

RADIM RYŠKA AND MARTIN ZELENKA

PROFESSIONAL SUCCESS DUE TO SCARCITY? BACHELOR GRADUATES IN THE CZECH REPUBLIC

STUDY STRUCTURE IN THE CZECH REPUBLIC

Before 1989, the Czech higher education system was highly centralised, very small and elitist in nature. The development of tertiary education had stagnated and did not respond to the rising educational aspirations or to the demand for tertiary education. It can be defined as a unitary system of traditional university education that offered only Master degrees. Because of the low income returns to higher education and the orientation of the economy towards heavy industry there was little motivation to study at university on the part of less educated lower classes (for educated higher classes a degree was a way of maintaining their social status) and little demand on the labour market. After 1989, a need for shorter and vocationally oriented types of tertiary education emerged. However, in the first half of the 1990s, tertiary education still consisted only of traditional universities focusing on academically-oriented studies. It was necessarily selective, and its limited capacity could not satisfy demand.

In the mid-1990s, a new type of tertiary institution, the *higher professional schools* (ISCED 5B) gradually came into existence in the Czech Republic. While it was originally presumed that they would become the main way of diversifying higher education (which was deemed necessary as a corollary to its expansion) as its lower tier, these institutions were not granted higher education status, and the only way they could come into existence was to create them as an extension of (upper) secondary vocational education, i.e. without any systemic links to existing universities (enabling, for instance, transfers of credits or recognition of studies).

A few years later – more or less at the same time as the Bologna Process – *universities started to offer vocationally-oriented Bachelor programmes* (ISCED 5A). Hence, further development and even the very existence of higher professional schools became thwarted. Although the duration of studies was the same, links to enterprises were closer and vocational orientation was more pronounced in higher professional schools, their diploma enjoyed less prestige than a first university degree and did not open the way to Master programmes.

During the second half of the 1990s and particularly after the turn of the century, when substantial changes (strengthening vocational education at the tertiary level, massive expansion of Bachelor studies and setting-up of private non-university higher education institutions) were introduced, the number of study places greatly increased – gradually at the beginning and quite steeply in the last few years. As a result, the tertiary education sector in the Czech Republic is now predominantly composed of public higher education institutions (with slightly less than 80 per cent of all students), followed by a constantly increasing number of

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private higher education institutions (with over 10 per cent of all students) and constantly diminishing higher professional schools (with less than 10 per cent of all students).

Bachelor studies underwent massive expansion – while in the year 2002 there were not even 16,000 Bachelor graduates (accounting for about a quarter of all higher education graduates), in the year 2009 there were more than 79,000 (accounting for almost 55 per cent of all HE graduates). However, most continue study in Master programmes and do not enter the labour market directly. Their share is gradually increasing, and as of 2009 three quarters of all Bachelors continued to study.

To sum up, tertiary education in the Czech Republic is composed of higher professional schools (introduced in 1992/93, with a two- to three-year study programmes) and higher education institutions (of a university and a non-university type). Conform to the Bologna process, there are three types of programmes: three- to four-year Bachelor programmes, Master programmes – five- to six-year single-cycle Master programmes or two- to three-year second-cycle Master programmes – and doctoral programmes leading to a PhD degree.

THE GRADUATE SURVEYS USED FOR THE ANALYSIS

Three main graduate surveys were used for this analysis. They were supplemented by data from the Czech Labour Force Survey, the European Social Survey, the Ministry of Labour and Social Affairs, and the Combined Register of Students.

The first graduate survey was *undertaken in the framework of the REFLEX project* involving partners from 16 countries (Austria, Belgium/Flanders, the Czech Republic, Estonia, Finland, France, Germany, Italy, Japan, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom) and was coordinated by the Research Centre for Education and the Labour Market (ROA) of Maastricht University. It focused on higher education graduates who had more or less than five years of experience since leaving higher education. The sample was restricted to ISCED 5A level (Bachelors and Masters or equivalent) graduates. The target cohort of graduates for the Czech Republic was defined in terms of the calendar years 2001 and 2002. A two-stage sampling was used: First a sample of higher education institutions, at the second stage a random sample within these institutions. Data were collected between March and June 2006. Overall 6,794 completed questionnaires were returned with a response rate of 27 per cent. The non-weighted sample consisted of 17 per cent of Bachelor graduates and of 82 per cent of Master graduates. Weighting was applied so that the sample represented the population of HE graduates in relevant years (with regard to the type of programme, field of study, sex, region, etc.). The disadvantage of this data source is that it is quite outdated as it relates to years 2001 and 2002. The advantage is, of course, a large sample of tertiary education graduates and international comparability.

The second graduate survey was the *REFLEX 2010 survey* – “Employability and situation of higher education graduates in the labor market”, which is part of a national project in the Czech Republic and builds significantly on the previous

REFLEX project. Data were collected between May and September 2010. The target cohort of graduates was defined in terms of the calendar years 2005 and 2006. Overall 20 public, one state and three private higher education schools took part in the project. The questioning was done via Internet. Overall 8,629 students completed questionnaires with response rate at 20 per cent. The non-weighted sample consists of those who graduated in the years 2005 or 2006 as Bachelor graduates in nearly 32 per cent of the cases, as Masters in almost 68 per cent of the cases and as doctors in about 1 per cent of the cases. There are more than 800 respondents (almost 9 per cent of the sample) whose highest education level at the time of the survey is the Bachelor degree. Weighting was applied so that the sample represented the population of HE graduates in relevant years.

