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EMPLOYABILITY AND MOBILITY OF NORWEGIAN GRADUATES POST BOLOGNA

THE STUDY STRUCTURE OF NORWAY

A new degree structure in Norwegian higher education was implemented in 2003 following the "Quality Reform" (Ministry of Education and Research, 2001). It follows up the objectives of the Bologna Process in the European higher education and aims at the implementation of a 3 + 2 + 3 degree system with a Bachelor's, Master's and PhD structure in accordance with European standards. The reform also introduced a new grading and quality assurance system in line with the Bologna Process.

Norway has a binary higher education system, with universities situated in the larger towns and university colleges spread all over the country. There are (in 2011) eight universities (Ministry of Education and Research, 2010a, 2010b), all state-run, of which three are former university colleges and ten are specialised institutions at university level – eight of them state-run. There are 21 state-run university colleges and more than 20 (mostly small, publicly supported) private colleges (some of them also officially university colleges). The university colleges play an important role for decentralised access to higher education and generally attract students with a more diverse social origin than the universities.

The university colleges predominantly offer 3-year professional Bachelor programmes (engineering, nursing, social work, etc.). There are also professional programmes of varying length, from one to five years, for example in teacher training and business administration. Several university colleges offer Master's programmes and three have the right to award doctorates in one or more subjects.

Prior to the reform, a lower university degree (cand. mag.) existed which took 4 years to obtain. With the implementation of the Quality Reform in 2003, the "cand.mag." degree was replaced by the Bachelor degree, with three years of full-time study (180 ECTS). Concurrently, the *Master* degree replaced the previous higher degree ("hovedfag"). The Master degrees mainly take two year of study subsequent to a Bachelor degree to obtain.

The three-year study programmes at the *university colleges* (among them *engineers, nurses* etc.) were hardly affected by the new structure, but they obtained a new label: "Bachelors". These programmes may be considered as "traditional Bachelors", although the former degrees had other titles.

The 3+2+2 model was implemented in most fields of study. Exceptions are professionally-oriented five-year Master degree programmes in some fields. Moreover, a few programmes kept their previous degree structure and the duration of six years (medical doctors and psychologists). Finally, teacher training lasts for four

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years instead of three. Students commencing on a Master programme in 2003 or a few years later and who completed it up to spring term 2007 had started their initial studies in the old structure. Thus, many of them had completed a cand.mag. degree (see above) before entering Master studies. Others had completed a three-year full-time study programme, i.e.180 ECTS (Bachelor degree equivalent), at a university college before commencing a Master programme. In addition, up until 2007 it was possible, as a transitional arrangement, to choose the "hovedfag" programme instead of a Master programme.

The introduction of the Quality reform was based on the report "Do your duty – Demand your rights (Report No. 27 to the Storting, 2000-2001)" submitted by the Government on 9 March 2001 whereby the new lower degree – the Bachelor degree – will *provide professional qualifications and/or qualify for admission to higher degree studies*. The Master degree confers professional qualifications and/or qualifies for admission to doctoral studies.

The Report stresses the relationship between higher education and working life without distinguishing between Bachelor and Master degrees. It states, for instance, that it is the responsibility of the higher education institutions (HEI) to make sure that the content of the study programmes is relevant and attractive for the working life into which the students are likely to enter (p.8); the content of study programmes and degrees should provide an education that students will need in future professional life (p. 29). Further, the Report states that the universities should arrange the study programmes in such a way that they are well organised and improved as far as vocational orientation is concerned (p. 37). The Report finally states that all higher education institutions should offer their students a period of study abroad as a component of the Norwegian study programmes. Overall, the Report emphasizes the importance of student mobility (cf. Ministry of Education and Research, 2001).

THE EMPLOYMENT SITUATION IN NORWAY

According to the Norwegian Labour Force Survey (LFS), only 2 per cent of the labour force were unemployed in the fourth quarter of 2007.[1] The labour market situation was very good in terms of demand for labour in 2007. Also, in Norway, the unemployment rate increased as a consequence of the financial crisis of autumn of 2008 and 4 per cent of the labour force were unemployed the first quarter of 2010. This is still much lower than in other European countries.

The percentage of *employed* people in Norway is high compared to most other OECD countries. In 2009, the employemnt rate was 77 per cent, whereas the OECD average was 65 per cent. In particular, the employment rate of *women* is

[1] Employed persons worked for a salary or profit for at least one hour in the survey week or were temporarily absent from work because of illness, holiday, etc. Unemployed persons were not employed in the survey week and had been seeking work during the preceding four weeks, and were available for work in the survey week or within the following two weeks. Persons in the labour force are either employed or unemployed.

higher in Norway than in most other countries. It is 74 per cent, as compared to the OECD average of 57 per cent (Organisation for Economic Co-operation and Development [OECD], 2010).

With regard to different age goups, the Norwegian LFS shows that the employment rate of 15-24 year-olds was 51 per cent in the first quarter of 2010, and somewhat higher among females than males (52 versus 50 per cent respectively) (Statistics Norway, 2010a) despite the fact that the female participation rate in higher education is higher than males. In the 25-66 age group, the percentage of employed people is 82 per cent for men and 77 per cent for women.

Newcomers on the labour market are more deeply affected by the increase in unemployment than others in the labour force. The LFS shows that in the last quarter of 2007 5 per cent of *15-24-year*-olds in the labour force were unemployed. In this age group, the unemployment rate increased to 9 per cent in the first quarter of 2010 (Statistics Norway, 2008; 2010b).

The fact that unemployment is higher among newcomers also applies to newcomers with HE, even though their situation is better than that of school-leavers with a lower education level.

