OECD THEMATIC REVIEW OF TERTIARY EDUCATION

Country Background Report for Czech Republic

Centre for Higher Education Studies
Ministry of Education, Youth and Sports
Czech Republic

February 2006

PREFACE

The background report for the OECD-review of the Czech tertiary education system has been compiled by Centre for Higher Education Studies (CHES), a state organisation providing research and expertise in higher education, on behalf of the Ministry of Education, Youth and Sports.

The group consisting of research staff of CHES have supervised and co-authored the background report. Apart from CHES and the Ministry of Education, Youth and Sports, several other institutions and representative bodies have participated in the report co-writing: the Council of Higher Education Institutions including the Students' Chamber, Research and Development Council, Accreditation Commission, Centre of Education Policy of the Faculty of Education at Charles University in Prague, Centre for Social and Economic Strategies of the faculty of Social Sciences at Charles University in Prague, Institution for Information on Education, National Institute of Technical and Vocational Education, and CzechInvest.

In addition, a representative group of national tertiary education stakeholders were credited for detailing, revising and commenting upon the background report (Ministry of Education, Youth and Sports, Council of Higher Education Institutions, individual experts in the area of tertiary education).

The main supervision of the report was the responsibility of the National Advisory Committee composed of experts from higher education system and representatives of the number of other stakeholders and chaired by the vice-minister for research and higher education Petr Kolář. The national coordinator for the review was Helena Šebková, director of CHES.

CHAPTER 1: THE NATIONAL CONTEXT OF TERTIARY EDUCATION

1.1 Basic information

1. The Czech Republic (further CR) is a relatively small country (an area of 78,886 km2) in Central Europe. It came into existence when the Czech and Slovak Federal Republic (formerly Czechoslovakia) split into two states on 1 January 1993. Territorially, the CR is divided into 13 regions and the capital city, Prague (population over 1.3 million). The official language is Czech. The unit of currency is the Czech koruna (CZK); 1 euro is about 30 CZK.

2. The CR is a parliamentary democracy with the President as the head of state. The Parliament has two chambers: the Chamber of Deputies or Poslanecka Snemovna (200 members elected for a four-year term under a system of proportional representation), and the Senate (81 Senators elected under a simple majority system for a six-year term).

3. The President, on the recommendation of the Prime Minister, appoints the cabinet. The present governing coalition is composed of the Czech Social Democratic Party (CSSD; the strongest partner in the coalition; Bohuslav Sobotka, Acting Chairman), the Christian and Democratic Union-Czechoslovak People's Party (KDU-ČSL; Miroslav Kalousek, Chairman) and the Freedom Union-Democratic Union (US-DEU; Pavel Němec, Chairman). The head of the government is Jiří Paroubek, who has been Prime Minister since 25 April 2005.

4. The parliamentary opposition is formed by the Civic Democratic Party (ODS; Mirek Topolánek, Chairman) and the Communist Party of Bohemia and Moravia (KSČM; Vojtěch Filip, Chairman). For many years the coalition majority in the Chamber of Deputies has been very low (101 out of the 200 members at present), which is an obstacle to any deeply radical reform (in tertiary education or anywhere else). The next election to the Chamber of Deputies will be held by June 2006; currently no substantial change is foreseen.

1.2 Historical background

5. From the second half of the eighteenth century to the first half of the twentieth century, the Czech territory was one of the areas in Central Europe where the processes of industrialization and urbanization and the development of a modern civic society began to take place only slightly later than in the centres of modernization in Western Europe. In the period before World War II, the former Czechoslovakia was among the ten most developed countries in the world.

6. The second half of the twentieth century was characterized by discontinuous socio-political development following the communist takeover in 1948. The communist regime (unlike its counterparts in neighbouring Poland and Hungary) retained almost complete control over all areas of life.

7. In the process of social changes that ensued following the collapse of the communist regime in November 1989, the CR experienced a development similar to that in other transforming countries, progressing from a totalitarian system with a centrally planned economy to a pluralistic democracy with a market economy. The overall human development index, derived from GDP per capita, mean life expectancy at birth and level of education, rates the CR as the 32nd country of 177 countries in the world and the 19th country in the EU (UNDP, 2004).

1.3 Population

8. The CR has 10.3 million inhabitants, with a population density of 131 per km2. Three-quarters of the population live in urban areas. Most inhabitants are of Czech nationality; other nationalities present in the country include the Slovak (3.1%), Polish (0.6%), German (0.5%) and Romany[1] (0.3%) minorities.

9. The most serious issue concerning population development in the CR in the last fifteen years has been a major and rapid drop in the birth-rate, which corresponds closely to changing trends in the marriage rate and family stability (UNDP, 2003). Given the current rapid drop in the birth-rate (around 1.2) and the expected positive development of mortality, the CR will become a country with one of the oldest populations in Europe and indeed the world (see Figure 1.1 for the demographic forecast 2002-2020).

10. Even on the assumption that the minimum qualifying age for a pension is raised, the mutual ratios between age groups will worsen, which will have a negative impact on many areas of the development of the society. The overall decrease and aging of the population in the CR could be tackled by greater immigration; this is, however, difficult to achieve owing to xenophobic fears. In comparison to the present time, by 2015 the Czech labour market will have experienced a 7% drop in the overall workforce and the situation will be likely to worsen even more. The old-age dependency ratio (the ratio of population over 65 years of age to the population of 15-64 year olds) will triple by 2050 – from the present 19.8% to 55% (OECD, 2005).

1.4 Economy and labour market

11. Under the communist regime, the country was oriented towards heavy industry, with high electricity demands and major requirements for imported raw materials. However, after 1989 the systemic and qualification structures of the Czech economy quickly began to change owing to the liberalization of the economy and related radical changes in the ownership structure. With the state sector now representing 20% of the GDP compared to 97% in 1989, the CR has attained one of the best positions in privatization among transforming countries. In a short time, the CR has managed to attract a substantial amount of foreign capital which, in the form of direct investments, has accounted for almost one-third of gross investments. But at the present time, there is a preponderance of production with lower added value in the CR, which does not contribute to an increase of the country's competitiveness on the globalized world market (some macroeconomic indicators are given in Table 1.1).

12. Despite the current economic growth, the CR has gone unnecessarily into debt; the total state debt is approaching 600 billion CZK. However, the transformation of the systems for funding the pension and health systems continues to be postponed, although the current situation is untenable in the long term. There is an increasing trend for public expenditures in the CR to be allocated in advance to clearly demarcated target areas (mandatory expenditures), usually of a non-productive nature. Thus the space for an active fiscal policy and growth-oriented expenditure support is becoming limited. The CR invests much less public funding in education than most developed countries but also less than Poland (5.6% of GDP) or Hungary (5.5%). On the other hand, the CR has the lowest relative poverty rates among all OECD countries (Förster & D'Ercole, 2005), thanks mainly to generous and egalitarian social security expenditures.

13. The limiting factors of Czech economic growth are the quality of human resources and the quality of management. Despite the modernization of technology at the workplace, the Czechs spend

[1] These are 2001 census data based on self-declared nationality; however, the proportion of Roma in the population is considerably higher - about 2 to 3 percent (200,000 to 300,000) according to expert estimates - because most of them declare themselves as either Czechs or Slovaks.

20% more time at work than the EU-15 average. The Czechs thus work longer, but not too effectively. Moreover, the Czechs spend longer amounts of time on household chores. One hour of Czech work costs slightly less than 20% of the EU-15 average. However, low wage costs are accompanied by low work productivity (62% of the EU-15 average), which tends to outweigh the comparative advantage of low wage costs (Potůček, 2005: 126-129).

14. Despite the fact that one-third of the economically active population has changed occupation, the structure of employment by field still resembles that of an industrially-oriented society. The Czech economy differs from other EU countries in the structure of employment, difficulty and complexity of work, and employee qualification. To bring the structure of employment by field in the CR into line with the 15 leading EU countries, about 700,000 people would have to work in services instead of in industry (Potůček, 2005: 61) and 500,000 adults would have to further their education by obtaining qualifications at the tertiary level (the latest census, in 2001, showed that the percentage of people older than 15 with tertiary education was only 8.9%). The level of employment in the CR corresponds to the EU average (64.7% in 2003). Most of the workforce is employed full-time; part-time employment is fairly low – 5.0% in the CR as opposed to 18.6% in the EU-15 (Potůček, 2005: 60). The employment situation in the CR is such that there is only a limited possibility to combine a workload with education and family care, thus reducing individuals' "second chance" to enter higher education.

15. In the CR, it is not easy to dismiss an employee with an open-ended work contract. On the one hand, the inflexible labour market provides greater certainties for the employed, while on the other it promotes greater unemployment owing to employers' unwillingness to take on new staff. Such an inflexible labour market supports the "grey" economy, in which the rights of those working are left unprotected. The level of unemployment in the CR is approximately the same as the EU average. As everywhere, unemployment poses a particular threat for women, those with low qualifications and the newly graduated.

16. A reliable source of innovation can only be found in conveniently structured, adequately financed and innovation-oriented research and development. The CR spends less money on research and development than the EU average – 1.3% of GDP in 2003 compared to the EU average of 1.9%. The share of public funds in total research and development expenditures is about 42%, and is allocated especially to basic research, or more precisely to research that does not generate knowledge that could be effectively used in new technologies, products and services. The CR falls significantly behind in, for example, the number of patent applications and awards, which is less than 5% of the EU-15 average (Potůček, 2005: 43-48). Thus it is a long way to a knowledge-driven economy; despite the increased presence of technology and skill-intensive industries in the Czech economy, qualitatively less intensive segments (mostly in the nature of assembly operations) still dominate in the Czech economy (Kadeřábková, 2004).

1.5 The legal environment

17. The legal environment and law enforcement are one of the long-time problems of the CR. The judicial system does not ensure a quick and fair pursuit of justice at court for the citizens. In this respect, the CR also face charges at the European Court of Human Rights. To set up a business is a lengthy process connected with an enormous administrative load. Furthermore, bankruptcy proceedings take an unreasonably long time and their effectiveness is very low (World Bank, 2005).

18. Widespread corruption destroys the system of social values, hinders development, causes industrial inefficiency and may discourage potential investors. According to the Transparency International ranking, the CR occupies one of the lowest positions in the world among developed countries (51st position in 2004). Although this is only an index of perceived corruption and so does not necessarily reflect the real state of affairs, it shows that a great many Czechs have lost faith in the just pursuit of public administration.

1.6 Value orientation

19. The change of the regime in 1989 also affected the value orientation of the population. Family, health and work are still highly prized; the value of friendship and leisure time is on the rise. The importance of values such as career, wealth, recognition by others, the endeavour to excel and risk-taking behaviour is still relatively low in the Czech population (Potůček, 2005: 151).

20. Since 1990, there has been a trend towards rising hedonism, especially among people under 30, though this was already observable under socialism. Consumer orientation and orientation on immediate consumption are on the rise, too. In the CR, the most noticeable difference in comparison to the majority of European countries is found in the perception of the importance of religious values. In ten years, there has been a drop from 27% to 16%, while in 33 European countries religion is perceived as important by 51% of the people on average (Potůček, 2005). A significant interrelation between a "rely on yourself" tendency and a tendency towards hostility to foreigners is characteristic of the CR. The widespread and continuous refusal to accept ethnic and cultural differences suggests the threat of a conflict that could turn out to be a limiting factor for the CR in the future – the conflict between a self-enclosed, provincial society on the one hand, and the requirements of an open, multicultural European society on the other hand. There is a high appreciation of solidarity in the CR; however, it is often linked to egalitarianism, clientelism and nationalism. The general public in the CR does not understand what is at stake in the current state of development of Czech society; the problems of the past get solved, but the impending "crisis of the future" is not being addressed (Frič et al., 2003).

CHAPTER 2: OVERALL DESCRIPTION OF THE TERTIARY EDUCATION SYSTEM

21. The roots of the development of tertiary education in what is now the CR go back to medieval times (Charles University in Prague was founded in 1348). The former Czechoslovakia (1918-1938) belonged among the most developed countries in the world, with a dense network of schools at all levels. The high quality of secondary professional schools and technical universities should be mentioned.

22. The development of Czech tertiary education in the second half of the twentieth century has been characterized by many profound and rapid changes caused by the dramatic and discontinuous socio-political development. During the German occupation (1939-1945), all higher education institutions were closed and many teachers and students were persecuted. After the communist takeover in 1948, a new wave of persecutions hit Czech universities: many teachers and students were put in prison or expelled; many of them emigrated. The communist regime (unlike that in neighbouring Poland and Hungary) retained almost complete control over all areas of life. The Soviet invasion in August 1968 was also followed by expulsions and a wave of emigration.

2.1 Major changes in the last fifteen years

23. The political and social changes in Czechoslovakia after 1989 have brought fundamental changes to higher education, too. As a result, the Higher Education Act was passed in May 1990 (No. 172/1990 Coll.; hereinafter "the Act of 1990"). The Act of 1990 restored academic freedom and self-governance to higher education institutions (hereinafter "HEIs"), though they continued to be state organizations. It also returned research to HEIs: during the previous communist regime most research was carried out at the Academy of Sciences. New HEIs founded in 1991 and 1992 outside traditional university centres (see Table 2.1) brought a marked improvement in the regional structure of higher education. Many new faculties were established, many new buildings were acquired, refurbished and built, many new degree programmes were developed and introduced. The number of higher education students (110,021 in 1989/90[2]) started to increase more rapidly than the subsidy from the state budget (see Table 2.2 and Chapter 7). The higher education system was composed of only one type of state HEI, which provided Master's programmes, unique as regards the degree level as well as average duration (4-6 years), as well as doctoral programmes, most of them new, that replaced the advanced studies ending with the title Candidate of Science (CSc.). It was already possible to award graduates from a self-contained part of a Master's programme a Bachelor's degree, but neither students nor the public accepted this title as a worthwhile academic degree. One major change in the institutional governing structure was the introduction of Academic Senates as self-regulating bodies. This enabled HEIs to be run without strict central control. Similarly, a Council of HEIs was established as a balance to offset government power. The institutional management of HEIs was hampered by the fact that not only HEIs but also their faculties had the status of legal entities. The desire to develop a quality assurance mechanism in an environment where the HEIs were fully responsible for curriculum development was reflected by the establishment of a new body, the Accreditation Commission. A characteristic feature of this period was that most of the significant changes occurred and were implemented within an extremely short period of time.

24. Soon after, however, it became apparent that new conditions and international developments in which the CR was soon participating required legislative changes on a larger scale. For this reason, work on drafting a new higher education act started before 1995, with the final version being passed after long-lasting discussions in 1998. The Act on Higher Education Institutions (No. 111/1998 Coll.;

[2] The total student numbers entering long-cycle Master's programmes (this was the only form of tertiary education that existed at the beginning of the 1990s) were very low as regards the ratio of 18-year-olds to the remaining population (about 14%).

hereinafter "the Act") took into account positive experiences gained during almost ten years of development and laid down several important changes, which can be summed up as follows:

- a significant institutional and programme diversification;
- transfer of state property to the ownership of HEIs, which was connected with a change in the status of HEIs from state to public;
- the possibility of establishing private HEIs;
- new arrangements for the financial management of HEIs aimed at supporting diversification of their financial sources, including the introduction of what were termed study-related fees;
- obligatory accreditation of all study programmes and the granting of new competencies to the Accreditation Commission;
- changes in the organization of units of public HEIs aimed at promoting institutional integration, with the only legal entities henceforth being HEIs, not faculties;
- changes in the competencies and responsibilities of governing bodies of public HEIs, including the establishment of Boards of Trustees, new bodies involving people outside the HEI;
- obligation on the part of the Ministry to prepare a Long-term Plan of Educational and Scientific, Research, Developmental, Artistic or Other Creative Activities in the Area of Higher Education Institutions (hereinafter "Long-term Plan of the Ministry"), and of the HEIs to prepare their own Long-term Plans, including annual updates.

25. At the beginning of the 1990s, the idea arose of establishing some kind of non-university HEI corresponding to models that existed elsewhere in Europe. The new schools were supposed to give a chance to practice-oriented students for whom the traditional theory-based higher education would present an obstacle. In some cases, a wish to teach new subjects that were absent from the curricula of HEIs played an important role. Beginning in the academic year 1992/93, the Ministry of Education, Youth and Sports (hereinafter "the Ministry") authorized the existence of 21 tertiary professional schools within a pilot programme. In 1994/95, their number increased to 44 and in 1995/96 to 50. However, the path to legalizing them was complicated. In 1995, an Amendment to the Education Act of 1984 transformed them into a special type of school sharing many features with secondary professional schools. At the same time, by this Amendment, the right of secondary professional schools to organize one- to two-year post-secondary courses was abolished and the legal possibility of establishing tertiary professional schools, after certain formal criteria were met, was introduced. As a result, many new tertiary professional schools emerged (157 in the academic year 1996/97), though most of them remained closely connected (in their personnel as well as financially) to "mother" secondary schools. After ten years, the Act on Pre-school, Basic, Secondary, Tertiary Professional and Other Education (No. 561/2004 Coll.; hereinafter "the Education Act") redefined the position of tertiary professional schools, but it did not change their formal connection to the secondary education sector. In addition, the expectations stemming from the passing of the Education Act have stalled the discussions about the preparation of a new Act on Tertiary Education that would contribute to better cohesion and deal with shortcomings in the tertiary education sector. In spite of the still unsolved problems of this part of the tertiary educational sector, these schools offer an alternative study path open for those applicants who, for various reasons, either are not admitted to higher education studies or do not want to pursue their studies at HEIs.

26. The early and mid-1990s can be characterized by a considerable focus on legislative work. In the higher education sector, the preparation of the new higher education act was considered a certain kind of conceptual task, with wide-ranging discussion among all important partners – the academic community (including students), representatives of Parliament, the Academy of Sciences of the CR, state authorities, trade unions and other interested parties. In the few years before the turn of the millennium, the passing of the Act led to the fundamental changes that have been outlined above and will be dealt with in detail in the relevant chapters of this report. The idea of forcing through important changes by legislative measures corresponded with the "modification" approach to the development of legal documents that is characteristic of societies in transition.

27. On the contrary, the end of the 1990s and the first years of the millennium can be characterized differently, owing to the fact that a number of conceptual documents in the field of tertiary education were prepared. Some of them appeared as the direct consequence of legal requirements (the *Long-term Plan of the Ministry*, *Long-term Plans of HEIs*) and some were approved or discussed by the Czech government (for details see section 3 below). Sometimes there was a lack of proper coordination of conceptual and planning activities and the documents that resulted, even though very useful and important, were not mutually interconnected, and continuity was lacking.

28. The area of tertiary education has been significantly influenced by international developments. Thanks to successful participation in Community programmes and activities within the Bologna Process, the accession of the CR to the EU did not simply mean an unprecedented step forward in the development of higher education. It brought about changes in the content of some programmes, including tertiary professional studies, mainly regulated by EU directives. Student and teacher mobility became easier between new members of the EU and countries outside the European Union. Similarly, the Bologna Process has been playing a significant role in shaping Czech tertiary education. The three-cycle system, quality assurance and the introduction of the ECTS and the Diploma Supplement are priorities of the Prague, Berlin and Bergen Communiqués that, at the present time, still need to be further addressed. The Bergen priorities have been the subject of expert discussions, and are reflected at both the state and the institutional levels. It is expected that the outcomes of the OECD *Thematic Review of Tertiary Education* project, within whose framework this Country Background Report has been drawn up, will be instrumental in gaining valuable viewpoints for developing the conceptual and strategy documents as well as their updates, as described in section 4 of this Chapter. For more details see Chapter 10.

2.2 Structure, qualifications and size of tertiary education system

29. The overall structure of the education system in the CR is shown in Figure 2.1. The tertiary education sector is understood as all types of education recognized by the state that follow after some form of secondary education (general or professional) that is completed by the secondary- school leaving examination (SSLE, "maturita"). In this report we will focus on higher education and tertiary professional education (which correspond to the ISCED levels 5 and 6)[3].

2.2.1 Structure and qualifications

30. **Higher education institutions** compose the major part (91%) of the tertiary education system (see Table 2.3). They provide Bachelor's and Master's programmes (ISCED level 5A) as well as doctoral programmes (ISCED level 6). The Act applies to these institutions. According to the way in which they have been established, they are classified as public, state (military and police establishments) or private HEIs.

31. Public HEIs are established by law, and are legal persons sui generis. State HEIs are also established by law; they are subordinated to the Ministry of Defence or the Ministry of the Interior, which govern these HEIs like other state institutions. Private HEIs are a relatively new part of the Czech higher education. The possibility of establishing a private HEI was only introduced with the Act of 1998. The applicants, who are legal entities, may establish private HEIs only after receiving state permission awarded by the Ministry. This procedure is explained in detail in Chapter 9.

32. Public and state HEIs are entitled to financing from the state budget, while private HEIs are required to obtain financial resources for their activities themselves (the Act, §§ 18, 40). Only exceptionally, when operating as a non-profit organization, can a private HEI receive a state subsidy.

[3] According to this definition of the tertiary education sector, it also includes the fifth and sixth classes of conservatories and of six-year art schools, where students pass the leaving examinations in the fourth class and studies in the two following years correspond to studies at tertiary professional schools.

In general, public and state higher education is free of charge, while students of private HEIs pay tuition fees; details regarding financing are discussed in Chapter 7.2.

33. Another kind of typology of HEIs stipulated by the Act is linked to the prevailing type of academic programmes that they offer (at the Bachelor's, Master's and doctoral levels). Before describing the types of institutions, it is useful to point out that the Czech higher education system is not a binary system that distinguishes between professionally and academically oriented HEIs, as is common in some European countries. Higher education studies are not divided into professionally and academically oriented spheres and the overall aim is to enable graduates both from Bachelor's and Master's programmes to enter the labour market successfully or to continue studies in line with the Bologna Process principles. However, this does not mean that all programmes at the Bachelor's and Master's levels offer the same proportion of general/academic and professional-oriented knowledge. The same holds true at the institutional level.

34. HEIs offering all types of programmes (at least up to and including the Master's level) are considered university-type institutions. Such HEIs are also obliged to foster "scientific, research, development, artistic, or other creative activities" (the Act, § 2). A non-university type of HEI provides mostly Bachelor's programmes; only rarely does it offer Master's programmes and it is not allowed to provide doctoral programmes. HEIs of the non-university type are also obliged to carry out research related to the level of the programmes they offer – in practice this is usually applied research – and other developmental, artistic or other creative activities. The organizational structure of non-university type HEIs is simpler – they are not divided into faculties (the Act, §2), because it was expected that these institutions would remain smaller in size and thus their internal management would be more flexible.

35. Currently, all public and state HEIs (with one exception) are of the university type; all private HEIs are of the non-university type. The current list of Czech HEIs can be found in Table 2.4 and Table 2.5.

36. The three levels of higher education studies are characterized (the Act, Part IV) as follows. A Bachelor's programme is focused on the preparation for a vocation, and it also gives access to studies in a Master's programme. The standard length of study is 3-4 years (180-240 ECTS credits)[4]. Graduates are entitled to the academic degree of Bachelor. Studies are completed by the final state examination, which includes, as a rule, the defence of a Bachelor's thesis.

37. A Master's programme follows a Bachelor's programme. It is focused on obtaining theoretical knowledge and on its creative applications. The standard length of study is 1-3 years (60-180 ECTS credits). Studies are completed by the final state examination, including the defence of a Master's thesis. Graduates are entitled to different academic degrees according to the various fields of study. In some special cases, accreditation may be awarded to a long-cycle Master's programme (see more in Chapter 9), which is not a continuation of a Bachelor's programme and has a standard length of study of from 4 to 6 years (240-360 ECTS credits). This long-cycle Master's programme represents the traditional type of higher education in the CR[5].

[4] Even though the Act does not stipulate either the length of programmes expressed in credits or the requirement that they be introduced, credits are widely used by most HEIs (for details see Chapter 8, section 8.3).

[5] The original version of the Act (§ 46) regarded it as the normal type; the "short" type, following a Bachelor's programme, was allowed as another possibility. As a result of the Bologna Process, the 2001 Amendment to the Act (No. 147/2001 Coll.) reversed the order: the "short" type is regarded as normal, and the long-cycle type as an exception.

38. A doctoral programme focuses on scientific activities, research and development. Only graduates from Master's programmes can be enrolled. The standard length of study is 3 years, which is usually not expressed by means of credits (in accordance with Bologna Process agreements). Doctoral studies are completed by the state doctoral examination, which includes the defence of the doctoral thesis, which must be an original scientific work. Graduates are entitled to the degrees of Ph.D or Th.D.

39. HEIs are free to offer, in addition to the on-site mode of studies, distance studies and combined studies (a combination of distance and on-site) in all types of programmes. However, the application for accreditation must clearly state the study mode offered and indicate how the relevant requirements will be met (Průcha, Zlámalová, 2003)

40. HEIs can provide study programmes in foreign languages. In this case, too, the application for accreditation must clearly state the language of the programme in question and indicate the relevant language abilities of the responsible academic staff. As an exception to the general principle of free higher education, HEIs may charge fees for programmes in foreign languages (the Act, §58).

41. Practical training is part of a large number of programmes. The scope, incorporation into the period of studies, length, organization and other aspects of practical training differ significantly from one HEI to another, fields of study included. In some fields of study, sandwich courses, with theory and practice alternating, are used. In other fields, student internships are preferred, though many HEIs and faculties face problems in making agreements with enterprises to ensure that internship conditions suit the study requirements and the students' needs.

42. **Tertiary professional schools** represent only 9% of the tertiary system capacity (see Tables 2.2 and 2.3). They offer vocational education programmes at ISCED 5B level that do not lead to an academic degree. The Education Act, which applies to these institutions, stipulates that they can be established by the state, a regional authority, a church or a private person (legal or natural). For the number of tertiary professional schools by region, see Table 2.6. All tertiary professional schools are entitled to financing from the state or regional budgets, but support for private tertiary professional schools is about 10-30% lower than the support for tertiary professional schools established by the state, regional authorities or churches. Students of all tertiary professional schools have to pay tuition fees (for details see Chapter 7).

43. Even though the tertiary professional schools constitute only a small part of the tertiary education system, they offer practice-oriented education programmes in many fields of study. Measured by the number of students enrolled in the first year of study, the leading position is occupied by the field of economics (33%), followed by social sciences and administration (25%), health care (19%), engineering (14%) and agriculture (5%).

44. The education programmes can be offered in several study modes, the closest translations of which are as follows: daytime, evening, remote, distance and combined. The daytime mode is the same as the above-mentioned in-site mode at HEIs. This mode is the most frequent one (84% of students in 2004/05). In the evening mode, students attend only 10-18 lessons per week, mostly in the afternoon or in the evening. The remote mode entails more individual studies, accompanied by 200-220 hours of consultations/lectures per year. Distance and combined modes are the same as at HEIs, i.e. forms of education based primarily on the use of new information and communication technologies.

45. In spite of quite different fields of study, the length of study is uniformly determined: 3 years (in health care fields up to 3.5 years) in the daytime form, including practical training, one more year in the other study modes. The final exam *(absolutorium)* comprises professional subjects, a foreign language and a written final work. Graduates are entitled to a diploma specialist degree in the given field of study.

2.2.2 Institutional landscape, developments in size

46. At the present time (December 2005), the tertiary education system of the CR comprises 25 public HEIs, two state HEIs (the University of Defence and the Police Academy) and 40 private HEIs (see Table 2.3).

Table 2.3. Overall size of the Czech tertiary education system - 2004/05 */

Type of institution	Number of institutions	Established by	Number of students	% of the total number of students
HEIs				
Public	25	law	274 962	83.84
State	2	law	4 114	1.26
Private	40	legal entity	19 120	5.83
Total HEIs	*67*		*298 196*	*90.93*
Tertiary professional schools (TPS)				
Regional	114	regional authority	19 593	5.97
State	1	state	85	0.02
Private	47	legal entity	8 340	2.55
Religious	12	church	1 741	0.53
Total TPS	*174*		*29 759*	*9.07*
TOTAL	***241***		***327 955***	***100.00***

**/ all study modes*

Source: Institute for Information on Education

47. As already mentioned, a significant increase in the number of what were then state HEIs occurred soon after 1990. In November 2000, after the transformation of the Zlín-based faculties of the Brno University of Technology, a new public university-type HEI was established in Zlín (Tomas Bata University in Zlin), and in 2004 a successful tertiary professional school in Jihlava was transformed into a public HEI of the non-university type (College of Polytechnics, Jihlava). The increased capacity and number of faculties of the institutions under discussion (64 in 1989/90, 117 at the present time) correspond to the rise in their student numbers (110 021 in 1989/90, 298 196 in 2004/05).

48. The opening of several new HEIs in various regions in the early 1990s had a positive impact on the regional distribution of HEIs (although at the time it was a controversial issue, and still meets with occasional criticism today). The changes in the regional distribution led to an overall drop in the number of students in the primary centres of higher education (Prague – from 46% to 38%; Brno – from 23% to 21%) and an increase in the number of students in the regional centres (Ostrava, Pardubice, Cheb, Jindřichův Hradec and Karviná). The absolute number of students in higher education grew significantly in all of the cities named.

49. Table 2.5 shows the rapid quantitative development of private HEIs. Although the number of private HEIs is high, they are rather small: their 19 120 students made up only 5.38% of the total number of students in higher education in 2004/05. This corresponds to the fact that they were established relatively recently, and in some cases have not even graduated their first students. The regional distribution of HEIs has also been influenced by the presence of private HEIs (Table 2.1). Although these HEIs have been opened in 17 cities, most of them are in Prague (21 private HEIs with 13 069 students), because the capital provides a large number of available, appropriately trained personnel. The degree programmes offered by these HEIs focus on the areas of economics (53%), law (8%), information science and related disciplines (4%), the arts (8%), applied environmental science (2%), humanities, theology, sociology and teaching (20%) and health care (5%).

50. The overall growth of numbers at tertiary education institutions after 1990 is obvious from Table 2.2 (see also section 1), while the numbers of students newly enrolled (details are discussed section 5 below) can be seen in Tables 2.7 and 2.8. Student numbers at state HEIs are virtually stable; currently they stand at 4 525. The decrease in the number of military HEIs from three to one in 2004 (through a merger) was carried through by the Ministry of Defence.

2.3 Legal framework, major national agencies

51. HEIs are subject to the legal norms related to both education and research and development (hereinafter R&D), since they are active in both areas. An appropriate balance between these two areas is still in the process of being achieved. The Act with its amendments (see the list of relevant legislation in References), already mentioned in the previous sections, covers the sector of HEIs. The R&D carried out by HEIs, besides being subject to the general regulations of the Act, is also covered by the law on financial support for R&D, which is discussed in Chapter 5.

52. Tertiary professional schools are regulated not only by the Education Act (§ 92-107) but also by the Teaching Staff Act (No. 563/2004). Furthermore, more detailed regulations for tertiary professional schools are given in the Decree on Tertiary Professional Education (No. 10/2005 Coll.). The financing of private tertiary professional schools (and of private basic and secondary schools) is regulated by Act No. 306/1999 Coll.

53. The Ministry has the primary responsibility for the development of the tertiary education system; it allocates state financial support from the state budget and controls its use (see Chapter 7.2). In the field of higher education, the rights and responsibilities of the Ministry are strictly determined by the Act and are designed to achieve a good balance with the autonomy and academic freedom of HEIs. Tertiary professional schools are much less independent of the state than HEIs, and ministerial regulation in this sector is relatively broad. The details are discussed in Chapter 8, including the role of other ministries in the area of tertiary education.

54. The commissions responsible for accreditation are very important bodies in the field of quality assurance in both the higher and the tertiary education sectors. The Accreditation Commission for higher education was established in 1990; it was given new responsibilities regarding accreditation, state permission in the field of private higher education and overall care for quality in 1998 (the Act, Part VIII) and can be considered a body with relatively broad experience. The Accreditation Commission for Tertiary Professional Schools, on the contrary, was established only recently (2005) and its experience so far is negligible. The functioning of both bodies is explained in Chapter 9.

55. The representative bodies of HEIs at the state level are the Council of HEIs and the Czech Rectors' Conference. They both play an essential role within the system, and the Ministry is legally obliged to consult them in all important issues related to higher education. The Council of HEIs also has a Student Chamber, which functions as an intermediary body allowing students to participate in discussions on issues of higher education.

56. In the tertiary professional education sector, no similar representative bodies have been established. Nevertheless, two associations of tertiary professional schools exist. The older of the two, the Czech Association of Schools of Professional Higher Education (CASPHE), was established in 1991. It played an important role in the pilot project for tertiary professional schools development (see section 1). In 1995, with the financial help of the Ministry, CASPHE developed a quality evaluation mechanism tailor-made for the type of institutions it represented. The evaluation has been the paid service. Currently CASPHE groups a minority of tertiary professional schools, its main aim being their continuing progress and possible expansion. The Association of Tertiary Professional Schools (AVOS), established in 1997, developed as a partner of the Ministry with regard to issues affecting the schools that are its members. It articulates their goals, the most important being coordination of member schools' activities and overall support for their development and collaboration.

57. In the area of R&D, the Council for Research and Development, which is established at the governmental level, plays the leading role. Its rights and responsibilities are discussed in Chapter 5. Similarly, the role and collaboration of HEIs vis-à-vis the Academy of Sciences of the Czech Republic is dealt with in Chapter 5.

58. Discussions leading to serious results (legislation, political strategic decisions) take place in the Parliament of the Czech Republic, especially within the Committee for Science, Education, Culture, Youth and Sport (Subcommittee for Science and HEIs) of the Chamber of Deputies as well as within the Committee on Education, Science, Culture, Human Rights and Petitions of the Senate. On the other hand, discussions within the Budget Committee, when these have taken place, have never led to any major changes in the government's proposed budget for the tertiary education sector.

2.4 The main conceptual and strategy documents

59. The basic document defining the general goals of Czech education policy is the *National Programme for the Development of Education in the Czech Republic* (hereinafter the White Paper), which was approved by the Czech government in 2001. The White Paper includes the conceptual development goals for particular levels of the education system as a whole, and six concepts that cut across all levels.

60. To realize the goals of the *White Paper*, the Ministry, acting on a government resolution, produced a document entitled the *Development Strategy of Tertiary Education until 2005*, which includes an outline of goals until 2005 (with the outlook for the period until 2010) as well as the tools necessary for achieving these goals.

61. In the field of higher education, the Act requires that the Ministry develop a *Long-term Plan of the Ministry* setting out the goals for a certain period of time. The first *Long-term Plan of the Ministry*, covering five years, came to an end in 2005; the *Long-term Plan of the Ministry for 2006-2010* was approved in August 2005. Similarly, all HEIs are legally obliged to elaborate their own *Long-term Plans*; all documents of this kind are publicly available. Moreover, the Ministry and HEIs are obliged by the Act to update their *Long-term Plans* annually, which offers the opportunity to take account all new development trends and to be flexible in reacting to international developments. The required discussions about their *Long-term Plans* between the HEIs and representatives of the Ministry, which include consideration of possible ways of harmonizing the plans with the goals of the *Long-term Plan of the Ministry*, contribute to a better understanding of aims and ideas on both sides. The priorities of the *Long-term Plan of the Ministry* are reflected in the Development Programmes through which the part of the state budget is allocated to HEIs (for details see Chapter 7.2).

62. Until 2002 the strategic goals articulated in all the documents just described were linked very loosely if at all with the various forms of state funding. In practice this meant that the state budget devoted to higher education did not reflect the increasing capacity of the sector and related performance. Important changes were introduced with the *Higher Education Reform Policy*, itself the result of negotiations and discussions between the Ministry and the government (the first draft was accepted by the government in 2004 and an updated version was approved in 2005). The *Higher Education Reform Policy's* goals derived from those stated in the *White Paper* and *Development Strategy of Tertiary Education*, and including the number of innovations were formulated in accordance with the analysis of the necessary state financial support. The effective use of the financial means from the state budget was enhanced by a reform of the mechanisms by which funding goes to particular HEIs that focuses on the inclusion of output parameters, the targeted allocation of funds within an improved model for the Development Programmes and direct support of student accommodation. The share of public financing for HEIs measured as a percentage of the GDP (0.722 in 2001, 0.776 in 2002, 0.817 in 2003, 0.79 in 2004) is still significantly lower in comparison with the EU 15 countries, where this percentage is 1.3 of GDP on average. For this reason, the *Higher*

Education Reform Policy suggests an incremental increase of public finance for HEIs till 2008 and outlines the precise areas of activities for which they should be used, in accordance with overall policy goals.

63. The main goals of the *Long-term Plan of the Ministry for 2006-2010* are in line with the principles of the *Higher Education Reform Policy* and the financial tools for enabling these goals to be met are seen as coming from increased public funding as approved by the government. The role of *Long-term Plans* in decision-making related to major projects is steadily increasing.

64. Another significant consequence of the *Higher Education Reform Policy* was the approval of an Amendment to the Act that came into force on 1 January 2006. The Amendment, besides other measures leading to the improved functioning of higher education, lays out the rules for a new form of financial support for students from less well-off families, allows HEIs to carry over a certain portion of the state funding into the fiscal year following the one for which it was allocated and abolishes the sharp distinction in the budget between current and capital expenditures. Though the documents described above also consider R&D, special policy documents regarding these activities were developed by the Ministry in collaboration with the Council for Research and Development. They are discussed in detail in Chapter 5.

65. The development of tertiary professional schools forms part of the *Long-term Plan of Development of the Education System*, which deals with the lower levels of the education system (i.e. from nursery to tertiary professional schools) and was produced by the Ministry in collaboration with regional governing bodies. Consequently, *Long-term Plans of Development* are also worked out by the individual regional governing bodies and discussed with the Ministry. So far no tertiary professional schools have produced any documents similar to the *Long-terms Plans* of HEIs. However, some tertiary professional schools, especially those collaborating with HEIs in the provision of Bachelor's programmes (for details see Chapter 8.3), have formulated their strategic goals in documents of their own making.

66. Among the actors involved in setting forth goals and objectives in strategic materials, the Ministry and the representative bodies of HEIs play the decisive role. The associations of tertiary professional schools serve a more advisory function. The results of research into higher education carried out by the Centre for Higher Education Studies (CHES) and statistical data provided by the Institute for Information on Education serve as the necessary background materials. All basic documents submitted by the Ministry to the government include critical remarks and viewpoints from other ministries, the Academy of Sciences of the CR and the Research and Development Council. The collaboration with the Office of the CR Government that has developed in recent years is considered useful. The same is true of the cooperation with the relevant committees of both chambers of Parliament. The positions of the Higher Education Trade Unions, affiliated in the Czech-Moravian Confederation of Trade Unions, are also taken into account.

67. On the other hand, employers, professional associations, regional governing bodies and the general public have been less active in exerting their influence. Their viewpoints, often reflecting the ideas of individuals, are only rarely articulated publicly, and only exceptionally do they influence the contents of strategic materials. The preparatory work on the *White Paper*, which was meant to foster a nationwide discussion (entitled "Call for Ten Millions") between experts and interested members of the general public, can stand as an example of this rather problematic cooperation. This fairly unusual project, supported both by the state via the Ministry and by private initiatives via the Open Society Fund, offered ample opportunity for the various stakeholders to express their views. The Czech general public, however, is not used to engaging in serious discussions of important conceptual issues and so, despite the well-organized project logistics, the nationwide discussion did not produce any great number of valuable viewpoints for further consideration of the development of tertiary education policy. However, in the higher education area, cooperation between the team of authors of the *White Paper* and higher education representatives was successful, and the chapter on tertiary education was formulated on the grounds of general consensus.

2.5 Purposes, goals, objectives

2.5.1 Goals expressed by policy documents

68. The purposes and goals of the two basic parts of the Czech tertiary education system (HEIs and tertiary professional schools) are in general outlined in the respective legal norms. In this respect, the Act states (§ 1): "HEIs represent the highest level of the educational system. They are regarded as the leading centres of education, independent knowledge and creative activity. HEIs play a key role in the scientific, cultural, social and economic development of the society." The goals of tertiary professional schools are more modest: they "develop and deepen the knowledge and skills obtained by secondary education, and provide comprehensive and professional education as well as practical training for the pursuit of specialized activities" (the Education Act, § 92). These goals are specified and developed in several documents dealing with the education policy and/or the tertiary education system as a whole.

69. The general goals of the *White Paper* concretely elaborated in the *Development Strategy of Tertiary Education for 2000-2005* can be summarized as follows:

- to create a richly diversified tertiary education system, with sufficient capacity, optimal permeability and opportunities for transfer, so enabling students to change or continue their studies at any age or time; thus it will be possible to make best use the specific abilities, requirements and needs of those applying to study and to profile graduates so that they will find adequate opportunities in the labour market;
- in accordance with one of the main goals of Czech education policy up to 2005, to enable half of the 19-year-old student population to enter some type of tertiary education and to enable access to higher education to the older population as well;
- to ensure equal and open access to education to the greatest degree possible, eliminating discrimination for whatever reason;
- in accordance with worldwide trends, to stress the concept of lifelong learning; for this, it is necessary to have a diversified and permeable structure not only of the tertiary sector, but of the education system as a whole, offering modern forms of studies and using new information and communication technologies;
- to make the ambitious goal of EU countries as expressed in the Bologna Process – that every student in the tertiary sector should in the future spend a part of his/her studies outside of his/her own education institution, possibly abroad – a goal of Czech education policy as well and, in similar fashion, to encourage the mobility of academic staff;
- to view evaluation of the quality of education as a complex matter, with the main focus on eliminating shortcomings and on promoting continuous improvement based on the results of self-evaluation and on the recommendations of evaluating experts;
- to have as the long-term goal the maximum utilization and support of human resource development, which means: a) to foster the personal and professional growth of staff of tertiary education institutions through lifelong learning; b) to help students to be well-informed about educational opportunities, to find optimal education paths and to orientate themselves in the labour market, by establishing counselling centres providing study and psychological counselling as well as career guidance.

2.5.2 Implementation of goals

70. The primary objective after 1990 was to achieve a rapid increase in student numbers in the tertiary education sector in order to come closer to levels in the developed European countries and OECD countries and to satisfy the high demand for higher education after decades of central regulation of student enrolment. The recommendation to rise the student numbers formulated by the final OECD report of 1991 of the joint OECD and Czech and Slovak Republic project and discussed also in the report prepared for the follow-up conference (CHES, 1993) was one of the main drivers of the expansive quantitative growth (see Table 2.2). From 1992, HEIs were motivated to increase

student numbers by the introduction of a formula-based mechanism for the allocation of financial support (see Chapter 7.2).

71. Equally important as an objective was the desire to maintain the quality of tertiary education, which required diversified study opportunities. The first step towards this end was the establishment of tertiary professional schools. An important change was the introduction of Bachelor's programmes, leading to a diversification of higher education, which was already instituted by the Act of 1990. However, the inappropriate definition of Bachelor's studies as only part of higher education studies did not encourage its successful introduction but, on the contrary, led to a distrust of this type of study on the part of students, parents, representatives of HEIs, employers and the general public.

72. An important space for diversification was opened by the Act. It precisely defined the three levels of higher education studies; the Amendment of the Act of 2001 made them obligatory. Of the current objectives of higher education policy that are in the process of being implemented, the complete changeover to a system of higher education studies based on three cycles (Bachelor's, Master's, doctoral) is the leading concern. Although in theory there are no essential problems with regard to achieving structural harmony between Czech higher education and the Bologna Process principles, in practice the process of restructuring has not yet been completed. The continuing debate focuses on those fields of study in which breaking up long-cycle Master's programmes seems to be rather complicated and perhaps even impossible (medicine, teacher-training, law). Another issue is the actual content of the newly structured programmes, for in some cases the former long-cycle programme has been divided into two parts formally (in practice just by the addition of a Bachelor's exam), but without any of the necessary changes in the internal sequence of courses (Šebková, H., Průcha J., 2004). Moreover, collaboration with employers and the incorporation of their views in designing programmes is mostly insufficient (Šturzová, 2005). The *Long-term Plan* of the Ministry and consequently the Development Programmes aim to motivate improvements during the coming years.

73. Institutional diversification is confirmed in practice by the possibility of establishing new non-university HEIs. The term "private HEI" is currently practically synonymous with the term "HEI of the non-university type". This situation is only temporary and is the logical consequence of the fact that newly opened private HEIs were not able to show sufficient experience in the area of research and development, which is a necessary prerequisite for the accreditation of Master's programmes. As a result, they mostly submitted Bachelor's programmes for accreditation, and thus they were classified as non-university type HEIs. This situation, however, will not continue indefinitely. It is expected, even if probably only rarely, that after some time the most developed private HEIs will also be able to obtain accreditation for Master's programmes (several Master's programmes have in fact already been accredited). At this point, private HEIs will be able to apply for a change in their status to that of a university-type institution, conditional upon approval by the Accreditation Commission.

74. A connected objective concerns the completion of the system of HEIs by the establishment of public HEIs of the non-university type, which can only take place on the basis of a law passed by Parliament. So far the endeavour to establish them through the transformation of the best regional tertiary professional schools has only been successful in the one case mentioned above (the College of Polytechnics in Jihlava); another three of four similar public non-university type HEIs will most likely be established in the coming years. The goal was for there to be the public HEI of the non-university type in each region (but possibly not more than just one), the aim being to attain convenient integration of programmes and effective use of the existing adequately qualified staff, equipment, etc. This goal, however, has not yet been reached.

