Report 2008:29 R

Swedish Universities & University Colleges

Short Version of Annual Report 2008

HÖGSKOLEVERKET
Swedish National Agency for Higher Education

« **Sofia Carlström**

Strolling among the stars, collage

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Introduction

« Anna Sörensson

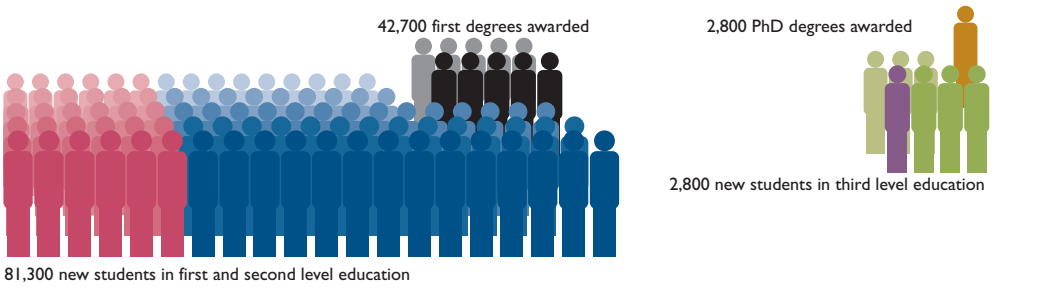
Indien [*India*]

THIS SUMMARY of the *Swedish Universities and University Colleges Annual Report* 2008 gives an outline picture of higher education activities in Sweden. The report summarizes developments prior to and including the fiscal year of 2007 and covers state and private universities and university colleges. The report also presents some indicators about Swedish higher education in an international perspective. Furthermore it offers a basic description of the academic structure in Sweden and the regulatory framework under the heading *Facts about the higher education sector today.* The subsequent section presents key data for each university and university college about students, staff and finance. Analysis in the Annual Report is based on information obtained from a number of sources, including the annual reports published by Swedish universities and university colleges and statistics produced by Statistics Sweden.

Trends and developments

« Mariel Rosendahl

När alla sover [*When everybody sleeps*]



Number of students and degrees in first, second and third level education 2006/07 academic year.

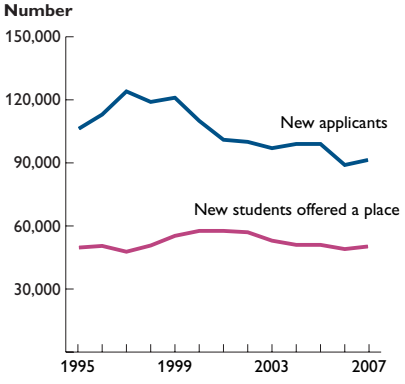
First and second level programmes

A new structure came into effect for higher education in Sweden on 1 July 2007. This is an adaptation to the Bologna Process, which is intended, among other things, to increase mobility for students and enable comparison of higher education in Europe. Higher education is divided into three levels – first level, second level and third level, the two first corresponding to what have previously been referred to in Sweden as undergraduate programmes. All qualifications are assigned to one of these levels. In the first level two general qualifications are awarded – University Diplomas and Bachelor's degrees – and in the second level either one-year or two-year Master's degrees. In addition there are specialised first and second level qualifications in the fine, applied or performing art. In the third level licentiate degrees and PhDs are awarded. Both first and second level professional or vocational qualifications are awarded. In addition to the new structure, a new system of higher education credits was introduced in which one year of full-time study corresponds to 60 HE credits.

More applicants to higher education

After several years of declining figures, there was slight rise in the number of applicants to higher education in the autumn of 2007. This is largely due to an increase in applications from 19-year-olds, which can in its turn be explained by the fact that this cohort was larger in 2007 than in 2006. The rise has continued in applications for the autumn of 2008, which are 8 per cent higher than for the autumn semester of 2007.

Altogether 91,500 applied to begin their studies in higher education in the autumn se-



New applicants, not previously participating in higher education, and number of new students offered a place autumn terms. There is always a gap between the number of applications and the number of admissions. This applied in the autumn of 2007 as well, when many higher education institutions did not fill all their places available for new entrants, which indicates that there are certain discrepancies between application interest and new entrant capacity, both in terms of educational orientation and its regional distribution.

mester of 2007. Of these 51,300 were admitted, a rise of 4 per cent since 2006. In spite of this increase, the number of applicants with no previous higher education was almost twice as large as the number admitted in the autumn of 2007.

Analysis of the major professional or vocational programmes reveals that in the autumn of 2007 competition for places was greatest for programmes in veterinary medicine and in medicine, with 7.2 and 6.8 first-choice applications for each student admitted.

Of the general study programmes, those in the health care studies, including social care, had the largest number of first-choice applicants. For the autumn of 2007 the number of first-choice applications for each student admitted averaged 2.4 for these programmes. The other major area comprised programmes focusing on the social sciences, law, economics and business studies.

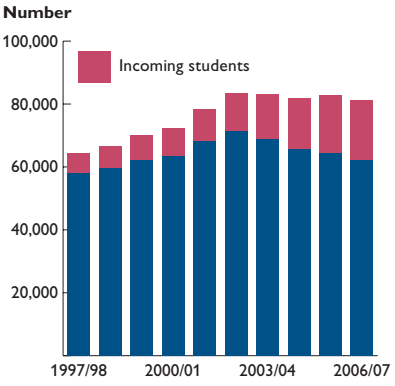
The lowest pressure could be found among programmes in the natural sciences, mathematics and computer science with 1.1 first-choice applicant for each student admitted. The average acceptance ratio for all general study programmes for the autumn of 2007 was 1.6 first-choice applicants for each student admitted.

One university entrant in four is an international student

More and more international students are coming to Sweden to study. This includes students in the Erasmus and other exchange programmes as well as "free movers", students who arrange their own studies in Sweden. The total number of university entrants has been just over 80,000 since the academic year of 2001/02. This volume has been maintained thanks to the rise in the number of international students. In the academic year of 2006/07 one new entrant in four came from abroad to study in Sweden. The largest number of new entrants from the Swedish population started their studies in 2002/03. Since then this figure has declined by 9,200 to total 62,100 for the academic year of 2006/07.

The total number of international students on first and second level programmes at higher education institutions in Sweden amounted in 2006/07 to almost 28,000. On average there has been a rise of 13 per cent per year during the last decade. This development means that in 2006/07 the number of students coming to study in Sweden exceeded the number of Swedish students travelling to study abroad.

International students reinvigorate the environment at higher education institutions and introduce new influences. They largely take courses in technology and the natural sciences. At the higher education institutions that focus on these areas the international students are both an intellectual and economic resource.



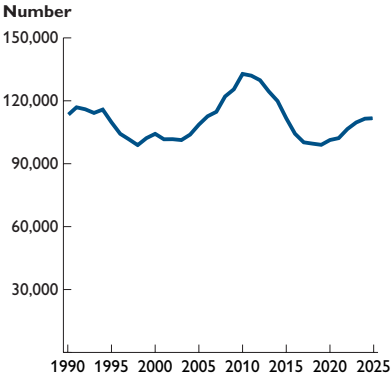
Higher education entrants 1997/98 to 2006/07. The numbers entering higher education totalled 81,300 in 2006/07. Of these almost one-quarter came from abroad. The number of incoming students has risen markedly during a ten-year period. On the other hand, the number of new entrants living in Sweden has declined over the last five years.

Slight rise in the number of students registered for the autumn semester of 2007

Since reaching its peak in 2003, the number of registered students has declined by 6 per cent. Now, however, this decline seems to have ceased and a slight increase of the student population can be discerned for the autumn semester of 2007, when 322,000 individuals were registered in first and second level programmes, an increase of 2,000 compared with the same semester in 2006.

Despite the rise in the student population in the autumn semester of 2007, the number of FTE's (full time equivalent students) continued to decline for the calendar year of 2007, which is because most of this fall occurred during the first half of the year. A drop in the number of FTE's in the humanities, social sciences and natural sciences is the main reason for this decline.

Ever since the reform of higher education in 1977, when programmes in health care studies and education in which women predominate were incorporated into higher education, there has been a larger proportion of women in higher education than men. This proportion has gradually risen so that in the last few years it has been just over 60 per cent. Among university entrants the proportion of women is also 60 per cent if international students are excluded. This figure has risen by three percentage units during the last decade.



The number of 20-year-olds 1990–2025. The number of 20-year-olds will peak in 2010 when it will total more than 130,000, almost 10 per cent more than today. Then numbers will rapidly decline again.

There are major variations in the gender balance from subject to subject. If these are grouped in broad disciplinary areas, women can be seen to predominate in seven of these nine areas. Men predominate in the technological domain and there is an even balance in the fine, applied and performing arts.

High initial participation rate

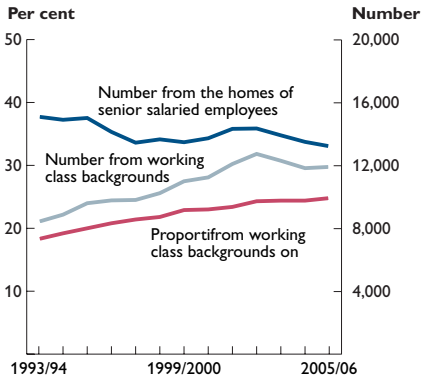
Just under 44 per cent of a cohort have begun studies in higher education by the age of 25. This means that the initial participation rate has doubled over a twenty-year perspective. During 2006/07 the number of new entrants aged 25 or below totalled 49,000, excluding international students. To this can be added a few thousand more who travel abroad to study complete programmes.

But initial participation is not restricted to those below the age of 25. Almost 18,000 university entrants are older than 25. If 26–31 year olds are included in the initial participation rate, it amounts to 50 per cent, and if the age group is extended by another ten years, the rate rises to 55 per cent and, of course, continues to rise as more age groups are included.

Now, however, the era of continually rising initial participation rates is over. Hitherto the keen interest in higher education among students has meant that the initial participation rate has largely been governed by how quickly the number of places on offer from higher education institutions can be increased. In recent years capacity has in some cases been great-

er than demand, which means that interest in higher education rather than capacity has been the limiting factor.

There is another factor, however, that will affect the number of applications to higher education in the next few years. This is the size of each cohort. Over the next two years the number of 20-year olds will rise by almost 10 per cent to just over 130,000 in 2010. This means that considerably more individuals are likely to seek higher education during the next three-year period.



New entrants' social background. In just over ten years the number of students from working class backgrounds has risen from 18 to 25 per cent of all new entrants aged 18–34. This means that the numbers of students from working class backgrounds are approaching those whose parents are senior salaried employees. The drop in the numbers of those whose parents are senior salaried employees can partly be explained by an increase in the proportion studying abroad.

Social background

The expansion of higher education has led to some degree of widened participation. Obvious variations still persist, however, in the initial participation rate for different social strata. Students with upper-middle class backgrounds are overrepresented in higher education and the working class underrepresented. In particular there are major differences in the longest programmes that are most likely to lead to high incomes and good career opportunities.

During the period from 1993/94 until 2005/06 the number of entrants to higher education with working-class backgrounds rose from 18 to 25 per cent, while at the same time the proportion whose parents were senior salaried employees declined from 33 to 28 per cent. This represents a genuine change as there has been relatively little alteration of the proportion represented by these two groups in the population as a whole during the same period.

Even though the proportion of entrants with working-class backgrounds has risen they are still underrepresented. The proportion of the population aged from 20–25 with working-class backgrounds is 38 per cent and the proportion whose parents are senior salaried employees is 18 per cent.

In terms of numbers this development during the last decade means that there has been no change or even a slight decline in the number of entrants whose parents are senior salaried employees while the number with working-class backgrounds has risen by about 40 per cent.

The proportion of those with parents who are senior salaried employees beginning to study by the age of 25 is about 75 per cent, while the initial participation rate for young people from working-class homes is just over 30 per cent.

This is the general picture when higher education is regarded as a whole. It depicts the extent to which young people with different backgrounds enrol in higher education and where in the system they can be found. Another relevant aspect is that there is considerable variation between different programmes. For instance the proportion of young people from

the upper-middle class taking programmes in medicine is considerably higher than for higher education as a whole.

This also applies to other long programmes where there is great competition for places, while a larger proportion of young people with working-class backgrounds can be found in short programmes in health and social care, teaching training programmes and diploma or bachelor's programmes in engineering.

Foreign background

Social background affects the entry to higher education of young people with foreign backgrounds in the same way as it does for those with Swedish backgrounds.

During the academic year of 2006/07 17 per cent of those entering higher education (excluding exchange students and free-movers) had foreign backgrounds, i.e. they were born abroad or had two parents who were born abroad. This means that the proportion of higher education entrants with foreign backgrounds is on a par with the proportion they represent in the population as a whole.

In all, almost 10,800 higher education entrants with foreign backgrounds were admitted to higher education institutions in 2006/07. Of these just over seven out of ten were born abroad and almost three out of ten born in Sweden but with two parents born abroad. Students with foreign backgrounds are a heterogeneous group both in terms of where they come from and how long they have lived in Sweden. In some cases, as well, distinctions like these are unreliable.

With these reservations, the results indicate that the average difference in initial participation in higher education is small for individuals with foreign or Swedish backgrounds. On the other hand there are major differences between groups with different nationalities.