THE NORWEGIAN GRADUATE SURVEY 2007

In Norway, NIFU has conducted national graduate surveys on a regular basis since 1972[2]. The "regular" survey is conducted every second year six months after graduation.[3] The most recent was conducted in November 2009. However, it did *not* include new university Bachelors. Hence, this chapter presents data from the 2007 Graduate Survey.

The 2007 NIFU STEP Graduate survey is the only national Norwegian graduate survey that includes Bachelor study programmes that were introduced in universities with the "Quality Reform" in 2003. It was conducted closer to graduation than the surveys of most other countries.[4] One should bear in mind that the unemployment rate among graduates is higher six months after graduation than one or more years after graduation.

The survey includes the following groups of graduates from the spring 2007 cohort:

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[2] The research institute NIFU (Nordic Institute for Studies in Innovation, Research and Education) was named NIFU STEP from 2005 to 2010, but changed back to NIFU in December 2010.

[3] Every other year "special" graduate surveys are conducted, targeting different groups and/or conducted several years after graduation.

[4] The reason why the Norwegian graduate survey is conducted six months after graduation is to avoid breaking the time series which go back to 1972. The regular Norwegian graduate surveys (six months after graduation) are held every second year, and, in the years in between, different types of special follow-up or retrospective surveys are held, for instance 2 ½ years after graduation or four to six years after.

- Bachelors graduating from the Universities of Oslo, Bergen, Trondheim and Tromsø (traditional universities). These are "new Bachelors", labelled "University Bachelors" in the tables;
- Bachelors in engineering graduating from university colleges, labelled "Engineering Bachelors";
- Graduates with higher degrees/Master degrees (except for medicine) from all universities (six at the time), as well as from university colleges providing such programmes, labelled "Masters".

Only one group of Bachelors from the university colleges, i.e. engineers, was included in the 2007 graduate survey. They serve here as a comparison group with new university Bachelors. It is not possible to compare the results for the new university Bachelors with the old system's previous lower degree cand.mag. graduates (see above), as they were never included in the Norwegian graduate surveys. It is also important to note that only university colleges graduate engineers. University Bachelor programmes in science and technology do not include engineering.

As mentioned above, 2007 was the final year when it was possible to graduate with a degree based on the old structure. This implies that some graduates with the highest degree did not graduate as Masters, but with the "hovedfag" (higher degree) which required one year more than the new Master degree. Yet, about two-thirds of the Master degree/higher degree graduates studied in the new structure, at least for the last part of their studies, thus graduating as Masters. For the sake of simplicity we will refer to the total group as "Masters" in the text.

Information was collected from the higher education institutions, and the graduates received a questionnaire. The respondents could choose between answering a paper questionnaire and a web survey. Three reminders were sent. The gross sample included 7,425 persons, whereas the net sample included 4,298 persons, of whom 2,515 are Masters/higher degree graduates, 722 are engineers, and 1,061 are university Bachelors. The overall response rate was 58 per cent; 61 per cent for graduates with a higher/Master degree; 52 per cent for the Bachelors in engineering and 53 per cent for the university Bachelors.

For most target groups, *all graduates* were included in the survey, but a sample was drawn with regard to some large groups among the *Masters*. All the results presented below are weighted: Groups from which a sample was drawn are weighted according to their original share of the graduates included in the survey. The weighted samples consist of 5,497 observations, of which 3,714 were made by Masters/higher degree graduates.

SOCIO-BIOGRAPHIC BACKGROUND AND COURSE OF STUDY

Like in other Western countries, there is a majority of *females* among the higher education students in Norway. However, as is shown in table 1, they are a minority among graduates in engineering. Among university Bachelors, the proportion of females in science and technology is 47 per cent.

Table 1. Gender of 2007 Graduates from Higher Education Institutions in Norway

	University Bachelors (new Bachelors)			Engineering Bachelors, university colleges	Master/ higher degree	Total
	Science and technology	Other fields	Total university Bachelors			
Per cent female	47	66	63	17	59	54
N (total number of observations)	134	927	1,061	722	3,714	5,497

Source: Norwegian Graduate Survey 2007

The most sex-segregated study programmes in higher education in Norway are – in addition to engineering – nursing, teacher training and pre-school teacher training, the former with a majority of male students and the latter three with a vast majority of female students. Except for these programmes, the gender gap in most studies has been narrowing in recent decades, mainly because female participation has increased in all fields (Statistics Norway, 2010b). In many study programmes where females used to be a minority or where their gender distribution was more or less balanced, females have become a majority. Examples of the latter are medicine and law. In Master degrees, the share of females is lower in science and technology at about 40 per cent, but this still represents a large increase in the last 20 years.

The educational level of the graduates' parents is shown in table 2. Here, the data regarding Master graduates are sub-divided by type of higher education institution, because the parental background of the Masters differs by type of higher education institutions, as it does among the Bachelors.

Table 2. Father and/or Mother with Higher Education among 2007 Graduates from Higher Education Institutions in Norway (per cent)

	Mother	Father	One of parents	Both parents
University Bachelors				
Science and technology	59	63	72	46
Other fields	58	59	71	44
Total	58	59	71	44
Engineering Bachelors, university colleges	42	47	56	32
Masters				
From university colleges	42	51	60	32
From universities	53	59	68	44
N (total, all graduates included in the survey)	51	57	66	41

Source: Norwegian Graduate Survey 2007

The figures presented in table 2 are not representative of *all* graduates in Norway. First, the graduate survey did not comprise *all* Bachelors from university colleges, but only the engineers. Second, some respondents may have overestimated their parents' educational level. Third, one of the categories regarding parental education in the questionnaire referred to *1-4 years* of higher education and this could lead to the inclusion of parents who would not have been registered in the official statistics.