75. Despite the enormous growth in the capacity of the tertiary education sector and the substantial increase in the total number of students in recent years (Beneš, Huisman, Šebková, 2003), demand for an academic degree or diploma in the tertiary education sector still outstrips existing supply (see Tables 2.7 and 2.8. A significant long-term prevalence of demand over supply only exists in certain fields of study, for example law, the humanities and the fine and performing arts, while in the case of technology-oriented fields supply corresponds to or exceeds demand. The data on demand in the form

of the number of registered applications are distorted by the possibility of applying to an unlimited number of programmes (while only two such options exist for applicants for pharmacy studies, applicants for economics and management studies can choose from 33 options), and by the repeated applications of unsuccessful students, especially after the first year of study (almost 20% of students do not finish their first year of study, and re-renter the tertiary education sector in a different programme). As sociological surveys have shown, many students enter fields of study that are in fact their second or third choice (around 25%), as they have not been successful in the entrance examination in the field of study of their first choice (the field from which they would like to graduate). In the following years, they repeatedly try to be admitted to their preferred field of study, while studying another field (Menclová, Baštová, 2005).

76. International comparisons reveal some other deficits that remain from the past. In spite of the already mentioned rapid and significant increase in student numbers, the participation rate of the relevant population cohort in the CR is still significantly lower than in the majority of the OECD countries, as documented in Table 2.9, which is based on the statistics from the academic year 2002/2003 (OECD, 2004). Similarly, in comparison with the OECD countries, only a low percentage of the population has completed tertiary education (see also Chapter 3). The age structure of students is changing (see Figure 2.2): most students begin their studies at the age of 20 or 21. Also, the number of older students is gradually increasing, a trend that is in line with those in many OECD countries, even if this development in the CR is rather mild so far (*Higher Education Reform Policy*, 2004).

77. One significant contribution to dealing with the insufficient number of study opportunities will be the further development of distance forms of studies, where supply so far has not met demand. The reason for this is that these forms of studies lack the necessary tradition (before 1990 distance studies for the employed had a completely different tradition). However, in this respect HEIs have been relatively prompt in reacting to the needs and to international development in this area. The first step towards improving the lack of coordination of cooperation between HEIs and their faculties, with possible results in a broader offer of lifelong learning courses and greater cost efffectivness, was a large-scale Phare project for Eastern and Central Europe that started in the mid-nineties (Zlámalová, 2002). This resulted in the establishment of the National Centre of Distance Education, which operates within the Centre of Higher Education Studies. It focuses especially on the organization of courses for teachers of distance education courses and the creators of various forms of study support. The aim is to support HEIs in providing degree programmes in the distance mode of study (in parallel to the on-site mode) that use up-to-date information and communication technologies, and by various means, including financial support from the Development Programmes, to promote cooperation between HEIs and their faculties in this area.

78. Another fundamental objective concerns an increase of the share of HEIs in the provision of lifelong learning courses for the public. It is anticipated that HEIs will widen the range of courses for other age groups and professional groups with the full use of distance modes of study based on progressive new technologies. Strategic tools for achieving this objective will include the provision of all available information and support in getting funding for new projects, especially from the European Union's Structural Funds.

79. The implementation of other goals quoted in section 5.1 such as quality assurance and internationalization is discussed in the relevant chapters.

2.6 Differences and tensions within the tertiary sector

80. **Conceptual documents and legislation.** From the overview of the various conceptual and strategic documents presented above, few important differences pertaining to the two main subjects of tertiary education can be inferred. Both the *White Paper* and the *Development Strategy of Tertiary Education* deal with the tertiary education sector as a whole and set the goals for both all types of HEIs and tertiary professional schools. For various formal and factual reasons, however, their implementation is uneven and tensions between these two types of institutions of tertiary education thus arise.

81. The fundamental problem of a formal nature in the tertiary education sphere is often seen in legislation, because HEIs and tertiary professional schools are regulated by different laws. Although none of these laws prevent either the creation of unified conceptual documents or cooperation between HEIs and tertiary professional schools, the different legislative framework does contribute to a strong perception of tertiary professional schools as institutions belonging to the secondary level of education, thus generating problems and tension. Even if their position in the education sector and the conditions under which they function is articulated in the Education Act better then before, the tertiary professional schools remain in many aspects an unequal and non-systemic part of the Czech tertiary education system.

82. **Competition for students, differences related to the external environment.** The institutional diversification of higher education is certainly a positive aspect of the development of the system. In theory, the private HEIs are considered welcome and motivating competition for public HEIs and a welcome contributors to the increasing number of places being offered at HEIs, especially in attractive areas of study (Vinš, Němec, 2004). In practice, the private HEIs have in some cases become real competitors for public HEIs and the rapid decline of the demographic curve will strengthen this reality, possibly leading to some kind of tension in the near future. In addition, the demographic development will perhaps result in increased competition between private HEIs themselves; similarly, the tertiary professional schools will certainly compete for their students with all institutions in the higher education sector offering Bachelor's programmes.

83. One important factor differentiating the types of institutions within the tertiary education sector is their position and role in the external environment, i.e. the given region, either within the CR, some cross-border region or even the joint European Higher Education Area (Prague Communiqué, 2001). Differences also arise from the extent of collaboration with employers, especially in the preparation of curricula content. Practice-oriented studies at tertiary professional schools but also at a number of HEIs of the non-university type require more intensive cooperation between potential employers and graduates of institutions. Both these important topics are discussed in Chapters 3 and 4.

84. **Tensions among HEIs.** Theoretically, the institutional diversification (HEIs of university and non-university types) should be considered a positive feature of the system. In practice, however, the traditional and conservative understanding of higher education on the part of the most important stakeholders (students, parents, society) supports the attempts of HEIs of the non-university type to raise their status to HEIs of the university type. The different level of prestige of different types of HEIs is closely connected with the competition for students mentioned above. Also, the problems of recognition of studies/parts of studies (discussed in more detail in Chapter 8) can contribute to another kind of tension among HEIs.

85. Private HEIs consider access to state financial resources unequal. This is questionable, given that they are allowed to charge unlimited tuition fees, whereas public HEIS must provide free higher education. Another problem lies in the state support for student accommodation and board, which has now been partly solved. The remaining tasks have been discussed at the state level (for more details, including suggestions for legal changes, see Chapter 7.2).

86. Among private HEIs, some kind of tension comes from the still continuing effort to establish new HEIs. The private HEIs that already exist consider the increasing numbers of similar institutions to be serious competition.

87. **Tertiary professional schools and HEIs.** The basic problem lies in the management of tertiary professional schools, which differs significantly from that of the largely autonomous HEIs. The rules for establishing them led to the creation of a high number of tertiary professional schools. Their different sizes, great differences in terms of content and quality of education and other problems may strengthen the perception of tertiary professional schools as a rather problematic part of the tertiary education sector.

88. The different mechanism of public finance allocation (see Chapter 7.2) along with their different legal status may cause difficulties in cooperation between HEIs and tertiary professional schools when it comes to providing joint-degree programmes or the establishment of new HEIs through the transformation of already existing tertiary professional schools.

CHAPTER 3: THE TERTIARY EDUCATION SYSTEM AND THE LABOUR MARKET

3.1 The labour market and the tertiary educated

89. Some basic characteristics of the Czech labour market have been given in Chapter 1.4. From 1994 to 2004, the total number of working positions dropped by 220,000; at the same time, 160,000 people with tertiary education were added to the workforce. However, the position of people with tertiary education qualifications is still good, the reasons being the structure of the Czech workforce and the generally greater flexibility and abilities of these individuals.

90. Despite the quantitative growth of the country's tertiary education sector during the 1990s, the number of people in the CR with tertiary education remains quite low in comparison with the developed countries. The latest OECD data from 2002 show that 12% of the Czech population between 25 and 64 years of age hold tertiary education qualifications, as opposed to 21% in the EU-15 average and 23% in the OECD average (OECD, 2004). The latest Czech data show that the number of people with a tertiary education accounted for 14% of the workforce; however, the EU-15 average has also increased, to 25%. For the percentage of people with tertiary education in the overall workforce to be the same as the EU average, more than half a million such individuals would have to be added to the workforce. Considering this number and the numbers of graduates in 2004 (more than 37,000 at all HEIs, about 7,000 at tertiary professional schools), it seems that it will take ten to twenty years for the CR to achieve a comparable position to that of the EU where people with tertiary education on the labour market are concerned. It should be added that the percentage of graduates on the labour market is influenced by the fact that a great many of them, mostly from tertiary professional schools and Bachelor's programmes, continue their studies in Bachelor's or Master's programmes rather than seeking a job immediately after graduation.

91. The fastest increase of working places with tertiary education requirements has been noticed in services (esp. business services). While the quaternary sector has experienced dynamic general growth, the secondary sector (industry) has been marked by an increase in the qualification level of employees and a reduction in its overall size. The numbers engaged in business services have grown by 90,000, with 110,000 people having tertiary education. This means that the increase in the number of tertiary educated people has covered the overall expansion of the quaternary sector, and 20,000 people with tertiary education have replaced those with lower qualifications. Despite the decreasing number of employees in the primary and secondary sectors, the number of people with tertiary education in these sectors has risen, too.

92. Tertiary educated people have filled all the working places created as a result of the increase in the number of professions with the highest qualification requirements. The number of newly created working places for people with tertiary education (68,000) has reached more than 86% of all working places in question. Overall, the number of new working places for top executives has increased significantly too; however, only 40% of these places were filled by people with tertiary education, the rest going to individuals with secondary education (ISCED 3A, 3B, 3C). Within the professions requiring qualified intellectual work, a significant proportion of the positions is still held by people with secondary education completed (in some cases not even completed) by a secondary-school leaving examination (SSLE). Thus space still exists for them either to obtain higher qualifications (in the appropriate form of tertiary education, taking into account their skills and practical experience) or to be gradually replaced by people with some tertiary education qualification.

93. Education is undoubtedly the most important factor influencing a person's income. As can be seen in Table 3.1, earnings in the highest educated category are about 70% higher than average ones. This is true for both men and women, but at the same level of education the average income of women is much lower than the average income of men (for details see Chapter 6.3.4). A more detailed picture emerges from Figure 3.1, where the percentile distribution of earnings in 2004 is shown. There is a

wide differentiation in the highest category, whereas in lower categories the earnings are much more equal. The differences according to age groups can be found in Table 3.2. The relation of average income to age is different in various sectors of the economy. In most public sectors (education, medical services, social services, public administration) income grows slowly but constantly during a person's entire career. For employees in education (more than 40% of whom are higher education graduates), the growth in income between age groups 30-39 and 50-59 is only 15%. In the private sector, on the other hand, income growth is over in the early forties, but the starting salary for graduates is much higher than in the public sector. The joint effect of age, education and sex on the growth of income is overshadowed by the differences between salaries in different sectors of the labour market (Mzdová diferenciace zaměstnanců v roce 2004).

94. In the CR, despite some initial obstacles, individuals with tertiary education have no significant problems with unemployment. The unemployment rate of tertiary educated people differs according to the field of study, as shown in Figure 3.2. Once regional variations are taken into account (higher education graduates enter the labour market in regions with varying levels of unemployment), there should not in theory be any significant differences in the level of unemployment of higher education graduates from HEIs of the same or similar study programmes. Analyses of unemployment as regards job placement by field, qualification and profession does not suggest the existence of a problem for tertiary graduates in general and there is no clear and/or stable evidence of either a significant shortage or an oversupply of graduates in particular areas.

95. As can be seen from Table 3.3, the unemployment rate decreases rapidly with the increasing level of education and in the highest category is much lower than the average. Nevertheless, it is important to point out that the under representation of people with tertiary education in the population generally suppresses possible field disproportions in the output of Czech HEIs and tertiary professional schools and that tertiary educated people are more flexible than other employees.

3.2. The labour market and tertiary education graduates

96. In general, young people (which includes tertiary education graduates) have a more difficult position in the labour market than older people. This is caused by their lack of work experience and limited orientation in the labour market (Vlk, 2003). A certain number of tertiary education graduates find a job relatively soon after their graduation; the rest look for a job for a longer time. Among the EU countries, the CR is one of those in which it takes a tertiary education graduate a few months (six and a half months on average in this case) 1 to find a first regular job. This is similar to the situation in Austria, Sweden and Slovakia. In spite of the generally satisfactory employment rates of tertiary education graduates, however, some problems do exist. The position of young graduates (from all types of schools) in the labour market is complicated by the provision of the Labour Code that fresh graduates have a right to be given an employment contract without any time limit. This provision, which was intended to serve as a form of protection for graduates, in reality appears to be an obstacle to them when it comes to finding a job. However, if a graduate himself/herself asks for a fixed-term contract this reduces the fear, uneasiness and consequent vague approach of prospective employers to the minimum.

97. Graduates are seeking for and finding jobs in areas or fields that are often very remote from those they studied. The "discrepancy level" is low in programmes preparing for specific professions such as medicine and veterinary medicine. In international comparisons, agriculture and the humanities tend to show the highest levels of discrepancy. Czech graduates of agriculturally-oriented programmes indeed show the highest level of discrepancy (77%)[6], while graduates in the humanities only 53%. The level of discrepancy in the case of public administration, economics and law is 49%, similar to that in the

[6] The figure is taken from the Module on Graduate Job Placement in the Labour Force Survey, prepared in 2000 with the involvement of fourteen EU and six Eastern European countries.

humanities. Thus, it is apparent that almost no direct correspondence exists between the needs of tertiary educated people and their ability to find a relevant occupation. In many professions in the CR (e.g. accountants), people with secondary education qualifications still prevail; however, they will certainly be replaced by those with tertiary qualifications, though this will not be an automatic process.

98. Despite a good position in the labour market, tertiary education graduates obviously face problems similar to those of graduates in other developed EU countries. The most important disadvantage faced by Czech tertiary education graduates in the labour market is the lack of practical experience and frequent misconceptions on the part of employers concerning profession-related abilities acquired during studies. For this reason, tertiary education graduates often enter the workforce in positions that do not correspond to the level of their education; however, these provide them with work experience for their further professional growth. In comparison with other EU countries, Czech graduates fare no worse, and they find regular employment after a relatively short period of time, as pointed out above.

99. As explained in Chapters 2 and 8, the three-level structure of higher education studies – especially Bachelor's programmes and their graduates, who are awarded a Bachelor's title – is still a novelty in the CR, not fully accepted anywhere by anybody, either applicants for higher education studies and their parents, the labour market or the society in general. The situation of Bachelor's graduates is particularly complicated. The increased qualification requirements of a number of both existing and completely new professions, as well as the increasing technological complexity of the national economy, call for a workforce with an increasingly diversified range of qualifications. Unfortunately, however, employers are still not properly aware of the benefits of diversified levels of tertiary qualification and usually offer most positions to Master's graduates, not realizing that the experience and flexibility of Bachelor's graduates, even though they have less theoretical knowledge, would definitely be very beneficial in many cases. There are also problems on the part of graduates themselves, who are not properly informed as to where and how they might use the competencies they have gained efficiently.

100. There are also, of course, positive features: the situation has been changing, not dramatically but steadily. As an example there are the results of the project on "Analysis of Cooperation between HEIs and Industrial and Service Enterprises" (Šturzová, 2005). The analysis of the real needs of employers is shown there in connection with the design of the content of Bachelor's programmes. The outcomes of joint meetings between employers and academics responsible for the qualifications of Bachelor's graduates suggest a number of positive changes or proposals for change.

101. The most important change in recent years has been the improving situation of people with tertiary education in the labour market in general, which has also resulted in a drop in the level of unemployment of people with Bachelor's level or tertiary professional education. This reflects a change in the behaviour of employers, who are moving in the direction of finding increasingly effective ways of placing graduates of Bachelor's programmes.

3.3 Tertiary education policy and the labour market

102. The current employment policy at the national level does not deal with the issue of tertiary educated people. In the recent *National Action Plan for Employment for the Period 2004-2006* this category is not mentioned at all.

103. The *Higher Education Reform Policy* puts forward the state's policy goals in the area of higher education (for details see Chapter 2); these include the question of the employment of graduates. The *Higher Education Reform Policy* calls for close harmony between the Bologna structure of higher education and the requirements of employers, including feedback based on graduates' employability and their overall success in the labour market. The main financial tool that has been devised as motivation for meeting the goals is support for projects of particular HEIs within the framework of

Development Programmes (for details see Chapter 7.2). A special section of the *Higher Education Reform Policy* is devoted to collaboration between HEIs and industry: it includes an analysis of weak points and strong points in this field, an analysis of the legal environment and suggestions leading to improvement. Similarly, as a more detailed follow-up to the *Higher Education Reform Policy*, the *Long-term Plan of the Ministry* declares the employment of higher education graduates, collaboration between HEIs and their regions and various employers and the interconnection of theory and practice in higher education studies to be priorities of major importance. In addition, it states that the employability of graduates is one of the main indicators of quality in higher education. The necessary tool for motivation, as mentioned above, is financial support provided through the Development Programmes and the effective use of the financial resources offered by the EU Social Fund.

104. The unemployment rate of people with tertiary education is substantially lower than the national average; there is a relatively insignificant lack or surplus of the necessary qualified people in different fields of the labour market; the generally low total numbers of those with tertiary education enables the labour market to absorb all new tertiary education graduates, which is supported by their high degree of adaptability and readiness to work in fields different from those for which they have gained qualifications at the tertiary level. In this situation, there is no need for the tertiary education policy to interfere into the proportions of field structure of tertiary education. This is rather left within the competence of HEIs and tertiary professional schools.

105. As a result, accreditation and re-accreditation are awarded on the grounds of quantitative and qualitative data on institutional capability to provide programmes of the required quality, while possible labour market needs and graduates' employment/employability are regarded as being of secondary importance. The opponents of such a policy, however, claim that the employability of graduates should be the priority, promoted by state policy and listed, for example, as one of the criteria for allocation of state funding. These are topics of permanent debate.

106. Information on the labour market and unemployment is gathered routinely and systematically by the Ministry of Labour and Social Affairs (via the local Labour Offices) and by the Czech Statistical Office. In these statistics, the number of unemployed persons is sorted according to sex, age, region, level of education and field of study. There are special statistics for the category of "graduates". This category is defined as persons who are registered at Labour Offices during a period lasting a maximum of two years after their graduation. These statistics are very detailed: it is possible to find the number of registered graduates from individual educational institutions.

107. Much more useful are sociological surveys made by some HEIs or by institutions like the Centre of Education Policy at the Faculty of Education of Charles University in Prague, CHES and the National Institute of Technical and Vocational Education. Based on such surveys, individual HEIs find out how successful their graduates are in the labour market, which professions they are employed in and what their views are on the education they received. Most tertiary professional schools, which have a much lower number of students than HEIs, have very detailed information of this kind. This information can be used for two purposes. First, it helps institutions to update and modify programmes that already exist, and in some cases to create new ones (Šturzová, 2005). Second, it can be drawn on to provide guidance and counselling services to applicants and students – a duty that is explicitly imposed on public HEIs by the Act (§ 21, 1d).

108. Guidance and counselling centres of very diversified types and providing various services are established at most public HEIs (Freibergová, Z. et al, 2003). Many of them monitor the situation in the labour market and mediate information on available working places to students. They often hold "graduate fairs" at which students and graduates have an opportunity to meet and communicate with potential employers, who in turn may specify concrete requirements for available positions. Furthermore, guidance and counselling centres provide information about the labour market to applicants and help them in choosing the appropriate field of study. However, there is practically no coordination of these centres' activities and so sometimes the situation is rather confusing for students/applicants seeking comprehensive information and services. Apart from these centres at

HEIs, other independent agencies mediate contacts between students in the final years of study/graduates and potential employers and advertise updated job offers on their websites.

109. The cooperation of HEIs and tertiary professional schools with employers and regional authorities is a very important source of information about the labour market. One promising trend in this area is membership of representatives of employers and the regional public on the Boards of Trustees and Scientific Councils of HEIs (for more details see Chapter 8). In some cases, HEIs have been ready to "tailor" programmes or specialized parts according to employers' requests. Generally speaking, graduates are often felt to have a good theoretical knowledge but to lack "soft skills" (such as communication abilities and a capacity for teamwork) and a good working knowledge of a foreign language; unfortunately, however, these skills are not very often integrated into study programmes.

110. The interaction of HEIs with employers has also been promoted by means of research projects. The results of the project "Analysis of Cooperation between HEIs and Industrial and Service Enterprises" carried out by CHES in 2002-2004 are available in the Annex. A project of the Institute of Chemical Technology, devoted to the monitoring of graduates and carried out within the framework of the Ministry's Development Programmes, can be mentioned as an example of best practice: the results have been taken into account in the preparation of newly structured Bachelor's and Master's programmes (Vlk, 2003). Some HEIs do longitudinal research on the employability of their graduates. Research of this type at the Faculty of Physical Education and Sport, Charles University, showed that structural changes in study programmes adopted in the course of the 1990s were beneficial. A good example of a survey focused on graduates' employment in connection with quality assurance was one conducted by the Technical University of Ostrava – VSB (Noskievič, Kozel, 2005; Kozel et al, 2005). The activities and seminars that formed part of the project were partly designed to enhance contacts and cooperation with business associations on the national level, among them the Chamber of Commerce of the CR, the Agrarian Chamber of the CR, the Association of Research Organizations and the Confederation of Industry of the CR. Their representatives spoke about their specific requirements and recommendations for the educational content of study programmes and graduate competences for relevant job positions and pointed out their willingness to cooperate more intensively with the representatives of HEIs. The *Advisory Team of the Minister for the Development of Technical Higher Education Studies and the Cooperation of Technically-oriented HEIs with Industry* is worth mentioning here as well (see also Chapter 8.2).

3.4 Influence of the international labour market

111. The most important international European higher education policy is the Bologna Process, referred to in several chapters of this report. Its also has a significant influence on the international labour market, something that was emphasized especially in the recent Bologna documents. The Bergen Communiqué puts a strong emphasis on the employability of graduates but also takes into account the problems of acknowledgment and the employability of Bachelor's programme graduates, which for many reasons cause difficulties in the CR and elsewhere.

112. The access of Czech citizens to the international labour market is limited not only by language barriers but also by the restrictive regulations of some EU countries. Therefore the influence of this market is not very pronounced. The international labour market may influence the Czech tertiary education system in the case of professions whose qualification requirements are different abroad and in the CR. A typical example can be seen in the case of the qualifications of nurses. Many developed OECD countries as well as EU directives set these at the ISCED 5B level; however, until the CR became part of the EU, the ISCED 4 level was acceptable in this country. In view of this situation, and influenced by the increasing sophistication and complexity of many medical activities, a large number of nursing programmes have started to be provided either by tertiary professional schools or by HEIs at the Bachelor's level. Furthermore, the international labour market also shapes the qualification structure in export-oriented fields and professions. The automobile industry can be taken as a significant example, and Škoda Auto, working with German industry, has even founded its own

private HEI. Attractive wage levels and the requirements of specialists, in particular in the Western European countries, influence some professions (for example medical doctors or computer science professionals).

113. Indirect pressure on foreign language teaching and learning is rather effective and can be regarded as a significant influence of the international labour market. The Leonardo programme (see Chapter 10.4) plays an important role by bringing students´ and teachers´ experience from an international work and social environment directly into Czech enterprises.

CHAPTER 4: THE REGIONAL ROLE OF TERTIARY EDUCATION

4.1 Regional development in the Czech Republic and tertiary education

114. The implications of regional development have played a certain role in the establishment of new HEIs after 1989. In many cases, the creation of regional higher education institutions has been linked to the endeavour to obtain the status and prestige of a university town/city. Moreover, a local HEI is expected to contribute to the inflow of educated people into the region and prevent brain drain to traditional higher education centres, thus indirectly stimulating the level of regional culture. However, since 1989 no cases have been noted in which the state initiated or gave more than standard support to the establishment of new HEIs in socially or economically underdeveloped regions. The current preferences and priorities of higher education policy do not envisage recourse to such measures.

115. The location and size of public and state HEIs correspond to the economic, historical and cultural development of the given regions and their population potential. At the present time, public HEIs can be found in all regions of the CR with the exception of Central Bohemia and the region of Karlovy Vary (see Table 2.1). In the case of Central Bohemia (which surrounds Prague geographically), most higher education provision is centred in the capital city of Prague. Branch faculties or workplaces operating in a region different from the home location of a particular HEI can be found in, for example, Cheb, Karviná, Jindřichův Hradec, Děčin, Most, Hradec Králové, Jičín and Klatovy.

116. Private HEIs were expected to meet the demand for fields of study in areas in which public tertiary education was underrepresented. This expectation, however, has only been fulfilled to a certain extent, for example in Karlovy Vary, Litomyšl and Třebíč. Otherwise, the majority of private HEIs operate in regions with a sufficient number of potential applicants for study. Currently, 21 out of 40 private HEIs are located in Prague (see Table 2.6).

117. Private, state and religious tertiary professional schools came into existence before the establishment of the present-day regional structure. Tertiary professional schools were founded rather spontaneously and swiftly, and always met the full needs of a certain (small) area or those of a specific field of study nationwide (e.g. some art schools that further developed a long-term educational tradition in a single given artistic field). Yet the established regional structure does not fully correspond to the natural regional boundaries. For this reason, the numbers of tertiary professional schools, their composition, size and educational programme structure do not fully match the needs of the regions. Tertiary professional schools are typically located in greater agglomerations such as Prague, Brno, Ostrava and České Budějovice. On the contrary, no tertiary professional schools exist in areas close to the border such as the Sokolov, Cheb and Tachov districts, or in the Rakovník or Český Krumlov district; they are also less well represented in the regions of South Bohemia and South Moravia.

118. It is necessary to mention the process of establishing branch faculties and workplaces of public and private HEIs in the regions. In addition to individual private HEIs (e.g. the Institute of Finance and Administration in Prague), branch faculties and workplaces have been established by some public HEIs of a largely technological nature (the Institute of Chemical Technology in Prague, the Czech Technical University in Prague, the University of West Bohemia in Pilsen, VŠB-Technical University of Ostrava and the Czech University of Agriculture). By establishing regional branch faculties and workplaces, some HEIs are in fact attempting to tackle the decreasing interest in study programmes they offer, because, at the present time, secondary school graduates tend to prefer fields of study in the areas of economics, law, the humanities and the social sciences. However, the degree of success in establishing regional branch faculties and workplaces, and secondary-school graduates' interest in studying the fields of study offered, vary considerably. It is also clear that there is a wide range of views (even within the same HEI) on the concept of establishing regional branch faculties and workplaces situated outside of the main location of the institution. On the other hand, it is necessary to

point out that such activities are supported by the cities and regions in which branch faculties and workplaces are established. In this respect, the establishment of regional branch faculties and workplaces can be seen as a response to specific regional needs. Nevertheless, many questions still remain unanswered – for example the economic effectiveness of operating regional branch faculties and workplaces, or the degree of saturation of demand in small towns (Most, Kladno, Strakonice, Sokolov, Sezimovo Ústí, etc.), given the general demographic decrease in the young cohorts of the population.

119. In general, it may be said that regional development policy has so far been more focused on incentives for attracting foreign investments, building quality infrastructure, support of small and medium-sized enterprises and an active employment policy. These are the main tools used for the solution of significant problems of a structural nature at the regional level. However, in the future one can expect that the composition of tertiary education institutions by region and field of study will have to comply, to at least some extent, with the changing structure of employment bodies (regional enterprises, etc.). As an example, pressure from important regional employers requiring adequate numbers of specialists with higher education degrees contributed significantly to the establishment of the College of Polytechnics in Jihlava.

4.2 Funding allocation

120. The current system of funding does not explicitly allocate funds to institutions on the grounds of their contribution towards regional or local development. However, higher education funding based on the Development Programmes of the Ministry takes into consideration some activities reflecting regional aspects; in 2005, for example, projects focused on the improvement of the educational structure of certain regions were supported.

121. In the case of tertiary professional schools, the state allocates funding not only to regional tertiary professional schools (via the regional governing bodies) but also to private and religious tertiary professional schools. The allocation of funding is formula-based, but the region, as the most frequent founder of tertiary professional schools, has the practical possibility to further adjust the financial resources distributed to particular tertiary professional schools. This tendency is evident in several regions (e.g. the Liberec Region and the Moravia-Silesia Region) that support secondary and tertiary professional schools that are part of the network providing education services for adults. Keeping in close contact with the labour market and social partners within the region enables these schools to react flexibly to the needs of the labour market in initial and continuing education.

4.3 Formal requirement for regional engagement

122. The Act stipulates that HEIs "contribute to development on both the national and regional levels while cooperating with various levels of the state administration and municipalities as well as in the areas of industry and culture" (the Act, § 1). This stipulation, however, is of a declaratory rather than a normative nature. Moreover, no chapter of the *Development Strategy of Tertiary Education for 2000-2005* dealt systematically with the issue of the contribution of tertiary education towards regional development. The *White Paper* limits itself to stating that "cooperation with regions is necessary for the development of both parties – educational institutions and autonomous institutions in the region" (*White Paper*, Chapter III, Tertiary Education, 2001). A certain improvement could be found in the *Long Term Plan of the Ministry for 2006-2010*, in which the cooperation of HEIs with industry and the region is among the most important priorities in the "Quality and excellence of academic activities" section. For the first time, HEIs can get support within the Development Programmes for this type of cooperation.

123. In general, the basic legal and strategic documents of Czech tertiary education do not oblige HEIs to participate actively in regional development. Related activities supported by the Ministry are mostly of a recommendatory nature, and are supported on the grounds of the voluntary, active involvement of HEIs or their parts.

124. In the case of tertiary professional schools the Education Act does not stipulate any specific obligations on the part of the founder; however, it does stipulate that the region is obliged to create suitable conditions for the pursuit of secondary and tertiary professional education by establishing/closing secondary and tertiary professional schools. In the case of every region, the development strategy of tertiary professional education is formally laid down in the region's strategic document, especially in the Long-term Plan for the Development of Education of the region, which is linked to the *Long-term Plan for Education and the Development of the Education System in the Czech Republic*. Therefore, the regional composition of tertiary professional schools is often influenced by the demands of regional enterprises and the regional labour market. In some rare cases, regional enterprises have founded tertiary professional schools themselves.

4.4 Policies to support the regional dimension of tertiary education

125. After 1989, the post-revolutionary period of higher education policy development focused especially on problems accumulated during last fifty years. Issues such as self-governance and the management of HEIs, tuition fees, quality evaluation and the implementation and implications of the Bologna Process were dealt with. The development priorities of the tertiary education system and the priorities of the Development Programmes did not in any fundamental way support the intensive involvement of HEIs in regional development or the cooperation of HEIs with employers or other public actors. However, in the last few years a positive shift towards the regional involvement of HEIs has been noticed in the development priorities of tertiary education (see the previous section).

126. Mutual cooperation between tertiary education institutions and other bodies is supported and, with varying intensity, even required within some particular programmes of the EU Structural Funds, in particular within the Industry and Business Support implemented by the Investment and Development Agency CzechInvest. The preliminary result of the CLUSTERS[7] programme is 31 projects submitted at the end of 2005. It is also planned that CzechInvest's regional offices together with other important players should help facilitate greater involvement of tertiary education institutions (higher education institutions as well as tertiary professional institutions) in regional development. Moreover, mutual cooperation between HEIs and regional employers is also supported via the Single Programming Document for Objective 3 throughout the capital city of Prague.

127. For the time being, with the exception of the Development Programmes of the Ministry and the EU Structural Funds, there are not many projects, measures or systematic tools at the national level to help tertiary education institutions react to the specific regional situation. However, some thematic seminar series can be considered a certain tool for systematic support. One such thematic seminar series, held in the course of the last few years by the CHES, fostered mutual consultations between representatives of HEIs and representatives of the employer sphere in selected industrial fields (chemistry, engineering, electro technology, economics, etc.).

[7] A cluster is a regional, field-related set of bodies that, with the participation of regional HEIs, aims at the development of small or medium-sized businesses and at bringing research closer to the requirements of practice.

CHAPTER 5: THE ROLE OF TERTIARY EDUCATION IN RESEARCH AND INNOVATION

128. The role of individual parts of the tertiary education sector in research and development (hereinafter R & D) is highly varied. Tertiary professional schools generally do not carry out R & D activities. This does not mean that they are focused solely on teaching, but simply that their other activities (often very useful at the local or regional level) are not R & D. This also holds true for most private HEIs, which are all of the non-university type and carry out very limited research activities. Financial support for the R & D of these institutions does not exceed 0.1% of the total R & D expenditures in the tertiary sector. The role of public and state HEIs is thus dominant. With only one exception (see Table 2.1) all public and state HEIs are of the university type and their teaching has to be closely connected with "scientific, research, development or artistic activities"[8]. For these reasons, this chapter only deals with public and state HEIs.

5.1 Changes in research organization and funding

129. In order to properly understand the position and the role of HEIs in R & D, it is necessary to briefly outline some historical circumstances and to describe the changes in the system of R & D and its funding that have occurred since 1993 (when the CR came into existence).

130. The communist regime decided that HEIs (all of which were state HEIs) should play the role of teaching facilities, while basic research would be conducted in the Czechoslovak Academy of Sciences and applied research in numerous research institutes. In fact, scientific work at HEIs did not disappear completely during this period, but it was not the priority, and financial support went mostly to other institutions. In this connection, ideological pressure and control over scientific work, especially in the humanities and social sciences, should be emphasized.

131. After 1989, the position of HEIs started to change very rapidly. The Act of 1990 declared that HEIs were the highest educational and scientific institutions. However, the "return" of research to HEIs was not easy, as the conditions for scientific work were quite unsatisfactory. Moreover, there was a fear that the brightest young people would prefer business to badly paid scientific work at HEIs.

132. In 1993, some institutional changes were introduced. As a result of these changes, the Czech Science Foundation (focused largely on supporting basic research) and the Research and Development Council (whose task is to make recommendations to the government in the areas of R & D policy and funding) were established. The Academy of Sciences (arising from the former Czechoslovak Academy of Sciences) was reduced considerably in size; the number of researchers decreased from 7,900 to 3,500. Unfortunately, the attempt to transfer some of the successful researchers from the Academy of Sciences to HEIs was an almost complete failure[9]. (However, some of them teach at HEIs externally.) The scientific capacity of the Academy of Sciences still remains relatively great, comparable to that of HEIs (see below). In this respect, it is possible to speak about a "dual" system of basic research in the CR, with competition often prevailing over cooperation. The research institutes, which dealt with applied research, were partly privatized and partly dissolved. A few remained as state research

[8] At HEIs devoted to the fine and performing arts, the teaching is based primarily on the creative abilities of the teachers; research activities in the field of theory or the history of the fine and performing arts are limited.

[9] One exception should be mentioned. A group of scientists from biological institutes of the Academy of Sciences in České Budějovice established the Faculty of Biological Sciences at the newly created University of South Bohemia. Most of the teachers work at both institutions, and students have access to a wide range of modern laboratories and equipment.

institutions (for example in the medical and environmental fields). No significant strengthening of R & D at HEIs came from this area.

133. The Ministry prepared several programmes aimed at encouraging and promoting scientific work at HEIs. All HEIs were linked up through a fast Internet network and equipped with modern ICT equipment. Other programmes for the modernization of HEIs´ libraries and the purchase of new scientific books and journals (under the name INFRA) ran in 1995-1997, with financial support amounting to about 200 million CZK. Later on, these programmes were extended to the whole scientific community and the total financial support up to the present amounts to 1.5 billion CZK.

134. In 1996, a programme entitled "Strengthening Research at HEIs" was initiated by the Research and Development Council: 56 laboratories and research teams in the first year and 39 in the second year succeeded in the competition for total financial support of 250 million CZK.

135. A subsequent programme, "Research Centres", was designed to bring together the research capacities of HEIs and the Academy of Sciences and other institutions, and to promote the creation of scientific "centres of excellence". The first round of the programme (2000-2004) has been evaluated as being very effective. Many young researchers at HEIs produced impressive scientific results and won international recognition. This programme has become a long-term component of the state's R & D policy and will be described in more detail in section 2 below.

136. The system of state funding for R & D that crystallized in the 1990s was formulated in the Act on the Support of Research and Development from Public Funds (No. 130/2002 Coll.). This Act distinguishes between targeted and institutional expenditures. So far, public support has in practice meant support from the state budget (support from regional and local authorities is negligible). The expenditures from the state budget are distributed according to the recommendation of the Research and Development Council via 22 ministries or central offices. The greatest amount is distributed by the Ministry, the Academy of Sciences, the Czech Science Foundation and the Ministry of Industry and Trade. The large number of bodies involved in distributing funds has resulted in low effectiveness and dubious quality assessment, as their criteria can be quite different. The Strategy for Economic Growth made public in March 2005 suggests a substantial reduction in this number. During the 1990s, all Czech governments tried to increase the financial support for R & D (see Table 5.1), but the absolute value expressed as a proportion of GDP[10] is still lower compared to the EU-15 (0.66%), EU-25 (0.64%) and OECD average (0.68%) (Main Science and Technology Indicators, 2004).

137. In connection with the expected admission of the CR to the EU, the *National Research and Development Policy* was formulated in 2000. One of its main goals was to increase the state expenditures for R & D to 0.7% of the GDP by 2002; however, in the event this only amounted to 0.52%. On the basis of the *National Research and Development Policy*, the *National Research Programme I* for the period 2004-2009 was launched in 2003. It contained five main thematic programmes: I. Quality of Life; II. The Information Society; III. Competitiveness and Sustainable Growth; IV. Energy for the Economy and Society; V. Modern Society and its Changes. These were further divided into nineteen programmes and three cross-section programmes – I. Human Resources for R & D; II. Integrated R & D; III. Regional and International Cooperation in R & D – which were in turn divided into seven sub-programmes. The sub-programmes are announced by different ministries or the Academy of Sciences (the above-mentioned "Research Centres" programme comes under cross-section programme II). They will run until 2009, with total financial support from public funds expected to amount to 16,962 million CZK.

138. In 2004, a new document entitled *National Research and Development Policy in the CR from 2004 to 2008* was approved. The increase in state support for R & D planned in this document is given in Table 5.1. Nevertheless, the "Barcelona" goal of 2002 (to increase R & D expenditures to 3% of

[10] This proportion provides a more realistic picture of the dynamics of state support for R & D since it does not include inflation.

GDP by 2010, with 2% from private sources and 1% from public ones) seems hard to reach. In 2005, the *National Research Programme II* (for the period 2006-2011), which is more oriented to applied research, was approved.

139. There is an ongoing discussion about the balance between targeted and institutional expenditures, which in the 1990s decreased from a ratio of 55:45 to 40:60, and subsequently increased to approximately the original value (see Table 5.1). The reasons for this evolution are partly historical: the development of the grant system, accompanied by an increase in funds for grant agencies in the 1990s, was followed by the introduction of clear rules for institutional funding based on research plans in the next decade. Future increases in state expenditures for R & D are now expected primarily in the targeted area.

5.2 Research and development at HEIs

140. The research capacity of HEI staff is limited by their teaching duties. The balance of teaching and research duties of the staff is approximately 2:1 on average. If the size of academic staff at public HEIs is taken as 14,600 FTE (full-time equivalent), one obtains the (theoretical) number of 4,800 full-time researchers. In statistical reports, a figure of approximately 4,300 FTE researchers at HEIs is given (note that HEIs also have a category of employees called "researchers", who have little or no teaching duties; there are about 1,400 such employees, and they are included in the above figure). This research staff capacity is higher than that of the Academy of Sciences, and accounts for 29% of the total number of researchers in the CR (see Table 5.5). The research capacity and performance of individual HEIs can be more accurately estimated from the ratio of the financial support for R & D to the amount of money obtained for teaching activities. This problem will be discussed at the end of this section.

141. Public HEIs obtain their **institutional support** for R & D from the Ministry in two forms (see also Chapter 7.2):

- support for **specific research**, i.e. research connected with providing Master's and doctoral programmes. The total amount (1,044 million CZK in 2004, 1,244 million CZK in 2005) is allocated to HEIs according to a formula that includes quality indicators such as the amount of targeted expenditures obtained by the given HEI in the previous two years, the number of professors and associate professors and the number of students in Master's and doctoral programmes[11]. Individual HEIs can distribute this money to their faculties according to their own decision, but in doing so they usually follow the above-mentioned formula;
- institutional support based on **research plans** for 5 to 7 years. These plans are presented by individual HEIs to the Ministry (other research institutions present their plans to other Ministries or to the Academy of Sciences in a similar fashion). The first period for research plans lasted from 1999 to 2004; in 2003, for example, public HEIs obtained 1,326 million CZK, and in 2004 1,565 million CZK. For the next period (2005-2011), the funding for this purpose has been substantially increased (to 3,040 million CZK in 2005) and the research plans rather strictly assessed. The method of peer review has been used, but without any coordination of particular (especially foreign) peers and their criteria. Only around 50% of the research plans submitted by HEIs were approved; they obtained 100% (or 90%) of the amount of money they had requested. (This amount can be adjusted each year according to the evaluation of the results obtained.) The remaining research plans were not given any financial support. This approach somewhat resembled the competition for targeted support and has been criticized. In 2006, it is possible to present new proposals; those approved will be financed beginning in 2007.

142. State HEIs obtain their institutional support for R & D from the Ministry of Defence and the Ministry of the Interior in a similar way.

[11] Only HEIs are eligible for this type of financial support, and only public HEIs managed to fulfil the criteria.

143. All HEIs can apply for **targeted support** (grants) from different agencies or programmes. Among programmes administered by the Ministry that on Research Centres is the most important. Its aim is to concentrate the research capacities of different institutions on current problems. One important rule is that the research teams should be composed of both experienced researchers from the above-mentioned institutions and doctoral students. In the first round, financial support was granted to such teams for five years (2000-2004) and it was supposed that the best centres would become integral parts of the corresponding HEIs. The programme had two categories: category A for basic research and category B for applied research. In category A, 21 out of 40 applicants succeeded, 11 of them having their coordinator from an HEI; in category B, there were 12 successful teams out of 20 applicants, 9 of them centred at HEIs. The total expenditures for the programme were 1,566 million CZK in category A and 1,710 million CZK in category B. In 2005, the second round of the Research Centres programme started (formally as two separate programmes). Among the 18 successful applicants in basic research and 25 in applied research, there are both teams continuing their activity from the preceding round and teams that did not succeed in 2000 but continued to develop their scientific activities and were successful on this occasion. The total expenditures for the period 2005-2008 should entail approximately 1,700 million CZK in category A and 3,260 million CZK in category B.

144. The most important agency allocating money for basic research is the Czech Science Foundation. Table 5.2 shows what proportion of these targeted expenditures is received by public HEIs. For example, the 510.9 million CZK in 2004 (without post-doc and doctoral projects) amounted to 42% of all expenditures on standard projects. The Czech Science Foundation does not lay down any research priorities; the main evaluation criterion is scientific excellence.

145. Public HEIs also compete successfully for the support of grant projects at other ministries (the Ministries of Health, Agriculture, Industry and Trade and the Environment). The grant programmes of these ministries support both basic and applied research in accordance with the thematic programmes of the National Research Programme I (see above). The Academy of Sciences has its own grant agency, which is also open to researchers from HEIs.

146. A considerable portion of the targeted support flows to public HEIs from **international cooperation** in R & D. In the case of the 5th Framework Programme of the EU, public HEI teams were the most common participants in successful projects – 170 teams compared with 82 teams from the Academy of Sciences (Report, 2005). As for the 6th FP, the European Commission has only published data pertaining to the first third of the budget. These show 348 Czech participations out of which 110 are in the category of HEIs (32%). Whereas all Czech participants have asked for EC support amounting to 32.5 million EUR, HEIs represent only 9.3 million EUR of this (29%). These values are below the EU-15 and EU-9 percentages and indicate that in the CR a large part of R & D capacity remains outside HEIs (Albrecht, 2005:4). This also holds true in the case of other international programmes like the European Education Campaign, COST, EUROCORES, etc. Fees paid from the state budget to international research institutions like CERN and the European Molecular Biology Organization also represent an important indirect support for research at HEIs.

147. **Private funding** for research at Czech HEIs is generally low. According to OECD data, in 2002 only 0.9% of the total R & D funding at Czech HEIs came from industry; in 2003 this ratio was 1% (Main Science and Technology Indicators, 2004). These figures are considerably higher in other countries: e.g. 6.2% in Finland, 11.8% in Germany, 4.9% in the USA. There are several reasons for this. In the structure of Czech industry, branches with a high share in the GDP are ones that do not need much R & D (e.g. the building industry). Until recently, foreign investors mostly profited from the Czech "low-cost economy" and had little need for research results. Indirect tools supporting R & D are almost non-existent: only since 2005 has it been possible to write off R & D expenditures from the tax base. This situation is closely linked to the low level of innovations (see section 5 below).

148. To complete the review of R & D at public HEIs, it is useful to look at some data about individual institutions. Table 5.3 indicates the support for R & D (without capital investments)

obtained in 2004 by individual public HEIs. The institutional support was provided by the Ministry; for targeted support only public sources were involved (ministries, the Czech Science Foundation, regional authorities, international cooperation). The ratio of the support for R & D to the support for teaching activities can be taken as a measure of research capacity or performance. This ratio differs considerably at individual HEIs and is the highest at the Institute of Chemical Technology in Prague (1.28). At large HEIs with several faculties a more exact picture can be obtained if this ratio is calculated for individual faculties. Taking account of these data, it is possible to distinguish between "research" and "teaching" faculties. It should be stressed that this labelling has been emerging (more or less) spontaneously, without any official designation of some institutions/faculties as being *a priori* research or teaching-oriented. This process has been stimulated by the system of funding as described above.