Students of Iranian origin are well represented in higher education, and this also applies to young people from the Nordic and other western European countries, while those from the African countries are strongly underrepresented.

In addition there are considerable differences between programmes. Students with foreign backgrounds more frequently take programmes in technology or health care than in the humanities or social sciences.

The programmes with the highest proportions of students with foreign backgrounds include dentistry and biomedical laboratory science, but they are also overrepresented in programmes in medicine and engineering. In recent years there has also been some degree of overrepresentation of students with foreign backgrounds among new entrants to programmes in law.

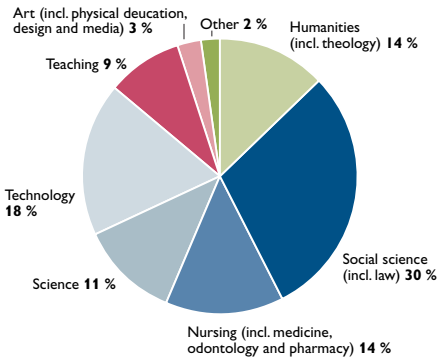
Just over 300,000 students

During the autumn semester of 2007 there were 322,000 students in first and second level higher education programmes. Compared to the autumn semester of 2006 this is a slight increase, which means a reversal of the declining trend during the three preceding autumn semesters. The increase has taken place among the youngest students (19–20 year olds). Changes in other age groups have been very small.

If a longer perspective is adopted, there has been a major rise in the number of students and during the last fifteen years the student population has doubled. There has been a substantial increase for all age groups, with a somewhat larger rise for women than for men.

Student numbers peaked during the autumn semester of 2003, when there were 340,000 students in higher education in Sweden. Despite the decline since then, historically speaking the number of students is still very high.

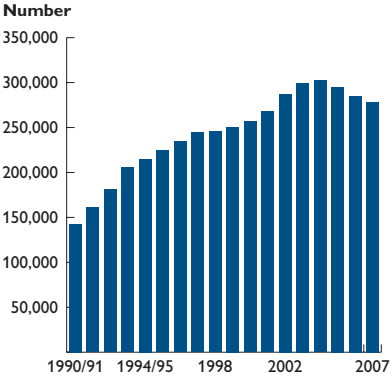
Just over half of the students are between 20–25. In the age group when participation is at its highest – 22 for women and 23 for men – one woman in three is studying at a higher education institution and one man in four. The proportion studying continues to be large until the age of 25. It then halves for those aged 25–29 as the majority complete their programmes and are awarded qualifications.



Full time equivalent (FTE) students 2007 by subject area. The social sciences, in which business studies is the largest single subject, account for 30 per cent of the total volume of higher education. This is approximately the same proportion as for the natural sciences together with technology.

Reduction of the number of FTE´s

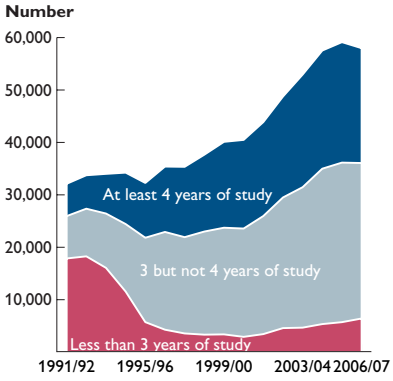
The total number of places offered at higher education institutions amounted to 278,000 FTE's (excluding commissioned courses) in 2007. This is a reduction of 2.4 per cent compared with the previous year and a decline of almost 9 per cent compared with 2004 when the number of FTE's reached its maximum so far. Compared to the preceding year, the entire decline in 2007 occurred during the spring semester. The number of FTE's during the autumn semester of 2007 was at the same level as for the corresponding semester in 2006, which may indicate that the declining trend in the number of places of the last few years may now have come to an end.



FTE's in 2007. The number of FTE's declined for the third year in succession. Almost all of this reduction occurred during the spring semester. In the autumn semester of 2007 the number of FTE's was at the same level as in the autumn semester of 2006.

The largest of the disciplinary domains is the social sciences which, when law is included, accounts for 30 per cent of the entire number of places. Many of these places are offered in economics subjects. Next in size after the social sciences come the technological subjects with 18 per cent, the humanities with 12 per cent and the natural sciences with 11 per cent of the total number of places.

Study outcomes can be calculated in terms of annual performance equivalents. This is calculated by dividing the total number of credits awarded by the number corresponding to a year of full-time study. For 2007 this figure was 227,500 annual performance equivalents. The ratio of this figure to the total number of FTE's is 0.82, which gives a performance indicator of 82 per cent. During the entire period since 1993 for which comparable data are available the performance indicator has remained at the same level.



Qualifications awarded. For the first time since the mid-1990s the number of qualifications awarded declined, but this was from a very high level. The large total number of qualifications is due to the fact that many students are awarded more than one qualification. The number of first qualifications awarded was almost 43,000 in 2006/07.

Health care, teaching and the fine, applied and performing arts are the domains with the highest performance indicators. In these subjects courses normally form part of a programme. The performance indicators are lowest in the humanities, where students make their own combinations of independent courses.

Decline in the number of qualifications but at a high level

For the first time since the mid-1990s the number of qualifications awarded declined during the academic year of 2006/07. This is, however, a small decline and in all 58,000 qualifications were awarded during the year. Of these, 42,700 were the first academic qualifications awarded. The number of qualifications awarded has declined because there have been fewer students in recent years. It is not, in other words, the result of increasing unwillingness among students to complete their degree programmes or any change in the results of their studies. From this point of view, the reduction is by no means remarkable but it still reverses the tendency that has prevailed for more than ten years for these figures to rise markedly.

During the last decade the number of qualifications awarded has risen by 45 per cent. This means that more and more individuals with academic qualifications are entering the labour market and today about 40 per cent of a population cohort have been awarded a higher education qualification.

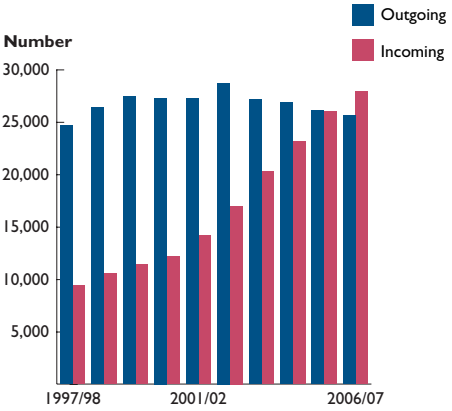
Among programmes with large numbers of graduates there was decline in the number of nursing qualifications and master's and bachelor's degrees or diplomas in engineering awarded. There was, however, a slight rise in the number of those graduating with teaching qualifications. The numbers receiving diplomas or bachelor's degrees in engineering have been declining in recent years. On the other hand, 2006/07 was the first year since the mid-1990s in which there was a drop in the numbers of nursing qualifications and master's degrees in engineering awarded.

Two-thirds – 66 per cent – of all qualifications are awarded to women. This is a rise of about five percentage points since 1996/97. This means that among those graduating the proportion of women is larger than in the student population as a whole, where they account for just over 60 per cent. This difference can be partly explained by the fact that women more often take programmes that traditionally have high completion rates. This applies above all to teacher training and health care programmes. But in other programmes women are also graduating to a greater extent than men.

Student mobility

There has been a considerable increase in the mobility of students across Sweden's borders during the last fifteen years. This applies to both Swedish students travelling abroad to study and incoming students travelling to study in Sweden. The number of students leaving Sweden has, however, declined to some extent in recent years.

During 2006/07 over 25,600 Swedish students were studying abroad with financial aid from the Swedish National Board for Student Aid (CSN). This figure has hovered around 26,000 since 1997/98. The number of students travelling to Sweden has risen threefold during the same period and in 2006/07 there were almost 27,900 students from other countries in first and second level higher education programmes in Sweden. Overall this means that the number of students coming to Sweden is now larger than the number travelling abroad.



Incoming and outgoing students. For the first time there were more students coming to study in Sweden than those leaving Sweden to study abroad. Almost 28,000 students from other countries were studying in Sweden in 2006/07 – three times more than ten years ago.

Country	Number of Swedish students abroad	thereof on exchange programmes
Denmark	1,870	105
Finland	212	34
Iceland	43	26
Norway	638	61
Nordic countries	**2,763**	**226**
Belgium	124	70
France	1,484	502
Greece	101	19
Ireland	191	69
Italy	1,034	229
Malta	126	3
Netherlands	430	266
Poland	563	42
Portugal	57	33
Romania	67	4
Russia	101	13
Switzerland	480	213
Spain	2,064	378
United Kingdom	4,701	545
Czech Republic	128	36
Germany	1,257	726
Hungary	304	21
Austria	310	212
Other European countries	197	21
Europe excl. Nordic countries	**13,719**	**3,402**
Egypt	44	
South Africa	92	57
Other African countries	67	20
Africa	**203**	**77**
Canada	450	274
Mexico	110	96
USA	4,017	560
Other North and Central American countries	32	10
North and Central America	**4,609**	**940**
Argentina	106	46
Brazil	35	17
Chile	209	45
Uruguay	48	2
Other South American countries	67	22
South America	**465**	**132**
Hong Kong	121	108
Japan	479	186
China	414	61
Singapore	157	130
Thailand	101	42
Other Asian countries	409	164
Asia	**1,681**	**691**
Australia	1,992	405
New Zealand	213	72
Oceania	**2,205**	**477**
Total	**25,645**	**5,945**

Number of students studying abroad with student assistance, 2006/07. Two out of three Swedish students studying abroad do so in Europe. The biggest single host country is the UK, which receives almost a fifth of all Swedish outward students. For exchange students Germany is the biggest host country, with one in eight exchange students.

Fewer Swedes studying abroad

During 2006/07 the number of Swedes taking programmes abroad declined by two per cent in comparison with the previous year. Almost 20,000 Swedes were studying at higher education institutions abroad on their own initiative. In addition there were nearly 6,000 who travelled to study within the framework of an exchange programme on exchanges organised by the institution at which they were registered in Sweden. Of these exchange programmes, the European Union's Erasmus is the largest and it provided support for half of these exchanges.

Spain and Australia waning, Denmark and several countries in Asia in the ascendant

Most often Swedish students studying abroad do so in another European country. Nearly two-thirds of the students travelling abroad go to Europe, mainly the United Kingdom, Spain or Denmark. More and more, however, are opting to study in countries in Asia. Almost 1,700 were studying in Asian countries in 2006/07, which is four times more than in 2001/02, when 400 students travelled to these destinations. This means that the proportion of students travelling to Asia has increased and now amounts to seven per cent.

The United Kingdom and the USA are the largest single host countries, with 18 and 16 per cent of the total number studying abroad. Another 34 per cent choose Spain, Australia, Denmark, France and Germany. Seven countries therefore receive about 70 per cent of the students who travel abroad.

The countries chosen by students have altered over time. The numbers travelling to Australia rose tenfold between 1995/96 and 2003/04, from 300 to just over 3,000. Since then the number has dwindled and in 2006/07 it was under 2,000.

Programmes abroad in medicine and veterinary medicine are attractive

The vast majority of those who study abroad do so for only one or two semesters as part of their programme at a higher education institution in Sweden. Increasing numbers, however, are taking complete programmes or the major part of their programmes abroad. One indication of this is that the proportion of all those studying abroad who have done so for six semesters or more rose from 13 to 16 per cent between 2000/01 and 2006/07.

The numbers of those studying abroad has risen in particular in programmes for which there is keen competition in Sweden. For instance the number studying medicine abroad has risen from 600 to almost 1,800 since 2001/02. During the last five years the number studying veterinary medicine abroad has also risen, from 100 to 330, of whom 180 are taking programmes in Denmark and 50 in Hungary.

International students in Sweden

Ever since the mid-1990s the number of students travelling to Sweden has risen and during 2006/07 amounted to almost 28,000 international students on first and second level programmes in Sweden. On average the rate of increase has been 13 per cent per year and between 2005/06 and 2006/07 the number of incoming students went up by another 9 per cent. This means that the number of international students in Sweden is larger than the number of students travelling from Sweden to study.

This increase also means that international students now constitute a considerably larger proportion of the student population than they used to. This proportion has risen from 3.1 to 7.3 per cent in the last decade.

About 16,700 international students made their own arrangements to study in Sweden. An additional 11,200 were studying at higher education institutions in Sweden within the framework of an exchange programme, most of them in the Erasmus programme.

This means that many Swedish higher education institutions have increased their recruitment of students from other countries, above all those specialising in technology. As a result of this development one student in fourteen in Sweden has come from abroad.

Just under 60 per cent of the 16,700 students who had made their own arrangements to study in Sweden came from Europe and the Nordic countries (this figure also includes those whose country of origin is unknown). Another 30 per cent come from Asia. It is also among students from Asia that the largest increase has taken place. Today there are 5,100 students from Asia who have arranged their own study programme, which is ten times more than in the mid-1990s. The major countries of origin are China, Finland, Pakistan, India and Iran.