Therefore, the proportion of parents with higher education is presented in table 3 for both new entrants in upper secondary education and new entrants in higher education.[5] These figures based on register data show that parents of students in higher education in Norway have a higher level of educational attainment than those of the average young persons. According to table 3, the share of students in Norway with higher education-trained parents is lower than that of the respondents shown in table 2.

Yet, the differences between the groups presented in table 2 are valid in principle. University college students represent a group with a somewhat lower parental educational attainment level than that of university students. The large geographical diffusion of these colleges is probably the reason why the share of students who have parents with higher education is lower at these institutions than among the university students.

[5] The figures in table 3 refer to persons who mainly belong to the 1983 – 1984 birth cohorts. The Bachelors in table 2 represent, on average, persons who are two years older, and thus also refer to parents who are somewhat older.

Table 3. New Entrant Students in Upper Secondary Education and Higher Education with Higher Education-Trained Parents in Norway (per cent, register data)

	Mother	Father	One of parents
Persons who started in upper secondary education in 1999 or 2000 (N=98,452)	27	27	38
Persons who started in upper secondary education in 1999 or 2000, and who started in HE in 2002 or 2003 (N=24,035)	40	41	55

Source: Støren, Helland and Grøgaard (2007); Støren (2009)

The educational attainment of the parents of engineers is lower than among university Bachelors and Masters. The finding that the university *Bachelors* have somewhat more highly educated mothers than the university *Masters* may be coincidental: it may be because Bachelors are younger than Masters and thus have younger parents who are more likely to be highly educated.

Regarding prior study and degree, the question was formulated as follows in the Norwegian graduate survey: *"Did you complete any other university or college education with a full-time duration of at least one year, before the one you completed in the spring of 2007, and which is not part of the degree you were awarded in the spring of 2007?"* The graduates were also asked what kind of education this referred to. These answers were coded in accordance with the Norwegian 6-digit Standard Classification of Education. Some graduates mentioned education at a lower level than ISCED 5. They are excluded here. 22 per cent of university Bachelor graduates, 12 per cent of engineering Bachelor graduates, 29 per cent of Master graduates, and 26 per cent of all graduates surveyed had completed higher education (between at least one year of study at ISCED 5 level and a degree) prior to the current degree.

In the case of Masters one should bear in mind that they could have included "cand.mag.", Bachelor or another equivalent degree, although the questionnaire specified that the respondents should not include education that is part of the degree they were awarded in the spring of 2007. We can infer such errors because the respective quota is quite high among Master graduates.

The 2007 graduate survey does not provide a complete picture of the total *years of study up to the degree* awarded in 2007. Yet, some useful information can be presented here as regards *prolongation of study*. The following questions were asked: *Did you take more time than prescribed (standard) time to be awarded this degree?* (The graduates were given the instruction not to include studies that were not necessary to obtain the degree.) (If yes:) *Estimate the number of semesters that exceed prescribed study time.* The share of those spending more time was 28 per cent among university Bachelor graduates, 14 per cent among engineering Bachelor graduates, 54 per cent among Master graduates, and 44 per cent of all

graduates surveyed. Of those who answered "yes", 23 per cent gave no answer to the follow-up question to estimate the number of semesters. With regard to the duration *among those who gave an answer*, the arithmetic means were:
– 2 semesters for university Bachelor graduates,
– 2.6 semesters for engineering Bachelor graduates,
– 4.0 semesters for Master graduates and
– 3.7 semesters for all graduates surveyed.

Obviously, the Master graduates frequently reported that they had studied longer than the prescribed time because work on the Master thesis may be quite demanding and require more time than estimated; some students spent much time on paid employment while studying; some had children while being a student; moreover, the student support system allows for some delays.

The average *age at the time of graduation*, according to the 2007 survey, was:
– 25.9 years for university Bachelor graduates,
– 26.6 years for engineering Bachelor graduates,
– 32.3 years for Master graduates and
– 30.3 years for all graduates surveyed.

The average age among Masters was increased by the fact that graduates were included in 2007 who had their last chance that year of obtaining this degree in the old system. The respective mean among 2009 graduates was 30.3 years. Yet, the average age of Norwegian graduates is quite high for the reasons quoted above. Although incentives are provided for rapid study progress, the Norwegian system is relatively flexible with regard to studying at an older age.

The relatively late age of engineers and new Bachelors does not seem to be caused by slow study progression. As shown above, only 14 per cent of the engineers had used more than the prescribed time on their degree, with an average of 2.6 semesters. The main reason is postponement of higher education enrolment and the fact that a relative high share had completed a higher education degree prior to the current degree. Another point worth mentioning is the fact that, in Norway, the normal age for leaving upper secondary education is 19, whereas it is 18 in many other countries.

INTERNATIONAL MOBILITY

Immigrants

The Norwegian Graduate Survey does not include information on citizenship, but information on the graduates' country of birth and that of their parents. We may thus identify first-generation immigrants, who are persons born abroad with both parents being also born abroad. They make up:
– 6 per cent of university Bachelor graduates,
– 5 per cent of engineering Bachelor graduates,
– 6 per cent of Master graduates from university colleges,
– 5 per cent of Master graduates from universities, and
– 5 per cent of all graduates surveyed.

The differences in the rate of first-generation migrants by type of study are small. However, additional analyses showed the share of immigrants from *non-Western* countries is relatively high among engineering graduates. Those from the Nordic countries are highly represented among Master graduates from the university colleges, and European (and North-American) immigrants are relatively numerous among the new university Bachelors.

Recent immigrants or inward mobile students

The Norwegian Graduate Survey does not distinguish between foreign inward mobile students and recent immigrants. However, it includes information on place and country of residence at the age of 17.

