 2006/07 they accounted for 33 per cent of the total programme and course offering but only 23 per cent ten years later. Instead, general qualification programmes have increased their share from 22 to 30 per cent. A probable partial explanation for this change is the incorporation of many freestanding courses into study programmes, with a loss of their freestanding status.

Between the academic years of 2015/16 and 2016/17 freestanding courses dropped by 2,200 FTEs while general qualification programmes grew by 1,700 FTEs. With 101,100 FTEs, the number of freestanding courses peaked in 2009/10 but have since dropped to 66,300 FTEs.

Graduates

A student who has completed his or her studies, fulfilling the requirements laid down in the Higher Education Ordinance, is entitled to receive a degree certificate. Not all students, however, receive a degree. There are several possible reasons. A student may study for a short time, choosing only a few freestanding courses, or drop out before completing his or her studies. Also, since degree certificates are only issued upon request, a student may simply omit to require a certificate.

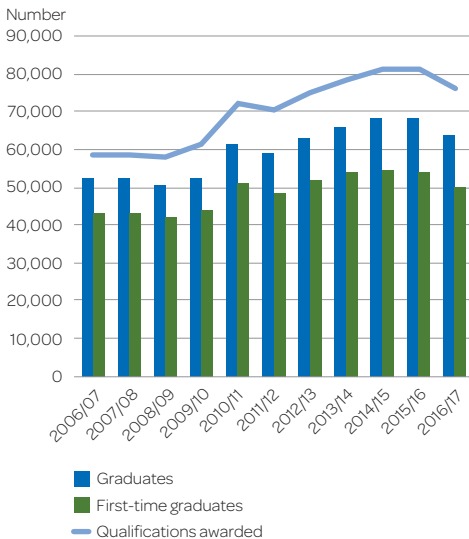
For the first time in several years the number of first and second-cycle graduates declined in the academic year of 2016/17. 63,400 students (40,700 women and 22,700 men)

graduated, 4,900 fewer than in the academic year of 2015/16. Over time, however, the number of graduates has increased considerably. Between the academic years of 2006/07 and 2009/10 the annual graduation rate was approximately 52,000. The rate then increased, peaking in the academic years of 2014/15 and 2015/16 with approximately 68,300, the highest graduation rate to date. The gender ratio has stayed approximately the same in this period, with two out of three graduates being women.

Of the 63,400 graduates in the academic year of 2016/17, first-cycle graduates accounted for 38,200 and second-cycle graduates for 27,200. The reason that the parts add up to more than the total is that a student may receive two qualifications the same year, one from each cycle.

The difference between women and men was greater in the first cycle than in the second cycle: 66 per cent of first-cycle graduates were women and 34 per cent men, as compared to 59 and 41 per cent for women and men, respectively, in the second cycle.

Figure 11. Number of graduates, first-time graduates and qualifications awarded, academic years 2006/07-2016/17.



More women graduates in all areas except engineering and technology

Social sciences and law had more graduates than the other subject areas, 18,030 (11,420 women and 6,610 men) in the academic year of 2016/17. The second largest area was health sciences and social care, with a total of 15,560 graduates (12,810 women and 2,750 men). Several professional qualifications with many graduates, for example qualification as a nurse, are included in this area. Graduates in engineering and technology (10,860 in total, 3,770 women and 7,090 men) as well as graduates in education (9,470 in total, 7,470 women and 2,000 men) were in third and fourth place, respectively. The remaining four areas are considerably smaller. There were 4,750 graduates in natural sciences, mathematics and computer science (2,130 women and 2,620 men), 3,940 graduates in humanities and art (2,480 women and 1,460 men), 1,030 graduates in services (620 women and 410 men) and finally 480 graduates in the agricultural sciences and veterinary medicine (320 women and 160 men).

The number of graduates has increased in the past decade, in all areas, especially in social sciences and law. The only exception is education, where instead the number has decreased by 10 per cent.

Largest number of graduates from the nursing qualification programme

Unlike general qualifications, professional qualifications are clearly linked to a specific profession. In the academic year of 2016/17 a total of 31,800 professional qualifications were awarded, with women receiving 69 per cent. There were 53 different professional qualifications awarded but most were very small; only 12 qualifications accounted for 80 per cent of all professional qualifications awarded.

The largest professional qualification programme, in terms of the number of

qualifications awarded, was Bachelor of Science in Nursing, followed by Master of Science in Engineering, Bachelor of Arts in Pre-School Education, Postgraduate Diploma in Specialist Nursing, Bachelor of Science in Engineering and Bachelor of Science in Social Work. Men and women differ: while the engineering qualifications are the most prevalent professional qualifications among men, the most prevalent qualifications among women are the nursing and pre-school teaching qualifications.

All teacher qualifications combined, however, accounted for almost a quarter of all professional qualifications awarded in the academic year of 2016/17. These qualifications had very different gender profiles. The largest difference between men and women was found in pre-school teaching qualifications where 95 per cent of the graduates were women and 5 per cent men. Secondary or upper-secondary education teaching qualifications had the smallest difference between men and women, 56 per cent women and 44 per cent men.

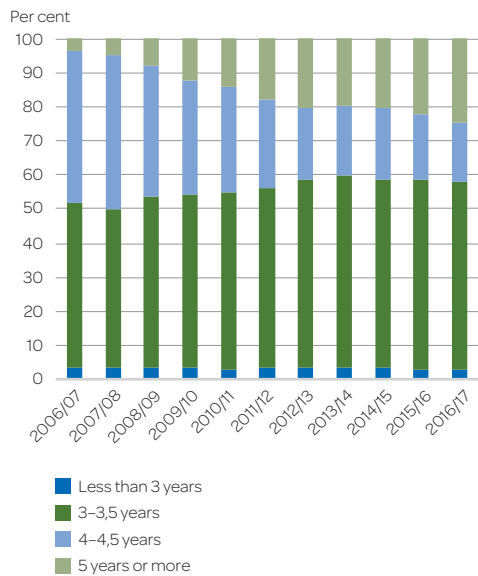
Women are more highly educated than men

The level of education of the Swedish population has risen steadily since the 1950s, as defined by the proportion of graduates with a minimum of three years of higher education. Applying this definition, approximately 14 per cent of the cohorts born in the early 1950s were highly educated. The level rose to approximately 16 per cent for the cohorts born in the middle of the 1950s. Starting in the middle of the 1960s, the percentage of highly educated increased with every cohort, to reach 31 per cent in the youngest cohort that can be studied at age 40 (those born in 1976).

Women have raised their level of education to a larger extent than men. In the beginning of the 1950s the number of highly

educated women and men was approximately the same, but the level of education of women rose much more in the following years. The difference between men and women born in 1960 was 6 percentage points, while men and women born in 1970 differed by 11 points. In 2017, 39 per cent of women born in 1976 were highly educated at the age of 40 years, but only 23 per cent of the men born the same year.

Figure 12. Distribution of official study time of first and second-cycle graduates, academic years 2006/07–2016/17.



Performance and completion

While the number of graduates is a measure that is useful when estimating how well the needs of the labour market are met, other measures may be needed to describe how long studies take and identifying patterns of study. Three such measures of student performance and completion rates are retention rates, graduation rates and performance indicators. Which measurement to use depends on which group of students is being studied. Graduation rates are not, for

instance, particularly suitable when it comes to students on freestanding courses who have no intention of acquiring a qualification.

Retention rate year two

Retention rate year two is a useful measure of student completion in the early stages of a longer programme. In the academic year of 2015/16 on average 76 per cent of students were registered to continue their programme from the first year into a second year. The highest retention rate was found in programmes leading to a qualification as psychotherapist, with programmes leading to a qualification in medicine in second place. Programmes leading to the award of a Higher Education Diploma, a two-year general qualification, had the lowest retention rates, followed by

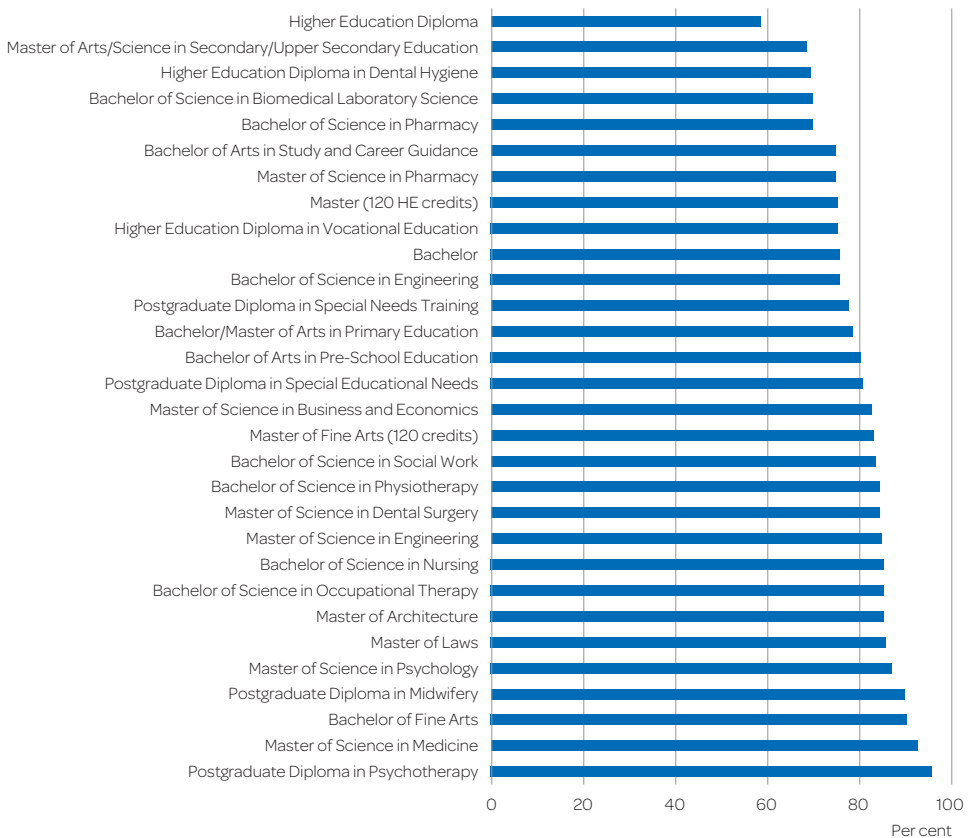
secondary or upper-secondary education teaching qualification programmes.

Performance indicators

Performance indicators measure the extent to which students acquire the higher education credits (credits) they are registered for in a specific academic year. Credits acquired are monitored during the semester in which students register and the three following semesters. As the credits awarded to students are monitored over four semesters, the latest figures available for performance indicators are for the academic year of 2014/15.

Performance indicators are a measure of completion that is generally applicable, making it uniquely useful when comparing programmes and freestanding courses.

Figure 13. Retention rate year two for students beginning a programme academic year 2015/16. Programmes with more than 200 entrants.



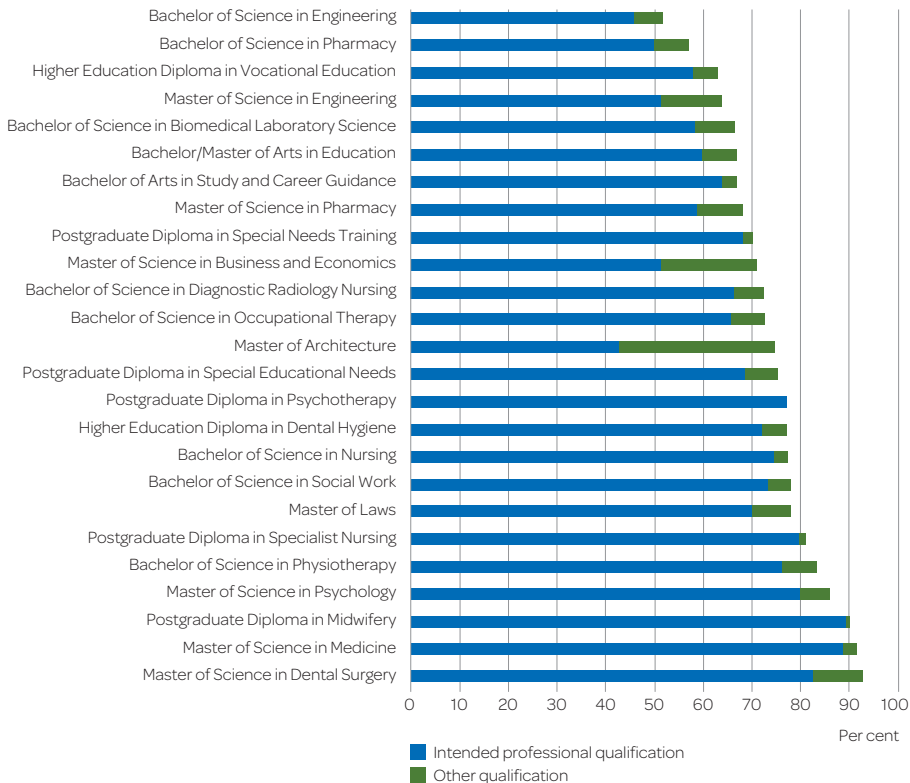
The average performance indicator, based on all credits acquired and credits registered for in the academic year of 2014/15, was 83 per cent. With a 6 percentage point difference, women performed much better than men.

The performance indicators of programme students have been much higher than of freestanding course students since the academic year of 2006/07, if not longer. Students in programmes leading to a professional qualification had the highest indicators in 2014/15 (90 per cent). In general qualification programmes, performance was slightly lower, 86 per cent. Students in freestanding courses showed the poorest performance, 65 per cent. Women performed better than men regardless of type of study.