The third graduate survey was the Czech School Leaver Survey *School to Work Transition of Graduates and Skill Requirements*. It was conducted as part of the Quality II project (under the ESF Operational Programme Human Resource Development), and the data were collected between October 2007 and January 2008. The sample was chosen by the quota sample technique. Quotas were gender, age, level of education, region and economic activity and they were calculated on the basis of data from the Czech Labour Force Survey. Data was collected by means of face-to-face interviews using the CAPI (Computer Assisted Personal Interviewing) technique. Overall 5,853 respondents between the ages of 19 and 59 were questioned. For the purposes of the original project the sample emphasised young people and several other specific groups (people studying in tertiary education). Weighting was used. Hence, the sample was fully representative for the relevant population. Weights were based on data about gender, education, economic activity, age and region gathered in the Czech Labour Force Survey 2008. The response rate was 60 per cent. This survey made it possible to compare the number of Bachelor graduates with primary, secondary and post-secondary non tertiary education graduates, which is much lower than in the REFLEX projects.

The survey had two main focuses. The first contained several questions: What is the process of transition of school leavers from school to work, how far has the school leavers' position in the labour market changed, and how do graduates value their education and their school? What are the ensuing recommendations for education policy (for example for the structure of the Czech school system and for educational content) and for employment policy? The second contained questions such as: What is the relation between job qualification requirements and workers' educational level? How does their education match with skill requirements and how can it be used in the labour market? What are the cases of over-qualification or of under-qualification? What will it mean for further development of education and work and what does it mean for lifelong learning?

As for the *additional data sources*, the Czech Labour Force Survey is a standardised ILO Labour Force Survey. It is carried out four times a year as a random sample of households (about 60,000 respondents per quarter), and focuses on identifying the economic status of the population in the country. The European Social Survey, which so far has been conducted in four rounds in the years 2002-2009, focuses on examining social structure and value orientation, and on moni-

toring attitudes, beliefs and behaviour patterns in current European societies. A sample size for all participating countries is about 40,000 (for the Czech Republic it is about 2000) in each round.

SOCIO-BIOGRAPHIC BACKGROUND AND COURSE OF STUDY

Bachelor studies in the Czech Republic are dominated by *women*, and a Master degree is more often obtained by men. According to the latest Czech Labour Force Survey, of all Bachelor graduates, more than 56 per cent are women, while in the group of Master graduates they represented about 45 per cent.

Much empirical evidence shows that *social origin* is an important factor that affects young people's chances of continuing education or dropping out early with different labour market outcomes. The relationship between parents' and children's education in the Czech Republic is very strong. According to data from research undertaken in 2007/08, young people who have attained higher levels of education more often have parents with tertiary education than parents with primary or secondary education. For example, graduates with a Master degree have fathers with tertiary education in more than 30 per cent of the cases, and mothers with tertiary education in almost 20 per cent of the cases. At least one parent obtained a higher education degree in nearly two fifths of the cases. Compared to that, graduates with a Bachelor degree had at least one parent with tertiary education in one of four cases (a father in 19 per cent and a mother in 14 per cent of the cases). The proportion of graduates of higher professional schools and of all types of upper secondary schools with parents where at least one has attained tertiary education, ranges from 13 per cent to 19 per cent. At lower levels of education, the share is less than 6 per cent.

Similar results can be found in REFLEX 2010: Nearly 35 per cent of Master graduates of the years 2005 and 2006 have a father with tertiary education and 26 per cent (23 per cent in REFLEX 2006 of the graduation years 2001 and 2002) of them have a mother with tertiary education. Bachelor graduates on the other hand have a father with tertiary education in 26 per cent of the cases and a mother with tertiary education in more than 16 per cent of the cases. While these figures are generally higher than those taken from the 2007 survey, it clearly shows the same quite substantial difference between Master and Bachelor graduates. It seems that while Bachelor studies often serve as a way to upgrade on the level of parents education, Master studies are more often a way of reproducing parents education. Of course, the number of tertiary graduates is substantially higher than in the past so quite large share of Master graduates' parents did not achieve tertiary level.

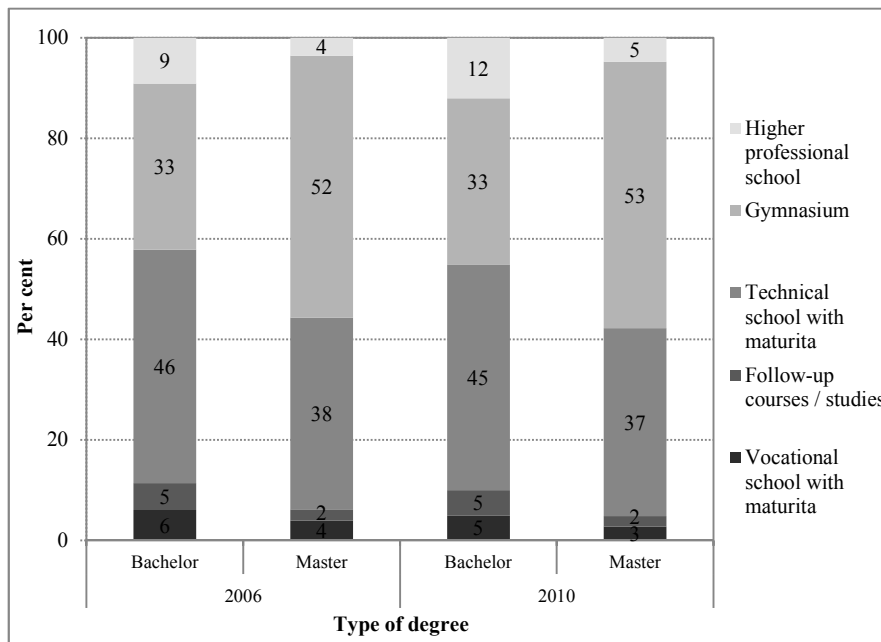
In looking at the relationship between parents' occupation and children's educational attainment, we find the most substantial difference between Bachelor and Master graduates in the share of fathers who are working in a professional/managerial occupation. According to data of the REFLEX 2010 survey, more than 37 per cent of fathers of Master graduates of the years 2005 and 2006 were working (when the respondent was 15 years old) in this occupation – a share comparatively higher than the 29 per cent in case of Bachelor graduates. The difference