Table 4. First-generation Immigrants from Various Regions Arriving in Norway at the Age of 18 or Older among the 2007 Graduates from Higher Education Institutions in Norway (per cent)

	Bachelors from universities	Engineering Bachelors university colleges	Masters from university colleges	Masters from universities	Total
Nordic countries	1	0	2	1	1
Europe, except the Nordic countries	2	1	2	1	2
Africa, Asia, Latin-America	1	1	1	1	1
North-America, Oceania and unknown	0	0	0	0	0
Total	3	3	5	3	4

Source: Norwegian Graduate Survey 2007

Graduates who were not born in Norway (and whose parents were not born in Norway), and who lived outside Norway at the age of 17 are most often immigrants who subsequently came to Norway. Some may be what is ordinarily understood as foreign inward mobile graduates. However, many graduates in the latter group have probably left Norway and are thus not included in the survey. We assume that most of the foreign inward mobile students are from the Nordic or other European countries. In table 4 we present the proportion of graduates who are first generation immigrants not having resided in Norway at the age of 17, by region of origin.

These recent immigrants make up 4 per cent of all the 2007 graduates surveyed, as is shown in table 4. As the total share of immigrants is only 5 per cent, as shown above, we note that most foreign (immigrant) graduates did not live in Norway at the age of 17. This holds true for all regions of origin.

It does not come as surprise, however, that many respondents among Nordic graduates – 3 per cent – arrived in Norway at the age of 18 or later. Many are certainly inward mobile persons, but this group also comprises "regular" immigrants or refugees, for instance from Bosnia, as well as persons who have moved to Norway because they have a Norwegian spouse/partner.

Temporary outward mobility

The proportion of outwards temporarily mobile students, i.e. persons that has spent at least one semester abroad as a part of their Norwegian study programme, before they eventually graduated from a Norwegian higher education institution in Norway in 2007, is

- 20 per cent among university Bachelor graduates,
- 5 per cent among engineering Bachelor graduates,
- 23 per cent among Master graduates from university colleges,
- 25 per cent among Master graduates from universities, and
- 21 per cent of all graduates surveyed.

Accordingly, this outward temporary mobility is highest among Master students; this is not surprising, given that they have been students for more years. Bachelors in engineering are less likely to have studied abroad; this could be because these study programmes are less flexible, making it difficult to find time to go abroad. Mobility statistics from the Norwegian Centre for International Cooperation in Higher Education (SIU) show that the proportion of Bachelor students undertaking a sojourn abroad is generally lower among university college students than among university students (Senter for internasjonalisering av høgre utdanning [SIU], 2010). Also, fewer students in natural sciences study temporarily abroad than students in most other fields.

Internationalisation of higher education is high on the political agenda in Norway, and student mobility is an important part of this. Temporary mobility, such as participation in student exchange programmes like ERASMUS and NORDPLUS, is strongly encouraged. The number of exchange students increased by almost 70 per cent between 1999 and 2009 (Lånekassa, 2009). This means that more than three per cent of the total student body goes abroad on exchange sojourns every year.

Graduating abroad

A high share of the total student body goes abroad, compared to many other Western countries (see OECD, 2005; UNESCO, 2006). Full degree students abroad have in recent years constituted approximately 6-7 per cent of the total Norwegian student body (Senter for internasjonalisering av høgre utdanning [SIU], 2008) thanks to a generous student support scheme for mobile students (Saarlikallio-Torp & Wiers-Jenssen, 2010).

Norwegian students graduating abroad are not included in the regular NIFU surveys six months after graduation. However, those graduating from foreign

universities are included in two "special" graduate surveys conducted 3-4 years after graduation in the years 2002 and 2007. They show that those who have taken a full degree abroad are more likely to face difficulties in entering the labour market than graduates who obtained their diploma from a Norwegian HEI (Wiers-Jenssen & Try, 2005; Wiers-Jenssen, 2010). On the positive side, Norwegians who obtain their diplomas abroad have higher wages.

Mobility after graduation

The regular Norwegian graduate surveys undertaken six months after graduation do not contain information about mobility after graduation. The special graduate surveys 3-4 years after graduation conducted in 2002 and in 2007 include graduates working abroad, but they did not address the new Bachelor graduates. According to the 2007 surveys, five per cent of those Norwegian graduates who studied for the whole study period in Norway worked abroad at some stage during the first 3-4 years after graduation. Mobility after graduation was much higher among those who had been mobile during their course of study: 16 per cent of graduates from Norwegian higher education institutions who spend a study period abroad, and 22 per cent of persons from Norway who spent their whole study programme and graduated abroad (Wiers-Jenssen, 2008). As the rate of students who study abroad is increasing, one could also expect an increasing international mobility of Norwegian graduates.

TRANSITION TO EMPLOYMENT AND FURTHER STUDY

Altogether, 72 per cent of the 2007 Bachelor graduates from Norwegian universities continue their studies – more than half to Master level and more than one fifth to other further study. More than half each work and study concurrently. This is in accordance with the graduates' response to a question regarding the envisaged qualifications. 68 per cent of the university Bachelor graduates intend to study up to a Master degree and 13 per cent to a doctoral degree (Arnesen & Waagene, 2009). The proportion of those planning to obtain a Master degree was almost the same among females and males (69 versus 66 per cent), while more men planned to obtain a doctoral degree (17 versus 10 per cent) (Arnesen & Waagene, 2009).

62 per cent of the 2007 university Bachelor graduates are employed six months after graduation; however, as table 5 shows, only 23 per cent are employed but do not study. Finally, about 5 per cent neither study nor are employed.

The situation is different for engineering Bachelor graduates from university colleges. 29 per cent, i.e. less than half as many as university Bachelor graduates, continue their studies, of whom 11 per cent work at the same time. Altogether, 25 per cent of the engineering Bachelors transfer to Master study. In reverse, 78 per cent of engineering Bachelor graduates take up employment during the first six months after graduation, of whom 67 per cent without concurrent study.