Graduation rates

Graduation rates, or in other words how large a proportion of those beginning a programme are awarded qualifications, are a frequent measure of student completion rates. Since it is a prerequisite that the aim of the study is a qualification, graduation rates can only be used to measure completion of students in study programmes. Graduation rates are based on an analysis of how many entrants to degree programmes in a specific year have been awarded a qualification after the official study period plus another three years. This should not be understood to mean that students normally take this long to finish their studies. Instead, the intention behind the long follow-up period is to make

Figure 14. Graduation rate of entrants on professional qualification programmes followed through academic year 2015/16.



sure that all graduates are included. The statistics provided here are the most recent available and concern entrants who were awarded qualifications up to and including the academic year of 2015/16. Depending on the official study period for the individual programme the data refer to students commencing their studies in the academic years of 2005/06 through 2011/12.

Among professional qualification programmes the highest graduation rates were found in programmes in midwifery and medicine, 89 per cent. The graduation rate for programmes in architecture was only 43 per cent, but an additional 32 per cent of the students were awarded another qualification, resulting in a fairly high graduation rate. The lowest graduation rates were found in Bachelor's programme in engineering – 41 per cent. The graduation rates of women were higher than the rates of men, in all larger programmes.

Information is also available on the graduation rates for entrants to programmes leading to the award of four general qualifications: Higher Education Diplomas and Bachelor's degrees as well as 60 and 120-credit Master's degrees. Just as for the professional qualification programmes, the statistics provided here concern entrants who were awarded qualifications up to and including the academic year of 2015/16. The lowest graduation rates were found in the two-year Higher Education Diploma programmes. Only 22 per cent of the entrants to these programmes were awarded a diploma in the original subject area, i.e. the area in which the students started their studies. Bachelor degree programmes had a much higher rate of graduation in the original subject area, 38 per cent, although with a 12 percentage point gap between women and men. Second-cycle programmes had considerably higher graduation rates and much smaller gender differences. The highest

graduation rates were found in two-year Master's programmes, 48 per cent.

Teaching qualifications

Teacher education, specifically the qualifications, has been reformed several times in the past decades. Also, since 2015, the Government has allocated extra funds for the HEIs to expand programmes leading to the award of a teaching qualification. There are now four such qualifications: Bachelor of Arts in Pre-School Education, Bachelor/Master of Arts in Primary Education, Master of Arts/ Science in Secondary/ Upper-Secondary Education, and Higher Education Diploma in Vocational Education. These replaced the previous single teacher qualification in 2011. Pre-school teaching and vocational qualifications are first-cycle qualifications whereas primary and secondary teaching qualifications may be first or second-cycle qualifications, depending on length of study.

For the autumn semester of 2017 teaching qualification programmes had 16,880 qualified first-choice applicants. This was 900 less than a year before, but the drop was not uniform. While there was a decrease in the number of applicants for pre-school, extended primary school and upper-secondary school teaching qualification programmes, there was no change in the number of applicants for other teaching qualification programmes. The number admitted increased, however, from 11,700 to 12,200 between the autumns of 2016 and 2017. As a consequence, the acceptance ratio dropped.

Since teaching qualification programmes also start in the spring (normally in January), statistics are given for academic, rather than calendar, years. In the academic year of 2016/17, 13,680 students started a teaching qualification programme. Pre-school teaching programmes had the largest number of entrants, 3,790, followed

by upper-secondary school teaching qualification programmes (3,400).

A majority of entrants to pre-school, primary school and vocational teaching programmes were women. Pre-school teaching programmes had the largest proportion of women in the academic year of 2016/17, 93 per cent. Only secondary and upper-secondary school teaching programmes had an approximately even gender ratio.

In the academic year of 2016/17, 7,690 students graduated with a teaching qualification, 290 fewer than a year before. With 2,380 graduates, pre-school teachers were the largest group of graduates. However, the fastest growing qualification was the upper-secondary teacher qualification, increasing from 540 to 1,130 graduates.

The number of women graduating with a teaching qualification exceeded the number of men in the academic year of 2016/17. In relative terms, 77 per cent were women. The percentage of women varied between 95 per cent (pre-school teaching qualification) and 56 per cent (secondary school teaching qualification).

Broadened recruitment

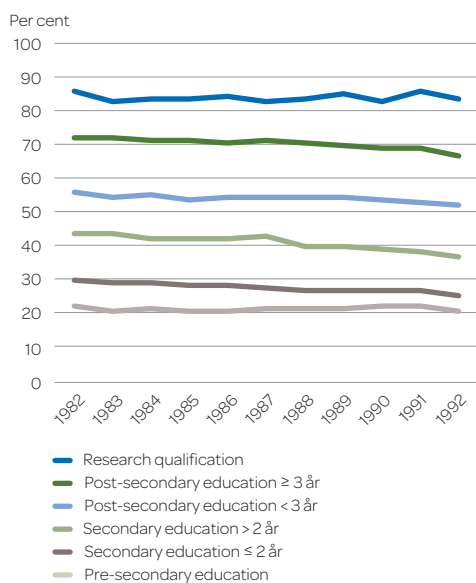
By law, Swedish HEIs are required to actively promote and broaden recruitment to higher education. Increased diversity and decreased recruitment bias must be actively pursued with the goal of ensuring that no group of upper-secondary graduates is disadvantaged in the access to higher education. In Sweden, studies of recruitment bias have primarily concerned four areas: gender, social background, foreign (non-Swedish) background, and domicile (counties and municipalities).

In this description of how social as well as Swedish or foreign backgrounds affect recruitment to higher education, educational background of parents is used as a

measure of social background. If there is a difference between the parents, the parent with the highest educational attainment is used to estimate social background.

The parents' educational attainment plays a big part in the likelihood of beginning higher education. Upper-secondary graduates with at least one parent with a research qualification are very likely (84 per cent) to begin higher education, and quite likely if a parent has at least three years of tertiary education but no research qualification (66 per cent). If, on the other hand, their parents have only completed compulsory school a much smaller proportion (21 per cent) of upper-secondary graduates begin higher education. The figures for upper-secondary graduates with other backgrounds lie between these groups. The social bias in recruitment is obvious: the more highly educated parents, the more likely it is for their children to start higher education.

Figure 15. Proportion who have begun higher education in Sweden by the age of 25 of individuals born 1982–1992, by their parents' educational attainment (as a measure of social background).

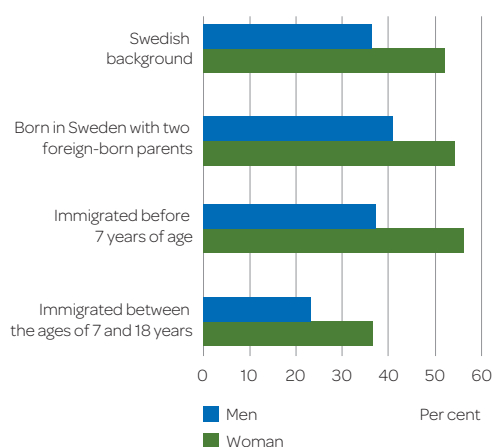


Social bias in recruitment (participation rate) has been more or less the same for cohorts born between 1982 and 1992, although with a slight decline in some of the groups compared.

Of all women born in 1992, 51 per cent had begun higher education by age 25 years. The corresponding share of men was 36 per cent. The gender difference was largest for those with parents with medium-high education (more than two years of upper-secondary education or post-secondary education of less than three years), an 18 percentage point gap in favour of the women.

To some extent, individuals with different social backgrounds also opt for different higher education courses and programmes. Entrants with highly-educated parents are more likely to study medicine, architecture or psychology, and less likely to choose programmes in education, compared with entrants with different social backgrounds. As a consequence, programmes leading to professional qualifications in these areas vary in the social backgrounds of the students.

Figure 16. Proportion of individuals born 1991 with Swedish or foreign backgrounds who had begun higher education by the age of 25, by gender.



Age at immigration makes a large difference

There is a bias in recruitment to higher education that reflects Swedish or foreign backgrounds. Recruitment is greatly affected by whether individuals with foreign backgrounds were born in Sweden or not and at what age they came to Sweden. Individuals who immigrated to Sweden between 7 and 18 years of age began higher education to a much smaller extent than other groups. This applied to all cohorts born between 1982 and 1991 and for later cohorts the difference was actually greater. In the 1991 cohort, 29 per cent began higher education by age 25 years as compared to 24 per cent in the 1987 cohort.

The participation rate of individuals arriving in Sweden before the age of 7 years used to be lower than that of individuals with a Swedish background, but the rate has increased over time and is now actually higher. The participation rate was 47 per cent in the 1991 cohort if the individual had two non-Swedish parents and arrived in Sweden before the age of 7 years. Individuals with a Swedish background in the same cohort had a 46 per cent participation rate.

Men and women with Swedish or foreign backgrounds show the same participation pattern. However, since a larger percentage of women, regardless of background, begin higher education, a larger proportion of women than men in all of the groups analysed begin higher education. The lower participation rate of those who arrived in Sweden after school-starting age, can be explained by a gradual decrease starting from the 1987 cohort. Five years later, the participation rate of men and women in the 1991 cohort had dropped to 23 and 37 per cent, respectively, a drop of 5 percentage points for both genders compared with the 1987 cohort.

RECOGNITION OF QUALIFICATIONS AWARDED OUTSIDE SWEDEN

In addition to those who graduate from HEIs in Sweden, graduates who have immigrated to Sweden and/or studied in another country also enter the Swedish labour market. Qualifications awarded outside of Sweden may be recognised as a basis for work or further study in Sweden.

Individuals with foreign qualifications that are not required for a regulated profession may have them evaluated and recognised by the Swedish Council for Higher Education (UHR) with a certificate. In addition, the Swedish National Board of Health and Welfare, the Swedish National Agency for Education and other appropriate authorities evaluate qualifications obtained abroad that provide admission to regulated professions, for example those that require registration with a regulatory body.

In 2017, UHR issued just over 7,900 certificates. Most frequently, these involved comparisons with Bachelor's degrees. About 270 qualifications were considered equivalent to a Swedish higher education diploma, approximately 5,180 Bachelor's degrees, approximately 1,670 Master's degrees (60 or 120 credits) and 145 Doctoral degrees. Most of the certificates relating to professional qualifications concerned programmes in engineering: almost 1,000 were considered to correspond to Bachelor's degrees in engineering and approximately 350 to Master's degrees. The applications for recog-

nition submitted during 2017 involved qualifications awarded in 147 different countries. By far the most had been awarded in Syria (2,501). This was followed by Iraq (593), Iran (456), India (397), Russia (315), the United Kingdom (314), and the US (299).

If a qualification awarded abroad is for a healthcare practitioner, a licence is required, in which case the National Board of Health and Welfare is the authority issuing the licence. In 2016, the Board of Health issued 2,030 licenses for individuals with foreign qualifications, of which about 1,170 were licences for physicians and 430 licenses for nurses. In the same year the National Board of Health and Welfare issued a total of 9,480 licences to individuals with qualifications awarded in Sweden. Since a total of 9,480 licences were issued to individuals with qualifications awarded in Sweden, healthcare practitioners trained abroad constituted approximately one in six.

Similarly, the National Agency for Education issues teacher certificates. In 2017, the Agency issued certificates to 6,200 individuals with pre-school or school teaching qualifications awarded abroad.

Sources: the Swedish Council for Higher Education, the Swedish National Board of Health and Welfare, and the Swedish National Agency for Education.

Third-cycle courses and programmes

After second-cycle graduation some students continue to third cycle courses and programmes. In addition to Swedish students, there are a large number of students who come to Sweden aiming for a third-cycle degree. These are referred to as international students, a subset of all incoming students who pursue third-cycle studies.

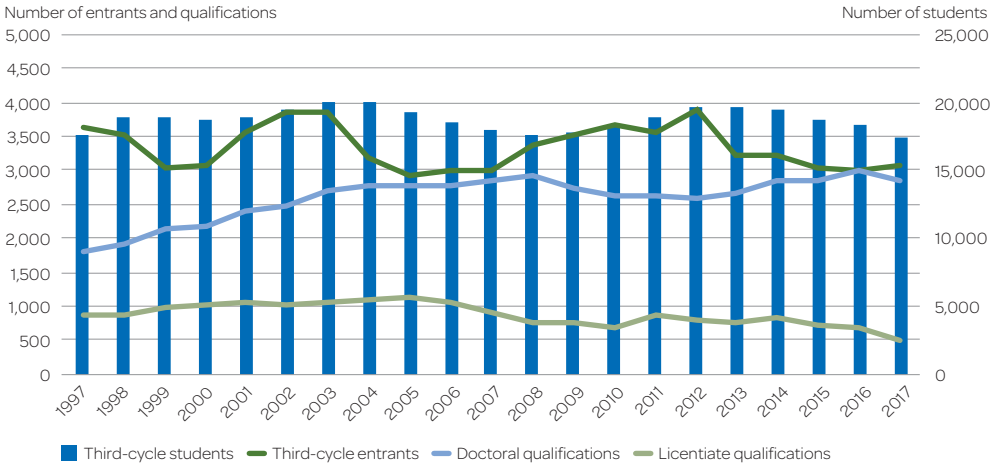
The number of third-cycle entrants has varied between 3,000 and 4,000 since 1997, with the third-cycle student population as a whole alternating between 17,000 and 20,000. As these numbers show, third-

cycle education has not really grown. The number of doctoral degrees awarded has risen by 60 per cent, however. This increase can be partially attributed to the reform of third-cycle education in 1998, which included a requirement for guaranteed funding for the entire period of study.

Of students graduating from the second cycle in the period between academic years 2008/09 and 2011/12, a little over 4 per cent had started third-cycle studies by the academic year of 2016/17. There was a gender difference in participation rate: 3 per cent of women second-cycle graduates started third-cycle studies as compared to 7 per cent of men.

Figure 17. Third-cycle entrants, students and qualifications awarded 1997-2017.

Students are shown on the right.



