

Haridus- ja Teadus|ministeerium

OECD THEMATIC REVIEW OF TERTIARY EDUCATION

Country Background Report for Estonia

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ESTONIAN HIGHER EDUCATION STRATEGY, 2006–2015

QUALITY AGREEMENT

PREFACE

The Report was prepared for the OECD as an input to the Thematic Review of Tertiary Education. The document is set up based on the guidelines the OECD provided to all participating countries. The opinions expressed are not necessarily those of the national authority.

The preparation work was steered by the national advisory group lead by Jaan Kõrgesaar, the Head of the Higher Education Department. Other members of the advisory group were Mart Laidmets (the Secretary General of the Estonian Rectors' Conference), Tiina Kukkes (representative of the Professional Higher Education Institutions' Rectors' Conference), Marjaliisa Alop (representative of the Estonian Students Federation) and Eve Tõnisson (Analyst from the Analysis Department). The National Coordinator and editor of the report is Heli Aru.

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EXECUTIVE SUMMARY

After regaining independent statehood, the first 15 years of developments in the Estonian higher education system have been characterized by strong deregulation and fast expansion. Although not all the reforms undertaken have been implemented successfully, the scope of changes - from a strongly state-controlled system towards democratic and market driven decision-making in highly autonomous institutions - is remarkable. It should be acknowledged that during these years of reforms, the changes that occurred were often bottom-up – institutional practice and regulations were translated into national legislation only later, not the other way around. And although there has been strong civic engagement in planning educational change, a number of designed plans have failed or ended up with a “no change” compromise.

Historically, education and especially higher education has been highly regarded in Estonia as it implied a route to a better life and higher social standing. The rapid expansion of the student body and the number of new higher education providers have somewhat shaken the reputation of the system, but the general perception has nevertheless remained rather favourable. In political terms, higher education has received somewhat less attention in comparison with general and vocational education, but access issues and topics such as PhD training, and science and technology fields, are the subjects of government focus. Additional pressure for prioritising higher education and research and innovation has come from the opening of the EU labour market. Gradually, the understanding of a greater role for science and innovation in shaping the country’s future is becoming more widespread, although to the great disappointment of higher education sector leaders this is not always demonstrated in funding decisions.

Summing up the main developments during the last 15 years we would indicate the following.

Major policy developments in three phases

1989-1995 – Breaking free from the Soviet system and building up a new legal framework

- Instilling democratic principles and processes throughout the universities, removing the courses of Marxism-Leninism, History of the Communist Party of the Soviet Union and military training from the content of study. As a result, 5-year university studies were restructured into 4-5 year leading to a specialist qualification. In parallel, 2-year Master’s and 4-year doctorate were introduced, thus lengthening the nominal 9 years of researcher training (diploma study of 5 years plus 4 years for a candidate degree) into 10-11 years (specialist qualification - 4-5, Master's - 2, doctorate - 4 years). Although the initial idea was immediately transferring to the Anglo-American model in the beginning of 90’s it was not successful effort due to the grave disagreements within academic circle.
- The legal framework for higher education, quality control and accreditation remained the subject of debate without any firm decision being made in legislation up to 1995, due to scant capacity for leading the process on a national level and conflicts of interest between different stakeholders (Kalm, 2004). In 1995, the University Act was passed in the Parliament, granting broad university autonomy - free and democratic election of rector and deans, the right to possess assets and buildings, to contract a loan, to determine the wage level of employees, to decide upon the total number of students admitted and to specify the rate of fees for services offered. The University Act provided the basis for the adoption of the government decree “The Standard of Higher Education” (adopted in 1996), which is a fundamental regulation in granting education licences and accreditation. The decree introduced a student workload-based, accumulative credit point system. Similarly to Scandinavian countries, one credit point corresponds to 40 hours of study performed by a student in a week.

- The opportunities of a market economy, self-interests, and the aspiration to provide alternative tuition to conservative state institutions, were the reasons for the initial emergence of private higher education institutions at the beginning of the 1990s. Although the Private Educational Institutions Act created the legal basis for their activities only in 1998, this was the period when the more prominent private institutions started their activities and when they enjoyed their highest reputation.
- The integration with universities of separate research institutes, previously under the former Academy of Sciences, and reforming the Academy into a honorary membership society. The ideology and design of these changes were agreed quite early in 90's, although the actual implementation fell to the end of the decade. During the preparation of the reform, international research evaluations played a significant role as they provided feedback on the actual quality level of research groups and analysed the proposed measures for increasing the efficiency and quality of the system. One of the great advantages of Estonia in comparison to many CEE countries has been building of state funding system for R&D on the open competition principles from the very beginning.

1996-1999 - Expansion of the higher education sector

- Due to the liberal policies introduced regarding the opening of new study (for public universities and private institutions alike), and allowing private institutions, the provision expanded rapidly – on average, the increase in admitted students per academic year was 18%. In absolute numbers, the increase was concentrated in the university sector – the number of admitted students almost doubled, from 5465 (1996/97) to 10219 (1999/00). In relative terms, the biggest increases in admission were in private universities (336%) and state VET schools (286%). It can be said that these expansion decisions were seldom backed with systematically lead and necessary investments into human and physical infrastructure.
- Expansion did not occur only in the private sector but also in the publicly funded domain – by introducing higher education in selected state vocational education schools in areas where there was limited or no provision at all on a professional higher education level. At the same time, the University of Tartu started its systematic regionalization activities by establishing colleges in towns like Pärnu (Western Estonia) and Narva (Northeast Estonia). Soon other public universities followed this example. Expansion in the university sector (both public and private) was largely carried out based on private money, through charging tuition fees.
- With the increased provision more need for quality control was perceived, and finally a separate agency - the Accreditation Centre - was established in 1996 for administrating the system on behalf of the ministry. Initially, regulations were somewhat different for institutions depending on their legal status. The biggest difference was that while state funded institutions (public universities, state owned professional higher education institutions and VET schools) had the right to award state recognized diplomas (as the quality of these programs was to some extent “controlled”) without accreditation, the private institutions had to pass the accreditation procedure. This was later changed and now all (regardless of the legal status of the HEI) need to pass external assessment for state recognition (amendment from 2003).
- In 1998, the Professional Higher Education Institutions Act was passed in the Parliament thereby completing the legislative basis and endorsing the binary structure of the sector.
- Throughout the 1990s, “learning from the West” was considered the way to success. Academic and administrative staff with direct experience of HE or research in western *academia*, and returnees from the West, was among the most consistent advocates for further reforms (Kalm, 2004). International cooperation was especially important in reforming university management and curriculum development. From the early 90s, a number of foreign

scholars contributed to the development initiatives, financed by countries such as Sweden, Finland, Germany, Denmark, France, Turkey, Japan, USA, and many others. Estonian participation since 1998 in the EU on education such as Socrates and Leonardo da Vinci has had considerable impact.

2000-2004 – The next wave of reforms: higher education reform plan 2002

- By the end of the 90s there was quite a large consensus developed amongst various stakeholders that developments in the sector were not entirely in accordance with the expectations of the public at large – the sector had grown too quickly and not in the areas most urgently needed for the national economy (very few new programs were connected with the high-skilled industry). The system as a whole was too turbid and the perception was that there was too much competition between institutions for students and too little for quality. An additional layer for reform efforts came from the inter-governmental initiative for establishing the European Higher Education Area. As a result, the Cabinet approved the first higher education reform plan in 2000, and the activities of the Ministry for the following years were mostly guided by this document.
- Following the Bologna Declaration ideology, two-tier were introduced (2002/03) for specialist qualification. The changes were adopted through the University Act, and as such were compulsory for all universities to follow. During the preparation of the changes regular meetings of the vice-rectors from public universities were held with the purpose of agreeing on the main principles of a new curriculum structure. There were intentions to design new in such a way as to enable a change of specialization within the university as well as between institutions. Other steps related to the “Bologna agenda” were approving the legislation for the Diploma Supplement (2003), introducing state funded mobility schemes for students and young faculty members (2003), a decree on the correspondence of qualifications awarded under different qualification systems (2004), and legalising the basis for recognition of foreign qualifications (2005).
- A major change in funding principles was carried out (2002) when, instead of the state funding the intake of students per programme (by distributing student study places!), a transfer was made towards a more general approach – agreeing on a national level on the number of graduates in a broader study field. Through this change, an additional stimulus for creating new study in institutions was removed.
- Throughout these years, the equal access issue to higher education has not been high on the political agenda since the expansion of the sector, based on private money, has permitted the needs and interests of different groups to be accommodated. Due to the perception of open access, no serious public interest has been directed towards assessment of how well the current system supports equal access in reality. An effort towards a means-tested study allowance system was made in 2002-2003 while preparing the Study Allowances and Loans Act (2004) but due to the severe political disagreements in the parliament the idea was abandoned. Provision of tuition-free study places for the best students, together with a state guaranteed study loan system, is still considered to be the most acceptable instrument for creating equal study opportunities.
- It is obvious that with such a rapid expansion of the system, the quality of tuition varies considerably between, and even within, institutions. The reputation of the private sector was even further damaged by the financial mismanagement of the once-prestigious private university, *Concordia*, which ended in bankruptcy (court decision in 2006, but the takeover of students by another private university - Audentes University - in 2003), and the low quality of instruction concluding the activities of several small private institutions. Reflecting these experiences, the necessary amendments were made to the Private Higher Education

Institutions Act in 2003 with regard to requirements for financial management and share capital.

- In 2004, a new commission was formed to formulate the Estonian higher education strategy for 2006-2015, regarding financing and quality assurance in the light of the Lisbon strategy and the national strategy for research and development. After two years of work by the special task force the strategy was approved in the Parliament in November 2006.

Main developments in figures

Student body

- During the 15 years, the number of students has increased 2.7 times – from 25 483 in 1994/95 to 68 287 in 2005/06. The boost has taken place due to the expansion in the numbers of students who pay for their studies directly via tuition fees, and the number of state commissioned student places has increased 1.4 times during 1994-2005. The growth has been mostly concentrated in areas such as business, law, media, humanities and arts.
- The gender gap between male and female students is growing – in 1993 female students represented 51% of the student body, in 2005 the share has increased to 62%.
- The average age of students has grown considerably - in 2005, the share of “students 26 and over” was 34.1% whereas in 1995 it was only 15.3%.
- The main language of tuition is Estonian, 10% of all students study in Russian and 1.5% in English.
- Provision of higher education has concentrated in two main cities Tallinn and Tartu. In 2005/06, 10% of all students study in the regions (outside the two main cities), mostly following professional higher education.

Institutions

- There has also been a strong increase in the number of institutions providing higher education – from 6 universities in 1990/91 to 39 institutions (among them universities, professional higher education institutions and VET schools). The overall number of institutions is decreasing due to several mergers and closings, but also restructuring within public sector. The highest number of institutions the country has had was in 2001/02 and 2002/03 when the respective figure was 49.
- Until quite recently, “higher education” was understood in Estonia to be traditional academic education. Rapid expansion and several structural reforms – introducing new types of programs – have scattered somewhat the notion of higher education for the public. In Estonia, administrative documents term “professional higher education” is only assigned to the shorter programs oriented directly towards the labour market – internationally referred to as *Fachhochschulen* programs - although, programs for lawyers, engineers or medical personnel is as equally professional training. By 2005/06, 34% of all students studied on the professional higher education track.

Admission

- The general requirement for admission to higher education is secondary education, and institutions have the right to set additional specific requirements. Admission is administered directly by the HEIs.
- Of all the admitted students in the first cycle in 2005/06, 49.9% were graduates from secondary (2004/05) and 4.6% from VET schools.

- Graduates from professional higher education in state institutions are readily accepted for further studies on the Master's level in public universities. 7% out of whole intake for second cycle in public universities were graduates of professional higher education background, in 2005/06.

Funding

- The funding from the public sector to higher education as % of GDP has stayed in the same level since 1995 with a slightly decreasing trend in relative terms. In 2004 the respective number was 1.1%. The private sector accounts for about 1/3 of higher education expenditure. Expenditure per student was 28% of GDP, or 29 138 kroons (the figure is given without the private sector share).
- State funding to higher education in recent years has been calculated in a manner to maintain fee-free study places for at least 50% of the graduates of secondary schools. Allocations to institutions are made in block grants. Investments into infrastructure are decided separately, based on government priorities and negotiations.
- Since 2002/03, the preferred areas for state funding have been science and technology, services and health/welfare, in order to balance out the expansion in social sciences and arts and humanities (these are fields mostly populated by students paying themselves for their studies). In 2005/06, the government allocation to the science and technology fields in the first cycle was 40%. But, generally, there is a feeling that student demand determines the supply for institutions.
- Of the 19 private higher education institutions (universities, professional higher education institutions, VET schools), six had performance-related contracts with the Ministry of Education and Research in 2005/06.

Research and Development

- Quite a low level of R&D investment is characteristic to Estonia – in 2004 only 0.91% of GDP was allocated to this purpose. The investments by business to R&D formed 38% of all expenses, although this share has increased rapidly during last years. In absolute terms the volume has increased 3.5 times between years 1999-2004.
- Public universities are the main beneficiaries of state research funding. Gradually they have increased the share of outside financing, from international and local business sources, for R&D activities. Research revenues of the biggest University of Tartu budget constitute approximately 40%, of which 20% are international projects and grants, in 2005. R&D budget of the second largest research university – Tallinn University of Technology – comprises 24% from the private sector contracts and 16% from international projects.

Quality Assurance

- In the 2005/06 academic year, 16% of all students were enrolled in the programs that had not been passed the accreditation procedures.
- The first round of accreditation (1996-2002) showed that only 15 (3%), out of the 500 assessed, were not accredited, while 100 (25%) were accredited conditionally. All other was granted full accreditation for 7 years.

Labour market

- Higher education has provided people with a sense of security during an era of major economic restructuring. The unemployment rate among people with tertiary education has been constantly the lowest. In 2005 the unemployment rate was 3.8%.

- The transition of young graduates to the labour market has been relatively easy. In general, there are no strong links between the field of graduation and the area of work, with two notable exceptions – 54% of graduates in the teacher training field take up a work in the studied profession, and the number is even higher for medical personnel and social services – 57%.
- The participation rate of adults in the age group 25-64 in lifelong learning is rather low, in 2005 the corresponding figure was 5.9%.