Over 11,000 exchange programme students in Sweden

The number of students travelling to Sweden as part of an exchange programme has more than doubled during the last decade. In 2006/07 this number rose by 7 per cent to just under 11,200. This means that there are almost twice as many students coming to Swe-

Country of origin	Number of foreign students in Sweden	thereof on exchange programmes
Denmark	331	153
Finland	1,826	629
Iceland	178	29
Norway	509	158
Nordic countries	**2,844**	**969**
Belgium	256	235
Estonia	103	27
France	1,627	1,353
Greece	200	82
Italy	616	509
Lithuania	217	127
Netherlands	536	477
Poland	501	388
Portugal	131	112
Russia	106	40
Switzerland	319	66
Spain	235	203
United Kingdom	1,051	911
Czech Republic	383	294
Turkey	191	180
Germany	303	135
Ukraine	2,585	2,124
Austria	128	6
Other European countries excl. Nordic countries	389	349
Europe excl. Nordic countries	760	367
Origin unknown within Nordic countries and Europe	**10,637**	**7,985**
Ghana	**5,203**	**0**
Cameroon	140	2
Nigeria	209	0
South Africa	409	1
Other African countries	433	97
Africa	**1,191**	**100**
Bangladesh	453	4
India	884	41
Iran	539	4
Japan	199	111
China	1,596	258
Pakistan	1,177	47
Singapore	163	143
South Korea	148	108
Thailand	159	18
Other Asian countries	593	91
Asia	**5,911**	**825**
USA	390	277
Canada	227	117
Mexico	720	473
Other North and Central American countries	**52**	**8**
North and Central America	1,389	875
Brazil	71	19
Other South American countries	248	97
South America	**319**	**116**
Australia	366	319
Other Oceanian countries	44	35
Oceania	**410**	**354**
Total	**27,904**	**11,224**

The number of incoming students in Sweden in 2006/07. Two of every three of the students travelling to Sweden come from Europe. Germany is the single largest country of origin and accounts for almost one-tenth of the incoming students. The number of incoming students has tripled since the mid-1990s. This rise has been particularly large for Asia, where China is the largest country of origin.

den in exchange programmes as those travelling abroad.

The majority of exchange students come from Europe. In 2006/07 they accounted for 80 per cent of the total and this figure includes the 9 per cent who came from other Nordic countries. An additional 8 per cent came from North America. Between 1997/98 and 2006/07 the proportion of incoming students from Asia has risen most, from just under 2 per cent to more than 7 per cent. In terms of numbers there are now 9 times as many incoming exchange students from Asia as there were in the mid-1990s.

The single largest source countries were Germany, France, Spain, Finland and Italy. Almost half of the incoming exchange students came from these five countries.

The majority of incoming exchange students are young, almost 90 per cent are under 25, and they are considerably younger than the international students who have made their own arrangements to study in Sweden. The gender balance among exchange students is even, in other words 50 per cent are women and 50 per cent men.

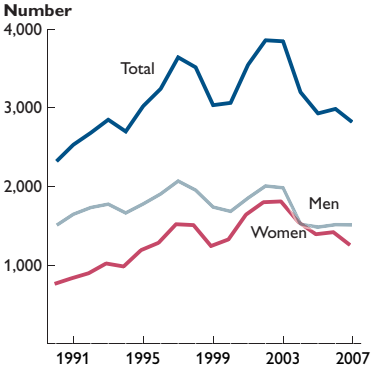
Virtually all these students are taking independent courses, mainly in law and the social sciences as well as the humanities (modern languages) and theology. Three of every five incoming exchange students were taking courses in these disciplines.

Third level programmes

For the third year in succession, the number entering third level programmes is 25 per cent below its previous peak during the years of 2002 and 2003. The gender balance continues to be even, although the proportion of women declined in 2007 to 46 per cent after lying between 48 and 50 per cent during the period 2001–2006. There are major variations in the gender balance for different subject areas like those in first and second level programmes. Men predominate in technological subjects and the natural sciences (74–60 per cent) while there is a predominance of women in the social sciences and medicine (56–59 per cent).

As in first and second level programmes, there has been a major rise in the number of international entrants during the last decade and they now constitute 27 per cent of all those beginning doctoral programmes.

The reduction in the number of entrants means that the total number of doctoral students is declining. Since the autumn of 2003 there has been a drop of 15 per cent and in the



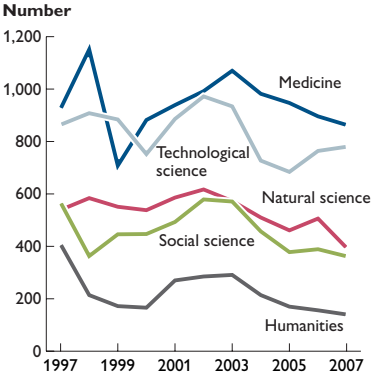
New entrants to third level programmes. The number of entrants to postgraduate programmes in 2007 corresponds in level to the two previous years, 2005 and 2006. Developments during the 1990's and up to 2007 display both rising and falling trends. The gender balance that was attained in 2004 seems to have reversed as more men than women began third level programmes in 2007.

autumn of 2007 there were 17,250 active doctoral students.

Just under 3,000 new entrants to third level programmes

In 2007 there were 2,800 new entrants to doctoral programmes. This is on a par with the two immediately preceding years of 2005 and 2006.

Over a longer perspective – 1990 to 2007 – the number of new entrants has developed unevenly. There was a rising trend during most of the 1990s which reached its peak in 1997 and then declined after the 1998 reform of doctoral studies, which, for instance, introduced the requirement that funding had to be arranged for the entire period of study before admission. The number of new entrants quickly began to rise again to reach a new peak during 2002 and 2003. The ensuing decline has now evened out at the current level of just below 3,000. This drop is probably linked to the adaptation of the number of new entrants at the higher education institutions to their economic resources, while at the same time they have been improving the possibilities of post-doctoral careers in higher education for recently qualified PhDs.



New entrants to third level programmes per discipline (the five largest). During the last decade medicine and the technological sciences have together admitted more students than the humanities, social and natural sciences combined. In the humanities the number of admissions fell for the fourth year in succession.

Developments have, however, varied in different disciplines. Over the three most recent years, when on the whole developments have stabilised, it is mainly in the social sciences that similar patterns can be discerned. One can also see that the decline in admission figures in the humanities, already fairly low, has continued during both 2006 and 2007, while admissions to the technological sciences are growing in number. Medicine is still, however, a somewhat larger discipline than the technological sciences. Together these two areas accounted for 58 per cent of the admissions.

Trend reversed – more men admitted than women

More men began doctoral programmes in 2007 than women: 1,500 men and 1,300 women. This means that women account for 46 per cent, which is lower than in the previous year and can be seen as the reversal of a trend. During the period 2001–2006 the proportion of women varied between 48 and 50 per cent. Previously there had been a smaller proportion of women.

Analysis of the different disciplines reveals, however, that more women began doctoral programmes in medicine (59 per cent) and in the social sciences (56 per cent) than men. Men predominate to a large extent in technology – where there are only 26 per cent women. There are also more men than women in the natural sciences (40 per cent women). There have often been more women than men in the humanities but in 2007 the gender balance was in principle even with 51 per cent women and 49 per cent men.

Even though women are heavily underrepresented in the technological sciences, a relatively large number of women are undertaking doctoral programmes in technology. The explanation is that is a very broad discipline. In 2007, 200 women were admitted to research programmes in some technological subject, as many as those admitted in social science subjects and almost three times as many as those admitted in the humanities (70 women).

As the balance of women and men varies in the different discipline, on the whole the increasing imbalance is linked to the extent to which the various disciplines expand or contract. In technology, where men predominate, more doctoral students have been admitted in the last few years, while there has been a decline in medicine, which is a large discipline with a preponderance of women.

More than one new entrant in four comes from abroad

Of those admitted to postgraduate programmes at higher education institutions in Sweden during 2006/07, 27 per cent came from some other country. This is a slight increase compared to the previous year, when 23 per cent of those entering doctoral programmes were international students. Ten years ago, in 1996/97, international students accounted for 14 per cent of these admissions.

The proportion of international students in first and second level programmes is at more or less the same high level as for third level programmes. But there is one important difference between these two student categories. The international research students have been admitted to third level programmes and therefore intend to complete an entire course of study for the award of a Swedish licentiate degree or PhD. A large proportion of the international students in first or second level programmes only study in Sweden for one or two semesters.

The gender balance among international students admitted to third level programmes is not the same as for other research students and men predominate (59 per cent men and 41 per cent women). This ratio has been relatively stable for the last decade.

Few with working class backgrounds

Relatively few of those admitted to third level programmes have working class backgrounds. In 2004/05, 12 per cent of those admitted came from working class backgrounds compared to 25 per cent of the new entrants to first and second level programmes. The proportion of those with working class backgrounds among new entrants to doctoral programmes has remained more or less constant at around 10–12 per cent for just over a decade now.

One explanation of this variation in social background between the different levels lies in the different first level programmes chosen by students from different social strata. Students whose parents are salaried employees and who begin to study in higher education opt to a greater extent for longer programmes that offer greater preparation for doctoral studies than students with working class backgrounds.

Foreign background

There is a considerably higher representation of individuals with foreign backgrounds, i.e. those with foreign background who are resident in Sweden, among doctoral students than of individuals with working class backgrounds. About 15 per cent of those admitted to third level programmes in 2006/07 had for-

eign backgrounds (were born abroad or had two parents born abroad). The corresponding figure for those admitted to first level programmes was 17 per cent.

Funding for doctoral students

Doctoral studies can be funded in different ways. 55 per cent of the students are employed on doctoral studentships while the others fund their studies through some other form of employment in or outside their higher education institution, through a grant or a scholarship.

There are major variations between the different disciplines. Some differences seem, however, to be "natural", for instance only in medicine can research students support themselves by working as doctors (14 per cent of those admitted in medicine). In the technological sciences many doctoral students are employed by their higher education institutions (doctoral studentships) from the beginning of their programme (54 per cent). Here research students in medicine provide the other extreme as only 13 per cent are offered doctoral studentships on admission.

What is also characteristic of the technological sciences is that 11 per cent of those admitted to doctoral programmes are employed by companies. These research students are employed by commercial companies that pay their salaries and they are able to undertake their doctoral studies within the framework of their post.

International exchanges at doctoral level

During 2007 just over 1,000 doctoral students travelled abroad to take part in a student exchange of at least three months. This is the highest figure for the 21st century but still on a par with previous years, as there have only been moderate variations. These doctoral students have all been admitted to third level programmes in Sweden and spent some time in some other country as part of their programmes.

At the same time Sweden was the host country for just over 800 exchange students at doctoral level (these are students who have *not* been admitted to third level programmes in Sweden). Since 2000 this figure has varied from about 700 to just under 1,000 doctoral students each year.

For just under half of those travelling abroad and of those coming to Sweden the exchange takes place with one of the EU countries. In addition the USA is a relatively major host country for those travelling from Sweden – the destination of about one in five. Considerably fewer come from the USA to Sweden (about 6 per cent).

The single largest discipline to which doctoral students are taking part in international exchanges is technology. In 2007 this discipline accounted for 31 per cent of those leaving Sweden and 29 per cent of those who arrived here.

2,800 PhD's

In 2007 the number of PhD's awarded reached the highest level ever and 2,800 degrees were awarded. The numbers awarded during the last five years have also been at this high level. It is very probable that the number of degrees awarded in postgraduate programmes will exceed the government's target for the period of 2005–2008. With the current level of admissions to third level programmes, however, the number of degrees awarded will decline during the period after 2008.

Nevertheless, the total number of PhD's and licentiate degrees awarded declined for the second year in succession. This is entirely the result of a drop in the number of licentiate degrees awarded as there has been no decline in the number of PhD's.

The number of PhD's awarded rose in both medicine and the technological sciences during the first few years of the 21st century. Since then the figure has evened out in the technological sciences and in medicine there has even been a noticeable decline during the last year. In the other disciplines the number of PhD's awarded has risen and fallen during the 21st century, although within specific intervals for each discipline. In 2007 medicine was the discipline in which the largest number of PhD's were awarded, followed by the technological sciences.

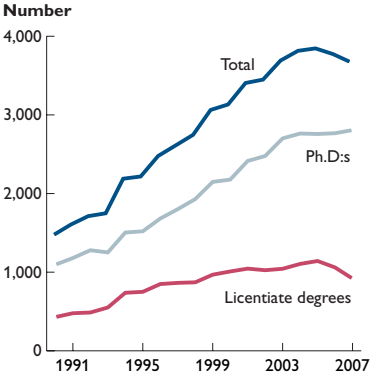
The proportions of women and men receiving third level degrees have never been entirely in balance and this still applies: men continue to predominate to some extent. According to the figures for 2007 the ratio of women and men awarded PhD's is 47:53 and 40:60 for those awarded licentiate degrees.

Staff

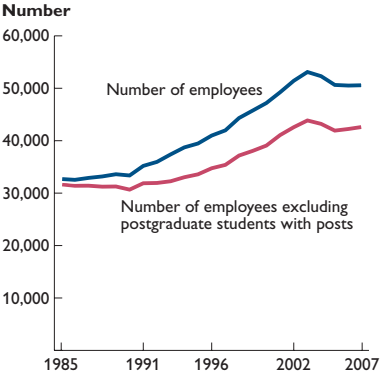
The numbers employed in higher education are rising slowly after dropping in the period 2004–2005. In 2007 staffing levels were at the same level as before the decline, i.e. 64,300 individuals were employed at higher education institutions in Sweden. This rise has largely involved those employed on fixed-term contracts, which means that only minor changes can be seen in staffing resources measured in terms of FTE's (when the total number of hours worked are converted into full-time posts). In 2007 this figure was 50,600 FTE's. If doctoral studentships are excluded, the total is 42,600.