149. The average ratio of research/teaching financial support for the whole system (0.32) is also reflected in the structure of the academic staff income. A recent sociological survey (Matějů, Vitásková, 2005: 173) shows that on average 25% of income is from R & D, 60% from teaching activities and 15% from other sources. This is in accordance with the declared research capacity of public HEIs as expressed by the FTE number of researchers (approximately 4,300) out of the total number of academic staff (approximately 14,600).

5.3 Doctoral studies

150. One important way to promote R & D at HEIs is to support doctoral studies. The Act of 1990 introduced doctoral studies leading to the degree of *"doktor"* as the form of preparation/training for scientific work. In parallel, the system of scientific training established in the 1950s according to the Soviet model continued to exist. The content of this form of scientific training was practically identical with doctoral studies elsewhere, including the defence of a thesis. Graduates in this system were awarded the degree of "Candidate of Sciences" (CSc.). The HEIs, the Academy of Sciences and some research institutes were allowed to award this degree. This "dual" system of scientific and academic degrees lasted until 1999, and it was one of the reasons for the low number of graduates in doctoral programmes (and doctoral students in general) in the early 1990s (see Table 5.4).

151. The great research training capacity of the Academy of Sciences has, however, remained. It is used now for the provision of doctoral programmes in cooperation with HEIs, which is enabled by the Act (§ 81). In this case, the doctoral student works in some institute of the Academy of Sciences, preparing his dissertation and possibly attending some special courses. The committee for the state doctoral examination and the defence of the thesis is composed of both researchers from the Academy of Sciences and teachers from HEIs. The degree is awarded by the HEI[12]. In most cases, this system works very well. In the given fields of study, expert councils for monitoring the doctoral programmes have been established. The members of these councils come from both HEIs and the Academy of Sciences. Many researchers from the Academy of Sciences, some of them with the rank of professors or associate professors, also teach at HEIs, both in doctoral as well as in Bachelor's and Master's programmes.

152. In the mid-nineties, in order to promote doctoral studies, the Ministry began to allocate funds for doctoral scholarships to HEIs to the amount of 60,000 CZK per year for each student enrolled in the on-site mode of studies. At the present time, this has increased to 80,000 CZK (in accordance with its internal regulations, the HEI can vary the amount of the scholarship, for example for different years of study). As can be seen from Table 5.4, the number of doctoral students has increased threefold in the past few years (more rapidly than the total number of students), but the number of graduates is still low, with the time taken to get a degree ranging from five to eight years (instead of the standard length

[12] Some people in the Academy feel that this form does not give due respect to its scientific prestige. The Academy has a plan to establish its own Institute of Advanced Studies (in the legal form of a private HEI), which would provide doctoral programmes.

of three years). Many students, especially those in the combined mode of study, drop out. This is an undesirable state of affairs, but on the other hand it indicates that doctoral studies in the CR are rather demanding and that the requirements for the thesis in most fields of study are relatively high. At the beginning of the new millennium, the Ministry started to exert pressure on HEIs to encourage students to finish doctoral studies sooner. The number of doctoral graduates became an important indicator in quality assessment, in the allocation of institutional expenditures for R & D and in the formula funding of teaching activities. Funds for doctoral scholarships and for doctoral programmes began to be allocated only according to the number of students who did not exceed the standard length of study. Table 5.4 shows that the number of graduates from doctoral programmes is increasing and slowly approaching 5% of all graduates, which is considered to be normal and sound.

153. The Czech Science Foundation has also contributed to the promotion of doctoral studies. Based on a recommendation of the Research and Development Council, the Grant Agency launched a programme called "POST-DOC" in 1998. As the name shows, the aim of this programme is to support young graduates of doctoral programmes (under the age of 35) and to increase their income so that they can continue their scientific work in the CR. Support can be given for up to three years, and it can be renewed once. In 2003, the Czech Science Foundation also announced another type of programme for doctoral teams and their teachers; in this programme, they can obtain three-year grants for financing such things as doctoral research, the mobility of doctoral students and their participation in international conferences. The number of projects in both programmes and their respective funding are given in Table 5.2. The "Research Centres" programme has also played an important role in this respect. Thus it can be said that systematic support for doctoral studies represents one of the most effective tools of the state's R & D policy.

5.4 Quality assessment in R & D

154. More and more attention is currently being paid to the assessment of the quality and effectiveness of research, and the assessment of R & D is one of five systemic priorities in the *National R & D Policy in the CR from 2004 to 2008*. The Research and Development Council is very active in this respect and in 2005 it prepared the methodology for evaluation of R & D and its results. No special methods or rules apply for HEIs; universal rules are applied to all institutions receiving public money for research.

155. Research plans, which are used as a basis for institutional funding of R & D (see section 2 above), are assessed *ex-ante* by a team composed of Czech and foreign experts. An annual assessment also takes place, and if the results are unsatisfactory the financial support can be reduced. The overall assessment of the research plan outcomes is done when it comes to an end. In the case of targeted support, every project is evaluated by the respective agency, generally comparing the proposal with the results achieved. Projects lasting several years are checked annually. The amount of money obtained by the given HEI from different grant programmes is an important indicator for the allocation of funds for specific research (see section 2 above).

156. The results of R & D in the form of published papers, books, patents and so on are recorded in special databases administered by the Research and Development Council, and are used apart from this for bibliometric/scientometric analyses and comparisons. Table 5.5 gives the results recorded during the period 1998–2003. In evaluating these data, the research capacity of the individual sectors should be taken into account (in FTE, 2002). It is clear that these methods measure the quantity of research rather than its quality; nevertheless, HEIs stand this test quite well.

5.5 HEIs and innovation

157. The low number of patents and technological innovations in Table 5.5 (very low compared to EU and OECD countries) reflects the generally weak connection of R & D at HEIs (and research and development in the CR generally) with industry. This situation is even more alarming given that in statistical reports almost half the R & D at HEIs is declared as applied research. For these reasons, all governmental strategic materials concerning R & D try to encourage closer cooperation between HEIs and industry. The National Research Programme II in particular is oriented in this direction.

158. In the past few years some new funding programmes have been launched in which joint projects of an HEI and an enterprise can be supported. One of them is the Research Centres programme, category B. The Ministry of Industry and Trade is the administrator of several programmes supporting industrial R & D. One of them, TANDEM, has the explicit condition that every project must guarantee the transfer of results from the level of basic research to the level of industrial R & D. Among the programmes of the large Operational Programme Industry and Enterprise 2004-2006, financially supported by the EU Structural Funds, there are two that can stimulate closer cooperation between HEIs and industry. In the framework of the PROSPERITY programme the HEIs can participate especially in establishing and running science and technology parks, business incubators and technology transfer centres. The CLUSTERS programme supports the establishment of networks of companies in the same sector and associated research and educational institutions with the aim of improving the ability of enterprises to compete through innovation and collaboration. It is expected that HEIs will participate in about thirty projects in this programme (Šmídová, 2005).

159. Several science and technology parks have already been established (according to foreign models) at the Czech Technical University in Prague, Brno University of Technology, Palacký University in Olomouc and VŠB-Technical University of Ostrava. In these parks, some space (mostly on the university campus or near to it) is rented to small and medium-sized enterprises under favourable conditions, and the necessary infrastructure is in place. This opportunity is frequently used by ICT enterprises.

160. The unsatisfactory position of the CR in competitiveness rankings led the government to the decision to prepare the *National Innovation Policy of the Czech Republic for 2005-2010*. This document, which was approved in July 2005, lays great emphasis on R & D as the main source of innovation. The role of HEIs in this process is also stressed. Some specific objectives are laid out for HEIs, especially as regards human resources. More graduates from technology fields and the natural sciences are requested, and it is assumed there will be close cooperation between HEIs and industry, in particular small and medium-sized enterprises. It is obvious that this document tries to motivate HEIs to become more active in knowledge transfer and to abandon a "research for research's sake" policy, without adequate consideration for concrete outputs. However, the concrete instruments for implementation of the goals laid out in the document are absent or vague. For example, a specialized independent grant agency for applied research, a counterpart to the Czech Science Foundation in the area of basic research, has been planned for several years, but it does not yet exist.

161. The participation of academic staff in the innovation process has been the subject of a recent sociological survey (Matějů, Vitásková, 2005: 178). It confirms that at Czech HEIs basic research predominates over applied research, but that the members of the academic staff would prefer applied research. They declare that the main hindrance to this is the failure of the government to create the necessary conditions. This widespread view is only partly right. As historical experience shows, the decisive impetus for innovation must come from industry.

CHAPTER 6: ACHIEVING EQUITY IN AND THROUGH TERTIARY EDUCATION

162. In the recent years, equity received more attention in the Czech tertiary education policy. Recent policy documents proposed several measures to tackle the social-background inequalities in tertiary enrolment as well as to improve the situation of older tertiary education students. The initiatives thus extended the range of equity policies existing before: support of the integration of students with disabilities, which has formed an integral part of higher education funding since 1990, and the support programme for Roma tertiary-education students, available since 2000. However, several inequalities and differences still persist in the tertiary education system and, consequently, some policy makers, stakeholders and experts continue to criticise the equity policies as underdeveloped and propose several amendments and alternatives. The issue has thus recently come more to the forefront of policy debates.

163. Significant differences have existed between various dimensions of inequality in terms of policy attention and of the attendant controversy. Support of students with organic disabilities received most systematic attention and elicited least controversy but remains surprisingly under-researched. On the other hand, the influence of social background on the tertiary education enrolment has attracted most research, stirred up much controversy and recently led to introduction of some policy responses. Gender, age and ethnicity in tertiary education remain under-researched and received uneven attention both in policy debates and in policy making. These emphases will be reflected in the following discussions of the equity-related issues and policies in the Czech tertiary education.

6.1 Equity in and through tertiary education: changing contexts

6.1.1 Policy context

164. Almost all the Czech cabinets since 1992 expressed in their policy statements a commitment to the principle of equal student opportunities in tertiary education irrespective of socio-economic background. Since 2002, the cabinets' policy statements included an explicit determination "to broaden access to tertiary education for the children from the less stimulating social background" and to "guarantee equal education opportunities for the members of ethnic minorities" (Dokumentace minulých vlád ČR, 2005).

165. Equity issues received attention in the policy documents adopted over the last two years. Most importantly, the Long-term Plan of the Ministry for 2006-2010 acknowledges the existence of significant social-background inequalities and proposes some measures to address them. Similarly, the Higher Education Reform Policy discussed the situation of students older than 26 and considered some measures to improve their position. In December 2005, the Cabinet approved a new document as a step towards the implementation of the national human resources strategy; this document envisages further policy measures to “simplify access to tertiary professional and higher education for groups threatened by social exclusion” and to reduce the existing inequalities (Program realizace, 2005). This constitutes a marked development from the situation prevailing only five years ago: concern for equity was almost completely absent from the major tertiary education policy documents adopted around 2000. None of them identified equity as an issue of prime importance and all limited their concern for equality to the declaration of a formal principle of non-discrimination (White Paper, 2001; Long-term Plan of the Ministry 2000-2005; Development Strategy 2000-2005). Still, some equity-related issues (gender, ethnicity, disabilities) received from little to no attention even in the recent policy documents. In addition, not all policy declarations have already been implemented and translated into policy measures aimed at preventing or reducing the existing inequalities.

166. The increasing attention dedicated to equity in the various policy documents must be seen in relation to the increasing evidence of actual inequalities in the Czech education system. Studies of inequality proliferated especially in the last few years (esp. Matějů, Straková, 2003). Most of them focused on socio-economic inequalities, some addressed gender issues, but ethnic or age inequalities remain considerable under-researched, as does the position of the people with disabilities.

167. Equity in tertiary education has thus become one of the major issues in contemporary policy debates, owing to the growing awareness of the scope of the actually existing inequalities. These debates have, though, mostly concentrated only on the social-background dimensions of inequality: both various experts (Potůček, 2003; Matějů, 2003) and the major right-wing opposition party (Bartoš, 2005) criticised the ministry for the neglect of the problem. Other aspects received considerably less attention both by experts and by the various stakeholders. Tertiary education institutions (Šturzová, 2005) and their representatives (Bilanční a hodnotící zpráva, 2005) assign low priority to equity as such, concentrating on other aspects of tertiary education policy. National student representatives has considered the issue important since its establishment but limited its attention only to certain aspects and proposed only few policy alternatives to alleviate the existing inequalities (Programové prohlášení, 2003).

6.1.2 Tertiary education funding in equity context

168. Equity considerations play a role among the funding criteria. There are two channels of public higher education funding aimed at addressing inequalities in tertiary education: first, within the framework of the Development Programmes, second, through Higher Education Development Fund (see Section 7.2.1). Throughout the 1990s, one the priorities of the Higher Education Development Fund was to support the integration of students with organic disabilities; since 2000, this aim is financed primarily within the newly established Development Programmes. One of the priorities of these programmes is the funding of projects supporting integration of students with disabilities or supporting students from the disadvantaged social groups. In fact, most of the projects eventually financed focused solely on the integration of students with disabilities. Expenditures on these projects in 2004 amounted to almost 24 million CZK, i.e. 0.1% of the total public expenditures on tertiary education (Development Programmes; IIE). In 2006, a new national scholarship programme for students from low-income families shall be established; initially, the expenditures should amount to about 200 million CZK, then they should rise annually to reach 800 million CZK in 2008, thus amounting to some 2% of the public expenditures (Long-term Plan of the Ministry 2006-2010).

169. Public expenditures on public and state HEIs cover the entire study costs; students at these HEIs thus do not normally pay tuition fees. Even they, however, have to pay several study-related fees, including penalty tuition fees for exceeding the standard length of study. On the other hand, all other tertiary education institutions collect tuition fees to cover part (in the case of tertiary professional schools) or almost all of their expenses (private HEIs). In addition, all students have to cover all other study-related (e.g. textbooks) and living costs. According to the 2004 survey of higher education students, the average overall costs come to a monthly amount of 3500 CZK in case of public-HEIs students and of 9800 CZK in case of private-HEIs students (Matějů, 2004; cf. also Menclová & Baštová, 2005). In 2004, these sums constituted about 19 and 54% of an average income, respectively. Total annual expenditures of higher education students thus amount to approximately 11 billion CZK, i.e., to an equivalent of almost a half of public expenditures on higher education. Similar data on tertiary professional students are not available.

170. No national system of grants or loans exists that would help students (or their particular groups) to meet these costs. The first such system is to be introduced only in 2006 based on Higher Education Amendment 2005 (see Section 6.2). Public subsidies for accommodation and meal of higher education students have so far constituted the only partial exception to this rule. Meal subsidy covers at maximum a half of the cost of meal provided by cafeterias at HEIs, which are used by about one fifth of students. Since 2005, students who live outside the district of their HEI are entitled to receive

financial support to cover part of their accommodation expenses; before 2005, state subsidised accommodation in the facilities owned by HEIs. Similarly, no national welfare policies exist that would be aimed at all tertiary education students. For the purposes of health insurance, tertiary education study is equivalent to employment; however, this applies only to students under the age of 26. Tertiary education students are also included into the pension insurance system but only for six years of studies after the age of 18. Furthermore, tertiary education study does not count as equivalent of employment for the purposes of rules governing the entitlement of unemployment benefits. Social support benefits are available to students' families only within the system of welfare support of families with children. The most important form of social support is the system of child allowances available (on a means-tested basis) also to families with students younger than 26. (Nantl, Matějů, Vitásková, 2004)

171. According to a 2004 survey, 29.5% of students at public and 15.5% of students at private HEIs received social support benefits, in the average amount of 910 and 1690 CZK, respectively (Menclová, Baštová, 2005). In addition to national welfare system, HEIs may provide scholarships to its students; however, no data are available on the institutional scholarship policies (Nantl, Matějů, Vitásková, 2004). However, until the end of 2005, any scholarship granted to students was added to the income of their families for the purposes of the means test; only since the beginning of 2006 are most types of scholarship exempt from this rule (2005 Amendment to the Act). The underdevelopment (or perhaps even absence) of a national student welfare system has elicited criticism in the recent years, especially from higher education student representatives as well as from some researchers on the social situation of students. They have called for the development of an effective student welfare system, either "by granting the institutions a real financial autonomy to launch their own student welfare programs or by a national program of student support" (Nantl, Matějů, Vitásková, 2004: 3). All things considered, the student welfare system in the Czech Republic has to be understood within the context of the Czech universalistic welfare system as a whole. The welfare system is not segmented by profession or status, and students are included into it only on the basis of their employee-like status. Moreover, many social and tax benefits are family-centred, thus perceiving student as a child depended on parents. Yet, some of the recent measures (e.g. the introduction of student housing grants in 2005) may be seen as initial steps towards a student-oriented public support, as different from employee-like or family-centred support.

172. In the absence of national system of grants / loans or sufficient social support system, students and their parents share in the responsibility for covering the lion's share of the study-related and living costs. According to a 2004 survey of higher education students, parental contributions cover, on average, 55-60% of the total expenses, both for students at public and private HEIs, while students' own income covers the rest. Casual and part-time employment constitutes the main source of their own income for the majority of students (Matějů, 2004; cf. also Menclová, 2005). In spite of this, the 2004 change to the legal rules governing the casual employment of students made it considerably more expensive to employers and therefore, presumably, less available to students (Studenti mají připomínky, 2005).

6.1.3 Transition from secondary to tertiary education

173. The most important aspect of the transition process is its highly selective character. Ever since 1990, the success rate of applicants hovered around 50%. In the last few years, it increased rapidly between 2000 and 2003 (from 46.8 to 60%) but then again decreased slightly in 2004 (58.9%). In other words, more than 40% of applicants still fail to enter tertiary education (Tables 2.7 and 2.8). The success rate varies significantly between various parts of the system. Firstly, it is lower in the higher education sector (58%) than in the tertiary professional (65%). Secondly, even greater differences exist between various fields of study in the higher education itself: on the one hand, technical and agricultural fields display considerably higher-than-average success rate (72 and 64%, respectively); on the other, success rate in the most prestigious fields is as low as 36% (medicine and economics),

29% (creative arts) or 18% (law). Finally, the success rate at public HEIs (55%) is considerably lower than at private HEIs (88%). (All data in this paragraph refer to 2004; source: IIE)

174. Further diversity in success rates stems from the structure of the Czech upper secondary sector, which is highly differentiated and selective. It consists of three main school types: grammar, professional and vocational schools. Of the students enrolled in 2004, 17% enrolled at grammar schools, 39% at professional schools and 44% at vocational schools (IIE). Students enter these schools typically at the age of 15, or, in the case of the multi-year grammar schools, two or four years earlier. The grammar schools represent the general thread of upper secondary education, primarily preparing for the entry into tertiary sector, while the professional and vocational schools represent the vocational thread (some of the vocational schools do not even offer the secondary school leaving exam). Correspondingly, grammar-school graduates are over-represented among applicants for tertiary education: in, 2004, they amounted to 36% of all applicants despite representing only 19% of fresh upper-secondary graduates (2004, IIE). Furthermore, students and graduates of these various types of schools differ significantly in their educational achievement and aspiration as well as in the success rate if they eventually attempt to enter the tertiary sector. In all these respects, the three school types may be ranked in a descending order: grammar schools rank highest (with the multi-year schools ahead of the four-year), vocational schools lowest and professional schools fall in between (Burdová, Matějů, Pocházková, 2003; Koucký et al., 2004). Significant between-school differences in aspiration and tertiary education entry rate persist even after controlling for actual achievement: grammar-school graduates aim higher and fare better than other graduates on the same or even higher level of aptitude (Burdová, Matějů, Pocházková, 2003; Table 6.1). In 2004, the success rate in entry into tertiary education ranged from 76% among the grammar-school graduates to 61 among professional-school graduates to 60% among vocational-school graduates (2004, IIE). In 2006, the Ministry thus proposed a programme to increase the proportion of grammar-school enrolments to 35% in 2010 and 40% by 2020 (Více míst na gymnáziích, 2006). In addition, a recent study found evidence of alphabetical order playing role in the tertiary selection process: “Among university applicants predicted to be close to the non-admission margin, those high in the alphabet enjoy higher chances of admission.” (Jurajda, Münich, 2005).

175. As far as rules and guidelines are concerned, entry into tertiary education in the Czech education system is based on competitive selection process. The first precondition of entry is the passing of the secondary school leaving examination (or its equivalent abroad). All persons who have passed the secondary school leaving exam are entitled to submit any number of applications for studies at tertiary education institutions. All tertiary education institutions autonomously determine the conditions of entry, which in the vast majority of cases involve a competitive entrance examination. Typically, these examinations test extensively the applicants' knowledge in the particular field of study. The criteria are the same for all applicants; national regulations provide for no special procedures or criteria for any particular group. This corresponds to the strong and widespread conviction that the admission criteria should be the same for all applicants.

176. The transition to tertiary education thus involves a combination of a significant excess of demand over supply and complete institutional autonomy in the selection process. This combination has given rise to complaints about the lack of transparency and reliability of the admission proceedings, especially in the high-demand fields like law (see e.g. Bobek, 2005). In reaction, a number of institutions undertook some steps intended to improve reliability and transparency of the entrance examinations. The available options involve also standardised tests developed and sold to the tertiary institutions by the private enterprise Scio, which are partly modelled on the US Scholastic Aptitude Test (see http://www.scio.cz). Despite the recent improvements, the support of the current model among the Czech population is far from universal. According to a 2004 survey, 56% of the respondents agreed while 33% disagreed that the entrance examinations at HEIs constitute a selection really based on study aptitude; in addition, 42% approved while 46% disapproved of the statement that social connections are a necessary precondition for success in the selection process (Šamanová, 2004). According to a survey conducted in 2004 among higher education students, only 55% thought that connections or bribery play no role in the selection process while 45% though the opposite; this

percentage rose to 71 among those students who, before being admitted, experienced at least one failure in the past (Matějů, 2004).

177. A reform of the SSLE with possible implications for the tertiary selection process has been debated at least since the White Paper (2001). According to the reform plans, the SSLE should have a centrally prepared and supervised part, consisting of three subjects (Czech and second language plus one optional subject), in addition to the already existing part managed by the schools. This structure should enhance the comparability of the examinations across upper-secondary schools. According to a survey conducted by CHES, a significant proportion of HEIs would take results of the new exam into consideration in their own selection process (Šebková, 1996). Currently, the Education Act envisages the implementation of the reform in 2008 (Education Act, § 77-82).

6.2 Socio-economic inequalities

178. Recent developments of socio-economic inequalities in the Czech tertiary education system must be interpreted against the background both of recent increase in socio-economic inequality in the Czech society and, at the same time, of its comparatively low levels. One of the main goals of communist policy, and one of the main heritages of the communist era in CR, was the levelling of society "in terms of both income and status" – "the disappearance of the stratum of the poor together with…the stratum of the rich" (Potůček, 2003: 61). Political and economic liberalisation after 1989 thus led to increasing income and status differentiation (Potůček, 2003: 17-18). Despite the growth of inequality over the last 15 years, CR has remained one of the most egalitarian countries in the world, with the Gini index as low as 25.4 (Human Development Report, 2005: 270).

179. Czech tertiary education policy has recently turned its attention to the problem of socio-economic inequalities in the tertiary sector, a previously neglected area. Several studies reveal significant levels of inequality on all educational levels, despite the low levels of socio-economic inequality in the Czech society. According to some reports, the levels of socio-economic inequality in access to tertiary education belong to the highest in the EU. The expansion of tertiary education in the last 15 years has not led to a significant decrease in socio-economic inequality in access; some studies even indicate further growth.

6.2.1 Socio-economic inequalities in transition to tertiary education

180. The differentiated structure of upper-secondary education contributes significantly to the socio-economic selectivity of the Czech education system. All the available data and analyses testify to the existence of a strong correlation between schools choice and social status of students' parents. As a result, the three school types differ notably in the socio-economic background from one another while schools of the same type tend to share the same social-status characteristics. Distribution of students according their socio-economic background across different types of schools follows the same pattern as described above: descending from the highest levels observable at multi-year grammar schools to slightly lower levels at four-year schools of the same type, then to significantly lower levels at professional schools and finally to the lowest levels at the vocational schools. (For an assessment of the multi-year grammar schools, see Matějů, Straková, 2005.) This relationship between social status and school type contributes to – and is reinforced by – the between-school variance in education achievement and aspirations described above. Consequently, students from higher-status families as well as students at schools displaying higher social-status levels aspire much more frequently at tertiary education than lower-status students and students at lower-status schools, even if their actual performance levels are the same. This relationship was confirmed both by the PISA survey of fifteenth-year olds (Koucký, 2004) and by the survey of students in the final year at upper-secondary school (Burdová, Matějů, Pocházková, 2003). (See Figure 6.1 and Table 6.2 for a detailed evidence.)

181. In addition to inequalities arising from the influence of socio-economic background on school choice and educational aspirations, further inequalities occur in the selection process for tertiary education. Research shows that students' socio-economic background impacts also on their success or failure in the tertiary education admission proceedings. Among applicants with the same study aptitude (as measured by an independent testing), those from higher-status families succeed more often than those from lower-status backgrounds. The socio-economic differences in success rate are higher in fields with greater excess demand. (Burdová, Matějů, Pocházková, 2003; see Table 6.3).

6.2.2 Socio-economic inequalities in tertiary education

182. All available studies confirm the existence of inequalities in tertiary education attainment over the last 15 years. They differ, however, in identifying the main sources of this inequality as well as the trends in its development. One of the analyses concluded, first, that the effect of educational background surpassed that of socio-economic background; and second, that in the post-1989 period inequalities decreased slightly thanks to the decrease of the influence of educational background (Simonová, 2003). Another study reached almost opposite conclusions: first, it found the socio-economic factor more important than the socio-cultural (parents' education); second, it reported a considerable increase of inequalities during the 1990s (Matějů, Řeháková, Simonová, 2003). Finally, according to surveys of higher education students, educational inequalities in access to higher education between 1995 and 2004 were more or less stable (Koucký, 2005: 7). Therefore, even though the evidence remains inconclusive in several respects, one thing is clear: social-background differences in tertiary education attainment have not declined significantly despite the sizeable expansion of the tertiary system.

183. The composition of the current higher education student population thus reflects high degree of inequality between students from various social strata. Two recent surveys (Matějů, 2004; Menclová, Baštová, 2005) of higher education students enable a detailed analysis of the social composition of the contemporary student population. Furthermore, results from the parallel survey of the 15-year students allow for comparison with upper secondary student population, thus revealing the changes resulting from the transition from the secondary to tertiary level. Studies based on these surveys paint the same picture: higher social strata are consistently over-represented at the expense of the lower ones. This holds for both the socio-economic and educational aspects of the students' background (Table 6.4). The results indicate that students with tertiary-educated parents are about four-times more successful in the transition to tertiary education than students whose parents did not achieve SSLE and roughly two-times more successful than students whose parents achieved SSLE. The same difference exists between students from families with the highest and lowest levels of socio-economic status (Table 6.4). Even higher inequalities exist in fields of study with high excess demand, especially in law, natural sciences and social sciences, while low-demand fields (e.g. agricultural or technical) display lower degree of inequality (Table 6.5). In contrast to these differences between various fields of study, composition of student populations at public and private HEIs are very similar. The only exception is the higher proportion of students at private HEIs whose parents are self-employed (Table 6.4). This contradicts the widespread opinion that students at private HEIs come primarily from the higher socio-economic strata that can easily afford the high tuition fees. Unfortunately, no comparable surveys have analysed either the social composition of tertiary professional students or the differences between various levels of higher education (bachelor, master, doctoral). Similarly, no data are available on the social background of academic staff.

184. Higher education students from higher strata find it generally easier to cover the study-related and living costs than students from the lower strata. Students from the lower socio-economic background both receive slightly smaller parental contributions and also tend to earn a bit less on their own. More importantly, almost one third of these students report that their studies constitute a great burden on the family budget. Overall, students from families greatly burdened with financing studies of their offspring amount to more than a fifth of higher education students while students from

families experiencing no major troubles with financing studies comprise about a quarter (Matějů, 2004; Menclová, Baštová, 2005; see Table 6.6).

6.2.3 Tertiary education contribution to social-status mobility

185. Due to the structural features described above, tertiary education contributes more to the reproduction of educational inequalities than to inter-generational social mobility. Studies of survey data on the educational determinants of inter-generation mobility identified an overall decline in dynamics of educational mobility since the 1960's. Recent surveys thus indicate quite limited extent of mobility in the population (Table 6.7). Calculations based on the EU Labour Force Survey (2000) show that the probability of achieving tertiary education is more than twenty-times higher among people with higher-educated parents than among people whose parents attained basic education only. The ratio for parents with higher education to parents with upper-secondary education is almost five to one (Koucký, 2005: 14).

6.2.4 Policies to address social-background inequalities

186. In the recent years, the official policy of the Ministry started to pay attention to the social-background inequalities in tertiary education. The Long-term Plan of the Ministry for 2006-2010 thus acknowledges the under-representation "of some social groups among higher education students", admits that "there is no comprehensive system guaranteeing social security and open access to higher education for students" and that HEIs are unable to cope with the problem of their own. The plan refers to the document of the European Commission "Mobilising the Brainpower of Europe" as an inspiration for policies aimed at reducing these inequalities. The policies actually proposed by the plan are: a) organisation of preparatory courses before entering tertiary education; b) counselling during studies; c) continuation of the Development Programmes mentioned above; d) scholarship granted to students from-low income families. The last measure was first proposed in the Economic Growth Strategy in order to reduce the high selectivity of the education system; in addition, this document recommended the creation of "a functioning system of loans to fund the cost of studies" (Economic Growth Strategy, 2005: 97-98). Introduction of the state-funded scholarship for students from low-income families was included into the Amendment to the Act approved at the end of 2005; all political parties supported it. The scholarship should be granted to higher education students from lowest-income families (circa 13,000 students) and, according to the Ministry, will amount to 16,000 CZK per year. In addition, a recent Cabinet document proposes a national system of student loans; in 2006, the Ministry should "initiate a discussion" with the Ministry of Finance about the potential introduction of such a system (Program realizace, 2005). A recent survey of higher education students shows that the demand for such loans is not negligible: more than a third of public-HEIs students and more than a half of private-HEIs students would take out a loan at lower interest rate and with income-dependent deferred payment, if it was available. Not surprisingly, students from families greatly burdened with financing studies would opt for such loans more often than other students (Matějů, 2004; see Table 6.8 for details).

187. Before the recent policy change, the issue played in the official policy only one role: the social-democratic party, which dominated the post-1998 cabinets and held the post of the education minister throughout, based its opposition to the introduction of tuition fees on the concern about social-background equality in access to tertiary education. Similarly, HEIs mostly ignored the issue, as apparent from the scarcity of relevant projects within the framework of the Development Programmes. The under-development of the student welfare system and the role of social-background inequalities in tertiary education funding have already been described above.

188. Despite these newly introduced measures, some experts and interest groups continue to criticise the official policy as insufficient to redress the high degree of social-background inequalities. These criticisms are usually associated with proposals to introduce tuition fees and a system of student loans and grants (described in Chapter 7.2.9). In addition, student representatives has for several years

demanded an establishment of a student welfare system enabling all higher education students to cover the study-related and living costs, thus eliminating this source of inequality. At the same time, student representatives oppose the introduction of tuition-fees as contradictory both to the constitutional principle of free-of-charge education and to the principle of equal access (Poziční dokument "Školné", 2002).

6.3 Gender issues

189. Significant gender inequalities exist in CR despite the constitutional guarantee of equal opportunities. The most important areas in this respect are labour market, decision-making and gender division of labour within the family. The key patterns on the labour market involve occupational segregation, inequalities in advancement and in incomes – all in favour of men. Women are also under-represented in decision-making at all levels and in all areas, both in politics and in top management positions. Finally, traditional patriarchal division of labour predominates in most families. Although support of gender equality has been a part of government policy at least since 1998, it has not been able to redress the existing inequalities, at least in part because of the imperfect implementation (Potůček, 2003: 65-67; Havelková 2005).

190. The official policy of the Ministry is to support of the equality of opportunities of men and women. In the tertiary education policy, the vast majority of policy-makers and stakeholders have not considered it necessary to adopt or demand any policy measures in this direction. Still, the available research studies point to a considerable gender dynamics in the Czech tertiary education, which is observable on many levels and in many areas: in the entry and graduation rates of students, in student participation on the subsequent education levels, in distribution of both students and staff across fields of study, in career paths of academic staff etc. Many of these follow similar patterns as those observable in the society at large, both in the horizontal and vertical dimensions (for a thorough analysis, see Červinková, 2002; for an Eastern European context, see Grünberg, 2005 and Miroiu, 2003).

6.3.1 Gender differences in transition to tertiary education

191. Statistical data reveal a consistent long-term growth in the proportion of women entering tertiary education. This trend has already offset the traditional gender imbalance among tertiary students in favour of men. Several gender differences still exist in transition to tertiary education, though. Firstly, women outnumber men among applicants for tertiary education. Secondly, the success rate of men in the tertiary selection process is higher than among them (Table 6.9). While the first piece of evidence corresponds to the gender composition of upper-secondary student population, the latter is at odds with it. The over-representation of women among applicants reflects the predominance of women among grammar- and professional-school students (in 2004, 59.5 and 55.7%, respectively) who are, in general, more likely to apply for tertiary education. Because they also tend to be more successful in the selection process, the lower success rate of women must be explained by other means. The only existing analysis proposed two sources of this difference: firstly, women apply more for fields of study with higher excess demand (e.g. medicine and humanities / social sciences) while men prefer fields with lower demand/supply ratio (e.g. technical fields). Secondly, the success rate of men tends to be higher even within individual fields, which may indicate a "hidden discrimination" (Čermáková, 2000 and 2002).

192. While most of the institutions do not consider the gender factor important in the selection process, survey data reveal a different picture among higher education students. More than a third of the public-HEIs students and even more than a half of the private-HEIs students indicated that gender played a role in the admission process (Menclová, Baštová, 2004).

6.3.2 Gender in tertiary education: students

193. Three main gender patterns observable among tertiary education students are: increasing proportion of men with each subsequent educational level, higher graduation rate of women and differences in the distribution of men and women across fields of study.

194. Higher levels of tertiary education bring a shift in men/women ratio in favour of men. Women comprise about two thirds of tertiary professional students, about a half of bachelor and master students but only about a third of doctoral students. While the proportion of women has been rising on all levels, the gender differences in the composition of student populations on these three levels persist. The relation proportion of men and women on bachelor and master level fluctuated in recent years due to the uneven transition across fields of study from long-cycle master programmes to bachelor/master structure (Table 6.10).

195. Women are more successful in completing their studies than men: the proportion of women among graduates is consistently higher than among students (with the only exception of doctoral programmes). This trend is at odds with the previous one: even though women complete their studies more often than men, they less often proceed to a higher educational level (Table 6.10).

196. Proportion of women and men varies greatly between various fields of study. On the one hand, men constitute almost 80% of students in technical and military fields and 60% in the natural sciences; on the other hand, women make up three quarters of education students, almost 70% in medicine and more than 60% in the humanities / social sciences. (Table 6.11) Seen from another perspective, more than 70% of women study in four areas: economics, education, humanities / social sciences, and medicine, while 50% of men study in technical fields and natural sciences. The high degree of gender differences across fields of study is a significant feature of the Czech education system visible already on the primary level, entrenched on the upper-secondary level and reinforced on the tertiary level. It reflects and contributes to a high level of occupational segregation on the labour market, which is one of the main sources of gendered income inequality (cf. Červinková, 2002).

197. Students' paths through tertiary education thus considerably differ by gender and display several paradoxes. Firstly, women predominate among the applicants but men succeed more often in the selection process. Secondly, while men achieve higher success rate in the admission process, women achieve higher success rate in completing their studies. Thirdly, while women comprise a slight majority of master graduates, they make only about 40% of newly enrolled doctoral students. In addition, the highest proportion of women in tertiary education (as well as in the entire Czech education system) is to be found at tertiary professional schools, in many respects the most problematic part of the Czech tertiary education system. Finally, men and women differ significantly in their choice of fields of study.

6.3.3 Gender in tertiary education: staff

198. Gender patterns observable among tertiary education staff correspond to those observable among students. Firstly, the proportion of men among staff members increases with the increasing educational level as well as with every subsequent level in the academic-career hierarchy. Women thus constitute 63% of academic staff members at tertiary professional schools but only about a third at public and state HEIs. Furthermore, women constitute considerably higher proportion of the higher education support staff than of the academic staff. The vertical differences are even more pronounced on the various levels of the academic-career hierarchy at HEIs. While women predominate at the bottom of the hierarchy (53% of “lecturers”), their share declines bellow fifty% in the rank of assistants to rapidly decline among associate professors (22%) and professors (10%; all data as of 2004, IIE). The under-representation of women on the higher levels of the hierarchy is probably partly responsible for the very low proportion of women receiving research funding: from 2003 to 2005, projects headed by a woman comprised around 20% of all projects supported by the Czech Science Foundation and

carried out at HEIs (Kraťková, 2005). Further gender inequality in research funding originates from the fact that the research fields with lowest representation of women (natural and technical sciences) receive the highest proportion of public expenditures (Kolářová, Linková, 2002). The under-representation of women in research funding may, in turn, be one of the sources of the differences in income of higher education staff members. According to a 2004 survey, women earn significantly less than men not only overall (due to under-representation in higher career positions) but even on the same hierarchy-level in the same age group (Matějů, Vitásková, 2005: 154-155). Men are also significantly over-represented in the decision-making offices at higher education institutions. In 2003, men comprised 49 of 58 rectors, 102 of 129 vice-rectors, 112 of 118 deans and 327 of 422 vice-deans (Kraťková, 2004).

199. Despite all these differences, a 2004 survey of women in academic offices revealed that they do not consider the present situation as one of gender inequality. Throughout, the majority of them insisted that the opportunities of women and men in higher education were indeed equal. According to them, the conditions for women in promotion, pay, research, or mobility are the same for both genders. However, they concede that men find themselves in a better position to make advantage of the available opportunities, due to the different social role of a woman. Nevertheless, all women surveyed opposed the idea of positive discrimination in favour of women (Kraťková, 2004).

6.3.4 Returns of tertiary education

200. The returns of tertiary education differ by gender as well. The social status of tertiary-educated men is considerably higher than that of women with the same level of education. The differences are perhaps most visible in terms of median incomes. In the entire population, men earn more than women with the same education, but the difference is greatest among tertiary-educated employees: while in the entire population women earn about 84% of men's incomes, among people with master or higher degree the ratio is 74% and among people with bachelor or tertiary professional degree 80%. Tertiary-educated women even earn less than men with one-degree lower education (Table 6.12; for further evidence see Červinková, 2002: 41-42).

6.3.5 Gender issues in tertiary education policy

201. The Ministry has adopted an official policy document on the equal opportunities of men and women, which is revised annually (Priority a postupy, 2005). As part of the implementation of the priority that has been the one most closely followed during the recent years, the Ministry commissioned several research projects into the gender dynamics of the Czech tertiary education (e.g. Červinková, 2002; Kraťková, 2004 and 2005). Of the current list of the Ministry's priorities in the area of gender equality, six out of 25 apply to tertiary education at least partly (Priority a postupy, 2005). However, gender issues do not figure in the tertiary education policy documents of the Ministry (e.g. White Paper, 2001, Long-term plan 2000-2005; Long-term plan 2006-2010). The instruction of the Minister of Education for the furthering of equality of men and women (2000) applies to tertiary professional education. The Ministry shares with most of the stakeholders the opinion that gender issues in tertiary education are not significant, or if they are, they are not to be addressed by policy measures. Gender equality received more attention in the national R & D policy; it lead, primarily, to the establishment of the National Contact Centre – Women in Science (http://www.zenyaveda.cz), intended to provide support women researchers, and also elicited other measures in this direction; these operate, though, mostly outside the tertiary education system. One more issue deserves mention: the decision-making positions in the area of tertiary education policy are predominantly occupied by men.

202. Much of the same applies to the policies of HEIs: gender issues play no significant role in their long-term plans (Šturzová, 2005). One of the few exceptions may be found at some technical HEIs that are considering measures to increase the very low proportion of women among their students (Sloboda, 2004).

6.4 Other equity issues: age, ethnicity, and people with disabilities

203. Arguably, social background and gender are the two most important issues related to equity in the Czech tertiary education system. All the three issues dealt with in this section received almost no attention in tertiary education research and also spark less controversy in policy debates. These issues do, however, differ in how much attention they received in policy making: from the continuous attention paid to the position of people with disabilities to largely non-existent policies to address the ethnic inequalities.

6.4.1 Age-related equity issues

204. Two equity concerns related to age may be observed in the Czech tertiary education. The first involves students older than 26 who are not eligible for most forms of social security and social support. The other concerns applicants for tertiary education: fresh upper-secondary graduates consistently achieve higher success rate at the expense of the older applicants. Both of them are associated with the gradually increasing representation of older cohorts among both applicants and students, caused by the prolongation of compulsory schools attendance and by the unmet demand for tertiary education in the population at large (Table 6.13).

205. The first aspect, the unequal position of students over 26 in the social support system, received considerable attention in recent policy debates that eventually resulted in a near-agreement that the problem must be addressed (Šmídová, 2005). The proportion of students aged 27 and above has been rising steadily during the recent years, so that in 2004 these students amounted to 21% of all higher education students and even to 64% of doctoral students. The issue entered policy debates for two reasons. The first was the continuous attention devoted to it by student representatives who have originally demanded the move of the age-limit to 27 or 28 years (Pozičí dokument studium, 2005) and later the equalisation of all students, irrespective of age, for the purposes of the public welfare policy. The other impulse resulted from the policy support of doctoral studies. In the recent policy documents of the Ministry, the issue has thus been viewed as concerning primarily doctoral students; the documents agreed that the present situation is untenable but proposed no specific measures to alleviate it (Higher Education Reform Policy, 2004; Long-term plan 2006-2010). Correspondingly, no measures have been introduced so far, at least partly because social insurance and support fall into the responsibility of the Ministry of Labour and Social Affairs.

206. The situation is different in the case of the other age-related equity issue: the considerably higher success rates of fresh upper-secondary graduates and their over-representation among the enrolled into tertiary education (Table 6.19) are not considered a policy issue in CR. While in 2004 the fresh graduates comprised 43.5% of all applicants, their proportion rose to 51,1 among the enrolled; in other words, they were more successful by about a third (IIE). No proposal to establish special criteria or procedures for the older applicants has been introduced, undoubtedly owing to the strong and widespread belief that the admission criteria should be the same for all applicants.

6.4.2 Ethnic inequalities in tertiary education

207. Czech society is to a large degree ethnically homogenous: not only do Czechs comprise the vast majority of the population but also members of the largest minority, Slovaks, are not perceived as foreigners by most of the Czechs. Several small ethnic minorities live in CR, both the historical (German, Polish, Hungarian) and the ones created by recent immigration (e.g. Ukrainian, Russian, Vietnamese). Nevertheless, by far the most problematic is the position of the second-largest ethnic minorities – the Roma. Expert estimates of their numbers range between 200,000 and 300,000. Their situation may be succinctly described as "ethnicisation of poverty": the Czech Roma demonstrate much higher levels of unemployment and much lower levels of income that members of the majority and face a considerable social exclusion as well (Potůček, 2003).

208. Roma students are inadequately integrated into the Czech education system. According to a recent Phare-supported research, 44% of them do not complete basic and less than 5% eventually achieve secondary education (Marquéz, 2005). Their proportion in tertiary education is even lower: regional coordinators of social workers for the Roma minority estimate that approximately 60 Roma study at Czech HEIs while other experts estimate their numbers in the tertiary sector at about 100. Ethnicity-sensitive statistical data are not collected, though, in order to protect private data; this fact, however, also prevents the detection of an eventual ethnic discrimination.

209. In 2000, the Ministry launched an affirmative support programme for Roma upper-secondary and tertiary-professional students. This programme should help the Roma students to cover study-related and living costs; in 2004, 2314 Roma upper-secondary and tertiary-professional students received this support, a slight decline from 2577 in 2003 (Koncepce romské integrace, 2005; Vyhlášení programu 2006). Several Roma organisations have demanded the extension of this programme into higher education (Report on the Situation, 2004), a model recommended also by OECD (Economic Survey, 2004). Meanwhile, some non-profit organisations run support programmes for Roma preparing for or studying in tertiary education (e.g. Slovo 21, Verda).

6.4.3 People with disabilities in tertiary education

210. Integration of people with disabilities into tertiary education has received the most systematic and most extensive policy support of all the issues discussed in this chapter. Since the beginning of the 1990s, virtually all policy-makers and stakeholders perceived their exclusion from higher education as an issue requiring a concentrated attention. Several funding programmes have been available to promote their integration both at HEIs and at tertiary professional schools. At present, public funding for such projects is available both within the framework of the Development Programmes and through the Higher Education Development Fund (see Chapter 7.2). Regrettably, no data are available about and no research has been conducted on either the enrolment or graduation rates of the students with disabilities or their overall situation in tertiary access and study.