Regional dimension

- There are many organizational units (17) and 5 separate institutions outside Tallinn and Tartu offering study opportunities on the higher education level. Among them are a few that have established a solid basis for sustainable development, but the majority lack critical mass, and need in the coming years to go through mergers or to conclude provision in its current form since student numbers will be decreasing.
- An important development has been the opening of regional study centres for e-learning. In 2005, there were 10 study centres situated either in regional colleges of public universities or in public libraries. The network covers the whole country in a fairly representative way.

Internationalization

- The brain drain is a real issue for Estonia as very few research institutions can offer internationally competitive research environment. Due to the issue of limited funding over the years, infrastructure investments enforcing international cooperation on equal footing have been possible only in a few cases. Hence, in many institutions or subunits academic culture could be described as inward looking. It is not rare to notice that there is a tendency for a pressure to increase fragmentation and some resistance to international dimension “at home”.
- The share of foreign students is rather low - in the 2004/05 academic year it was 1.3% of the whole student population. The biggest number comes from Finland. There are initiatives, amongst both private and public universities, to attract more students from South East Asia.
- Participation in the EU Erasmus programme has expanded rapidly, almost twice for outgoing students and four times for incoming students, between 1999/00 and 2004/05. The numbers have also increased rapidly for the exchange of academic staff.

Ongoing Discussions

There are debates raised regarding many higher education issues. For the last years the more substantial topics raised have been

- Discussion over the role of higher education in society – whether it is mostly preparation for a professional life or whether it entails broader values that are needed in life;
- Discussion over the range of Estonian-taught programs in the context of maintaining and developing Estonian as a language of science;
- Discussion over the introduction of partial tuition fees for all students;
- Discussion over the social benefits system for students: conditions for allocating grants, combining study and work;
- Discussion over the introduction of Bologna-compatible two-tier, and the value of new Bachelor qualifications for the labour market;

- Antagonism between the universities from Tallinn and Tartu regarding many issues. The debate intensified due to the decision by the parliament in 2005 to rename Tallinn Pedagogical University as Tallinn University (TLU);
- Limiting the possibility for students to change their chosen study field while studying in a government-commissioned study place (amendment to the law in 2003).

Future Policy Developments

On November 8, 2006 the Estonian Parliament approved a new higher education strategy document for 2006-2015. The strategy foresees three main challenges for the sector in coming years:

- To be prepared for a decrease in the student population. Due to the downward demographic trend, the number of potential students starting their studies in higher education will diminish by almost 60% between 2004 and 2016. Consequently, this decrease will have a very negative impact on the labour market over the years;
- There is a clear need to strengthen the international dimension of HEI-s in many respects, including by recruiting academic staff internationally and attracting students from abroad;
- Additional funding is of vital importance for the sustainability of the sector in a globalized world, either for infrastructure investment or competitive salary levels of academic personnel.

Measures foreseen in the new strategy paper include:

- Clarification of the profiles of higher education institutions by bringing the decision regarding study fields and qualification levels to the Government. Based on the strategy document, all institutions need to undertake the procedure during the next three years to confirm their licences for a certain profile;
- Focus on quality issues by introducing more quality-specific criteria for opening , adopting the requirements for academic positions and degrees. Changes will be adopted based on the university quality agreement, which is a set of criteria adopted by the academic community. The right of provision of higher education is reserved only for HEIs, not for other institutions (such as VET schools).
- As a result of the government decision regarding the profiles of HEIs, the state system for the recognition of diplomas will be changed. At the moment, recognition of diplomas is dependent on the accreditation results, but this is a very complicated system to run, and there is a high rigidity in the system that inhibits establishing new programs and working internationally.
- There will be many actions connected with the so-called Bologna agenda – introducing learning outcomes, joint degrees, supporting mobility schemes, LLL and APEL. In order to tackle the complexity of all issues there is a special strategic document dealing with the internationalisation agenda. Concrete targets regarding the flow of mobility will be set;
- There will be a new scheme developed for steering the process with the objective of a transfer to 3-year contracts. Special criteria will be agreed for assessing HEI performance. State funding for 50% of high school graduates and 10% of VET graduates for HE studies is to be continued;
- More attention should be paid and funds allocated on the level of the basic school to the career services system and hobby education, in order to better inform young people about prospects in different professions. In Estonia, this has been historically a weakly coordinated area, and as a result there has been a tendency that graduates of upper secondary schools tend

to continue their studies on the higher education level in "softer areas", not in science and technology related fields.

CHAPTER 1. THE NATIONAL CONTEXT OF TERTIARY EDUCATION

1.1. Economic, social and cultural background

1. Estonia has a population of 1.35 million people (2004), and a territory of 45 227 square km with a population density of 30 people per km². Estonia is a green land, forests cover 50.5% of the country (22 846 square km). Largest ethnic groups are Estonians (68%), Russians (26%), Ukrainians (2%), Belarussians (1%) and Finns (1%). The country is divided into 15 counties. The proportion of the urban population in 2004 was 69.3%.

2. Freedoms of conscience, religion and thought are valid in Estonia, no state church exists. But since the Reformation movement in the 16th century, the Lutheran church has played the leading role in Estonia. Other larger active confessions are: Russian Orthodox, Greek Orthodox, Baptist, Methodist and Roman Catholic.

3. Estonia restored its sovereignty from the Soviet Union in August 1991. The statehood is considered to be successor of the Republic of Estonia of 1918-1940. Freedom was regained by way of the "Singing Revolution" at the end of the 1980s, which was marked by numerous peaceful public demonstrations. Estonia became a NATO member state on 29 March 2004 and a European Union member state on 1 May 2004. Public support for the EU has been increasing after enlargement, and in 2005 it remained close to 70%. Due to the Soviet legacy, the relationship between Estonia and its biggest neighbour Russia has remained tense.

4. The official language in Estonia is Estonian, which belongs to the Finno-Ugric language family and is closely related to Finnish. Along with Finnish, English, Russian and German are also widely spoken and understood. The major minority language is Russian with its speakers making up about 30% of the population. Russian-language education is provided in public and also in private schools at all levels: in pre-school, basic and secondary schools, as well as in vocational schools and higher education institutions. About 24% of all Estonian school children attend Russian-language basic and secondary schools. 10% of higher education students study in Russian. Since the mid-1990s the government has gradually developed a policy framework to improve language teaching for all relevant population groups.

5. The parliament is called *Riigikogu* and is elected by proportional representation. It has 101 members and is elected for a period of four years. The current coalition government has been in office since April 2005 and is led by Prime Minister Andrus Ansip (Estonian Reform Party), with the other members of the coalition being the Estonian Centre Party and the People's Union. Participation in the parliamentary elections has been gradually decreasing, with a 58% turnout in 2003. The average duration of the coalition governments since the beginning of the 1990s has been approximately 2 years.

6. Estonia has in a short time caught up with advanced countries in terms of information and communication technology (ICT) infrastructure and in the use of ICT in society. Attitudes favouring ICT, innovative thinking and progressive ICT entrepreneurship, have developed a strong technological infrastructure in Estonia. Surveys show that 54% of 6-74 year old Estonians are using the Internet, which means that the community using the Internet is now 648 000 people. There are over 700 Public Internet Access Points in Estonia, 51 per 100 000 people (one of the highest proportions in Europe). All Estonian schools are connected to the Internet. 72 per cent of Estonian Internet users conduct their everyday banking via the Internet. Internet banking has become a common channel through which people perform transfers, pay for services, pay taxes, communicate with the Taxation Board, etc. The high level of Internet use in Estonia is largely correlated to the early adoption of the Internet in the research and higher education sector and the existence of a developed telecommunications network.

1.2. General macroeconomic development

7. GDP growth of 9.8 per cent in 2005 places Estonia among the fastest growing economies in the region. The economy has grown by an average of close to 6 per cent a year since 1995. The average economic growth for the EU25 during the same period has been 2.3%, the Estonian GDP per capita, taking into account purchasing power parity, has increased from an initial one-third to one-half of the EU average. If the present development continues, by 2010 we will be at about 62–63% of the EU average. The fastest economic growth is in the fields of manufacturing industry, construction, hotels and restaurants, and financial intermediation.

8. Successive governments have adhered to the principles of Estonia's economic success: a balanced state budget, a stable convertible currency pegged to the Euro (one euro corresponding 15.6466 Estonian kroons, before 1 January 1999 to the Deutsche Mark) and liberal trade and investment laws. The Estonian monetary system is based on currency board regulation.

9. Estonia's long-serving system of low, flat rate taxes, in particular, the 23 per cent income tax, makes for a simple system. To encourage companies to expand their business all reinvested profits have been exempted of corporate income tax. However, any redistributed profits, for example, profits paid for dividends, are taxed at 23%. The system of VAT is set at 18 per cent. Employers pay a social and health insurance tax, which is 33 per cent of the gross wage.

10. Around 80 per cent of Estonia's total trade was with EU member countries in 2004. Estonia's main trade partners are Finland, Sweden and Germany. Estonia's major exports are machinery and equipment, wood and wood products, textiles, agricultural and food products. Estonia's main imports are machinery and appliances, transport equipment, metals and agricultural and food products.

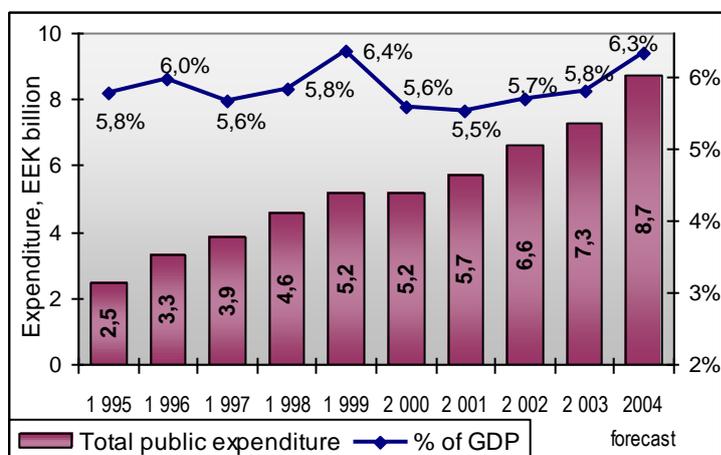
11. In 2005, the government surplus comprised approximately 1.8% of the GDP. Total government expenditure as a percentage of GDP was 37.4% in 2005. The consumer price index for 2005 was 4.1 (2004 – 3.1).

12. The purchasing power of consumers has improved over the years, owing to the increase in average salaries and pensions. This, in turn, has stimulated the growth of private consumption, whereas at the same time it has had a negative impact on the external balance through import growth. The contribution of net export to economic growth has been negative for a number of years. The current account deficit is 10.5% as a ratio of GDP (12.7% in 2004).

13. One of the biggest concerns in the rapid economic development has been the volume of consumer credit that is growing rapidly, especially in regards to mortgage loans. Household indebtedness, which comprised 57% of the real disposable income at the end of March 2006, has shot up by more than 15 percentage points within the past year. The debt level continues to be low in comparison to the more advanced economies of Europe (at the end of 2005 the ratio of debt to real disposable income amounted to an estimated 225% in Denmark, 150% in UK, 130% in Sweden and 89.5% in Finland). As for indebtedness growth, however, Estonia is in the forefront of European countries. The stock of housing loans has increased 65% within the last year, thereby raising the share of households with a long-term loan commitment to 17.5%. A substantial role in the housing loan market activity has been played by low interest rates.

14. Expenditure on education from the public sector budget has been under continuous attention in most of the coalition government agreements that constitute the bases of coalition government and public budget allocation. Financing in absolute figures has been increasing. As a proportion of GDP, the financing has increased in the past 5 years from 5.6 % of GDP to 5.8 % in 2003 and forecast to be 6.3% in 2004. The share in GDP of expenditure on higher education from the public budget in 2004 was 1.1 % (in comparison, the average for OECD countries in 2001 was 1.3%).

Figure 1.1. Total public expenditure on education in billions of Estonian kroons and as % of GDP



Source: Estonian Ministry of Education and Research, 2005

1.3. Broad population trends

15. The Estonian population has constantly declined, starting at the beginning of the 1990s. If in the beginning the primary reason was migration, then during the last few years the age structure of the population has started to change. The regaining of independence can be considered as the starting point for the ageing trend of the population through the constant increase in the number of those 65 years old or older. After the years of the “Singing Revolution”, the birth rate has dropped below the population renewal rate (in 2005 17 316 deaths and 14 350 births), total fertility rate being on the level of 1.5. The decrease in the number of children and an increase in life expectancy have inevitably raised the number of older people in the population. If the percentage of those over 65 was 11.5% in 1990, then today they form 16.2%, and by 2050 it will increase to 27% of the population.

Table 1.1. Resident population as of January 1, 1989 to 2006

Year	Resident population at the beginning of year
1989	1 565.7
1991	1 570.5
1999	1 379.2
2000	1 372.1
2001	1 366.9
2002	1 361.2
2003	1 356.0
2004	1 351.0
2005	1 347.5
2006*	1 344.0

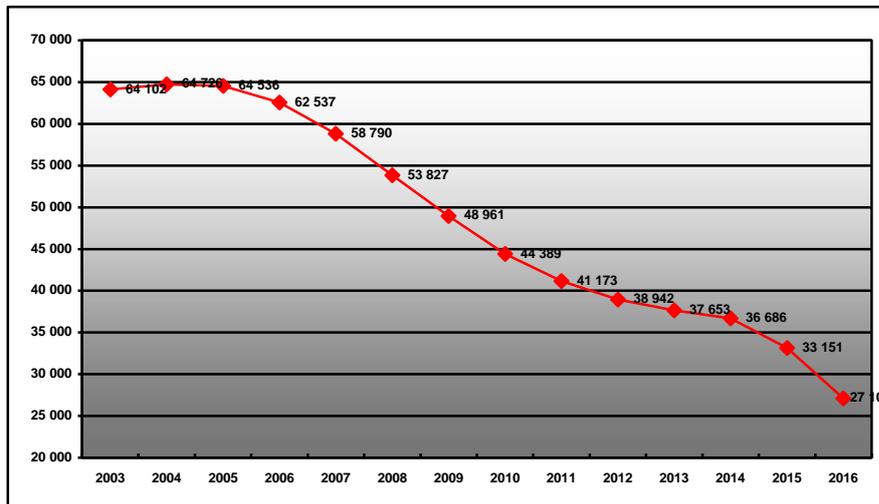
*Estimate

Source: Statistical Office of Estonia

16. According to current forecasts (from the European Commission and the Ministry of Finance of Estonia), the Estonian population will decrease approximately 17–18% within 50 years. The forecast assumes that the birth rate will increase compared to the current level, but will not increase sufficiently to guarantee the 2.1 children per woman necessary to maintain the population.