BACHELOR GRADUATES IN THE CZECH REPUBLIC

in case of mothers is about the same – 36 per cent and 27 per cent. In the case of the share of parents working in associate professional occupation there is also quite small discrepancy between Bachelor and Master graduates. Fathers of Master graduates were working in this occupation in nearly 17 per cent of the cases and mothers in 22 per cent of the cases. Comparable numbers for Bachelor graduates are 14 per cent in the case of fathers and 22 per cent in the case of mothers.

According to the data of the 2007/08 survey, more than 33 per cent of fathers of Master graduates were working in the same occupation when the respondent was 15 years old – a share comparatively higher than the 15 per cent in the case of Bachelor graduates. The difference in the case of mothers is much lower – 22 per cent and 18 per cent. Even if the proportion of parents working in associate professional occupation is considered, a small difference between Bachelor and Master graduates remains. Fathers of Master graduates were working in this occupation in about 23 per cent of the cases and mothers in less than 22 per cent of the cases. Comparable numbers for Bachelor graduates are 20 per cent in the case of fathers and 17 per cent in the case of mothers.

Figure 1. Prior Education to Higher Education Studies of 2001-2002 and 2005-2006 Bachelor and Master Graduates from Higher Education Institutions in the Czech Republic (per cent)



Source: REFLEX 2006 and REFLEX 2010

Bachelor and Master graduates also differ substantially in their course of study at secondary level. While both generally quite often follow general secondary educa-

tion, in the case of Master graduates this happen considerably more often. On the other hand, Bachelor graduates graduate from technical schools, secondary vocational schools and higher professional schools before their higher education studies much more often than Master graduates.

According to the REFLEX 2010 data which relate to the years 2005 and 2006, Bachelor graduates most often took the route of secondary technical schools (more than 45 per cent), quite a substantial number graduated from general secondary schools (one third), and more than one tenth completed higher professional education. The route via secondary vocational schools was also an important one (more than 10 per cent including the follow-up courses).

As Bachelor programmes last for three to four years and some Bachelor graduates spend time in Master programmes without successfully completing them, the average *length of time spent on higher education study* for Bachelor graduates is about 3.7 years. On average, their age on graduation is about one and a half years more than Master graduates. According to the REFLEX 2010 project, Bachelors in 2005 and 2006 graduated at the age of 28.0 years, whereas Masters graduated at the age of 26.3 years. This is mainly because Bachelor programmes often serve as a supplementary way of obtaining a degree for those who, for various reasons, were not able to do so in their early 20s. Graduates are also getting older as, according to the data from REFLEX 2006, the average age of graduation of the 2001 and 2002 graduates was 25.8 years for Bachelors and 25.2 years for Masters.

One must ask whether Bachelor graduates are *satisfied with their choice of course of study*. The results of the 2007/08 survey show that most have responded positively, however also a significant number would have liked to continue their studies and obtain a higher degree. 78 per cent are satisfied with their educational path, but more than 15 per cent would have chosen a higher level, and less than 2 per cent a lower level. In comparison, 91 per cent of Master graduates are satisfied with their educational path, less than 6 per cent would have chosen a higher level, and about 3 per cent a lower level.

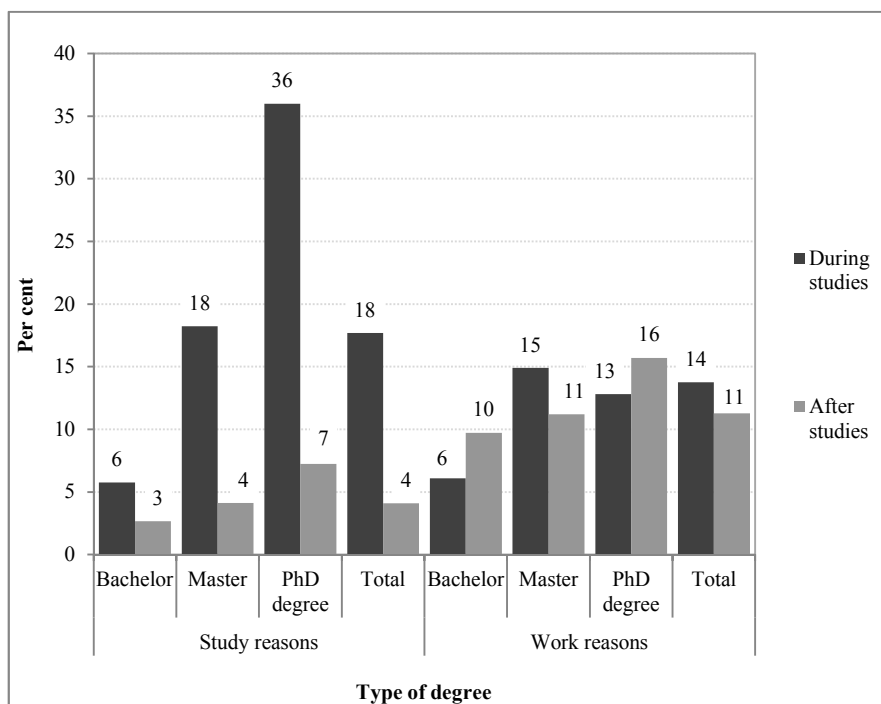
INTERNATIONAL MOBILITY

There is not much information about graduates' international mobility. Fortunately, in the REFLEX 2010, there were questions about the time Czech 2005 and 2006 graduates had spent abroad during their course of study or after graduation for study, study-related activities or work. As can be seen in [figure 2](#), only a small share of Bachelor graduates (6 per cent) had *studied abroad* for at least 3 months during their course study. In contrast, many Master graduates had spent a period abroad during their studies. This cannot be explained merely by the length of the overall study period. Rather, Bachelor students do not have as much flexible time as Master graduates who often go abroad in the later stages of their course of study.