CHAPTER 7: RESOURCING THE TERTIARY EDUCATION SYSTEM

7.1 Staff

7.1.1. Public and state HEIs

211. The academic staff in Czech HEIs are traditionally subdivided into the following ranks: professors, associate professors (*docents*), senior assistants, assistants, and lecturers. These categories are also stated in the Act (§ 70). Academic staff of all ranks carry out both teaching and research or other creative activities. The balance between the teaching and research duties of individual academic staff members can vary widely; on average it is approximately 2:1 (see section 5.2). There is also the category of "researcher", which usually entails very limited teaching duties. Other specialists may take part in teaching on the basis of employment contracts beyond the scope of regular employment.

212. For the appointment of the two highest categories of academic staff – associate professor and professor – the Act lays down a procedure explained in detail in §§71-77. An associate professor for a given field of study is appointed by the Rector on the base of a procedure called habilitation. In this procedure, the scientific or artistic capacity of a candidate is verified by the defence of the habilitation thesis, and teaching ability by his or her previous practical experience and the delivery of a special lecture. Both are assessed by the Scientific Board of a faculty. A professor is appointed by the President of the CR on the recommendation of a Scientific Board of an HEI. The right to carry out the procedures of habilitation and to appoint professors is the subject to accreditation (see Chapter 9) and it is not granted to all faculties and HEIs in all fields of study. (So, for example senior assistants at a faculty that does not have the "right of habilitation" must submit an application to another faculty that does have this right in the appropriate field of study.) In the CR, the title of professor or associate professor thus indicates a kind of academic degree or a level of academic qualification that the holder retains for life, not a position. The criteria for the above-mentioned procedures are generally quite strict and it takes a relatively long time to build up an academic career in the CR (see below).

213. On the other hand, the individual HEIs have great power when it comes to personnel matters. They can determine without any regulations the number of academic staff in all ranks. Table 7.1 shows the growth in the number of academic staff at public HEIs in the past ten years. This growth is much slower than the increase in the number of students. The "teaching productivity/efficiency" measured by the student/teacher ratio has increased in this period almost twofold. The size of the direct teaching load of HEI academic staff is not determined by legislation, so there can be considerable differences between different faculties or even departments. By not explicitly defining the limits of employment contracts, the Act allows each HEI to decide whether its teachers will be employed for an indefinite time or have a fixed-term contract. The Act stipulates that academic staff positions at public HEIs must be filled on the basis of a competitive examination; this procedure is in many cases only formal.

214. Individual HEIs can also determine the salaries of their employees according to their own internal regulations. The average monthly salaries in the different categories of academic staff of public HEIs are given in Table 7.2. It should be noted that these figures do not include other earnings, for example from research contracts, or salaries from other jobs. The salaries of academic staff have grown only slightly faster than the national average. If we take into account the increase in "teaching efficiency" in these years (Table 7.1), the academic staff salary growth is even less significant. Table 7.3 shows the differences in academic staff salaries between individual public HEIs. These differences correlate to a certain extent with the performance in R & D (see Table 5.3).

215. A study based on a sociological survey of academic staff conducted in 2005 found that academic salaries are determined by three main factors: position in the academic hierarchy, research performance and gender. Firstly, every step up the hierarchy leads to a significant salary increase.

Secondly, the better the research performance of a staff member, the higher his or her salary. Finally, the study found that salaries of women staff members were about one-fifth lower than those of their male counterparts (Matějů, Vitásková, 2005: 154-155).

7.1.2 Problems in ensuring an adequate supply of academic staff

216. One of great problems facing Czech HEIs after 1989 was to get rid of compromised teachers, especially in the humanities and social sciences, in order to enable the return of teachers expelled by the communist regime and to recruit new, young teachers. In order to make this process easier an amendment to the Act of 1990 was adopted in 1993. This amendment cancelled open-ended contracts for all categories of academic staff and limited their contracts to from two to five years. Contracts would then be extended on the basis of an evaluation of academic staff performance, while new applicants were required to take part in competitive examinations. It soon became clear, however, that this amendment could be easily circumvented and that it did not meet expectations. It was cancelled in the 1998 Act.

217. Meanwhile, many qualified teachers and researchers left academia for other sectors that provided plentiful opportunities for considerably higher salaries than those offered in higher education. The still relatively low salaries in higher education and their insufficient differentiation were the main reasons why many young teachers and researchers left.

218. As a result, the average age of academic staff is very high. In 2000, for example, the average age of professors and associate professors was 63 and 57 respectively. But the average age of those newly appointed in the upper ranks of academic staff is also relatively high (55 and 49 respectively). This is undoubtedly connected with the stiff requirements in the procedures for appointments. In many cases, the appointment is the result of lifelong achievement. Nevertheless, in recent years the situation has been looking up; in the fields of science, engineering and medicine, for example, professors appointed when they are not yet 50 are no exception.

219. The lack of professors and associate professors is a serious problem for many public HEIs and faculties (especially outside traditional university locations), which hinders the accreditation of new programmes (especially at the Master's and doctoral levels). The solution of recruiting professors and associate professors from other HEIs for part-time jobs cannot be considered satisfactory.

220. On the other hand, the qualification level of Czech academic staff in comparison to other countries is relatively high. The academic degree of Ph.D. (or its equivalent) is considered a necessary condition for the position of the senior assistant (and for higher ranks as well). Good graduates of doctoral programmes with experience from projects and with published papers in international journals are able to pass the habilitation procedure within five years.

7.1.3 Policies and programmes to improve the quality of tertiary education staff

221. Despite the changes in the age and qualification structure of academic staff in last years, the situation cannot be considered satisfactory. The *Long-term Plan of the Ministry for 2006-2010* considers enhancing of the quality and potential of academic staff one of the key development factors in higher education. HEIs must make efforts, with the help of direct financial incentives and indirect motivational tools, to gradually enhance the attractiveness of academic careers and to develop their human resource potential by attracting talented students and graduates of Master's and doctoral programmes. HEIs' human resources policies must be directed towards increasing demands on existing academic staff (in terms of professional growth criteria, academic career development, their own scientific or creative activities, opportunities for an international academic career), and towards setting the parameters of a competitive environment by rewarding those academic staff members who contribute to HEI development and increasing the potential of their students. However, personnel matters are fully in the competence of the HEIs, and the Ministry can do no more than help to stimulate it through its Development Programmes (see 7.2.2).

222. Furthermore, ways of motivating and recruiting experts from practice to become more involved in higher education will continue. Experts from practice are not usually interested in academic careers, so their position within the hierarchy of academic staff is not sufficiently prestigious. Their motivation for coming to academia is generally not the financial rewards from teaching but a chance to share their experience and knowledge. People from the private sector that teach at public HEIs remain in the positions of assistants. There has been some debate about the possible establishment of external or extra-professorial positions for these people, but so far no decision has been taken.

223. Lifelong learning is another way of improving the quality of academic staff. In this respect, the emphasis is put especially on the development of knowledge and skills both in a field of personal specialization and in the whole area of knowledge, strategies and methods of higher and adult education, as well as on the ability to pass knowledge on to students and on the development of soft skills (i.e. presentation abilities, teamwork, information literacy, ICT skills in education and research, the development of language competencies, management skills, knowledge related to intellectual and industrial property, etc.). These activities will be supported by means of the Development Programmes. Financial resources may also be obtained from the EU Structural Funds. Lifelong learning, the dynamics of professional growth and the language proficiency of academic staff will play a role in the process of quality evaluation of HEIs/faculties and will be taken into consideration in the process of accreditation of Master's and doctoral programmes.

224. The level of qualification of academic staff is significantly influenced by international cooperation in education, research and development. Bilateral cooperation between HEIs, international agreements, research and development programmes (especially the EU Framework Programmes) and education programmes (especially Socrates and Leonardo) enable and support short and long-term exchange stays of academic staff abroad. Thus, academic staff can gain further professional qualifications as well as new personal contacts and can also improve their language skills, which are generally considered quite important in terms of the development of the human resources of HEIs. That is why support for academic staff mobility is expressed in the *Long-term Plan of the Ministry for 2006-2010*, and why it is also supported financially.

7.1.4 Private HEIs

225. Academic staff at private HEIs are subject to the same legal regulations concerning qualification as staff at public institutions. Data taken from the annual reports of private HEIs for 2004 show that, as of 31 December 2004, 1,778 academic staff members, among them 139 professors and 320 associate professors, were employed at private HEIs. The number of FTE teachers is 706. From this we can estimate the "teaching efficiency" (see section 7.1) as 26.6 students/teacher. This seems to be considerably higher than at public HEIs. However, if we take into account the research duties at these institutions and reduce the number of academic staff by one-third, the "teaching efficiency" at both types of HEIs is quite comparable.

226. The qualification structures of academic staff at private HEIs are similar to those of public HEIs. However, private HEIs, which are non-university types of institutions, are not awarded accreditation for doctoral degree programmes, procedures for habilitation or the appointment of professors. In terms of academic staff provision and the development of human resources, private HEIs are thus dependent on public and state HEIs of the university type. Private HEIs tend to "solve" this situation by offering contracts to members of academic staff – especially professors and associate professors – from public HEIs. The problem is that a number of these professors and associate professors continue to work at their "home" university-type HEIs at the same time. Some private HEIs can attract professors and associate professors from public/state HEIs by offering them better financial conditions. In this respect, the number of students at a given private HEI (i.e. donors of financial sources) plays a significant role. If a private HEI has at least 200 students enrolled in one year of study, it has the assets to improve the qualification structure of its internal academic staff members. The higher number of students also generates financial sources for the development of creative activities of private HEI, thus

raising its attractiveness for academic staff. Private HEIs focus on systematic development of their human resources, and facilitate conditions for involvement of their junior academic staff in doctoral programmes at public HEIs.

7.1.5 Tertiary professional schools

227. Teachers at tertiary professional schools focus primarily on teaching activities; the obligation to carry out R & D is not stipulated by law. Until recently, the criteria for their professional and pedagogical competencies were the same as those for teachers at upper-secondary schools. The new Teaching Staff Act (No. 563/2004 Coll.) changed the situation: now teachers of general/comprehensive or professional subjects at tertiary professional school must be graduates from Master's programmes corresponding to the subjects they teach. Teachers of practically-oriented subjects or practical placements meet the qualification requirements by having graduated from either a higher education programme, or a tertiary professional educational programme, or a secondary-school programme finalized by the leaving examination certificate; they must also have had the relevant practice for a period of at least three years. The direct teaching load of teachers at tertiary professional schools is the same as at upper-secondary schools, i.e. 21 teaching lessons per week on average plus a newly instituted three office hours (Government Decree No. 75/2005 Coll.). Teachers from HEIs or other experts are teaching often also part-time at tertiary professional schools.

228. The number of teaching staff and their average salaries are given in Tables 7.4 and 7.5 respectively. The teaching staff salaries are at the level of senior assistant at public HEIs. The salary growth in the past eight years has also been similar.

7.2 Financing

7.2.1 Public HEIs

229. The share of the public budget spent on education is proposed by the government and approved by the Parliament. The amount is decided upon by political priorities and influenced by current possibilities, and is not directly related to the output of HEIs. The Act states that a public HEI is entitled to a state subsidy, and limits what this subsidy may be used for.

230. The basic part of the budget of public HEIs is composed of a state subsidy, but at the same time HEIs are expected to diversify their financial sources, and gain other funding from supplementary activities (see Figure 7.1.). In accordance with the Act, public HEIs can carry out supplementary activities subject to payment and related to their main (educational, scientific, research, developmental, artistic or other creative) activities. Revenues from supplementary activities, possible gifts, donations and bequests provide financial resources that have to go towards additional funding of their main and supplementary activities. The total share of extra-budgetary revenues varies greatly among HEIs (see Table 7.6); on average, the share of extra-budgetary revenues in total revenues is around 15%. There are three universal sources of these revenues: revenues from services for students and study-related fees, revenues from property and revenues from research and development activities and services.

- study-related fees. Higher education provided by public HEIs is in general free of charge. The HEIs cannot collect tuition fees from students in regular study programmes offered in the Czech language. The can, however, charge what are referred to as study-related fees. These include fees for studies taught in a foreign language (the cost of which is not limited by the Act), for the extension of the standard length of studies, and for studies in a second degree programme at the same level;
- revenues from services for students. Revenues from accommodation, catering and other services for students (including revenues from the publication and sale of study materials) form an important part of the revenues of public HEIs. The accommodation and related services become

more profitable when offered to customers from outside HEIs, for example to tourists during holidays;

- other incomes from educational activities. HEIs may provide, either free of charge or subject to payment, lifelong learning programmes within the framework of their educational activities and beyond the scope of their regular programmes;
- revenues from property. HEIs own the "assets needed to provide activities within their primary objectives" (the Act, § 19). The main source of these revenues is from renting land and property. Different institutions have very different opportunities to raise this type of revenue. How they use their assets is limited by the Act and supervised by the Board of Trustees.
- Revenues from R & D activities and services (see also Chapter 5).

7.2.2 Mechanisms for allocating state subsidy: Public HEIs

231. The Act explicitly states that the state subsidy of public HEIs is dependent on the types and financial requirements of their accredited study programmes and lifelong learning programmes, the number of students and the results achieved in educational, scientific, research, developmental, artistic or other creative activity and their demands. Besides the Long-term Plans of HEIs and the Long-term Plan of the Ministry are also taken into account. The practice has been accepted that the details of the distribution of the state subsidy to individual HEIs are based on mutual agreement between the Representative Commission and the Ministry. The Representative Commission is composed of representatives of the Czech Rectors' Conference, the Council of Higher Education Institutions, the HEI Registrars, and a representative of the labour union.

232. The total state subsidy for a particular institution is based primarily on its teaching and research performance. The main portion of the **grant for teaching activity** is based on a performance formula (it is expected that this will remain the major constituent for several years), the smaller portion on "contracts" (see below). This latter part is allocated according to other (not formula-based) rules. The composition of the total grant for teaching is shown in Figure 7.2.

233. **Formula funding.** The amount of money allocated is derived from the volume of teaching activity. The total sum for each HEI is calculated as a sum of the products of the number of students and the financial assessment of each accredited programme. Recently, the number of graduates has also been included in the formula, thus enhancing the output orientation of the funding system. The financial assessment of a study programme is the product of the normative base (Table 7.7) and a coefficient reflecting the relative cost of the programme. The coefficients for different fields of study and the normative basis in the last ten years are given in Table 7.8. The amount for one graduate is calculated in a similar manner, only the normative base is different: in 2005 this was 6,825 CZK in Bachelor's and Master's programmes and 10,238 CZK in doctoral ones. The annual increase in the number of students who will be financed as well as any possible annual increase in the normative base is the subject of discussions between the Ministry and the Representative Commission.

234. **Contractual principle.** In this case, the funding depends on congruence between the Long-term Plans of individual institutions and the Long-term Plan of the Ministry. The mechanism is based on the Development Programmes published by the Ministry (see Figure 7.2), and HEIs are invited to submit projects that fit in with the programme priorities, which are derived from the state strategy as expressed in the Long-term plan of the Ministry. The financial support of successful projects allocated on the basis of specific contracts enables state priorities to be implemented through funding. The assessment of any particular project's eligibility is based on the priorities of the Long-term Plans of the Ministry and that of the particular HEI; it is examined by expert teams consisting of members of the Czech Rectors' Conference and the Council of HEIs and representatives of the Ministry.

235. **Other means of funding.** The grant for teaching activities includes several other items (for details see Table 7.9). They are:

- doctoral students´ scholarships;

- grants covering the expenses of foreign students studying in the CR within the framework of international agreements and grants for Czech students studying abroad within the framework of various programmes (Socrates, Aktion, CEEPUS);
- grants from the Educational Policy Fund. These grants are designed for development projects involving more than one HEI that are in compliance with the plans of the Ministry; decisions on the grants are the Minister's prerogative;
- grants from the Higher Education Development Fund, which is designed to support projects focused on various topics of educational development. This fund is jointly managed by the Ministry and the Council of HEIs. The priorities in the relevant thematic fields are set and the evaluation of particular projects carried out in collaboration with these two bodies;
- a fund for meeting any types of extraordinary expenses;
- grants for students' accommodation and meals. Public HEIs used to be provided with grants for students' accommodation and meals. Recently, however, the allocation of the accommodation part was changed. From now on, the money will be distributed in the form of scholarships directly to students, who are entitled to use them to procure accommodation in institutional residences or anywhere else. ;

236. The investments in new assets, their reconstruction and renewal are distributed upon assessment of detailed projects. The decision on the allocation of funds, made by the Ministry or by the government (according to the size of the project), is based upon the priorities of the state and the Long-term Plans of the Ministry and the particular institution.

237. The financial support for R & D is described in detail in section 5.2. The support from the state budget has two forms: institutional and targeted. Institutional support is provided to HEIs by the Ministry according to the recommendations of the Research and Development Council, and has two parts:

- Support for specific research, i.e. research linked with the provision of Master's and doctoral programmes. The total amount is allocated to HEIs according to a formula that includes quality indicators such as the financial support received from various research projects in open competition for public money in the previous two years, the number of professors and associate professors, and the number of students in Master's and doctoral programmes.
- Support based on research plans, which should be comprehensive, relatively detailed documents, planning the research of the HEI for a period of 5–7 years, including needed staff and budget. Research plans are evaluated by special committees composed of Czech and foreign experts and are approved by the Ministry.

Targeted support can be obtained on the basis of competition within the framework of different programmes administered by the Ministry, other ministries, the Czech Science Foundation and the Academy of Sciences.

238. Public HEIs also receive financial support for R & D from other national and foreign sources, for example from the EU Framework Programmes (5th and 6th) and many others.

239. The total support received by the HEI is reduced by the expenses needed for its central activities and then redistributed to the faculties. The internal budgeting of public HEIs is subject to the internal regulations of each institution and the provisions of the law on higher education; the annual budget must be approved by the Academic Senate. For distribution purposes, most public HEIs use criteria similar to those used for the allocation of the money from the Ministry to individual HEIs (e.g. the same coefficients involved in the formula funding for teaching activity).

7.2.3 Changes in the funding mechanism

240. The main change in the funding mechanism was implemented in 1992 when the incremental method used for many years was replaced by formula funding. (Holda, Čermáková, Urbánek, 1994; Turner 1994)

241. Formula funding (which has been used for several years now for the allocation of approximately 90% of the state subsidy for the teaching activities of the HEIs) has had an enormous influence on the expansion of the system, as was expected and intended. On the other hand, the available sources were insufficient to support unlimited growth in the number of students and negotiations had to be undertaken by the Representative Commission on the annual increase in the number of newly enrolled students (this was in the range of about 3-5%). This might be seen as an intervention in the expansion of the system, but it was necessary to prevent expansion on such a scale as to lead eventually to serious problems (human resources, the capacity of buildings and facilities as well as a decrease in per capita funding).

242. The relatively simple and understandable formula used in the beginning made it virtually impossible to implement the state priorities, and it was also too focused on input parameters. The Act introduced the requirement for Long-term Plans on the part of the Ministry and HEIs, and through the above-described contracts the state priorities could be implemented. Two changes that have been suggested and already partly implemented are the introduction of the Development Programmes in 2001 and the inclusion of output parameters in the formula in 2005.

243. Research funding has changed very substantially in recent years. Before 1990, HEIs were seen exclusively as teaching institutions, and they did not have any special part of their budgets for research activities. The new mechanisms for the specific parts of the research budget (explained above) were implemented as follows (the amount of money allocated to the particular type of research changed over time): specific research in 1994; research plans in 1999; Research Centres programme in 2000.

244. Thus during the last fifteen years the Czech higher education system has seen a slow but significant shift from the centralized budget-oriented funding of the communist times to a more decentralized outcome-oriented funding mechanism (Jongbloed, 2003). Recently the formula was changed and output-oriented measures were implemented; the importance of basic formula funding in the overall budgets of the HEIs is decreasing and at many HEIs the share of specific or targeted financing is growing (see also Figure 7.3). The structure of spending at public HEIs (see Figure 7. 4) shows that personnel expenditures represent 56% of their total spending.

245. There are two main problems of the funding system shaping the strategies of the Ministry for further development of the higher education system:

- there is a need for a mechanism for allocating public funding that would suit most of the involved stakeholders and ensure the effective use of funds;
- there is the long-term underfinancing of HEIs, since public financial resources remain insufficient (in spite of the annual growth, especially during recent years, as shown in Table 7.9).

246. In the view of the Ministry, the long-term underfinancing of HEIs is visible in the still insufficient incomes of the academic staff and in the sometimes outdated technical and research equipment of the institutions. This is caused by a decrease in the real public support per student (total average expenditures per student at HEIs are shown in Table 7.10) and the low flow of private funds into the HEIs in general. The problem is dealt with in a number of strategic and conceptual documents developed at the ministerial and governmental levels (see Chapter 2). The most recent important document, currently elaborated for repeated submission to the government, is the *Higher Education Reform Policy*. The Ministry has expressed its intention of seeking an increase in the state budget for higher education, at the same time stressing the need of higher competitiveness and economic contribution of the higher education system. In this respect, funding is seen as a basic tool for the implementation of these ideas, and an important part of the ministerial plans is the continual introduction of the above-mentioned changes in the funding mechanism. Henceforth the growth of support should be accompanied by a stress on the effective use of the funds. The Ministry believes that part of this problem can be solved by changes in the rules regulating the spending of funds from public sources. So far, public HEIs have had to obey strict rules separating incomes into capital and non-

capital funds. An amendment to the Act in 2005 (No. 552/2005 Coll.) enables the HEIs to carry over part of the money from public support to the following year.

7.2.4 Links with quality assurance outcomes

247. In principle, there are both direct and indirect links between funding mechanisms and quality assurance. The quality aspect is present in all types of funding mechanisms. Formula funding is clearly and relatively directly connected with the evaluation outcomes. Each study programme provided by an HEI must be accredited (see Chapter 9). If a programme is not accredited (or not re-accredited after a certain period of time), the HEI cannot admit students to this programme, which means the loss of the money relevant to the number of possible students. Although this is a very rare case, the link to quality assurance is obvious. The allocation of money based on the evaluation of development projects is also explicitly linked to quality. Peer-reviewed projects that are of low quality are not supported. The same applies for the research plans. Obviously targeted support of research is also allocated on the basis of the evaluation process.

248. An indirect relation between the funding mechanism and the quality of research exists in the case of specific research. The formula takes into account the number of qualified staff, which is to a certain extent a part of quality assurance. The amount of money received for research from other sources, which the formula also includes, may also be seen as an indirect measure of the research quality, since, at least theoretically, additional financial sources should only be granted to high quality research. Even though various types of quality assurance quite significantly influence the mechanisms of money allocation, some representatives of the academic community often argue for a more explicit use of qualitative criteria in funding. In spite of this, so far no mechanism that would reflect this argument has been developed or agreed upon.

7.2.5 Private HEIs

249. Under the Act, private HEIs are obliged to ensure their own funding for their activities. The Ministry may provide a private HEI with a subsidy only when it operates as a non-profit organization. So far this has rarely been the case. The money comes from the Educational Policy Fund (see above). The budgets of most HEIs are composed primarily from tuition fees, for which they can charge whatever they want, without any regulation. In 2004, these varied from 30,000 to 150,000 CZK per year.

250. Private HEIs can compete for any kind of research support. Until now, the amount of research money received by private HEIs has formed only a very small part of the national research budget allocated to the higher education sector. This is because private HEIs are of a non-university type, that is they mostly provide Bachelor's programmes, and their developmental or other creative activities seldom meet the requirements of national competitions.

7.2.6 Tertiary professional schools: specific issues

251. All tertiary professional schools, established either by the state, a regional authority, a church or a private person (legal or natural), are entitled to financing from the state and regional budgets. The support for schools established by the state, regional authority or church is regulated by the Education Act No. 561/2005 Coll. and covers practically all their expenditures. The support for private schools is regulated by a special law (Act No. 306/1999 Coll.) and is about 10-30% lower. The Ministry decides on the funding base per capita for each year and distributes the funds to the regional authorities. The regional authorities can set regional standards for funding per capita, respecting regional long-term plans for the development of education, the needs of accredited programmes and the scope of activities of tertiary professional schools. Tertiary professional schools can generate other revenues from supplementary activities in the same way as HEIs.

252. All tertiary professional schools, in contrast to HEIs, collect tuition fees. At state and regional schools, the fee is determined by Regulation No. 10/2004 Coll. and amounts to 2,500-5,000 CZK per year (according to the field of study). Private and religious schools are not subjected to any fee

regulation; nevertheless, the fee at religious schools is usually equal to or lower than those at state and regional institutions.

7.2.7 Existing differences

253. Differences can be found first of all between the higher education sector and the tertiary professional school sector, historically more closely related to the secondary sector of education. In this report, various chapters explain many aspects of the distinctions; differences related to funding have been explained above.

254. From another point of view, we can delineate institutions that seem to be more teaching oriented and more research-oriented institutions, which often seek other revenues for research activities or which sometimes gain an important part of their revenues from professional activities made on a contract basis. Other differences can also be seen from Figure 7.5, which shows the share of the formula grant for teaching activities in the total budgets of all public HEIs. For more entrepreneurial institutions and institutions with a higher percentage of research income (see Table 5.3), the formula funding is of lesser importance in the total budget.

255. The term "cost of study" is not used in the accounting of the public HEIs. The spending per student from public sources could be an alternative measure (see Table 7. 10). The differences between public HEIs are related to their differing successes in raising research-targeted support, but are mainly caused by the financial assessment of different study programmes in the grant for teaching activities.

7.2.8 The tax system and tertiary education

256. HEIs and tertiary professional schools, on condition of being legal entities domiciled within the CR, are subject to donation-tax exemption, if the donation was made for the purpose of educational, scientific, R & D or artistic activities. HEIs and tertiary professional schools, however, are not exempted from VAT, consumer tax or income tax. A special deductible sum from the income tax base, enabling them to deduct 100% of related expenditures for the realization of R & D, was introduced in 2005 with the aim of enhancing R & D activities as well as the cooperation of HEIs with industrial enterprises. The advantage is that such expenditures can be deducted twice by a taxpayer; first as a tax-related expenditure, and second as a deduction from the tax base.

257. Public HEIs, most tertiary professional schools as well as private HEIs with the legal status of a non-profit organization may lower the income tax base by up to 30% (1 million CZK at most), if they use this deduction for education, scientific, R & D or artistic activities. If the 30% deduction amounts to less than 300,000 CZK, it is possible to deduct the amount of 300,000 CZK, but only up to the amount of the tax base. These institutions are also exempt from real estate tax on condition that the real estates are used for the provision of accredited study programmes. All HEIs are exempt from inheritance tax. Nor is the income from the interest on current accounts subject to tax in the case of public HEIs.

258. As regards students, the following scholarships are subject to tax exemption: scholarships from public sources, from resources of the HEI, from abroad, from foundations, from foundation funds and from civic organizations. A student up to the age of 26 (28 in the case of on-site study in a doctoral programme) may lower the tax base by 11,400 CZK per year, applicable for the duration of the period of study or training devoted continuously to preparation for his or her future occupation.

259. In the CR, natural persons cannot deduct expenditures for education (for example tuition fees at private HEIs) from the income tax base.

260. As regards the age earning profiles of graduates, they are irrelevant for the funding mechanism, since at the present time there are no universally collected tuition fees with student loans bound to the

income of graduates. However, the opposition politicians of the Civic Democratic Party, supported by the Christian and Democratic Union-Czechoslovak People's Party, may try to implement some such funding mechanism (income contingent loans and universal tuition fees at all public institutions). In this case, of course, the age earning profiles would play a significant role in balancing this mechanism.

7.2.9 Controversial issues and alternative opinions

261. The controversies related to the funding of higher education concern mostly the insufficient flow of private sources into the higher education system in general, and often focus on the problem of tuition fees. (see for example Hanousek, Kočenda, 2004; Matějů, Straková 2003; Valenčík, Zichová 2005; Veselý, Kalous, 2003) The existing mechanism for allocating public support to the public HEIs has not been subject to major debate. Of course, the representative bodies of the HEIs continually discusses the size of the normative base in the formula funding of the educational activities, but even the current political opposition, which is proposing the introduction of tuition fees and a change in the system of funding along the lines of the "investment principle" (this system is explained below), has not offered an alternative to the current system for allocating the public funding as described above (see 7.2.2).

262. In 2004, a group of parliamentarians prepared an amendment to the Act which, besides giving HEIs the right to collect tuition fees if they wished, also called for other changes in the funding system. The group wanted HEIs to be free from income tax. They tried to introduce a change in the funding mechanism that would enable HEIs to prepare non-deficit budgets and not only balanced budgets, as are now required by the Act. This would give HEIs the chance to use the revenues from public sources in later years; HEIs would not be forced to spend all the money in one year (amendment to the Act No. 552/2005 Coll. made this possible; see 7.2.3 above), and would thus have the opportunity to make their long-term planning more efficient. Some other amendments were prepared to enable HEIs to enter more freely into business companies as partners or shareholders; now they can only own safe types of stocks and bonds. This would, in the view of those proposing the measure, stimulate an increase in private resources for HEIs and their research. However, since this document also gave the HEIs the opportunity to collect tuition fees, after it was passed by the Senate, a majority in the Chamber of Deputies rejected it.

263. The current political opposition recently unveiled a detailed plan for tuition fee implementation and higher education funding reform. His system stems partly from previous unsuccessful attempts (in 1993 and 2002) to obtain Parliament's approval for tuition fees. In 2002, 105 members of Parliament from the government coalition (Social Democrats, Christian Democrats) and the Communist Party rejected a bill that would have implemented tuition fees amounting to 12.5 to 37.5% of the total non-investment support for the HEIs per capita, with adequate mechanisms for a loan scheme. A recent proposal (Bartoš, 2005) presented by the Civic Democratic Party – currently the leading opposition party – is based on the idea of higher education as mainly a private investment. The "investment principle" also means that the funds from the public sources come with the student to the school regardless of the type of institution; however, the mechanism for allocating public support is not treated in detail in the proposal. The tuition fee system that is proposed is an income contingent loan scheme with various types of possible payment methods: the tuition fee can be paid at front or by a third party (a sponsor or foundation), but also in the form of income tax from the future earnings of the graduate. The tuition fees would not lower the size of public support, but would become a supplementary source of funds for the development of the HEIs. The reform also proposes the implementation of an education saving scheme for all students, a student loan system for covering the living expenses and a system of effective social scholarships for students form less well-off families. The architects of this proposal expect that this scheme will significantly improve access to higher education, decrease the dependency of the HEIs on limited state budget support when it comes to what studies they can offer, and move from a supply-driven to a demand-driven system of higher education funding.

264. Naturally, these plans would require quite significant changes in the Act, and thus also political and public support. Political support can be expected to come from the parties of the right and centre of the political spectrum. Tuition-free access to higher education continues to be one of the pillars of the policy of the Czech Social Democratic Party. Current electoral preferences show that after the 2006 election the chance of passing any type of tuition fee based reform would be very much the same as at present.

265. The direct popular support for tuition fee implementation, as seen in the data from CVVM (the Public Opinion Research Centre of the Institute of Sociology of the Academy of Sciences of the Czech Republic), was 33% in December 2004 and 29% in November 2005 (Horáková 2004, 2005). The majority of the population see higher education as bringing social as well as private benefits, as a private as well as a public investment. Quite inconsistently, two-thirds of respondents believe that the implementation of tuition fees at public HEIs would give more people a chance to access higher education and at the same time two-thirds of respondents believe that the state should be responsible for providing free access to higher education to all. From this inconsistency the experts conclude "about half of the respondents have no clear idea about the financing of higher education" (Šamanová, 2004).

266. The debate about tuition fees often lacks specific calculations of the real contribution of tuition fee implementation to the budgets of the individual HEIs. To the question of how much of the budget tuition fees might contribute to the higher education system if a socially acceptable tuition fee system were adopted, both sides respond quite vaguely. The Social Democrats, the strongest party in the government coalition, question the importance of the contribution of tuition fees to the budgets of the HEIs, focusing instead on the question of the general underfunding of the system of higher education. Tuition fees, in their view, act as a barrier to access in higher education (see the *Long-term Plan of the Ministry for 2006-2010*).

CHAPTER 8: PLANNING, GOVERNING AND REGULATING THE SYSTEM AS A WHOLE

8.1 Distribution of responsibilities

267. The distribution of competencies and responsibilities among particular state bodies on the one hand and HEIs on the other hand (see Figure 8.1) has become relatively stable in the last ten years. In this respect, the Act of 1990 brought fundamental changes, granting academic freedom, institutional autonomy and self-governance to HEIs to an extent unusual in other European countries at that time, while limiting the state powers exercised via the Ministry to the minimum. In 1998, the Act regulated the relation between the state and HEIs in a more detailed manner and demarcated the ministerial competencies, which "moved the system from a full institutional focus to a more mixed and balanced state-institution-market focus" (De Boer, Goedegebuure, 2003).

268. All HEIs are fully responsible for the creation and profile of their study programmes (which are subject to accreditation), determination of research priorities and staff recruitment. Public and private HEIs have their own internal salary regulations, which are not the subject of any state limitations. The Act stipulated the obligation of HEIs to provide an annual report on activities as well as one on financial management, to submit the reports to the Ministry and to make the reports public, reflecting a belief in the importance and effectivness of public accountability of HEIs. The requirement to prepare and publish an annual report on activities also concerns private HEIs, while a report on financial management is only required by law if a private HEI is the recipient of a state subsidy (which so far has only occurred exceptionally). Another important legal obligation of HEIs is to implement a regular internal evaluation system and to make the results public (see Chapter 9).

269. Tertiary professional schools are much less independent than HEIs. The Ministry decides not only on their very existence (by recording them in the School Register) and programmes, but also on the maximum number of students they may admit (part of the School Register record). An important decision-maker is the founder, who nominates the director of the school. The rights and duties of all bodies are determined by the Education Act. The circumstances that have influenced the size and structure of this part of the tertiary system were explained in Chapter 2.2.

270. The responsibilities of the Ministry in the higher education sector are strictly fixed by the Act (§ 87), which povides for a decentralization of the management of higher education. As already menitoned, there is an important and powerful (though not all-powerful) "buffer body" between the Ministry and the HEIs that is composed of representatives of the academic community. It comprises two parts. The first, the Czech Rectors' Conference, exists in a more or less similar form in most European countries, while the second, the Council of HEIs, has similar counterparts especially in recently transformed or transforming countries; it serves as an expression of democratic principles at the national level as well as a means of protecting them. It is worthwile to note here the importance of the Students' Chamber of the Council of HEIs, which enables the students to have an influence on strategy issues at the national level. This is quite unusual in Europe. After long-term experience, the required consultations on important measures undertaken by the state administration with the representatives of the academic community have come to be viewed (after long-term experience) as a useful necessity rather than a legal obligation.

271. State HEIs are financed by the Ministry of Defence and the Ministry of Interior, which can thus promote their own priorities.

272. As regards another ministries, the basic responsibility for the preparation of the draft budget regarding tertiary education is in the hands of the Ministry of Finance; there is always some space for negotiations with the Ministry. The Ministry collaborates and negotiates with the Ministry of Finance through its highest authorities. The monitoring of employment issues, distribution of financial support from the funds for lifelong learning support, and responsibility for the allocation of a significant

amount of money from the EU Structural Funds, which are all areas related to a certain extent to tertiary education, are the responsibility of the Ministry of Social Affairs. Identification of the needs of the regions and stimulation of cooperation between HEIs and industrial enterprises and other employers of graduates are questions of collaboration between the Ministry and the Ministry of Trade and Industry or the Ministry for Regional Development. Cooperation with other ministries corresponds to the field of study (e.g. agriculture, informatics, transport), while the joint interests of the Ministry with the Ministry of Foreign Affairs focus on such issues as international agreements, some specific international programmes, visa problems and long-term stays of foreign students at Czech HEIs. In the case of study programmes in the area of health, the Ministry of Health should express its viewpoint on the competence of graduates to perform their jobs before accreditation is awarded. Collaboration among the ministries is often not coordinated properly and all institutions in the tertiary education system would certainly benefit from more intensive cooperation in the above-mentioned areas. On the other hand, there is good cooperation between the Ministry and the Research and Development Council (for the competences of the Council see Chapter 5), and the activities of the Business Environment Development Council and the Office of the Government also have a positive influence on collaboration at the state level.

8.2 Central policy tools

273. For the implementation of strategic goals stemming from its overall responsibility for the development of higher education (system steering), the Ministry has two important tools: the distribution of financial support from the state budget to particular HEIs (for details see Chapter 7.2) and the assurance of quality through the awarding or withholding of accreditation following the expert opinion of the Accreditation Commission. The Ministry also plays an important role in the establishment of private HEIs, conditioned by granting the state permission, which is also based on the expert opinion of the Accreditation Commission (for details see Chapter 9). Another important base for the system steering is the significant role of the Ministry in preparing conceptual and strategy documents; these were described in Chapter 2.4.

274. The financial tools of the Ministry take the form of several mechanisms used for the allocation of the relevant parts of the state budget to individual HEIs. HEIs were motivated to quantitative expansion by the introduction of a formula-based mechanism for the allocation of funding in 1992. As the financial resources of the state budget are limited and the increase has only been gradual, the Ministry decided to negotiate annual increases in newly enrolled students with the Representative Commission (see Chapter 7.2). The agreed year-to-year increase in the number of students has been somewhere between 3-5% on average, and it is applied in accordance with the available capacity of the higher education system and the available state budgetary resources in such a way as to ensure that the average amount of financing per student remains at an acceptable level. The limited quotas are therefore not *numerus clausus*, set up by the government on a centralized basis, but rather the result of discussions between the Ministry and HEIs through their representatives in the Representative Commission. This does not in any way limit individual HEIs from deciding on the actual number of students admitted. HEIs have the right to decide on an increase in the numbers of students they admit beyond the numbers that have been agreed, while effectively utilizing the resources allocated (or possibly other types of financial resources). Until recently, HEIs have used this latter option only rarely, and the resulting number of students admitted has usually been based on the amount of available state funding.

275. Besides the agreement on the annual increase of student numbers (i.e. the performance of HEIs), the formula gives almost no possibility to promote the national goals formulated in the conceptual documents (Beneš, Šebková, 2002) described in Chapter 2.

276. An important and gradually increasing role in funding is played by the Development Programmes (Beneš, Šebková, 2002). They stimulate the implementation of priorities formulated in the Long-term Plan of the Ministry (for details see Chapter 7.2) and thus serve as a significant tool of central policy.

The five years of experience so far have shown that the Long-term Plan of the Ministry and Long-term Plans of HEIs have contributed to a greater openness in the state education policy and made HEIs formulate their own goals more precisely, something that was not common practice up to 1998. Furthermore, the Long-term Plans of HEIs have helped to make HEIs less reticent and uncommunicative vis-à-vis society, something that has been a constant subject of criticism. The discussions between representatives of the Ministry and individual HEIs about the degree of harmony between their respective Long-term Plans contribute to mutual understanding, which can be regarded as a mechanism for maintaining a balance between competence and responsibility.

277. The financial tools also comprise the possibility of influencing major capital investment programmes, thus making possible both the renovation and the expansion of public HEIs. The national goals and priorities can also be promoted by targeted funding allocation, which is applied mainly in the field of research and development (see Chapters 5 and 7.2).

278. The Ministry does not directly assess the efficiency and role of institutional management; however, the allocation of funding clearly reflects the overall institutional performance of HEIs (for more details see Chapter 7.2). The minister takes account of institutional performance when setting Rectors' salaries, but the results of financial audits and other relevant inspections have a more important impact on the personnel and financial situation of HEIs.

279. The Ministry can support its plans and goals by means of various advisory committees established to discuss and hold consultations on both standing and *ad hoc* issues. One such example is the Advisory Team of the Minister for the Development of Technical Higher Education Studies and Cooperation of Technically-oriented HEIs with Industry, the aim of which is to exert a gradual influence on various issues related to studies in the field of technology, including the above-mentioned problem of the number of students in technically-oriented programmes. A similar role can be played by the results of research projects, for example "Analysis of Cooperation between HEIs and Industrial and Service Enterprises", elaborated by the CHES, a summary of which can be found in the Annex.

280. It is obvious that the steering tools at the central level applied to public HEIs are basically indirect ones, among which the principles and rules of the state budget allocation play the most important role. As concerns the private HEIs, the interventions of the state are limited to quality assurance applied through the Accreditation Commission (for details see Chapter 9), unless state financing is involved, which at present only occurs very rarely (see Chapter 7.2).

281. Central policy tools applied to tertiary professional schools have been explained in section 1 above.

8.3 Institutional governance

282. The governing bodies at public and state HEIs (see Figure 8.2) – their nature, composition, methods of operation, rights and duties – are defined by the Act (§ 5-16). Detailed descriptions and the working methods of these bodies are set out in the institutions' internal regulations, which must be registered at the Ministry (which has the expertise to decide whether or not they are at variance with the law and legal regulations).

283. The self-governing academic bodies of public and state HEIs are the Rector, Academic Senate, Scientific Board and Disciplinary Committee. At a public HEI the Academic Senate nominates an individual for the Rector's position and on the basis of this proposal he or she is appointed by the President of the Republic. The Rector is formally in charge of the whole institution and acts and decides in its name; however, the Act grants a number of fundamental decision-making powers to the Academic Senate.

284. The Academic Senate decides on the institutional budget, Long-term Plan, annual report on activities, annual report on financial management, internal regulations and the establishment (or abolition, merging or division) of parts of the HEI, and selects a nominee for the position of Rector (it can also propose his or her removal from office). The members of the Academic Senate are elected from the institution's academic community. According to the Act, students form at least one-third and at most one-half of all the Academic Senate membership, thus playing an important role in running HEIs. Moreover, at many HEIs a student chamber exists within the Academic Senate, which gives student representatives an opportunity to protect student rights and interests[13].

285. The competences of the Scientific Board lie especially in the procedures for habilitation and the appointment of professors and in the preparation of proposals for study programmes and research plans. The Scientific Board is composed of leading representatives in the individual fields of study offered at the HEI, with at least one-third of its members coming from outside the institution (from other HEIs, the Academy of Sciences, research institutes, industry, agriculture, the health sector, the business sector etc.). Thus there is an external influence on the design of the HEI's study programmes, but the decisive role in this respect is played by academic criteria rather than influence from the employers' perspective.

286. The person responsible for financial matters is the Registrar; appointed by Rector, he is in charge of the institutional management and internal administration of the HEI.

287. Another body at public HEIs is the Board of Trustees, introduced for the first time in 1999 by the Act. The minister appoints the members of the Board of Trustees after discussion with the Rector. The members must come from outside the institution, with balanced representation from, in particular, the public sphere, the municipality, and state administration (the Act, §14).

288. The primary reason for the inclusion of this new body in the institutional management was the transfer of state property to the ownership of the individual HEIs. The Board of Trustees is expected to ensure the proper use and maintenance of the newly obtained assets: it approves legal acts concerning real estate and movable assets whose value exceeds a legally stipulated amount. Another reason for its creation was to contribute to the broader openness of HEIs to the public and vice versa – to foster the involvement of external ideas in the relatively closed system of higher education. The Board expresses its standpoint on the institutional Long-term Plan, the institutional budget, the annual report on activities and the annual report on financial management, and may publicly present its suggestions and standpoints on the activities of the HEI (the Act, § 15). Last but not least the Board of Trustees is expected to ensure that the HEI continues to meet the purpose for which it was established, to see that the public interest is reflected in the institution's activities and to see to the proper management of its assets. The diverse composition of the Board of Trustees, which includes leading representatives of large enterprises and banks as well as regional and local authorities, is intended to ensure that the general public has an influence on the activities of HEIs and that there is greater understanding of the problems, activities, roles and achievements of the individual HEIs in their regions.

289. The institutions' original response to the establishment of the Boards of Trustees was rather negative. HEIs considered them an unacceptable form of involvement by outside power in the institutional autonomy and they articulated their thoughts quite forcefully at the time when the Act was being prepared. The so far relatively short time since the Boards have been in existence does not allow any straightforward judgements to be passed on the usefulness or otherwise of this new type of governing body. However, there are a number of indications that the views of the leading representatives of HEIs are changing; for example the Ministry's annual report on higher education summarizes the experience by saying that "HEIs continue to present a very positive evaluation of the performance of their Boards of Trustees in the annual reports" (Annual Report on the State of Higher Education, 2003).

[13] In certain issues, such as student accommodation and provisions for meals, the student chamber is granted the right of veto, depending on the internal regulations of the institution.

290. At the faculty level, there are analogous governing bodies to those at the institutional level (see Figure 8.2); instead of the Rector and Registrar, there are the Dean and Secretary, respectively. The Dean is appointed by the Rector on the basis of a proposal of the Academic Senate of the faculty. Faculties have no Board of Trustees. In this respect, it must be stressed that faculties of public and state HEIs are to a large extent independent parts of HEIs, with important rights guaranteed by the Act (§ 24, § 49). Thus, faculties of public and state HEIs can decide in matters of the creation and provision of study programmes (including the stipulation of additional requirements for the admission of students to Bachelor's and Master's programmes), research orientation and priorities, staff recruitment, international cooperation and resource allocation. Importantly, until 1998 faculties were legal entities, so that HEIs were a kind of federation of faculties, which made overall management at the institutional level quite difficult. This situation changed with the Act; nevertheless, considerable tensions between faculties and the management of HEIs sometimes continue to exist.