17. As a result of the low birth rate and an increase in the average life expectancy, the ratio of working people and pensioners will worsen (the dependency ratio of the pension system). In 1992, there were 2 working people per pensioner in Estonia. Currently the dependency ratio has dropped to 1.8. According to the forecasts, in 2050 there will be only 1.27 working people per pensioner. These developments put great pressure on the social security system, and therefore, it is necessary to implement measures to guarantee the sustainability of the pension and health insurance system.

Figure 1.2. Number of 16-18 years olds, 2003-2016



Source: Centre for Policy Studies Praxis, 2005

1.4. Main labour market trends

18. Changes in employment broadly paralleled the changes since the restoration of independence. Total employment fell by about 200 000 between 1989 and 1997, with the greatest part of the fall coming in the period up to 1993. Virtually every industrial sector experienced a decline, with the largest absolute reduction coming in agriculture where the 1997 employment of about 53 000 was barely one-third of the 1989 figure. Manufacturing fell from about 215 000 to about 144 000. Other sectors to show large relative reductions were mining and fishing. There were some growing sectors, though still relatively small in absolute terms. These tended to be where new activities were required by the market economy such as trade, and the financial sector.

19. By 2004, the employment rate had reached 64.4 %, i.e. 586.3 thousands people aged 15–64 were employed. This has been a significant progress over the last 5 years. The unemployment trend has also been favourable – in 2005 the unemployment rate decreased to 7.9 %, achieving the lowest level in the last seven years. Estonia has already reached two “Lisbon goals” in regard to the labour market – in 2004 the employment rate for women was 60% and for older people 52.4%.

20. A serious problem is structural unemployment. The long-term unemployed constitute 53% of all the unemployed (or 4.2% of the workforce) (Ministry of Social Affairs, 2006). In 2005, 56% of all unemployed were non-Estonians who faced difficulties in their job search due to their limited Estonian proficiency. Unemployment among men is slightly higher than among women (8.8% vs. 7.1% in 2005). The average educational level of the unemployed is significantly lower than that of the employed. The unemployment rate among people with tertiary qualifications is significantly lower – among the 26-64 year olds, the share of unemployment was 4.8%, with the corresponding number for EU-25 being 4.2% (2002 data). The age group that has had the biggest problems among people with higher education qualifications is the 45-54 group, with their share of the unemployment fluctuating around 5-8.5% between 1997-2004 (Statistical Office, 2006). A significant drop was witnessed in the

unemployment rate among the 15-24 year olds – from 21% to 15.9% in 2005, in comparison to the previous year, but is still problematically high.

21. Participation in life-long learning is also relatively low – according to the data from the 2004 EU Labour Force Survey, only 6.7% of the population aged 25–64 participated in some type of training in the previous four weeks. The corresponding figure for the European Union countries is 9.9%, on average. The priority of the Ministry of Social Affairs is to strengthen active labour market measures based on the needs of different risk groups and to increase the flexibility of labour market services, in order to bring risk groups into employment (e.g. introducing case management principles, working training, tailor-made services for disabled people, etc).

22. Labour productivity in Estonia in 2004 constituted 50.6% of the EU average. Productivity growth rate per employee has been decreasing - in 2005 it was 7.5%. In recent years, the growth of real wages has surpassed the growth of productivity. The main reasons for the low productivity are considered to be limited investments in infrastructure due to restricted financial resources, deficiencies in management practices and logistics, scarcity of new ideas and the insufficient skill level of employees. In this regard, EU structural funds will play a major role in helping to facilitate a transfer to a technology-intensive economy in the coming years.

CHAPTER 2. OVERALL DESCRIPTION OF THE TERTIARY EDUCATION SYSTEM

2.1. Introduction

18. The Estonian higher education system can be described as relatively heterogeneous. The reason for this is based on the concept of limited state administration of economic affairs - the dominant paradigm after the regaining of independence in 1991. In broad terms, state intervention was minimised as much as possible as a reaction against the strong state involvement during the Soviet period. As a result, the major developments during the last 15 years in higher education that have designed the face of Estonian higher education today are often the result of decisions made at institutional level and limited ministerial interference. It is hard to assess in retrospect whether the abandonment of expedient decisions on the ministerial level regarding the opening of new study was altogether well analysed. However, as a result of this decision there has been enormous growth in the provision of so-called soft areas (social sciences, humanities) that enrol 51% of all students (2005/06). The growth has been mainly due to the possibility of introducing tuition fees - in 2005/06 54% of all students paid for their studies themselves. The growth in absolute numbers has concentrated in the autonomous public universities that have enjoyed most the high interest on behalf of learners. The face of the private sector institutions is less homogeneous, since here the situation of the well-perceived and accomplished institutions is aggravated by the high number of private institutions that are relatively recently established and under the critical mass. To the dissatisfaction of employers, the specialities of technology and science are not very popular among young people. Even further, it can be said that professional higher education, in general, is still less attractive to student candidates in comparison to university studies. One of the reasons for this can be the relatively recent emergence of the professional higher education sector. It can be said that in comparison to universities PHEI-s are just establishing their reputation for the potential students.

19. There are three types of educational institutions that provide of higher education: universities, professional higher education institutions and vocational education schools.

- Universities (*ülikool*) – institution of research, development, study and culture with at all higher education levels in several fields of study;
- Professional Higher Education Institutions (*rakenduskõrgkool*) – educational institutions with of professional higher education and *Magister*-study. The institution may offer secondary vocational .
- Vocational Education Schools (*kutseõppeasutus*) – institutions of secondary vocational. Until 2006, the limitation has been that institutions may offer the professional higher education if they do not provide VET based on basic education.

There are three different legal forms for HEI-s: public, state and private. More information regarding the specific differences in legal rights and responsibilities is provided in Chapter 8. Private institutions can be owned by public limited company or private limited company entered in the commercial register or by a foundation or non-profit association entered into the non-profit associations and foundations register.

20. In the academic year 2005/06 there are 39 institutions that provide HE. Although the number of institutions seems high for a country the size of Estonia, this number has already been reduced due to the increase of quality and financial requirements in the legislation. The highest number of HEIs that the country has had was 49 for the 2001/02 and 2002/03 academic years. The governance of HEIs is under the auspices of the Ministry of Education and Research with three exceptions – The Estonian

National Defence College (Ministry of Defence) and the Public Service Academy¹ (Ministry of Interior Affairs). The Baltic Defence College (situated in Tartu) is operating under the agreement of three Baltic Ministers of Defence and is not part of the formal higher education system.

Table 2.1. Number of institutions and students in 2005/06².

	No. of institutions	No. of students
Public universities	6	42 867
Private universities	5	6467
State professional higher education institutions	8	7142
Private professional higher education institutions	13	7452
State VET schools providing HE	6	4058
Private VET schools providing HE	1	301
Total	39	68 287

Source; MoER, Estonian Educational Information System, 8.11.2005

Subunits of institutions in regions are not considered separately.

21. Within the context of ISCED one needs to acknowledge the existence of qualifications of both “tertiary” and “higher” education. Although intake to old Soviet type polytechnic - ISCED 4 leading to a tertiary qualification - was terminated in 1999/2000, people with these qualifications constitute an important part of the workforce (10.2%). The current system consists only of “higher education” (ISCED 5 and 6).

22. Most of the changes in the last five years are connected with the developments of the European Higher Education Area (reform in the structure of study, establishment of mobility schemes for students and academic staff, introducing the principles for APEL), since Estonia was among the countries that signed the Bologna Declaration in 1999. Differently from many other countries, the Bologna process was seen as a continuation of the earlier reform developments, as an opportunity to increase competitiveness internationally (especially regarding the comparable degree structure) and broadening students' choices in terms of national and international mobility. Another major change has been a transfer to the performance based funding model (commissioning the graduates in certain broad study groups instead of financing the intake on a programme basis). More specific information in this regard will be presented in Chapter 7.

23. In order to implement changes in connection to the “Bologna”, a reform plan was approved by the Government on June 2001 - the first of its type. This is especially important to note because earlier policy changes were prepared by task forces that focused mostly on legislation and did not tackle the overall policy context in a comprehensive manner. This was an initial step in this direction. The new development plan of higher education for 2006-2015 has been in preparation for two years now and was approved by the Government in June 2006.

2.2. Brief overview of the Estonian education system³

25. The Education Act determines basic education (*põhiharidus*) as the minimum level of compulsory general education prescribed by the national standard of education. According to the

¹ The name in English is somewhat misleading - this institution offers mostly professional higher education programs for specialities in the area of state internal security (police, prisons, border guard, rescue, etc).

² This list does not count regional colleges separately, but as structural units under the HEI-s.

³ The formal structure of the Estonian education system is shown in the diagram B1 in appendix.

Education Act, children who are of the age of compulsory school attendance are subject to the obligation to attend school. This requirement applies to children who attain 7 years of age by 1 October of the current year. Pupils are subject to the obligation to attend school until they acquire basic education or attain 17 years of age.

26. Basic education can be obtained on the basis of three different national curricula: national curricula of basic and upper secondary schools; supplementary learning curriculum (pupils with a slight learning disability; 1.4% of basic school pupils study on the basis of this curriculum;) national curriculum for students with a moderate to severe learning disability (0.4% of basic school pupils study on the basis of this curriculum). Each school prepares its curriculum on the basis of the national curriculum. The share of pupils in special schools was 2.9% in 2004/05, and the share of pupils with special needs integrated in mainstream schools – 12.1%. There has been a clear trend in improving integration over the last five years.

27. After satisfactory completion of basic education, pupils in grade 9 are accorded the Basic School Leaving Certificate (*põhikooli lõputunnistus*), and are entitled to continue their education in upper secondary schools (*gümnaasium*) or vocational education institutions (*kutseõppeasutus*). Although an increase in the share of VET students has been on the political agenda for years as a policy goal there are no significant changes in public perception and, hence, in the growth of VET popularity among youth. In 2004/05 the share of basic school graduates that continued their studies on the VET track was 29%, and this number has not changed over the years. In the academic year of 2005/06, admission to state funded places in VET decreased ca 10% in comparison to the previous year. The majority of this decrease can be subscribed to the places of vocational secondary education on the basis of general secondary education.

28. Admission to upper secondary schools (*gümnaasium*) is based on basic school (*põhikool*) graduation results. In Estonia, parents have the right to choose a school for their children, and the choice is not necessarily dependent on the family's place of residence. Schools that are obliged to offer services to an entire town or to the whole country establish additional criteria for admission in order to ensure that the limited number of study places are filled by pupils with the best qualifications to fulfil the requirements of the curriculum. In most cases, supplementary tests are taken in basic subjects or in the subjects of the chosen field, which are followed by interviews with all the pupils. Pupils who have been successful in regional or national subject contests are preferred.

29. The vocational education system is currently undergoing extensive reforms. In addition to the one qualification level offered so far, new qualification levels are introduced. The provision of qualifications is organised in the following form:

- VET on the basis of basic education with a minimum length of 3 years (existing), corresponding to ISCED 3B;
- VET on the basis of general secondary education with a length of at least one year (existing), corresponding ISCED 4B;
- VET programs for people who do not have basic education and who have exceeded the age of compulsory school attendance (opening in 2006/07);
- VET programs based on basic education without acquiring upper secondary education (opening in 2006/07);
- Short-cycle tertiary courses for 2 years with the possibility to transfer to the 3rd year of professional higher education (possibilities in legislation for such already exist, but very few institutions offer them. Also, there is no separate name for these qualifications, yet).

These changes are expected to decrease the number of dropouts in VET schools. Another important policy goal is to ease the transfer from VET to HE by providing one year extra in order to prepare for state examinations. This is a development expected to take place especially in fields like technology. Other major changes implemented in the VET system include merging small VET institutions into bigger consortia (shrinking the number from 86 in 1998 to 68 in 2004, and a decrease in state-owned

schools from 70 to 47) and enlarging the responsibilities of employers on the school councils. Considerable work is being carried out on increasing VET attractiveness through quality improvement, taking full advantage of the recently-opened EU structural funds.

30. Access to higher education is open to all who have fulfilled the requirements of secondary education.

The following are the grounds for admission, according to the Universities Act and the Institutions of Professional Higher Education Act:

- *Gümnaasiumi lõputunnistus* (Secondary School Leaving Certificate - 12yrs of study) and State Examination Certificate or
- *Lõputunnistus keskhariduse/ põhihariduse baasil kutsekeskhariduse omandamise kohta* (Secondary Vocational School Leaving Certificate) and State Examination Certificate or
- corresponding foreign qualification.

The autonomy of an HEI permits it to decide precise admission requirements, in addition to the results of secondary education studies. Merit determines final acceptance by an HEI. Institutions may select students based on examinations/tests/interviews, the average mark on the leaving certificate or a group of marks for certain subject(s).

2.3. Purposes and goals of the tertiary education system

31. Higher education purposes or goals are not explicitly given in any legislative acts. However, the draft document for the national higher education strategy listed the role and goals of higher education as following:

30.1. The social and economic development of modern society is greatly determined by its innovative capability and its ability to cope with the risks of a globalising world. Central to such a society are free and educated individuals, with the organisation of society and the economy being knowledge-based and proceeding from the principles of human rights and social justice.

30.2. A precondition for building a knowledge-based society is a fair and effective educational system, of which a vital and advancing component is higher education. Higher education is developing into a universal educational level, to which most of the population aspire through either traditional forms or through the ever-increasing and various forms of lifelong learning. There is increasing overlap between the higher education system and the systems of research and development and innovation. .

30.3. The quality of education is a central factor of competition between countries and organisations. For this reason, seeking for the sensible division of labour internationally is unavoidable, especially for small nations. It is in Estonia's interest to offer, in the European higher education space, competitive higher education in all spheres of activity that exist here, and to aspire to an international top level in our main fields of activities.

30.4. Higher education is a motor for societal development, and an innovative educational system is a precondition for the renewal of society. Fair access to quality higher education, according to one's abilities, is a right that must be guaranteed by the public sector. At the same time, it must be kept in mind that higher education is both a public and private benefit.

30.5. The organisation of higher education is becoming increasingly student-centred - the expectations, needs and preferences of students have become factors that substantially affect the higher education system.