Third-cycle entrants

In 2017 there were a total of 3,060 entrants to third-cycle courses and programmes, an increase of 60 entrants over the previous year. Of these entrants 48 per cent were women and 52 per cent men. Unlike first and second-cycle student gender ratio, third-cycle gender ratio has been more or less even with the proportion of women varying between 46 and 49 per cent in the past decade. From a longer perspective, however, the proportion of women has grown from a somewhat lower level, 43 per cent in 1997.

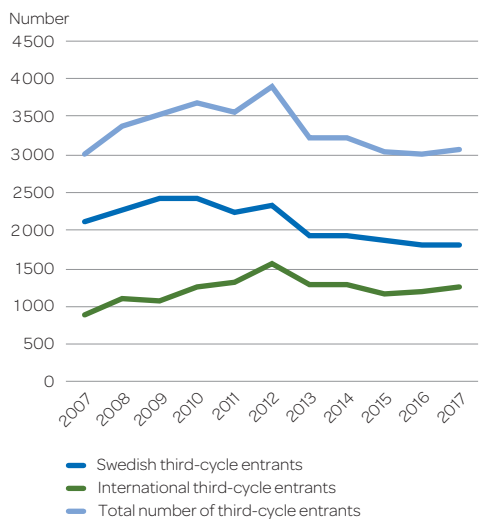
The 3,060 entrants to third-cycle courses and programmes in 2017 included 1,260 international students, that is, students who have come to Sweden for the express purpose of studying. There were more third-cycle students from countries outside the EU/EEA and Switzerland than students from the EU/EEA and Switzerland.

In 2017, the number of international entrants increased from 1,180 to 1,260, whereas the number of Swedish entrants was more or less the same as in the previous year. International entrants have constituted

38-41 per cent of the total number of entrants since 2007, and were 41 per cent in 2017.

Men formed the majority of the international entrants to third-cycle courses and programmes, 60 per cent. This has been the case since the start of recording this statistic in 1997. The proportion of women is higher among Swedish third-cycle entrants, and amounted to 51 per cent in 2017.

Figure 18. Number of international and Swedish third-cycle entrants 2007-2017.



The typical age to start third-cycle studies for women as well as men is 25-29 years of age. Women more frequently than men start third-cycle studies at the age of 40 or more. In absolute numbers, more men start their studies when they are 25-29 years old. The age distribution of third-cycle entrants has hardly changed in the past decade.

Largest number of entrants in the medical and health sciences

In descriptions of third-cycle studies they are divided into six fields of research and development: medical and health sciences; natural sciences; engineering and technology; social sciences; humanities and the arts as well as agricultural and veterinary sciences.

The number of entrants varies a great deal between fields. In 2017, as in previous years, the largest number – 1,040 entrants or one third of all – was made up of entrants in medical and health sciences. There were 710 and 680 entrants in the fields of natural sciences and engineering and technology, respectively. The number was somewhat lower in social sciences (440) and in humanities and the arts (140). Agricultural and veterinary sciences was the smallest field, with 60 entrants.

More students are provided for

Regulations stipulate that funding must be guaranteed for the entire period of third-cycle study. There are various types of funding: doctoral studentships or other type of employment at the HEI, employment outside of the HEI in which students are able to pursue third-cycle studies, doctoral grants, scholarships, or “other”.

Several HEIs have phased out doctoral grants, making doctoral studentships or other employment at the HEI a rule. As a consequence, the number of entrants funded by doctoral studentships has grown strongly in the past decade, reaching 73 per

cent in 2017, whereas entrants no longer receive doctoral grants. As a consequence, third-cycle students are better provided for.

The number of third-cycle students who are employed as doctoral students by companies, or work as physicians, has increased and amounted to 5 and 6 per cent, respectively, in 2017. Other types of funding have declined – in 2017 the number of entrants receiving scholarships, being employed within or outside of an HEI, or receiving “other” types of funding was 8, 3, 4 and 2 per cent, respectively. There is a gender difference: men are employed as doctoral students by companies to a larger extent than women, whereas women more often have posts within an HEI or can be found in the “other” category. A much larger proportion of international students have scholarships, 15 per cent, compared to Swedish students, 3 per cent.

Broadened recruitment

Possible social bias in recruitment to third-cycle education can be analysed using parental educational attainment as measure of social background. Since incoming students are not included in the Swedish population, as defined here, they are not included in the following analysis.

A majority of 60 per cent of third-cycle entrants in the academic year of 2015/16 had highly educated parents (three-year tertiary education or with a research qualification). Another 28 per cent had parents with more than two years of upper-secondary education or post-secondary education of less than three years. The remaining 12 per cent had parents with low educational attainment: only completed compulsory school or compulsory school and no more than two years of upper-secondary education. The same pattern can be seen in the social

background of all third-cycle entrants, both women and men.

In the academic year of 2006/07, the proportion of third-cycle entrants with highly educated parents was 54 per cent, that is to say 6 percentage points less than in the academic year of 2015/16, indicating that social background has become less diverse over time. A comparison with the educational background of the relevant age group in the Swedish population (ages 25-29 years, the most frequent ages of third-cycle entrants) shows that their educational attainment has not increased to the same extent. It would seem that there has been an increase in social bias in the recruitment to third-cycle education over time.

Third-cycle students

The total population of third-cycle students is made up of all students who are registered in third-cycle courses and programmes. The size of the population is determined by inflow (number of entrants) and throughput, i.e. completion of third-cycle courses and programmes.

In the autumn of 2017 the number of third-cycle students totalled 17,370, as compared to 18,280 a year before. The annual numbers have varied between 17,400 and 19,400 in the past decade. The gender ratio has been more or less even from 2007, with the proportion of women varying between 47 and 49 per cent. Women accounted for 47 per cent and men for 53 per cent in the autumn of 2017. International students constituted 36 per cent of the total number of third-cycle students in the autumn of 2017, a share that was unchanged from the autumn of 2016. In the last ten-year period, however, this share has grown from 19 per cent in the autumn of 2007 to 36 per cent ten years later.

As in previous years, third-cycle students tend to study full time. In the autumn of 2017, 57 per cent of the students pursued full time studies. The proportion has not changed greatly since the autumn of 2007, ranging between 57 and 60 per cent. In the autumn of 2017, more men than women studied full time, 60 per cent compared with 53 per cent of the women.

About one third-cycle student in six devoted less than 40 per cent of their time to their studies in 2017. This may seem like a large share, but it can be partly explained by students starting, or resuming, their studies in the middle of a semester. There are also third-cycle students who work alongside their studies, a case in point being third-cycle students in the medical and health sciences who combine their studies with work as physicians. All the same, devoting as little as 40 per cent of the time to studying has become less frequent.

Qualifications awarded

Third-cycle degrees are divided into general qualifications and qualifications in the fine, applied and performing arts, and in each category either a licentiate degree or a doctoral degree may be awarded. During 2017 the total number of third-cycle qualifications awarded amounted to 3,340, 2,840 doctoral and 500 licentiate degrees. This represents a drop in comparison with 2016 – doctoral degrees declined by 150, mainly in natural sciences (120), and licentiate degrees declined by 190.

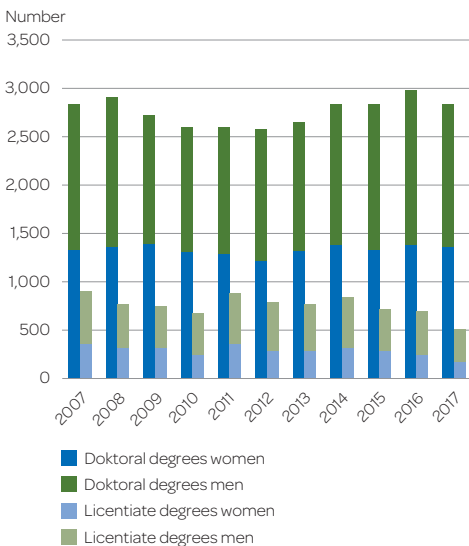
There were almost the same number of men and women graduates in 2017, continuing a trend of even gender ratios. With a 36 per cent share, women made up a smaller part of the licentiate graduates, however. The main reason is that half of all licentiate degrees are awarded in the field of engine-

ering and technology, in which men are a majority of third-cycle students.

Most doctoral degrees awarded in 2017 were in the medical and health sciences. With 980 qualifications awarded, they made up just over one third of all third-cycle qualifications. The natural sciences as well as engineering and technology follow with 610 and 560 qualifications, respectively. Men were awarded 70 per cent and women 30 per cent of the doctoral degrees in engineering and technology. In natural sciences, the ratio was 62 per cent men to 38 per cent women. Nearly the reverse was true for medical and health sciences, agricultural and veterinary sciences as well as social sciences: 59 per cent women and 41 per cent men. In humanities and the arts, the gender ratio was even.

The number of licentiate degrees also varies between different fields of research and development, albeit differently. Half of the total number of licentiate degrees was awarded in engineering and technology and a third in natural sciences. Licentiate degrees only occur to a limited extent in other fields.

Figure 19. Number of doctoral and licentiate degrees 2007–2017, by gender.



Completion

Student completion rates indicate the extent to which students beginning third-cycle courses and programmes complete their studies and graduate, and also how quickly they do so.

One measure of student completion rates is offered by graduation rates, which show what proportion of entrants to third-cycle courses and programmes graduate after a specific number of years. Graduation is measured for the first time after five years. Since a doctoral degree corresponds to a net study time of four years, graduating within an additional year is reasonable. The most recent cohort that can be studied within five years of beginning their third-cycle studies began in 2012. In 2017, 45 per cent had graduated with a doctoral degree. Compared with the previous cohort (beginners in 2011) the graduation rate was 3 percentage points lower.

Graduation rates increase over time. Of entrants in 2009, 47 per cent were awarded a doctoral degree within five years, 63 per cent within six years and 74 per cent within eight years. Six per cent of the 2009 cohort were awarded a licentiate degree. After eight years, then, twenty per cent had not been awarded either type of third-cycle qualification.

The graduation rate of women is lower to begin with but the gender gap is closed after a few years. This suggests that women take longer to graduate. Looking at the 2009 cohort, 44 per cent of women and 50 per cent of men were awarded a doctoral degree within five years, a difference of six percentage points. The gap decreased to three points after six years and then decreased further. The graduation rate of women then passed that of men, to reach a rate for women that was actually two percentage points higher. Men, on the other hand, had a higher licentiate degree graduation rate, seven per cent to the women's five per cent.

Graduation rates vary between those graduating in different fields. In the 2009 beginner cohort, natural sciences accounted for the highest graduation rate after five years, 54 per cent. Humanities and the arts accounted for the lowest rate, 23 per cent. Three years later natural sciences was still in the lead with 81 per cent, but with medical and health sciences a close second and humanities and the arts at the bottom, with 59 per cent.

All HEIs with full university status are entitled to award general qualifications at the third-cycle level, and since 1 January 2010 it has been possible for other HEIs also to apply for entitlement to award third-cycle qualifications. These applications however refer to separate areas. They are appraised and approved by UKÄ. Since 2010, entitlement to award third-cycle qualifications has been granted to 18 HEIs.

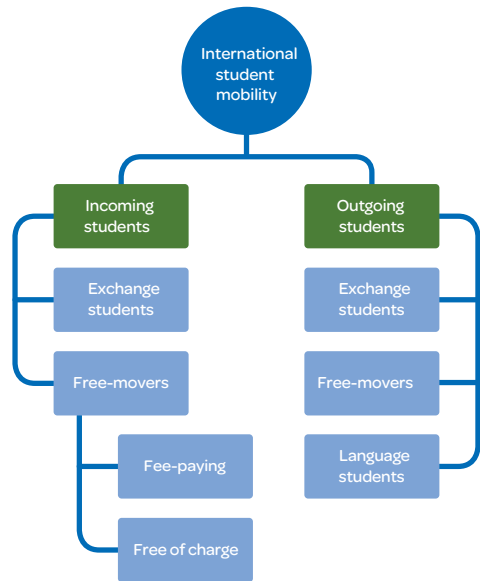
Doctoral and licentiate degrees in the fine, applied and performing arts were introduced as qualifications in their own right on 1 January 2010. All HEIs, including those with full university status, have to apply for entitlement to award these qualifications. UKÄ appraises and approves these applications also. Four HEIs (Lund University, the University of Gothenburg, the University of Borås and Stockholm University of the Arts) have been granted entitlement to award third-cycle qualifications in the fine, applied and performing arts.

International mobility

This chapter deals with international student mobility in first and second-cycle courses and programmes in higher education. International mobility includes foreign students who come to Sweden to study as well as Swedish students who travel abroad to do so. The two groups are referred to here as incoming and outgoing students. These groups may be further

divided into exchange students and free movers. Exchange students usually choose freestanding courses as part of an exchange programme with the intention of including them in their studies in their own country. Free movers are not part of an exchange programme and frequently follow an entire study programme in Sweden.

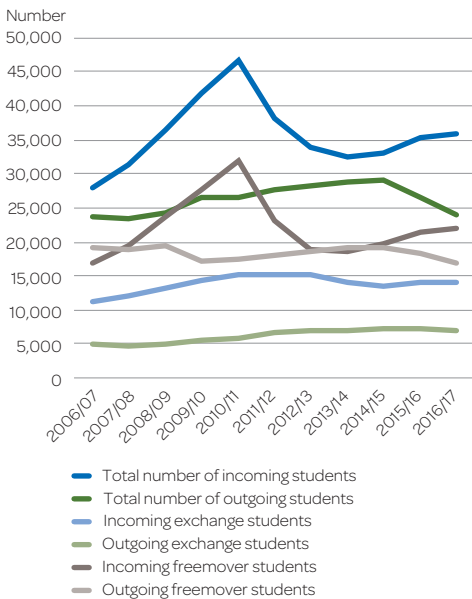
Figure 20. Different groups of students within international student mobility from a Swedish perspective.