291. The interrelations of rights and responsibilities of the governing bodies – the Academic Senate, Rector, Scientific Board and Board of Trustees – make the governance of HEIs a very complex, complicated and in some cases not sufficiently flexible process requiring discussion among many parties before decisions can be made. "No doubt this structure is again the result of a strong emphasis on democracy" (de Boer, Goedegebuure, 2003). The Academic Senate, with its significant number of decision-making rights, is still considered an extremely important body, which prevents the institution from returning to practices used before 1989, in particular a high degree of centralization and the accumulation of power in the hands of one individual, the Rector. Similarly, the Council of HEIs plays the role of protector of democratic principles and collegial decision-making at the national level (de Boer, Goedegebuure, 2003).

292. The collegial type of HEI governance in the CR is connected with another important aspect that derives from the Humboldtian model of university governance, which is widely accepted in the countries of Central Europe. With very few exceptions, the Rector (or the Dean at the faculty level) is an academician of the highest academic rank (professor, associate professor). This academic character is also maintained at lower management levels – the Vice-Rectors, Vice-Deans, heads of institutes and departments, members of the Scientific Board and also, in some cases, the Registrar. New developments at the international level resulted in a number of discussions on professionalism being held during recent years. The improvement of the managerial skills of senior management staff is one of the priorities of the Development Programmes of the Ministry, but only infrequently is it a priority of HEIs themselves. Similar debates affect various administrative divisions of HEIs where academics have so far remained in leading positions, for example offices for international cooperation, for the formulation and submission of R & D projects and/or international projects, for quality evaluation and the like. To increase the professional skills of the management of these offices seems to be easier, as seen for example from the results of an international workshop on higher education management held within a multi-country project (Beneš, Šebková, 2002).

293. The Act stipulates neither the rules for the internal organization of private HEIs nor their institutional governing bodies. The statutory body of a private HEI corresponds to the form of legal entity that it represents. In the endeavour to achieve similar social recognition to that accorded public HEIs, the majority of private HEIs have tended to adopt internal organization structures and activities similar to those of public HEIs, and also to have more or less similar governing bodies (e.g. private HEIs are governed by Rectors but they have not established Academic Senates). The role of experts from different cooperating institutions, employers and specialists from practice exerting their influence on the nature and content of study programmes is apparently more important at private HEIs than at public HEIs. Private HEIs currently having the status of non-university type institutions (see Chapter 2.5.2) are not subdivided into faculties. The absence of faculties and an Academic Senate makes the governance of privates HEIs relatively flexible. On the other hand, their Rectors have neither powerful opponents nor guardians of democratic principles when it comes to the management of the institutions. Also, the role of students, even though many private HEIs do in fact take this seriously, does not have any legal basis.

294. State and regional tertiary professional schools have only one governing body – the director. Private and church-founded tertiary professional schools may also have a body similar to the Board of Trustees at public HEIs (the Education Act, § 132). Members of this board are appointed by the founder of the school.

8.4 Linkages inside the tertiary education system

295. The creation of a highly open and permeable tertiary education system is one of the most important goals declared by the *White Paper* and the *Development Strategy of Tertiary Education* (see Chapter 2). The preconditions for the fulfilment of this goal exist; most legislative obstacles have been removed. Despite this, the permeability of the system is still one of its most serious issues, even in the higher education sector. Generally speaking, the basic principles of recognition which "is sought, unless substantial differences can be shown between the study or period of study completed in another institution" (Lisbon Recognition Convention, 1997) have not been put into common practice. Contrary to this, the recognition has been still mostly acknowledged on the basis of equivalence at Czech HEIs. The difficulty with the recognition of (periods of) study in general is complicated by the fact that recognition at many HEIs/faculties is left up to individual teachers, who quite naturally tend to seek complete similarity with their own lectures.

296. There are major difficulties concerning the recognition of (periods of) tertiary professional study in a higher education study programme. The Act did not introduce any major barrier preventing recognition of (periods of) study received at a tertiary professional school in a Bachelor's programme provided by an HIE. However, in the opinion of the Accreditation Commission, this kind of recognition was not to be recommended. It would seem that the main reasons for this view were the Commission's rather conservative approach to the new developments in tertiary studies and resistance towards acceptance of studies in accordance with the *Lisbon Recognition Convention*; instead of this, the Commission required high degree of equivalence. Another reason for limited recognition derived from the highly practice-oriented study at tertiary professional schools. Though from one point of view this is a very positive factor, unfortunately neither HEIs nor the Accreditation Commission considered the tertiary professional studies academic enough. The Education Act and subsequent Amendment to the Act (§ 49) improved the situation by stipulating that the HEI or faculty can determine different entrance requirements for students who are graduates or students of tertiary professional schools. However, there is no experience with the application of this Amendment as yet and it is necessary to count on some time for a change of thinking on the part of all the main stakeholders.

297. A positive linkage can be seen in the active cooperation that has already started between some tertiary professional schools and HEIs in the provision of joint Bachelor's programmes, which is possible according to § 81 of the Act. In this way, the HEI is able to recognise (parts of) tertiary professional study in accordance with the curricular content of a Bachelor's programme with no obstacles. Given this contradicting experience, the recognition of (periods of) tertiary professional study by HEIs in accordance with the principles of the Bologna Process still presents a policy challenge for the Czech tertiary education sector.

298. Attempts and efforts of institutions to seek greater prestige by raising their status can be found in the diversified tertiary sector of education as a whole. As regards the tertiary professional schools, some of them have endeavoured to transform themselves into HEIs, which was, in fact, the aim of a pilot project at the beginning of the 1990s (see Chapter 2). So far this endeavour has been most successful in the case of private schools, where it is not necessary for Parliament to pass a special law (these private HEIs, which came into existence via a successful transformation from private tertiary professional schools, can be found in Table 2.5). As already mentioned, only one public HEI has evolved from a regional tertiary professional school – the College of Polytechnics in Jihlava (see Table 2.4); further plans in this area are described in Chapter 2.5.2. It is necessary to add that the much

higher success of private institutions is in no way shaped by different requirements regarding quality of studies. The Accreditation Commission applies the same criteria for both public and private study programmes, but the establishment of a public HEI through legislation is a highly time-consuming procedure, while receiving the state permission needed for a private HEI to function is relatively easier in administrative terms (see also Chapter 9).

299. In a similar fashion, HEIs of the non-university type that are capable of demonstrating a sufficient R & D capacity and well-qualified academic staff have been attempting to obtain accreditation for Master's programmes; there are already several examples of this (Vinš, Němec, 2004). In theory, in such a case an HEI can apply for transition to the university type of HEI, which carries with it greater social recognition. In practice, only a very few applications have been submitted to the Accreditation Commission for the required evaluation; in all cases its decision was negative and as a result no changeover of this kind has yet occurred.

300. The essential ideas regarding the creation of a richly diversified tertiary education system (as found in the *White Paper* and other conceptual documents) were as follows. Firstly, to offer study opportunities to all who are capable of undertaking tertiary studies but are very differently talented, with different orientations and expectations, and to make it possible for the maximum number of applicants to undertake first level studies. Secondly, to ensure the relevant quality at all levels of tertiary studies (tertiary professional education, Bachelor's, Master's and doctoral higher education). Thirdly, to meet the diversified requirements of the labour market. Fourthly, to decrease significantly the drop-out rate (by fitting the diversified studies to the abilities of students) and so to prevent both the waste of financial resources invested in unsuccessful studies and the demotivation of those who end their studies without having achieved any useful result (any kind of diploma or cerificate). Thus the Ministry tries through various forms of funding (introduction of output parameters into formula funding, Development Programmes) to stimulate HEIs to prepare diversified programmes that take into consideration the above-mentioned priorities. The Accreditation Commission supports these strategy goals by setting firm requirements for the quality of accredited Master's (and doctoral) programmes. So far, this effort to support diversity has been successful.

301. Although there is no legal provision obliging HEIs to use the credit system, all public HEIs have implemented the European Credit Transfer System (ECTS) or some other ECTS-compatible system (Nováček, 2004). Some private HEIs have also implemented the ECTS; only those that were recently established have not been able to implement it yet. The international transfer of credits is relatively widely accepted, thanks especially to the Socrates/Erasmus programme. The national transfer of credits is functional between higher education programmes of a similar type. However, problems occur in the case of the transfer of credits from different type of programmes because of the accent on the equivalency of content of programmes, as was mentioned above. The accumulation function of credits, which provides students with the possibility of modifying their study plans within given limits but closer to their individual interests, is also being gradually implemented. The use of the ECTS in the lifelong-learning process is at its very beginning – to be more precise, at the stage where discussions are being held and examples of good practice sought.

8.5. Linkages to other parts of the education system, lifelong learning

302. Linkages between institutions within the education sector as well as with other partners are articulated only implicitly within the conceptual documents. "To develop the autonomy, innovative potential and equipment of schools, their openness to society and relations with the social environment through development programmes and the establishment of networks of cooperating schools. The broadening of cooperation between educational institutions and other research and development organizations will be promoted as well as involvement in regional development in tertiary education" (*White Paper*, 2001).

303. In higher education, the Act requires that HEIs play a key role by (among other things) "contributing to development on both the national and the regional level while cooperating with various levels of the state administration and municipalities as well as in the area of industry and culture" (the Act, §1).

304. Czech society is not yet fully aware of the nature and implications of the three-cycle structure of higher education. Some stakehlolders in the tertiary education sector, including employers, still tend to regard a long-cycle Master's programme ending with the relevant diploma as the most – if not only – acceptable (traditional) type of higher education degree. This certainly does not contribute to the prestige of graduates with a Bachelor's degree, or make their position in the labour market any easier. Moreover, qualification requirements for many important professions (e.g. teachers, judges, lawyers, doctors) are legally specified to be on the Master's level. In addition, tertiary professional studies, which can now boast more than a ten-year tradition, are still regarded as some kind of substitute for the "real thing", despite the eminent employability of the graduates in these programmes. However, this situation has been changing, slowly but surely. This can be documented by a number of findings showing that collaboration between HEIs and municipalities, industry and employers is being developed. This is borne out, for example, by the findings of the research project on „Analysis of Cooperation between HEIs and Industrial and Service Enterprises", already mentioned in section 2 above (see Annex).

305. The collaboration of HEIs with the Academy of Sciences of the Czech Republic should be mentioned as another example of linkages with other partners. Their jointly provided doctoral programmes are the most important examples of accumulation and the use of the research capacity of both types of institutions. Other types of collaboration, especially in the framework of various research programmes, can also be present as positive features, all described in more detail in Chapter 5.

306. The relationship between tertiary education and secondary education has several aspects. The quality of the teacher training at HEIs has a crucial impact on the quality of secondary education. In this connection, there has been a long-running debate as to whether future teachers for secondary schools should study at Faculties of Education or at Faculties of Science, Arts and so on. The new Teaching Staff Act (2004) addresses this issue, and allows both possibilities. The Ministry also supports the quality enhancement of programmes for teacher training via the Development Programmes. New requirements in this field are also set by the Education Act, as every school must prepare its own school education programme on the basis of the framework education programme prepared by the Ministry. Graduates from teacher training programmes should be able to prepare such school education programmes, and the innovation of study programmes in this direction is one of priorities of the Development Programmes of the Ministry.

307. One important linkage between HEIs and secondary schools is through the HEIs' entrance examination requirements. The attempt to prepare students as well as possible for these examinations shifts the course of secondary education in the last year too much in the direction of these requirements, often of a very encyclopedic character, which can without doubt modify, even distort, education. On the other hand, HEIs provide preparatory courses for applicants (for payment), participate in the search for gifted secondary students (potential future applicants) and organize such things as competitions (student competitive games and the like) and summer schools. More about linkages (the transition from secondary to tertiary education) can be found in Chapter 6.1.3.

308. Another important area of cooperation concerns socio-culturally disadvantaged groups of students growing up in an environment that does not tend to motivate them to enter secondary/tertiary education. To reverse this tendency requires constant cooperation with these groups of students during their secondary school studies and the provision of intensive preparatory courses for admission to higher education studies. Sociological surveys in this field reveal significant problems that have not yet been adequately taken into consideration (for more details see Chapter 6). The priorities of the *Long-term Plan of the Ministry* regarding the above-mentioned forms of cooperation and their planned support through Development Programmes offer hope of improvement.

309. The Act (§ 60) states that in addition to accredited programmes, HEIs may, without accreditation by an agency, also provide lifelong learning courses of different types, either free of charge or for payment (these courses may also be certified by international or national professional institutions). Lifelong learning may be vocationally oriented or may follow personal interests. These types of activities include re-qualification, extension and innovation courses for persons with academic degrees. Courses offered as part of Learning in the Third Age / University of the Third Age fall into this group, too. There is good experience with courses offering the completion of teaching qualifications, courses of specialized language teaching (profession-oriented courses) and management and economics courses, in particular those run by partner HEIs (mostly in the UK or France)[14] or those run as joint programmes of Czech and foreign partner HEIs.

310. In Tables 8.1 and 8.2, the number of lifelong learning courses offered in 2004 by public HEIs and the number of their participants are given. HEIs and tertiary professional schools also participate in various re-qualification programmes in cooperation with the Ministry of Labour and Social Affairs, and in re-qualification and innovation courses funded by the Ministry of Trade and Industry and the Ministry of the Environment. A proposal for the education of members of the public administration has been prepared by the Ministry in collaboration with the Ministry of the Interior and the Office of the Government.

311. The detailed conditions for lifelong learning are stipulated in internal regulations of HEIs. HEIs issue certificates to all those who graduate from lifelong learning programmes. Those who receive lifelong learning provision are not students under the Act, which means that they cannot be awarded any academic degree and obtain no social benefit. However, the 2001 Amendment to the Act (No. 147/2001 Coll.) enables lifelong learning to be provided within the framework of accredited programmes. If graduates from lifelong learning programmes of this kind are admitted as students under the Act, the HEI may recognise the credits thus obtained for up to 60% of all credits required for graduation in the accredited programme. This provision, as well as the explicit support for wider access, permeability and lifelong learning expressed in the *Long-term Plan of the Ministry for 2006-2010*, is an important step towards an open and permeable tertiary education system. In contrast to the positive developments just mentioned, the possibility of gaining recognition of courses obtained outside the initial education system (in accordance with the Bologna Process priority) seems to be still very far in the future, and much effort will have to be paid to this issue.

8.6 Information services

312. Applicants and students have many opportunities to obtain detailed information concerning programmes on offer in the Czech tertiary education system. First, they can turn to the websites of individual HEIs and tertiary professional schools, which can also be accessed from the website of the Ministry (www.msmt.cz) and from the website of CHES (www.csvs.cz). The former also includes a list of all HEIs and their accredited programmes. Another important source of information that applicants for higher education study traditionally use is a publication entitled *How to Access Higher Education*, which is compiled annually by CHES in cooperation with the Ministry and individual HEIs. This publication contains a complete overview of opportunities for formal higher education studies in the on-site, distance and combined modes that are provided by public, state and private HEIs. An abbreviated and edited version of this publication appears first in an autumn issue of the weekly *Učitelské Noviny (Teachers' Newspaper)*. Later on, after the publication has been edited and shipped to bookshops, its contents are made available in the form of an interactive database on the CHES website. The basic data from this database are subsequently reprinted in supplements of the most widely read Czech dailies. The data on tertiary professional schools, collected by the National

[14] The financing of such courses can be shared by both the participants and foreign partners such as the British Council; some of the courses were designed under the Development Programmes in previous years and already have students at Czech HEIs, etc.

Institute of Technical and Vocational Education, are made available in a similar way, and are also used by the press. CASPHE (Czech Association of Schools of Professional Higher Education) annually provides the information about tertiary professional schools in a winter issue of the weekly *Reflex* as well as on its website (www.ssvs.cz). The complete list of tertiary professional schools including their websites is available on the AVOS (Association of Tertiary Professional Schools) website (www.asociacevos.cz). Besides this, HEIs and tertiary professional schools make presentations at an annual education fair in Brno, *Gaudeamus*, which focuses on tertiary education. Some HEIs and tertiary professional schools also publicize their activities at similar fairs abroad.

313. For foreign students, CHES compiles a publication entitled *Higher Education in the Czech Republic – Guide for Foreign Students*, issued in English once every two to three years (the 2005 edition has 446 pages). Apart from a complete list of programmes being offered at individual HEIs (some of them in foreign languages), the reader can find information on admission, the organization of studies, student services and so on. The publication is also available on the CHES website.

314. In general, information on HEIs is collected, sorted and made public by the Ministry (see www.msmt.cz). The ministerial evaluation of activities of all HEIs along with the relevant basic data are included in the *Annual Report on the State of Higher Education*. Similar information can also be obtained from the CHES quarterly *AULA*.

315. There are also various commercial firms providing information about study possibilities, the large numbers of which, coupled with insufficient guidance activities at secondary schools, often make it difficult for applicants to make informed decisions. That is why the discussions on what higher education institutions are offering that are organized in some regions are useful for secondary education students and their parents and provide important feedback for the relevant HEI.

CHAPTER 9: ASSURING THE QUALITY OF TERTIARY EDUCATION

9.1 Key agencies and organizations involved in the process of quality assurance

316. The primary responsibility in the area of quality assurance, including a number of decision-making powers, is attributed to the Ministry. The key agencies and organizations involved in the process of quality assessment and enhancement are as follows:

- the Accreditation Commission for HEIs, established in 1990;
- the Accreditation Commission for Tertiary Professional Schools, established in 2005, and the Czech School Inspectorate;
- other agencies and bodies providing related activities such as various international external evaluations (for example the EUA's Institutional Evaluation Programme, the EVOS quality evaluation programme, the project "Evaluation of the Quality of HEIs", the project "Systematization of the Process of Student Quality Evaluation");
- HEIs creating their own systems of internal evaluation.

9.1.1 Accreditation Commission for HEIs

317. The Accreditation Commission for HEIs (hereinafter "AC") was established in 1990 on the basis of the Act of 1990[15]. Since its establishment in 1990, the AC has conducted external evaluation of HEIs on the basis of peer reviews and comparative evaluations of faculties and related fields of study.

318. After the passing of the Act in 1998, the competencies and responsibilities of the AC were considerably extended. According to the Act, the AC must perform in particular the following:

- evaluate activities pursued by the HEIs and the quality of accredited activities, and publish the results of such evaluations;
- assess other issues concerning the system of higher education, when it is asked to do so by the Minister, and express its standpoints on these issues (the Act, § 84).

Furthermore, the AC is obliged to express its standpoint on the following issues:

- requests for the accreditation of study programmes;
- requests for authorization to carry out habilitation procedures and procedures for the appointment of professors;
- the establishment, merger, amalgamation, division or dissolution of a faculty of a public HEI;
- the granting of state permission for a legal entity desiring to operate as a private HEI;
- the determination of the type of HEI (university or non-university type) (the Act, § 84).

319. This scope of activities suggests that the AC's competencies are very important, even though the AC itself has no decision-making powers: these are reserved for the Ministry.

320. To award accreditation of a study programme is the responsibility of the Ministry. However, the Ministry can award accreditation to a study programme if the standpoint of the AC is positive; in the case of a negative AC standpoint, the Ministry must not award the accreditation. From 2000 to 2005, the AC received 5,943 requests from public and private HEIs for accreditation of study programmes. Of these 5,943 requests, 4,968 were viewed positively by the AC; 975 requests were turned down. In addition, the Ministry issues accreditation of the procedures of habilitation and the appointment of profesors, as well as state permission for the establishment of private HEIs, on the basis of the expert standpoint of the AC. In the case of requests for the establishment of a private HEI, since 1999 the AC has received 103 requests from private entities for state approval. The total number of 40 private HEIs operating to date suggests that slightly over a third of the requests are successful. However, if the Ministry does not grant accreditation on the basis of the negative AC standpoint, this is not an

[15] The Czech Accreditation Commission is the oldest in Central and Eastern Europe.

ultimate, irreversible act, as the HEI or private entity is free to submit its application again. So far the Ministry has not refused to award accreditation where there was positive expert opinion from the AC.

321. The AC is an expert independent body composed of 21 members (academics and professional experts) appointed by the Czech government on the basis of a proposal by the Ministry. The Minister discusses proposals for appointments with representatives of the HEIs (the Czech Rectors' Conference, the Council of HEIs), the Research and Development Council and the Academy of Sciences of the CR. The AC members are appointed on a part-time basis (they keep their academic or professional positions) for a six-year term, which can only be renewed once. Material and financial support for the activities of the AC is provided by the Ministry via the Secretariat of the AC. The Secretariat of the AC, organizationally a part of the Ministry, has six employees and is headed by a Secretary, who is appointed and dismissed by the Minister upon a proposal submitted by the Chair of the AC (for further details see the Statute of the AC in Annex).

9.1.2 Accreditation Commission for Tertiary Professional Schools

322. The Accreditation Commission for Tertiary Professional Schools was established by the Education Act (2004), which stipulates its role and regulates its activities. The members of the Accreditation Commission for Tertiary Professional Schools are appointed on a part-time basis (they keep their educational or professional positions) for a six-year term. This term can only be renewed once. Some members of the Accreditation Commission for Tertiary Professional Schools and its working groups are also members of the AC. Material and financial support for the activities of the Accreditation Commission for Tertiary Professional Schools is provided by the Ministry (the Education Act, § 105).

323. For a long time, the Czech School Inspectorate has been carrying out regular and stringent external evaluations of the teaching process and students' knowledge at tertiary professional schools. The results of these external evaluations are publicly available, and influence the funding of private tertiary professional schools.

9.1.3 Other agencies and activities

324. In addition to the legally demarcated scope of activities of the AC and the Accreditation Commission for Tertiary Professional Schools, other activities with a focus on the improvement-oriented evaluation of HEIs are undertaken in the CR. The aim of these activities is to complement the scope of activities of the AC and the Accreditation Commission for Tertiary Professional Schools in order to provide participating tertiary education institutions with less binding stimuli for bottom-up-based continuous improvement of their activities.

325. Various international services in the field of quality evaluation, among them the EUA's highly prestigious Institutional Evaluation Programme, are seen as important complementary activities to the external evaluation of the AC. Similarly, within the framework of the Research for the State Administration programme, the Ministry has decided to initiate the project "Evaluation of the Quality of HEIs" (CHES 2004-05) with the aim of complementing the legal obligations of HEIs in the field of quality assurance otherwise falling under the responsibility of the AC. EVOS – a quality evaluation programme for tertiary professional education – was the only activity in the field of quality assurance in this area of the tertiary education sector until 2004, when the Accreditation Commission for Tertiary Professional Schools was established. EVOS is run by a private agency and institutions are required to pay for its services. The evaluators are chosen from representatives of regional employers, HEIs, other tertiary professional schools and other bodies in order to guarantee the objectivity of the evaluation. The downside of the EVOS quality evaluation programme so far has been the small number of tertiary professional schools that have chosen to participate in it (EVOS – garance kvality, 1995).

9.1.4 Internal evaluation systems of HEIs

326. All HEIs have the legal obligation to implement a regular internal evaluation system and to make the results public (the Act, § 21). An additional requirement is to include a detailed description of the evaluation procedure in their internal regulations. Thus the framework of this obligation is very open, and it is left to the institution to implement evaluation procedures and draw on their results.

9.2 Mechanisms and criteria used to assess and ensure the quality of tertiary education

9.2.1 Quality assurance of HEIs under the responsibility of the AC

327. The mechanisms used for the external evaluation of all HEIs (of the university as well as the non-university type), both with regard to the evaluation of institutions and for accreditation purposes, are defined in the Statute of the AC, which is approved by the government of the CR. When evaluating educational, scientific, research, developmental, artistic or other creative activity, the AC focuses especially on the evaluation of accredited and other activities of the institution or of several institutions performing similar accredited study programmes. For this purpose, the AC has developed a mechanism for standard steps to be followed in evaluation processes in order to provide HEIs with some help and guidance. The standard steps are as follows:

- preparation of an evaluation questionnaire by the special working group;
- completion of the questionnaire by the institution being evaluated (self-evaluation report);
- site visit by at least three members of the special working group (see below) to the institution being evaluated, including a review of the filled-in evaluation questionnaire and other information required by the special working group;
- elaboration of a report by the special working group and provision of information to the Rector, Dean or director of the institution on its content;
- discussion concerning the evaluation report of the special working group at an AC meeting in the presence of the Rector, Dean or director of the institution, and adoption of the conclusions and recommendations of the AC relating to the institution under evaluation;
- publication of the conclusions and recommendations of the AC relating to the institution, publication of the evaluation report and of any comments the Rector, Dean or director of the institution might wish to make concerning the evaluation report (the Statute of the AC).

328. The AC requires quantitative data on general characteristics of the institution (faculty, institute), academic staff and organization structures, study programmes, research and development activities, technical equipment, the information system (including libraries, computers) and funding. Thus, the AC uses criteria for external evaluation similar to those used for accreditation, as the external evaluation concentrates on three basic aspects that are decisive indicators for the final judgement on whether to grant accreditation by the AC: the quality of the academic staff (professors, associated professors, staff members holding doctoral degrees), the quality of the study programme offered and standards of academic and research activities (the quality of publications in scientific journals, research grants, etc.).

329. In accordance with the Act, the AC establishes special working groups. Members of special working groups study the self-evaluation report and other information materials provided by the relevant HEI and discuss its strong and weak aspects before the site visit. During the site visit they discuss their findings with the representatives of the HEI being evaluated, its staff, students, and where possible graduates, in order to assess the quality of all the relevant conditions and activities of the HEI as impartially as possible. The assessment should consider both the content of the study programmes and the HEI's ability to deliver them, which means personnel resources and the adequacy of material and technical resources (computer and information systems, library, etc.). Finally, the preparation of an analytical report, in which recommendations and conclusions from the evaluation are formulated, is

carried out by the members of the special working group, who also discuss these recommendations and conclusions with the representatives of the HEI that has been evaluated (Statute of the AC).

330. Similar mechanisms are used for the purpose of accreditation of study programmes, for procedures for habilitation and the appointment of professors, and for obtaining state permission to run a private HEI. For this purpose, the AC, through its Secretariat, is authorized to require all the necessary information and documentation from the Ministry, public, state, private HEIs and other legal entities that participate in the educational and scientific, research, developmental, artistic or other creative activity of the HEI being evaluated.

331. The AC has its criteria for the examination of applications for accreditation of study programmes that are related to: the requirements of the Decree on the Content of an Application for Accreditation of a Study Programme (No. 42/1999), information and equipment provisions, the content of studies and staff provisions of study programmes, requirements concerning the distance and combined modes of studies as well as requirements related to study programmes provided in foreign languages (for further details see the Decree).

9.2.2 Accreditation of educational programmes of tertiary professional schools

332. An educational programme in the relevant area of education for individual tertiary professional schools is granted accreditation by the Ministry on the basis of the expert opinion of the Accreditation Commission for Tertiary Professional Schools. In its composition, mode of action and activities, this body is very similar to the AC, the aim being to achieve a high degree of comparability with regard to principles, procedures and criteria in order to support permeability between higher education and tertiary professional studies. Given the fact that the members of the Accreditation Commission for tertiary professional schools were appointed by the Minister in June 2005, there has so far been little accreditation experience when it comes to tertiary professional schools.

9.2.3 Other activities

333. The EUA's Institutional Evaluation Programme evaluates the institution as a whole, taking into account the institution's specific situation, goals and issues. As a quality management oriented evaluation, the EUA evaluation stresses the aspects of institutional strategic management in order to help the institution to perform its activities more effectively (EUA Institutional Evaluation Programme, 2005). So far, six Czech HEIs (Palacký University in Olomouc, Czech Technical University, Masaryk University in Brno, Brno University of Technology, the Silesian University of Opava, Mendel University of Agriculture and Forestry in Brno) have gone through the EUA institutional evaluation programme. The experience of Czech HEIs with the EUA Institutional Evaluation Programme so far suggests that the EUA evaluation provides invaluable foreign expertise and insight into the issues of modern institutional management (often seen as a weakness in Czech higher education). However, it entails rather high overall organizational costs, which acts as a strong barrier to participation by smaller regional HEIs.

334. The methodology (Šebková et al, 2005) developed in the project "Evaluation of the Quality of HEIs" is primarily aimed at the contribution to the quality culture of the higher education system in general. By adopting the fitness for purpose approach, which in the Czech higher education context can be seen as the degree to which institutional goals defined in the institutional Long-term Plan are fulfilled, the project aims to provide a comprehensive methodology for improvement-oriented quality evaluation usable in the national context (e.g. by HEIs that cannot afford the EUA evaluation or want to build on it). Furthermore, by testing the methodology at several pilot public and private HEIs, the project should help to create examples of good practice to be followed in the future (Evaluation of Quality of Higher Education Institutions, 2004). However, the short lifetime of the project so far (it started in May 2004) limits impartial assessment of its results – so far two Czech public HEIs have undertaken pilot evalutions according to the newly created complex methodology, and the evaluation outcomes are currently the subject of analysis.

335. The methodology for student quality evaluation is being developed within the project "Systematization of the Process of Student Quality Evaluation", which is run by the ACSA (Academic Centre for Student Activities). Within this project, a working group consisting of representatives of students, teachers and university management will create the relevant methodology, outline and publish it in two years' time. The publication will provide information for HEIs and their faculties on the most frequent problems encountered during student evaluations, and offer methods that should increase the effectiveness and efficiency of student evaluation of HEIs (Systematisation of Proces of Students' Quality Evaluation, 2005).

336. The EVOS quality evaluation programme for tertiary professional education aims at developing this kind of education by providing the general public with information on the quality of particular tertiary professional schools, thus benefitting those tertiary professional schools that demonstrate above-average quality in their activities and study programmes. The programme goes through all stages of an evaluation process, including a site visit and publication of a publicly available final report (http://www.ssvs.cz/evhodnoc.htm). The tertiary professional schools that have been evaluated see the greatest contribution to their development in the need to formulate strengths and weaknesses precisely, define and perfect a long-term development strategy and involve a higher number of staff, which leads to improvement in mutual communication.

9.2.4 Internal evaluation

337. In order to comply with the legal obligations concerning quality assurance, HEIs are obliged to perform internal evaluation, though according to their own preferred guidelines and criteria, and to make the results public (the Act, § 21).

338. Until now, despite the fact that all HEIs are obliged to elaborate and publish an annual report on their activities that should also reflect the results of internal evaluation, the developments in the field of internal evaluation of HEIs have been rather unsatisfactory, varying from some cases of well organized systems to only formally applied procedures of a non-systemic and short-lived nature, as represented by student evaluation of tuition and infrastructure-related issues. The great diversity and rather low effectivity of internal forms of evaluation can be ascribed to the still insufficient awareness and prevailing mistrust of the role of quality evaluation in higher education among members of the academic community, resulting in the adoption of a purely formal approach designed to cover up weak points in the activities that HEIs pursue. Hence, with the exception of a few cases of implementation of the EFQM Excellence Model, ISO 9000 standards and well-thought out student evaluations with institutional support covering a wider range of issues, Czech higher education lacks a sophisticated internal evaluation system.

9.2.5 Methods used to assess research quality and teaching quality

339. The methods used to assess research and teaching quality are an integral part of the criteria of all evaluation activities of the AC, as quality of research and quality of teaching are perceived as intrinsically related. Some of these criteria refer more directly to the quality of teaching (e.g. curricula content) or to the quality of research (e.g. the number and quality of publications–quotation index, impact factor); some of these criteria refer to both the quality of teaching and the quality of research (e.g. the number of professors and associate professors). For further details concerning the evaluation of research, see Chapter 5.

9.2.6 Students' and graduates' perspectives

340. In Czech higher education, students are considered important stakeholders and partners in quality assessment, as they play a role in internal quality evaluations. Student quality assessments, enabling students to express their opinion on academic staff, quality of lectures and other problems that students find relevant in their daily lives and activities at HEIs, are organized at most Czech HEIs. However,

when these student quality assessments lack institutional support, they are of a rather short-lived nature (see internal evaluation). Up until now, students have not been represented directly in the AC or its working groups; however, members of AC working groups are obliged to discuss matters of student interest with students, student representatives and graduates (where possible) during the site visits, and students' views are given space in the final quality evaluation reports. Recently the AC, in connection with the changing membership criteria of ENQA (Regulation of ENQA, 2004), has initiated a discussion concerning more intensive, direct involvement of students in the evaluation and accreditation processes (membership of student representatives in special working groups or standing groups). Last but not least, the Ministry has initiated a national survey conducted by the ACSA that focuses on students' views in several concrete areas of quality evaluation, with the intention of using the survey outcomes as supplementary material for the accreditation procedure.

9.3 International comparability of the quality of tertiary education

341. The AC has foreign members to guarantee an outside view of the Czech national higher education system. At present two German academics and one French academic are members of the AC. In some evaluations, foreign peers are involved in special working groups (the evaluation of Faculties of Law). At the institutional level, international evaluations (for example the EUA evaluation, US accreditation of Faculties of Medicine, etc.) represent an important mechanism for international comparability.

342. Since May 2001 the Accreditation Commission of the CR has been a member of ENQA. It is also one of the founders of the Central and Eastern European Network of Quality Assurance Agencies in Higher Education (CEEN) and participates actively in the dissemination of good practice and the exchange of experiences. At present, the Vice-President of the Accreditation Commission is the President of CEEN. The AC is also a member of the International Network for Quality Assurance Agencies in Higher Education (INQAAHE), and it also plays an important role in the accreditation process of Czech medical faculties in the United States, being a partner of the National Committee on Foreign Medical Evaluation and Accreditation. Staff and members of the Accreditation Commission participate actively in workshops organized by ENQA, CEEN, the German Rectors' Conference, the European Consortium for Accreditation in Higher Education, OECD and UNESCO, and apply the newly gained knowledge and experience to its quality evaluation practices and procedures. The AC has developed a particularly intensive cooperation with the Accreditation Commission of the Slovak Republic. Following the Frankfurt meeting of ENQA in November 2004, the AC and the Slovak Accreditation Commission began cooperation on the preparation of a new system of self-evaluation of AC activities as the basis for periodical external evaluations.

9.4 Relationship between methods used to finance tertiary education and quality measures

343. There is no direct relationship between methods used for financing public/state HEIs and quality. However, accreditation of study programmes has a direct impact on the financing of public and state HEIs. If a given study programme is not accredited, no applicants can be admitted, no lectures or examinations may be held, and no academic degrees may be awarded. In this case, HEIs cannot receive money allocated on a formula basis (see Section 7.2) or on a possibly planned relevant number of students.

344. In general, the funding received for education and research from other parts of the public budget on the basis of different mechanisms, that is money channelled by the Ministry to the Development Programmes, specified research, research plans as well as other public resources allocated on the basis of competitions (explained in 7.2), are indirectly, but nevertheless strongly, connected with evaluation of quality.

9.5 National policies and programmes of agencies to improve the quality of tertiary education

345. The quality of tertiary education is one of the main concerns at the international (the Bologna Process) and national policy levels. The relevant national policies and policy documents, all of them considering quality as an important priority, which are discussed in Chapter 2 and in Chapter 8, can be summarized as follows:

- *National Programme for the Development of Education in the Czech Republic (White Paper)*;
- *Development Strategy of Tertiary Education 2000-2005*;
- *Long-term Plan of the Ministry for 2000-2005, Long-term Plan of the Ministry for 2006-2010;*
- *Long-term Plans of HEIs for 2000-2005, Long-term Plans of HEIs for 2006-2010;*
- *Higher Education Reform Policy* (and its update*)*;
- *National Research and Development Policy of CR*;
- *National Research Programme I* and *II*;
- *Strategy of Economic Development*.

346. The agencies created and other activities used to improve the quality of tertiary education and research are discussed above.

9.6 Monitoring of quality assurance

347. Accreditation serves as the basic regulatory mechanism of quality assurance. Accreditation of study programmes is granted for a limited period of time, at the most twice the standard length of the study programme (Bachelor's and Master's levels). In the case of doctoral programmes, accreditation should not be awarded for more than ten years (the Act, § 80); in practice it is usually given for four or eight years, depending on the quality of academic staff and research activities. In the case of conditional accreditation, a report stating how problems found by the AC have been solved is required midway through the period for which the study programme in question is accredited.

348. There is no such legal requirement in the case of external evaluation, but the AC tries to cover all HEIs on a regular basis as well, despite the great demands on time that the process entails. In the case of newly founded private HEIs, the first institutional evaluation usually comes three years after they have been in operation, so as to assess the quality and prepare recommendations for further development. The period until the next institutional evaluation is then conditioned by the results of the initial one.

349. As regards internal evaluation, all HEIs are obliged to implement a regular evaluation mechanism and to make the evaluation results public by including/referring to them in the obligatory annual reports on their activities. However, as it has already been mentioned, owing to the lukewarm attitude of HEIs to quality matters, the practical implementation of this mechanism remains rather formal (see also internal evaluation).

9.7 Key audiences for evidence on the quality of the system

350. The results of all evaluations and accreditations made by the AC are made public (see Zprávy z hodnocení a přijatá doporučení, 2005). For greater transparency, all evaluation reports and accreditation decisions are published on the website of the Ministry. All information is available to the general public too; however, the key audiences – the management of HEIs, academic staff, students and policy makers – are addressed directly.

351. The key audience of international evaluations is to a large extent similar; to make the results public is usual practice, but in many cases the scope of publicity is left up to the institution itself. As regards the results of internal evaluation, they are primarily intended as tools for institutional self-

improvement. When an institution is undergoing an external evaluation process, they usually form its first step.

9.8. Private tertiary institutions and quality assessment

352. The mechanisms, procedures and criteria employed by the AC in assessing quality are identical in both the public and private higher education sectors. Specific problems of private HEIs are connected with the relatively short history of their existence (the first private HEI was granted state approval in June 1999 on the basis of the Act). Similar problems can be encountered at newly founded faculties of public HEIs, but they are able to draw on the material and academic resources of their own institutions, an option that is not open to private HEIs. Hence the biggest problem of private HEIs is the shortage of experienced academic staff, which is made worse by some negative aspects of the ”ompetitive” relationship among private HEIs. Several private HEIs rely on tuition as their only source of financing and reveal some tendencies to decrease the quality of the education provided, or try to attract potential students by seeking accreditation of Master’s programmes without adequate academic staff and other resources and without enough experience and knowledge gained from Bachelor’s programmes. After they have been granted accreditation of a Master’s programme, some private HEIs try to repeat this approach at the doctoral level, without having any graduates of the Master’s programme and without sufficient research activities or publications in scientific journals. This is the result of their rather low capacity for realistic self-evaluation as well as of underdeveloped systems of internal evaluation.

353. All these tendencies have forced the AC to introduce relatively frequent institutional evaluations of private HEIs as well as of their accredited activities. During the last five years, more than 45% of all existing private HEIs were evaluated by the AC (Vinš, 2004).

354. In trying to find mechanisms that could help it to tackle the specific problems of private HEIs, the AC decided to establish a special standing group for private HEIs of a non-university type with the task of preparing support materials for these relatively newly founded institutions so as to assist them in introducing internal evaluation systems (manuals, forms etc.) that could be also used in external evaluations, thus saving resources. These support materials will be made available to private HEIs in the course of the next academic year.

9.9 Relationship between inputs (new entrants) and outputs (e.g. graduation rates)

355. Information on the relationship between inputs and outputs in general, on graduation rates, etc. together with a more general monitoring of the efficiency of the higher education system is provided by the Institute for Information in Education. The long-term trend, also noted in the *White Paper*, is a growth in the number of students in the tertiary education sector. This trend is accompanied by an increase in the graduate/entrant ratio (0.546 in 1998, 0.573 in 2004). During the last seven years, the graduation rate in Bachelor’s and Master’s programmes for students in on-site studies has increased by 25.6% (Bachelor’s programmes) and 36% (Master’s + long-cycle Master’s programmes) – see Table 9.1.

356. After the introduction of structured study programmes in connection with the Bologna Process and especially after the 2001 Amendment to the Act (see Chapter 2), the ratio between graduates of Bachelor’s and Master’s programmes changed as well. Whereas in 1993 the share of graduates of Bachelor’s programmes was 8.5% and of Master’s programmes 91%, in 2004 the share of graduates of Bachelor’s programmes accounted for 26.3% of total graduates while that of graduates of Master’s programmes had dropped to 73.7%.

357. From the institutional point of view, there are some differences between the graduate/entrant ratio in analogous study programmes at public and private HEIs: higher ratios are typical of private HEIs.

However, it must be taken into account that only the older private HEIs have graduates of Bachelor's programmes and, in some rare cases, of Master's programmes. A higher graduate/entrant ratio can be seen in tertiary professional schools as well. However, it is necessary to add that the students of tertiary professional schools frequently continue to study at an institution whose personnel and physical plant are identical with those of the professional school at which they received their secondary education.

358. Among individual public HEIs with similar study programmes, partial differences exist, but these differences change over time and no generalizations can be made. In some public HEIs of the university type, doctoral programmes exhibit a persistent low efficiency. Hand in hand with the development of distance and combined learning and distance and e-learning devices, the number of graduates of programmes provided in these modes of studies is gradually increasing. Step by step, the age cohort of students is changing, especially in distance studies, where employed students, aiming at enhancing their education, already prevail. This tendency can be seen particularly clearly in the case of private HEIs, where tuition is paid.

9.10 Implications of the expansion of the system for quality assessment

359. The expansion of tertiary education in the CR since the political changes in 1989 still continues. During the 1990s, Czech tertiary education experienced a wave of newly-founded regional universities and faculties, the establishment of higher professional schools and, after 1998, the establishment of a private HEI sector, thus paving the way to the massification of higher education. This process was enhanced by the introduction of the three level study structure in line with the principles of the Bologna Process. Tertiary education in the CR is open to increasing shares in age cohorts of young people. The lack of academic staff has led to some adverse effects on the quality of higher education in certain fields of study (especially economics and management and law), where the CR experienced a real boom in HEIs and faculties even though experienced academic staff in those areas are relatively scarce. In such attractive fields of study, the Czech higher education is experiencing transfers of academicians from public to private HEIs and the emergence of "lying professors" able to teach at several HEIs at the same time but maintaining their position at their "home" public HEI because of the procedures for habilitation and the appointment of professors. The AC has responded to these trends by developing minimal standards of quality for Bachelor's, Master's and doctoral programmes that clearly state the minimal requirements for academic staff at different levels. Similar principles apply to tertiary professional schools.

CHAPTER 10: INTERNATIONALIZATION OF TERTIARY EDUCATION

10.1 Impact of internationalization

10.1.1 Transformation period

360. Along with the new legislation (for more details see Chapter 2), it was the international EU programme Tempus (1990-1998) that played a vital role in the transformation of the traditional, highly centralized system of Czech higher education. Thanks to the Tempus programme, new relationships were established between Czech and Western European HEIs. The first step towards opening up the system was teacher mobility, which contributed to the gradual establishment of useful contacts and cooperation with partner institutions in the EU.

361. In its first phase, the Tempus programme mainly targeted curricular development projects, either for the preparation of new curricula or for the innovation of existing ones, which was useful both for the transformation of Czech higher education and later as a basis for the implementation of new ideas, for example in the development of joint degree programmes and in the Bologna Process in general.

362. In the second phase of the Tempus programme, the shift of priorities was obvious, and more projects dealing with the internal structures of universities and the strengthening of university management were developed. Within the framework of these projects, HEIs established a number of new units facilitating cooperation between HEIs and industry and/or local/regional authorities as well as centres for continuing adult education.

363. Within the Tempus programme, HEIs acquired technology and specialist literature worth at least 400 million CZK (about 11.5 million euros). The importance of mobility for the development of the system and improvements in quality was proved when, drawing on the experience gained in the Tempus programme, the Czech HEIs found little difficulty in becoming involved when the most complex EU educational programme, Socrates, was introduced in 1997.

364. In addition to the EU programmes, the OECD also had an important influence on the development of higher education, in particular by means of a joint project of the OECD and the Czech and Slovak Federal Republic entitled "Higher Education in the CSFR" (1991-1992). The most important outcome of the project was a report produced by the OECD experts that included six recommendations concerning the further development of the tertiary system of education. The experience of subsequent years has shown that most of the ideas embodied in the recommendations and related explanatory comments were wise and helpful, and most were given very serious consideration. Only one recommendation, for the establishment of an independent interdisciplinary high-level strategy group at the national level, remained unimplemented until quite recently.

10.1.2 Impact of the Bologna Process

365. All higher education systems in Europe have been undergoing massive changes in the last decade, and the Czech system is no exception. For the first time, the idea of creating a European Higher Education Area (EHEA) opened the path to pan-European cooperation in harmonizing the architecture of national systems on the one hand, while retaining diversity on the other. The Bologna Process has thus become one of the main drivers of the internationalization of tertiary education during recent years in most European countries. Some of the ideas have even spread to other continents, as witnessed, for example, by educational reforms in Latin America.