There is much smaller yet still considerable difference between Bachelors and Masters who *go abroad for work-related reasons*. Some 16 per cent of Bachelors and 26 per cent of Masters were working outside the Czech Republic for at least three months during or after their studies.

BACHELOR GRADUATES IN THE CZECH REPUBLIC

Figure 2. Mobility for at Least Three Months during and after the Course of Study of 2005-2006 Graduates from Higher Education Institutions in the Czech Republic (per cent)



Source: REFLEX 2010

Even though the REFLEX 2006 data on 2001-2002 graduates do not offer full comparability with the results above, it can be assumed that the experience of studying abroad is becoming available to a growing number of higher education students. Unfortunately, this only applies to Master graduates. Their share who had studied abroad during studies was about 10 per cent (compared to 18 per cent in the data from 2010 on 2005-2006 graduates), while for Bachelors it was 6 per cent (the same as in the 2010 survey).

EMPLOYMENT AND FURTHER STUDY OF BACHELOR GRADUATES

The employment situation of Bachelor graduates is greatly influenced by the expansion of their numbers and the economic situation of the country.

First information about what Bachelor graduates are *doing several years after graduation* is provided by the REFLEX data. Five years after graduation, most of those who graduated from higher education institutions in the Czech Republic in 2001 and 2002 did not continue their studies. More than 81 per cent were only employed, almost 13 per cent were neither studying nor employed, and only 6 per

cent were still studying (about three quarters of those were studying and employed and about one quarter were only studying). These figures resemble those of Master graduates. The biggest difference is that there was a share of those who were neither studying nor employed (less than 9 per cent). Slightly more Master graduates were employed (almost 83 per cent) and, surprisingly, more Master students were still studying (9 per cent) five years after graduation.

However, these data are somewhat outdated and do not present the situation just after graduation. We therefore used data about *unemployed graduates* gathered by labour offices and processed at the Czech Ministry of Labour and Social Affairs twice a year. An unemployed graduate is defined as a person registered as a jobseeker at a labour office within the first two years after graduation. This registered unemployment differs from the ILO definition. Data on the number of higher education graduates and on the number of those who continue their studies after graduation are provided by a Combined Register of Students (SIMS in Czech). They enable us to analyse the situation of Bachelor graduates up to seven years after graduation.

In 2002 only about 16,000 Bachelors graduated. Within six months after graduation, 58 per cent were continuing their studies, 18 per cent were unemployed, and almost one quarter was in employment or economically inactive for other reasons than higher education (unfortunately we are unable to distinguish between both groups but we assume that most are employed and only a small share is inactive). Within the subsequent six months, i.e. to one year after graduation, the share of unemployed is always radically reduced, and also in 2002 the share of unemployed dropped to 9 per cent. Correspondingly, the share of those who continued their studies and those in employment increased. In the second year after graduation, the share of the unemployed had decreased and the share of the other two groups had increased.

The dynamics within the first two years after graduation do not change much over time. What changed dramatically was a significant rise in the number of graduates, an increase in the share of those who continued to study, and significant changes in the economic situation of the country. While in 2003 there were only slightly more than 16,000 Bachelor graduates, this figure greatly increased to almost 80,000 in 2009, and while in 2003 not even two-thirds of Bachelors continued their (mostly Master) studies, there were about three-quarters of them in 2009. The overall unemployment rate rapidly decreased, as did the share of unemployed Bachelor graduates. It was lowest in the years 2007 and 2008 when the share of unemployed Bachelors within six month after the graduation was 8 per cent; it was 4 per cent in the second half-year after graduation and 3 per cent in the second year after the graduation. Those figures have increased since then and are expected to be substantially higher in 2010. This is, of course, due to the effect of the economic crisis which has caused a significant increase in the overall unemployment rate, and the decreasing proportion of the employed in recent years. In spite of this, due to a large increase in the number of Bachelor graduates, the absolute number of Bachelors entering the labour market continues to grow substantially. As of 2009, almost 20,000 graduates entered the labour market, which is about four times more than in 2002.

BACHELOR GRADUATES IN THE CZECH REPUBLIC

These data can only partly be compared to those of Master graduates. Logically, the share of Master graduates who continue their studies is much lower, and thus the share of those who enter the labour market within the first two years after graduation much higher. Therefore, it only makes sense to compare the share of unemployment. The most recent figures show that right after graduation (within the first six months) the share of unemployed is slightly higher for Masters (10 per cent) than for Bachelors (10 per cent). But thereafter, Masters become much less often unemployed than Bachelors. In the second six months after graduation, there were 3 per cent unemployed Masters compared to 4 per cent Bachelors. In the second year after graduation, this proportion changed to 2 per cent and 3 per cent respectively.