Table 5. Employment and Study Six Months after Graduation of 2007 Bachelor Graduates from Higher Education Institutions in Norway (per cent)

	Bachelors universities	Engineering Bachelors university colleges	Total Bachelors
Per cent			
Master study (only)	25	17	22
Master study and employment	27	8	19
Other further study (only)	9	2	6
Other further study and employment	12	3	8
Employment (only)	23	67	41
Neither study nor employment	5	4	4
Total	100	100	100
Count			
Master study (only)	262	122	384
Master study and employment	284	59	343
Other further study (only)	93	12	105
Other further study and employment	128	19	147
Employment (only)	244	483	727
Neither study nor employment	49	27	76
Total	1,060	722	1,782

Source: Norwegian Graduate Survey 2007

While university Bachelor graduates predominantly conceived the Bachelor as a stage in their studies and continue to study, Master graduates as a rule transfer to employment: 95 per cent, as table 6 shows, of whom 11 per cent with concurrent study. Five per cent neither study nor are employed.

Table 6. Employment and Study Six Months after Graduation of 2007Master Graduates from Higher Education Institutions in Norway (per cent)

	Per cent	Count
PhD study and employment*	2	90
Other further study (only)	2	78
Other further study and employment	7	249
Employment (only)	83	3,094
Neither study nor employment	5	199
Total	100	3,712

* PhD study (only): too few to be reported

Source: Norwegian Graduate Survey 2007

PROFESSIONAL SUCCESS OF GRADUATES

Period from graduation to employment

The Norwegian graduate survey does not provide any information on the duration of the period from graduation to first employment. However, it indicates the timing of the *start of current employment.* For most graduates this is the first significant employment after graduation.

The responses indicate that about 28 per cent started their current job prior to the year of graduation; obviously, they were employed during study and continued their job after graduation, possibly thereby increasing their working hours. This proportion might be even higher because some graduates providing information on the start of their current employment after graduation report that they already had been in this job prior to graduation.

Table 7 comprises only graduates having started the current employment upon or after graduation in the upper part, while the lower part of the table informs about all employed graduates.

Table 7. Number of Months from Graduation to Current Employment on Average of all 2007 Graduates from Higher Education in Norway Employed Six Months after Graduation

	Engineering Bachelors	University Bachelors	Master / higher degree	Total
Started in current employment after graduation or in the month of graduation				
Mean	1.5	2.7	2.3	2.2
Median	1	2	2	2
N	440	294	2,191	2,925
*All employed graduates**				
Mean	1.2	1.2	1.5	1.4
Median	1	0	1	1
N	561	656	3,433	4,650

* Number of months is set to zero for those who started current employment before graduation.

Source: Norwegian Graduate Survey 2007

University Bachelor graduates started employment on average 2.7 months after graduation. This period from graduation to employment is even shorter for Master graduates (2.3 months) and engineering Bachelor graduates from university colleges. Also, other data provided below suggest that the labour market situation for university Bachelor graduates in Norway is more difficult than for other graduates.

However, as already pointed out, many university Bachelor graduates continue to work on the job they held prior to graduation. If we count their transition period to employment as zero, the overall average transition period from graduation to the current job is 1.2 months on average. We must bear in mind, though, that the jobs held prior to graduation are mostly not very demanding; 79 per cent reported that their work did not require higher education or that it was irrelevant.

Employment situation

Six months after graduation, the rate of *full-time employment* is:
- 30 per cent among university Bachelor graduates,
- 87 per cent among engineering Bachelor graduates from university colleges,
- 85 per cent among Master graduates, and
- 77 per cent of all graduates surveyed.

The share of university graduates employed full-time is higher than that of Bachelor graduates who are employed without concurrent study (23 per cent, as shown above). Also, very few university Bachelor graduates reported that their part-time work was involuntary (see figure 3 below). Thus, part-time study seems to be chosen voluntarily in order to be able to pursue work and further study concurrently.

About half the employed university Bachelor graduates had *long term or unlimited contracts* six months after graduation. As figure 1 shows, the proportion is lower than that of other groups, but the difference is less than in the case of full-time employment.

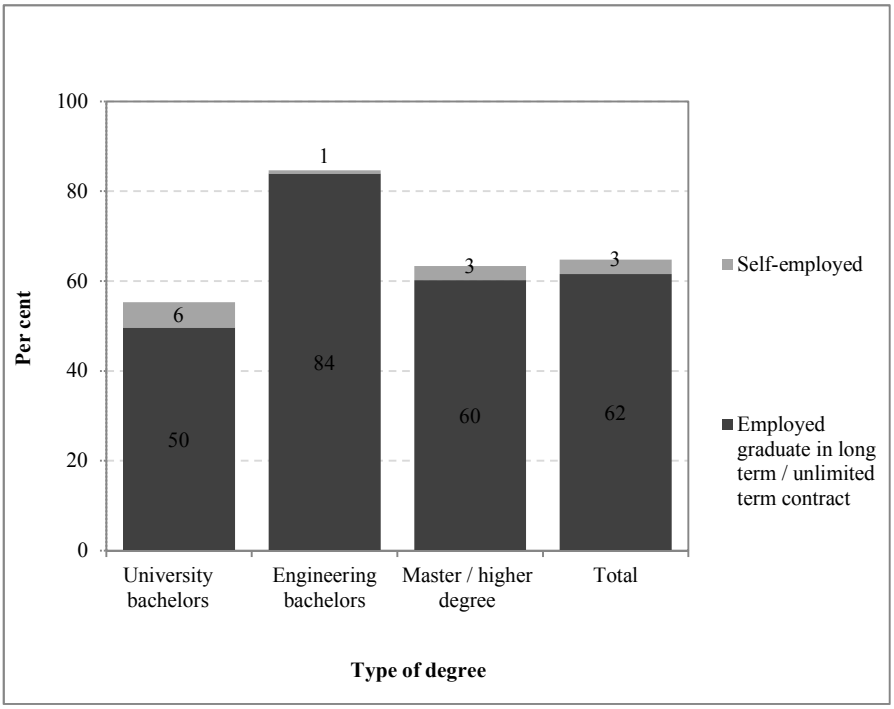
Again, the relatively low percentage of permanent employment of university Bachelors can be explained by the fact they often understand their concurrent study and work as a first step to employment, but not as a real integration in the employment system. In contrast, the transition of engineering Bachelor graduates from university colleges is in most cases a transition to full-time regular and relevant work.