Student mobility has increased over time and a further increase is considered a political priority. The EU council of ministers has set a target, declaring that by 2020 on average at least 20 per cent of higher education graduates should have had a period of higher education-related study or training abroad. There is no comprehensive information on how well Sweden meets the EU target. Of all first and second-cycle graduates in the 2016/17 academic year, 15 per cent had studied abroad at some point during the preceding twelve semesters. However, third-cycle graduates are not included, nor are students who graduated abroad.

Statistical information on student mobility is published annually by the OECD. The latest issue of *Education at a Glance – OECD Indicators (EAG 2017)* shows that in 2015, Sweden ranked low in the number of incoming as well as outgoing students. However, exchange students were not included in the OECD data.

Figure 21. Incoming and outgoing students: total number, exchange students and freemover students academic years 2006/07-2016/17.



New incoming students

The number of new incoming students increased by 1,310 students to 18,380 students between the autumn semesters of 2016 and 2017. The number has increased every year between 2013 and 2017 with a total increase of 3,380 students, or 23 per cent.

While the total number of new incoming students has increased, the number from the EU/EEA and Switzerland has decreased from 9,590 students to 8,640 students in the six-year period between the autumn semesters of 2012 and 2017.

However, these figures are probably too low. There were 3,110 students with no information on country of origin in 2017 (an increase from 1,690 students six years before) and it is likely that many of them come from an EU/EEA country.

The number of new incoming students from countries outside the EU/EEA increased from 4,000 students in the autumn of 2012 to 6,630 students six years later. The increase in the last two years was 910 students, or 16 per cent. The number of new tuition-paying students increased by 730, corresponding to 27 per cent, between the autumn semesters of 2016 and 2017. In a six-year perspective, the number has increased from 1,100 students to 3,470 students, a 215 per cent increase.

These changes do not apply equally to both groups of incoming students. While the number of exchange students decreased slightly in the last year, by 110 students or 1 per cent, the number of free movers increased by 1,420 (17 per cent). Countries within the EU/EEA did not differ from other countries.

In the academic year 2016/17, 53 per cent of new incoming students were women and 47 per cent men. The ratio of women to men has varied in the last decade, but there has been a stable percentage of women among incoming students, around 53 per cent, since 2011/12. There is a slight difference between exchange students and free movers: the ratio of women to men is 55/45 in the former group but 49/51 in the latter. The free-mover group was dominated by men (60 per cent) until tuition fees were introduced in 2011, when the percentage of men decreased to the present level (49 per cent).

Largest number of incoming students from Germany and France

The number of new incoming students from the EU/EEA and Switzerland was 11,710 in the academic year of 2016/17, an increase of 150 students compared with the preceding

year. However, the number of students is probably underestimated since it is likely that a large proportion of new incoming students with no information on country of origin are from the EU/EEA countries.

The number of new incoming students from countries outside the EU/EEA increased by 390 to reach 8,160 in the academic year 2016/17. The largest increases were from Africa, Asia and North America.

In the academic year of 2016/17, the greatest number of students from individual countries came from Germany, France, China and Finland, followed by the United States, Spain, the Netherlands, India, Italy and the United Kingdom. Compared with the year before, the number of new incoming students increased from all of these countries. Chinese, Finnish and Indian students were free movers to a large extent, while a large share of the students from the other seven countries came to Sweden through an exchange programme.

Total number of incoming students

As many incoming students study more than a year in Sweden, new students only make up part of the population of incoming students. In the academic year of 2016/17, the total number of incoming students in Sweden was 35,860, 13,940 exchange students and 21,970 free movers. There is some overlap since a student may belong to both groups at some point during the academic year. The number of exchange students decreased slightly (by 50 students), while the number of free movers increased (by 650 students) in comparison with the preceding year.

Increasing number of tuition-paying students

Some tuition-paying students finance their studies through grants, from their homeland or from Sweden. Since the former are not administered by the Swedish HEIs, the total extent is not known. When tuition fees were introduced, the Swedish government set up two grant programmes, administered by the Swedish Council for Higher Education and the Swedish Institute. Aside from these grants, funds at the disposal of the HEI may be used to finance the studies of tuition-paying students. Occasionally, tuition fees are covered by Swedish companies.

According to the HEIs there were 6,810 registered tuition-paying students (2,840 women and 3,970 men) in the autumn of 2017. Of these, 1,980 students, or 29 per cent, had a Swedish grant that covered the fee, partially (11 percentage points) or in full (18 percentage points). The proportion of women financing their studies through grants was higher than the corresponding figure for men, 33 compared with 26 per cent. Of institutions with more than ten tuition-paying students, Umeå University and Lund University had the largest share of students supported by grants in 2017, 55 and 54 per cent, respectively.

Outgoing students

Students going abroad to study constitute the other part of mobility. These students, referred to as outgoing students, have decreased in number in the last two years, and in the last academic year (between 2016/17 and 2015/16) their number decreased by 9 per cent, from 26,440 to 24,080 students. In 2016/17 there were 7,110 exchange students, 17,000 free movers, and 30 students who took language courses. While exchange students decreased by only 2 per cent compared with the preceding year, free movers decreased

by 8 per cent. Language course students have almost disappeared: they were 2,790 in 2014/15, 910 in 2015/16 and 30 in 2016/17. A contributing factor is that some of these courses have been reclassified and are no longer tertiary education.

In the academic year of 2016/17, 58 per cent of outgoing students were women and 42 per cent men. Roughly the same percentage applied to exchange students and to free movers. The decrease in the number of outgoing students affected all groups apart from male exchange students, whose number was unchanged compared with the preceding year.

The decrease in the number of outgoing students runs counter to the political ambition that more Swedish students should study abroad. In 2017, the Swedish Government therefore set up an investigation tasked with suggesting measures to make Swedish students study abroad and to make international students study in Sweden.

Decreasing number of students studying medicine abroad

A fairly large proportion of free movers study an entire programme and graduate abroad. Programmes leading to a degree in medicine, dentistry or veterinary science at Swedish HEIs have more applicants than the HEIs are able to accept, and many students with insufficient grades choose to study in another country. This especially applies to medicine: in the academic year of 2016/17 2,490 students received study loans to study medicine abroad, compared with 7,880 students in Sweden. Poland, followed by Latvia, Rumania and Denmark, accepted the largest number of outgoing students in medicine. The number of students studying dentistry abroad in the academic year of 2016/17 was 330 (1,510 in Sweden) while 260 students studied veterinary science (520 in Sweden). Consequently, of these three

groups the largest proportion studying abroad were students of veterinary science.

More incoming than outgoing students

In the academic year of 2016/17, the total number of incoming students was 35,860 and the total number of outgoing students 24,080, i.e. there were 11,780 more incoming students. The number of incoming students has exceeded the number of outgoing since the academic year of 2005/06. The difference between the groups peaked in 2010/11 but declined with the introduction of tuition fees in 2011. In the last two years, however, the number of incoming students has increased, indicating that free movers from countries outside of EU/EEA and Switzerland have returned to study in Sweden.

Education and employment

The remit of higher education institutions (HEIs) is to offer courses and programmes that match student demands, as well as labour market needs for a qualified work force. The rate of unemployment can be used as a measure of how well different groups of higher education graduates fare in the labour market. As an alternative, a measure of employment, the “establishment rate” is used to compare the number of graduates with labour market demands for different groups of graduates. The difference in establishment rate between first and second-cycle graduates, on the one hand, and third-cycle graduates, on the other, can also be used as a measure of the need for highly qualified labour. Statistics Sweden, among others, compares the number of graduates and employment data to make forecasts of labour market demands.

Good job prospects for higher education graduates

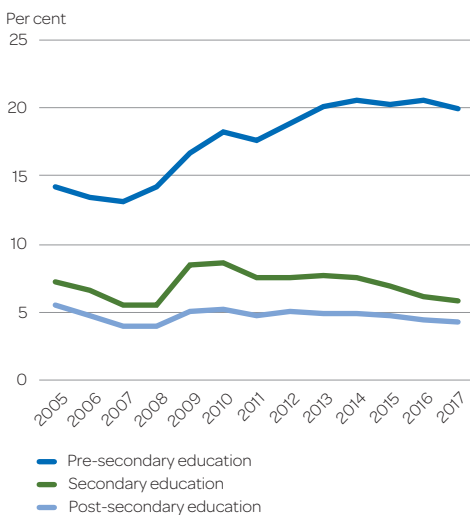
As a rule, graduates from higher education have better chances of finding work and have lower unemployment rates than those with only an upper-secondary qualification. These in their turn have considerably better job prospects than graduates with only a lower secondary qualification. The better chance to obtain stable employment of higher education graduates is demonstrated by e.g. unemployment data. These data show lower unemployment rates among higher education graduates, compared to other groups.

The difference between graduates of different levels of education has persisted over time, with little or no effect of the state of the economy. Clearly, more education means better job prospects.

Graduates established soon after completing their studies

In 2017, a majority of recent graduates of higher education institutions were established in the labour market within a

Figure 22. Proportion of the labour force aged 15-74 years who were unemployed 2005-2017, by education level, according to Labour Force Surveys. Source: Statistics Sweden.



short time after completing their studies. This applied to first, second and third-cycle graduates. There were, however, differences between graduates, depending on degree programme and specialisation.

Of first and second-cycle graduates, in the academic years of 2006/07 – 2011/12, 80 per cent of women and 85 per cent of men were established in the labour market three years after graduating. Nine per cent of women and 8 per cent of men had an uncertain status in the labour market, and 8 per cent of women and 5 per cent of men had a weak status (see fact box for explanations of these terms).

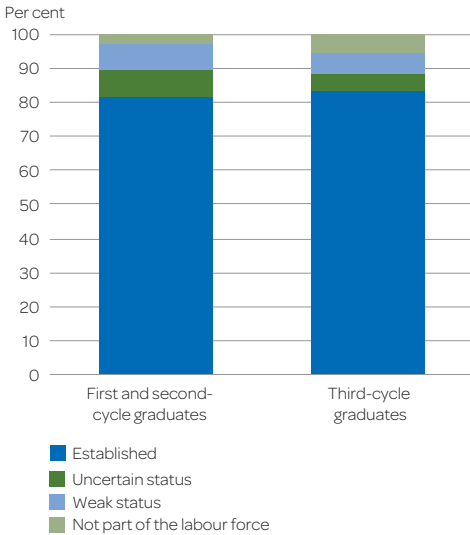
Of third-cycle graduates in the same time period, 82 per cent of women and 84 per cent of men were established, 6 per cent of women and 5 per cent of men had an uncertain status, and six per cent of both women and men had a weak status in the labour market.

Finally, 3 per cent of women and 4 per cent of men who had graduated from the first or second cycle were not part of the labour force. The corresponding figure for third-cycle graduates was 5 per cent for women and 6 per cent for men. So, three years after graduating, third-cycle graduates were not part of the labour force to a larger extent than first or second-cycle graduates.

Establishment increases over time

Establishment in the labour market increases over time. Three years after graduation, 82 per cent of first and second-cycle graduates were established. Two years later, the establishment rate had increased to 84 per cent, with a further increase to 87 per cent after another three years. There was a 5 percentage point difference between men and women 3 as well as 5 years after graduation, with men having a higher establishment rate. At a follow-up 8 years after graduation, however, the difference between the sexes had decreased to 4 percentage points.

Figure 23. Labour market status three years after graduation, academic years 2006/07–2011/12.



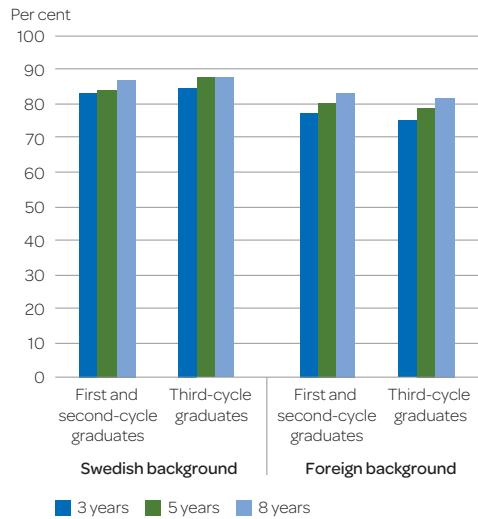
The corresponding rates for third-cycle graduates was 83 per cent after three years, 86 per cent after five years and 87 per cent after 8 years. The difference in establishment rate between men and women was 2, 1 and 4 percentage points, respectively.

Graduates with a Swedish or foreign background

Graduates who are residents of Sweden may be classified according to background: if they were born in Sweden or have at least one parent who was born here, they are referred to as graduates with a Swedish background. Graduates who were born outside of Sweden, or have parents who were both born outside of Sweden, are referred to as graduates with a foreign background. These groups may be compared to see if there is a difference in labour market success.

Regardless of graduation level, graduates with a Swedish background were established in the labour market to a much larger extent than graduates with a foreign

Figure 24. Percentage of first and second-cycle graduates as well as of third-cycle graduates academic years 2006/07–2011/12 established after 3, 5, and 8 years, Swedish or foreign background.



background three years after graduation. The establishment rate of first and second-cycle graduates with a Swedish background was 83 per cent, as compared to 77 per cent for those with a foreign background. For third-cycle graduates the difference was even larger, 85 per cent for those with a Swedish background and 75 per cent for those with a foreign background. Continuing studies after the second cycle, therefore, seems to decrease, rather than increase, establishment in the labour market for graduates with a foreign background.

Effect of discipline on establishment rate

Discipline plays a crucial role for the rate of labour market establishment, regardless of graduation level. Since disciplines are defined differently for first and second-cycle graduates, on the one hand, and third-cycle graduates, on the other, the establishment cannot be easily compared. Differences notwithstanding, some disciplines are

similar enough to allow a comparison of graduation levels.