Almost half teach and undertake research

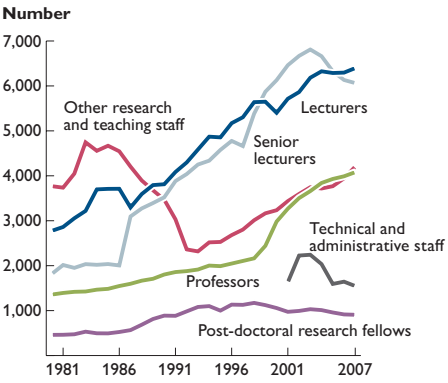
Almost 45 per cent of all those employed at higher education institutions are undertaking research or teaching. Other members of the staff are administrators, technical staff, librarians or temporary employees. In 2007 the total number involved in research and teaching amounted to 23,600 FTE's, which is a slight rise compared to 2006.



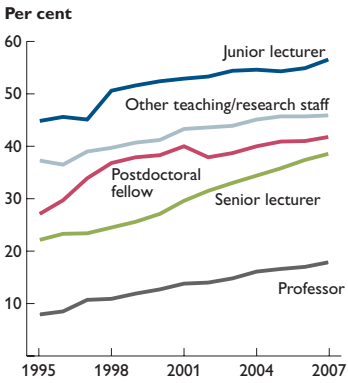
Number of third level degrees. The number of licentiate degrees awarded has declined for two years in succession and in 2007 it reached the lowest level in the 21st century. At the same time the award of PhD's peaked in 2007 at 2,800, more than ever before.



Numbers employed in higher education institutions, 1985–2007 (FTE's). After rising since the beginning of the 1990s the numbers employed in higher education institutions declined during 2004 and 2005, but have then slowly risen again.



Research and teaching staff at higher education institutions, 1980–2007 (excluding doctoral studentships). During the latter half of the 1990s the number of professors and lecturers rose appreciably. The major increase in the number of professors can be explained by the promotion reform. The rise in the number of lecturers is largely due to the nationalisation of the colleges of health sciences.



Proportion of women among research and teaching staff, 1995–2007. The proportion of women is rising slowly. Since 1995 the proportion of women professors has risen from 8 to 18 per cent, and of senior lecturers from 22 to 39 per cent. The increase among lecturers can largely be explained by the incorporation of the colleges of health sciences in the national higher education system.

The largest categories of staff involved in research and teaching comprise senior lecturers and lecturers, each accounting for 27 per cent. They are followed by professors (17 per cent) and the group of other research and teaching staff (18 per cent). Technical and administrative staff whose tasks involve research and teaching (e.g. research technicians and project managers) account for 7 per cent. Finally 4 per cent of the staff involved in research and teaching are post-doctoral research fellows and 2 per cent either guest or part-time fixed-term lecturers.

The largest group of employees can be found in the social sciences with 5,600 FTE's. Next come the technological sciences with 4,200 FTE's, and then the humanities and religious studies, medicine and the natural sciences which each employ about 3,000 FTE's.

Uneven staff gender balance

More or less the same number of men and women are employed in higher education, but if the figures are broken down by staff category and discipline the gender balance is very uneven. A very large proportion of the women belong to categories not involved in research or teaching, for instance they constitute 89 per cent of the cleaning staff, 79 per cent of the administrative staff and 73 per cent of the librarians.

On the other hand women account for a smaller proportion of the research and teaching staff – 42 per cent. The lowest proportion of women can be found among the professors (18 per cent) although for several years this figure has been rising by about one percentage point each year. The only category of research and teaching staff where women are in the majority consists of the lecturers (57 per cent).

The proportion of women professors is low in all age groups, even the lower ones. One reason is that women are older than men when they attain professorial rank. Among senior lecturers, post-doctoral research fellows and lecturers the proportion of women is somewhat higher for older age groups than for younger ones. In the other staff categories the distribution of women and men is more or less the same for all age groups.

Slowly a more even gender balance is developing among those employed in higher education. Where research and teaching staff are concerned, greatest progress has been made since 1995 among senior lecturers and post-doctoral research fellows where the proportion of women has risen by 16 percentage points in the first case and 15 in the second. Among professors the proportion of women has increased by 10 percentage points.

Analysis of appointments to the various staff categories shows that the proportion of newly recruited women is still low among professors. Only a quarter of the newly-appointed professors are women and they attain professorial rank later in life than men. Even so there has been an increase in the appointment of women during the last ten years, both where professors are concerned and also for senior lecturers and post-doctoral research fellows. The proportion of women among newly appointed professors has risen from 14 per cent in 1995 to 26 per cent in 2006. Almost half of the newly recruited senior lecturers are women, a rise from 29 to 52 per cent between 1995 and 2006. And for newly recruited post-doctoral research fellows the proportion of women rose from 29 to 38 per cent.

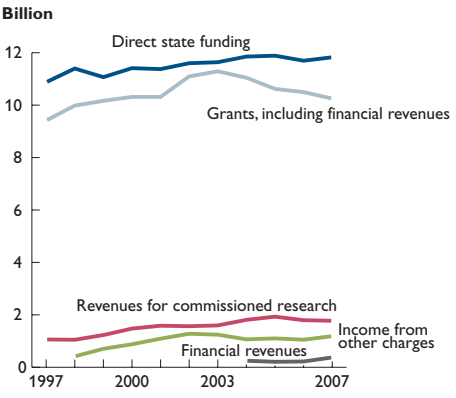
Research funding

Funding for research and third level programmes consists mainly of the direct government funding allocated to the higher education institutions by the Riksdag and research grants from a variety of funding agencies, of which most comes from the public purse.

In 2007 the total revenues of the higher education institutions for research and third level programmes amounted to SEK 25.4 billion. In real terms this is an increase of SEK 150 million, i.e. less than one per cent.

Direct government funding to the higher education institutions for research and third level programmes amounted altogether to SEK 11.8 billion in 2007, a rise of SEK 130 million, i.e. 1.1 per cent.

The total revenues of the higher education institutions from external funding agencies were SEK 13.2 billion in 2007, which can be compared to just over SEK 13.3 billion in 2006 (in 2007 prices). As direct state funding has risen somewhat while external funding has declined, the proportion of external finance has dropped to 52.7 per cent compared with 53.3 per cent in 2006.



Different forms of revenues for research and third level programmes, 1997–2007 (2007 prices). Altogether revenues have risen by SEK 4 billion since 1997, the bulk of this for externally funded activities.

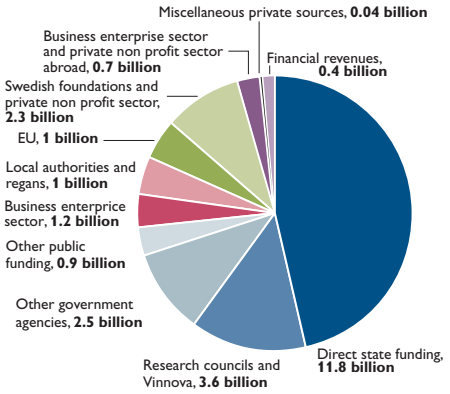
Major growth in public funding over a ten-year period

In 1997 the revenues of the higher education institutions for research and third level programmes totalled SEK 21.3 billion (2007 prices). Since then revenues have risen by SEK 4 billion in real terms. Direct government funding has risen by just under SEK 1 billion or 9 per cent, while revenues from external funding agencies have risen altogether by SEK 2.7 billion or 26 per cent. In addition, financial revenues totalling just under SEK 400 million should be included as they were not accounted for separately in 1997. The rise in revenues mainly occurred at the beginning of the period.

Public sources of funding account for almost all of this increased revenue for the sector since 1997. Then, just as in 2007, 82 per cent of these revenues came from the public purse. The rise in revenue that has taken place has not, therefore, had any significant impact on the balance between public and private funding.

Commissioned research forms only a small proportion of the research undertaken at the higher education institutions. The extent to which the commissioning bodies can influence the planning and implementation of the research and their right to make use of the results are regulated by contracts. In all, revenues for commissioned research amounted to just under SEK 1.8 billion in 2007. In view of the development of costs, this is a slight drop compared to the previous year.

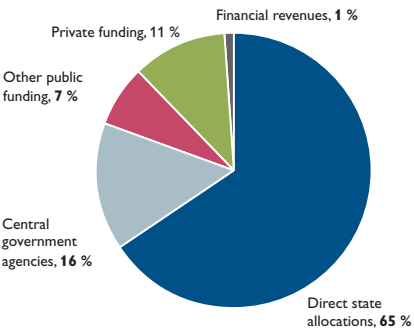
Each of the major universities receives revenues from commissioned research that total 100–400 million SEK. Swedish companies account for 32 per cent of these revenues. A significant number of commissions come from the public sector through government agencies, local authorities and county councils, which account for a total of 45 per cent of the revenues for commissioned research.



Research funding. During 2007, 82 per cent of the revenues of the higher education institutions for research and postgraduate programmes came from various public funding agencies.

International comparison of research resources

Sweden is at the head of the EU league in terms of the funds invested in research and development (R&D) in relation to the GDP. In 2006 Sweden devoted SEK 108 billion to R&D, which is 3.83 per cent of its GDP. This is the highest figure in the whole of the EU



Operational funding of the higher education institutions in 2007. The public sector accounted for 88 per cent of the total revenues of the higher education institutions, which amounted to SEK 47.4 billion in 2007.

and of the OECD countries only Israel devotes a higher proportion of its GDP to R&D. In Sweden companies account for most of this investment. A total of 75 per cent comes from the commercial sector, the bulk of this from a few major companies. In Sweden most of the publicly funded research is undertaken in higher education institutions and not at research institutes, as is often the case in other countries. Of all the resources devoted to R&D in Sweden, 20 per cent goes to the higher education institutions.

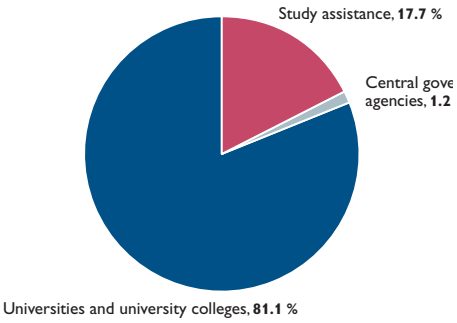
Funding

In 2007 the revenues of the higher education institutions totalled SEK 47.4 billion. In fixed terms revenues have declined by 1.6 per cent compared to 2006. This drop is due to decreasing student numbers for the third year in succession and the consequent reduction in the revenues of the higher education institutions.

Just under half of the operations of the higher education institution comprise first and second level programmes (46 per cent) and just over half (54 per cent) consist of research and third level programmes.

80 per cent of the funding of the operations of the higher education institutions comes from the government, most of it (65 per cent) in the form of direct government funding. An additional 7 per cent comes from other public funding agencies, which means that just under 88 per cent of all the funding comes from the public purse. The remainder comes from private funding agencies and financial revenues. The proportion of private funding has lain around 11–12 per cent in recent years.

The operational expenditure of the higher education institutions totalled SEK 47 billion in 2007, which equals 1.53 per cent of Sweden's Gross Domestic Product (GDP). In the last few years there has been a considerably larger increase in the GDP than in the development of expenditure in the higher education sector and therefore its proportion of the GDP has been declining since 2004. The EU's target is to allocate two per cent of the GDP to higher education in 2010. According to the latest figures, which apply for 2004, the current EU figure is 1.3 per cent, which can be compared to the USA, where 2.9 per cent of the GDP is devoted to higher education.



Higher education sector expenditure in 2007. Total expenditure in the sector amounted to SEK 58 billion, of which 81 per cent was by the higher education institutions. Student finance was another major item.

The total expenditure on the higher education sector also includes expenditure for student finance and the operational costs of a number of central agencies. Student finance cost SEK 10.3 billion in 2007 and the central agencies cost SEK 712 million. This means that the total expenditure in the sector amounted to SEK 58 billion, which corresponds to 1.9 per cent of the GDP.

88 per cent public funding

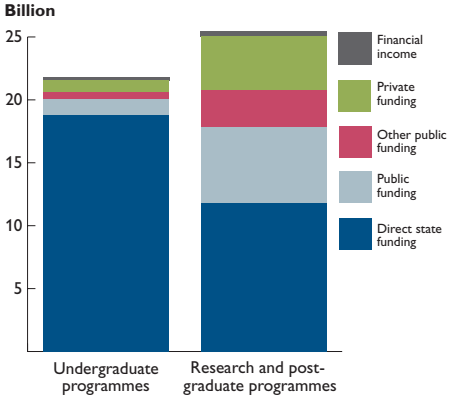
Government funding allocated directly by the Riksdag to the higher education institutions accounts for SEK 30.7 billion of their total revenues of SEK 47.4 billion. This proportion has been rising slightly for a number of years because the rise in revenues from external funding agencies has been lower than for government funding. In 2007, however, direct government funding to the higher education institutions has declined in fixed prices, while there has only been a marginal reduction in the revenues from external funding agencies.

Most of the funding for first and second level programmes (86 per cent) comes directly from the government, while less than half of the funding for research and third level programmes comes from the same source. For this reason the proportion of direct government funding is considerably higher for the new universities and higher education institutions focusing on first and second level programmes, whereas the proportion of external funding is greater at the older universities, where research plays a more important role.