It is interesting to note that the number of Master graduates who have a long-term or unlimited contract, though higher than among university graduates, is clearly lower than among engineering Bachelor graduates. This could be due to the fact that a higher percentage of engineers than Master graduates are employed in the private sector (83 per cent for engineering Bachelor graduates and 47 per cent for Master graduates). The private sector is more strictly regulated than the public sectors when it comes to temporary labour contracts, while many careers in the public sector start with a limited time contract.

The wages of university Bachelor graduates is 15 per cent lower than those of engineering graduates, and 17 per cent lower than those of Master graduates. This can be explained by the difference in educational level. However, the wage difference between engineering Bachelor graduates and university Bachelor graduates is interesting because their education level is equivalent. There are three main reasons for this difference. The first is that engineers have a vocationally-oriented education that is well adapted to the demands of the labour market,

whereas university Bachelor graduates have a (new) generic education that is not very well adapted to the demands of the labour market. The second is that engineers were highly demanded in the labour market as a result of the economic boom in the period 2005-2007. The third is that engineers, to a great extent, find their jobs in the private sector where wages are generally higher and more flexible than in the public sector. This means that the favourable labour market will have a more positive effect on their wages than for graduates who mainly find work in the public sector.

Figure 1. Long-term/Unlimited Term Contract Six Months after Graduation among 2007 Graduates from Higher Education in Norway (per cent)



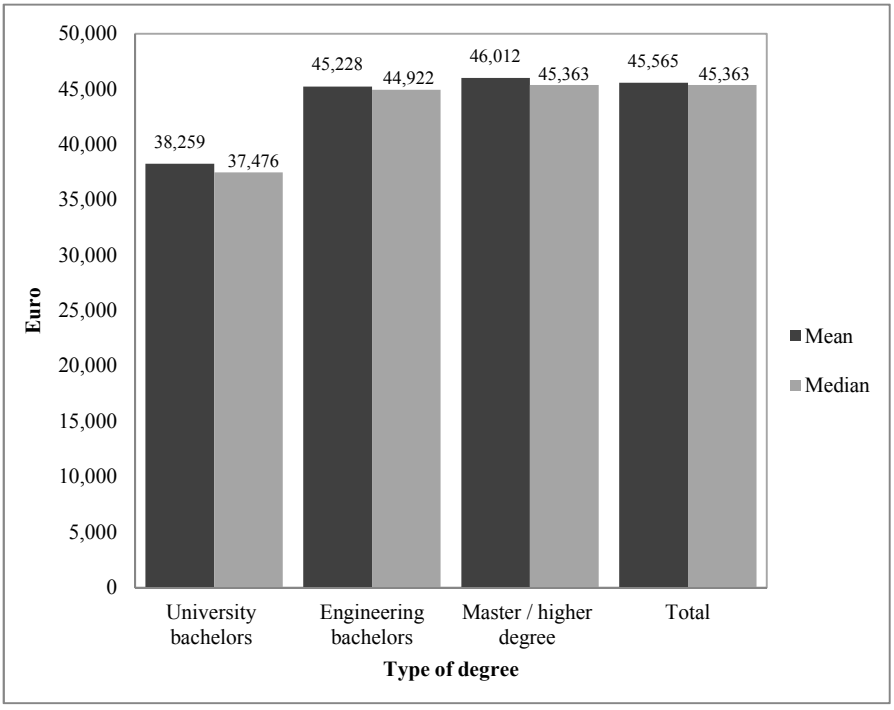
Source: Norwegian Graduate Survey 2007

Figure 2 shows the average *annual gross income* of those in full-time employment. University Bachelor graduates earn 17 per cent less than Master graduates. This difference can be viewed as normal, i.e. as reflecting the difference in the level of educational attainment.

Although engineers had a very favourable labour market in 2007, it is surprising that Master graduates only earned 2 per cent more. The wage difference was exceptionally small in 2007 and must be seen in light of the positive labour market situation in 2007 and the high percentage of engineers who found jobs in the higher

paying private sector. As already mentioned, 83 per cent of the engineers worked in the higher paying private sector, while this was the case for only 47 per cent of Master graduates.

Figure 2. Estimated Annual Gross Income Six Months after Graduation of Full-time Employed 2007 Graduates from Higher Education Institutions in Norway (mean and median, Euro)*



* Calculation of the annual gross income: monthly regular gross income in NOK * 12, whereby 7.9360 is NOK: Euro rate in November 2007.

Source: Norwegian Graduate Survey 2007

Another point worth mentioning with regard to the results in figure 2 is the small difference between the median and the arithmetic mean. This indicates that the wage distribution is not very skewed.

Type of positions

Only some 27 per cent of university Bachelor graduates in Norway hold professional positions shortly after graduation, as table 8 shows, while 11 per cent are in associate professional and 62 per cent in other positions. As already pointed out, many university Bachelor graduates studying along employment do not really opt

for a professional career. But also among those who were employed only (i.e. not combining work and study) all a minority (39 per cent) held professional positions, while 15 per cent held associate positions and 46 per cent were employed in other occupations. In contrast, almost three quarters of engineering Bachelors – almost as many as among the Master graduates – held professional positions.