366. Some of the main Bologna principles (the Bachelor's/Master's structure, quality assurance) were already covered by Czech legislation and had begun to be implemented to at least some extent from the early 1990s. However, *Bologna Declaration* worked as a catalyst, and the privilege of the CR in

hosting the ministerial meeting in 2001 helped enormously in terms of the implementation phase of the changes. The results so far are impressive: at the present time the three-level structure is generally in place (except for study programmes where the regulations of certain professions and/or the nature of a programme do not permit this), about 57% of students participate in the two-level structure and this number will grow in the future. The stocktaking regarding the main cornerstones of Bologna Process implementation (the stage of implementation of a quality assurance system, the two-cycle system, the Diploma Supplement, the *Lisbon Recognition Convention* and ECTS) prepared for the meeting of ministers in 2005 in Bergen found the Czech progress to be very good and even, in some cases, excellent.

367. In accordance with Bologna Process, any Bachelor's or Master's qualification offers access to further studies or to the labour market. However, in spite of the successes just mentioned, a significant number of problems occur in practice, especially with regard to follow-up programmes in different study areas. In this respect, it is believed that the work on a national qualification framework compatible with the European framework of qualifications for the EHEA, as accepted in Bergen, will help.

368. Similarly, recognition issues, based on the close interconnection of the Bologna Process with the *Lisbon Recognition Convention*, should be dealt with in greater detail and improved, as explained in section 2 as well as in Chapter 8.

369. More information concerning developments and implementation within Bologna Process is available at http://www.bologna.msmt.cz, where the activities of the Bologna Promoters teams are also available.

10.2 Principal policy issues

370. Internationalization has been influencing the Czech tertiary education system and has become an integral part of the development of the system as a whole as well as of each particular institution. Through international networking, it has brought new ideas for innovation in teaching and learning as well as in research. The main goals are those connected with the Bologna Process (creation of the EHEA), the aim being to develop a higher education system that is competitive within Europe as well as beyond its borders. The main priorities are:

- increased mobility of incoming students and teachers. Consequently, it is expected that HEIs will be motivated to accredit their study programmes in foreign languages (in most cases in English) and to improve the language competence of academic as well as administrative staff;
- an internationally recognized system of quality assurance, with more attention being paid to the nternal quality assurance at individual HEIs;
- wide use of transparency tools such as the ECTS and Diploma Supplement[16], leading to better information on study programmes, increased mobility of students and, implicitly, improved quality in study programmes (as a result of rethinking the organization and composition of courses to be taught);
- joint-degree programmes, double-degree programmes and shared supervision of Master's and doctoral theses;
- active participation in all EU programmes (involving European cooperation as well as cooperation outside the EU);
- offering more life-long learning courses for the purpose of either deepening a specific study programme or complementing the requirements for higher-level courses (when moving, for example, from Bachelor's to Master studies), or for meeting requalification demands.
- active participation in the Bologna structures and cooperation with international organizations, above all the European Commission, the Council of Europe, OECD and UNESCO.

[16] The Amendment to the Act, published as Act 552/2005 Coll., which came into power on 1 January 2006, enjoins all HEIs to issue the Diploma Supplement automatically and free of charge.

371. The CR has not developed any proactive policy for international marketing. However, the first steps have been taken, through cooperation between the Socrates National Agency (a unit of the CHES) and various HEIs, to develop an appropriate scheme including advertising in selected countries as well participation in a restricted number of international educational fairs. In the coming years the HEIs will be motivated to develop proactive recruitment policies on the basis of the priorities of their new *Long-term Plans* (2006-2010), which are designed to reflect the proactive policy of the state.

372. It is also possible to state that the CR does not have significant problems with transnational education of questionable quality being offered in the country. This is partly due to the fact that this type of education is not yet a significant element in the education offered in the CR.

373. International cooperation in the field of quality assurance is very important and the broad range of activities of AC is described in Chapter 9.3.

374. Mobility is the most costly part of international cooperation, necessitating state financial support for its development through the Development Programmes established by the Ministry, as well as cofunding from EU programmes (mainly Socrates, in particular Erasmus). This support is expected to continue for the next five years, as declared in the *Long-term Plan of the Ministry for 2006-2010*, and can be regarded as a concrete positive contribution to the Bologna Process. Nowadays it seems that difficulties with recognition may be among the main obstacles in promoting the mobility of students (see Chapter 8).

375. The CR has ratified the *Lisbon Recognition Convention* and has been implementing its principles since 2000. This process is not easy, as it necessitates a change in the way of thinking at HEIs, which are the bodies responsible for recognition of foreign qualifications and/or their parts. Unfortunately practice has shown that there is still considerable prejudice, and many HEIs still tend to insist that a foreign study programme be identical with their own, rather than evaluate the learning outcomes as a whole, as explained in Chapter 8. To motivate HEIs to improve their practice in this area is one of the main challenges in the immediate future. The recognition of studies, their parts and diplomas in accordance with the principles of the *Lisbon Recognition Convention* remains an important policy priority in the educational system, as reflected in the substantial support offered by the National Recognition Information Centre (complex information, services) within the Centre for the Equivalence of Educational Documents (a unit within the CHES).

10.3 Internationalization and instruments for implementation

376. The *Long-term Plan of the Ministry for 2006-2010* frames almost all activities of HEIs in the international context, internationalization being declared a general priority as the result of negotiations between the Ministry and representatives of the HEIs. Internationalization has thus become one of the most important action lines in the development of Czech higher education. Already the *Long-term Plan of the Ministry for 2000-2005* paid significant attention to support for the EU educational programmes, and required HEIs to take full advantage of the possibilities they offered, with specific attention focused on the mobility of students and teachers was well as other connected issues – the implementation of ECTS, recognition of studies and development of joint programmes. Similar support has been given to other international programmes, in particular the Leonardo da Vinci and Jean Monnet programmes, and to regional cooperation within the CEEPUS and Aktion programmes. The Ministry has encouraged HEIs to increase the professional standards of their departments responsible for international relations.

377. A separate section of the *Long-term Plan of the Ministry for 2000-2005* was devoted to the implementation of the Bologna Process, even though in 2000 this was still at a very early stage. The annual updates of the *Long-term Plan of the Ministry for 2000-2005* continued to support the principle of internationalization, with a more concrete focus on the particular priorities of the Bologna Process.

Since accession to the EU, more attention has been paid to international cooperation outside Europe, in particular within the current stage of Tempus, Erasmus Mundus and other EU projects and programmes.

378. The Community programmes have become an organic part of the integration process in the EU and have introduced quite a complex instrument, which has been used in the whole sphere of education. For both HEIs and the Ministry, Socrates/Erasmus has become an important element of strategic planning in the field of international collaboration. To use this instrument fully, however, additional funding must be provided to complement EU sources. The numbers of outgoing students have increased more than six fold, and the even slightly higher increase in outgoing teachers from 1998 until the present is shown in the real numbers found in Table 10.1. One of the reasons for this impressive growth is clearly the significant increase in additional support from the state, as documented in Table 10.2. Like the mobility scheme, various projects submitted within the framework of Erasmus as well as other Socrates sub-programmes (mainly Grundtvig, Minerva and Arion) have received additional state financial support. The Leonardo da Vinci II (Leonardo) programme supports, among other actions, the practical training and work placement of graduates from all types of higher education. At present, about 2,000 students annually take part in this form of mobility and the total number of students who have participated is close to 7,000, 10-11% of them being higher education students. Tertiary professional schools are active participants in this programme, but in the statistics their students are listed in the group of secondary school students.

379. Joint degrees are another excellent example of international cooperation. In the CR, joint- degree programmes as well as double-degree programmes have been developed at all three levels of study – Bachelor's, Master's and doctoral. There is no specific national legislation; however, the current legislation puts no barriers in the way of developing joint degrees. In the 2006/07 academic year five Czech HEIs will be participating in selected Erasmus Mundus Master's programmes, which foster student mobility and cooperation with countries outside the EU.

380. Other forms of international cooperation that could be mentioned include regional programmes such as CEEPUS (Central European Exchange Programme for University Studies), aimed at multilateral cooperation within the wider Central European region; Aktion, a bilateral programme of research and educational cooperation between the CR and Austria; cooperation with DAAD; and the Visegrad Scholarships Programme.

381. The most important internationalization, however, takes place at HEIs themselves. They have the main responsibility for making optimal use of the above-mentioned programmes and they also organize many forms of bilateral cooperation on their own. Support for student mobility based on bilateral institutional contacts as well as the promotion of institutional participation in the programmes described above is provided through the Ministry's Development Programmes. Charles University in Prague, the Czech Technical University in Prague and Masaryk University in Brno have signed the largest numbers of agreements; the main countries involved are Germany, the United States, Poland, France, Slovakia, Austria and Great Britain.

382. Among the most important international R & D cooperation programmes in which the CR is involved are the EU Framework Programmes, COST, the European Education Campaign, EMBC, NATO, the Central European Initiative, INTAS and the European Space Agency as well as various national programmes (designed to provide financial support for cooperation activities): KONTAKT, EUPRO, INGO and bilateral cooperation programmes with the most important countries. Czech HEIs are also involved in bilateral cooperation with Slovenia, Hungary, Germany, the Russian Federation, France (the Barrande programme), the USA (the National Science Foundation, the Fulbright Commission, Fermilab–high energy research), Japan, China, Greece, Italy, Poland and Slovakia. The CR is a full member of CERN and of the Joint Institute of Nuclear Research in Dubna.

10.4 National policies to encourage mobility

383. As already mentioned, the mobility of both students and teachers has been an important priority of national policies and is heavily subsidised by the state (through the Ministry).

10.4.1 Student mobility

384. The state support provided for student mobility is oriented mainly to students of public HEIs. Most support goes to mobility within international academic programmes, bilateral and intergovernmental agreements and/or agreements of HEIs on direct bilateral or multilateral international cooperation. Scholarships can also be awarded to "freemovers" on the basis of the hosting HEI accepting the applicant and the sending HEI recognizing his or her studies after return. The Ministry also has its own scholarship programmes.

385. In practice, the main support from national sources is provided within the framework of Socrates/Erasmus in the form of co-funding for outgoing students and under the Development Programmes, established and financed by the Ministry. Many HEIs co-fund mobility from their own funds as well.

386. The main problems regarding outgoing mobility are as follows:

- limitation of financial resources for the additional support of living costs, which in most countries are significantly higher than in the CR;
- lack of understanding (on the part of students) that only part of the expenses can be covered by the grant (though their awareness of this has been improving);
- lack of interest in student mobility, in particular at technical HEIs;
- difficulties with recognition stemming from such things as rigid curricula and a limited understanding and lack of implementation of the main principle of the *Lisbon Recognition Convention* (as already mentioned in section 2) on the part of the sending institution;
- fear on the part of some students of going abroad, in part because of language problems (something less true now than in the past);
- difficulty in getting support for full study abroad, unless a grant from a foundation is obtained.

387. Incoming students can be given some support from the Development Programmes, which offer HEIs the opportunity to obtain financial support for scholarships for foreign students. Some HEIs have designed projects for incoming students, but at most HEIs there is still no comprehensive strategy to attract foreign students. This is also connected with the insufficient number of study programmes accredited in foreign languages (in particular English), in spite of the fact that the development of study programmes in foreign languages can also be supported under the Development Programmes.

388. Some examples of very good practice can be found, for example at most Faculties of Medicine, HEIs devoted to the arts and some Faculties of Engineering. Since the mid-1990s, some Czech HEIs have started to offer individual courses in two languages (usually Czech and English in parallel) for incoming international students. By now, the situation has improved significantly. At Czech HEIs there are many accredited Master's programmes (and even some Bachelor's programmes) taught in foreign languages both for incoming students and home students as well. The number of students enrolled in these programmes varies; this depends on the number of incoming students, and it is steadily increasing with the growing trend towards inward student mobility.

389. Between 1999 and 2004 the number of foreign students at Czech HEIs grew from approximately 5,500 to 17,000 (see Table 10.3), which is approximately 6% of the higher education student body.

390. There is still a gap between the number of incoming and outgoing students. Promotion work is done by individual HEIs via the ECTS information packages, brochures for foreign students and developed and regularly updated websites in English. At the central level, *Higher Education in the*

Czech Republic – Guide for Foreign Students is published every two years (by the CHES in collaboration with the Ministry), and also made available on the CHES website (see Chapter 8).

10.4.2 Mobility of students to full study programmes

391. Besides the student mobility within the above-mentioned student exchange programmes, a smaller number of Czech students leave the country to enrol in full study programmes abroad, and a significant number of foreign students come to study full study programmes in the CR. Nevertheless, the number of incoming students who complete their studies in the CR is still small compared to the EU average.

392. The most numerous incoming group are Slovak students, who are enrolled in full study programmes on the same terms as Czech students and are able to study in the Czech language (about 55% of all foreign students in the academic year 2004/05). They make up a significant proportion of the total number of incoming foreign students in the CR. There is no real parallel to this in other Eurodata countries (see Table 10.3.).

393. The target countries of diploma-mobile Czech students are mainly Germany, Slovakia, the USA, Australia, the United Kingdom and France. The median outgoing age is 22, and students spend about three years abroad. Total figures remained almost constant between 1999 and 2003.

10.4.3 Teacher mobility

394. The state support provided for teacher mobility is oriented mainly to public HEIs. It is usually connected to an international academic programme. There is also massive co-funding under the Socrates/Erasmus programme. Teacher mobility is also supported within research grants gained at the national level. Moreover, teacher mobility is increasingly coming to be considered an organic part of academic as well as research activities.

395. The mobility of teachers is still only a kind of complement to their teaching activities. In spite of great improvements in this respect, there are still language problems, especially among the older generation. Difficulties also arise from still limited financial resources, in some cases the traditionally conservative behaviour of teachers, and the lack of planning of most HEIs in this direction. Further development of internationalization with respect to teacher mobility (incoming as well as outgoing) should be dealt with in the Long-term Plans of HEIs for 2006-10. A basis for this is the new role of Master's and Bachelor's programmes in foreign languages being run in cooperation with partner HEIs. Some of these bilateral agreements, along with the appropriate exchange of teachers, have already been implemented. This view of teacher mobility development, in particular in joint-degree (and double-degree) courses, seems to offer promising prospects.

CHAPTER 11: CONCLUSIONS

396. The Czech tertiary education system has experienced a number of deep, dynamic changes and extensive development in the last fifteen years. From a strictly uniform, highly centralised and ideologically-bound system under the communist regime, it has been changed into the much more diversified and decentralised system, with the full academic freedom and self-governing bodies, open to Europe and the world. These profound changes have been made possible by the change of the country's political system.

397. In order to assess the tertiary education policy in the period of the last fifteen years, its underlying issues will be categorized according to main thematic areas. These thematic areas, however, do not develop in isolation, as policy action in one area often affects the developments in another.

11.1 Institutional landscape

398. This thematic area concerns the Czech tertiary education system as a whole in terms of its capacity, permeability, diversification and integrity. To take account of qualitative aspects of tertiary education, the policy of quantitative expansion of the system shifted from theory-based discussions to actions in practice, as evident in the gradual accentuation of system diversification. The process of building up up-to-date information infrastructure played a vital role in the development of the institutional landscape as well.

399. The growth in student numbers was prompted by the long-term unmet demand for tertiary education study opportunities as well as by the international developments in which the CR after 1990 quickly started to participate. The OECD urgent recommendation to increase the system capacity and the introduction of the performance based formula funding in 1992, accompanied by the continuous increase in funding from the state budget, provided the strong impetus to the quantitative expansion of the system. The result of this expansion is the threefold increase in student numbers in tertiary education during the last 15 years. Such a widening access to tertiary education should be certainly considered a positive aspect of the system development.

400. The establishment of several public HEIs of the university type, mostly as the result of institutional transformation of the faculties of education already in existence, in different regions at the beginning of 1990s should be seen as another achievement of the state higher education policy. During 1990s, a number of new faculties came into existence at newly established as well as already operating HEIs. The construction of new buildings, division of a great deal of real estate previously in possession of the Communist party, reconstructions and structural adjustments of older buildings all proved fundamental to and supportive of the quantitative institutional and faculty development. In this respect, it is important to mention another achievement – the interconnection of all HEIs by the fast internet network made possible by mass purchases of ICT.

401. The quantitative expansion of the system was accompanied by significant institutional diversification. In this respect, the first step concerned the establishment of a limited number of tertiary professional schools in 1992-1993 as a new type of Czech tertiary education institutions within the pilot project. Later (1995), the corresponding legal provisions, enabling the mass founding of about 170 tertiary professional schools in short time, were made.

402. The outcomes of the long-term disputed strategies of institutional diversification resulted in the passing of the legal provisions of the Act, making it possible to establish HEI of the university or non university type according to the level of its prevailing study programmes and to establish private HEIs. As a consequence, a relatively large number of established private HEIs (39), conveniently widening

the available study offer, contribute (so far to a limited extent) to the more even regional distribution of institutions and bring a stimulating competitive element into the public higher education sector.

403. Higher Education Reform Policy states: "Additionally, it is necessary to properly recognize the objectives, capacities and limitations of the individual institutions (especially of the non-university type) in their ability to formulate, to a greater or lesser degree, [the concept] that could be subsumed under the term creative activities. The goal will be to try to mobilize all of the resources of the respective institution in order to achieve the best possible results in a particular area; and to provide support for the area of research and development in which the institution excels and is able to achieve outstanding results. As part of this evaluative process, we must make sure that we do not end up making global comparisons, which could, in certain situations, lead to de-motivation instead of an effective utilization of the available capacities of the respective institution."

404. From the perspective of the state policy-making, the diversification of study programmes follows the idea to provide tertiary education to a continuously growing number of applicants with significantly different abilities, opportunities, expectations and goals in order to eventually see to it that all applicants with relevant abilities who have a genuine interest in pursuit of tertiary education are given access. At the same time, the diversification of study programmes is considered the basic prerequisite of maintenance and further development of quality of tertiary education provision. The adoption of the three-cycle system (Bachelor – Master – Doctoral) as the main priority of the Bologna Process not only formally by law but in reality by the finalised re-structuring of study by accreditation of three-cycle study programmes (except for the cases determined by the AC) should be considered a strong point in the diversification of study programmes which also comprises the development of tertiary professional education as a complement to or part of (with respect to system permeability) higher education study.

405. The Act limited system disintegration tendencies, stemming from the legal autonomy of faculties, by granting the statute of legal entity only to HEIs. The Long-term Plans of the Ministry and the Development Programmes give support to the true integration of HEIs for example by providing funds for jointly used laboratories, workplaces, joint programmes etc. The endeavour to pursue this kind of integration often comes from the top HEI management.

406. Despite the abovementioned achievements and positive trends in development, the development of institutional landscape of Czech tertiary education still faces some considerable policy challenges.

407. Regardless the steady rise in study opportunities, these opportunities (location and capacity of HEIs and tertiary professional schools) still tend to be concentrated in the capital and few more traditional education centres (the Long-term Plan of the Ministry for 2006-2010 – SWOT analysis). The uneven distribution of study opportunities throughout the country is further enhanced by the limited overall growth in student numbers (5% nationwide). In this respect, the establishment of tertiary professional schools and private HEIs with a small number of students and location mostly in traditional education centres has so far not brought a significant change in the uneven distribution.

408. The fact that HEIs of the non-university type come into existence after meeting stringent criteria (establishment by law) is one of the reasons why up to the present time only one public HEI of the non-university type was founded. Thus, the strategic goal to establish one HEI of the non-university type in every region with the financial support of the state, formulated in Development Strategy of Tertiary Education 2000-2005, has so far remained unfullfiled.

409. At the present time, still a considerable number of applicants for higher (or tertiary professional) education cannot be admitted, despite being successful in entrance examinations, because of the limited institutional capacity. The related issue concerns high drop-out rates of especially first-year students. As a result, some of the students leave tertiary education without any formal qualification (degree), which means a financial burden to the state and weakening of institutional effectiveness and

productivity. A certain number of drop-out students begin their studies again, thus contributing to the continuing unfulfilled demand for certain fields of study. One of the reasons of such a state is only a formal re-structuring of a certain number of study programmes – a formal division of the existing Master's programme into the Bachelor's and continuing Master's programme instead of the thorough modification in sense of the Bologna Process.

410. The insufficient permeability of the Czech tertiary education, especially between tertiary professional schools and HEIs, presents another significant policy challenge. Despite the fact that legal and conceptual documents of the Ministry support such permeability, the principles of the Lisbon Convention (global approach to recognition) are not fully respected in favour of requests for a full equivalence of study, respectively its parts. In general, the reason lies in a rather conservative approach of Czech society to the higher education study and especially higher education degree, perceiving them as a sign of certain exceptionality, which contributes to the low understanding of the changes related to massification of tertiary education. Although employers and general public gradually begin to take notice of and appreciate Bachelor's qualification, its general acceptance as a full-fledged higher education qualification is still unsatisfactory, as the influence of the respective state policies on society as well as on HEIs (through the priorities of the Long-term Plan, activities of the AC) represents a slow, time-demanding process with certain limitations that need to be further addressed.

411. Within the Czech tertiary education system, the area of lifelong learning remains a long-term unresolved problem. Although factually, a reasonably wide and rich offer of theory and practice-based courses exists and in some fields (medicine, education) a sophisticated system of lifelong/professional learning has been developed, a comprehensive policy, clearly delineating the general role and status of lifelong learning in tertiary education, is missing. As lifelong learning represents a cross-cutting theme within the area of responsibility of several ministries, the resolution can be made on the government level – the attempts to address the problem so far have resulted in the establishment of the Government Council for Human Resource Development.

11.2 Quality assurance, academic staff

412. The existence of the AC since 1990, legal obligation of accreditation of all study programmes, procedures of habilitation and the appointment of professor, legal possibility to establish private HEI on condition of obtaining the state approval based on the expert standpoint of the AC, obligation of the AC to take care of the quality of higher education and to perform comprehensive evaluation are all the strong points of Czech higher education that can be matched only by a few EU and Bologna signatory countries. These achievements can be further complemented by the accreditation commission for tertiary professional schools, whose activities and impact, however, given its recent year of establishment (2005), have so far been rather difficult to assess.

413. Besides being reflected in all strategic documents of the state, quality assurance, which has in recent years become one of the main priorities of the Bologna Process, also gets recognition by individual Czech HEIs, students and other stakeholders. All basic measures to comply with the minimal quality standards have been taken and the ongoing harmonisation process with a substantial participation by ENQA, whose member the AC is, will probably not entail significant problems in quality assurance in the Czech national context. Both from the national and international perspective, Czech tertiary education quality assurance thus stands as a substantial system strength.

414. Despite the strong position of quality assurance within the Czech tertiary education, the developments in this area are accompanied by a number of issues that still require further policy attention.

415. Significant attention must be paid to the elaboration of self-evaluation that HEIs are legally obliged to pursue and that represents a prerequisite for development of the process of quality assurance as stipulated by the Bologna Process (Berlin Communiqué, 2003). The level of use of self-evaluation mechanisms and self-evaluation results for institution itself as well as for the external evaluation by the AC, respectively for international evaluations, remains widely differentiated among Czech HEIs, which represents a basic weak point in Czech quality assurance. In this respect, it is expected that the CHES project "Evaluation of Quality of HEIs", focussing on improvement based quality evaluation in wider context as a complement to and support of the activities of the AC, will bring a positive, stimulating impetus.

416. The AC considers an adequate number of academic staff with the corresponding academic qualifications the fundamental prerequisite for assurance of quality of higher education study. The personnel requirements of the AC can hardly be met by newly established private HEIs but also by a number of public HEIs (smaller in size, younger in origin, regional), which in turn leads to their difficulties in obtaining accreditation for study programmes. This results in a very unfavourable state in which some, especially private HEIs "purchase" highly qualified academic personnel from traditional, more prestigious public HEIs almost at any price. These highly sought after members of the academia then use the situation to their own benefit and accept several work positions from which both their "home" as well as "hosting" HEI, at which they are only formally employed, suffer. Naturally, by such practices, the effect of accreditation mechanisms is reduced and students are left facing the deterioration of quality of their study.

417. To this, it is important to note that the obtaining of the degree of professor and associate professor represents a demanding procedure both from the viewpoint of a candidate and accreditation principles (as stated above). Both the degree of professor (conferred by the president of the CR) and associate professor are regarded as socially prestigious, with the lifetime validity. Thus, the degrees of professor and associate professor on the one hand attest person's high qualification, on the other hand, support the abovementioned negative multiple workload practices. The appointment of professors and associate professors on the basis of a vacancy competition might help to remove the prevailing problem of multiple workloads and, in many cases, would simplify the accreditation process. However, the change of the mechanism of appointment and status of professors and associate professors is by no means an easy task, as it would entail the shift of the responsibility and appointment criteria to the institutional level, which would, given the necessity of nationwide comparability, require intense communication and general consensus.

418. The current mechanism of appointment and status of professors and associate professors also causes difficulties in terms of the status of professional experts at HEIs. The policy documents declare the necessity of greater cooperation of HEIs with industries that would show itself through the creation of such a curriculum structure of study programmes that would more directly correspond to the practice-based needs and preferences of industrial enterprises. Given the fact that leading professional experts lack high academic degrees (and by majority they do not intend to, or cannot obtain them because of the requirements), their HEI status is not competitive enough and they practically do not figure into the assessment which forms the basis of accreditation.

419. Another issue concerns an insufficient mobility of academic staff during their career. In the Czech tertiary education, it is a common practice that throughout his career, an academic staff member remains at one HEI, where he eventually obtains the professorial degree; in this respect, a traditional Czech reluctance to change one's permanent residence to get an occupation to some extent plays a role as well. The corresponding state policy is weak (respecting the long-term tradition) and has so far not initiated a large-scale discussion on this issue.

11.3 Research and development, doctoral studies, Academy of Sciences

420. The unanimous support to the return of research and science to HEIs at the beginning of 1990s stands as a positive underlying aspect of the state higher education and research policy. The continuous support of doctoral studies forms an important part of this policy. Even if the state financial support has not reached the level comparable to the EU-15 and OECD countries, the mechanism of resource (targeted and institutional) allocation has led to the gradual profiling of several faculties or HEIs towards research and development activities.

421. Given the policy decision to retain research also within the Academy of Sciences because of its significant research potential, in terms of cooperation in research and development, the Academy of Sciences represents a strong partner for HEIs. The well-developed ways of cooperation comprise joint pursuit of doctoral study programmes, creation of joint workplaces and pedagogical activities of specialists from the Academy of Sciences at HEIs.

422. Despite this effective cooperation, the direct impact of research and development of HEIs on Czech economy, knowledge transfer, and stimulation of innovation is still insufficient, although some HEIs are very productive in research and development. Thus, on national level, the area of research and development still remains underdeveloped, also due to the long-term absence of the state policy on the support of innovation and transfer of knowledge – the first steps have been taken only recently.

11.4 Internationalization

423. The new opportunity of international contacts after 1989 presented itself almost immediately through the reactions and all kinds of actions of HEIs. From this reason, at this point, only one of the aspects – internationalisation of study – is given space. As regards internationalisation of study, a significantly strong point of the state policy is the continuous support to the CR integration into the EU education programmes, starting with the involvement in the TEMPUS programme. In reality, the state policy support manifested itself in the establishment of the national agency by the Ministry in 1991. The newly established national agency took up the administration of the TEMPUS programme and gradually enlarged (with the support of the state funding) the scope of its activities as required by the CR participation in the newly created EU education programmes.

424. The EU education programmes have been supportive of the cooperation in quality assurance, use of the ECTS, recognition of study, issuing of the diploma supplement etc. However, their main goal was the promotion of student mobility, which the state supports by additional funding. HEIs make use of the possibility of cooperation with foreign HEIs in creation of joint degree programmes. The current state policy in internationalisation gives a continuous support to these activities.

425. In the case of student mobility, the main issue concerns still rather high financial costs of relevant activities given the country's level of economic development (unlike the situation in the EU-15 countries) and some legislation problems whose solution transcends the national borders (visas, permissions for study etc.). The still insufficient language competence of students and especially academic staff limits the number of outgoing and, in particular, incoming students (except the Slovaks). Recognition issues, noticeable mostly at national level, pose another limitation to student mobility.

11.5 Steering and funding

426. The emphasis on keeping democratic principles of steering at the institutional and state level, whose implementation was made effective by the post-revolutionary period of the early 1990s, continues to characterise the Czech higher education policy. Till the second half of 1990s, the political

and conceptual goals were discussed and developed mostly as incentives for the preparation of the Act and thus brought into practice as legal measures. This tendency, characteristic of the transforming society, began to change after the passing of the Act in 1998. In the period to follow, the Ministry declared its conceptual goals in tertiary education in the number of strategic policy documents and the CR became the signatory country of the Bologna Process, adopting its underlying principles and strategic goals.

427. All the important goals and decisions of the Ministry are discussed with the HEI representative bodies – the Council of HEIs and the Czech Rectors' Conference. The endeavour to reach consensus is evident on both sides; the steering mechanisms of the Ministry are largely indirect. The most important steering mechanism of the Ministry is the mechanism of state funding allocation which influences the strategic decision-making of public HEIs. The steering of private HEIs is far less state policy driven, as the Ministry decides on the quality matters in which, however, the expert statement of the independent AC plays a decisive role.

428. Although the highly democratic steering combined with the significant autonomy of HEIs, not often seen internationally, undoubtedly strengthens the independence of higher education on the state, it, on the other hand, results in the cumbersome and often less flexible system steering of public HEIs. The similar characteristic holds true for institutional steering. The pursuit of democratic steering principles in terms of large-scale decision-making powers of the academic senates, retention of significant influence of scientific councils on research, development and student agenda, granting of the overseeing of estate and property maintenance to the board of trustees, while keeping the responsibility for the running of institution in the hands of the rector all make the institutional steering rather cumbersome, though with the significant involvement of the academic community. For the purpose of higher professionalism of institutional steering that can be otherwise considered almost entirely academic-based, in recent years, the state policy has begun to use financial motivation tools, which represents a positive policy trend. The weak point, though, has so far been a rather hesitant approach of HEIs to make use of such incentives.

429. The evolvement of mechanism of funding of public HEIs has seen a number of changes with an almost every change being the improvement of the previous state. The originally used input-based formula funding has been complemented by other mechanisms: contract-based development programmes, enabling to pursue state policy priorities in the case of funding of education activities, and limitation of formula funding by the annually set increase limit in student numbers. This limitation had a system stabilising effect, however, its introduction reduced the main advantage of formula funding – the transparency. Another complementary mechanisms are the currently introduced output formula parameters (graduate numbers), further complicating the formula mechanism, however, resulting in greater system effectiveness due to the increased motivation of HEIs. The funding of research and development through specific research and research plans (institutional expenditures) and through the competition for targeted funds (for example the programme Research Centres) can be generally considered a highly beneficial state strategy. Although criticism is sometimes voiced over the implementation of such funding mechanisms, on the other hand, they provide new strategic opportunities that are worth reflecting.

430. The acquirement of state funds allocated on the basis of different mechanisms provides HEIs with the opportunity of focussing on the activities that correspond to thematic areas prioritised by these mechanisms and thus to develop their institutional profiles more towards education or research and development. It is assumed that in this way, a new typology of HEIs based on the amount of finance obtained by source category can be gradually created without the state direct intervention. From the national as well as international perspective, bringing the elaboration of institutional typologies in focus, this policy of funding allocation should be considered the system's strong point.

11.6 Students

431. The absence of the complex student welfare system represents the fundamental issue and weakness of this policy area. The state covers student health insurance, provides student support in terms of accommodation and boarding subsidies, travel money, scholarships for PhD. students and newly introduced social scholarships. A substantial amount of the state support is provided in the form of scholarships for student stays abroad. Another support is given to families through tax reductions and children's benefits. However, no systematic loan support concerning life and study-related expenses exists.

432. Different types of social support are convenient and they make student life easier, however, the downside is that they are provided by different ministries that, as a rule, do not maintain a frequent intra-ministerial communication, which leads to the cases in which the support by one ministry negatively impacts on (reduces) the amount of support provided by another ministry. Moreover, the situation in which the student aged 27 and more has, with the exception of PhD. students, no legal claim of social support is no longer tenable.

433. The fact that the composition of higher education student body according to the social status remains unbalanced presents an issue in terms of the equity of access to higher education. The estimated continuing rise in student numbers will thus be accompanied by measures leading towards the equal access of groups of students in danger of some form of social exclusion – students with disabilities, students disadvantaged because of family origin, social background, age or life situation.

434. The introduction of tuition fees presents a significant challenge for the Czech higher education policy. In this respect, the long-terms discussions show substantially different viewpoints and standpoints by political parties, without much mutual will for concessions. The present-time government does not intend to introduce tuition fees, as it considers "free" higher education its policy priority.

11.7 Main future policy issues

- two structurally different sectors of tertiary education (HEIs and tertiary professional schools) do represent a high degree of diversification, however, they do not present good conditions for the harmonic development of the system as a whole. The necessary prerequisite for the change of this state is the deeper harmonisation of legislation concerning both sectors. At the same time, it is necessary to make clear profiles of both HEIs and tertiary professional schools, smooth out the differences in qualifications (academic degrees at HEIs vs. non-academic degrees at tertiary professional schools) and funding arrangements and to establish a more intense cooperation including the specification of transparent conditions of permeability. Correspondingly, the tertiary education policy faces the necessity of changing the role and status of lifelong learning within tertiary education as well;
- the elaboration of the complex student welfare system is necessary in the short-time policy view. The system should be elaborated on the basis of a robust analysis of the present-day issues and cases of good practice and it should allocate all types of support to the decision-making area and administration of one provider. The limitation and gradual removal of all types of social inequity, which the currently functioning cumbersome mechanism promotes, should become the underlying principle of the new system;
- massification, diversification and decentralisation of higher education systems significantly change the role of HEIs and continuously raise demands for quantity and quality of their activities. The respective future vision of Czech higher education should be the convenient optimisation of academic self-governance with the corresponding managerial skills of the HEI management, which will enable HEIs to fully meet all the demands and effectively use all the resources available. The relevant concept concerns the striking of a balance between the decentralisation and integration of steering and decision-making competencies;

- the cooperation of HEIs with businesses and industries represents the important sphere of HEI activities. The pursuit of such a cooperation brings benefits to both actors and allows HEIs to seek additional funding sources. From the state policy perspective, it is expected that HEIs will play a fundamental role not only in the development of research excellence but also in transfer of research and development outcomes into practice, thus generating an important source of social and economic innovation. In this respect, the important goal remains to extend the research capacity at HEIs from current 15% to at least 20% of the total CR research output and, at the same time, to achieve a substantial (fivefold) increase in the amount of private funding of research and development. Entrepreneurial activities of HEIs, making it possible to diversify financial sources, will be supported by a modified mechanism of the state funding allocation.

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GLOSSARY

Academic Senate (*akademický senát*): One of the self-governing academic bodies of public and state HEIs and of their faculties. The members of the Academic Senate are elected from the institution's academic community. The Academic Senate decides on the institutional budget, Long-term Plan, annual report on activities, annual report on financial management, internal regulations and the establishment (or abolition, merging or division) of parts of the HEI, and selects a nominee for the position of Rector (it can also propose his or her removal from office). For details, see Chapter 8.3.

Academic staff ranks: The academic staff in Czech HEIs are traditionally subdivided into the following ranks: **professor** (*profesor*), **associate professor** (*docent*), **senior assistant** (*odborný asistent*), **assistant** (*asistent*), and **lecturer** (*lektor*). Special procedures exist for the appointment of the two highest categories of academic staff – associate professor and professor. An associate professor for a given field of study is appointed by the Rector on the base of a procedure called habilitation (*habilitace*). A professor is appointed by the President of the Republic on the recommendation of a Scientific Board of an HEI. The title of professor or associate professor thus indicates a kind of academic degree or a level of academic qualification that the holder retains for life, not a position. For a detailed account, see Chapter 7.1.1.

Accreditation Commission (*Akreditační komise*): In the CR, there currently exist two these bodies:
Accreditation Commission for HEIs (*Akreditační komise*): The Accreditation Commission for HEIs (in the text referred to as 'AC') was established in 1990; ever since, it has conducted external evaluation of HEIs on the basis of peer reviews and comparative evaluations of faculties and related fields of study. After the passing of the Act in 1998, the competencies and responsibilities of the AC were considerably extended, even though the AC itself has no decision-making powers: these are reserved for the Ministry. For a detailed account, see Chapter 9.1.1 and 9.2.1.
Accreditation Commission for Tertiary Professional Schools (*Akreditační komise*): The Accreditation Commission for Tertiary Professional Schools was established by the Education Act (2004). In its composition, mode of action and activities, this body is very similar to the AC. For a detailed account, see Chapter 9.1.2 and 9.2.2.

Associate professor (*docent*): see **Academic staff ranks**;

Board of Trustees (*správní rada*): One of the governing bodies of public HEIs, introduced for the first time in 1999. The minister appoints the members of the Board of Trustees after discussion with the Rector; the members must come from outside the institution. The Board of Trustees approves legal acts concerning real estate and movable assets whose value exceeds a legally stipulated amount. Furthermore, it expresses its standpoint on the institutional Long-term Plan, the institutional budget, the annual report on activities and the annual report on financial management, and may publicly present its suggestions and standpoints on the activities of the HEI. For details, see Chapter 8.3.

Combined mode of study (*kombinovaná forma studia*): see **Mode of study**;

Council of HEIs (*Rada vysokých škol*): One of the representative bodies of HEIs at the state level, along the Czech Rectors' Conference. The Ministry is legally obliged to consult them both in all important issues related to higher education. The Council of HEIs also has a Student Chamber, which functions as an intermediary body allowing students to participate in discussions on issues of higher education. See Chapter 2.3 and 8.1.

Educational programme (*vzdělávací program*): Vocational (degree) programme at ISCED 5B level offered by tertiary professional schools.

Habilitation (*habilitace*): see **Academic staff ranks**;

Higher education: see **Tertiary education**;

Higher education institution (*vysoká škola*): Higher education institutions compose the major part of the tertiary education system (91% of students). They provide Bachelor's and Master's programmes (ISCED level 5A) as well as doctoral programmes (ISCED level 6). HEIs offering programmes at least up to and including the Master's level are considered university-type institutions. A non-university type of HEI provides mostly Bachelor's programmes. According to the way in which they have been established, they are classified as public, state (military and police establishments) or private HEIs. Currently, all public and state HEIs (with one exception) are of the university type; all private HEIs are of the non-university type. See Chapter 2.2.1 for details.

Long-term Plan (*dlouhodobý záměr*): Higher Education Act requires that the Ministry as well as all HEIs develop a policy document covering five-years period. Moreover, the Ministry and HEIs are obliged by the Act to update their Long-term Plans annually. The required discussions about their Long-term Plans between the HEIs and representatives of the Ministry, which include consideration of possible ways of harmonizing the plans with the goals of the Long-term Plan of the Ministry, contribute to a better understanding of aims and ideas on both sides. The priorities of the Long-term Plan of the Ministry are reflected in the Development Programmes through which the part of the state budget is allocated to HEIs. See chapter 2.4.

Mode of study (*forma studia*): Mode of study or study mode refers to the mode in which student is attending a programme. Three different modes are available in higher education: **on-site** (*prezenční*) – undertaken through attendance on a regular basis; **distance** (*distanční*) – based primarily on the use of new information and communication technologies; **combined** (*kombinovaná*) – combination of the two modes above. Five mode are available in tertiary professional education: **daytime** (*denní*) – corresponds to the on-side mode explained above; **evening** (*večerní*) – students attend only 10-18 lessons per week, mostly in the afternoon or in the evening; **remote** (*dálková*) – entails more individual studies, accompanied by 200-220 hours of consultations/lectures per year; **distance** (*distanční*) and **combined** (*kombinovaná*) correspond to the higher education study modes of the same name.

On-site mode of study (*prezenční forma studia*): see **Form of study**;

Professor (*professor*): see **Academic staff ranks**;

Representative Commission (*reprezentativní komise*): Consultative body playing a role in allocating the public higher education budget: details of the distribution of the state subsidy to individual HEIs are based on mutual agreement between the Representative Commission and the Ministry. The Representative Commission is composed of representatives of the Czech Rectors' Conference, the Council of Higher Education Institutions, the HEI Registrars and a representative of the labour union. For a detailed account, see Chapter 7.2.

Research plan (*výzkumný záměr*): One of the forms of research funding available to HEIs as well as other research institutions. These plans (for 5 to 7 years) are presented by individual HEIs to the Ministry. This form of support has been available since 1999. See Chapter 5.2 and 5.4 for details.

Scientific Board (*vědecká rada*): One of the self-governing academic bodies of public and state HEIs and of their faculties. The Scientific Board is composed of leading representatives in the individual fields of study offered at the HEI, with at least one-third of its members coming from outside the

institution. The competences of the Scientific Board lie especially in the procedures for habilitation and the appointment of professors and in the preparation of proposals for study programmes and research plans. For details, see Chapter 8.3.

Study programme (*studijní progran*): Academic (degree) programme at ISCED 5A and 6 levels offered by HEIs.

Tertiary education (*terciární vzdělávání*): The tertiary education in CR is understood as all types of education recognized by the state that follow after some form of secondary education (general or professional) that is completed by the secondary school leaving examination (*maturita*). This report focuses on higher education and tertiary professional education (which correspond to the ISCED levels 5 and 6).

Tertiary professional school (*vyšší odborná škola*): Tertiary professional schools represent 9% of the tertiary system capacity. They offer vocational education programmes at ISCED 5B level that do not lead to an academic degree. They can be established by the state, a regional authority, a church or a private person (legal or natural).

LIST OF ABBREVIATIONS

AC	Accredition Commission for HEIs
CHES	Centre for Higher Education Studies, Prague
CR	Czech Republic
CZK	Czech Koruna
CZSO	Czech Statistical Office
ECTS	European Credit Transfer and Accumulation System
EHEA	European Higher Education Area
ENQA	European Association for Quality Assurance in Higher Education
EUA	European University Association
EVOS	Quality evaluation programme for tertiary professional education
FTE	Full-time equivalent
HEI	Higher education institution
IIE	Institute for Information on Education
ISCED	International Standard Classification of Education
R & D	Research and development
SSLE	Secondary school leaving exam
The Act	Act No. 111/1998 Coll. on Higher Education Institutions
The Ministry	Ministry of Education, Youth and Sports

ANNEX

The following documents can be downloaded from indicated web locations.