In addition to the direct government funding, an additional SEK 7.4 billion from the public purse is allocated to the higher education institutions through various government agencies. This means that a total of SEK 38.1 billion, or 80 per cent of the funding, comes from the government. In addition SEK 3.4 billion comes from other public funding agencies, such as local authorities and county councils, public research foundations and the EU. Altogether therefore 88 per cent of the funding for the operations of the higher education institutions comes from the public purse. There has been no change in this proportion since the previous year.

SEK 74,300 per FTE.

According to the income statements of the higher education institutions, their expendi-



Funding for the various operational areas. 86 per cent of the funding for first and second level programmes takes the form of direct government allocations while the funding for research and third level programmes comes from a variety of sources. Just under half is allocated directly by the government.

ture on first and second level programmes in 2007 amounted to SEK 20.7 billion (excluding commissioned courses). In 2007 the student population comprised 278,200 FTE's, which means that the average cost per student at the higher education institutions was SEK 74,300. Total government expenditure on students also includes student aid and therefore averaged SEK 111,200 per FTE.

Government allocations to higher education institutions are based on per capita amounts per FTE and full-time performance equivalent for the different disciplines. The higher education institutions are not bound by these levels when allocating funding within their own organisations. The per capita allocation levels play a significant role, however, in determining internal funding levels. They are lowest for the humanities, social sciences, law and theology, which together account for 42 per cent of the total number of FTE's. The highest per capita funding goes to programmes in the fine, applied and performing arts, which altogether account for just over 2 per cent of the total number of FTE's.

Labour market

Irrespective of the state of the economy, unemployment is highest for those in the labour force who only have qualifications from primary education or the equivalent. Unemployment is lower for those with secondary qualifications and lowest for those with qualifications from higher education. During 2007 unemployment among university graduates was 3.2 per cent according to the labour market surveys undertaken by Statistics Sweden. For those with secondary qualifications the figure was 4.3 per cent and for those with only primary schooling 7.6 per cent.

Rising establishment rates

Of the students who graduated from higher education during 2004/05, 73 per cent had established themselves in the labour market in 2006, i.e. twelve to eighteen months after the award of their degrees. This was just over two percentage units above the corresponding proportion one year earlier.

The greater rate of establishment for those with higher education qualifications in 2006 than in 2005 is the result of improvements in the labour market during the period, above all in the private sector.

These figures show that the declining trend for several years in the rate of establishment for those with master's and bachelor's degrees or diplomas in engineering – in particular those specialising in information and communication technology – has been transformed into a relatively substantial rise during 2006. Establishment rates for graduates in law and from master's programmes in economics were also considerably higher in 2006 than in the previous year. This also applies to those qualify-

ing in architecture and in engineering for the building sector.

Rapid establishment with health care qualifications

Students of medicine and specialist nursing are two major groups that rapidly establish themselves in the labour market. Other large groups that establish themselves quickly are those with master's degrees in engineering and qualified nurses, even though the proportion of engineering masters established in the labour market from twelve to eighteen months after graduating is lower than it was at the end of the 1990s.

The statistics for 2006 indicate that several major groups of graduates have establishment rates that lie between 70 and 90 per cent twelve to eighteen months after graduation. One large group where there is a negative deviation from this pattern consists of graduates from programmes in the fine, applied and performing arts. Only 33 per cent of this group has found a foothold in the labour market twelve to eighteen months after graduation. Those with bachelor's and master's degrees in the humanities also display a relatively low rate of establishment, as is the case with those awarded bachelor's or master's degrees in the social sciences and natural sciences. Twelve to eighteen months after graduation, 39 per cent of those awarded master's degrees in the humanities and theology had not yet entered the labour market or only had only gained a weak foothold, i.e. their earnings were either low and/or they were unemployed.

The rate of establishment for those graduating with master's degrees, irrespective of subject orientation, is somewhat higher than for those with bachelor's degrees, which suggests that in certain cases longer programmes make it easier to enter the labour market.

Establishment with research qualifications

As a rule, those awarded PhD's find a foothold in the labour market relatively quickly. Just under 2,500 research students graduated with PhD's in 2002 and 79 per cent had established themselves in the Swedish labour market after three years. The difference in the rate of establishment of women and men was only 1 percentage point: 80 per cent of the women and 79 per cent of the men had found employment in 2005.

There are relatively large variations in the rate of establishment for the different disciplines. It takes least time to gain a foothold in the labour market for those with qualifications in the technological sciences, of whom 86 per cent were established three years after graduating. They are closely followed by the social sciences and medicine. In both these groups 85 per cent were established three years after graduation. Those with qualifications in the natural sciences had the lowest rate of establishment, 67 per cent. The rate of establishment for natural scientists is, however, reduced by the large number who undertake post-doctoral studies.

Just over half of those with PhD's who had established themselves in the labour market were employed in the public sector three years after graduation: generally this means in higher education. The private sector employed 31 per cent of those graduating with PhD's. This sector includes not only privately owned companies but also those owned by the government or local authorities as well as organisations. About 18 per cent of those with PhD's

were employed by local authorities. Most hospitals, in which those qualifying in medical subjects are employed, are run by local health authorities.

In the last decade, the number of PhD's awarded has more or less doubled, which means that every year the number entering the labour market with research qualifications is considerably larger than of those retiring.

Major contribution to the labour market

Overall about 40,000 graduates from higher education are entering the labour market each year – about 40 per cent of an age cohort. In addition a relatively large number of students leave higher education institutions without taking a degree. This group includes about 10,000 individuals who have completed at least three years of study in higher education and are therefore in many respects comparable with those awarded degrees. In some cases the offer of a job in the field in which they intend to work is the main reason why students give up their studies without taking a degree. In addition, each year Sweden has via immigration a net surplus of about 5,000 individuals with post-secondary training.

Each year, therefore, Sweden is gaining a significant input of graduates from higher education. The proportion of graduates among those retiring is just under half as large. As a result, as each new cohort enters the labour market the competence of the labour force is being upgraded.

On average, therefore, the numbers graduating from higher education are more than adequate to fill the gaps left by graduates leaving the labour market.

Balance between supply and demand

In the short term the state of the economy has a major impact on the balance in the labour market. But in the long term, other factors such as the development of different sectors, skill requirements, retirement and other forms of mobility affect the demand for different groups of graduates. On the basis of assumptions about the development of these factors, each year the Swedish National Agency for Higher Education and Statistics Sweden produce a long-term assessment of the future balance in the labour market for about thirty different groups of graduates.

For about one-third of these groups these estimates indicate a balance or relatively good balance between the supply of qualified individuals and labour market demands. This applies, for instance, to law graduates, theologians and architects. Otherwise there are manifest risks of either a surplus or shortage of graduates unless changes are made in the number of places offered in different programmes.

Risk of shortages can arise for groups of graduates where large numbers of retirements can be expected in the next decade. This applies, for instance, in medicine, dentistry and for many of the other groups with qualifications in health and social care, certain groups of teachers and engineers – above all those with bachelor's degrees or diplomas. Moreover it is also difficult to replace several of these groups with graduates in related areas, in particular, of course, in the health care professions with their specific professional status requirements.

Where medicine and dentistry are concerned shortages already exist, and a large

proportion of new recruitments to the medical profession involve graduates from other countries.

In the schools there are also relatively large imbalances. There is a risk that the current shortage of pre-school teachers, after-school teachers, special teachers and vocational teachers will worsen in the future. Where pre-school teachers and after-school teachers are concerned, large numbers are qualifying in these areas but today many of them then opt to work in the junior schools. Estimates suggest however that in contrast to these groups of teachers there is likely to be a surplus of qualified secondary and upper-secondary teachers.

Evaluations of higher education

In 2001, at the behest of the Government, the National Agency for Higher Education started an extensive round of national evaluations of subjects and programmes. This year's evaluations completed this round so that now altogether 1,700 higher education programmes have been assessed.

These evaluations have enhanced quality in a number of ways, not least when entitlement to award degrees has been called into question. Follow-up after twelve months has shown that in virtually every case the higher education institutions have taken measures to remedy the shortcomings identified or have themselves opted to discontinue the programme concerned.

Follow-up that has taken place three years after publication of the evaluation reports has also shown that the evaluations make an impact. In the vast majority of cases the higher education institutions have adopted the recommendations made by the panels of assessors about improvements in the quality of the programmes.

New national quality assurance system

Implementation of the National Agency's new quality assurance system began in 2007. In developing this new quality assurance system the aim has been to combine experiences from the previous system with the new ideas about quality assurance and quality development that have recently been mooted in various national and international contexts.

The most important change involves a shift of focus that places greater responsibility on the higher education institutions for qual-

ity assurance, which means that the National Agency's external evaluations of the quality of subjects and programmes can concentrate on a smaller number of in-depth programme appraisals. These will be undertaken after the assessment has been made that there is a risk that good standards are not being maintained at the higher education institutions selected.

The new quality assurance system comprises the following five components that interact with and support each other.

Audits of the quality assurance mechanisms at the higher education institutions,

The audits of the higher education institutions' quality assurance mechanisms will include every organisational level at the institutions. From two to six areas at each institution will be selected for in-depth appraisal that can provide a picture of way in which quality assurance procedures are applied. All institutions will be audited during the period from 2008 to 2012.

Evaluation of programmes

Programme evaluations will continue to be organised on the basis of a six-year plan. These evaluations will consist of three phases.

Initially the National Agency, in cooperation with subject experts, will produce an overall national picture on the basis of information supplied by the higher education institutions. This information will consist of simplified self-evaluations, programme and course syllabuses and internet questionnaires addressed to students and teachers. More stringent demands will be made of the quantitative data submitted. This information will be compiled to provide quality indicators.

In the second stage, a number of individual programmes will be selected for in-depth appraisal. The quantitative quality indicators will play an important role in this selection.

In the third stage, the programmes selected for in-depth appraisal will be evaluated using the same methods as previously with panels of external assessors and site visits.

Appraisal of entitlement to award degrees

Accreditation of programmes will continue to be an important element in the quality assurance system. In addition to the normal extent of these appraisals, during 2007 a number of new applications were submitted as a result of the new qualification structure. These involved applications for entitlement to award master's degrees, the new master's programme in economics as well as a large number of qualifications in the fine, applied and performing arts.

One-third of the applications for entitlement to award master's degrees were rejected. These decisions were based on lack of qualified teachers and teaching capacity or shortcomings in the academic environment which would not enable higher education institutions to offer teaching with close links to third level programmes in the area for which the application was made. Two-thirds fulfilled these requirements but half of them will be monitored after twelve months to ensure that standards are maintained in these programmes.

Only six higher education institutions – the universities of Göteborg, Linköping, Lund, Stockholm, Växjö and Umeå – met the requirements for entitlement to award a master's degree in economics. The institutions whose applications were rejected were unable

to offer the breadth or content required in the programme and/or revealed shortcomings in the qualifications of the teachers and teaching capacity, above all in the accounting specialisation.

Thematic evaluations and studies

The National Agency will continue to undertake national thematic evaluations of areas that are central to the quality of higher education. Last year saw follow-up of the earlier evaluations of the internationalisation of first, second and third level programmes as well as the interaction of the higher education institutions with the wider community. Thematic studies are also undertaken with the intention of enhancing knowledge of various phenomena.

Distinguishing centres of educational excellence.

The nomination of centres of educational excellence, intended to stimulate quality development and provide inspiration for others, is a new feature of the quality assurance system. In the first round, 26 applications were submitted by 12 higher education institutions. After appraisal by an international panel of experts on the basis of the applications and site visits, five of the applicants were found to fulfil the stringent requirements. These are the vehicle engineering programme at the Royal Institute of Technology, the programme in medicine as well as the automatic control undergraduate studies constellation at Linköping University, the programme in odontology at Malmö University College and the department for historical studies at Umeå University. All five were able to demonstrate clearly and convincingly that they were preeminent and maintained very high standards.

International perspectives

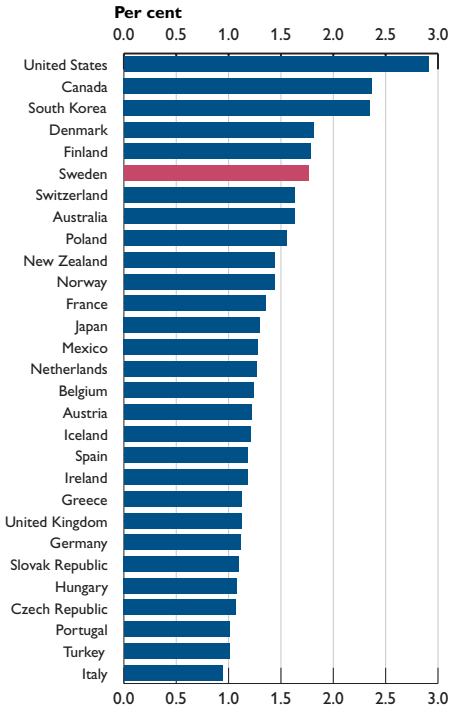
« Ida Rödén

Flygövning 1 [*Flying practice 1*]

RAISING EDUCATIONAL STANDARDS as means of attaining competitiveness and growth has been on the agenda for more than fifteen years – in Sweden and internationally. The impact on educational statistics is clear with student populations that have doubled in both Sweden and in several comparable countries.