Table 1. Employment and Study within Two Years after Graduation of the 2002-2009 Graduates from Higher Education Institutions in the Czech Republic (per cent)

Year	2002	2003	2004	2005	2006	2007	2008	2009
Numbers of graduates from Bachelor's programmes	15,861	16,036	20,125	28,947	40,996	54,062	67,873	79,418
<i>Proportion of Bachelor's graduates pursuing further study at the same or other institution in period</i>								
Within 6 months of graduation	58	52	53	59	66	69	68	68
From 6 to 12 months after graduation	64	59	56	60	63	69	72	72
From 12 to 24 months after graduation	65	61	61	65	69	74	74	n/a
<i>Proportion of Bachelor's graduates who are unemployed in period</i>								
Within 6 months of graduation	18	18	16	13	13	10	8	9
From 6 to 12 months after graduation	9	10	9	6	6	4	3	4
From 12 to 24 months after graduation	8	6	4	3	3	2	3	n/a
<i>Proportion of Bachelor's graduates who are not unemployed and not opting to pursue further study in period</i>								
Within 6 months of graduation	24	30	30	28	21	21	24	23
From 6 to 12 months after graduation	27	31	35	34	32	27	25	24
From 12 to 24 months after graduation	27	34	35	31	28	24	23	n/a

Source: Ministry of Labour and Social Affairs, SIMS

PROFESSIONAL SUCCESS OF BACHELOR GRADUATES

Areas of professional success

The concept of professional success is very complex. It concerns societal and personal outcomes which are interconnected. We can see how new knowledge is acquired and how it is used. We can also focus on how people with specific personal characteristics act in their professional and personal life. Different approaches as to how to measure professional success and different data are available, and different indicators can be used.

On the one hand, data can be used to indicate how certain groups of persons with specific characteristics affect measurable economic gains. On the other different data describe certain characteristics of the transition from study to work (or to another job with better use of the knowledge acquired), including the quality of the job (the type of contract, income, etc.) or the quality of the knowledge transfer from higher education to work (whether employment corresponds to the level and field of education and how the knowledge is used in the job). Other questions concern job satisfaction.

Data used to measure professional success can come from different sources and be of different quality. Most come from surveys such as the labour force survey conducted on a large sample or from special surveys like those on graduate transition to the labour market that can include personal characteristics, views and attitudes. In what follows, we use data from two projects on the transition of graduates to the labour market – the Labour Force Survey and the European Social Survey.

From the societal and economic point of view, the key points of professional success concern the way the knowledge acquired is transformed into economic outcomes. We will analyse the distribution of Bachelor graduates and compare it to that of graduates of upper secondary and Master levels. First, we will examine the jobs of Bachelor graduates.

Positive situation for a small share of graduates in the labour force

Compared to similarly developed economies, the number of tertiary graduates in the Czech economy is still low, which creates a positive environment for tertiary graduates as a whole. Moreover, many Bachelor graduates continue their study. In the economy, there are 18 per cent of tertiary graduates, of whom 84 per cent are Master graduates, 7 per cent Bachelor graduates, 6 per cent higher professional school graduates and 4 per cent PhD graduates (2009 data). Changes were noted mainly among Master and Bachelor graduates. Compared to 2005, the share of Masters graduates has dropped from over 86 per cent to the above 84 per cent, while the share of Bachelors has increased from 4 per cent to 7 per cent. An increase, although lower, was observed in the case of graduates of higher professional schools; however their future is uncertain due to the demographic decline and to their ambiguous position in the tertiary system.

Occupational category

Compared to developed economies with a higher proportion of tertiary graduates, most of the relatively small proportion of tertiary graduates in the Czech Republic are still working in managerial and professional (or associate professional) occupations. However, in recent years, a change can be seen, as a growing number of tertiary graduates in the labour market has caused more of them to occupy professions in ISCO 4-9 groups. This is the case not only for new but also for older tertiary graduates.

Table 2. Proportion of Tertiary Education-Trained Persons in the Czech Republic in Various Occupational Categories (per cent)

	Age 20-29		Age above 30	
	2005	2009	2005	2009
ISCO 1+2	60	52	71	67
ISCO 3	32	38	24	26
ISCO 4-9	8	10	5	7

Source: Labour Force Survey

The situation of Bachelor degree holders is similar to that of the whole group of tertiary education-trained persons. However, their proportion occupying a profession in the lower-level ISCO 4-9 groups is even more pronounced. A stronger movement between the groups ISCO 1+2 and ISCO 3 is visible in the case of Bachelor graduates: Recent graduates of Bachelor studies are entering professions at the ISCO 3 level more often than the ISCO 1+2 than was the case a few years ago. In the case of Master graduates, this effect is weaker. An obvious difference can be seen between groups of Bachelor and Master graduates occupying jobs at ISCO 4-9 level: Bachelor graduates more often work in these jobs. The change between 2005 and 2009 in the group of older Bachelor graduates is not as high in other groups; this may be an effect of older workers taking Bachelor courses to improve their job positions and further career prospects.