Zip file with all annexes
<http://www.csvs.cz/projekty/2006_OECD/annex/annex.zip>

Individual files of annexes:

Act No. 111/1998 Coll. on Higher Education Institutions (the Act)
<http://www.csvs.cz/projekty/2006_OECD/annex/act111.doc>

Act No. 130/2002 Coll. on the Support of Research and Development from Public Funds
<http://www.csvs.cz/projekty/2006_OECD/annex/act130.doc>

Act No. 172/1990 Coll. on Higher Education Institutions (the Act of 1990)
<http://www.csvs.cz/projekty/2006_OECD/annex/act172.pdf>

Decree No. 42/1999 issued by Ministry of Education, Youth and Sports on Contents of Application for Study Programme Accreditation
<http://www.csvs.cz/projekty/2006_OECD/annex/decree42.doc>

Higher Education Reform Policy and its update.
<http://www.csvs.cz/projekty/2006_OECD/annex/HE_reformpolicy.zip>

National Programme for the Development of Education in the Czech Republic (the White Paper)
<http://www.csvs.cz/projekty/2006_OECD/annex/thewhitepaper.pdf>

Statute of the AC
<http://www.csvs.cz/projekty/2006_OECD/annex/statuteofAC.doc>

The Long-term Plan of the Ministry for 2000-2005
<http://www.csvs.cz/projekty/2006_OECD/annex/longterm2000_2005.doc>

The Long-term Plan of the Ministry for 2006-2010.
<http://www.csvs.cz/projekty/2006_OECD/annex/longterm2006_2010.pdf>

Analysis of the Cooperation of HEIs with Industrial and Service Enterprises
<http://www.csvs.cz/projekty/2006_OECD/annex/report_industry.doc>

LIST OF TABLES

Table 1.1 Some macroeconomic indicators

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
GDP[1] (billion CZK)	1 467	1 661	1 785	1 962	2 041	2 150	2 315	2 415	2 556	2 750
GDP[2] y/y (%)		4.2	-0.7	-1.1	1.2	3.9	2.6	1.5	3.2	4.4
Inflation rate (%)	9.1	8.8	8.5	10.7	2.1	3.9	4.7	1.8	0.1	2.8
State debt (billion CZK)	154.4	155.2	173.1	194.7	228.4	289.3	345.0	395.9	493.2	592.9
Unemployment rate (%)	4.0	3.9	4.8	6.5	8.7	8.8	8.1	7.3	7.8	8.3
Public exp. on education (% of GDP)[3]	4.90	4.92	4.42	4.09	4.25	4.06	4.15	4.41	4.53	4.47
Total exp. on R&D (% of GDP)	0.95	0.98	1.09	1.17	1.16	1.23	1.22	1.22	1.26	1.27

[1)] Current prices
[2)] Real terms
[3)] Since 1997, incl. the expenditures of the Ministry of Defense

Source: Czech Statistical Office (www.czso.cz)

Table 2.1 Changes in regional structure of higher education between 1989 and 2005

	Acad. year 1989/90				Acad. year 1991/92				Acad. year 2004/05			
City	**Number of HEIs (state)**	**Number of faculties**	**Number of students (in thousands)**	**Share of stud. (%)**	**Number of HEIs (state)**	**Number of faculties**	**Number of students (in thousands)**	**Share of stud. (%)**	**Number of HEIs (state, private and public)**	**Number of faculties**	**Number of students (in thousands)**	**Share of stud. (%)**
Total CR	23	64	110.0	100.0	23	95	111.9	100.0	62	117	298.2	100.0
Praha	8	31	50.9	46.3	8	37	51.4	45.9	29	36	113.6	38.1
Brno	5	15	25.8	23.5	5	19	24.7	22.1	9	25	62.8	21.1
Ostrava	2	5	10.0	9.1	2	8	10.2	9.1	3	11	28.8	9.7
Plzeň	2	4	5.8	5.3	2	6	5.5	4.9	2	7	15.8	5.3
České Budějovice	1	1	2.2	2.0	1	5	2.3	2.1	2	5	9.1	3.1
Ústí nad Labem	1	1	1.9	1.7	1	3	2.0	1.8	2	4	8.7	2.9
Olomouc	1	4	6.7	6.1	1	6	6.8	6.1	1	7	16.7	5.6
Liberec	1	2	3.0	2.7	1	3	3.4	3.0	1	6	7.6	2.5
Hradec Králové	1	3	2.8	2.5	1	2	3.1	2.8	1	4	9.9	3.3
Pardubice	1	0	0.9	0.8	1	2	0.9	0.8	1	4	7.1	2.4
Zlín	-	-	-	-		1	0.8	0.7	1	3	7.5	2.5
Opava	-	-	-	-		2	0.8	0.7	1	1	2.2	0.7
Cheb	-	-	-	-					-	1	1.9	0.6
Karviná	-	-	-	-					-	1	1.9	0.6
Jindřichův Hradec	-	-	-	-					-	1	1.2	0.4
Lednice na Moravě	-	-	-	-		1			-	1	1.0	0.3
Karlovy Vary	-	-	-	-					1	-	0.8	0.3
Kunovice	-	-	-	-					1	-	0.5	0.2
Mladá Boleslav	-	-	-	-					1	-	0.3	0.1
Kladno	-	-	-	-					1	-	0.3	0.1
Kolín	-	-	-	-					1	-	0.2	0.1
Litomyšl	-	-	-	-					1	-	0.1	0.0
Třebíč	-	-	-	-					1	-	0.1	0.0
Přerov - město	-	-	-	-					1	-	0.1	0.0
Písek	-	-	-	-					1	-	0.0	0.0

Source: Institute for Information on Education

Table 2.2 Tertiary education students 1989/90 – 2004/05

	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97
Tertiary education total	110 021	115 072	110 883	116 523	125 961	137 973	151 450	177 333
TPS total[1)]	0	0	0	1 391	2 438	4 631	6 302	14 931
in %	0.0	0.0	0.0	1.2	1.9	3.4	4.2	8.4
HEIs total (public, privat, state)	110 021	115 072	110 883	115 132	123 523	133 342	145 148	162 402
in %	100.0	100.0	100.0	98.8	98.1	96.6	95.8	91.6
Bachelor's	0	0	0	12 195	15 624	27 805	34 414	36 145
Master's	0	0	0	0	0	0	0	0
Long-cycle-Master's	110 021	115 072	109 219	99 485	103 218	98 777	102 475	116 457
Doctoral	0	0	1 664	3 452	4 681	6 760	8 259	9 800

	1997/98	1998/99	99/2000	2000/01	2001/02[2)]	2002/03[3)]	2003/04	2004/05
Tertiary education total	199 271	212 311	224 566	228 423	240 276	259 289	285 821	327 870
TPS total[1)]	25 445	29 566	31 073	26 605	26 680	27 584	30 622	29 674
in %	12.8	13.9	13.8	11.6	11.1	10.6	10.7	9.1
HEIs total (public, privat, state)	173 826	182 745	193 493	201 818	213 596	231 705	255 199	298 196
in %	87.2	86.1	86.2	88.4	88.9	89.4	89.3	90.9
Bachelor's	39 410	40 809	33 291	36 335	43 275	61 843	91 781	129 766
Master's	0	10 087	10 304	12 233	12 319	13 607	15 379	18 405
Long-cycle-Master's	122 963	119 640	135 870	139 472	142 798	138 766	128 360	110 111
Doctoral	11 453	12 209	14 028	16 230	17 702	19 245	21 330	24 526

[1)] TPS – tertiary professional scholls in the academic years from 1992/1993 till 1995/1996 the TPS did not exist.
[2)] Data do not include number of students from four private HEIs.
[3)] Data do not include number of students from six private HEIs.

Source: Institute for Information on Education

Table 2.3 Overall size of the Czech tertiary education system – 2004/05 */

Type of institution	Number of institutions	Established by	Number of students	% the total number of students
HEIs				
Public	25	law	274 962	83.84
State	2	law	4 114	1.26
Private	40	legal entity	19 120	5.83
Total HEIs	*67*		*298 196*	*90.93*
Tertiary professional schools				
Regional	114	regional authority	19 593	5.97
State	1	state	85	0.02
Private	47	legal entity	8 340	2.55
Religious	12	church	1 741	0.53
Total TPS	*174*		*29 759*	*9.07*
TOTAL	***241***		***327 955***	***100.0***

*/ all study modes

Source: Institute for Information on Education

Table 2.4 Public and state HEIs in the Czech Republic – 2004/05

Name	Founded	Number of faculties	Number of students
Public HEIs (total)		117	*274 962*
Charles University in Prague	1348	17	47 257
Masaryk University in Brno	1919	9	31 961
Palacký University. Olomouc	1577	7	16 684
University of South Bohemia České Budějovice	1991	5	8 827
University of West Bohemia [Pilsen]	1991	7	15 541
Jan Evangelista Purkyně University in Ústí nad Labem	1991	4	7 991
University of Ostrava	1991	4	7 777
Silesian University in Opava	1991	2	4 146
University of Hradec Králové	1992	2	6 537
University of Veterinary and Pharmaceutical Sciences Brno	1918	3	2 216
Czech Technical University in Prague	1707	6	22 942
Brno University of Technology	1899	8	18 626
Tomas Bata University in Zlin	2000	3	7 508
Institute of Chemical Technology. Prague	1952	4	3 780
University of Pardubice	1950	4	7 058
VŠB – Technical University of Ostrava	1849	7	19 437
Technical University of Liberec	1953	6	7 633
University of Economics. Prague	1953	6	16 021
Czech University of Agriculture. Prague	1952	4	12 674
Mendel University of Agriculture and Forestry Brno	1919	4	7 791
The Academy of Performing Arts in Prague	1945	3	1 242
Academy of Fine Arts. Prague [2)]	1896	0	269
Academy of Arts. Architecture and Design Prague – VSUP [2)]	1885	0	442
Janáček Academy of Music and Performing Arts Brno	1947	2	602
College of Polytechnics. Jihlava [1), 2), 3)]	2004	0	0
State HEIs (total)		*3*	*4 114*
University of Defence [Brno]	2004	3	2 039
Police Academy of the Czech Republic [Prague] [2)]	1992	0	2 075

[1)] Non-university HEI.
[2)] Not subdivided into faculties.
[3)] First students were admitted in the 2005/2006 academic year.

Source: Institute for Information on Education

Table 2.5 Private HEIs in the Czech Republic

Name	Location	State permission	Fields of study	Number of Students
All private HEIs				19 120
College of Banking in Prague	Prague	1999[1)]	Banking	2 074
European Polytechnic Institute	Kunovice	1999[1)]	Management and Marketing. Finance. Informatics and Computer Science	484
Institute of Hospitality Management	Prague	1999	Hospitality Management	1 736
Institute of Finance and Administration	Prague	1999[1)]	Banking. Finance. Informatics	2 800
College Karlovy Vary	Karlovy Vary	2000	Law	798
Business School Ostrava	Ostrava	2000	Business. Informatics	1 605
Škoda Auto College	Mladá Boleslav	2000	Business	325
The Writers' Academy of Josef Škvorecký	Prague	2000[1)]	Media and Communication Studies	279
College of Tourism. Hotel And Spa Hospitality	Prague	2000	Hospitality Management	77
Institute of Restoration and Conservation Techniques Litomyšl	Litomyšl	2000[1)]	Conservation and Restoration	68
Private College of Economic Studies	Prague	2000[1)]	Management. Accounting. Security Management	467
College of Business Studies in Prague	Prague	2000	Travel and Tourism	504
Sting Academy	Brno	2000[1)]	Finance. Taxation. Management	484
Prague Institute of Technology	Prague	2000	Environmental Engineering	64
College of Public Administration and International Relations in Prague	Prague	2001	International Relations. Law. Public Administration	615
J. A. Komenský College of Higher Education	Prague	2001	Education	2 701
Karel Englis College. Brno	Brno	2001	Management	233
The New Anglo-American College in Prague	Prague	2001	Business Administration. Humanities. Political Science[2)]	304
Prague College of Psychological and Social Studies	Prague	2001	Social Work	80
College of Advanced Legal Studies	Prague	2001	Law	465
College of Economics and Management	Ústí nad Labem	2001	Taxation. Business	697
The College of Pilsen	Pilsen	2001[1)]	Nursing	429
University of New York in Prague	Prague	2001	Business. International Economic Relations. Communication and Media Studies[2)]	333
College of Managerial Informatics and Economics	Prague	2002	Management. Management Informatics	165
School of International and Public Relations. Prague	Prague	2002	International Relations. Public Administration	277
Central Bohemia Institute of Higher Education	Kladno	2002	Business. Marketing. Management	275
International Baptist Theological Seminary	Prague	2002	Theology[2)]	25
West Moravian College Třebíč	Třebíč	2003	Informatics	59
Academia Rerum Civilium	Kolín	2003	Political Science	220
College of European and Regional Studies	České Budějovice	2003	Regional Studies	243
Rašín College	Brno	2003	Crisis Management	59

College of Regional Development	Prague	2003	Regional Development	25
Film Academy of Miroslav Ondricek in Písek	Písek	2003[1)]	Audiovisual Creation	21
College of Physical Education and Sport Palestra	Prague	2004[1)]	Sport	38
Newton College	Prague	2004	Business. Management	40
The College of Logistics	Přerov	2004	Logistics	51
The College of Nursing and Midwifery	Prague	2004[1)]	Nursing	0[3)]
Brno International Business School	Brno	2005	Management[2)]	0[3)]
The Private College of Economic Studies Znojmo	Znojmo	2005	Marketing & Management. Accounting	0[3)]
Moravian College Olomouc	Olomouc	2005	Business. Management	0[3)]

[1)] Transformed from a tertiary professional school.
[2)] The institution offers programme(s) and degree(s) accredited abroad in addition to those accredited in the Czech Republic.
[3)] First students were admitted in the 2005/2006 academic year.

Source: Institute for Information on Education

Table 2.6 Tertiary professional schools in the Czech Republic 1996/97 – 2004/05

TPS by Region	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05
Total	*158*	*157*	*168*	*166*	*165*	*166*	*168*	*169*	*173*
Prague	32	30	35	35	35	34	34	34	36
Central Bohemia	17	17	19	18	18	19	18	17	18
South Bohemia	13	14	14	14	14	14	14	15	15
Plzeň Region	4	5	5	5	5	5	5	5	5
Karlovy Vary Region	2	2	2	2	2	2	2	2	2
Usti nad Labem Region	10	9	7	9	9	9	10	10	11
Liberec Region	7	7	9	7	7	8	8	8	8
Hradec Kralové Region	9	9	11	10	10	10	11	11	11
Pardubice Region	11	11	10	11	10	9	11	11	10
Vysočina Region	10	9	11	11	11	12	11	11	12
South Moravia	15	15	16	16	16	16	16	16	16
Olomouc Region	6	6	12	7	7	7	7	7	7
Zlín Region	11	12	10	11	11	11	11	11	11
Moravian-Silesian Region	11	11	7	10	10	10	10	11	12

Source: Institute for Information on Education

Table 2.7 Enrolment at public and private HEIs (in thousands)

	1995/96	1996/97	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05
Number of applications	178.0	232.1	260.6	256.3	233.8	208.2	237.5	234.0	253.3	285.0
Number of applicants	78.1	96.8	107.0	107.2	104.4	103.5	105.0	108.8	117.5	130.4
Number of persons admitted	40.3	44.0	44.5	45.2	47.4	45.2	54.7	61.1	69.6	75.6
Number of applicants / persons admitted (%)	51.6	45.5	41.6	42.2	45.4	43.7	52.1	56.2	59.2	58.0

Source: Institute for Information on Education

Note: Data shown include all modes and types of studies without state HEIs.
From 2000/2001 the private HEIs are also included. Every applicant and admitted person is counted only once, regardless the number of application he/she submitted and regardless of the number, of HEIs to which he/she has been admitted.

Table 2.8 Enrolment at tertiary professional schools (in thousands)

	1997/98	1998/99	1999/2000	2000/01	2001/02	2002/03	2003/04	2004/05
Number of applications	30.7	37.5	35.9	21.2	28.2	29.5	32.7	27.0
Number of applicants	21.9	26.3	24.6	15.4	20.3	22.2	24.3	20.6
Number of persons admitted	13.7	15.2	15.4	10.4	13.8	14.8	15.5	13.3
Number of applicants / persons admitted (%)	62.6	57.8	62.6	67.5	68.0	66.7	63.7	64.8

Source: Institute for Information on Education

Table 2.9 Students in tertiary education by age

Net enrolment rates 2002/2003					
	Newly admitted in 2002		Population	Net enrolment rates %	
Age	ISCED5A	ISCED5B	31. 12. 2002	ISCED5A	ISCED5B
15	–	–	129 557	–	–
16	–	–	131 850	–	–
17	37	31	134 314	0.0	0.0
18	1 320	120	134 632	1.0	0.1
19	13 678	3 974	134 929	10.1	2.9
20	12 053	4 425	139 897	8.6	3.2
21	3 110	1 566	141 719	2.2	1.1
22	1 596	533	150 915	1.1	0.4
23	1 401	583	167 745	0.8	0.3
24	1 720	420	173 478	1.0	0.2
25	1 542	286	176 695	0.9	0.2
26	1 410	112	181 601	0.8	0.1
27	934	103	185 485	0.5	0.1
28	880	125	187 392	0.5	0.1
29	927	124	175 324	0.5	0.1
30–34	4 524	444	723 525	3.1	0.3
35–39	1 416	224	699 943	1.0	0.2
40+	1 194	214	4 844 502	0.5	0.1
Total	***47 742***	***13 284***	***8 613 503***	***32.6***	***9.2***

Source: Institute for Information on Education, *Education at a Glance* 2004, OECD Indicators 2005

Currently in the OECD countries 53% of people enroll tertiary education of the A type during their life span. Statistics from *Education at Glance* show that in the Czech Republic (33%) is one of the lowest ranking countries, slightly before Mexico and Turkey (28% and 23%).

Table 3.1 Average gross monthly income by level of education in CZK (1996-2004)

Level of education	1996	1997	1998	1999	2000	2001	2002	2003	2004
Total	*11 069*	*12 572*	*13 361*	*14 097*	*15 187*	*16 353*	*18 133*	*19 510*	*20 545*
Basic	7 533	8 576	9 096	9 492	10 570	11 181	12 070	12 786	14 066
Secondary without SSLE	9 431	10 645	11 396	11 684	12 549	13 258	14 409	15 242	16 262
Secondary with SSLE	11 490	12 931	13 629	14 220	15 358	16 742	18 514	19 909	21 296
Tertiary professional and Bachelor's	13 311	13 852	14 768	15 270	16 946	17 667	20 431	21 548	23 932
Master's or doctoral	19 312	20 107	22 093	23 128	25 688	28 501	31 835	33 678	35 067

Source: Czech Statistical Office

Table 3.2 Average gross monthly earnings by age and by education (2004)

Age (years)	Average earnings in CZK					
	Total	Education				
		Basic	Secondary without SSLE	Secondary with SSLE	Tertiary professional	Higher
Total	*21 290*	*14 339*	*17 100*	*21 732*	*24 508*	*36 373*
up to 19	12 089	10 670	12 569	12 511		
20 – 24	15 645	12 978	14 770	16 471	17 184	18 467
25 – 29	20 322	15 027	17 178	21 041	22 631	26 910
30 – 34	22 450	15 433	17 467	22 711	29 843	38 108
35 – 39	22 510	15 215	17 382	21 810	27 422	39 800
40 – 44	22 016	14 627	17 171	21 778	27 294	37 295
45 - 49	21 323	14 077	17 057	22 077	26 181	37 567
50 – 54	20 809	14 075	17 069	22 577	25 840	37 933
55 - 59	21 818	14 651	17 597	23 278	26 723	37 335
60 - 64	25 131	13 737	17 760	24 671	26 964	38 639
65 or more	20 336	10 075	12 733	18 456	23 130	33 025

Source: Czech Statistical Office

Table 3.3 Unemployment by level of education (2004)

Level of education	Number of unemployed (thousends)	Unemployment rate (%)
Basic	104.6	26.1
Secondary without SSLE	211.0	9.4
Secondary with SSLE	95.1	5.3
Tertiary	15.2	2.3
Total	***425.9***	***8.3***

Source: Czech Statistical Office

Table 5.1 State R&D expenditures

Year	Total (million CZK)	% of GDP	Institutional/ Targeted (%)
1993	4378	0.44	55/45
1994	4551	0.40	53/47
1995	4897	0.37	49/51
1996	6238	0.41	45/55
1997	7553	0.43	47/53
1998	8732	0.45	40/60
1999	9671	0.50	50/50
2000	11576	0.54	49/51
2001	12578	0.54	55/45
2002	12497	0.52	57/43
2003	13920	0.55	56/44
2004	14664	0.54	54/46
2005	16458	0.56	57/43
2006	*18200*	*0.59*	
2007	*22500*	*0.68*	
2008	*25800*		

Notes: Figures in current prices. Figures for 2006-2008 (in italics) according to the *National R&D Policy 2004-2008*
Source: Analysis, 1999; Analysis, 2004

Table 5.2 Projects of public HEIs financed by the Czech Science Foundation
(Expenditures in respective years are given, regardless of the year, when the project started.)

Year	Total amount distributed by CSF (million CZK)	Standard projects of HEIs[1)]		POST-DOC projects		Doctoral projects	
		Number	Amount (million CZK)	Number	Amount (million CZK)	Number	Amount (million CZK)
1996		814	304.9	-	-	-	-
1997	789	745	336.3	-	-	-	-
1998		715	340.3	112	13.8	-	-
1999		658	370.2	164	24.5	-	-
2000		721	404.4	221	33.5	-	-
2001		763	434.4	246	37.2	-	-
2002		832	458.5	307	45.1	-	-
2003		918	511.6	396	62.8	31	16.2
2004	1 223	900	510.9	370	68.5	35	68.5
2005		925	639.9	345	67.8	59	123.4

[1)] Projects co-ordinated by HEIs are given. Other participating institutions may have obtained some part of the given amount.
Source: Czech Science Foundation

Table 5.3 Public support for R&D at individual public HEIs in 2004

	Support for R&D (million CZK)			Support for teaching activities (million CZK)	R&D to teaching (%)
	Institutional	Targeted	Total		
Charles University in Prague	653.427	354.047	1007.474	2192.631	45.9
Masaryk University in Brno	213.747	146.674	360.421	1277.901	28.2
Palacký University, Olomouc	110.749	90.841	201.590	740.270	27.2
University of South Bohemia České Budějovice	76.960	73.227	150.187	387.438	38.8
University of West Bohemia	63. 643	49.717	113.360	597.839	19.0
Jan Evangelista Purkyně University in Ústí nad Labem	2.752	6.089	8.841	300.580	2.9
University of Ostrava	18.483	13.921	32.404	314.702	10.3
Silesian University in Opava	13.441	25.564	39.005	165.966	23.5
University of Hradec Králové	4.067	3.785	7.852	228.091	3.4
University of Pardubice	53.577	39.126	92.703	335.527	27.6
Tomas Bata University in Zlin	27.765	10.266	38.031	299.499	12.7
Czech Technical University in Prague	367.234	304.518	671.752	1248.785	53.8
Brno University of Technology	198.252	136.993	335.245	963.949	34.8
VŠB – Technical University of Ostrava	105.908	105.455	211.363	834.541	25.3
Technical University of Liberec	38.913	46.832	85.745	307.177	27.9
Institute of Chemical Technology, Prague	210.019	121.243	331.262	271.948	121.8
University of Economics, Prague	49.855	34.205	84.060	514.980	16.3
University of Veterinary and Pharmaceutical Sciences Brno	19.352	8.458	27.810	227.701	12.2
Czech University of Agriculture, Prague	54.619	37.614	92.233	569.747	16.2
Mendel University of Agriculture and Forestry Brno	89.300	35.725	125.025	431.256	29.0
The Academy of Performing Arts in Prague	7.355	1.043	8.399	212.744	3.9
Academy of Fine Arts, Prague	3.640	0	3.640	77.430	4.7
Academy of Arts, Architecture and Design Prague – VSUP	0	0	0	79.498	0
Janáček Academy of Music and Performing Arts Brno	2.629	0.315	2.944	117.328	2.5
Total	***2 385.687***	***1645.658***	***4 031.345***	***12 693.528***	***31.8***

Source: Annual Reports on Financial Management of HEIs

Table 5.4 Doctoral students and graduates

Academic year	Students of HEIs			Graduates of HEIs		
	Total	Doctoral	Doctor/Total (%)	Total	Doctoral (Dr., PhD.)	Doctor/Total (%)
1993/94	127 137	4 878	3.8	19 238	109	0.6
1994/95	136 566	7 113	5.2	19 481	229	1.2
1995/96	148 433	8 659	5.7	20 927	387	1.8
1996/97	166 123	10 255	6.2	23 846	501	2.1
1997/98	177 723	11 969	6.7	27 153	752	2.8
1998/99	187 148	12 919	6.9	27 952	827	3.0
1999/00	198 961	15 007	7.5	28 767	826	2.9
2000/01	209 298	17 379	8.3	29 719	1 062	3.6
2001/02	223 013	19 064	8.6	31 327	1 312	4.2
2002/03	243 765	20 771	8.8	32 979	1 524	4.6
2003/04	269 694	22 966	8.5	38 529	1 712	4.4
2004/05	294 082	24 701	8.4			

Source: Institut for Information in Education

Table 5.5 Results of R&D supported from public funds 1998–2003

R&D sector	Capacity (FTE)	(%)	Books	Chapters in books, papers in conference proceedings	Papers in journals	Patents	Prototypes, new technologies
Academy of Sciences	3700	25	3758	32 819	53 299	54	6
HEIs	4283	29	6386	84 650	70 763	306	217
State research institutes	729	5	1402	6 679	14 716	35	224
Private sector[1)]	6191	41	62	352	355	29	458

[1)] The apparent low efficiency of the private sector follows from the fact that only results achieved with support from public funds are recorded.

Source: Analysis, 2004

Table 6.1 Aspiration for tertiary education and success in higher education entry: upper-secondary graduates by type of school and study aptitude

(Table shows percentages)

Type of school	Study aptitude					
	Bottom		Average		Top	
	Asp.	Succes	Asp.	Succes	Asp.	Succes
Vocational school	**15.6**	**28.6**	**31.7**	**37.6**	**55.6**	**52.9**
Professional school	**25.9**	**20.4**	**50.8**	**36.6**	**77.6**	**59.8**
Grammar school (4-year)	**74.8**	**31.0**	**86.5**	**52.1**	**93.6**	**78.3**
Grammar school (multi-year)	**76.9**	**42.3**	**87.0**	**58.5**	**93.8**	**83.1**

Source: Burdová, Matějů, Procházková, 2003:38

Table 6.2 Aspirations for tertiary education among upper-secondary graduates: by parents' education

(Table shows percentages)

Parents´ education	Education aspiration		
	Higher education	Tertiary professional education	None
Higher education	78.8	6.1	15.1
Secondary with SSLE	56.8	10.8	32.4
Lower than SSLE	38.1	13.0	48.9
Total	***57.7***	***10.1***	***32.2***

Source: Burdová, Matějů, Pocházková, 2003:39

Table 6.3 Success rate in the tertiary-education selection process: by aptitude and parents' education

Study aptitude	Parents' education	Success rate (%)
Bottom	Lower than SSLE	17
	Secondary with SSLE	22
	Higher education	31
Average	Lower than SSLE	34
	Secondary with SSLE	40
	Higher education	51
Top	Lower than SSLE	62
	Secondary with SSLE	69
	Higher education	80
Total	***Lower than SSLE***	***37***
	Secondary with SSLE	***45***
	Higher education	***61***

Source: Burdová, Matějů, Pocházková, 2003:54

Table 6.4 Secondary and tertiary-education students: by parents' education, occupation and socio-economic status

(Table shows percentages)

		Sociological institute surveys				CHES survey
		15-year- old secondary	Higher education total	Public HEIs	Private HEIs	Public HEIs
Mother's education	lower than SSLE	39.9	21.0	21.1	19.2	17.2
	secondary SSLE	45.2	51.5	51.1	57.8	54.9
	higher education	14.9	27.5	27.8	23.1	27.8
Father's education	lower than SSLE	49.6	31.1	31.5	25.1	19.2
	secondary SSLE	31.8	33.8	33.5	37.5	43.3
	higher education	18.5	35.2	35.0	37.5	37.5
Parent with higher level of education	lower than SSLE	30.9	13.9	14.4	12.2	9.0
	secondary SSLE	46.2	42.9	42.8	44.8	49.1
	higher education	22.9	43.2	43.2	43.0	44.9
Mother´s occupation	professional + non-manual	62.2	76.2	76.1	77.7	81.4
	self-employed	8.9	7.6	7.2	13.2	5.7
	skilled manual	11.6	7.0	7.2	4.2	7.5
	unskilled + agricultural	17.2	9.2	9.5	4.8	5.4
Father´s occupation	professional + non-manual	34.4	51.9	51.8	54.4	57.9
	self-employed	19.1	15.7	15.4	21.8	15.4
	skilled manual	24.8	18.3	18.5	13.3	15.8
	unskilled + agricultural	21.7	14.1	14.3	10.5	11.1
Socio-economic status (quintiles)	bottom	18.1	8.8	9.0	5.5	
	2nd	22.1	15.9	15.9	14.2	
	3rd	20.0	17.3	16.8	23.5	
	4th	20.1	23.5	23.8	19.7	
	top	19.8	34.5	34.4	37.1	

Source: Matějů et al., 2004 (columns 1-4); Menclová, Baštová, 2005 (column 5)

Table 6.5 Educational background of students at public HEIs: by field of study

(Table shows percentages)

Faculties	Basic education		Secondary vocational, without SSLE		Secondary vocational, with SSLE		Secondary with SSLE		Higher education	
	Father	Mother	Father	Mother	Father	Mother	Father	Mother	Father	Mother
Medicine	2.2	2.2	25	19.9	11	8.1	30.1	42.6	31.6	27.2
Education	0	1.8	18.4	14.5	9.7	10	34.6	44.3	37.3	29.4
Law	0	1.3	14.5	3.9	5.3	6.6	25	47.4	55.3	40.8
Economics	1.1	1.1	21.8	16.8	11.5	9.9	36	47.7	29.5	24.4
Humanities	0.5	1	16.1	18.4	6.3	4.9	25.9	39.3	51.2	36.4
Technology	0.4	1.7	15.1	15	15.1	13.1	34.8	48	34.5	22.2
Agriculture	2	0	24	30	12	2	34	46	28	22
Sciences	0	0	25	8.3	5	5	21.7	45	48.3	41.7

Source: Menclová, Baštová, 2005

Table 6.6 Tertiary studies as burden on family budget (2004)

(Table shows percentages)

	Sociological Institute survey		CHES survey
	Public HEIs students	Private HEIs students	Public HEIs students
Great burden on family budget	21.4	27.2	20.3
Still bearable burden on family budget	52.3	45.2	49.9
No significant problem for family budget	26.3	27.6	29.9

Source: Matějů et al., 2004 (columns 1 and 2); Menclová, Baštová, 2005 (column 3)

Table 6.7 Intergeneration educational mobility: by parents' highest education level (1999)

Education of parents	Education of respondents				
	Basic education	Secondary vocational	Secondary with SSLE	Higher education	Total
Basic education	23.4	49.6	21.4	5.6	18.3
Secondary vocational	52.4	23.5	10.1	6.8	
	7.6	51.5	34.6	6.3	42.8
Secondary with SSLE	40.0	57.3	38.4	18.1	
	2.0	22.9	54.2	20.9	26.8
Higher education	6.5	16.0	37.8	37.8	
	0.8	10.0	43.4	45.8	12.1
	1.1	3.2	13.7	**37.3**	
Total	***8.2***	***38.4***	***38.5***	***14.9***	***100.0***

In this table, uneven rows contain row percentage and even rows contain column percentage. For example, the first row shows the education attainment of respondents whose parents achieved basic education: 23.4% achieved basic education, 49.6% secondary vocational, 21.4% secondary with SSLE and 5.6% higher education. The same rule applies also to the third, fifth, seventh and ninth rows. On the other hand, the even rows (second, fourth, sixth and eighth) show the composition of respondents according to the parents' education. For example, of the higher-educated respondents (fourth column), 6.8% had parents with basic education, 18.1% with secondary vocational, 37.8% had parents who attained SSLE, and 37.3% had parents with higher education qualifications.

The limited extent of educational mobility in tertiary education is plainly visible especially in the fourth column. While 45.8% of the respondents with higher-educated parents achieved higher education qualification, the percentage decreases to about 6% among respondents whose parents did not attain SSLE.

Source: Machonin, 2000

Table 6.8 Students who would take a lower-interest, income-dependent deferred-payment loan: by financial situation of student family

(Table shows percentages)

	Definitely yes	Probably yes	Probably not	Definitely not
Great burden on family budget	16.0	29.8	37.9	16.3
Still bearable burden on family budget	8.8	27.9	45.0	18.3
No significant problem for family budget	9.3	21.8	45.7	23.3
Total	***10.5***	***26.7***	***43.7***	***19.2***

Source: Matějů et al., 2004: Figure 7.4

Table 6.9 Tertiary education admission process: by gender

Applicants:

	2002		2003		2004	
Men	27 685	45,8%	30 496	45,4%	31 818	45,8%
Women	32 826	54,2%	36 635	54,6%	37 677	54,2%
Total	***60 511***		***67 131***		***69 495***	

Success rate (%):

	2002		2003		2004	
	women	**men**	**women**	**men**	**women**	**men**
HEIs	55,1	70,2	58,1	72,7	56,7	71,5
TPSs1)	73,6	80,5	70,3	76,7	73,5	82,1
Total	***58,7***	***71,5***	***60,5***	***73,2***	***59,4***	***72,4***

[1)] tertiary professional schools

Source: Institute for Information on Education

Table 6.10 Tertiary education students and graduates: by gender (2004)

(Table shows percentages)

	TPSs[1)]	HEIs total	Bachelor´s	Master´s	Long-cycle Master´s	Doctoral
Students women	69.5	50.3	49.0	52.9	54.3	38.3
Ggraduates women	74.2	53.5	58.6	56.0	51.2	35.6

[1)] tertiary professional schools

Source: Institute for Information on Education

Table 6.11 Higher education students: by field of study and gender (2004)

	Women (%)
Military fields	22
Technical fields	22.3
Natural sciences	39.1
Law	48.4
Agricultural fields	53.9
Creative arts	57.1
Economics	58.1
Humanities / Social sciences	62.3
Medicine	68.3
Education	74.4

Source: Institute for Information on Education

Table 6.12 Monthly median incomes (CZK): by education level and gender (2004)

Education level	Total	Men	Women
Basic	12 387	14 746	10 982
Secondary without SSLE	15 408	17 025	12 008
Secondary with SSLE	19 191	21 678	17 445
Tertiary professional and Bachelor's	20 668	24 339	18 606
Master's or higher	26 831	30 740	22 778
Total	***17 706***	***19 329***	***15 645***

Source: Holý, 2005

Table 6.13 Higher education students: by age

Age (years)	2002/03		2003/04		2004/05	
	Total	Doctoral	Total	Doctoral	Total	Doctoral
17 and younger	58		79		102	
18	1 736		493		600	
19	21 897		22 347		22 567	
20	36 653		38 352		38 053	
21	33 784	1	38 768	2	37 601	3
22	31 776	25	34 431	21	36 300	10
23	29 540	835	30 286	809	29 860	696
24	22 571	1 871	25 462	2 136	23 408	1 952
25	15 599	2 442	18 745	2 778	18 689	3 064
26	11 016	2 570	13 002	2 869	13 933	3 152
27	8 005	2 217	9 582	2 618	10 241	2 856
28	6 434	2 131	7 185	2 116	7 976	2 420
29	4 894	1 624	5 855	1 886	6 232	1 842
30-34	11 771	3 519	14 651	4 000	17 523	4 421
35-39	6 329	1 498	7 039	1 507	7 916	1 455
40 and older	6 693	2 359	7 804	2 540	9 236	2 657
Total	***248 756***	***21 092***	***274 192***	***23 282***	***280 336***	***24 528***

State HEIs not included

Source: Institute for Information on Education

Table 7.1 Student / teacher (FTE) ratio at public HEIs (1995-2004)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Number of students	145148	162414	173826	182745	193493	207721	219206	236678	259674	279800
Academic staff	12 890	12 969	13 216	13 292	13 592	12 791	13 641	13 846	14 220	14 623
Student / teacher ratio	11.3	12.5	13.2	13.7	14.2	16.2	16.1	17.1	18.3	19.1

Source: Institute for Information on Education

Table 7.2 Average monthly salaries of HEI staff. 1997-2004 (CZK)

Staff categories	1997	1998	1999	2000	2001	2002	2003	2004	2004/1997 ratio
All employees	11 910	12 593	14 198	14 614	15 953	17 795	19 143	21 303	1.79
Academic staff	15 229	16 020	18 045	18 004	19 954	22 571	24 116	26 281	1.73
Including:									
Professors	22 389	24 023	28 351	28 052	31 871	35 886	38 809	42 699	1.91
Asociate professors	19 014	20 100	22 736	22 755	25 344	28 384	30 098	33 031	1.74
Senior assistants	13 320	13 875	15 327	15 414	16 924	19 065	20 433	22 504	1.69
Assistants	9 701	10 140	11 481	11 706	12 868	15 341	16 619	17 901	1.85
Lecturers	10 705	10 967	12 381	13 373	13 067	15 090	15 975	14 298	1.34
Average wage nationwide	10 802	11 801	12 797	13 614	14 793	15 866	16 917	18 035	1.67

Source: Higher Education Reform Policy, Institute for Information on Education

Table 7.3 Salaries of academic staff at individual public HEIs, 2004 (CZK)

	Professor	Associate Prof.	Assistant	Lecturer
Total average	*42 699*	*33 036*	*23 188*	*14 298*
UK Praha	36 168	28 305	18 069	8 167
JU České Budějovice	39 418	31 387	21 572	18 936
UJEP Ústí nad Labem	33 146	33 130	21 852	16 468
MU Brno	46 543	37 448	27 157	20 756
UP Olomouc	34 315	28 407	21 272	16 894
VFU Brno	39 151	31 045	19 783	0
OU Ostrava	30 282	31 177	21 227	0
Univerzita Hr. Král.	30 608	29 296	21 244	19 313
SU Opava	38 829	31 498	20 547	17 330
ČVUT Praha	56 062	38 152	26 583	20 712
VŠCHT Praha	54 971	39 557	27 837	19 756
ZČU Plzeň	41 025	33 538	22 706	16 159
TU Liberec	34 822	29 596	18 660	0
UPa Pardubice	48 058	34 628	25 274	18 001
VUT Brno	50 343	34 511	24 299	0
VŠB-TU Ostrava	47 614	38 150	25 797	0
UTB Zlín	38 383	28 160	23 036	18 703
VŠE Praha	50 561	37 406	25 983	17 065
ČZU Praha	61 829	41 457	26 752	0
MZLU Brno	44 222	34 473	23 040	0
AMU Praha	25 675	19 857	16 608	14 072
AVU Praha	32 469	26 726	16 367	0
VŠUP v Praze	29 149	18 094	23 403	15 215
JAMU Brno	36 868	27 001	22 244	0

Source: Report on the State of Higher Education in 2004

Table 7.4 Staff at tertiary professional schools (FTE)

(Including public, private and religious instiutions)

	1997	1998	1999	2000	2001	2002	2003	2004
All empolyees	1 342	1 786	2 144	2 243	2 126	2 106	2 209	2 273
Teaching staff	1 025	1 369	1 622	1 668	1 559	1 533	1 620	1 653

Source: Institute for Information on Education

Table 7.5 Average monthly salaries of the staff at tertiary professional schools (CZK)

(Including public, private and religious instiutions)

	1997	1998	1999	2000	2001	2002	2003	2004	2004/1997 ratio
All employees	12 323	13 279	14 923	14 744	16 399	17 364	19 060	19 921	1.62
Teaching staff	13 455	14 489	16 310	16 170	18 100	19 300	21 174	22 187	1.65

Source: Institute for Information on Education

Table 7.6 Share of revenues from supplementary activities related to the total revenues: public HEIs. 2003 (%)

The Academy of Performing Arts in Prague	16
Academy of Fine Arts, Prague	1
Czech University of Agriculture, Prague	37
Czech Technical University in Prague	12
Janáček Academy of Music and Performing Arts Brno	3
University of South Bohemia České Budějovice	5
Masaryk University in Brno	4
Mendel University of Agriculture and Forestry Brno	40
University of Ostrava	2
Silesian University in Opava	6
Technical University of Liberec	6
University of Hradec Králové	3
Jan Evangelista Purkyně University in Ústí nad Labem	2
Charles University in Prague	7
Palacký University, Olomouc	3
University of Pardubice	4
Tomas Bata University in Zlín	5
University of Veterinary and Pharmaceutical Sciences Brno	52
VŠB – Technical University of Ostrava	7
University of Economics, Prague	14
Institute of Chemical Technology, Prague	14
Academy of Arts, Architecture and Design Prague – VSUP	1
Brno University of Technology	8
University of West Bohemia	3

The table shows the differences in revenues, which may not always be seen in profits, generated by the supplementary activities of the public HEIs. Stricking numbers reflect various chances and possibilities of each institution to generate some extra budgetary income. High numbers at the agricultural institutions come from their use of school farms; some other institutions have larger revenues from the land and building rents.

Source: Annual Reports on Financial Management of HEIs

Table 7.7 Time development of the normative base in formula funding

Year	1995	1996	1997[1)]	1998	1999	2000	2001	2002	2003	2004	2005
Normative base (CZK)	23 300	25 824	24 520	24 704	28 148	27 620	27 620	29 203	30 079	32 990	33 320

[1)] After a set of restricting measures in the state budged (so-called "packages")

Table 7.8 Coefficients of economical valuation of study programmes in formula funding

Field of study	Coefficient
humanities, social sciences, theology, law, economics	1.00
philology, education, teacher training	1.20
geography, ecology, informatics, engineering, sports. nursing	1.65
mathematics, geology, biology, agriculture, pharmacy, architecture	2.25
medicine, physics, chemistry	2.80
veterinary sciences, creative arts at non-artistic HEIs	3.50
creative arts at artistic HEIs[1)]	5.90

[1)] Added in 2004

Source: State budget, chapter 333 – Ministry of Education, Youth and Sports

Table 7.9 Funding items of the grants for HEIs, 1997 – 2005 (thousands CZK)

Part	1997[1)]	1998[1)]	1999	2000	2001	2002	2003	2004	2005
Study programmes, formula funding	6 310 308	6 327 702	7 648 020	7 376 406	7961301	9 065 750	9 959 263	11 854 585	13 210 323
Doctoral students´ scholarships	210 000	247 200	300 000	300 000	300000	455 000	520 200	659 040	659 040
Foreign students and international cooperation	121 295	61 071	57 712	23 200	28200	29 300	222 554	289 112	289 112
Non-investment expenses related to the property investments	108 000	85 000	185 000	169 398					
Education Policy of Fund	76 197	130 625	110 379	170 379	175000	158 000	143 549	102 601	102 601
Higher Education Development of Fund	80 000	80 000	80 000	80 000	120000	85 000	115 000	280 000	320 00
Development Programmes					279284	670 000	698 224	830 935	1 430 935
Extra expenses	54 000	109 000	282 880	131 017		10 000	30 000	31 391	31 391
Students' accomodation and meals	816 200	780 000	780 000	780 003	780000	810 005	800 000	810 005	1 060 005
Non-investment transfers to HEIs	7 776 000	7 820 598	9 449 081	9 035 493	9 643 785	11 283 055	12 488 790	14 448 350	***
Property investment transfers besides ISPROFIN								409 319	508 319
Total budget for HEIs	7 776 000	7 820 598	9 449 081	9 035 493	9 643 785	11 283 055	12 488 790	14 857 669	16 721 726
R&D, specific research							1 044 227	1 044 227	1 044 227
R&D, research plans							1 325 791	1 565 472	3 040301
Programme funding (investments to the property) (ISOPROFIN)	1 846 460	1 662 327	1 744 780	2 306 179	2 728 772	2 646 002	2 733 400	3 116 000	3 616 000

[1)] Without depreciation write-offs.

Source: State budget, chapter 333 – Ministry of Education, Youth and Sports

Table 7.10 Total funding per student from public sources including support of R&D, 2004 (thousands CZK)

	2002	2003	2004
Public HEIs average	*68.0*	*76.8*	*85.8*
The Academy of Performing Arts in Prague	169.5	228.2	208.0
Academy of Fine Arts, Prague	179.0	191.6	382.8
Czech University of Agriculture, Prague	59.3	59.9	77.8
Czech Technical University in Prague	84.4	93.8	102.7
Janáček Academy of Music and Performing Arts Brno	180.5	191.2	235.6
University of South Bohemia České Budějovice	66.4	69.8	91.4
Masaryk University in Brno	55.9	66.8	75.1
Mendel University of Agriculture and Forestry Brno	80.2	125.2	132.6
University of Ostrava	47.2	47.5	55.8
Silesian University in Opava	49.3	70.2	57.4
Technical University of Liberec	57.1	59.7	67.4
University of Hradec Králové	42.3	39.8	52.2
Jan Evangelista Purkyně University in Ústí nad Labem	39.6	50.1	52.4
Charles University in Prague	79.8	88.7	98.2
Palacký University, Olomouc	62.2	63.4	71.8
University of Pardubice	65.1	70.0	78.3
Tomas Bata University in Zlín	59.2	87.6	62.3
University of Veterinary and Pharmaceutical Sciences Brno	111.2	195.1	150.5
VŠB – Technical University of Ostrava	58.6	60.4	76.2
University of Economics, Prague	41.1	47.4	61.7
Institute of Chemical Technology, Prague	207.3	212.7	233.0
Academy of Arts, Architecture and Design Prague – VSUP	160.5	173.8	196.6
Brno University of Technology	82.9	81.3	98.1
University of West Bohemia	50.1	68.6	68.5

Source: Institute for Information on Education

Table 8.1 Lifelong learning courses offered in 2004 by public HEIs

Field of study	Lifelong learning courses in accredited programmes		Other	*Total*
	Free courses	Fee courses		
Sciences	7	25	81	*113*
Engineering, manufacturing, construction	1	30	199	*230*
Agriculture, forestry and veterinary science	2	8	24	*34*
Health, medicine and pharmacy	28	20	25	*73*
Social sciences and services	5	50	147	*202*
Economics	1	40	28	*69*
Law and public administration	2	35	9	*46*
Education, teacher training and welfare	1	137	110	*248*
Psychology	0	7	1	*8*
Creative arts and cultural studies	0	7	23	*30*
Total	***47***	***359***	***647***	***1 053***

Note: Does not include courses offered by Charles University in Prague.
Source: Annual reports of HEIs

Table 8.2 Participants in lifelong learning courses at public HEIs in 2004

Field of study	Lifelong learning courses in accredited programmes		Other	*Total*
	Free courses	Fee courses		
Sciences	60	940	3 246	*4 246*
Engineering, manufacturing, construction	0	1 084	3 414	*4 498*
Agriculture, forestry and veterinary science	692	300	2 471	*3 463*
Health, medicine and pharmacy	150	86	2	*238*
Social sciences and services	6	315	5 215	*5 536*
Economics	104	768	1 704	*2 576*
Law and public administration	37	361	524	*922*
Education, teacher training and welfare	103	2 432	5 542	*8 077*
Psychology	0	15	0	*15*
Creative arts and cultural studies	0	429	437	*866*
Total	***1 152***	***6 730***	***22 555***	***30 437***

Note: Does not include courses offered by Charles University in Prague.
Source: Annual reports of HEIs

Table 9.1 Graduate/entrant ratio (HEIs, on-site mode of study)

Entrants	1998	1999	2000	2001	2002	2003	2004
Bachelor's	10 967	6 281	8 116	9 525	16 860	26 414	35 332
Master's	x	x	3 994	3 466	3 774	3 327	5 976
Long-cycle Master's	30 238	34 794	28 365	26 805	22 131	16 844	10 552
Doctorate	1 793	1 138	1 740	2 317	2 817	2 531	3 273
Graduates							
Bachelor's	6 551	5 952	6 094	5 938	6 279	6 152	8 229
Master's	2 440	2 645	3 034	3 232	3 261	3 424	3 841
Long-cycle Master's	14 478	15 211	15 571	16 411	17 071	17 868	19 183
Doctorate	260	235	200	219	264	311	346
G/E ratio within the standard length of studies (%)							
Bachelor's (3 years)				54.1	100.0	75.8	86.4
Master's (2 years)					81.7	98.8	101.8
Long-cycle Master's (5 years)						59.1	55.1
Doctorate (3 years)				12.2	23.2	17.9	14.9

Source: Institute for Information on Education

Table 10.1 Outgoing and incoming students and teachers (Socrates programme)

	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05[1)]
Outgoing students	879	1 249	2 001	2 533	3 002	3 589	5 817
Months	4 130	5 980	10 481	14 355	17 384	21 508	43 785
Outgoing teachers	366	408	635	782	973	987	2 393
Weeks	531	729	800	890	1 062	1 027	3 631
Incoming students[2)]	290	509	635	800	993	1 398	n. a.