First and second-cycle graduates in the area of engineering and construction rated highest in labour market establishment, with an 88 per cent rate 3 years after graduation. They still had the highest establishment rate 8 years after graduation, 90 per cent. Humanities and the arts graduates had the lowest establishment rate: 58 per cent three years after graduation, increasing to 69 per cent after eight years.

The difference in establishment rate between graduates in the areas of engineering and construction and humanities and arts, respectively, applies to both women and men, graduating from first, second or third-cycle studies.

The establishment rate three years after graduating from third-cycle studies was 87 per cent for engineering and construction graduates, higher than for any other field. Aside from agricultural and veterinary sciences, engineering and construction was the only field where third-cycle graduates had an establishment rate over 90 per cent three and eight years after graduation. Graduates in humanities and the arts had the lowest establishment rate of third-cycle graduates: 74 per cent after three years and 77 per cent after eight years. The establishment rate of natural sciences graduates increased from 77 per cent to 86 per cent in the same time period. There seems to be an inverse relationship between establishment rate three years after graduation and increase in rate in the following five years, demonstrating a difference between groups in the time it takes to become established in the labour market.

As a rule, the establishment rate of third-cycle graduates increases over time. The only exception was graduates in social sciences whose rate decreased from 90 per

cent five years after graduation to 88 per cent three years later.

Pattern of establishment

With a few exceptions, there were no great differences in establishment between first and second-cycle graduates, on the one hand, and third-cycle graduates, on the other. However, while differences between disciplines were usually limited to the occasional percentage point, there were also larger differences. Among third-cycle graduates, the establishment rate for women was 82 per cent three years after graduation, while it was 84 per cent for men. By comparison, the establishment rate of first and second-cycle graduates was 80 per cent for women and 85 per cent for men. The average establishment rate eight years after graduation was 87 per cent for first, second and third-cycle graduates.

First, second and third-cycle graduates with a Swedish background had a higher establishment rate than graduates with a foreign background. Among women third-cycle graduates, however, the difference in establishment rate between the two groups decreased from 12 per cent three years after graduation to 4 per cent five years later.

First and second-cycle graduates differ from third-cycle graduates in what section of the labour market they are established in. While 8 per cent of first and second-cycle graduates were established in the government sector, this applied to 53 per cent of third-cycle graduates. First and second-cycle graduates instead worked in the private sector to a much larger extent, 45 per cent. The corresponding figure for third-cycle graduates was 30 per cent. The same difference applied to the local or regional public sector, where 47 per cent of first and second-cycle graduates were established, compared to 18 per cent of third-cycle graduates.

MEASURING EMPLOYMENT

Graduate employment is defined using a variable based on income, occupation, unemployment, and labour market policy measures. The graduate is referred to as *established* in the labour market if he or she fulfils all of the following criteria:

- Employed in Sweden in the month of November in the relevant follow-up year, in accordance with the definition used by Statistics Sweden in the Employment Register.
- The aggregate income from employment during the year exceeds a certain level that is adjusted annually.
- There are no indications of unemployment or labour market policy measures.
- He or she is not defined as studying.

Those not established in the labour market may have *uncertain status* (a lower annual income or periods of unemployment), *weak status* (very low income as well as periods of unemployment), or neither work nor study, i.e. they are *not part of the labour force*. These measures of employment have been used regularly in the follow-up of graduates from upper-secondary school and from tertiary education.

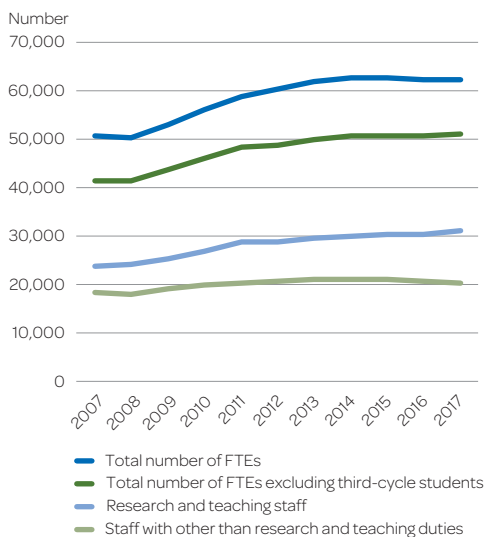
Teachers and researchers

Higher education is the single largest public sector in terms of the number employed, 28 per cent of all government employees work at a university or university college.

In 2017 there were a total of 75,480 employees at higher education institutions (HEIs). When expressed in full-time equivalents (FTEs) in order to factor in part-time employment and leave of absence, the employees numbered 60,600. A substantial part of research as well as teaching is carried out by third-cycle students. Nevertheless, for the purpose of this report they are not included in the data describing HEI staff. When third-cycle students are excluded, the number of HEI staff drops to 50,830 FTEs.

HEI staff has grown by 8,200 FTEs, or about 20 per cent, compared with 2007. This increase continued until 2014, to stabilize at more or less the present level. The research and teaching staff is responsible for the greatest growth since 2007, by 6,450 FTEs or 27 per cent.

Figure 25. Number of staff at HEIs 2007–2017 in FTEs.



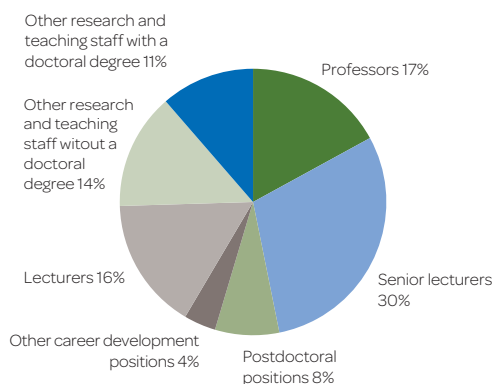
Research and teaching staff

Higher education research and teaching is primarily conducted by research and teaching staff, comprising, among others, professors, senior lecturers, lecturers and career development positions. Research and teaching staff account for about 60 per cent of the entire HEI staff, excluding third-cycle students. In 2017, research and teaching staff numbered just under 36,000, or a little more than 30,000 FTEs. Between 2016 and 2017 the number increased by 630 FTEs, or close to 800 individuals.

Senior lecturers formed the largest subcategory among research and teaching staff in 2017, accounting for 30 per cent of the total number of FTEs. Professors accounted for 17 per cent and lecturers for 16 per cent.

Career development positions, that is, positions that can only be held for a limited time to allow further training in order to pursue a career in academia, were held by 12 per cent of research and teaching staff. Of these, two thirds were postdoctoral positions. The number holding a career development position increased by 360 FTEs (11 per cent) between 2016 and 2017.

Figure 26. Proportion of different categories of research and teaching staff (FTEs) in 2017.



More senior lecturers but fewer lecturers

Over time, the largest increases have been of senior lecturers and individuals holding career development positions. The number of senior lecturers has grown steadily in the last decade – from 6,300 to 8,950 FTEs in the 2007-2017 period.

There has also been a considerable increase in the number of professors but the increase has abated since 2014. In 2017 there were 5,120 full-time equivalent professors employed by HEIs, 1,040 more than in 2007.

Lecturers, who primarily teach first and second-cycle students, instead have declined in number in recent years. In 2017 there were 4,800 full-time equivalent lecturers, a drop of 1,240 since 2007. Since only 16 per cent of lecturers have a research qualification, the decreasing number of lecturers in combination with the increase in senior

EMPLOYMENT CATEGORIES

Research and teaching staff primarily consist of categories that were previously regulated by the Swedish Higher Education Act (1992:1434) and the Swedish Higher Education Ordinance (1993:100), namely professors, senior lecturers, postdoctoral research fellows, and lecturers.

The regulation of teaching positions changed with an autonomy reform (Bill 2009/10:149). From January 2011, the number of regulated positions was reduced and only the teaching categories “professor” and “senior lecturer” were still regulated. In addition, fixed-term “career development positions” were introduced in the Ordinance in 2012. In 2017, in an amendment of the Ordinance, the career development positions were removed and positions as associate senior lecturers were introduced. These, along with postdoctoral research fellowships and postdoctor positions, form their own employment category in the statistics – career development positions.

In addition to these groups, there are a large number of other employees who also have research or teaching duties. These are included in the category “other employees with research and teaching duties”, where researchers, research engineers and research assistants make up just over 60 per cent. Those included in the category are, in turn, divided based on whether they have a doctoral degree or not. For example, researchers generally have a doctoral qualification while research assistants do not. The category “other research and teaching staff without doctoral degrees” also includes individuals for whom data is lacking on education level.

lecturers and professors has resulted in a more academically qualified staff.

The number of career development positions has grown also, from 1,380 to 3,500 FTEs, i.e. by 2,120 FTEs, since 2007. Two-year postdoctoral positions account for almost the entire increase.

CAREER DEVELOPMENT POSITIONS

After being awarded a doctoral degree, graduates may obtain necessary qualifications for a continued career in research or other senior posts through a fixed-term appointment. A number of such appointments are offered at HEIs: postdoctoral positions, associate senior lectureships, and postdoctoral research fellowships. As the number of doctoral degrees awarded considerably exceeds the number of appointments available, however, the chances of acquiring an appointment are limited.

Postdoctoral positions in their current form are based on an agreement signed by labour market organisations, allowing HEIs to employ postdoctors until further notice, but for a

maximum of two years which could be extended if there were special grounds for doing so.

Associate senior lectureships are regulated in the Swedish Higher Education Ordinance (1993:100). These lectureships require a doctorate degree or corresponding research qualification. The appointment is for a period of at least four years but no more than six years. The purpose of the appointment is for the associate senior lecturer to acquire the qualifications needed for another research and teaching post that requires more advanced qualifications.

Postdoctoral research fellows are also employed by HEIs. These positions are not centrally regulated, but are normally restricted to a period of four years.

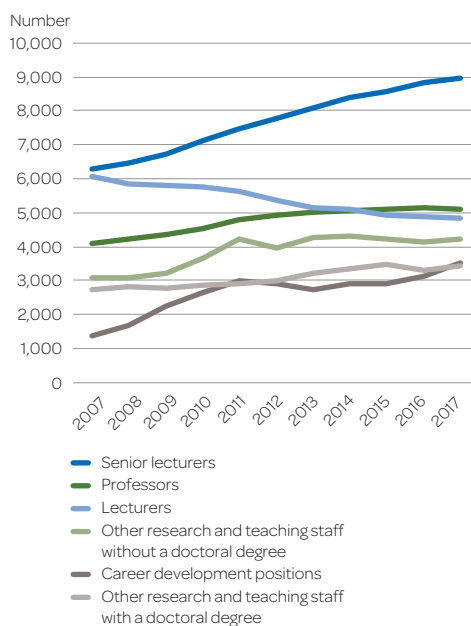
Professors, senior lecturers, lecturers and career development positions are not the only groups devoting at least some of their time to research. HEIs are free to employ and name staff categories but these will not be discussed here, except to say that such staff, primarily involved in research, has grown.

Staff categories vary between fields

Social sciences as well as medical and health sciences, with 7,380 and 7,350 FTEs respectively, head the list of research and teaching staff, followed by natural sciences with 6,540 FTEs. A little more than 70 per cent of research and teaching staff were active in these fields in 2017. Engineering and technology numbered 4,020 and humanities and the arts 3,530 FTEs. Agricultural sciences and veterinary medicine had the smallest number of research and teaching staff in 2017, 1,100 FTEs, corresponding to 4 per cent. These figures have been relatively stable over time.

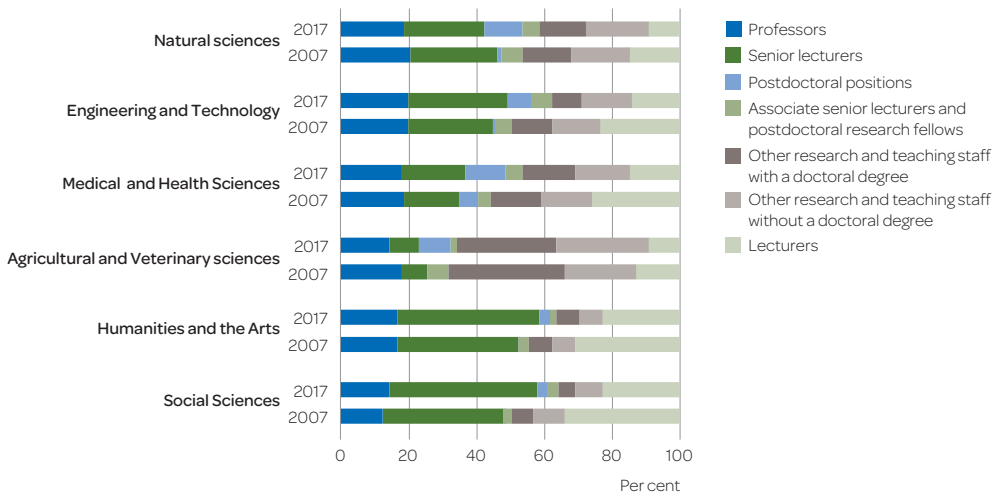
There are, however, differences in categories of research and teaching staff between fields. The proportion of senior

Figure 27. Number of research and teaching staff (FTEs) at HEIs 2007-2017, by category of staff.



lecturers and lecturers is relatively high in social sciences as well as in humanities and arts, compared with the remaining four fields, with a concurrent low proportion of other research and teaching staff.

Figure 28. Percentage of research and teaching staff (FTEs), by staff category and field of research and development in 2007 and 2017.



Also, in medicine and health sciences, natural sciences as well as engineering and technology, the proportion of staff holding career development positions is considerably higher than in other fields. Among those with career development positions, 80 per cent were employed in these three fields.

The percentage of professors varies the least between fields of research and development, being lowest in social sciences as well as in agricultural sciences and veterinary medicine (14 per cent) and highest in engineering and technology (20 per cent).