Table 3. *Proportion of Bachelor and Master Degree Holders in the Czech Republic in Various Occupational Categories (per cent)*

	Bachelor graduates				Master graduates			
	Age 20-29		Age above 30		Age 20-29		Age above 30	
	2005	2009	2005	2009	2005	2009	2005	2009
ISCO 1+2	45	31	46	38	66	60	71	68
ISCO 3	39	52	41	49	28	34	24	25
ISCO 4-9	16	18	14	14	6	6	5	7

Source: Labour Force Survey

Bachelor graduates do not occupy jobs equally across the board, but they can be found more often in certain professional groups. In the managerial occupations (ISCO 1), the percentage in categories such as *Heads of offices, secretaries and executives of district and municipal authorities, Executives of smaller units*, or among *Senior public officials* is small. In the professional occupations (ISCO 2), there are many Bachelor graduates in jobs such as *Teachers at special schools, Archivists, librarians and professionals in related fields* and *Other administrative professionals*. Among associate professional occupations (ISCO 3), the greatest share of Bachelor graduates can be found in the following jobs: *Health care assistants, opticians and rehabilitation staff, Professional caregivers, nurses, Police inspectors and detectives, Social workers*; and notable numbers are working as *Teachers for preschool education of children and youth, Teachers in special schools, Professionals – brokers commercial and financial transactions, Representatives – agents, Administrative associate professionals* and *Customs and Excise staff and workers in related fields*.

Income

Income differences are one element of professional success. They are connected to the structure of graduates' jobs and to their position in the economy. Concerning Bachelor graduates, their qualification is relatively recent and their experience is limited in the Czech Republic. Differences by tertiary level according to the average hourly wage (as indicated by the information on average earning) fall into two groups. One comprises Bachelor graduates and graduates of higher professional schools, the other includes Master and PhD graduates. The hourly wage of Bachelor and higher professional school graduates is 51 per cent lower than that of Master and PhD graduates; but it is 15 per cent higher than that of higher secondary graduates with maturita, 54 per cent higher than that of higher secondary graduates without maturita, and 85 per cent higher than that of those with only basic or no education.

BACHELOR GRADUATES IN THE CZECH REPUBLIC

Table 4. Employees in the Czech Republic in the Various Rankings of Gross Monthly Earnings according to Data of the Czech Statistical Office, by Level of Educational Attainment (per cent)

<i>Education / earnings (CZK)</i>	All	Basic education	Secondary without maturita	Secondary with maturita	Higher professional and Bachelor	Master's and PhD
Till 15,000	18	47	27	10	5	1
15,001 till 20,000	22	29	30	20	15	4
20,001 till 24,000	18	12	19	21	18	9
24,001 till 28,000	14	6	12	17	17	15
28,001 till 32,000	9	3	6	11	12	13
32,001 till 40,000	9	2	4	12	16	18
40,001 and more	11	1	2	10	16	39

Source: Czech Statistical Office, 2010, 1st quarter

Table 5. Employees in the Czech Republic in the Various Rankings of Gross Monthly Earnings according to Data of the REFLEX 2010 Survey, by Level of Educational Attainment (per cent)

	Bachelor	Master's	PhD	Total
<i>Till 20,000</i>				
First job	69	64	62	65
Current	29	22	24	24
<i>20,000 – 29,999</i>				
First job	24	27	21	26
Current	39	33	31	34
<i>30,000-39,999</i>				
First job	5	6	10	6
Current	16	20	20	19
<i>40,000 and more</i>				
First job	2	3	7	3
Current	11	21	18	18
<i>Gross monthly earnings</i>				
First job	18,278	19,549	21,402	19,253
Current	28,217	32,996	31,200	31,641

Source: REFLEX 2010

Distribution of employees by earnings provides us with another perspective of how Bachelor graduates convert their education into monetary value (see [tables 4 and 5](#)). Though there is a visible advantage as compared to graduates of a lower level of education, the difference as compared to graduates of Master and doctoral programmes is greater than would be expected when taking into account three-year education of Bachelors and only another two-year education of Masters. From the Reflex 2010 survey difference between first and current job is also obvious.

Transition to employment and employment conditions

We will explore different aspects of how Bachelor graduates obtained their first jobs and how stable these were compared to graduates of other levels of education. As in the case of many other indicators, the position of Bachelor graduates here is also between Master graduates and higher secondary school graduates. We must keep in mind that this implies many other characteristics of a personal nature, and that it does not necessarily draw a correct picture of the effectiveness of Bachelor study programmes. From the 2007/08 survey, we saw that Bachelors need half the time to find a job compared to graduates from higher secondary school and Masters half of the time that Bachelors need. Reflex 2010 shows that it took the 2005-2006 Bachelor graduates 2.7 months on average to find a job as compared to 2.0 months for Master graduates. The situation of PhD graduates (only 0.4 months on average) is different, as they mostly already hold a job.

Although the duration of job contract can be considered as another indicator of a successful transition from school to work, there is no significant difference between Bachelors and Masters. 85 per cent of the Bachelor graduates and 86 per cent of the Master graduates obtain a long term or unlimited term contract. Similarly, 84 per cent of the Bachelor graduates and 87 per cent of the Master graduates are employed full-time.

Link between level of educational attainment and job requirements

An appropriate use of the highest level of education attained is important to assess the effectiveness of both public and private expenditure on education. More important is that people have jobs that correspond more to their level of education than to their field of study. We find significant differences between graduates of Bachelor and Master programmes. Graduates of Master's programmes have jobs that correspond to their level of education much more often than Bachelors, and Bachelors are more likely to have jobs that would require Masters. This reflects an unclear position of Bachelor education in the labour market, and also a still insufficient number of tertiary graduates in the Czech economy, as can be seen in [table 6](#).