32. Based on the Universities Act, the mission of a university is to advance science and academic practices, to create and develop opportunities based on integrated education and research for the acquisition of contemporary higher education, to organise continuing education and to provide education and research services to society. Based on the Institutions of Professional Higher Education Act, the mission is the provision of education programmes, conducting in-service training, applied research and developing the quality of studies. The function of VET schools defined in law is to provide opportunities for students to acquire the knowledge, skills and moral values necessary for life and work. Schools should consider the needs of the society and the labour market in organising vocational, professional and occupational training, and continuing vocational training. Based on the law, there are no differences in the mission specified for VET schools between those that provide higher education and those that do not.

33. Based on the *Concept of Vocational Education and Training*, approved by the government in 1998, higher education programmes were introduced in 8 state-owned VET schools. The policy decision was argued to be based upon the need to keep up with rapid changes in the labour market, and reflected to some extent the rigidity of university policy at that time, broadening regional access to higher education and the limited scope of the specialization of professional higher education institutions. Over the years, this step has been extensively debated, and the political consensus seems to have emerged that the provision of HE programmes has to be clearly the right of HEIs. Two health care training schools that had previously the status of VET schools - *Tartu Tervishoiu Kõrgkool* and *Tallinna Tervishoiu Kõrgkool* – underwent institutional accreditation in 2004. The results of accreditation were positive for both schools to varying degrees, and their legal status was changed in 2005 by a government decision to that of professional higher education institutions. There are some other state VET schools that are in the process of changing their status.

34. Over the years, integration of the HE system has improved but tensions certainly exist between different parts of the sector. The most sensitive part of the discussions concerns the right of VET schools to provide HE programmes (under the new HE development plan this possibility has been made an exception rather than a rule, as already referred to in the previous point), and the right of professional higher education institutions to provide Master's level courses (this is made available in the law but to be decided each time separately by the Government, based on certain criteria). In both these examples, broadening the provision of HE has been seen by the institutions as a marketing tool for attracting new students. So far, the MoER has mostly maintained a conservative position in regards to Master's programmes in PHEIs, as the proposals to introduce new have been focusing on the "softer" areas where there is already a clear oversupply in the market.

2.4. Central policy actors

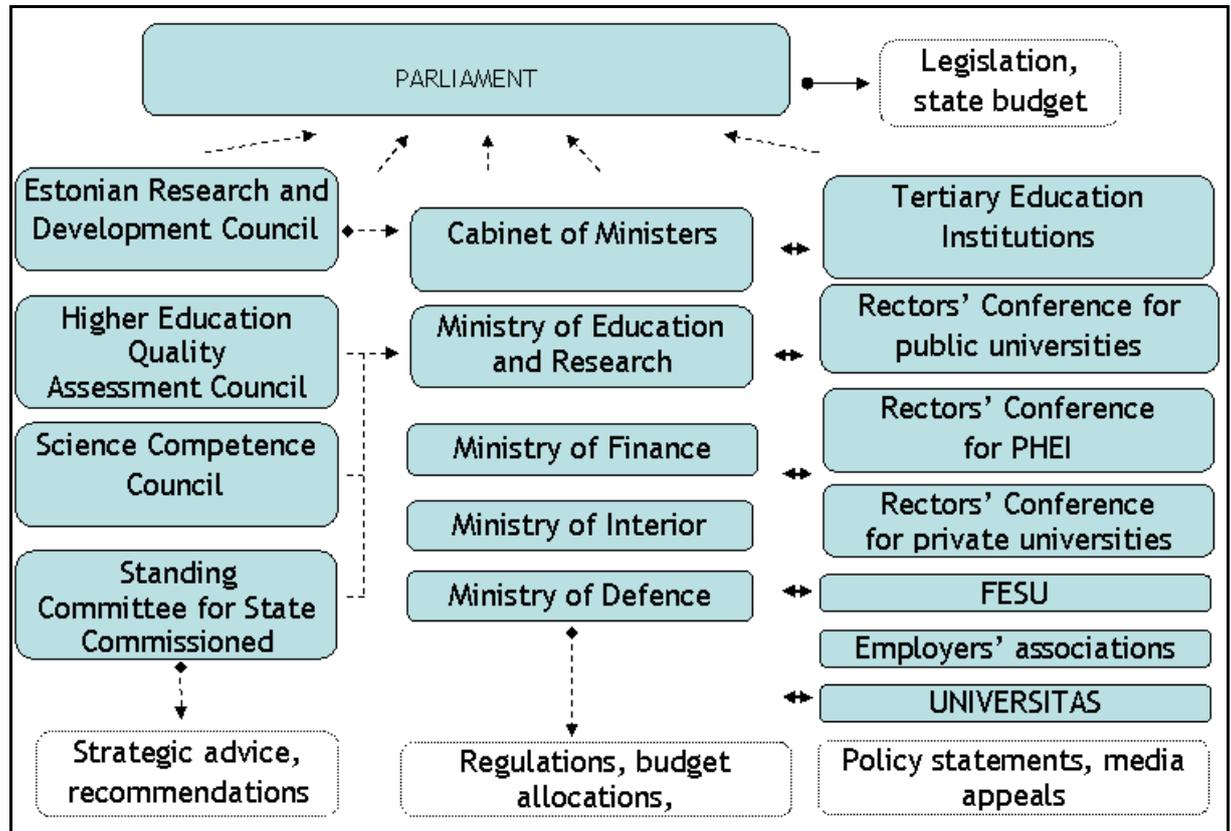
35. The responsibilities of the Parliament regarding higher education policy (in addition to the adoption of laws) include:

- ✓ Determination of principles of forming, operating and developing of the education system;
- ✓ Introduction of tuition fees in public education institutions and in public universities;
- ✓ Regulating the establishment, merger, partition or closure of public universities on the basis of decisions made by the *Riigikogu* (Parliament),

36. Responsibilities of the Government include:

- ✓ Approval of the standard of higher education;
- ✓ Regulating establishment, merger, partition or closure of professional higher education institutions;

Figure 2.1. The main actors and their roles in the development of higher education policy in Estonia.



- ✓ Approval of the rate of tuition fees, maximum amount of student loans, loan interest and penalties for delayed payback of loans, also approval of the procedures for delivering and repayment of the student loan and establishing advantages in loan delivery;
- ✓ Establishing competence framework requirements for teacher training
- ✓ Determination of the basis of scholarships for students in state and municipal educational institutions (*kutseõppeasutus*) and for students studying under the state-commissioned education, including Master's and doctorate level students;
- ✓ Approval of the composition and work regulation of the Higher Education Quality Assessment Council;
- ✓ Approval of the composition of *kuratoorium*s for public universities.

37. *Eesti Teadus- ja Arendusnõukogu* (Estonian Research and Development Council), is a consultative body in the Government chaired by the Prime Minister. The Council advises on the strategic issues in the field of research and development thereby directing the systematic development of the national research and development and innovation system. The work of the R&D Council is supported by the two permanent committees that focus on research policy and innovation policy. The committees are chaired by the Minister of Education and Research and the Minister of Economic Affairs and Communications, respectively, and submit annual reports on the results of the work of the committees as well as their agendas for the upcoming period to the R&D Council. Responsibility for the facilitation of the everyday work of the committees lies with the policy advisers of the respective ministries. Ad hoc committees can be established to elaborate on specific tasks.

38. Responsibilities of the Ministry of Education and Research are:

- ✓ Negotiating the state commission, for the number of graduates, with universities, professional higher education institutions and VET schools;

- ✓ Distributing budgeted funds to the professional higher education institutions;
- ✓ Approving the development plans of professional higher education institutions;
- ✓ Carrying out the State supervisory activities;
- ✓ Keeping the registry of recognised final documents issued by universities and professional higher education institutions;

39. Public universities (*Ülikool*) are autonomous under the administrative jurisdiction of the MoER. The autonomy ensures universities the right to independently determine

- ✓ Academic and organisational structure,
- ✓ Content of the teaching and research work,
- ✓ Organisation of teaching,
- ✓ Course curricula,
- ✓ Conditions for admission and graduation, the organisation of research work, and
- ✓ Employment terms for teaching staff and researchers and the selection of candidates.

40. The MoER is assisted in its role by a number of management and consultative bodies with an administrative function:

- ✓ *Kõrghariduse Hindamise Nõukogu* (Higher Education Quality Assessment Council), a body that is comprised of twelve members and is formed, and its membership is approved, for three years by the Government of the Republic on the proposal of the Minister of Education and Research. The main activities of the HEQAC include the accreditation of universities and other educational institutions that provide higher education, accreditation of their study, disclosure of accreditation decisions, elaboration of standards of higher education, which meet international requirements, and issuing recommendations on the basis of accreditation decisions. Based on the amendment to the Universities Act in 2003, the HEQAC in cooperation with the MoER can verify the compliance of a HEI or its curricula with the information submitted upon accreditation. If it becomes evident that there are significant deficiencies or violations of law in the activities of a HEI or in its curricula, the Minister of Education and Research may, in co-operation with the Higher Education Quality Assessment Council, revoke the accreditation decision as of the academic year following verification. In practice, this opportunity has never been used.
- ✓ *Eesti Teaduskompetentsi Nõukogu* (the Research Competency Council) is formed and its membership is approved for up to three years by the Government of the Republic on the proposal of the Minister of Education and Research. Its main function is to make recommendations to the Minister of Education and Research about the targeted funding of research topics of R&D institutions, assess the effectiveness of the targeted financing of research at research and development institutions, and the conformity of the research results with international standards, and to make proposals for the approval of the results of evaluation of research and development.
- ✓ *Eesti Teadusfond* (Estonian Science Foundation), is an expert research-funding organisation. Its main goal is to support the most promising research initiatives in all fields of basic and applied research. The EstSF uses state budget appropriations to award peer-reviewed research grants to individuals and research groups on a competitive basis.
- ✓ *The Archimedes Foundation* is a foundation established by the MoER for organising and managing the activities of different aid and cooperation of the European Union. In addition, Archimedes plays an important role for HE and research activities on a national level. Units within the Foundation include:
 - The Higher Education Quality Assessment Centre is responsible for administering institutional and study programme accreditation;

- The Estonian ENIC/NARIC's functions are the evaluation of foreign higher education qualifications, and qualifications giving access to higher education, for the purpose of recognition of the qualifications, collecting and providing information on higher education systems, higher education institutions, study and credentials in Estonia and abroad, and providing foreign students with information about the study possibilities in Estonian higher education institutions;
- The Mobility Centre runs the scholarship programmes for students and academic staff on behalf of the MoER and facilitates discussion in regards to the internationalisation strategy for the Estonian HEIs.
- EU Cooperation , including Youth for Europe and Socrates (ERASMUS and COMENIUS), [National Contact Point](#) for the Fifth and Sixth Framework Programme of EU Research and Technological Development (FP5, FP6), National Office for the [COST](#) network, and the National Office for [eContent](#) and [eTen](#) , amongst others.
- ✓ *Rectors' Conferences* are separate for universities, professional higher education institutions and private universities. MoER consults Rectors' Conferences on all legislative matters and other strategic decisions regarding higher education and research policies. For the last three years, annual funding terms have been a separate issue for discussion between MoER and Rectors' Conferences before the negotiations start with each HEI separately over the size of the state commissioning.
- ✓ *The Federation of Estonian Student Unions* is the organization representing the student voice in all the various task forces under the auspices of MoER.
- ✓ *The Estonian Employers' Confederation and Estonian Chamber of Commerce* participate in main working groups for preparing the policy documents.
- ✓ *The Federation of the Employees of Estonian Universities, Institutions of Science, Research and Development (UNIVERSITAS)* act as discussion and consultation partner in specific issues.

41. Over the years, a clear tendency has emerged in the development HE policy to seek a consensus between different stakeholder groups. The usual procedures for preparing HE policy decisions include consultation with all stakeholders' representatives, usually in the form of discussions and official approval rounds. For developing broad-based policy directions or working out special legislative acts/decrees, the Minister usually assembles a special task force with a specific assignment. Rectors' Conferences, the students' federation and other bodies are then asked to nominate their representatives on the specific issue. Usually these task forces are lead by MoER high level staff, but sometimes also by outside experts. The conclusions of the working groups are taken as recommendations to the Minister. Although recommendations are not legally binding, in the majority of cases these are taken as a basis for conclusive decisions.

2.5. Present governance and regulatory framework

42. The laws governing the system include:

- Universities Act (passed 12.01.1995),
- Institutions of Professional Higher Education Act (10.06.1998),
- Private Education Institutions Act (3.06.1998),
- Vocational Education Schools Act (17.06.1998), and
- University of Tartu Act (16.02.1995).

43. Since its initial adoption, the Universities Act has been amended 20 times in the Riigikogu. A similar pace of change has also been the case for all the other legislation covering the higher education sector. Of course, not all of these changes have been substantial for academic life (i.e. changing the names of public universities). However, it demonstrates the extensive discussions going on in the sector, the efforts to link better the education system and labour market, a desire to increase transparency and efficiency, and improve quality.

44. Other important legal documents governing the HE education sector are government decrees, among which the most important are:

- *The Standard of Higher Education (Kõrgharidusstandard)* of 1996 (amendments from 2003, 2004) which specifies requirements for higher education in Estonia and is a fundamental act for granting education licences and for the accreditation of study at higher education institutions. The Standard of Higher Education is based on other acts related to higher education and is valid for all stages or forms of higher education irrespective of the owners or the legal status of higher education institutions. The MoER is responsible for determining whether institutions meet the requirements of the Standard of Higher Education.
- *The Statute and Form of Diploma and Academic Transcript (Diplomi ja akadeemilise õiendi statuut ja vormid)* of 2003 prescribes the forms and regulations for awarding diplomas to graduates of various study programmes from different types of institutions. It requires that all HEI issue the Diploma Supplement in English from January 1, 2004. The format of the Diploma Supplement complies with the requirements set by the European Commission, European Council and UNESCO/ CEPES.
- *Standards for Accreditation of Universities and Institutions of Professional Higher Education in Estonia (Ülikooli ja rakenduskõrgkooli ning nende õppekavade akrediteerimise kord ja akrediteerimisel esitatavad nõuded)* from 2003 sets requirements for the accreditation of universities and professional higher education institutions on an institutional level as well as on the study programme level. Requirements include standards concerning mission, goals, objectives, planning and self-evaluation, organisation and management, curricula, implementation of study, staff of educational institution, student body, teaching aids and information resources, material resources, financial resources, educational institution's relations with the public, academic ethics, and feedback and quality assurance.
- *The list of the names of academic degrees awarded by educational institutions (Eesti Vabariigi kvalifikatsioonide ja enne 20. augustit 1991. a antud endise NSV Liidu kvalifikatsioonide vastavus)* from 2005 is a comparison of qualifications that have been obtained under different qualification systems. The decree serves the purpose of ensuring the equal rights of graduates in access to further study and to the labour market.
- *The basic cost of a student place created on the basis of state-commissioned education (Riikliku koolitustellimuse õppekoha baasmaksumus 2005. aastal)* is government decree approved separately for each budgetary year and it sets the cost level for all different types of study programmes (Bachelor, Master's, PhD, professional higher education) covered from the state budget. This is a basis for concluding the contracts with public and private HEIs and for the budgetary allocations of state professional higher education institutions;
- *The factors for broad groups of study groups (Õppevaldkondade koefitsiendid)* from 2002 and 2004 classifies different study fields into clusters based on the volume of experimental and individual work (i.e. the factor for exact sciences is 2.1 but for social science 1.1, etc).
- *Designation of degrees awarded by universities (Õppeasutuste antavate akadeemiliste kraadide nimetuste loetelu)*, from 2004 lists denomination and abbreviations of academic degrees in Estonian as well as in English that can be ascribed to graduates of study programmes.