Gender differences among research and teaching staff

The gender ratio of research and teaching staff has grown more even over the past decade, a trend that continued in 2017, although less pronounced. In the ten-year period since 2007 the percentage of women in the research and teaching staff has increased from 41 per cent to 46 per cent of FTEs, but the increase in the last year was only 0.4 percentage points.

Excluding professors, the percentage of women is within the 40 to 60 per cent range

in all staff categories. There are, however, differences between categories. Whereas lecturers tend to be women (58 per cent) only 28 per cent of professors were women in 2017.

Government policy, as described in the most recent research bill (Bill 2016/17:50), is to achieve a more even gender ratio, not least among professors. To expedite an increase in woman professors, the Government has set up new recruitment goals for the 2017–2019 period.

Despite a strong rise in the last ten years women continue to be a smaller share of professors than would be expected from the composition of the third-cycle student population. In absolute terms, though, the number of woman professors has increased much more rapidly than the number of men: from 740 to 1,440 FTEs and from 3,340 to 3,680 FTEs, respectively, since 2007. The number of men among the professors has actually decreased in the last few years. As a result, the proportion of women has increased by 10 percentage points since 2007.

These figures may be compared with the corresponding figures from other European countries. According to data from ETER (using data from 2014), women made up less than a

third of the professors in most countries. Two countries, Bulgaria and Latvia, occupied a top position, with approximately 35 per cent woman professors. Sweden, with on average 25 per cent woman professors, was in tenth place.

Approximately 45 per cent of career development positions have been held by women in the past decade. Considering the academic career ladder, via a career development position to a senior lectureship and finally a position as professor, it is important with an even gender ratio on every rung of the ladder in order to achieve the government target for woman professors.

All three staff categories, lecturers, senior lecturers and professors, exhibit the same pattern: the percentage of women has increased in the last ten-year period. The result is an even more skewed gender distribution among lecturers, a group already dominated by women.

There is a lot to suggest that the percentage of women in most staff categories will continue to grow. This is evidenced by the fact that in most staff categories, the percentage of newly recruited women exceeded the percentage of women among incumbent staff in 2017. The largest difference is found in the professor category, 40 per cent and 27 per cent, respectively.

Smaller pay gap between women and men

Pay gaps are another sign of gender differences. An analysis of such differences has to take into account mitigating factors, such as age and length of employment that are not discussed here. Nevertheless, in 2016, men had a higher average salary than women in all staff categories. The difference between men and women was 4.2 - 4.5 per cent in almost all staff categories.

In the period between 2013 and 2016 the pay gap decreased in several staff categories. Career development positions are one of the categories that are characterized by the most

pronounced decrease. The pay gap between women and men with senior lectureships, on the other hand, has widened somewhat.

In addition to salaries varying between staff categories and gender, there are differences between fields. In all fields, however, men were paid more than women in 2016.

Declining percentage of fixed-term appointments in the past decade

Fixed-term appointments are quite frequent at Swedish HEIs. Employing adjunct or guest staff, such as adjunct professors and guest professors for a limited period of time may be regarded as a form of interaction with e.g. industry. Also career development positions at HEIs are fixed term and give doctoral graduates the opportunity to obtain qualifications for a continued career in academia.

Therefore, even though fixed-term appointments need not per se imply labour market vulnerability, a high frequency of these in some staff groups and a prevalence of successive fixed-term positions may indicate an insecure position in the labour market. From the perspective of the individual, fixed-term appointments may spell financial insecurity, problems acquiring a mortgage or making other life decisions. According to the most recent government bill on research, fewer fixed-term appointments is a political priority.

In 2017, 29 per cent of research and teaching staff (in FTEs) had fixed-term appointments. In the past ten years – the period of available data – there has been an overall decrease in fixed-term appointments of five percentage points. This does not apply equally to all staff categories, however.

In research and teaching staff overall there are no major differences between men and women in the percentage of fixed-term appointments.

Research and teaching staff with a foreign background

As in the rest of Swedish society, internationalization and global recruitment affect the higher education sector. A case in point is the employment of staff with a foreign background. The term “foreign background” applies to individuals either born outside of Sweden or born in Sweden but with parents who were both born outside of Sweden.

This definition is slightly different than the one normally used for foreign background among students and the general population in that it does not include a requirement for population registration.

The percentage of research and teaching staff with a foreign background was 34 per cent in 2017, an increase of two percentage points compared with 2016. The percentage of individuals with a foreign background was 24 per cent in the Swedish population but the figures are not quite comparable since different definitions are used. Individuals born outside of Sweden make up most of the research and teaching staff with a foreign background. Not all are residents, some are visiting researchers who came to Sweden when they were employed by an HEI.

The proportion of individuals with a foreign background is larger among those holding postdoctoral positions than among other groups of staff, 76 per cent, and has grown by four percentage points since 2016. The large proportion may be explained by the fact that some postdoctoral positions are especially designed for foreign visiting researchers. The lowest percentage, 17 per cent, is found among lecturers.

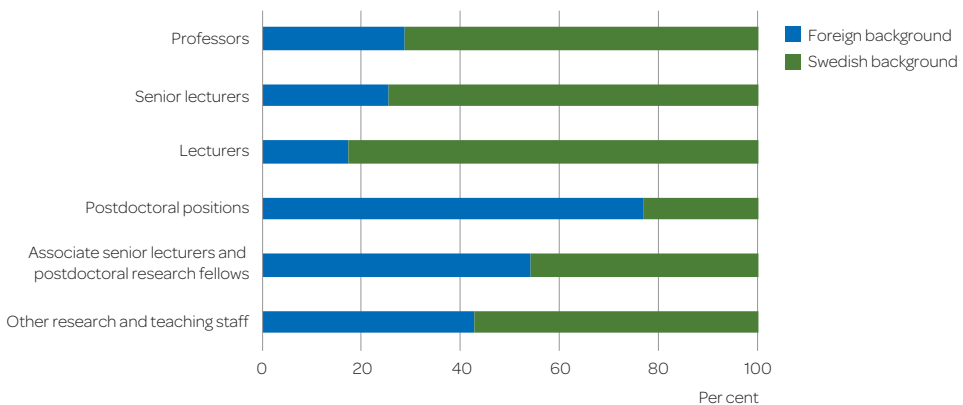
In 2012, the proportion of research and teaching staff with a foreign background was 27 per cent. There has been a gradual increase since, and the increase has applied to men and women alike.

Staff with other than research or teaching duties

HEI staff with other than research or teaching duties totalled 20,780 FTEs in 2017, a decrease by two per cent from the previous year. In comparison with 2007 the number of FTEs has increased by nine per cent, or 1,780 FTEs.

Staff with other than research or teaching duties mainly consists of administrative staff. A little more than 11,950 FTEs are administrative staff, corresponding to 58 per cent. The second largest group is

Figure 29. Proportion of research and teaching staff with foreign or Swedish background in 2017, by category of staff.



technical staff, totalling 6,620 FTEs (32 per cent) in 2017. Other groups include library staff and temporary employees, numbering 1,170 and 1,030 FTEs, respectively.

Only the number of administrative staff has increased since 2007. The increase, 27 per cent, is the same as the increase in research and teaching staff, also 27 per cent in the time period. In the last ten years the number of technical staff has remained more or less unchanged, whereas library staff and temporary staff have decreased by 160 and 570 FTEs, respectively.

Of staff with other than research or teaching duties 65 per cent were women in 2017. Administrative and library staff had the largest gender gap, with 77 and 71 per cent women, respectively. Conversely, the proportion of men in the technical staff was higher than that of women, 55 per cent. The gender ratio of of temporary staff is even.

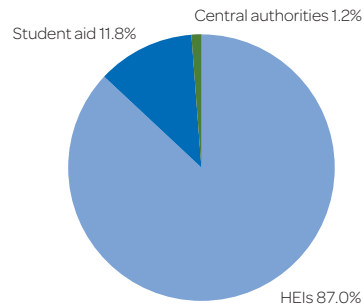
Finance and research funding

The total expenditure of Swedish institutions of higher education on their operations in 2017 amounted to SEK 70.6 billion, which corresponds to 1.53 per cent of Sweden's gross domestic product (GDP). Expenditure in the higher education sector also includes expenditure on student aid and central agencies. The total expenditure in the higher education sector was SEK 81.1 billion in 2017.

Funding of HEIs

The HEIs have two operational areas, with all activities attributed to either first and second-cycle courses and programmes or to research and third-cycle courses and programmes. HEIs also receive two separate allocations from the Government: one for first and second-cycle courses and programmes and one for research and third-cycle

Figure 30. Allocation of expenditure in the higher education sector in 2017. Total expenditure was SEK 81.1 billion.



courses and programmes. The only exception is the continuous environmental analysis that is undertaken at the Swedish University of Agricultural Sciences which is accounted for as a separate operational area.

There are differences in the funding of the two areas. First and second-cycle courses and programmes are financed mainly (85 per cent) by direct government funding whereas direct government allocations only provide 44 per cent of the funding for research and third-cycle courses and programmes. In addition, a great deal of government funding is indirect, through research councils and other government authorities. Of the total funding received by the HEIs, government funding accounted for 79 per cent in 2017.

Over the last decade, resources have increased substantially and a key part of the increase has been for research and third-cycle courses and programmes. Between 2007 and 2017, funding for research grew by SEK 10.5 billion in fixed prices while funding for first-cycle courses and programmes grew by SEK 2.6 billion. This means that HEIs have become more research-driven in the past decade – the share of total funding accounted for by research and third-cycle course and programme funding has increased by a little under 5 percentage points, from 53.6 to 58.3 per cent. This is due to two previous research

policy bills (2008 and 2012), which have led to major rises in government funding for research at Sweden's HEIs.

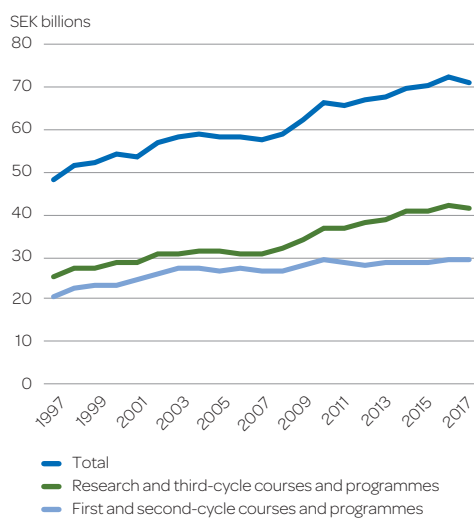
However, the expansion of research funding has slowed in the last few years. In 2017, the HEIs' total revenue was 70.9 billion, an increase of SEK 1.7 billion in current prices from 2016. For the first time in the past decade funding for first and second-cycle courses and programmes accounted for a greater share of the increase in revenue at the expense of research and third-cycle courses and programmes.

The total expenditure of HEIs amounted to SEK 70.6 billion in 2017, whereas total revenue was SEK 70.9 billion. The financial result was SEK 0.3 billion in the HEIs' operations for 2017. Compared to 2015, expenditure increased by SEK 0.8 billion in fixed prices. This was almost entirely due to increased costs of first and second-cycle courses and programmes, costs of research and third-cycle courses and programmes having increased only marginally.

Staff costs represent the largest cost item of the HEIs. In first and second-cycle courses and programmes, staff costs have grown in the past two years and their share of the total costs of HEIs has increased while infrastructure costs have decreased.

The HEIs' financial result was a little more than SEK 0.3 billion in 2017, corresponding to 0.4 per cent of their turnover in the operating year. As a group, HEIs have reported a positive economic performance every year of the past decade. Unlike other government authorities, HEIs may save funds that have not been used, instead of having to return them. A surplus provides the HEI with a financial buffer that may be used to cover future losses or to fund projects in education or research.

Figure 31. HEIs' revenues for first and second-cycle courses and programmes as well as for research and third-cycle courses and programmes, 1997–2017, SEK billions at 2017 prices.



Funding of first and second-cycle courses and programmes

First and second-cycle courses and programmes at Swedish HEIs are financed primarily through government funding that Parliament (the Riksdag) allocates to the HEIs directly. In 2016, direct government funding totalled SEK 24.8 billion. The HEIs total funding for first and second-cycle courses and programmes in 2017 amounted to SEK 29.1 billion.

Framework funding constitutes a key part of direct government funding, almost SEK 23.5 billion in 2017. For most public-sector HEIs as well as some independent education providers, framework funding consists of a funding cap that defines the maximum amount each HEI may receive. First and second-cycle courses and programmes offered by HEIs that have a funding cap are funded based on the number of registered students (converted to FTEs) and the credits they attain (converted to annual performance equivalents) in different disciplinary domains. The funding varies between different disciplinary domains.

HEIs are given their funding caps as part of their annual appropriation directives, setting a limit to the number of students.

As a result of ongoing expansion, the volume of higher education is calculated to increase by 14,600 FTEs in the coming years, to reach 305,500 FTEs in 2020.

Yearly increase in application and tuition fee revenues

Income from application and tuition fees paid by students from outside the EU/EEA and Switzerland have increased year by year since tuition fees were introduced, and amounted to SEK 687 million in 2017. The annual increase has been approximately SEK 90 million since 2013. In relation to total revenue for first and second-cycle courses and programmes tuition fees only account for a small part, on average 2.9 per cent, but for some HEIs they make a more substantial contribution.

In total, 30 per cent of application and tuition fees were covered by various scholarships. These are mainly parts of the state scholarship programmes that were set up when tuition fees were introduced in

2011, although several HEIs have scholarship programmes of their own.