Sweden ranks high according to several of the indicators used in the OECD to describe the relationship of the gross domestic product (GDP) to the resources devoted to education and research. For several years the USA, Canada and South Korea have been devoting the largest share of their GDP to the higher education sector among the OECD countries. These range from 2.4 – 2.9 per cent. They are followed by Denmark, Finland and Sweden with 1.7 – 1.8 per cent (these figures apply to 2004). In calculating this indicator all the resources allocated to both education and research at higher education institutions are included as well as supporting functions. The indicator is therefore influenced by the way research is organised in different countries. Higher values are given to countries with major research undertakings in their higher education sectors and vice versa.

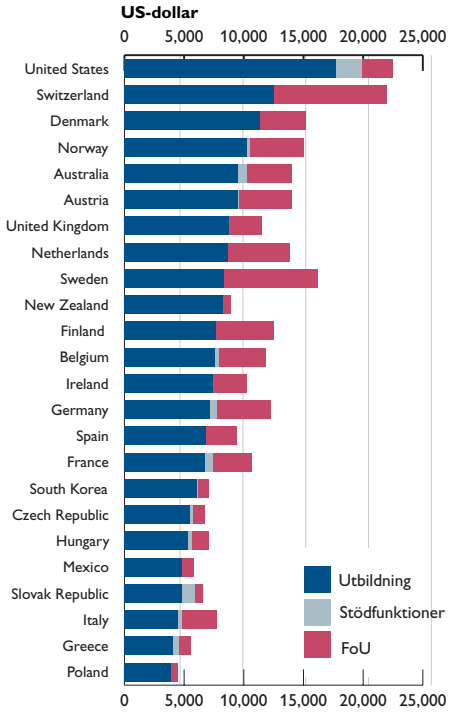
The OECD also accounts for the cost per student in a number of countries, divided into expenditure on education, research and supporting services. This last item comprises student accommodation etc, which in some countries is funded via the higher education institutions. This indicator reveals that for Sweden about half of the expenditure in the higher education institutions concerns research and third level programmes. In other countries research and development (R&D) is undertaken to a larger extent by institutes that are not part of the higher education sector. Among the countries providing data for this indicator, the USA, Switzerland, Denmark and Norway have the highest cost per student. They are followed by Australia, Austria, the UK, the Netherlands, Sweden and New Zealand – all with more or less the same high educational expenditure per student.



Costs of higher education as a proportion of the GDP in 2004. The USA, Canada and South Korea are the countries that devote the largest proportion of their GDP to higher education. They are followed by the Nordic countries together with Switzerland, Australia, Poland and New Zealand. These costs include research at the higher education institutions but not expenditure on student finance.

The expansion of higher education

Many countries expanded their higher education systems during the 1990s. Between 1995 and 2004 the number of students in higher education rose on average by 49 per cent in the OECD countries. For Sweden this rise was 52 per cent. This means that the expansion of



Higher education expenditure per student in 2004. When Sweden's relatively high expenditure on R&D at higher education institutions is discounted, the amount spent per student in higher education in Sweden is nine per cent above the OECD average. This expenditure is accounted for in USD with the differences in cost levels in the different countries taken into account.

higher education that began in the early 1990s also continued during the second half of the decade but not at the same rate as in the first half of the period.

There are major differences in the rate of expansion in the various countries. These differences can be explained to some extent by their points of departure. The countries with a low rate of expansion during the 1990s already had a high level of participation in higher education in 1990 and have retained – and to some extent raised – this high level. In other countries the rate of expansion has been greater. In South Korea, Poland, the Czech Republic, Hungary, Greece and Iceland student numbers rose by 59 per cent or more between 1995 and 2004.

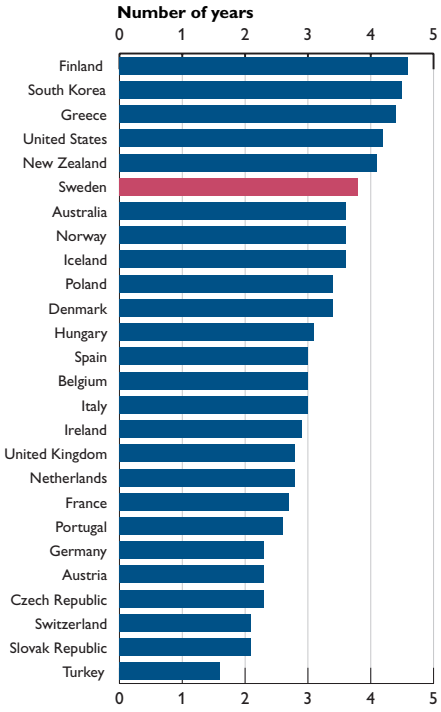
Many university entrants in Sweden

Sweden has a large number of students beginning higher education in relation to its population and if all age groups are included. Only Australia and New Zealand have a higher ratio, with 82 and 79 per cent respectively. For Sweden this proportion is 76 per cent, which can be compared with the OECD average of 54 per cent.

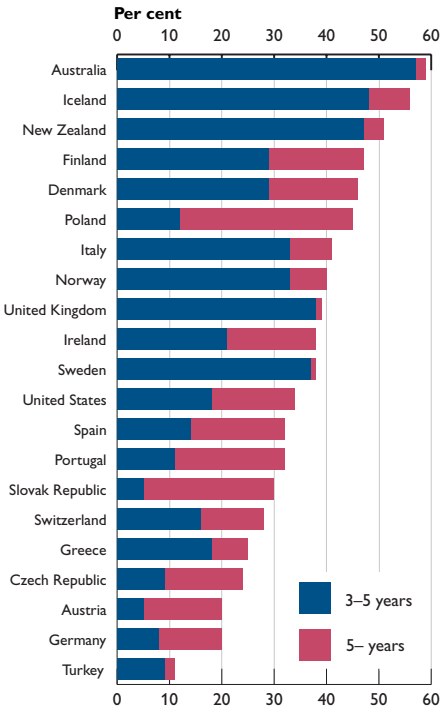
Together with Iceland and Denmark, Sweden has the highest median age for beginners in higher education. In Sweden this is just under 22.5. In most other countries the median age is around 20. Greece and Ireland have the largest proportion of young beginners with 80 per cent or more of their new entrants under 20. In Poland, Italy, Mexico, the Netherlands and Spain beginners are also young. Sweden stands out in contrast to these countries as only 20 per cent of its new entrants under 20 and more than 20 per cent are over 30. Sweden, together with Iceland, New Zealand and Norway has the highest proportion of students over 30 of all the OECD countries.

Just over three years in higher education

The OECD publication *Education at a Glance* (EaG) contains an indicator that describes the number of years that higher education can be expected to take. This is calculated as the sum of the relative frequency of participation for each age cohort from 17 and above. The indicator provides a general measure of the current volume of education and is dependent on both the size of the student population and the length of their studies. The OECD average is 3.1 years. In Finland, South Korea, Greece, the USA and New Zealand a 17-year-old can expect between 4.1–4.6 years of higher educa-



Expected number of years in higher education in 2005. These figures refer to first, second and third level programmes. Sweden is in the top third among OECD countries. In this group young people are expected to spend more than three years on their studies in higher education.



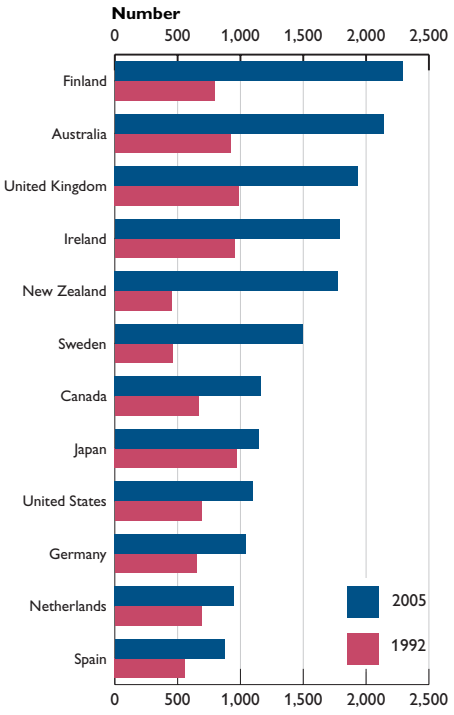
Number of higher education qualifications in relation to the size of the age cohorts to which they are typically awarded in 2005. Australia, Iceland and New Zealand have the highest ratio of higher education qualifications. This data is for ISCED level 5A (first qualification).

tion. In Sweden a 17-year-old can expect 3.8 years of higher education.

If instead this indicator is calculated for the number of years of education a 5-year-old can expect, the United Kingdom and Australia top the list with 20.9 years, followed by Sweden and Finland with 20.6 years. The average for all countries in this case is 17.7 years. In the majority of countries women can look forward to more years of education than men. Women in Sweden can expect 21.8 years and men 18.9. The average for all countries is 18.1 years for women and 17.3 for men. There are, however, major variations between different countries. In South Korea, Switzerland, the Netherlands, Germany and Turkey men can look forward to more years of education than women. The reverse applies for instance in the Nordic countries and the UK.

A large proportion of qualifications in health care and medicine

If the number of higher education qualifications (ISCED 5A) is related to the size of the age cohorts to which they are typically awarded, Sweden comes in the mid-range of countries. In 2005 the average for all countries was 36.4 per cent and for Sweden 37.7 per cent. In Australia and Iceland the proportions are 59 and 56 per cent, while Turkey has the lowest figures of all. Germany and Austria also have relatively low proportions, around 20 per cent. However, this last group has a large proportion of programmes that take five years or longer.



Number of qualifications awarded in the natural sciences and technology per 100,000 inhabitants aged 25–34 for 1992 and 2005. In many countries the number of degrees awarded in the natural sciences and technology has risen sharply since the early 1990's. This data is for ISCED level 5A.

There are characteristic differences between the countries in the distribution of qualifications (ISCED 5A) by discipline. Sweden and the other Nordic countries have the highest proportion of qualifications in medicine and health care. On the other hand Sweden awards a relatively small proportion of qualifications in the social sciences, 24 per cent, whereas the OECD average is 37 per cent. In technology and the natural sciences South Korea tops the list with 40 per cent, followed by Germany with 33 per cent and Finland with 32 per cent. Sweden is somewhere in the middle with 26 per cent, just above the OECD average of 25 per cent.

Swedish growth in the natural sciences and technology

Sweden's focus on technology and the natural sciences during the 1990s has resulted in twice as many graduates in these areas in relation to the 25–34 cohorts. This means that Sweden has moved up the scale in comparison with other countries since the beginning of the decade.

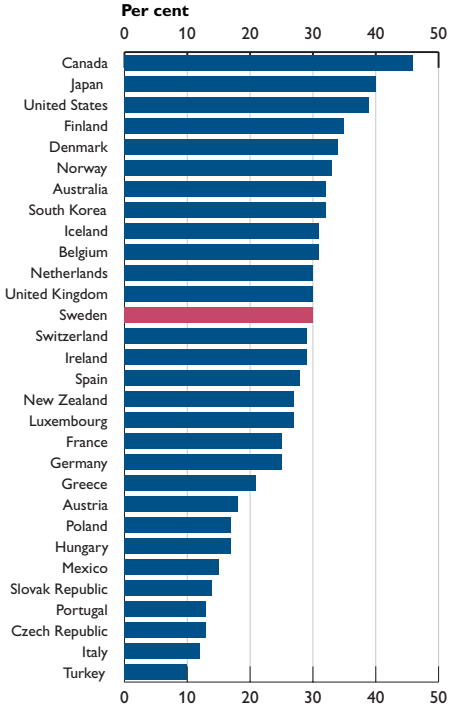
Other countries have also made major investments in this area. Finland and New Zealand have, like Sweden, almost tripled the number of qualifications awarded in the natural sciences and technology and in Australia, the UK, and Ireland the there has been a major increase in the award of these qualifications. On the other hand considerably more modest growth can be seen in the USA, Canada, Spain, Germany, Japan and the Netherlands between 1992 and 2005.

Many postgraduate degrees in Sweden

Where postgraduate degrees are concerned, Sweden ranks high because of the twofold increase in the number of these qualifications awarded during the 1990s. The number of postgraduate degrees in relation to the size of a typical age cohort is 2.2 per cent in Sweden, which is the fourth highest figure recorded in the entire OECD area for 2005.

Unlike previous years, the two-year licentiate third level programmes are not included in the statistics for Sweden from 2005 onwards. If they were also taken into account the figure for 2005 would be 3.2 per cent, which is the highest value for the entire OECD area.

Other countries with a relatively large proportion of research degrees are Switzerland, Portugal and Germany.



Proportion of graduates from higher education in relation to population aged 25–64. 30 per cent of the Swedish population has received higher education.

Well educated population

More than four-fifths of the Swedish population has at least completed upper-secondary schooling, which places Sweden in the top third of the scale among OECD countries. In Canada 46 per cent of the population aged 25–64 have completed higher education, which is the highest proportion for all countries. Sweden comes eleventh with 30 per cent.

Because of a change in the way these figures are calculated Sweden's share according to the OECD statistics has declined from 35 to 30 per cent between 2004 and 2005. Previously all those with at least 30 higher education credits were included in the statistics, but from 2005 and onwards only those with at least 120 higher education credits will be taken into account. The change in the statistics between 2004 and 2005 does not, therefore, mean that the proportion of the Swedish population who has undergone higher education has declined but is merely the result of a change of definition. These figures apply for all those with higher education, i.e. the ISCED levels 5B, 5A and 6.