2.6. Qualification structure

45. In the Estonian higher education system there are no intermediate qualifications. All higher education diplomas and degrees issued are final higher education qualifications. All recognised state and public higher education institutions have the right to award the state sample of diplomas of a certain format and content. Private higher education institutions have the right to award the state diploma only to the graduates who have completed an accredited study programme. The Statute of the Diploma adopted by the Government regulates the format and content of the state diploma.

46. Since 1991, four systems of stages of higher education and qualifications have been in force. In order to ensure equal opportunities and rights, work has been started to determine the comparison of earlier qualifications in the new system. The comparison of the qualifications used in former systems with the qualifications of the new system is governed by a regulation from the Government in 2005.

Until 1991

47. Until 1991 the Estonian higher education institutions followed the Soviet system of higher education. In most fields of higher education the nominal duration of study was 5 years, in a few it was 4 or 4.5 years, and in medicine it was 6 years. The final qualification *Diplom-Specialist* (Specialist's Diploma) or *Diplom kõrgema kutsehariduse omandamise kohta* as an original title, was awarded with an indication of a certain professional qualification: Engineer (*insener*), Physicist (*füüsik*), Geographer (*geograaf*), Economist (*ökonoomist or majandusteadlane*), Lawyer (*jurist*), etc, and the indication of a narrow specialisation where applicable.

48. The first stage of post-graduate studies (*aspirantuur/aspirantura*) leading to the qualification of *Kandidat nauk* normally lasted three years and included original research and publication. The second stage of post-graduate studies (*doktorantuur/doktorantura*) lead to the degree of *Doktor nauk*.

49. On 31 July 1990, a year before Estonia re-established its independence, the Government adopted a regulation on the approval of higher education qualifications according to which the two systems, the Soviet system and the Estonian system, became equally valid. In fact, the Soviet system ceased to function in the spring of 1991.

1991-1994

50. In this transition period the first degree – *Diplom*, known as *kraadita diplom* (university diploma with no degree) was the qualification that followed the structure of the Soviet-time Specialist's Diploma. In most cases, the nominal duration of study was 5 years as the students had begun their studies in the Soviet higher education system. In some cases, at the University of Tartu (*Tartu Ülikool*) for example, the nominal duration was reduced to 4 years, but the graduates received the qualifications of the same academic and professional value, as the persons who had completed 5-years. There were several cases in humanities, where the nominal duration of study was 5.5-6 years. The qualification *kraadita diplom* was a final university degree, after one long-cycle programme of study, giving access to all public positions where higher education was required.

51. The diploma awarded with a certain qualification (*insener, ökonomist, bioloog* etc.) or with the indication of the speciality after the completion of studies and upon the defence of a diploma thesis, or after passing the graduation examination, or both, was generally a prerequisite for admission to *magister*-study.

52. Instead of the former *aspirantura*, the first post-graduate research-based study programme was developed and was renamed *magistratuur* (*magister*-study). Generally, *magister*-study was of the same level as *aspirantura* in the system of the Soviet period. Until 1991 the admission requirement was *kraadita diplom* or *Diplom-Specialist*. The nominal duration of *magister*-study was fixed for 2 years. The graduates were awarded the *magistrikraad* after a public defence of original research. The *magistrikraad* was introduced as the first research degree in the higher education system and became a requirement for those who wanted to work in research institutes or higher education establishments, or to continue studies towards a doctoral-level degree (second research degree) – *doktorikraad*.

1995-2002

53. According to the Universities Act, the first stage of higher education with the nominal duration of 4 years was fixed for new admissions beginning with 1 January 1995. At the end of the 1990s very few courses (e.g. business administration at private universities) were designed with a nominal duration of 3 years. Generally, the reduction of studies was based on development for a market-oriented economy, with higher quality standards and with more intensive courses than the former 5-year course leading to the qualification *Diplom-Specialist* or *kraadita diplom*. The graduates of these were awarded the degree of *bakalaureusekraad*. At the same time, some universities (i.e. *Tartu Ülikool*, *Tallinna Pedagoogikaukool*) awarded the *bakalaureusekraad* not only to the students who had begun their studies in 1995, but also to those who graduated in that year. Other universities (i.e. *Tallinna Tehnikaülikool*) continued to award the *kraadita diplom* to those who had started their studies before 1 January 1995. In some cases the professional title was indicated on the diploma – *inseneri nimetus* (Title of Engineer); *ökonomisti nimetus* (Title of Economist), etc.

54. In fact there were still several *bakalaureus*-level course of this type (with the duration of 5 years) – for example, teacher training. The qualification *bakalaureus* was a final university degree of the same academic and professional value as the former *Diplom-Specialist* or *kraadita diplom*. The next stage of study was still *magistratuur* (*magister-study*) as introduced at the beginning of the 1990s.

55. Even if there were the titles of *bakalaureus* and *magister* in the Estonian higher education system this was not a traditional Bachelor-Master's or two-tier or undergraduate-graduate structure. There was one long-cycle system with the nominal duration of 4-5 years in most fields of study, including engineering, teacher training, law, etc. The *bakalaureusekraad* and *magistrikraad* are the degrees typical of and peculiar to the Estonian system only, and not comparable with most generally known European Bachelor-Master's systems.

56. In the second half of the 90s, more practically oriented higher education programmes were introduced in parallel to the academic branch in universities. There were two types of study – *diplomiõpe* in universities and professional higher education institutions, and *kutsekõrgharidus* in VET schools and professional higher education institutions. The biggest difference regarding the two types lies in the volume of the practical training, and the qualification requirements for academic staff. For graduates the biggest difference was the possibility to continue studies on the Master's level, since due to the legislation this was not possible for the graduates of *kutsekõrgharidus*.

Since the 2002/03 academic year

57. As a result of a major higher education reform and the reconstruction of study, for the first time in the history of Estonian higher education the Estonian universities introduced the two-tier (Bachelor-Master's) structure for the 2002/2003 admission. Unofficially the system was called the 3+2 model. The first qualification obtained in the new structure is the *bakalaureusekraad*. The nominal length of studies is predominantly three years and the capacity of studies 120 national credit points, which corresponds to 180 credits of the European Credit Transfer System - ECTS. In exceptional cases, the nominal length of bachelor-level studies extends to four years (240 ECTS credits). This "new" *bakalaureusekraad* is not comparable to the "old" *bakalaureusekraad*. The new degree is a bachelor-level qualification. At this level, basic knowledge and skills of a speciality are obtained.

58. In parallel to the academic branch, professional higher education programmes are also offered under the new qualification system, with the difference that *diplomiõpe* and *kutsekõrgharidus* were integrated into one programme – *rakenduskõrgharidus*, the professional higher education programme. It is the first stage of higher education where the purpose is to acquire the competence necessary for working in the relevant profession or for continuing studies at the Master's level. The nominal length of studies is 3 – 4.5 years, the volume of studies 120 – 180 credit points (180 – 240 ECTS credits).

59. After graduation from the bachelor-level, students can continue in the second cycle leading to the degree of *magistrikraad*. *Magister-study* is devoted to in-depth preparation for the speciality and includes a narrow specialisation. The persons who hold a professional higher education diploma can also commence Master's programmes at a university under the conditions and pursuant to the procedure established by the university. The nominal length of Master's level studies is 1-2 years and

the volume of studies is 40–80 credit points (60–120 ECTS credits) but together with bachelor level studies not less than five years (200 credit points / 300 ECTS credits). The “new” *magistrikraad* is a Master’s level qualification and is the required level for professional posts where a higher qualification is needed, such as teachers, engineers, economists, lawyers, etc.

60. The new two-tier structure applies to most disciplines, with the exception of medicine, pharmacy, dentistry, veterinary medicine, architecture and civil engineering. These long one-cycle courses are called integrated *bakalaureus*- and *magister*-study, with a nominal duration of 5 or 6 years and with a capacity of 200–240 credit points (300–360 ECTS credits). The study leads to a *magister*-level diploma. The universities may award the degree of *magistrikraad* after these studies.

61. The nominal length of doctoral studies has been altered: the length of doctoral studies is 3-4 years instead of the 4 years that was fixed formerly. The postgraduate research degree is *doktorikraad*.

62. From 2004 onwards, Master’s level studies may be also provided by institutions of professional higher education but in cooperation with universities and taking into consideration regional needs. An institution of professional higher education may independently provide Master’s level studies in the fields of theology and national defence.

2.7. Major changes in the last 15 years⁴

63. As a transition country Estonia has gone through numerous changes both in economic and social life throughout the 1991-2005 period. Obviously, the higher education sector is no exception. During these years the biggest changes were the following.

64. There has been considerable growth in the number of students – from 1990 to 2004 the number of students increased 2.6 times (from 25 899 to 67 760). This significant growth is mostly due to the increase in the share of paid education in public universities together with the development of open universities focusing on LLL, upgrading former polytechnics to the higher education level as professional higher education institutions, introducing new institutional types where HE programmes can be provided (VET schools, private institutions). Today ca 54% of students fully pay for their studies themselves (2005 data).

65. In the first phase of reforms (1991-1995) the main focus of politicians and the academic community was on instilling democratic principles and processes throughout the university (including the free election of the rector and academic deans), establishing a new legal framework providing for institutions of higher education, university autonomy, the framework for quality assurance, and a differentiated higher education system. As regards substance, there was a need to eliminate previous restrictions in content and pedagogy, especially in the social sciences and humanities, and eliminating the required military retraining as a compulsory part of the curriculum. Changes also included redefinition of the role of the MoE – moving from rigidly administered state universities subordinated to the MoE to extensive autonomy in academic policy, internal management, salaries and human resource management, and fiscal affairs leading to greater academic innovation and flexibility to respond to market trends.

66. Another strategic step was abolishing the Academy of Sciences as a research organisation (1997), reconstituting the Academy as an honorary society, integrating research into the universities and creating other independent Estonian research centres, resulting in substantial gains in research and greatly strengthened universities. Strengthening graduate education, especially through the integration of research and teaching at the doctoral level (in contrast to the location of doctoral studies outside the universities in Soviet times) were made possible due to this change.

⁴ For describing the changes during 1991-1999, the text is based on the OECD report “Reviews of National Policies for Education. Estonia” from 2001.

67. Reforming the financing policies to provide lump-sum allocations to universities, explicit recognition of both the teaching and research mission, and elimination of the detailed input line item (salaries, etc.) controls by the Ministry. Since 2002/03 the new funding formula for institutions concentrates on financing the output (the number of graduates from Master's and PhD programmes) and abandoned allocation of control numbers on a programme level, instead focusing on broader study fields.

68. There have been altogether four different degree structures in existence during the observed period, 1991-2005. In the beginning the system moved away from the narrow Soviet degree structure to an award structure that was not only more flexible but also consistent with Western models and increasing expectations for common structures across Europe and the world. The latest changes were introduced on 2002/03 when a degree structure following the Bologna model was implemented in universities.

69. Over the years matters concerning the quality of HE have gradually become more of an issue both for the HEIs as well as for public policy dialogue in connection to the development of the European Higher Education area. Since 1996 the accreditation system for programmes and institutions has been in existence. The administration of the system involves institutions' critical self-analyses, expert visits to institutions, decision-making based on the experts' suggestions and publication of both evaluation and accreditation results on the Internet. In addition to the accreditation system, and state monitoring activities, universities (including two private universities) have taken the initiative to self-impose quality standards for academic degrees, study programmes and positions (2003). This is an ongoing process with the obligation to follow up each year on the performance of participating universities. Full text of universities' Quality Agreement is available in Annex.

70. The evolution and development of the private education institutions started already in 1988 as a reaction to the new social and economic opportunities that were changing the very basis of society under Gorbachov's perestroika agenda. Some smaller private institutions were established for catering to the needs of the Russian-speaking community in Estonia – the share of Russian as the language of instruction with respect to the total number of students has decreased from 17% to 10% during the observed period. With few exceptions, private institutions have had real difficulties in asserting themselves in the HE market where there is an increased provision of fee-based education by public universities. Many of them are under the critical mass with their student bodies and do not have the proper resources for developing the infrastructure necessary to keep the institutions sustainable in the long run.

71. In 2004, new amendments to the Private Schools Act were adopted, establishing more transparent requirements for running private institutions, including establishing the minimum amount of the share capital for the owner of a private institution. The amount of share capital required differs for universities and professional higher education institutions (respectively, 10 million and 8 million Estonian kroons). These changes in the law were a result of the financial mismanagement of one of the biggest private universities, which ended with bankruptcy. Although the situation was resolved positively for students – based on the law, students could continue their studies in another private university offering accredited programmes in similar study fields – and the case as such has established a mode of behaviour for the HE community.

72. Over the observed period several institutional changes have taken place. In the mid-1990s many new organisations moved to the market offering programmes on the HE level. By the start of the 2005/06 academic year there is a clear trend of reduction in the number of institutions. Mergers have mostly taken place on the basis of negotiations and agreements between the institutions themselves, and the MoER has played a very limited role in these processes. The new strategy for HE for the years 2006-2015 foresees reducing the number even further, mostly due to two aspects: firstly, the number of potential students will decrease rapidly due to the negative demographic trend, and secondly, enforcement of new regulations as of 2007 regarding the share capital for HEIs.

73. The service mission for HEIs has greatly expanded including services to regions utilising open/distance learning and other means to provide access to higher education, and collaboration with

local governments and social partners throughout Estonia. For facilitating the e-learning opportunities, to broaden the access to quality education for students and other people willing to learn, also handicapped people, Estonians abroad and foreign students, the Estonian e-University programme was created in 2002 under the Estonian IT Foundation (jointly established by the state, business community, University of Tartu, Tallinn University of Technology, and partly funded by the government).