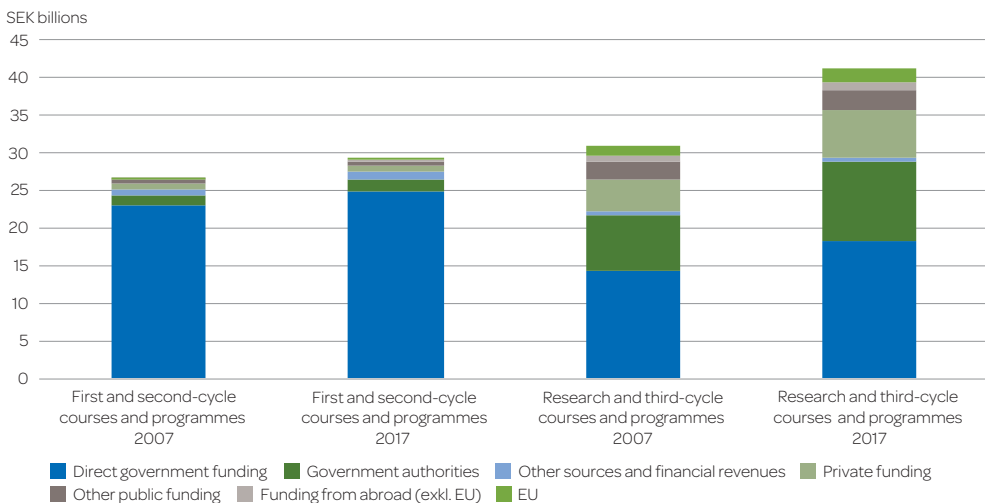
Recent increase in revenue from commissioned services

HEIs also provide different types of commissioned services for government authorities, private companies, and other bodies. A major client is the Swedish Armed Forces who commission the training of officers at the Swedish Defence University. There are also commissioned courses in the field of education and labour market training programmes. The size of commissioned education has been largely unchanged for many years, but grew by SEK 0.2 billion to SEK 1.6 billion in 2017. The increase was mainly due to an expansion of police training programmes.

Funding of research and third-cycle courses and programmes

Total revenue for research and third-cycle courses and programmes was SEK 41.3 billion in 2017. Government funding comprised a major part, SEK 28.9 billion

Figure 32. Funding for first and second-cycle courses and programmes as well as for research and third-cycle courses and programmes in 2007 and 2017 by source of funding, SEK billions in 2017 prices.



(70 per cent). Almost two thirds, SEK 18.2 billion, was direct funding to the HEIs, mainly consisting of framework funding (SEK 16.2 billion) that HEIs were free to use according to their own priorities. Direct funding also consisted of funding to the seven HEIs offering programmes in medicine, to cover the costs of medical research. The remainder of government funding (SEK 10.8 billion in 2017) was channelled through research councils and other research-funding authorities.

In addition to government funding, research and third-cycle courses and programmes are mainly financed by funding from a large number of public and private bodies. Researchers apply for this funding and after an assessment process funds are allocated to the projects that are considered to be most promising.

Municipalities, county councils and public research foundations fund research and third-cycle courses and programmes. These public funds totalled SEK 2.7 billion in 2017, amounting to a little less than 7 per cent of the HEIs' total revenue for research and third-cycle courses and programmes. This brought public funding up to SEK 31.5 billion, or 76 per cent of the total revenue for research and third-cycle courses and programmes.

Moreover, Swedish HEIs received considerable funds from the EU in 2017, in total SEK 1.8 billion. The EU framework programmes contributed a major part. If EU funds are included, public funding as share of total funding for research and third-cycle courses and programmes increased to 81 per cent.

Private foundations and other non-profit organisations also contribute substantially to research and third-cycle courses and programmes. In 2017, their share was SEK 4.9 billion, or 12 per cent. In an international perspective, Swedish HEIs have a high percentage of external funding from

such private sources. Together with the revenue from companies in Sweden (a little less than SEK 1.5 billion) private funding in 2017 amounted to 16 per cent of the HEIs' total revenue for research and third-cycle courses and programmes. The remaining 3 per cent mainly consisted of revenues from other countries (excluding EU) and financial revenues.

Commissioned research is also a source of revenue. Aside from actual research, such commissions may be for developmental or analytical work. In 2017 revenue from commissioned research accounted for only a minor part of all research funding, SEK 1.5 billion, or less than 4 per cent.

Research funding is growing, but slower

Research funding, regardless of type, increased by SEK 610 million (current prices) in 2017 compared with 2016. The increase corresponds to 1.5 per cent.

Direct government funding increased by SEK 360 million whereas non-government funding increased by SEK 260 million. Financial revenue decreased marginally.

In the past two years funding of research and third-cycle courses and programmes has grown much slower than before. Between 2007 and 2015 the average annual growth rate was 3 to 4 per cent in fixed prices. The share accounted for by direct government funding has since decreased by approximately 3 percentage points, from 47.3 to 44.1 per cent.

Between 2015 and 2017, the HEIs revenue from government authorities decreased by SEK 0.4 billion. Revenue from public and private foundations as well as from non-profit organisations, on the other hand, has increased considerably. Compared with 2015, revenues from private foundations and non-profit organisations increased by SEK 0.4

ALLOCATION OF RESOURCES FOR RESEARCH AND THIRD-CYCLE COURSES AND PROGRAMMES

The current funding system lays down that new funding for research and third-cycle courses and programmes as well as 20 per cent of the existing direct government funding is to be based on two quality indicators: external funding and research productivity (publications and citations).

This allocation principle was introduced in 2009, when the proportion reallocated totalled 10 per cent, but the proportion was later increased to 20 per cent in 2014. The current Government modified the model for the allocation of resources for 2016 so that a third of the increased funding went to more established HEIs,

HEIs recently awarded full university status and HEIs without full university status. The effect was significantly greater relative increases in funding for the latter two types of HEIs. In the latest research policy bill (Bill 2016/17:50), the Government has proposed that collaboration with the surrounding community should be added as a criterion for resource allocations.

In addition to its direct funding, the Government channels resources for research through the research councils and other public authorities that fund research. Although this funding is determined by political decisions, it is allocated competitively.

ALLOCATION OF RESOURCES FOR FIRST AND SECOND-CYCLE COURSES AND PROGRAMMES

Government funding for first and second-cycle courses and programmes offered by the HEIs is based on the number of registered students (converted to FTEs) and the credits they attain (converted to annual performance equivalents) in the different disciplinary domains. The funding is the same for all HEIs covered by the system, but varies between different disciplinary domains.

The funding cap establishes the maximum amount each HEI may receive and, together with the way in which courses and programmes are divided among the different disciplinary domains, sets the limits for the number of students.

Courses form the basis of all higher education. These are classified as belonging to one or several disciplinary domains. The Government determines which domains each HEI may include when calculating FTEs and annual performance equivalents. The HEIs that include FTE's and annual performance equivalents in the fine, applied and performing arts are only allowed to do so for a limited number of students. Otherwise the HEIs decide for themselves how to classify the disciplinary domain or domains that courses belong to. Resources are then allocated to the HEIs on the basis of these classifications.

In 2017, over 40 per cent of the entire number of students (total FTEs) were in the humanities,

social science, law and theology, domains which receive the lowest funding. One-third were in engineering and technology and in the natural sciences, so that most of the remaining disciplinary domains were small. Programmes in the fine, applied and performing arts, the domains that receive the highest per capita funding, only have a few per cent of the total number of students.

The allocation system and funding cap apply to the public HEIs with the exception of the Swedish University of Agricultural Sciences and the Swedish Defence University. The public HEIs, along with Chalmers University of Technology and Jönköping University, have 97 per cent of the total number of students, in terms of FTEs. HEIs may be assigned other tasks that are funded by direct government funding, such as offering courses in specific languages and offering minority language teacher education. For other tasks, such as supplementary programmes for individuals who have graduated outside Sweden or qualifying programmes for teachers who lack certification, HEIs receive direct government funding which is allocated by the Swedish Legal, Financial and Administrative Services Agency. Independent education providers receive, with a few exceptions, indirect government funding for the course offered.

billion in fixed prices. As a consequence, HEIs have received an increase in such private funding of the same magnitude as the decrease in revenues from government authorities. In the two years between 2015 and 2017, revenues from public research foundations also increased, by SEK 0.2 billion in fixed prices.

Revenues from EU framework programmes have only changed slightly in the last few years, whereas revenues from structural and regional funds have increased since 2015.

Research

Sweden is one of the countries that make the largest investments in research and development (R&D) in relation to GDP. According to data from the OECD, Swedish investment in R&D was 3.27 per cent of GDP in 2015. Only Israel, South Korea, Switzerland and Japan invested more in R&D that year. When

reporting expenditure on R&D, the OECD defines four sectors: the Government sector, the higher education institutions, the business sector, and the private non-profit sector.

As in most OECD countries the business sector executes by far the largest part of Swedish R&D. There is, however, a difference between Sweden and many other countries: since there are only a few state research institutes the bulk of publicly funded research is undertaken by higher education institutions (HEIs). In 2015, HEIs carried out 27 per cent of Sweden's total R&D, whereas the Government sector (including research institutes) carried out 3 per cent.

Large investments in R&D, in conjunction with HEIs undertaking most of the publicly funded research, are the reason that the operations of Swedish higher education institutions include research to a larger extent than in many other countries.

Table 2. Investment in R&D as a percentage of GDP in a number of OECD countries in 2015 by sector as well as total R&D for OECD countries and the EU. The table shows OECD countries with the largest investments in R&D in relation to GDP.

Country	R&D as a percentage of GDP	Proportion of investment in R&D by sector			
		Business sector	HEIs	Government sector	Private, non-profit sector
Israel	4,27	85	12	2	1
South Korea	4,22	78	9	12	2
Switzerland	3,37	71	27	1	1
Japan	3,28	78	12	8	1
Sweden	3,27	70	27	3	0
Austria	3,05	71	24	5	0
Denmark	2,96	64	33	2	0
Germany	2,92	69	17	14	
Finland	2,9	67	24	8	1
USA	2,74	72	13	11	4
Belgium	2,47	70	20	9	1
OECD total	2,36	69	17	11	2
France	2,27	64	22	13	2
Slovenia	2,2	76	10	14	0
Iceland	2,19	65	31	5	..
Netherlands	2	56	32	12	
EU (28 countries)	1,96	64	23	12	1
Norway	1,93	54	31	15	

Research at Swedish HEIs

Although the research carried out at HEIs involves a wide range of fields, financial emphasis is on the medical and health sciences as well as on natural sciences. The most recent data describing the division of revenues between fields of research and development pertain to the 2015 business year. Total revenues that year amounted to a little less than SEK 39 billion, of which more than half was spent on the two fields mentioned above.

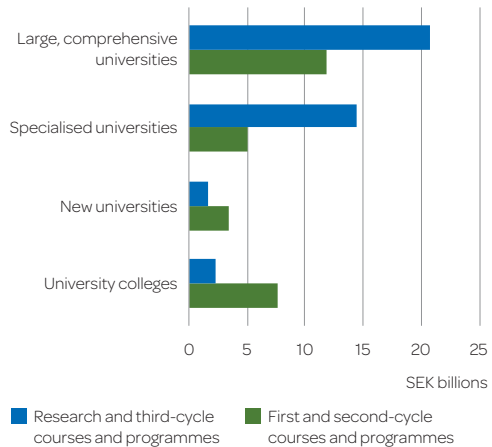
How much of the research is funded by direct government funding varies from one field of research and development to another. In 2015, direct government funding accounted for the smallest share of research in engineering and technology, about 36 per cent. This research was instead mainly funded by public and private bodies. Direct government funding also constituted only a minor part of research funding in the medical and health sciences. The reverse was true for humanities and the arts – 63 per cent of the research was funded by direct government funding.

Research is concentrated to the large universities, comprehensive or specialised. Whereas the comprehensive universities have the largest scope, in research as well as in first, second and third-cycle courses and programmes, specialised universities have more research revenue in relation to their size. At new universities (HEIs that have been given university status in recent years) and university colleges, on the other hand, research and third-cycle courses and programmes form a much smaller part of operations. Instead, their operations are dominated by first and second-cycle courses and programmes.

The research and third-cycle courses and programmes of new universities is similar to that of the older universities in that it involves several fields, but it is of a smaller magnitude. Several university colleges started

as health science or teacher colleges and their research is still influenced by their origins. However, there are also university colleges that specialise in engineering, natural sciences, social sciences or humanities and the arts.

Figure 33. HEIs' revenues for research and third-cycle courses and programmes as well as for first and second-cycle courses and programmes in 2015, by type of HEI, SEK billions.



Time devoted to research

According to a survey of time use, a total of 42,900 annual work units were performed by HEI staff that devote at least some of their time to research. Of these annual work units 19,970 related to research. On average, then, 47 per cent of staff time was spent on research. There are, however, considerable differences between fields of research and development. In the fields of natural sciences, engineering and technology, medical and health sciences as well as agricultural sciences and veterinary medicine the largest proportion of staff time was spent on research, 51 to 56 per cent. In social sciences as well as humanities and the arts, research accounted for a much smaller part of staff time, about 35 per cent. The difference is explained by the large volume of first and second-cycle courses and programmes in social sciences and humanities, with a concomitant volume of teaching.

The time spent on applying for research funding follows a similar pattern. Research in engineering and technology as well as in the medical and health sciences is funded by external revenues to a larger extent than other fields, since there are a great deal more external funds, and the difference is reflected in a difference in the time spent on applications.

In addition, the distribution of revenues for research and third-cycle courses and programmes differs from the distribution of first and second-cycle students between areas. Whereas social sciences (including, among other things, law) was by far the largest subject area, with more than 40 per cent of first and second-cycle FTEs (full-time equivalent students) in 2015, as a research field it only received 14 per cent of research revenues. Instead, the largest part of research revenues was received by the medical and health sciences. Even taking differences in costs between different fields into account, the number of research annual work units performed in a field is influenced by the uneven distribution of revenues.