Comparison that only takes levels 5A and 6 into account, i.e. in the case of Sweden higher education programmes that require three years or more and doctoral programmes, yields more or less the same result for Sweden. If all age groups are taken into account, Sweden shares tenth place with the UK, with 21 per cent, which is somewhat higher than the OECD average of 19 per cent. Sweden has a smaller proportion of older people aged 35–54 with three years or more of higher education than many other countries. On the other hand, the 25–34 and 55–64 age groups have more education.

International student mobility

Increased focus on higher education in many parts of the world has also resulted in greater international student mobility with more and more students undertaking some or all of their studies abroad.

Each year EaG contains figures on student mobility, i.e. information about how many are studying in a country other than the one in which they are citizens or have permanent residence. These figures have their shortcomings, however. They are affected by the different national regulations on immigration and also by the inability of some countries to distinguish between incoming international students and permanent residents with an foreign background. This means that the figures presented for some countries may be exaggerated.

The statistics function, however, as an indicator of the movement patterns of international students, their main countries of origin and the major host countries.

The most recent data from EaG covers student mobility in 2005, when over 2.7 million students were taking part in higher education in a foreign country. Since 2000 the rate of increase has averaged just under 9 per cent each year.

The major host countries are the USA, the UK, Germany, France and Australia. Between them these five countries were hosts to almost 1.6 million students in 2005, which represents a share of almost 60 per cent of international students. Sweden was host to 1.4 per cent of the international students.

The countries of origin of the students are considerably more diverse. The largest is China, which accounts for 15 per cent of the total number of international students. This is followed by India, South Korea, Germany and Japan. These five countries are the homes of 28 per cent of the international students, while 0.5 per cent travels from Sweden.

The most significant factor in the choice of where to study is the language spoken in a country and in which teaching is offered. The fact that almost 40 per cent of all international students opt for Australia, the UK and the USA is largely linked to the use of English.

Many countries have grown as host countries with increasing proportions of international students. This applies, for instance, to France, Australia, Japan, Russia, Canada and, above all, to New Zealand.

Sweden was the chosen destination of 1.4 per cent of the international students in 2005. This is the same proportion as in 2000. This means that the number of students coming to Sweden during these five years has risen at the same rate as the total number of international students globally, by more than 50 per cent.

Nowadays Sweden receives considerably more incoming students than it used to, even though several countries have seen a greater increase in the number of incoming students than Sweden.

Facts about the higher education sector today

« Carl-Erik Engqvist

Particle 008

THERE ARE SOME fifty institutions of higher education in Sweden run by either central government or private interests.

The government funded higher education institutions consist of 14 universities including the Karolinska Institute and the Royal Institute of Technology, 7 independent Colleges of fine, applied or performing arts and 15 university colleges including the Stockholm University College of Physical Education and Sports. In all there are 36 government-funded higher education institutions. On 1 January 2008 the Stockholm Institute of Education became part of Stockholm University and, in addition, on the same date the Swedish National Defence College was incorporated into the higher education sector.

Chalmers University of Technology, the Stockholm School of Economics and the University College of Jönköping are run by private sector governing bodies. There are also a number of smaller private institutions of higher education entitled to award specific first level degrees.

Admission requirements for first level programmes

Applicants for study at first level must satisfy the general admission requirements, which are the same for all courses and study programmes. General eligibility is attained by completing an upper secondary school programme and obtaining a pass grade or better in courses comprising at least 90 per cent of the total number of credits required in the programme, or by providing proof of an equivalent level of knowledge.

Most courses and study programmes also have specific entry requirements that vary depending on the subject area and the type of course. Specific entry requirements in courses open to new students take the form of standardized entry requirements. The Swedish National Agency for Higher Education determines these for programmes leading to the professional or vocational qualifications laid down in the System of Qualifications. Specific entry requirements are set locally by the higher education institutions concerned. (From 2010 onwards a number of changes will be made in the regulations on admission requirements.)

Admission to all study programmes and courses is restricted. If the number of qualified applicants for a course or a programme exceeds the number of places on offer, a selection process is necessary. At least one-third of the places must be allocated to new entrants on the basis of their upper secondary grades and at least one-third on the basis of the national scholastic aptitude test, which measures knowledge and skills that are important for successful studies in higher education. In addition to grades and the national scholastic aptitude test, selection may also be based on previous training, vocational experience or special tests, such as interviews or tests of skill.

A new structure of programmes and qualifications

A new structure came into effect for higher education in Sweden on 1 July 2007. This is an adaptation to the Bologna Process, which is intended, among other things, to increase mobility for students and enable comparison of higher education in Europe. Higher education is divided into three levels – bachelor's level, master's level and doctoral level, with the two first corresponding to what have previously been referred to in Sweden as undergraduate programmes. All qualifications are assigned to

one of these levels. In the first level two general qualifications are awarded – University Diplomas and Bachelor's degrees – and in the second level either one-year or two-year Master's degrees. In addition there are specialised first and second level qualifications in the fine, applied or performing art. In the third level Licentiate degrees and PhDs are awarded. Both first and second level professional or vocational qualifications are awarded. Programmes at each level require and are based on student completion of the previous level(s). New qualification descriptors have been included in the new System of Qualifications. In addition to the new structure, a new system of higher education credits was introduced, in which one year of full-time study corresponds to 60 HE credits.

General first level qualifications

University diplomas are awarded after students have completed courses for 120 HE credits in a specific area.

Bachelor's degrees are awarded after students have completed courses for 180 HE credits in a specific area, 90 of them for advanced study in the main area of the programme.

Each higher education institution decides itself on the main areas of study for specific qualifications.

General second level qualifications

A one-year Master's degree is awarded after students have completed courses for 60 HE credits in a specific area, 30 of them for advanced study in the main area of the programme.

A two-year Master's degree is awarded after students have completed courses for 120 HE credits in a specific area, 60 of them for advanced study in the main area of the programme.

Each higher education institution decides itself on the main areas of study for specific qualifications.

One requirement for the award of a general second level qualification is possession of a bachelor's degree, a bachelor's degree in the fine, applied or performing arts, a vocational or professional qualification of at least 180 HE credits or a corresponding qualification from some other country.

First level qualifications in the fine, applied or performing arts

University diplomas in the fine, applied or performing arts are awarded after students have completed courses for 120 HE credits in a specific area.

Bachelor's degrees in the fine, applied or performing arts are awarded after students have completed courses for 180 HE credits in a specific area.

Each higher education institution decides itself on the main areas of study for specific qualifications.

Second level qualifications in the fine, applied or performing arts

A one-year Master's degree in the fine, applied or performing arts is awarded after students have completed courses for 60 HE credits in a specific area

A one-year Master's degree in the fine, applied or performing arts is awarded after students have completed courses for 120 HE credits in a specific area

Each higher education institution decides itself on the main areas of study for specific qualifications.

One requirement for the award of a second level qualification in the fine, applied or performing arts is possession of a bachelor's degree, a bachelor's degree in the fine, applied or performing arts, a vocational or professional qualification of at least 180 HE credits or a corresponding qualification from some other country.

Professional or vocational qualifications

Both first and second level professional or vocational qualifications are awarded. Examples of first level professional or vocational qualifications are the degrees of Bachelor of Science in Nursing or Bachelor of Science in Nautical Science. Examples of second level qualifications of this kind are the degrees of Master of Science in Pharmacy or Master of Science in Engineering

Third level qualifications

Licentiate degrees are awarded

... *either* after a doctoral student has completed a programme comprising at least 120 HE credits in a subject in which a third level programme is offered

... *or* after a doctoral student has completed courses for at least 120 HE credits in a programme leading to the award of a PhD.

PhD's are awarded after a doctoral student has completed a programme of 240 HE credits in a subject in which a third level programme is offered.

One requirement for the award of a third level qualification is possession of first and/or second level qualifications comprising no less than 240 HE credits in all, of which 60 must have been awarded for second level study, or some substantially equivalent qualification.

Study assistance

It is possible for students to obtain state support to finance their studies in higher education. This support consists of study grants and study loans in combination. The grant portion of study support for an academic year nine months amounts to SEK 25.700 and the loan ceiling to SEK 49.200 The maximum total available government-sponsored study funding for an individual student pursuing full-time studies thus amounts to SEK 74.900 kronor. Study assistance can be paid for a maximum of 12 semesters or 6 academic years.

Repayment of the loan element is based on an annuity system and in normal cases the total debt should have been repaid in 25 years or before the borrower reaches the age of 60. The annual amount repayable is limited to five per cent of an individual´s annual income.

Since 1989 it has also been possible to receive study assistance for studies outside Sweden.

Rules relating to third level education

Third level education nominally comprises 240 HE credits (four years) and lead to a PhD. A PhD student must complete a number of taught courses and write a doctoral dissertation. Each student has the right to personal supervision. The dissertation, which constitutes the most important part of postgraduate studies, must be defended at a public oral examination. A Licentiate degree can be obtained and comprises at least 120 HE credits.

Institutions with the right to award postgraduate degrees are the universities plus the

Karolinska Institute, the Royal Institute of Technology, Chalmers University of Technology, the Swedish University of Agricultural Sciences, the Stockholm School of Economics and the University College of Jönköping. Many of the other institutions of higher education in Sweden collaborate with these institutions in the organization of postgraduate training.

Regulations have been introduced to enable other institutions of higher education to obtain the right to give postgraduate training and award postgraduate degrees. This will occur by way of the Government granting an institution of higher education university status after assessment and approval. Institutions of higher education will also have the possibility of establishing one or more so-called area of research after assessment and approval.

The University College of Kalmar has been granted the area of research of Natural Science, the Blekinge Institute of Technology the area of research of Technology, the University College of Malmö the area of research of Medicine and the University College of Mälardalen the area of research of Technology. Within these designated areas of research, the university colleges in question have the right to carry out postgraduate training and award postgraduate degrees.

Study funding in third level education

Postgraduate training is financed out of the state funding allocated to each faculty. There is also funding from external sources such as research councils. The faculty boards decide whether the state resources should be used for doctoral studentchips or for study grants. Both studentchips and grants run for four years. A grant may also be shared between two postgraduate students. Postgraduate students holding doctoral studentchips are obliged to concentrate on their studies, but are allowed to combine them with teaching or other work to a limited extent. A relatively common way of financing postgraduate studies is to combine them with work on a research project which may be externally funded by a research council or a research foundation.

In 1998, the rules for funding postgraduate studies were modified. Among other things it is stipulated that only applicants that can be employed in a postgraduate post or awarded a study grant may be admitted to postgraduate training. In other cases the applicant must have guaranteed study funding for the whole period of study.

Research within institutions of higher education

Sweden is a country that allocates a relatively high proportion of its resources to research and development (R&D). The proportion of GDP going to R&D is 3.8 per cent. The higher education sector is responsible for just over a fifth of the resources spent on R&D in Sweden. Most R&D is conducted within private sector companies.

By far the greatest part of publicly funded research takes place at institutions of higher education. Thus, institutions of higher education have a central role in the Swedish research system, not merely because they constitute the traditional base for research and postgraduate training, but also because they conduct research on behalf of public agencies and the private sector. Research activities have also great significance for undergraduate education.

For the most part, research and postgraduate training take place at universities and spe-

cialized professional institutions of higher education. But the university colleges are gradually expanding in research and postgraduate training.

Funding higher education and research

Institutions of higher education receive an educational assignment for each year. The allocation of resources depends on results measured in terms of students (calculated in terms of full time equivalent, FTE, students) and study achievements (calculated in terms of annual performance equivalents) at the institutions of higher education. There is a ceiling sum (maximum funding) which constitutes the highest aggregate compensation for FTE students and annual performance equivalents permitted for the fiscal year.

The amounts of compensation for FTE students and annual performance equivalents are determined annually by the national government and set out in its annual budget. The amounts are not the same for different subject areas. At the institutions of higher education all courses are classified by subject area. This classification determines the compensation that will be obtained. The higher education institutions are themselves allowed to reallocate funds between different subject areas.

Research and postgraduate training is funded by way of special grants from the national budget to the institutions of higher education in question. Resources for research and postgraduate training from central government is distributed to four areas of research — humanities/social science, medicine, natural science and technology. There is also a special item to cover compensation for such costs as rent of premises. A special grant for artistic development work is distributed to the colleges of art.

Organizational structure and teaching posts

Today the internal organization of institutions of higher education is decided by the institutions themselves. Certain guidelines are laid down in the Higher Education Act and the Higher Education Ordinance.

As previously, each institution of higher education is run by a governing board. The Government appoints the Chair of the board. The governing board is composed of the Chair, the Vice-Chancellor and not more than thirteen other members. The representatives of the teaching staff are chosen by election within the institution of higher education. The students have the right to be represented by three members. Employee representatives have the right to attend and to speak at board meetings.

The Vice-Chancellor is nominated by the board and employed by Government decision for not more than six years. Other board members are appointed for a period of not more than three years. A Pro-Vice-Chancellor is the Vice-Chancellor's deputy. More than one Pro-Vice-Chancellor may be appointed. An institution of higher education may also appoint Pro-Vice-Chancellors with responsibility for parts of its operations.