74. Introducing support and loan schemes for students to study in Estonian and foreign HEIs (the *Study Allowances and Study Loans Act* from 2003) and state co-funding for student participation in international mobility programmes like Erasmus (from 2002). Since 2003, under the *Kristjan Jaak* scholarship scheme, short and long-term mobility opportunities are funded from the state budget mostly for students on the Master's and PhD level and for academic staff.

75. Management of these changes has been challenging for all parties involved and, especially at the beginning of the period, consensus-building across different stakeholders was difficult. Changes has been implemented very rapidly. Over the years it has improved, and by 2005 the involvement of different stakeholders in working groups has been exercised as a routine.

2.8. Institutional landscape

76. Within the Estonian higher education system HE programmes can be provided by 6 different type of legal entities varying from each other by legal status (public/ private) and type of programmes they can offer. Universities are entitled to offer programmes on a Bachelor, Master's and PhD level, also professional higher education can be provided in a substructure that is part of a university (mostly situated in the regions). Although all universities have registered PhD programmes with the MoER, not all these programmes have undergone accreditation. In fact, none of the private universities can award PhD diplomas recognized by the state. All private universities have positively accredited Master's programmes, and two of them have research groups whose work has been evaluated to at least the satisfactory level by a team of international experts. No other private universities have research programmes running that have passed a similar kind of state evaluation.

Table 2.2. Distribution of students by type of institution, 2005

Type of institution	No. of institutions	No. of students in 2005
Universities where programmes are accredited up to the PhD level	6	42 867
Universities where programmes are accredited up to the Master's level	5	6467
Institutions offering accredited programmes on the professional higher education level	26	18 724
HEI with no accredited programmes ⁵	2	229
Total	39	68 287

77. The various institutions offering HE programmes can be categorized as follows:
Universities covering a broad group of disciplines; these are biggest providers of research training:

- Tartu Ülikool, *University of Tartu* (established in 1632). Offers PhD programmes in humanities and arts, education, social sciences, science, health and welfare, services. The University has five regional colleges– Narva, Pärnu, Türi and Viljandi. Since 2002 the

⁵ On March 2006, these two institutions were visited by the accreditation team, and the non-accredited status was recommended for all the programmes, and this recommendation was approved by the Higher Education Quality Assessment Council and the Minister.

biggest private university specialising in the field of law is incorporated with the university, located in Tallinn.

- Tallinna Tehnikaülikool, *Tallinn University of Technology* (established in 1918). Offers PhD programmes in science and engineering, and social sciences. Has regional colleges in Kohtla-Järve and Kuressaare.
- Eesti Maaülikool, *Estonian University of Life Sciences* (established as an independent university in 1951, based on three faculties of the University of Tartu – agronomy, forestry and veterinary medicine). Offers PhD programmes in science and engineering, agriculture, services. The name has been recently changed – the university was until autumn 2005 known as the Estonian Agricultural University.
- Tallinn University (renamed in 2004, the legal successor of Tallinn Pedagogical University founded in 1919). Offers PhD programmes on education, humanities and arts, social sciences, science and services. In 2004 the Estonian Institute of Humanities (private university) was incorporated with Tallinn University. Runs two regionally-based colleges that are part of the university – Rakvere and Haapsalu.

65. Two other universities offering PhD programmes have clearly focused areas – music and visual arts.

- Eesti Kunstiakadeemia, *Estonian Academy of Arts* (established on 1914).
- Eesti Muusika- ja Teatriakadeemia, *Estonian Academy of Music and Theatre* (established in 1919).

78. The private universities were mostly founded after Estonia's break-up from the Soviet Union. The majority of them were created out of the wish to cater for the emerging needs of the new free market economy. Similarly to the other Eastern European countries, these institutions offer programmes in the areas as business administration, law, media, arts and humanities, IT. Over the years there have been seven institutions that have had contracts with the MoER for state-commissioned education (IT College, Mainor Professional Higher Education Institution, Estonian Business School, University of Nord, Computer College, Private School for Hotel and Tourism management, Concordia International University), but the overall number of government-funded study places has been very limited since the majority of the programmes provided in the private sector would not be considered to be a state priority.

- Eesti Evangeelse Luterliku Kiriku Usuteaduste Instituut, *Institute of Theology of the Estonian Evangelical Lutheran Church* (founded in 1946 after the Soviet authorities closed down the theology department at the University of Tartu). During the Soviet occupation it was the only institution training personnel for the Estonian Lutheran Church. It can be considered to be the oldest private university in Estonia.
- Estonian Business School (established 1989).
- Akadeemia Nord, *University Nord* (established in 1991). Regional college in Sillamäe.
- Euroülikool, *European University* (1998).
- Audentese Ülikool, *Audentes University* (1999). In 2003 Concordia International University in Estonia and the Private Higher School of Social Sciences Veritas were incorporated with the university. Regional college in Jõhvi.

79. State professional higher education institutions (PHEIs) are highly specialised, often in the fields that are regulated by international standards. They offer professional higher education programmes with a length of 4 years. For graduates it is possible to continue their studies at university

on the Master's level, though most universities require complementary modules to be passed before the admission to the Master's level. Based on law, PHEIs can also offer programmes on the Master's level themselves, but on certain conditions as prescribed by law. Up to 2005, none of the institutions have registered programmes on this level, although this is the direction in which PHEIs would like to broaden their activities. The list of institutions is as follows:

- Tartu Tervishoiu Kõrgkool, *Tartu School of Health Care* (1811). Institutional status was changed from VET school to PHEI when the institution passed institutional accreditation in 2004.
- Eesti Mereakadeemia, *Estonian Maritime Academy* (1919). Status of HEI was awarded in 1992.
- Tallinna Tervishoiu Kõrgkool, *Tallinn Medical School* (established in 1940). Institutional status was changed from VET school to PHEI when institution passed institutional accreditation in 2004.
- Tallinna Tehnikakõrgkool, *Tallinn College of Engineering* (founded in 1992), legal successor of the Tallinn Technical Secondary School for Building and Mechanics established in 1962.
- Sisekaitseakadeemia, *Public Service Academy of Estonia*⁶ (1992).
- Tartu Lennukolledz, *Tartu Aviation College* (1993).
- Kaitseväge Ühendatud Õppeasutus, *The Estonian National Defence College* (1998).
- Tartu Kõrgem Kunstikool, *Tartu Art College* (established 2000).

80. Private higher education institutions, similarly to private universities, focus on areas like business administration, IT, theology, arts and humanities. Programmes are mostly of a length of three years. Altogether there are 13 of such institutions. The largest among these institutions is Mainor Higher Education Institution that offers programmes in a total of 9 different sites all over Estonia. In 2005, Mainor was granted the right by the government to provide Master's programmes in the social sciences field. Most of the private PHEIs have strong links with the employer community; one of the best examples in this regard is the Estonian Information Technology College that was founded in 1999 by the government (represented by the Ministry of Education), by the largest Estonian universities – Tallinn University of Technology and the University of Tartu – and the Estonian information and communication technology (ICT) industry as an example of an unique public-private partnership model.

81. Since 1999, nine state VET schools opened programmes on a higher education level. By 2005/06, they have all participated in the accreditation process, though with different results. Some of these institutions clearly play a major role, even in the future when the number of potential students goes down, but according to the new higher education strategy paper the provision of HE programmes should be concentrated mostly in institutions that have HEI status and diploma-awarding power.

82. There is also one private VET school offering PHE programmes, the Estonian School of Hotel and Tourism Management. The school was founded on 1996 by employer associations working in the field. It is a small school but well-respected, offering accredited programmes.

⁶ As said previously, the name of the Public Service Academy is somewhat misleading as the HEI provides programmes mostly in the area of internal security.

2.9. Overall size of the higher education sector

83. During 1993-2004, the number of general secondary school graduates remained stable around 10 000-11 000. But the interest among them to continue their studies increased immensely. Whereas in 1993 nearly half the graduates did not continue their studies at all, by 2004 only one in six did not continue their studies (incl. VET) immediately. The share of those continuing in higher education has increased from 30%, to 68% in 2004.

84. Over the years students have become more mature. One distinguishable reason is the lengthened duration of general secondary education – 12 years instead of 11. The formal entrance age for higher education is now 19. But at the same time another important trend has emerged – the increasing share of those aged 26 years and older. If in 1995 this group had a share of 15.3% in student numbers, by 2005 it had increased to 34.1%. The biggest reasons behind this were the poorer economic conditions and available business opportunities at the beginning of the 1990s that resulted in many postponing their studies at that time. By the end of the 90s, the labour market had changed – diplomas were gaining a higher value – and people with extensive work experience returned to their studies.

Table 2.3. Admission to higher education by level of study, 1994-2004

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Professional higher education	0	0	0	0	0	0	0	0	5 400	7 259	7 080
Vocational higher education	0	0	0	0	0	1 830	2 637	3 019	344	0	0
Diploma studies	2 038	2 081	3 098	4 733	5 623	5 060	5 152	4 528	984	0	0
Bachelor studies	3 360	3 934	4 336	4 635	4 920	6 165	6 960	6 463	7 670	7 473	7 738
Integrated Bachelor and Master's studies	0	0	0	0	0	0	0	0	934	875	811
Master's studies	791	1 027	1 023	1 025	1 135	1 462	2 074	2 150	2 830	2 894	2 866
PhD studies	134	250	93	298	324	386	370	281	329	354	428
TOTAL	6323	7292	8 651	10691	12002	14903	17193	16441	18 491	18 855	18 923

Source: Statistical Office of Estonia, 2005

85. As seen from Table 2.3., participation in the system has increased quite evenly at all levels. A slight change has taken place with the share of studies on the Bachelor level - 53% in 1994 and 41% in 2004. The decrease has taken place to the advantage of studies mostly oriented to the labour market – professional higher education's (vocational higher education and diploma studies are categorised under this) share in admissions in 1994 was 32%, and ten years later 37%, and studies on the Master's level - 12.5% in 1994 and 15% in 2004. Admission to PhD studies has increased sharply in terms of absolute numbers, but its share in the overall student body has stayed the same, 2% for both years. In order to see institution-wise where the growth has been concentrated, see Table 2.4.

Table 2.4. Admissions 1995-2004, by type of institution

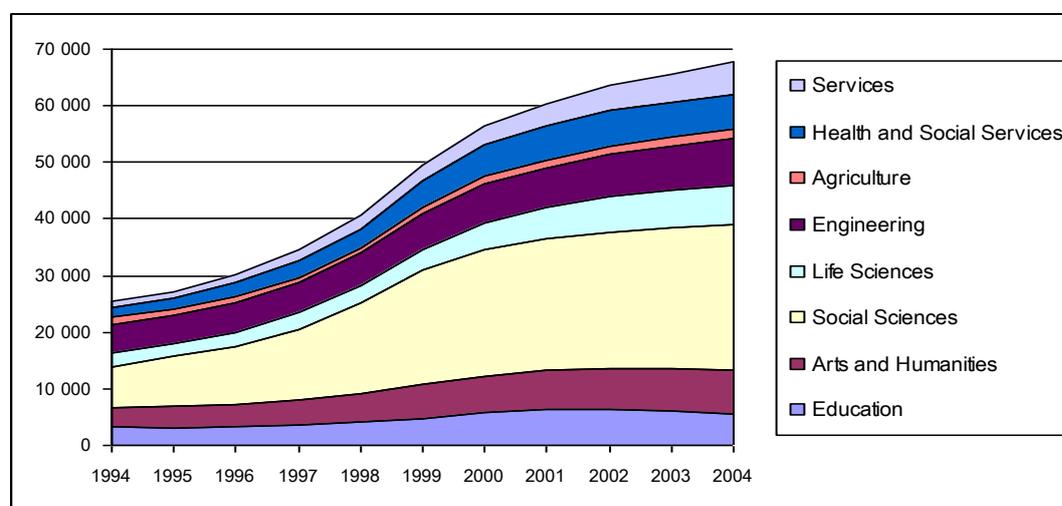
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Public universities	4 643	4 953	5 829	6 410	8 496	9 980	9 535	10 537	10 724	10 735
Private universities	363	512	1 134	1 571	1 723	1 877	1 735	1 714	1 526	1 729
State professional HEI	793	866	1 224	1 174	1 291	1 272	1 051	1 412	1 456	1 459
Private professional higher education institutions	1 362	1 700	1 872	2 113	1 813	1 645	1 307	1 976	2 344	2 516
VET schools at HEI level	131	620	632	734	1 580	2 419	2 813	2 852	2 805	2 484
TOTAL	7 292	8 651	10 691	12 002	14 903	17 193	16 441	18 491	18 855	18 923

Source: Statistical Office of Estonia, 2005

86. The biggest growth areas have been social sciences, business and law – increasing from 28.3% in 1994 to 38.1% in 2004. Service fields have almost doubled – from the share of 4.6% to 8.6%. Health and social services from 6.7% to 8.8%. All other fields have reduced their share although in absolute figures the number of students has not decreased in any broad field. Science and engineering has reduced its segment from 29.2% to 22.6%, agriculture, fishery and veterinary sciences from 4.8% to 2.6%, and educational sciences from 12.7% to 8%.

87. The main growth factor has been the introduction of fee-paid education, especially in public universities. By the 2004/05 academic year, the number of students paying for their studies themselves (incl. private sector HEIs) was more than 35 000, which is about 53% of all students. Four public universities⁷ enrolled 41 340 students (ca 61% of the total student body) and 53% of them were studying in state-commissioned student places. Private universities enrolled 18% and private professional higher education institutions 19% of all students paying for their studies themselves.

Figure 2.2. Students in higher education by field of study, 1994-2004



Source: Statistical Office of Estonia, 2005

88. In 2004/05, admissions to science and engineering fields made up 36% of all state-funded student places. Although social science fields have been enormously popular among students who are ready to pay for their education themselves, state-commissioning did not cease in the area as there is a need to prepare the next generation of those who will teach at HEIs. For the last four years the principles for the allocation of state-commissioning have stayed the same – the fields are divided up into growth, stable and decreasing areas. Fields such as IT, biosciences, engineering and services are handled as preferred fields although in general there has not been a fundamental change in the number of state allocations as regards head-count. Mostly, the preferred areas receive privileged treatment in the form of structural funding from EU resources.