With the availability of research revenue varying between fields of research and development, the opportunity for advancement, at the HEI or in the scientific community, is skewed. As a result, many first and second-cycle teachers are not active in research.

Staff categories vary in the share of their working hours they spend doing research. Postdoctoral research fellows, research assistants and third-cycle students devoted more time in 2015 to research than did other research and teaching groups, about 70 per cent. Professors, on the other hand, devoted only 46 per cent of their time to research, instead spending more time teaching courses at different levels. Senior lecturers spent more time teaching (45 per cent) than doing research (31 per cent). Of all groups with research or teaching duties, lecturers devoted least time to research, only 10 per cent of their time.

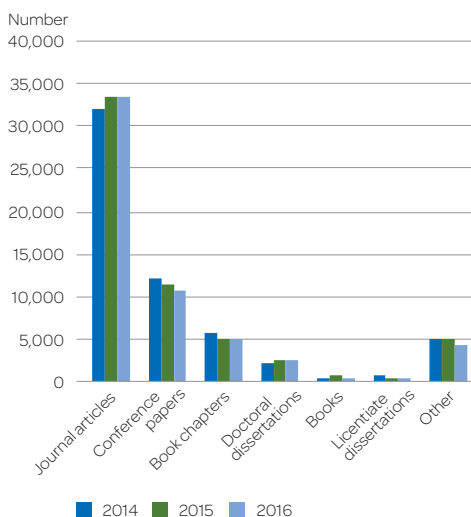
Scientific publications

The total number of scientific publications entered into the national database Swepub every year by researchers at Swedish HEIs has been about 58,000 in recent years. Close to 60 per cent of this scientific production consists of articles in scientific journals. The number of articles in Swepub has grown, whereas the publication of books has stayed constant at about 660 books published yearly in 2014–2016. The number of published book chapters has dropped from 5,660 to 4,990 in the same period.

The universities accounted for 90 per cent of the total number of scientific publications in Swepub in 2017, with the university colleges contributing the remaining 10 per cent. With 13 per cent of the total number of scientific publications, Uppsala University headed the scientific production, followed by the University of Gothenburg and Lund University, with 12 percent each.

Swepub is still under construction and entering publications is optional. While a majority of HEIs contribute their research publications, it should be kept in mind that coverage is not total.

Figure 34. HEIs scientific publications 2014–2016, by publication type. Source: Swepub.



KEY FIGURES FOR HIGHER EDUCATION INSTITUTIONS



HIGHER EDUCATION IS offered at about fifty universities, university colleges and other higher education institutions (HEIs) that vary greatly in size and degree of specialisation. The accompanying tables present quantitative data to describe differences and similarities between HEIs. The smallest institutions that are not public-sector HEIs have been excluded.

First and second-cycle courses and programmes

HE entrants to higher education at the institution. These figures indicate the number of individuals beginning to study for the first time at the institution in the academic year of 2016/17 in Sweden.

Median age of entrants. Median age of individuals beginning to study for the first time (HE entrants) in the academic year of 2016/17.

Proportion of women/men. The proportion of women and men among HE entrants in the academic year of 2016/17.

Total number of students. Total number of registered students, autumn semester 2017.

Education profile. The number of FTEs in some subject areas – humanities/theology, social sciences/law and technology – divided by all FTEs in the academic year of 2016/17.

The proportion of FTEs in second-cycle courses and programmes. The number of FTEs studying in the second cycle divided by all first and second-cycle FTEs in the academic year of 2016/17.

Total number of qualifications awarded.

The total number of qualifications awarded in the academic year of 2016/17.

Third-cycle courses and programmes

Third-cycle entrants. Entrants to third-cycle courses and programmes, 2017.

Total number of third-cycle students.

The number of active third-cycle students, autumn 2017.

Doctoral degrees. The number of doctoral degrees awarded, 2017.

Licentiate degrees. The number of licentiate degrees awarded, 2017.

Teaching and research staff

Teaching and research staff. The number of teaching and research staff (in FTEs), 2017. The figures include professors, senior lecturers, lecturers, career development positions, and other research and teaching staff.

Proportion of women/men. The proportion of women and men among teaching and research staff, 2017.

Funding

Total expenditure. Total expenditure (SEK million), 2017.

Proportion of first and second-cycle courses and programmes. The proportion of expenditure for first and second-cycle courses and programmes related to total expenditure, 2017.

First and second-cycle courses and programmes

HEI	HE entrants at the institution	Median age	Proportion of women/men	Total number of students (autumn semester 2017)
Total	167,312	22,1	57/43	345,494
Uppsala University	14,274	21,7	59/41	30,202
Lund University	12,272	21,5	56/44	29,176
University of Gothenburg	12,428	22,2	64/36	31,430
Stockholm University	15,779	22,0	62/38	33,317
Umeå University	11,218	22,3	60/40	21,582
Linköping University	7,592	21,7	53/47	20,132
Karolinska Institute	3,033	23,1	73/27	7,454
KTH Royal Institute of Technology	6,902	22,2	31/69	14,956
Chalmers University of Technology	3,155	21,8	30/70	9,760
Luleå University of Technology	5,117	21,9	46/54	9,314
Stockholm School of Economics	717	21,7	46/54	1,722
Swedish University of Agricultural Sciences	1,667	22,8	58/42	4,671
Karlstad University	5,212	22,0	60/40	10,207
Linnaeus University	12,852	22,6	60/40	19,383
Örebro University	5,269	21,3	59/41	10,727
Mid Sweden University	6,397	23,4	60/40	8,614
Blekinge Institute of Technology	2,500	21,5	31/69	3,437
Swedish Defence University	389	22,6	37/63	729
Swedish School of Sport and Health Sciences	471	22,9	45/55	931
University of Borås	2,878	22,8	70/30	7,033
Dalarna University	6,491	24,1	62/38	8,497
University of Gävle	6,421	23,5	60/40	8,318
Halmstad University	4,387	22,6	55/45	7,029
Kristianstad University	6,433	22,8	69/31	8,715
University of Skövde	2,731	22,3	49/51	4,857
University West	4,224	22,8	61/39	6,846
Malmö University	7,026	22,5	65/35	14,301
Mälardalen University	7,326	22,5	63/37	9,514
Jönköping University	4,756	22,0	56/44	9,207
Södertörn University	3,910	21,9	71/29	7,322
University College of Arts, Crafts and Design	307	24,9	74/26	776
Royal Institute of Art	128	28,2	63/37	219
Royal College of Music in Stockholm	372	23,4	46/54	959
Stockholm University of the Arts	357	25,3	70/30	541

First and second-cycle courses and programmes					
HEI	Humanities/ theology (%)	Social sciences / law (%)	Technology (%)	Second- cycle (%)	Total number of qualifications awarded
Total	14	42	15	21	75,996
Uppsala University	20	38	9	25	5,688
Lund University	14	39	16	27	6,820
University of Gothenburg	16	51		24	6,346
Stockholm University	25	62	0	20	4,629
Umeå University	14	43	7	21	4,510
Linköping University	11	34	21	24	5,440
Karolinska Institute	0	11		40	2,810
KTH Royal Institute of Technology	3	1	72	42	3,762
Chalmers University of Technology	2	9	62	39	3,074
Luleå University of Technology	10	28	33	18	1,757
Stockholm School of Economics	3	97		59	622
Swedish University of Agricultural Sciences		13	24	33	1,058
Karlstad University	10	57	10	14	1,915
Linnaeus University	20	48	6	12	3,286
Örebro University	8	56	6	13	2,479
Mid Sweden University	15	47	13	9	1,342
Blekinge Institute of Technology	1	1	72	25	806
Swedish Defence University	8	46	11	8	99
Swedish School of Sport and Health Sciences		20		17	135
University of Borås	9	50	15	15	1,830
Dalarna University	39	39	7	8	1,207
University of Gävle	13	46	19	7	1,339
Halmstad University	11	46	20	10	1,346
Kristianstad University	4	66	6	8	1,258
University of Skövde	12	21	32	7	1,033
University West	8	59	12	8	1,392
Malmö University	10	59	12	13	2,615
Mälardalen University	9	52	12	12	1,656
Jönköping University	10	45	21	14	2,442
Södertörn University	36	45		8	1,348
University College of Arts, Crafts and Design		11		37	177
Royal Institute of Art				61	37
Royal College of Music in Stockholm		8		27	132
Stockholm University of the Arts		14		17	54

Third-cycle courses and programmes				
HEI	Third-cycle entrants	Total number of third-cycle students (autumn semester 2017)	Doctoral degrees	Licentiate degrees
Total	3,060	17,376	2,838	498
Uppsala University	339	2,078	369	43
Lund University	380	2,356	447	36
University of Gothenburg	299	1,503	252	19
Stockholm University	229	1,352	208	43
Umeå University	119	831	193	7
Linköping University	170	1,046	170	30
Karolinska Institute	371	2,167	327	4
KTH Royal Institute of Technology	360	1,762	307	71
Chalmers University of Technology	189	1,103	139	132
Luleå University of Technology	92	506	68	32
Stockholm School of Economics	24	131	19	2
Swedish University of Agricultural Sciences	109	464	100	5
Karlstad University	27	215	31	17
Linnaeus University	53	258	35	5
Örebro University	66	409	49	8
Mid Sweden University	34	158	16	5
Blekinge Institute of Technology	25	99	8	2
Swedish Defence University				
Swedish School of Sport and Health Sciences	5	20	1	
University of Borås	21	74	5	1
Dalarna University	5	22	2	
University of Gävle	8	35	3	1
Halmstad University	6	60	3	6
Kristianstad University				
University of Skövde	9	41	3	2
University West	11	55	1	2
Malmö University	36	188	24	1
Mälardalen University	28	196	25	19
Jönköping University	23	177	18	5
Södertörn University	14	64	15	
University College of Arts, Crafts and Design				
Royal Institute of Art				
Royal College of Music in Stockholm				
Stockholm University of the Arts	7	19		

HEI	Teaching and research staff		Funding Total expenditure (SEK million)	Proportion of first and second-cycle courses and programmes
	Teaching and research staff (FTE)	Proportion of women/men		
Total	30,050	45/55	70,566	42
Uppsala University	3,129	44/56	6,875	29
Lund University	3,010	40/60	8,046	31
University of Gothenburg	2,706	51/49	6,384	39
Stockholm University	2,431	47/53	5,120	45
Umeå University	1,880	47/53	4,186	43
Linköping University	1,584	40/60	3,806	44
Karolinska Institute	2,112	53/47	6,794	15
KTH Royal Institute of Technology	1,580	26/74	4,535	32
Chalmers University of Technology	1,292	25/75	3,693	28
Luleå University of Technology	576	37/63	1,636	43
Stockholm School of Economics	91	24/76	454	65
Swedish University of Agricultural Sciences	1,526	50/50	3,409	17
Karlstad University	624	49/51	1,103	66
Linnaeus University	1,016	47/53	1,817	71
Örebro University	585	49/51	1,321	62
Mid Sweden University	497	45/55	978	62
Blekinge Institute of Technology	188	34/66	440	68
Swedish Defence University	213	23/77	512	77
Swedish School of Sport and Health Sciences	60	42/58	140	73
University of Borås	341	56/44	671	78
Dalarna University	408	56/44	633	83
University of Gävle	390	52/48	674	79
Halmstad University	295	47/53	586	72
Kristianstad University	326	59/41	504	87
University of Skövde	289	42/58	474	70
University West	297	57/43	517	78
Malmö University	772	55/45	1,446	80
Mälardalen University	498	49/51	901	69
Jönköping University	412	50/50	925	72
Södertörn University	398	51/49	789	66
University College of Arts, Crafts and Design	77	56/44	185	93
Royal Institute of Art	32	56/44	78	88
Royal College of Music in Stockholm	70	28/72	183	94
Stockholm University of the Arts	92	59/41	269	78

HIGHER EDUCATION INSTITUTIONS IN SWEDEN 2017



HEIs with entitlement to award first, second and third-cycle qualifications

Public-sector HEIs

Uppsala University
Lund University
University of Gothenburg
Stockholm University
Umeå University
Linköping University
Karolinska Institute
KTH Royal Institute of Technology
Luleå University of Technology
Swedish University of Agricultural Sciences
Karlstad University
Linnaeus University
Mid Sweden University
Örebro University
Blekinge Institute of Technology*
Dalarna University*
Halmstad University*
Malmö University*
Mälardalen University*
Swedish Defence University*
Södertörn University*
The Swedish School of Sport and Health Sciences*
University of Borås*
University of Gävle*
University of Skövde*
University West*

Independent education providers

Chalmers University of Technology
Ersta Sköndal Bräcke University College*
Jönköping University*
Sophiahemmet University*
Stockholm School of Economics
Stockholm School of Theology*
University of Arts, Crafts and Design**

*HEI entitled to award third-cycle qualifications in only specific research domains at the end of 2017.

HEIs entitled to award only first-cycle qualifications or first and second-cycle qualifications

Public-sector HEIs

Kristianstad University**
Royal Institute of Art**
Royal College of Music in Stockholm**
Stockholm University of the Arts*

Independent education providers

Beckman College of Design
Gammelkroppa School of Forestry
Johannelund Theological Seminary
Newman Institute
The Red Cross University College**
University College of Music Education in Stockholm
Örebro School of Theology

Independent course providers

Evidens University College**
Stockholm Academy for Psychotherapy Training**
The Erica Foundation**
The Swedish Institute for CBT & Schema Therapy**

** HEI entitled to award second-cycle qualifications.



The Swedish Higher Education Authority (UKÄ) is a government agency that deals with questions concerning higher education. UKÄ is responsible for the official statistics on higher education and also works with the quality assurance of higher education courses and programmes, monitoring and evaluating efficiency, legal supervision and leadership development in higher education.

You can read more on our web-site www.uka.se.