[1)] plan – the expected take-up rate is about 80%
[2)] according to the reports from HEIs

Source: NA SOCRATES

Table 10.2 State financial support of mobility (Socrates programme)

	EU Funds (thousands €)	National co-funding (thousands €)	National co-funding (millions CZK)
2000	2 136	1 691	52
2001	2 205	5 107	158
2002	2 271	5 728	176
2003	2 255	7 064	219
2004	2 620	8 125	260
2005[1)]	3 063	8 935	277

[1)] plan – the expected take-up rate would be about 80%

Source: NA SOCRATES

Table 10.3 Foreign and Slovak students in the Czech Republic in tertiary education 1999/00 – 2002/03

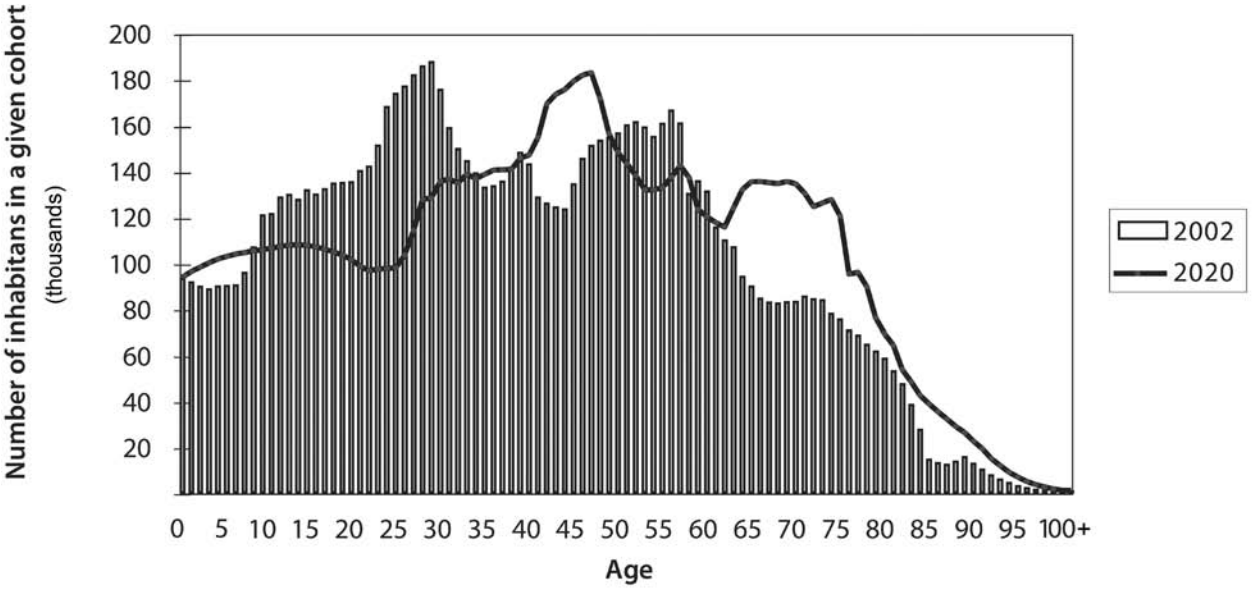
Year	Foreign students			Slovak students	Slovak students in %
	HEIs[1)]	TPS [2)]	Total		
1999/00	5 468	209	5 677	2 224	39.2
2000/01	7 486	253	7 739	3 950	51.0
2001/02	9 429	309	9 738	5 564	57.1
2002/03	12 078	379	12 457	8 047	64.6
2003/04	14 233	385	14 618	7 722	52.8
2004/05	17 124	353	17 477	9 599	54.9

[1)] HEIs - State HEIs not included
[2)] TPS - Terciary professional schools

Source: HEIs: Student Register – ICS Masaryk university, Brno, 2005
TPS: Institute for Information on Education, 2004

LIST OF FIGURES

Figure 1.1 Demographic forecast 2002-2020



Source: Burcín and Kučera, 2003

Figure 2.1 Education system of the Czech Republic

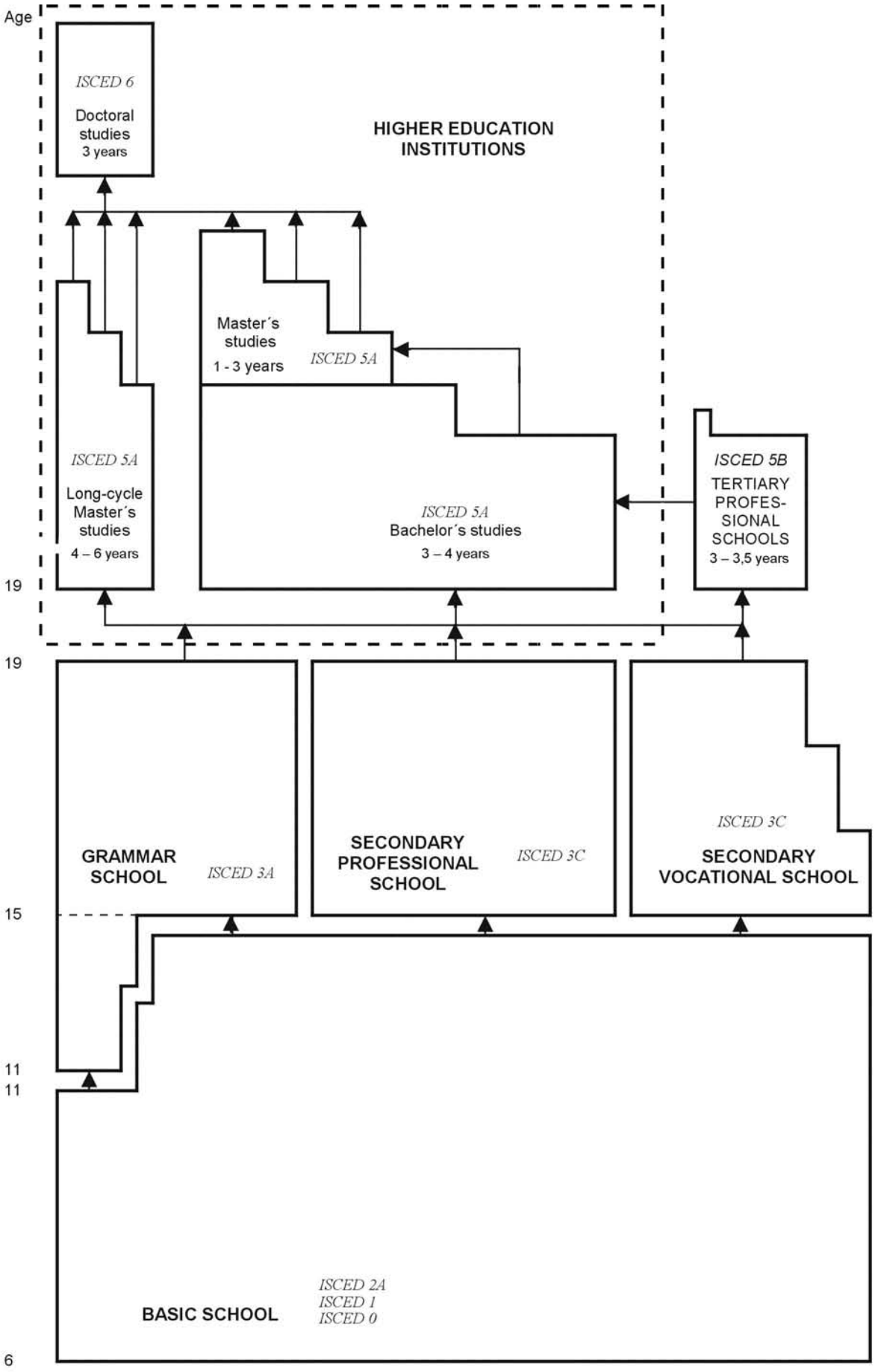
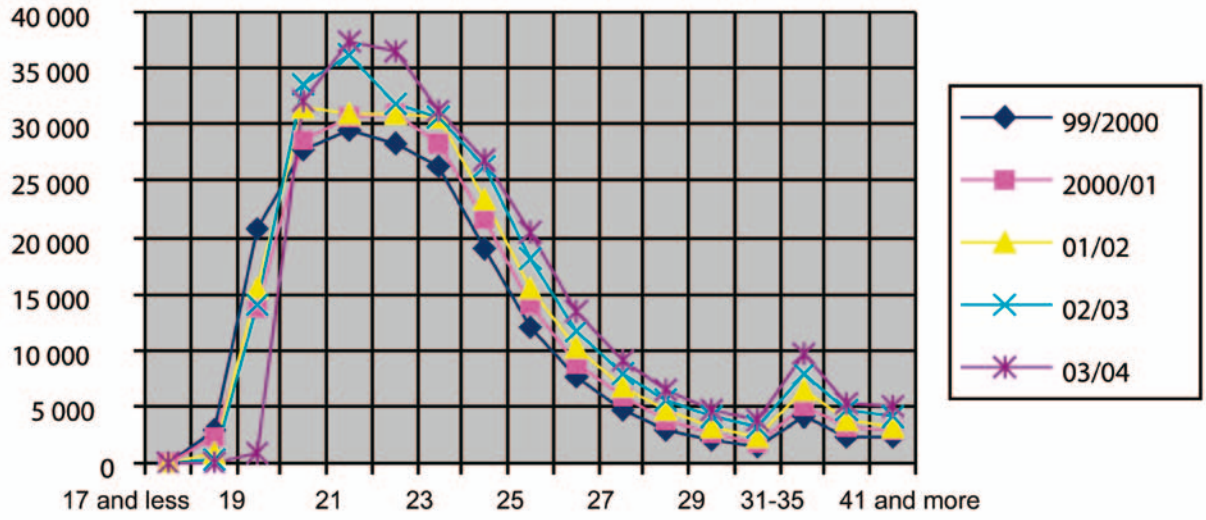
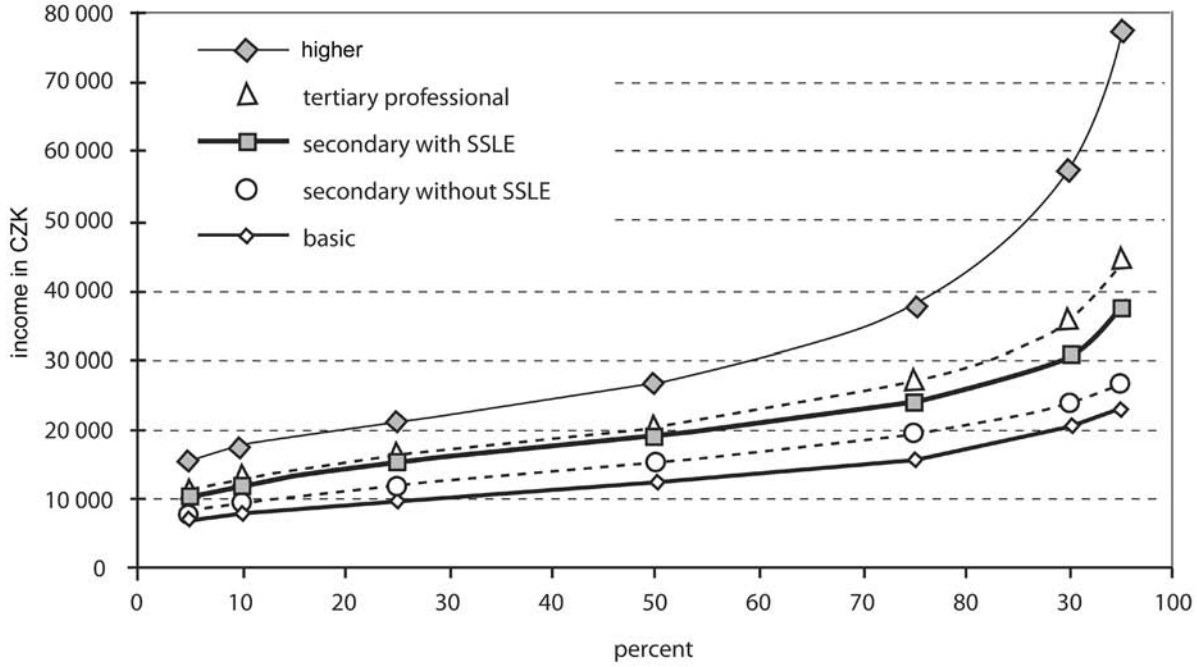


Figure 2.2 Students in Bachaler´s and Master´s programms by age



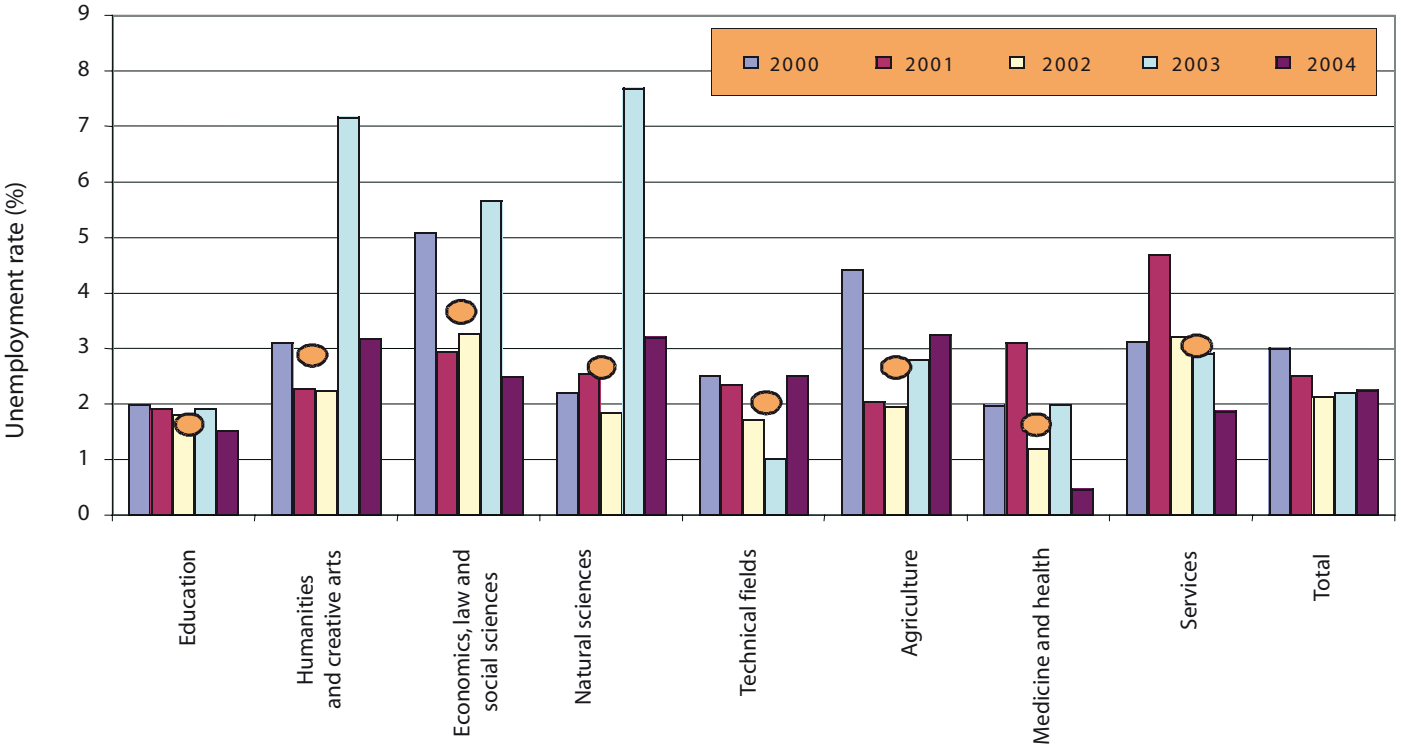
Source: Higher Education Reform Policy

Figure 3.1 Distribution of incomes by education level (in percentiles), 2004



Source: Czech Statistical Office, <http://www.czso.cz/csu/edicniplan.nsf/t/69003C414F/$File/3111t02.pdf>.

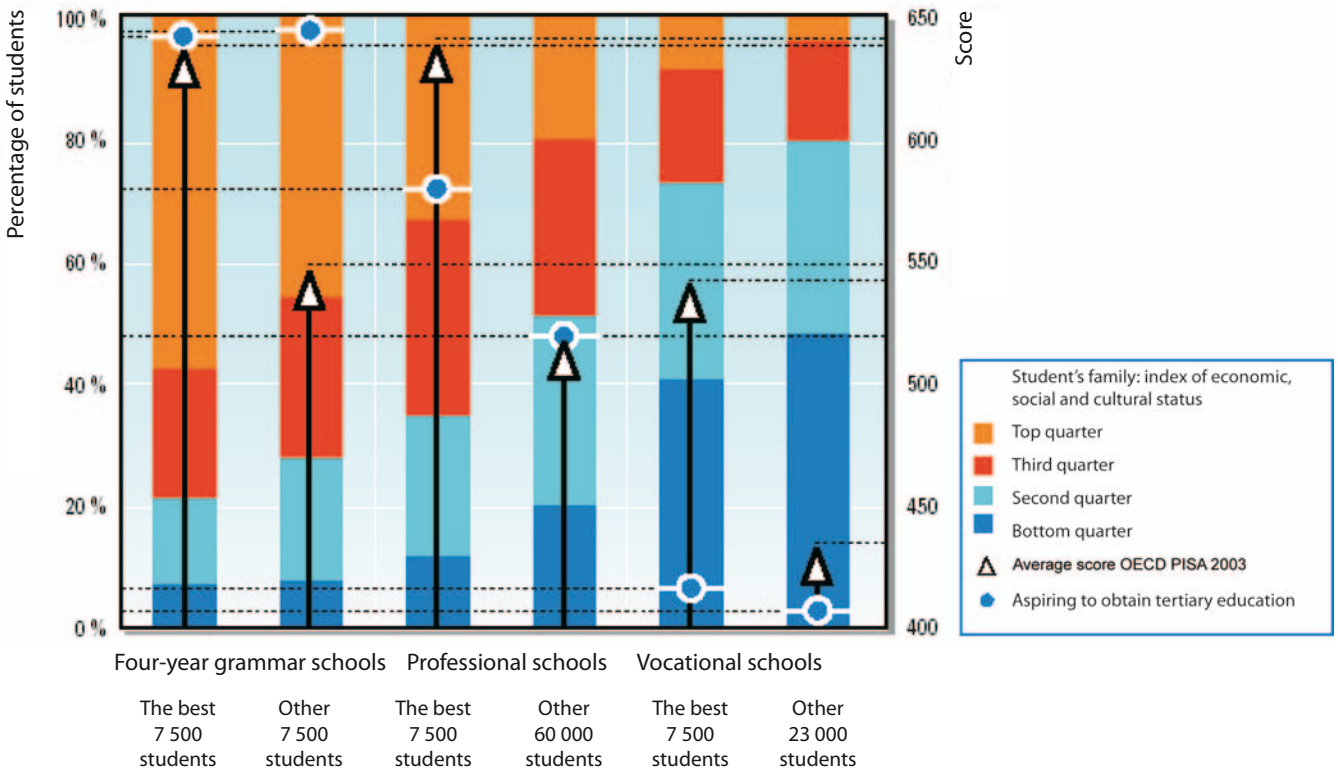
Figure 3.2 Unemployment rate of the tertiary educated: by field of study, 2000-2004



This graph shows differences in unemployment rate between 2000 and 2004 by field of study. However, the number of cases in each category is quite low, due both to the low number of tertiary educated people and to their low unemployment rate. Therefore, the most reliable indicator might be a median unemployment rate for each category ⬭ (an average of three annual rates, ignoring both the lowest and highest values among the five years).

Source: Czech Statistical Office, Educational Policy Centre

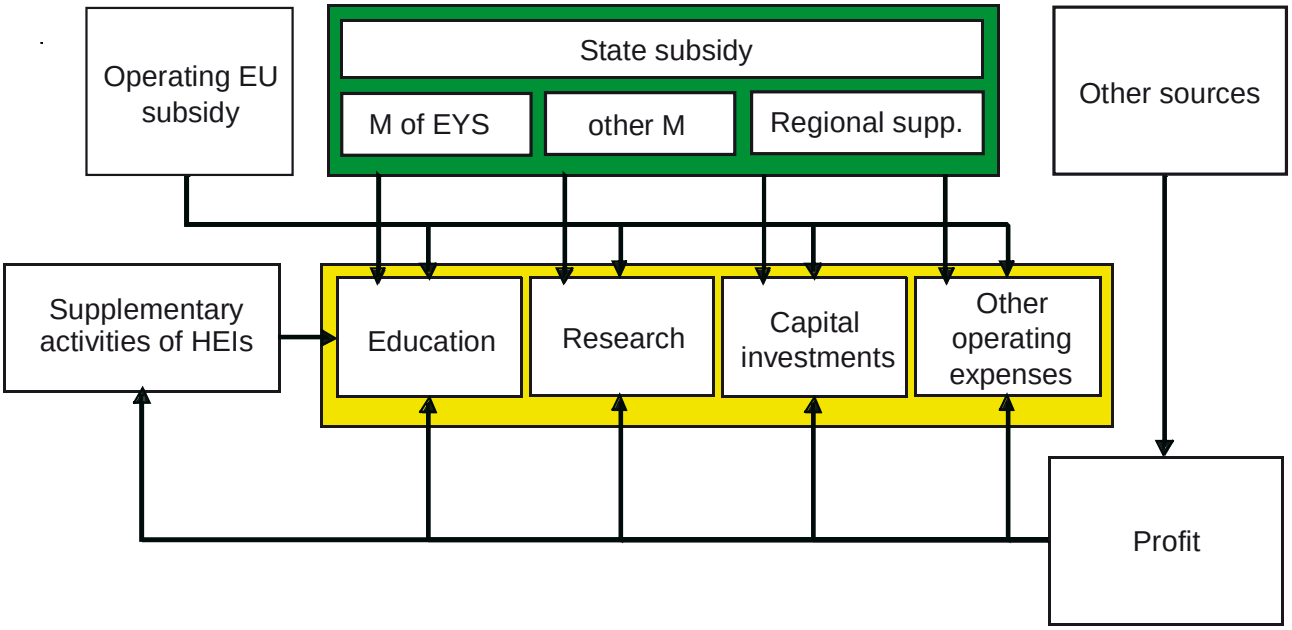
Figure 6.1 Upper-secondary educational achievements and aspirations in relation to family background



This graph shows that aspirations for tertiary education follow school type and social status more closely than actual educational achievement. While the best students at professional schools outperform the best students at four-year grammar schools, the percentage of students aspiring to go on to tertiary education is lower by about a quarter. Even greater differences exist between students on the next performance level, bringing together the weaker grammar- and professional-school students with the best vocational-school students. Even though all these students achieved roughly the same score, their educational aspirations differ enormously, conforming both to school type and social status. The most alarming difference exists between the weaker grammar--school students and the best vocational students: despite very similar results, the percentage of those aspiring to go on to the tertiary level range from almost 100 % in the first group to almost zero in the latter.

Source: Koucký, Kovařovic, Palečková, Tomášek, 2004:19

Figure 7.1 Flow of money in public HEIs



This diagram shows in a simplified way the flow of money for the main HEIs' activities – education and research and for the capital investments: The main source is the state subsidy supplemented by the financial means obtained from the EU programmes. There are other sources related to the supplementary activities and study related fees. services related the main institutional activities. revenues from property of the institution, possibly gifts, donations, bequest, which make the profit, that is used as the additional source of money for the main activities including support of capital investments and it partly goes back to the supplementary activities.

Figure 7.2 Construction of the grant for teaching activity

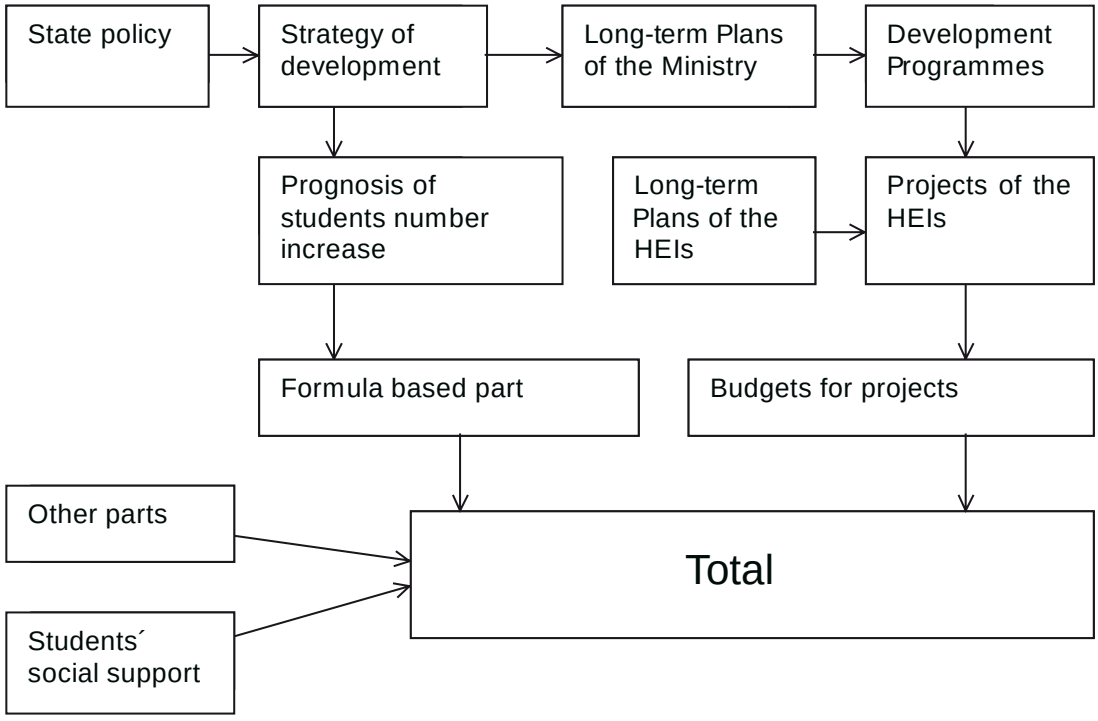


Figure 7.3 Funding indexes of the grants for HEIs. 1997 – 2005

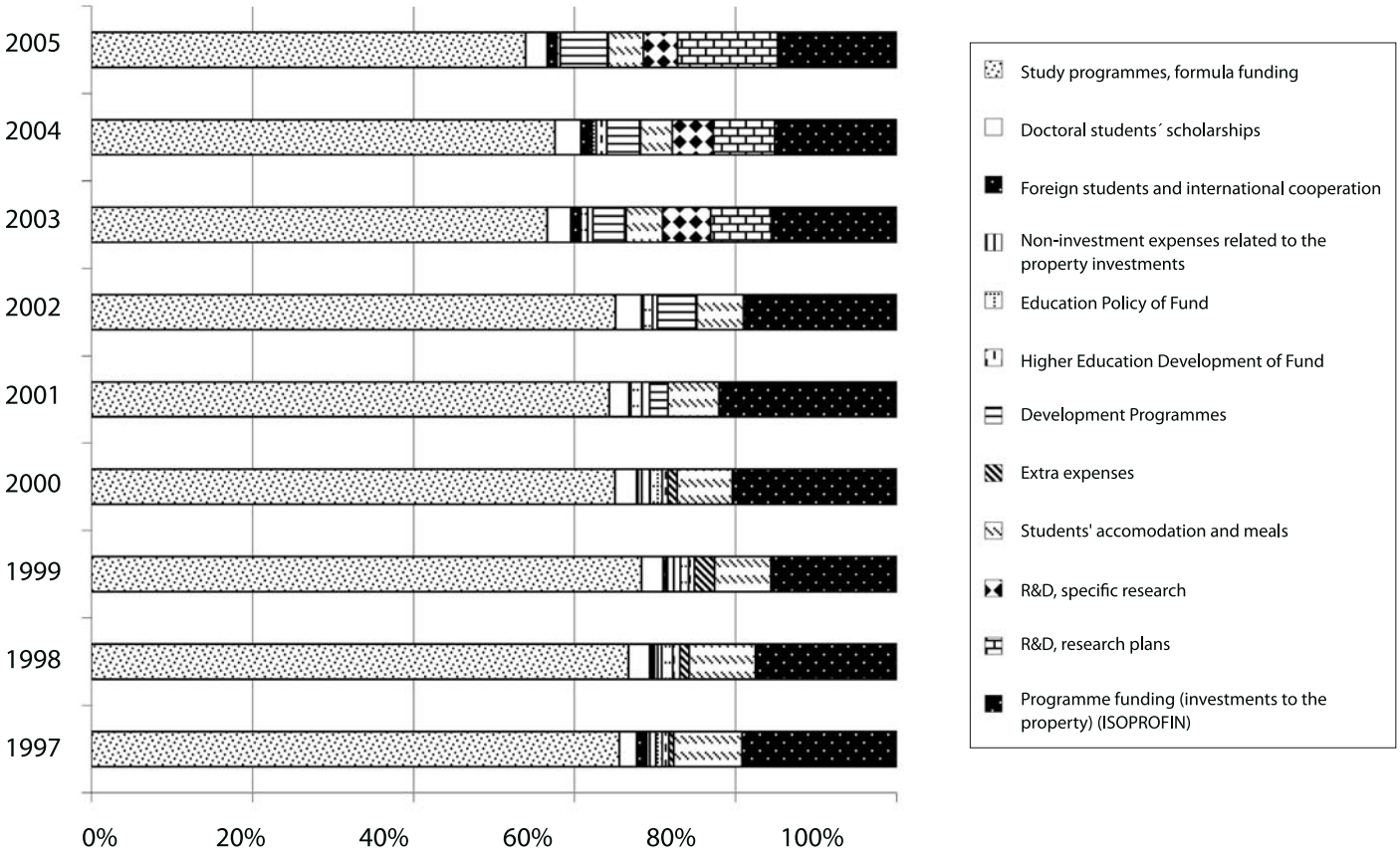
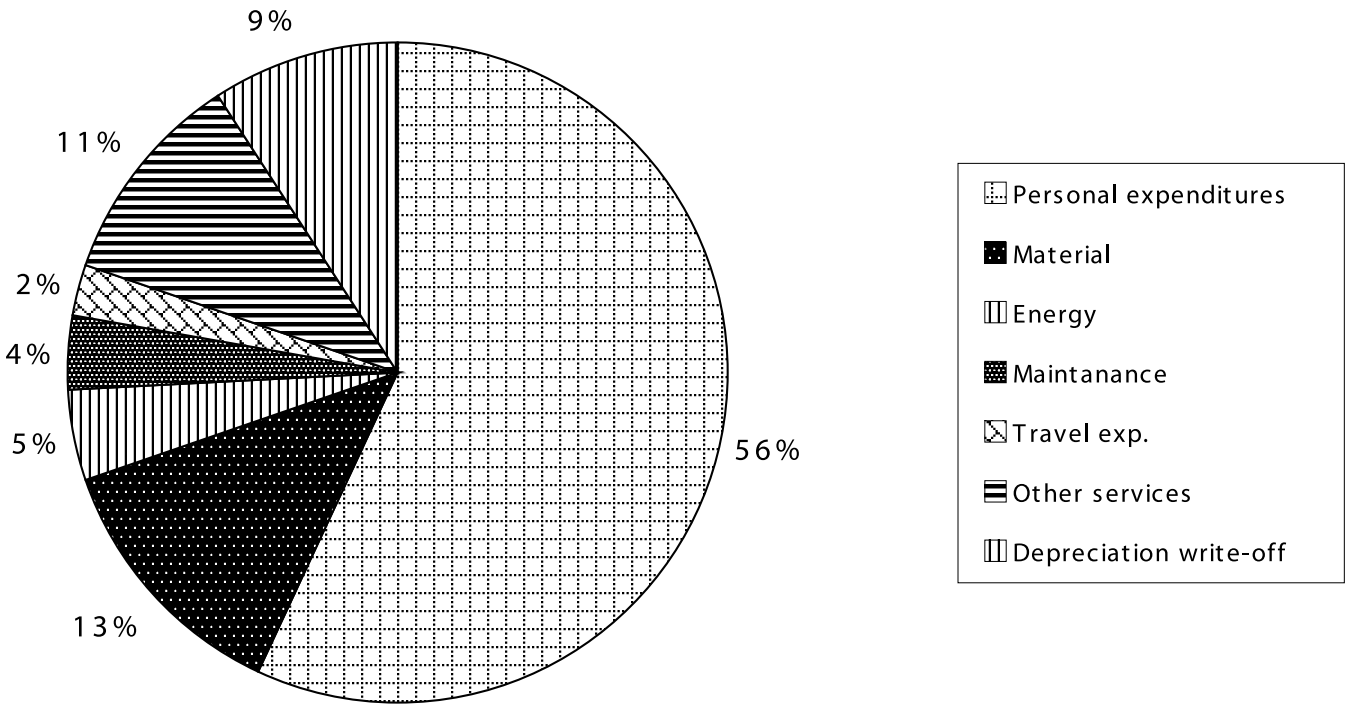
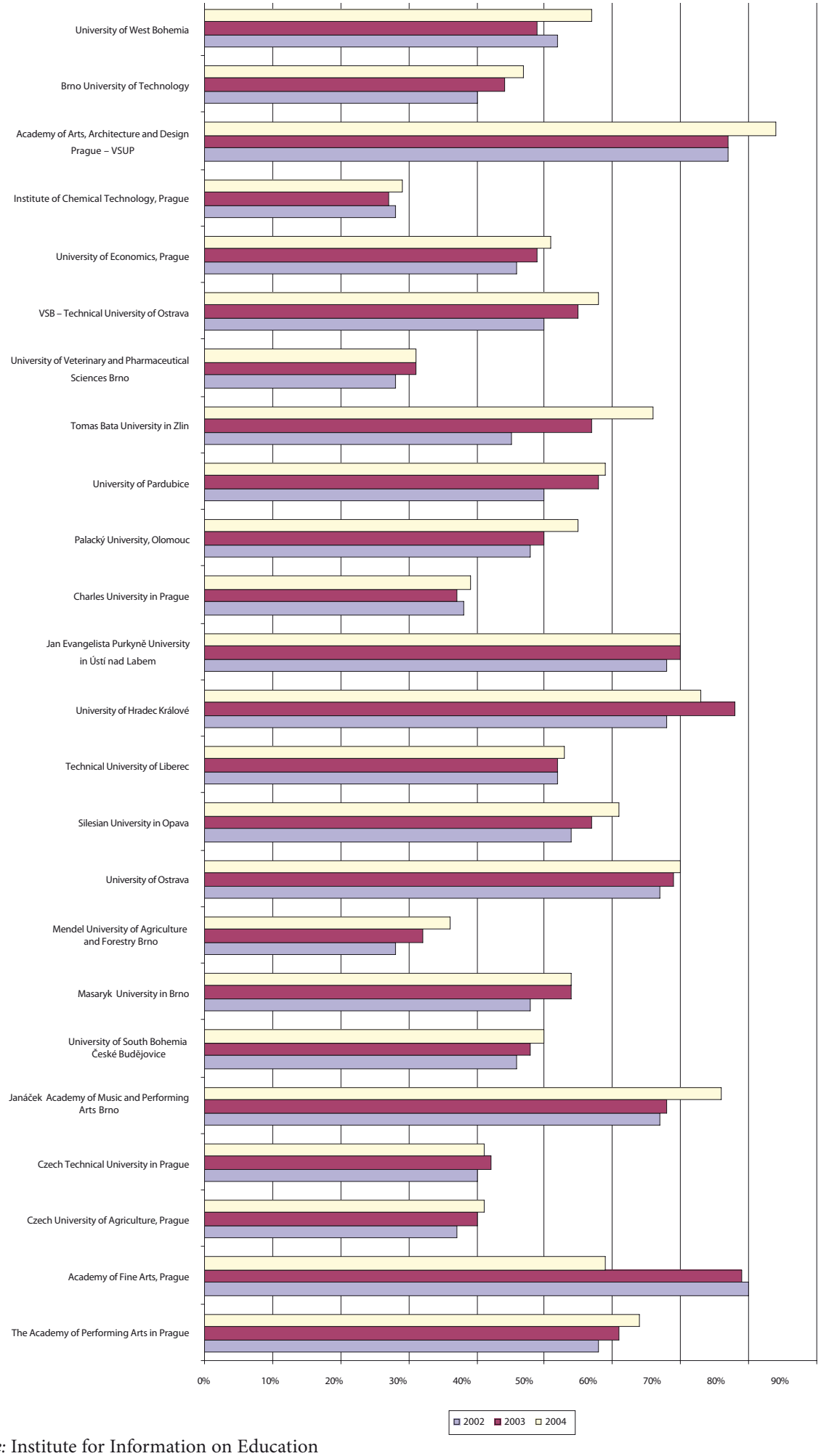


Figure 7.4 Structure of spending of the public HEIs



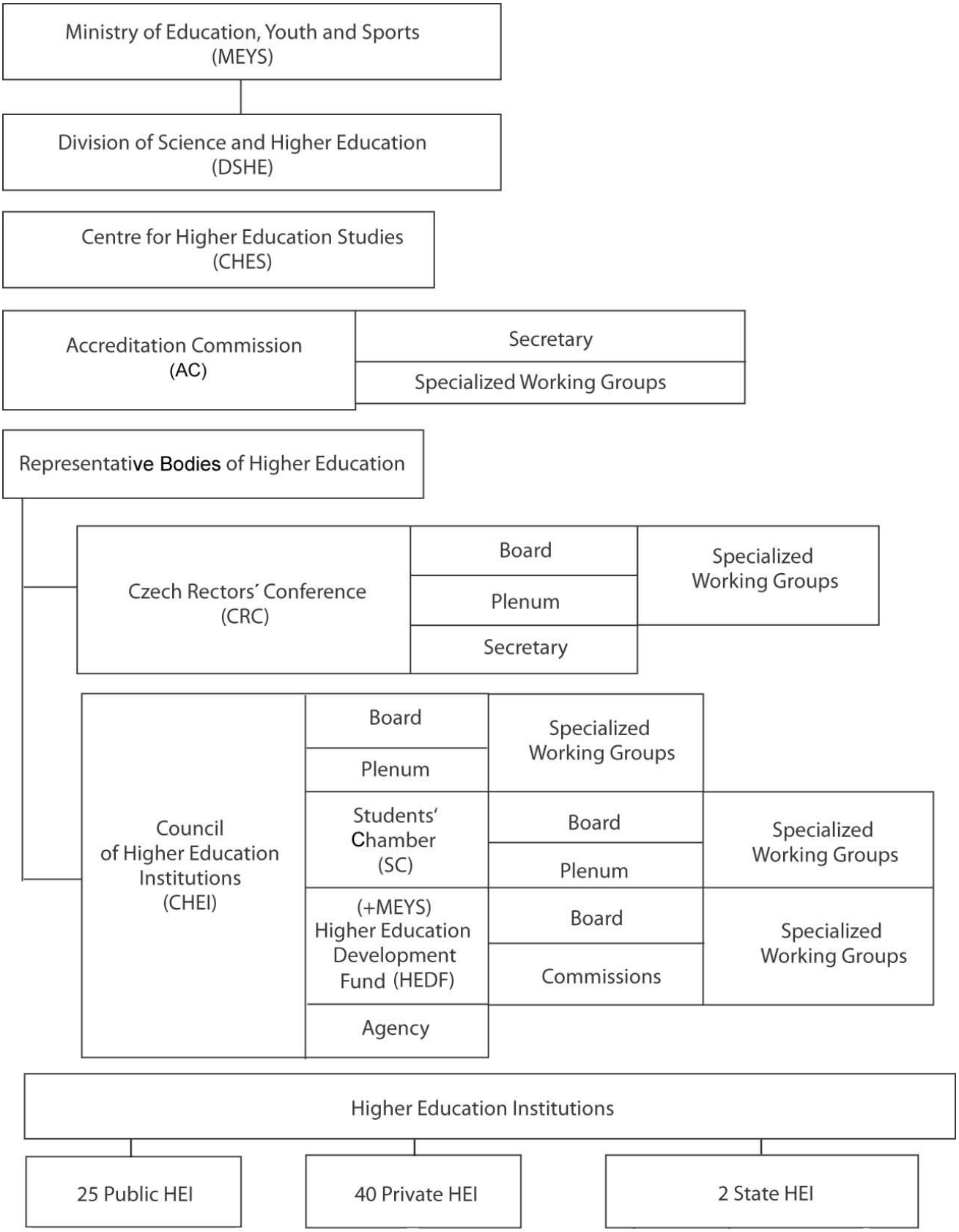
Source: Institute for Information on Education

Figure 7. 5 The share of the grant for educational activity in total budget of the HEIs, changes in time



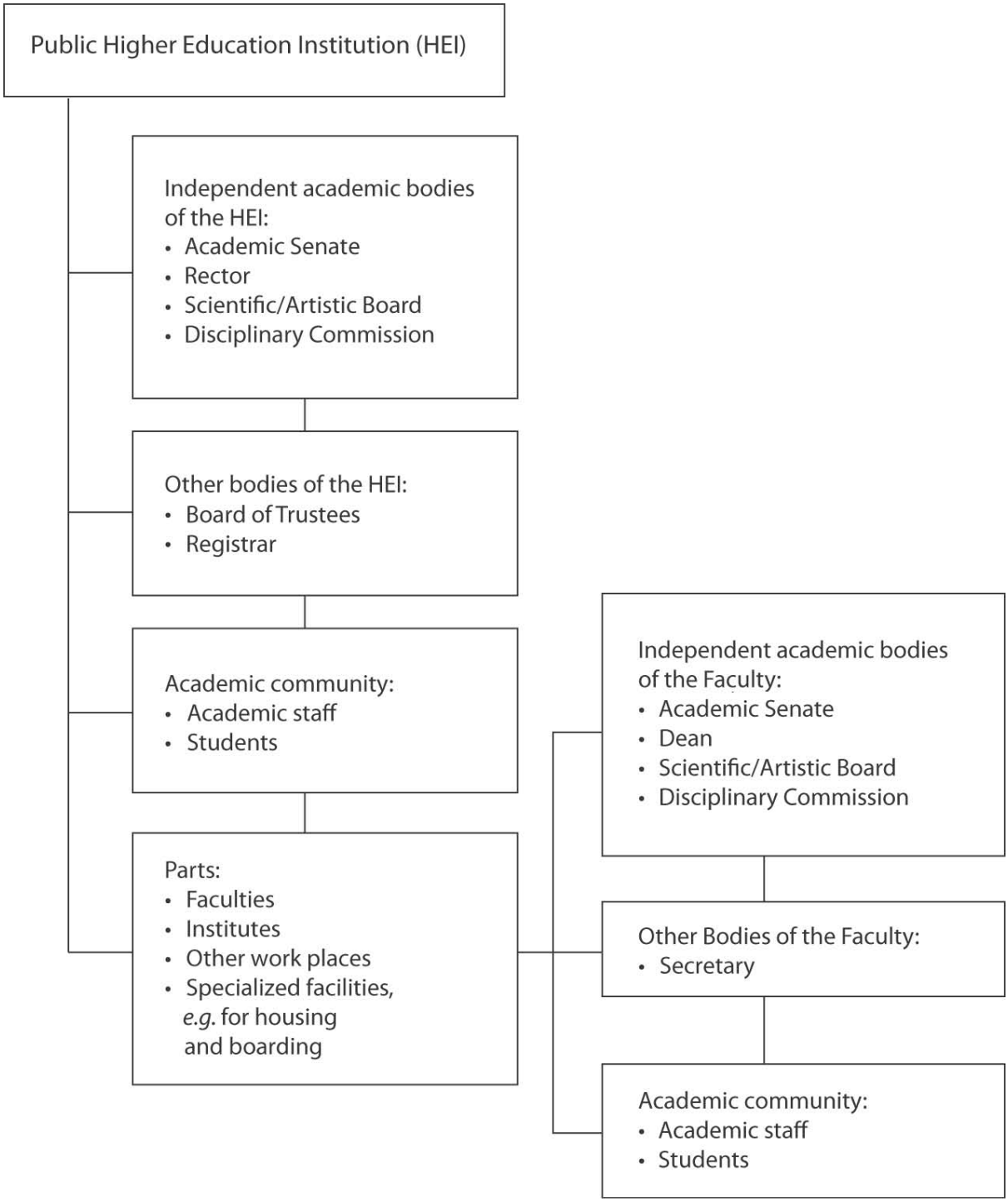
Source: Institute for Information on Education

Figure 8.1 Overview of the main institutions connected with higher education



Source: Münsterová, E., Baštová, J., Vlk, A. 2002

Figure 8.2 Internal structure of a Czech public higher education institution



Source: Münsterová, E., Baštová, J., Vlk, A. 2002