BACHELOR GRADUATES IN THE CZECH REPUBLIC

Table 6. Educational Level Perceived as Most Appropriate for the First and Current Job Four to Five Years Later for the 2005-2006 Graduates from Tertiary Education in the Czech Republic (per cent)

<i>Most appropriate education</i>	Bachelor	Master	PhD	Total
<i>PhD and other postgraduat qualification</i>				
First Job	2	4	43	5
Current Job	4	8	64	9
<i>Master</i>				
First Job	34	71	50	60
Current Job	46	79	32	69
<i>Bachelor</i>				
First Job	36	9	2	16
Current Job	34	6	2	13
<i>Higher professional school</i>				
First Job	7	3	1	4
Current Job	5	2	0	2
<i>Lower than higher education</i>				
First Job	22	12	3	14
Current Job	11	5	2	7

Source: REFLEX 2010

Graduates of Master programmes hold jobs that correspond to their level of education (71 per cent as regards the first job and 79 per cent as regards the job some years later) much more often than Bachelors (36 per cent and 34 per cent respectively); Bachelors are more frequently convinced a few years after graduation that their job would be better held by a Master graduate (46 per cent). Altogether, fewer graduates, Bachelors and Masters alike, think that their job a few years later would require a lower level of education than concerning their first job. This reflects the still unclear position of Bachelor education in the labour market in the Czech Republic, where the number of tertiary graduates is still insufficient and where the proportion of Bachelor graduates among all graduates is still low. The number of Master graduates is still too low for the needs of the current structure of the economy, thus opening up the door to higher-level jobs for Bachelor graduates.

Use of knowledge

In the REFLEX project, tertiary graduates assessed how their knowledge acquired in the course of study is used in their current job. The ratings of Master graduates (67 per cent) hardly differ from those of Bachelor graduates (65 per cent). On the basis of the assessment of the links between actual and most suitable educational attainment reported above, one could have expected that Bachelors would use their knowledge to a much greater extent, as many are working in positions that would

need a Master degree. It could be that the graduates had more specific areas of knowledge in mind than the overall level of competences needed.

Job satisfaction

73 per cent of Bachelor graduates expressed great satisfaction with their work situation a few years after graduation, i.e. slightly more than Master graduates (71 per cent).

Personal characteristic for professional success

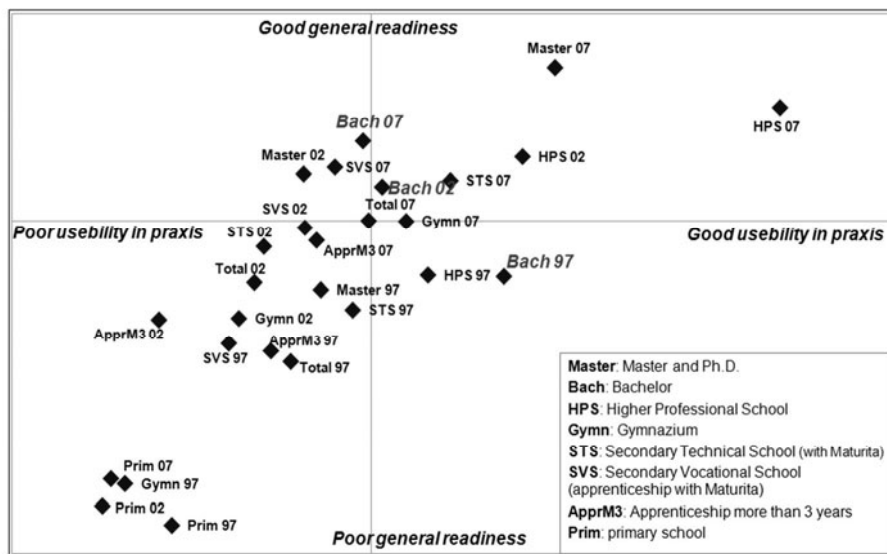
Even if we do not have an exact measure of professional success, these results indicate that about three quarters of tertiary education graduates consider their professional life as successful. This is because many perceive key elements of professional success as corresponding to their competences and their personal characteristics. The following personal characteristics are considered to be very important for professional success: (a) a *positive attitude* (not to lose energy on negative thinking, not to complain); (b) *openness to change* (flexibility and adaptability are qualities many employers seek as well as searching for new pathways, responses need to be quick); (c) *resilience* (the ability to overcome barriers, not to get frustrated, not to give up); (d) the *power of choice* (successful people understand that it is their choice that determines their success, they do not blame others for their failure). These characteristics – or at least some of them -have been included in a new data collection in June and July 2010 carried out as part of a new round of the REFLEX project. Further analyses may shed more light on these matters.

Taking into account all the dimensions of professional success mentioned above, we will focus on how satisfied graduates are with their education, as it would help us to describe the interaction between the world of education and the labour market. A factor analysis of data gathered over the last ten years has found two essential dimensions: the overall readiness and the use in practice. Overall readiness expresses how the level of education attained has prepared graduates for their working life, in particular whether the school has provided a broad base of knowledge and good opportunities for specialisation. The second dimension is concerned with whether the things taught have been well used in practice, assessing their possible obsolescence and proportion of theoretical knowledge that is not very applicable in practice. Taken together, both factors cover 65 per cent of the variance (the first factor 34 per cent, the second 31 per cent).

Using these factors, factor scores were calculated for each respondent from the surveys of the years 1997, 2002 and 2007. The resulting graph shows both dimensions and the position of different types of schools in the period examined. As far as Bachelor studies (marked as Bach) are concerned, overall readiness has improved during the period but the use in practice has been reduced. This reflects the development in the 1990s, when new practically-oriented Bachelor programmes were introduced, but the other Bachelor programmes only more or less replaced the

first part of Master studies. Therefore, graduates of Master programmes (Master) as and those of higher professional schools (HPS) give a more positive assessment of their education from the point of view of its use than Bachelor graduates.