89. There are no reliable statistics as regards attendance mode, since up to 2002/03 every institution defined separately its requirements and conditions for full or part-time studies. From autumn 2003 onwards, students need to define their status as full or part-time. If they fulfil 75% of the amount of work required by the programme during the nominal time, they are considered to be full-time. In 2004, there were 54 552 such students. 13 208 defined their status as studying part-time.

90. In the new HE strategy paper for 2006-2015 there are control numbers mentioned in regard to the state-funded student places for the 2006-2008 period. Combined bachelor and professional higher education studies access to the state-funded places have to be guaranteed on the level of ca 6300 (50% of the graduates on the secondary education level). But there is no upper limit set in regard to the

⁷ University of Tartu, Tallinn University of Technology, Tallinn University, and the Estonian University of Life Sciences

overall access (in regard to all study levels). This has caused some discussion and criticism by the employers' organizations who would like to see more people directed to VET studies rather than to HE.

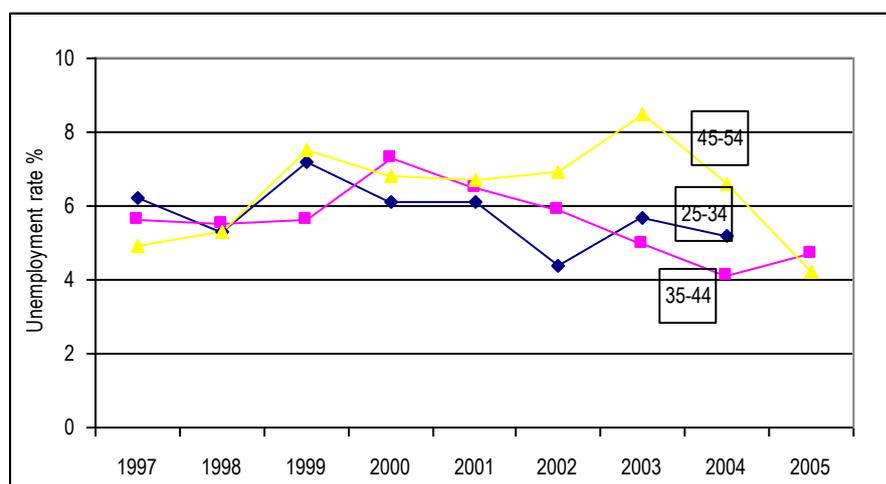
CHAPTER 3. TERTIARY EDUCATION SYSTEM AND THE LABOR MARKET

Policy developments

91. The working-age population of Estonia decreased 11% between 1990 and 2005, from 1.1 million to 980 000. Rapid economic reforms led to an even more dramatic drop in the labour force from 825 800 in 1990 to 586 300 in 2005 or almost 30%, whereas 85% of the jobs were lost between 1990 and 1995 (Statistical Office, 2006). The employment ratio in 2005 was 64.4%, which is a development in a positive direction compared to earlier years (Ministry of Finance, 2006). The most severely affected was the primary sector, where the drop was almost five-fold, while the industrial sector saw a decrease of around 1.5 times. Employment in the service sector remained comparatively stable throughout that period. These processes could be viewed as inevitable as the relative importance of these branches of the economy stemmed from the former Soviet era economic policy. Since the regaining of independence, employment growth has been only in the some part of the services (financial intermediation, real estate, leasing and business activity sectors), as this was the area where great demand met with the new entrepreneurial spirit, bringing the start of new firms and growth in the number of staff.

92. Swift reforms led to widespread layoffs, and while some managed to adapt fairly easily and find new jobs in growing areas of the economy, many found job-searching more difficult due to lack of qualifications, age or place of residence. The first outbreak of unemployment could be said to have appeared in 1991 when levels surpassed the 1% mark (Eamets, 2000). These figures peaked in 2000, when the proportion of those out of work reached 14.2%, but since then the level has steadily fallen, settling at 8.3% in 2005. Unemployment is highest in the 15-25 age bracket, with the 2005 rate being 15.9% (Statistical Office, 2006).

Figure 3.1. Unemployment rate among population with tertiary education by age group⁸ (including professional secondary education, the former Soviet polytechnic type education)



Source: Estonian Statistical Office

93. The unemployment rate among 25-64 year olds with higher education has remained at more or less the same level since 1997 – between 3.5% and 6%, or 4 500 and 7 100 in real terms. According to 2005 data, respective numbers were 3.7% and 5 200 (Estonian Statistical Office, 2006). Including those with professional secondary education as part of the tertiary education group, the unemployment rate is between 3.8% and 6.8% or 7 900 and 12 500 (2005 data – 3.8% and 7 900). Higher education provided people with a sense of security in the period under study – the unemployment rate in this

⁸ The sample for 25-34 age bracket was too small to be included as part of the official data.

group being twice as low as for those with secondary education and four times lower than for those who received only a basic education. However, unemployment among the tertiary educated group in Estonia (4.8%) is still higher than the EU-25 average (4.2%)⁹ (2002 data). The rate differs slightly though according to the age bracket and is largest among 45-54 year olds¹⁰.

94. According to 2005 data, 35.9% of the labour force in Estonia has third level qualifications (Statistical Office, 2006). Outside the public sector (including administration, defence, education and healthcare) the greatest concentration of employees with higher education is in the financial intermediation and business activity sectors, at 37% and 43%, respectively, and these numbers have not changed in the last ten years. The biggest increase in the proportion of employees with third level qualifications between 1997 and 2005 was seen in the transport and communication, agriculture and hotel and restaurant sectors, although in absolute numbers the figure may have even fallen.

Table 3.1. Labour force distribution by level of education (in thous.), 1997 and 2005

Economic sector	Education level of labour force	1997	2005
Agriculture, hunting, forestry	Below Upper Secondary Education	13.6	7.2
	Upper Secondary Education	30.2	16.2
	Tertiary education	6.1	5.6
Fishery	Below Upper Secondary Education	...	...
	Upper Secondary Education	3.5	1.8
	Tertiary education	...	...
Mining	Below Upper Secondary Education	...	...
	Upper Secondary Education	5.2	3.8
	Tertiary education	...	...
Manufacturing	Below Upper Secondary Education	22.1	17.5
	Secondary education	85.4	90
	Tertiary education	29	31.9
Energy	Below Upper Secondary Education	1.9	...
	Upper Secondary education	9	8.2
	Tertiary education	5.7	3.7
Construction	Below Upper Secondary Education	7.5	7.7
	Upper Secondary education	29.3	30.8
	Tertiary education	8.1	10.1
Whole- and retail sale,	Below Upper Secondary Education	7.3	3.8
	Upper Secondary education	52.3	49.7
	Tertiary education	26.6	27.1
Hotels and restaurants	Below Upper Secondary Education	...	2.5
	Upper Secondary education	10.3	13.8
	Tertiary education	...	5.7
Transport, communication and logistics	Below Upper Secondary Education	6.9	4
	Upper Secondary education	36.3	32.9
	Tertiary education	13.4	17.7
Financial intermediation	Below Upper Secondary Education	...	...
	Upper Secondary education	3.4	2.9
	Tertiary education	3.6	3.8
Real estate, renting and business	Below Upper Secondary Education	2.3	3.7
	Upper Secondary education	15.2	19.7
	Tertiary education	16.5	23
Public administration, national defence, social security	Below Upper Secondary Education	1.5	...
	Upper Secondary education	14.5	15.6
	Tertiary education	16.6	20.8
Education	Below Upper Secondary Education	3.2	1.9
	Upper Secondary education	18.5	17.2
	Tertiary education	35.1	35.9
Health and social services	Below Upper Secondary Education	3.6	3
	Secondary education	14.4	15.4
	Tertiary education	17.8	16.6
Other	Below Upper Secondary Education	3.4	1.4
	Upper Secondary Education	16.5	15.2
	Tertiary education	12.7	14.4

Source: Statistical Office, 2006.

⁹“European Higher Education in a Worldwide Perspective,” European Commission, spring 2005

¹⁰ The 15-24 age bracket is excluded as the values listed in the Statistical Office database do not cover each of the years under study.

95. One of the tendencies of rapid social and economic development is the need to employ people in positions that require tertiary level qualifications, and there are not enough people who hold such qualifications. Analysing the division of employees with those qualifications according to ISCO occupational groupings (Heinlo, 2004), it can be seen that people with tertiary qualifications represent 81% of high-level specialists and 52% of lower-grade specialists and technicians. They also account for 59% of the main body of legislators, high-level officials and managers, but given the domination of small and micro companies¹¹ in Estonian business this figure does not present a problem.

96. One of the costs to Estonia of the rapid economic success is increasing inequality, which is also expressed in the participation rates in education. The problems are not so much characteristic to the tertiary level than for the earlier stages. In 2000, the rate of people in the 20-24 age group who have at least ISCED-3 education was 83.9%. By 2005, this number has fallen to 80.9% (Ministry of Education and Research, 2006). Although, the figure is better than the average of the EU (in 2000, for EU 25 it was 77.3%), it is decreasing. Transformation has had different impact according to gender, with males paying the higher price.

Table 3.2. Share of education level among employed by gender and age group, (% , annual average)

	25-64 age group		25-34 age group		15-24 age group	
	1997	2005	1997	2005	1997	2005
Below Upper Secondary Education						
o Males	13.9	9.1	7.8	11.8	20.3	26.6
o Females	9.1	5.6	2.9	7.2	10.1	14.9
Upper Secondary Education						
o Males	58.6	60.1	70.1	58.9	71.7	58.9
o Females	49.5	50.2	51.3	49.4	69.7	61.1
Tertiary Education						
... Professional Secondary Courses based on secondary education						
o Males	7.8	8.1	6.4	7.6	...	...
o Females	17.2	15.2	19.1	9.9	15.8	...
... Higher Education						
o Males	19.6	22.7	15.7	21.7	...	10.3
o Females	24.3	29.1	26.7	33.5	...	21.8

Source: Statistical Office, 2006.

97. Long-term unemployment is high. In 2005 their share was 53% of all unemployed (or 4.2% of the total labour force). Unemployment rates are higher among the Russian-speaking population, 12.9% vs. 5.3% for Estonians, the main reason for this being a limited knowledge of the state language. Males have traditionally had somewhat higher unemployment rates – 8.8% vs. 7.1% for females, in 2005 (Ministry of Finance, 2006).

Assessing labour market needs

98. Until recently, as a result of the thorough economic reorganisation of the 1990s, Estonia had not done any research to assess labour force requirements at a national level. The Ministry of Economic Affairs and Communications took the first steps in this direction in 2003, when the first employment forecast up to 2010 was completed. This work is planned to continue with the basis of the forecasting model being updated and more focus given to needs assessment.

99. The important player in labour market issues is the Estonian Labour Market Board. The Board's mission is to support competitive, efficient and flexible labour market, accelerate fulfilment of work positions and provide assistance to those seeking work and to employers for fostering economic development. The agency processes and analyses the database of job seekers and of the employment services supplied, but the information gathered is mostly directed towards qualification levels below tertiary education. The lack of workforce is considered serious especially in sectors where there are

¹¹ According to the Estonian Statistical Office approx. 88% of all registered enterprises had less than 10 employees, in 2005. The proportion has been stable on this level for many years.

rapid developments (metal work, electronics, optics, construction), but it is broader issue and applies other sectors as well because of population trends.

100. At the national level, a special committee in charge of the state-commissioning of higher education has operated under the aegis of the Ministry of Education and Research since 2000. The main task of the Commission is to achieve a broader consensus and greater transparency in regards to the education and training system. It is an inter-ministerial structure (including employers' and students' representatives) that advises the Ministry and presents recommendations regarding the allocation of student places (state-commissioned graduate numbers) and fields at different levels. The Chair of the Commission is the Minister of Education and Research.

101. Since the 2002/03 academic year, the MoER has preferred in its funding decisions the natural and exact sciences and technology fields. In 2005/06, the overall share of the preferred fields (regarding student places for the first cycle) was 39%. The preference for listed fields was agreed in 2002 after the *Delphy* survey that was carried out among different stakeholders. It is a shared understanding that state funding has to balance student study decisions for "softer" study fields. At the same time, funding to social sciences, humanities and arts should be maintained, at least at a minimum level, in order to guarantee the preparation of the next generation of academic staff. There is also an understanding that a further increase of study places to preferred fields can be done only when more complex measures have been developed. Creation of a more positive attitude towards the science and technology subjects among young people (starting already at basic school level) should be the main strategic goal. Also, there have to be scholarship schemes in place that enable students to commit themselves more to studies. Lastly, institutions that provide programs in these fields need extra resources (human as well as financial resources) for development.

102. It is true that the planning process to date has been based less on evaluation of the needs of the labour market than on the argument for ensuring access to it. Accordingly, the political goal has been to create, for approximately 50% of high school graduates, access to higher education studies through the support of national measures. Here it should be stressed that no checks are carried out to assess whether the study places created through state measures are being filled by 'young' school graduates or those who have already previously obtained secondary education. The higher education strategy for 2006-2015 highlights the desire to also create HE study places for 10% of vocational secondary graduates, meaning that approximately 6300 young people, in total, would be able to begin studies at the first level (in the 2006-2008 period).

103. Generally it is believed that the demand of the students creates the supply of the provision, and graduates with tertiary education qualifications can flexibly reorient themselves should circumstances so require. At the same time there is an active discussion in the media amongst the main stakeholders as to whether the expansion of the higher education sector in mostly areas like social sciences and humanities and arts is good for the national economy. Higher education institutions have seen that debate often takes place in the context of employers seeking unpretentious cheap labour. Employers have stressed the example of other countries where expansion has taken place in the short-cycle and more practically oriented sub-sector, as compared to Estonia where the expansion mostly took place in public universities. As the country has not had any major economic setbacks the jury is still out regarding whether the expansion has served the best interests of the country. The great disagreement is partly caused by the structure of the economy – there are very few enterprises in the country that use highly-knowledge-intensive technologies.

104. Still, a number of measures has been introduced in legislation to facilitate feedback from the labour market for HEIs. Based on accreditation regulations HEIs are required to collect information about the success of their graduates on the labour market, and the representatives of the labour market must be included in the existing curriculum council at the structural division level. Since 2003, evaluation committees involved with accreditation have generally met with the relevant fields' employers' representatives, and the professional standards of the fields (where they exist) are sent to the members of the accreditation committees for their perusal prior to accreditation taking place. The voice of the business community is represented on the Higher Education Quality Assessment Council

by the Estonian Chamber of Commerce. But experience shows that for meaningful contribution, stakeholders need time and interest, two basic criteria that are not always fulfilled.