It is stipulated that all institutions of higher education granted an area of research shall have at least one faculty board. If an institution of higher education decide not to create specific decision-making bodies for basic higher education, the faculty boards are also responsible for the basic higher education carried out in their area of study. The Dean of Faculty is the chair of the faculty board. In the decision-making bodies created for matters of research and basic higher education, the

teaching staff is always to have the majority. The students have the right to be represented by at least two members on the faculty board and on other bodies dealing with educational matters.

With the exception of the above-mentioned rules concerning governing bodies, faculty boards and other bodies, Swedish institutions of higher education may themselves determine their internal organizational structure and the decision-making bodies and boards required for their purposes.

The Higher Education Ordinance contains regulations with respect to the employment of teaching staff at institutions of higher education. The categories concerned are: professors (including visiting professors), senior lecturers (including visiting senior lecturers), junior lecturers (including visiting junior lecturers), postdoctoral fellows, part-time teachers (paid on an hourly basis) and guest teachers.

As of 1999, new rules for the employment, recruitment and promotion of teaching staff have been introduced. The rules mean, for instance, that a senior lecturer who satisfies the employment requirements of a professor shall be employed as a professor. Educational skills should be given greater weight in this promotion than before. In addition, recruitment objectives are specified with a view to increasing the number of women among newly-appointed professors.

Key figures for the higher education institutions

« **Emma Pettersson**

Löjtnantshjärta [*Bleeding heart*]

HIGHER EDUCATION IS offered at about fifty universities, university colleges and other institutions that vary greatly in size and degree of specialisation. The accompanying table presents quantitative data to describe the differences and similarities between the higher education institutions. (The smallest institutions that are not run by the state have been excluded.) **studenter**

New entrants in undergraduate education

New entrants at the institution. These figures indicate the number of students beginning programmes during the academic year of 2006/07. They specify the number of individuals beginning to study for the first time at the institution concerned.

Median age of new entrants. Median age of new entrants at the higher education institutions, academic year 2006/07.

Proportion of men. The proportion of men among new entrants.

Proportion with working-class background. The proportion of newly enrolled students from working-class backgrounds.

Proportion with foreign background. The proportion of students who were either themselves born abroad or have two parents who were born abroad, excluding adopted children.

Students in undergraduate education

Total number of students. Total number of students, autumn semester 2007.

Undergraduate programme profile. The number of FTE students in 2007 divided by subject area.

Total number of degrees awarded. The total number of degrees awarded during the academic year of 2006/07.

Postgraduate training

New postgraduate students. New postgraduate students 2007.

Total number of postgraduate students. The number of active postgraduate students autumn semester 2007 Active students are those who have reported at least 10 per cent of full-time study activity.

PhD degrees. The number of PhD degrees 2007.

Licentiate degrees. The number of licentiate degrees 2007.

Teaching and research staff

Teaching and research staff. The number of teaching and research staff (FTE) in 2007 The figures include professors, senior lectures, lectures, post-doctoral research appointments, guest teachers, hourly paid teachers and other research and teaching staff.

Proportion of women. The proportion of women among teaching and research staff.

Proportion of teaching and research staff with PhD. The proportion with PhD degrees among teaching and research staff.

Finance

Total expenditure. Total expenditure (million Swedish kronor) in 2007.

Proportion of undergraduate education. The proportion of expenditure for undergraduate education related to total expenditure in 2007.

University/University College	New entrants in undergraduate education				
	New entrants at the institution	Median age (%)	Proportion of men (%)	Proportion with working class background (%)	Proportion with foreign background (%)
Total	145 784	22,2	44	26	17
Uppsala University	8 719	21,3	42	20	18
Lund University	10 712	21,5	48	18	14
Göteborg University	10 219	22,0	36	22	17
Stockholm University	13 113	21,7	40	19	22
Umeå University	8 214	22,4	40	28	10
Linköping University	6 494	21,8	49	25	12
Karolinska Institute	2 661	23,4	25	24	32
Royal Institute of Technology	6 558	23,1	74	20	28
Chalmers University of Technology	3 079	21,7	75	17	14
Luleå University of Technology	3 621	21,7	54	32	10
Stockholm School of Economics	516	21,5	61	6	9
The Swedish University of Agricultural Sciences	1 990	22,9	41	19	7
Karlstad University	4 278	22,5	37	34	12
Mid Sweden University	5 810	23,4	35	33	10
Växjö University	5 123	22,2	44	28	15
Örebro University	4 231	21,8	37	30	16
Blekinge Institute of Technology	4 539	24,9	64		13
Jönköping University College	4 052	21,8	42	32	17
Kalmar University College	3 778	22,1	44	33	11
Malmö University College	6 630	22,8	34	29	26
Mälardalen University College	4 260	22,6	39	34	26
Stockholm University College of Physical Education and Sports	246	22,9	56	15	3
Borås University College	3 741	23,6	34	34	20
Dalarna University College	4 494	24,1	44	34	12
Gotland University College	2 961	24,5	49	26	13
Gävle University College	5 267	23,7	39	34	13
Halmstad University College	3 681	22,2	41	30	13
Kristianstad University College	3 856	22,8	38	39	16
Skövde University College	2 544	21,9	42	34	16
University west	2 910	24,7	34	40	15
Stockholm Institute of Education	3 765	24,4	27	29	24
Södertörn University College	3 670	21,5	35	29	38
University College of Dance	88	23,7	5	15	8
University College of Film, Radio, Television and Theatre	183		37	11	15
University College of Arts, Craft and Design	191	24,3	39	14	17
Royal University College of Fine Arts	95	25,8	58	11	9
Royal University College of Music in Stockholm	215	22,5	51	10	19
Stockholm University College of Opera	10			5	14
National Academy of Mime and Acting	116		58	26	15

University/University College	Students in undergraduate education	Undergraduate profile			Degrees in undergraduate education
	Total number of students (autumn semester)	Humanities, social science, law (%)	Natural science (%)	Technology (%)	Total number of degrees
Total	322 179	42	11	18	57 981
Uppsala University	22 333	49	14	9	4 089
Lund University	27 278	54	8	19	4 738
Göteborg University	28 826	51	14	1	4 733
Stockholm University	25 691	74	12	6	3 458
Umeå University	18 239	39	14	9	3 927
Linköping University	19 259	35	16	23	3 268
Karolinska Institute	6 242	10	9	3	2 734
Royal Institute of Technology	13 543	11	20	69	2 063
Chalmers University of Technology	8 810	2		94	1 392
Luleå University of Technology	7 770	32	10	33	1 545
Stockholm School of Economics	1 520	100			309
The Swedish University of Agricultural Sciences	4 242	12	74		547
Karlstad University	9 972	46	10	11	1 505
Mid Sweden University	10 395	41	5	14	1 591
Växjö University	9 507	53	9	7	1 584
Örebro University	10 045	46	6	16	1 575
Blekinge Institute of Technology	4 383	20	8	59	560
Jönköping University College	9 706	42	4	25	1 920
Kalmar University College	7 402	34	10	22	1 013
Malmö University College	13 703	38	5	16	2 035
Mälardalen University College	9 265	39	10	19	1 574
Stockholm University College of Physical Education and Sports	472	2			203
Borås University College	7 728	24	10	17	1 542
Dalarna University College	7 617	44	10	13	1 001
Gotland University College	3 459	53	8	37	98
Gävle University College	7 958	42	14	17	1 004
Halmstad University College	5 965	42	15	22	918
Kristianstad University College	6 352	45	14	5	953
Skövde University College	5 114	37	10	24	1 240
University west	6 292	39	8	19	1 058
Stockholm Institute of Education	8 080	28	6	1	1 921
Södertörn University College	6 585	62	11	9	619
University College of Dance	222				8
University College of Film, Radio, Television and Theatre	198				33
University College of Arts, Craft and Design	623				106
Royal University College of Fine Arts	234				16
Royal University College of Music in Stockholm	850				42
Stockholm University College of Opera	41				10
National Academy of Mime and Acting	110				10

University/University College	Postgraduate training			
	New postgraduate students	Total number of postgraduate students	PhD degrees	Licentiate degrees
Total	2 811	17 251	2 807	918
Uppsala University	315	1 829	375	110
Lund University	344	2 425	496	66
Göteborg University	204	1 867	274	56
Stockholm University	207	1 543	233	110
Umeå University	171	1 091	162	27
Linköping University	221	1 174	177	63
Karolinska Institute	384	2 163	345	31
Royal Institute of Technology	329	1 518	209	152
Chalmers University of Technology	180	993	178	135
Luleå University of Technology	83	470	77	72
Stockholm School of Economics	18	176	12	9
The Swedish University of Agricultural Sciences	95	592	124	12
Karlstad University	27	207	34	8
Mid-Sweden University	28	132	13	11
Växjö University	26	204	14	19
Örebro University	100	426	32	14
Blekinge Institute of Technology	15	84	16	14
Jönköping University College	24	96	4	
Kalmar University College	12	84	9	2
Malmö University College	11	72	11	
Mälardalen University College	17	131	12	7
Stockholm University College of Physical Education and Sports				
Borås University College				
Dalarna University College				
Gotland University College				
Gävle University College				
Halmstad University College				
Kristianstad University College				
Skövde University College				
University west				
Stockholm Institute of Education				
Södertörn University College				
University College of Dance				
University College of Film, Radio, Television and Theatre				
University College of Arts, Craft and Design				
Royal University College of Fine Arts				
Royal University College of Music in Stockholm				
Stockholm University College of Opera				
National Academy of Mime and Acting				

University/University College	Teaching and research staff			Finance	
	Teaching and research staff (FTE)	Proportion of women (%)	Proportion of teaching and research staff with PhD (%)	Total expenditure (million kronor)	Proportion of undergraduate education (%)
Total	23 632	41	55	47 079	46,6
Uppsala University	1 984	39	67	4 263	33,2
Lund University	2 071	32	72	5 242	35,7
Göteborg University	2 295	47	61	4 400	42,9
Stockholm University	1 706	41	62	2 897	36,2
Umeå University	1 502	41	57	3 058	46,2
Linköping University	1 309	40	63	2 577	50,8
Karolinska Institute	1 537	50	62	4 100	19,5
Royal Institute of Technology	1 214	19	58	2 807	36,3
Chalmers University of Technology	817	17	65	2 135	35,7
Luleå University of Technology	577	35	48	1 219	48,7
Stockholm School of Economics	80	17	74	350	56,9
The Swedish University of Agricultural Sciences	1 201	42	64	2 319	23,4
Karlstad University	549	46	42	803	66,6
Mid Sweden University	420	42	41	735	68,9
Växjö University	464	40	44	760	72,3
Örebro University	475	47	50	872	67,2
Blekinge Institute of Technology	226	39	39	413	71,7
Jönköping University College	382	45	36	638	76,7
Kalmar University College	383	40	36	638	78,9
Malmö University College	674	55	42	1 034	84,6
Mälardalen University College	472	48	40	744	78,8
Stockholm University College of Physical Education and Sports	63	45	41	88	72,4
Borås University College	296	52	32	476	83,7
Dalarna University College	327	49	37	438	83,1
Gotland University College	84	35	35	158	86,1
Gävle University College	362	43	39	479	79,7
Halmstad University College	247	42	40	404	79,2
Kristianstad University College	285	58	40	357	85,1
Skövde University College	240	44	32	353	81,7
University west	239	50	37	331	81,0
Stockholm Institute of Education	329	70	30	619	89,0
Södertörn University College	295	46	60	531	55,8
University College of Dance	50	52	2	54	90,5
University College of Film, Radio, Television and Theatre	30	43	2	94	93,9
University College of Arts, Craft and Design	71	53	9	148	95,1
Royal University College of Fine Arts	30	41	5	62	92,9
Royal University College of Music in Stockholm	97	32	8	145	96,0
Stockholm University College of Opera	13	40		23	82,9
National Academy of Mime and Acting	15	56		35	88,8

Universities and University Colleges in Sweden

« Rasmus Albertsen

Insekt [*Insect*]

Universities and Institutions of Higher Education with the right to award postgraduate degrees

State
Uppsala University
Lund University
Göteborg University
Stockholm University
Umeå University
Linköping University
Karolinska Institute
Royal Institute of Technology
Luleå University of Technology
The Swedish University of Agricultural Sciences
Karlstad University
Mid-Sweden University
Växjö University
Örebro University
Blekinge Institute of Technology
Kalmar University College
Malmö University College
Mälardalen University College

Private sector
Chalmers University of Technology
Stockholm School of Economics
Jönköping University College

University Colleges

State
Borås University College
Dalarna University College
Gotland University College
Gävle University College
Halmstad University College
Kristianstad University College
Skövde University College
Stockholm University College of Physical Education and Sports
Swedish National Defence College
Södertörn University College
University West

Private sector
Erica Foundation
Ersta Sköndal University College
Gammelkroppa School of Forestry
Johannelund Theological Institute
Stockholm School of Theology
The Swedish Red Cross University College of Nursing and Health
Sophiahemmet College of Health Sciences
Örebro Theological Seminary

A number of institutions with psychotherapy programmes

University Colleges of Arts

State
University College of Dance
University College of Film, Radio, Television and Theatre
University College of Arts, Craft and Design
Royal University College of Fine Arts
Royal University College of Music in Stockholm
Stockholm University College of Opera
National Academy of Mime and Acting

Private sector
Beckmans School of Design
University College of Music Education in Stockholm