Figure 3. Usability of Education in Practice and General Readiness of School Leavers in the Years 1997 – 2007



Source: School leavers' survey 1997, 2002 and 2007/08

CONCLUSIONS

Available data gathered by the REFLEX 2006 and 2010 projects and by the 2007/08 Czech School Leaver Survey allow us to formulate some tentative conclusions concerning the difference between Bachelor and Master graduates. We observed differences in socio-biographic background, educational paths, as well as employment and professional success.

There is empirical evidence that social origin is an important factor that affects young people's chances of continuing education or dropping out early, and of achieving different labour market outcomes. The relationship between parents' and children's education in the Czech Republic is very strong. For Master graduates, at least one parent obtained a higher education degree in nearly two fifths of cases. Graduates with a Bachelor degree had at least one parent with tertiary education in one of four cases. It seems that while Bachelor studies often serve as a way to upgrade the level of parents' education, Master studies are more often a way of reproducing parents' education (of course, the number of tertiary graduates is much higher than in the past so that many Master graduates have parents who did not

achieve tertiary level). As for the relationship between parents' occupation and children's educational attainment, the biggest difference between Bachelor and Master graduates is in the share of fathers who are working in a professional/managerial occupation.

Bachelor and Master graduates also differ substantially in other aspects. One is the course of study they take at secondary level. While both generally quite often follow general secondary education, in the case of Master graduates this happens considerably more often. As for the average age of graduation, it is surprisingly about a year and half higher in the case of Bachelors. This is mainly because Bachelor programmes often serve as a supplementary way of obtaining a degree for those who were unable to do so in their early 20s. The graduates' satisfaction with their choice of course of study also differs. Almost all Master graduates are positive, while almost one fifth of Bachelor graduates would have liked to continue their studies and obtain a higher degree.

Experience of studying abroad for substantial period of time is not something students of Bachelor programmes go through very often. In fact only about 6 per cent had studied abroad for at least 3 months during their course study – a considerably lower share than in case of Master graduates who have much more flexible time available to do that mainly in the later stages of their course of study. In case of going abroad for work-related reasons there is smaller difference between Bachelors and Masters. About every sixth Bachelor have experience of working outside of Czech Republic for extended period of time during or after the course of study.

The employment situation of Bachelor graduates is mainly influenced by the rise in their numbers and the economic situation of the country. Particularly in recent years, the number of graduates has risen significantly, from 16,000 to 80,000, as has the proportion of those who continue to study, from less than two thirds to about three quarters. As the overall unemployment rate was rapidly decreasing before the economic crisis, so did the share of unemployed Bachelor graduates. Although today the economic crisis has caused significant increase in the overall unemployment rate, due to a large increase in the number of Bachelor graduates, the number of Bachelors entering the labour market continues to grow substantially, being in 2009 four times more than in 2002. Just after graduation (within the first six months), the unemployment rate of Bachelor and Master graduates is roughly the same, but later the proportion of unemployed Master graduates is lower, representing only about two thirds of the proportion of unemployed Bachelor graduates.

Different data can be used to measure professional success. Some relate to specific personal characteristics, others to characteristics concerning the transition from school to work, the quality of the job, the relationship between the education attained and job requirements, and job satisfaction. The number of tertiary graduates in the Czech economy is still relatively low, which creates a positive environment for them in the labour market. Moreover, a large proportion of Bachelor graduates continue their studies. Most tertiary graduates are still working in managerial and professional (or associate professional) occupations. However, in the last few years a growing number of tertiary graduates in the labour market has led to

the fact that more of them, and particularly Bachelor graduates, occupy professions in ISCO 4-9 groups. Furthermore, new Bachelor graduates are entering more often professions at the ISCO 3 level compared to ISCO 1+2 than a few years ago. In the case of Master graduates this effect is weaker.

Income differences are another element of professional success. Concerning Bachelor graduates, their qualification is relatively new and experience with it limited in the Czech Republic. In the labour market they are still in quite low numbers performing only a limited number of jobs. An hourly wage of Bachelor graduates is half that of an hourly wage of Master graduates, 15 per cent higher than that of upper secondary graduates with maturita and 54 per cent higher than that of upper secondary graduates without maturita.

In considering the time span between graduation and the first job and the stability of the first job, we observe a position of Bachelor graduates between Master graduates and upper secondary school graduates. As regards job contracts, there is no significant difference between Bachelor and Master graduates. Regarding the appropriate use of education attained, more important is that people do jobs corresponding to their level of education than jobs corresponding to their field of study. Graduates of Master programmes do jobs corresponding to their level of education much more often than Bachelors, and Bachelors do much more likely jobs that would require Masters. This fact reflects still an unclear position of Bachelor education on the labour market, and also a still insufficient number of tertiary graduates in the Czech economy.

Some key elements of professional success are closely connected to personal characteristics (positive attitude, openness to change, resilience, and the power of choice), which may thus play a great role in assessing both how much graduates use the knowledge and skills they gained and their job satisfaction. There is almost no difference between Bachelor and Master graduates in this respect, about three quarters of all tertiary graduates would see their professional life as successful.

Finally, an essential criterion of professional success is how satisfied graduates are with their education. A factor analysis of data gathered during the past ten years has found two essential dimensions: the overall readiness and the usability in practice. The first dimension expresses how education attained has prepared graduates for their working life, the second dimension is rather concerned with the fact whether the things taught have been well usable in practice.

In the period examined, as far as Bachelor studies are concerned, their overall readiness has improved during the period but the usability in practice has been reduced. This reflects the development in the 1990s, when some new practically oriented Bachelor programmes were introduced, but other Bachelor programmes only more or less replaced the first part of Master studies but did not change much in order to become more focused on usability in practice. Therefore Master graduates assess their education from the point of view of its usability in practice better than Bachelor graduates.

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