Table 8. Occupational Category of 2007 Graduates from Higher Education Institutions in Norway Employed Six Months after Graduation (per cent)

	University Bachelors	Engineering Bachelors	Master / higher degree	Total
Professional	27	74	75	68
Associate	11	4	13	11
Other occupations	62	22	12	20
Total	100	100	100	100

* Only graduates providing information on occupational category

Source: Norwegian Graduate Survey 2007

Link between study and work

While table 8 addresses the link or mismatch between study and work according to occupational category, the graduates' *assessments of the vertical match or mismatch* are shown in table 9. The correspondence between the two is fairly good. As the data provided above have shown, only Bachelor graduates considering employment as their "main activity" are really comparable to other graduates. The upper part of table 9 presents data for those employed as their main activity, while data for all (i.e. including those working concurrent to study) is provided in the lower part of the table.

Accordingly, we note that 57 per cent of graduates who are mainly employed consider their job as requiring their level of higher education or even a higher level. This holds true for 47 per cent of the university Bachelor graduates in science and technology, but only for 36 per cent of the other university Bachelor graduates. The respective quota is higher for Master graduates (58 per cent) and even slightly higher for engineering Bachelor graduates from university colleges (63 per cent).

Table 9. Assessment of the Link between Work and Level of Educational Attainment by 2007 Graduates from Higher Education Institution in Norway Employed Six Months after Graduation (per cent)

	University Bachelors, science and technology	University Bachelors, other fields	Total university Bachelors	Engineering Bachelors, university colleges	Master/ higher degree	Total
Employed graduates considering employment as their main activity						
The work requires higher education at the same level	41	29	30	57	55	54
The work requires higher education, but at a higher level	6	7	7	6	3	3
The work requires higher education, but at a lower level	6	7	7	7	23	20
The work does not require higher education, but it is an advantage to have it	24	32	31	25	14	16
Higher education is irrelevant	24	25	25	5	5	7
Total	100	100	100	100	100	100
All employed graduates						
The work requires higher education at the same level	23	16	17	53	52	47
The work requires higher education, but at a higher level	4	4	4	6	3	3
The work requires higher education, but at a lower level	14	5	7	7	22	19
The work does not require higher education, but it is an advantage	18	27	26	23	15	17
Higher education is irrelevant	41	48	47	12	8	14
Total	100	100	100	100	100	100

Source: Norwegian Graduate Survey 2007

Moreover, graduates were asked whether the content of their study was related to their current work. The responses, indicating the extent of *horizontal link or mismatch* between higher education and work, are presented in table 10.

Table 10. Assessment of the Link between the Content of Study and Work by 2007 Graduates from Higher Education Institution in Norway (per cent)

Content of study corresponds to work …	University Bachelors, science and technology	University Bachelors, other fields	Total university Bachelors	Engineering Bachelors, university colleges	Master/ higher degree	Total
Employed graduates considering employment as their main activity						
To a high extent	41	26	28	39	49	47
To some extent	24	40	39	49	38	40
Not at all	35	34	34	12	12	14
Total	100	100	100	100	100	100
All employed graduates						
To a high extent	30	18	20	36	47	42
To some extent	23	29	28	45	37	37
Not at all	47	53	52	18	15	21
Total	100	100	100	100	100	100

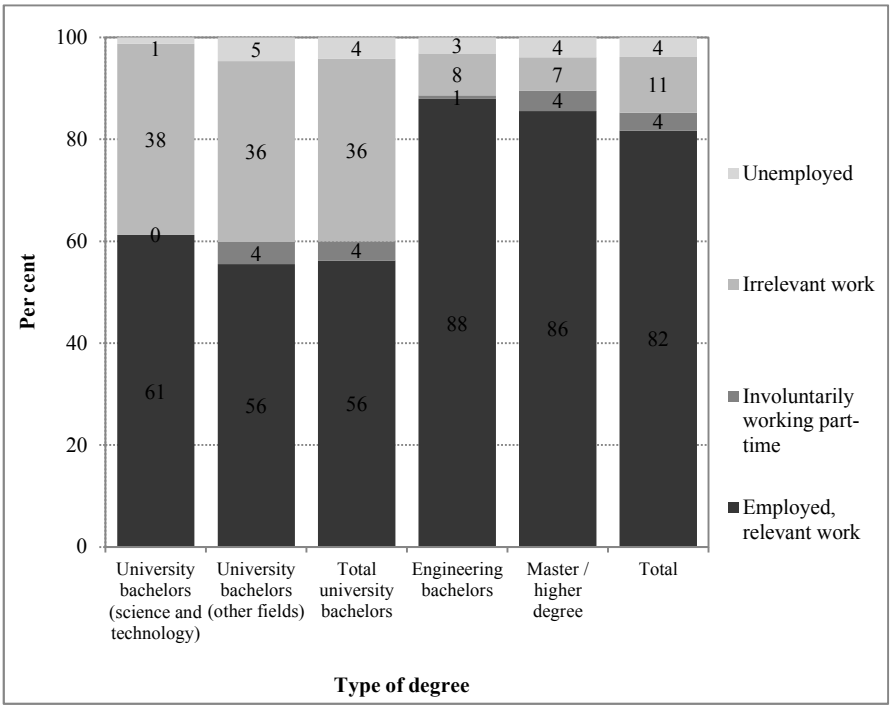
Source: Norwegian Graduate Survey 2007

A clear horizontal mismatch six months after graduation is reported by about one third of university Bachelor graduates for whom employment is the main activity. In contrast to the previous question about a vertical link or mismatch, a horizontal mismatch is not more frequently reported by university graduates in other fields of study than by those in science and technology. The corresponding share among engineers and Masters is only 12 per cent.

In figure 3, information on vertical and horizontal links versus mismatch is combined. The category *irrelevant work* is used here in a strict sense for those who consider *higher education as for their positions and* the *contents* of their education as not at all corresponding to their work. The data refer to all graduates in the labour market, i.e. including those combining study and work and those who are unemployed. Finally, those who are involuntarily employed part-time are presented in a separate category.

Figure 3 shows that the category "irrelevant work" applies to a little more than one third of university Bachelor graduates. In contrast, the respective proportion is 8 per cent for engineering Bachelor graduates from university colleges and 7 per cent for Master graduates.

Figure 3. Different Forms of "Match/Mismatch" Six Months after Graduation among 2007 Graduates from Institutions of Higher Education in Norway (percentage of graduates in the labour force)



Source: Norwegian Graduate Survey 2007

In 2007, the demand for labour was very high in Norway, and thus the unemployment rate among graduates six months after graduation was low, i.e. 4 per cent. This rate was both 4 per cent among university Bachelor graduates and Master graduates.

The survey undertaken in 2009 showed that the unemployment rate of recent Master graduates increased as a consequence of the economic crisis from 3.9 per cent in 2007 to 6 per cent in 2009. As pointed out above, the analysis of graduate employment is based here on the 2007 survey, because Bachelor graduates were not included in the 2009 Graduate Survey.

Satisfaction with relevance of study for work

Among the questions included in the Norwegian graduate survey about *job satisfaction* the question on satisfaction with the relevance of study for work is most salient. In combining the categories "very satisfied" and "a little satisfied" presented in table 11, we note the highest level of satisfaction among Master

graduates (74 per cent). It is clearly lower among university Bachelor graduates (48 per cent) – 60 per cent among those in science and technology and 46 per cent among those in other fields.

Table 11. Extent of Satisfaction with the Relevance of Study to Work Six Months after Graduation on the Part of 2007 Graduates from Institutions of Higher Education Institutions in Norway (percentage of employed graduates)

	University Bachelors, science and technology	University Bachelors, other fields	Total university Bachelors	Engineering Bachelors, university colleges	Master/ higher degree	Total
Very dissatisfied	6	8	8	4	2	3
A little dissatisfied	8	21	19	14	10	12
Neither nor	26	25	25	21	15	17
A little satisfied	33	31	32	42	38	37
Very satisfied	27	15	16	20	36	31
Total	100	100	100	100	100	100

Source: Norwegian Graduate Survey 2007

The engineering Bachelor graduates from university colleges (61 per cent) are more satisfied than the university Bachelor graduates. The degree of satisfaction, however, is clearly lower than on the part of Master graduates, although the responses to the other questions regarding the link and the mismatch between study and work were otherwise similar between these two groups.

CONCLUDING REMARKS

The labour market situation was very good in Norway in 2007 – the year in which the survey analysed here was undertaken. Hence, all groups of higher education graduates in Norway fare relatively well in the labour market compared to those in many other European countries.

The Norwegian case study, however, shows that the labour market situation for the new university Bachelor graduates was far from good. Their situation was not bad in terms of risk of becoming unemployed, but in terms of difficulties in finding a relevant job. University Bachelor graduates more frequently than the other groups:

- have limited-term contracts and part-time jobs,
- have occupations that do not necessarily or do not require higher education,
- hold jobs that do not correspond to the content of their study,
- are dissatisfied, as far as relevance of their study to the labour market is concerned.

More than 60 per cent of the university Bachelor graduates are employed six months after graduation; most combine study and employment. Almost 40 per cent study and work, and in addition one third are studying without having an employment. Even more stated that they intended to go on studying; in total about 80 per cent plan to take a Master degree or a PhD degree.

Employed university Bachelor graduates who consider that employment is their main activity more often have work that corresponds to their education level than those who do not. Still, when comparing groups who consider employment as their main activity, there remains a gap between university Bachelor graduates on the one side and Master graduates and engineering Bachelors on the other.

Continuing to study directly after the award of a Bachelor degree, for instance by combining work and study, may not have been a free choice for all university Bachelor graduates. We do not know how many preferred this and how many chose this option after having faced difficulties in finding a suitable job. The work situation of university Bachelor graduates suggests, overall, that the universities have not prepared them well for employment and that employers welcomed the new generic Bachelor educations.

The main objective of the introduction of Bachelor programmes at universities in Norway was to prepare students for Master study. However, it was also a central goal that a Bachelor degree should give students an opportunity to enter the labour market and obtain jobs based on their first degree. It was said in the Report to the Storting (Ministry of Education and Research, 2001) that universities should go through their study programmes in order to organise good study courses with a better vocational orientation.

The study has shown that the opportunities for mobility during the course of study are relatively high in Norway in a comparative perspective. For example, one out of five university Bachelor students and one out of four Master students from Norway has taken the opportunity to study abroad for some period. Taking into account the period of study, we note that university Bachelor students in Norway are most likely to study abroad. In contrast, only about five per cent of the engineering Bachelor students from university colleges study abroad for some period; this could be because these study programmes are less flexible, making it difficult to find time for an exchange.

But even though the temporary outward mobility of students from Norway is quite high, current mobility figures are far from the goal that all students should have the opportunity to study abroad. Whether many students are not interested in the opportunities provided or whether action would be needed to increase opportunities cannot be judged on the basis of the survey analysed. However, data from another survey show that there are both personal and practical barriers for studying abroad, but that personal reasons, such as family/partner, are the most important ones (SIU, 2010).

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