105. Closer cooperation between institutions of higher education and business has developed in the organisation of practical training experience in areas that are regulated at an international level. In other areas there remain few or simply no good examples – companies are not interested in taking students on for short periods and acting as their mentors. The limited initiative here on the part of the educational institutions themselves is also due in part to the notably high number of students who work at the same time as studying, albeit mostly in less demanding positions which are not necessarily connected to their studies. Exact data on this issue, however, is not available. The cooperation between HEI-s and enterprises for developing tailor-made programs is still in the initial phases. The practice varies dependent of the fields, programs for public sector personnel (civil servants, teachers, medical personnel) are better developed.

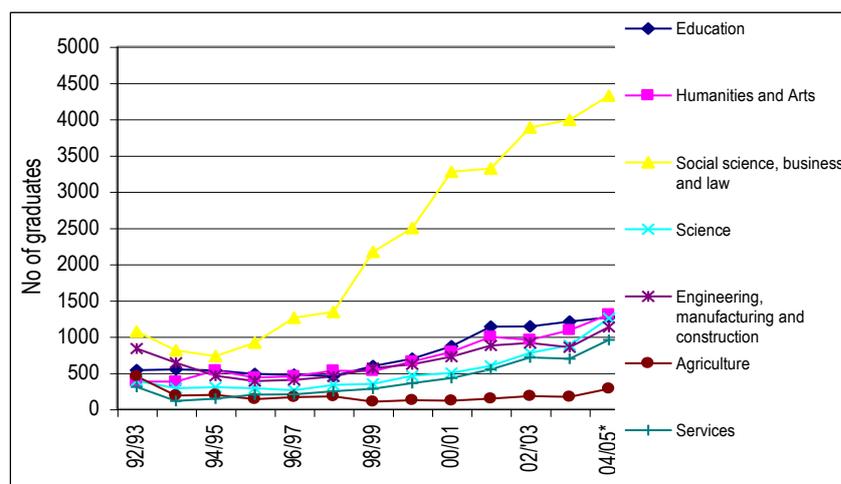
106. There is no overall system of career guidance and information in Estonia. This also applies to the higher education level. It is considered one of the major reasons why so many young people choose to study in upper secondary schools, not in VET schools and consequently, prefer academic study instead of the professional higher education track. Although there has been much talk regarding the design of such a system, there have been no concrete actions. For HEI-s this passivity could be explained by the successful transfer of graduates to the labour market. Decisions regarding the quality and scope of career services are taken by individual institutions, the Ministry of Education and Research does not have any role in this matter. It tends to be perceived as an area in which resources are limited and the potential for development is large: at the University of Tartu there are only three full-time employees responsible for the employment mediation, psychological support and career guidance for 18 000 students, while two are employed to provide career services for the 11 000 students studying at the Tallinn University of Technology.

Graduation and earning trends

107. The number of graduates with tertiary education has increased three-fold over the last 25 years, while the number with vocational qualifications has been reduced by almost half. Behind this decrease are structural changes in the educational system (former polytechnics upgraded to HE level), a large number of “older” students pursuing a tertiary degree (taking their second or finishing the first degree, as well as working) but, clearly, also the low popularity of the profession of worker and, thus, of the vocational education track. For more detail on graduates’ trends, see Annex, Table A11.

108. As regards study fields, there has been an increase of graduates in all areas, except agriculture (Annex, Table A7). The biggest increases have been concentrated in the social sciences field – such as business, law, public administration – leaving it open to discussion whether this poses new threats to market absorption capacity. Concern may be justified since management-related courses in the first cycle are of a general nature, and so far do not offer sufficient options for specialization.

Figure 3.2. Graduates with tertiary qualifications by field of study, 1992/93 – 2004/05



Source: Ministry of Education and Research, 2006

109. Relatively little attention has been paid to analysis of the success of graduates on the labour market at a central level in Estonia. Every year in December, the Labour Market Board makes available for interested parties figures on the fresh graduates who have registered with the Board for a job search. However, the numbers do not present the picture in all its complexity, glossing over any circumstances that may have affected the numbers (in some regions, for example, graduates register themselves as unemployed just after graduation in order to get access to social benefits).

110. There is still no general data collection regarding the salary levels and educational backgrounds of employees due to the smallness of the sample for the labour force. The Statistical Office data collection has focused on economic sectors and sizes of firms. The first step in assessing the size of graduate incomes was taken by the PRAXIS Centre for Policy Studies in 2005. The research was funded by the Ministry of Education and Research.

111. The research was based on the Taxation and Customs Board data of income tax paid by graduates (and students who had terminated their studies) from the 1999/00 and 2002/03 academic years. The result cannot be used for a variety of reasons to just calculate backwards for an indicator of total income. However, these figures can be used to compare relative differences between graduates (and students who terminated their studies) from different fields and levels of study. Inasmuch as the period under study is very short, the results cannot truly be used to make generalisations about subsequent periods. The Ministry of Education and Research intends to continue the assessment of graduate salary levels, increasing the scope of the study to take in graduates of vocational education.

112. From the results of the first research it is clear that a diploma confirming that higher education has been successfully obtained opens doors in the Estonian labour market: the average income of graduates is higher than that of students who dropped out, of whom 70% pay income tax as compared to the 85% of graduates who do the same. The average amount of annual income tax paid by graduates is also increasing more rapidly than for students who terminated their studies. Comparing different levels of higher education, the proportion of people paying income tax in the years in question averaged 95% among doctoral graduates, 92% among Master's graduates, 89% among bachelor's graduates and 87% among graduates of professional higher education studies.

Table 3.3. Income tax paid by graduates and students who have terminated studies in the 2000/01 academic year, during two consecutive years, in kroons

	Graduates			Students who have terminated studies		
	In the year of graduation	1 st year after graduation	2 nd year after graduation	In the year of graduation	1 st year after graduation	2 nd year after graduation
Professional higher education	10 772	14 730	18 129	10 209	11 653	13 757
Bachelor Studies	14 361	20 671	25 840	14 597	17 109	19 200
Master's Studies	24 602	30 121	34 443	30 973	34 108	37 849
PhD Studies	27 822	37 581	42 773	39 645	39 022	41 244
<i>Residentuur</i> ¹²	17 488	30 097	43 508	34 535	36 269	65 243

Grey areas denote that the number of taxpayers is less than 50

113. The obvious rule seems to be that the higher the education, the higher the pay. As such, professional education graduates throughout the years have had lower income tax levels, and graduates of doctorate studies and *residentuur* have higher levels. The three areas of study with the best salary prospects are social sciences, business and law; science and technology. In the case of social sciences, business and law, the average annual income tax of graduates of public universities is larger than that of graduates of the same subjects in private institutions. The lowest starting salaries were those of agriculture and education study field graduates, but in the following two years the growth in income tax levels in these fields was comparatively higher than in other areas. Graduate incomes in the humanities and arts, natural and exact sciences and agriculture are even lower in places than those of students who terminated their studies in the same period, but as these numbers diminish each year it is likely that the income tax levels of graduates will prevail in subsequent years. The average annual income tax for women in different areas of study is as equally divided as for men – and if you compare the areas with the largest and smallest income tax levels, the differences in the average amount are smaller.

114. Looking at the dispersion of graduates between different areas of activity, it can be seen that those of health, welfare and education are most highly concentrated: 57% work in the health and social welfare sector and 54% in education. Most evenly dispersed among branches of the economy are graduates of the social sciences, business and law, with the most concentrated sectors for the three being public administration, defence, wholesale and retail trade and the leasing of real estate. The division on the labour market of those who terminated their studies is generally similar to that of graduates, although somewhat more diffuse. Detailed information is presented in Annex, Table A12.

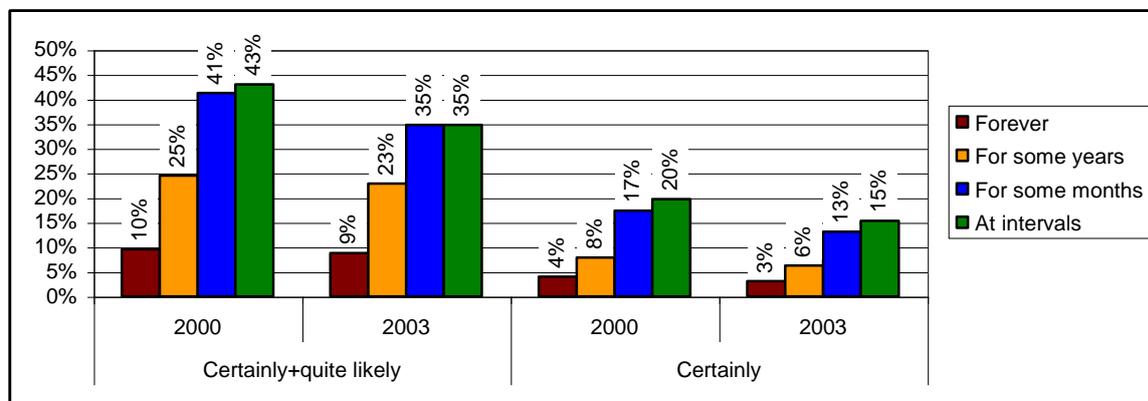
International labour market

115. There is no official statistical data about the number of specialists and workers who have left Estonia since the country joined the European Union. The estimates are that the number of people who are currently out of the country for working purposes remains at 12 000–16 000 (Aru, 2006). The reason for this quite low number is believed to be due to the Estonian character – people do not easily move for available jobs, even within the country. The Ministry of Social Affairs has run surveys to get more information about the preferences regarding countries, and by far the most popular destination is

¹² Residentuur (Residency) – postgraduate special medical training programmes lasting 3-5 years. The final examination completing *residentuur* of training is given in front of a committee, whose members are the current professionals of the specialty of graduation. If passed, the resident will be granted the title of a medical specialist in the field studied. Only successful graduation of these programmes gives the right to work as a specialist.

Finland. Usually people are willing to go to work abroad temporarily, with only 3% seeing it as a one-way trip.

Figure 3.3. People's aspirations to work abroad, 2003



Source: Kallaste, E., et al. *Eesti tööealise elanikkonna töötamise potentsiaal Euroopa Liidus*, Center for Policy Studies PRAXIS, 2004, extract from Ministry of Finance, 2006.

116. Often, the main reason for looking a job abroad is the difference in salary levels. But especially for the specialists with higher education qualifications the reason might also be new opportunities for self-realization. In some narrow fields, the small size of Estonia may limit professional activities – as a surgeon, one needs to conduct a certain number of special operations in order to maintain the professional level but a country the size of Estonia may not have a sufficient population.

117. However, in regards to scientists and engineers Estonia clearly faces the threat of brain drain if in coming years there are insufficient investments in the academic infrastructure, which is the crucial factor in making the work environment attractive for both local and international researchers.

CHAPTER 4. REGIONAL ROLE OF HIGHER EDUCATION

118. Estonia is sparsely populated compared to other European regions – the density of population per square kilometre is 31 people, which is approx. one-fourth the average in the European Union. At the same time, there are relatively large differences in the development of different regions. The urban areas of Tallinn and Tartu have clearly stood out due to their development potential, and more than a half of the country's economic growth (approx. 60%) is generated in Northern Estonia. The different development potential of regions is seen as a problem in Estonia and as a result, many strategic plans have been approved on the governmental level, which emphasise the importance of the balanced development of all counties and are aimed at stopping the population from moving into the capital area. The first regional policy document was approved in 1994. Unfortunately, strategic initiatives were not sufficiently specific until 2004, which means that regional economic disparities have grown according to all economic indicators, instead of decreasing. A certain tendency towards change is beginning to emerge due to the agricultural support associated with European Union member status.

119. Opportunities for supporting the complete and balanced development of regions with the help of specific measures will become available during the programming period of the European structural funds for 2007-2013, which will prescribe channelling significant amounts of support into the improvement of the social and technical infrastructure. According to the resolution of the Government, support of regional development is one of the five main priorities alongside educational, R&D activities, the environment and road construction. Creation of a business environment that favours the creation of new companies and jobs, improvement of the availability and quality of the public services aimed at the satisfaction of the basic needs of people and an increase in social inclusion are seen as important factors on the strategic level. Attempts are being made to use different measures for the creation of attractive conditions for highly qualified skilled labour and specialists and support the preservation of the historical and cultural heritage outside the capital.

120. Until now, Estonia has not had a specific agreement and development vision for strategies regarding higher education in the regions. Development has been rather sporadic and depended mostly on regional initiative and the interest of HEIs in Tallinn and Tartu. It may even be said that the regional aspect in higher education has still not been clearly defined, but many regional policy documents (not even mentioning the aspirations of local authorities) have recognised the significant role of higher education in maintaining the development of a region. One of the reasons for the relatively modest promotion of the regional dimension has been the fact that until 1991 – during the Soviet period – institutions of higher education only operated in Tallinn and Tartu. The first decade of reforms after Estonia regained its independence was aimed at the modernisation of the general management of higher education and securing the quality of teaching, which is why there have not been enough resources for the development of the regional dimension. On the other hand, the issue also lies in the fact that research, development and innovation activities, and the higher education associated therewith, require a strong business and industrial sector, the presence of which is moderate in the regions outside Northern Estonia and around the area of Tartu. This is also the main reason why there are so few research and developments projects between HEI-s and regions outside two regions mentioned previously.

121. The regional dimension of higher education has mainly found expression in state-commissioned education being directed to educational institutions outside the two main university cities. The network of educational institutions that offer higher education outside has been created as a result of the autonomous decisions of public universities and regional initiatives and through reorganisation on the basis of the vocational educational institutions that formerly offered professional secondary study, after the completion of secondary education. 10% of all students studied outside Tallinn and Tartu in the 2005/06 academic year. In the same year, 33% of all Estonian students studied in Tartu and over half of Estonian university students studied in the capital. Regions mainly offer studies based on professional higher education and bachelor study. Few of them offer studies at Master's degree level and this is then associated with centrally established qualification requirements for specialists (e.g. teachers). Specialities aimed at the public or service sectors (educational and social workers) are rather widely represented whereas the options for studies related to industry and

production are more limited.

Table 4.1. Distribution of university students according to the educational institutions located in the regions¹³.

	Number of inhabitants	Educational institutions offering higher education (incl. in private ownership) according to <i>the structural units</i> of the institutions of HEIs in the regions, <i>listed separately</i>	Number of students in 2005/06 academic year
Northern Estonia	521 410	28	38 878
Central Estonia	142 091	6	1800
North-eastern Estonia	174 809	6	2167
Western Estonia	163 406	5	1697
Southern Estonia	349 353	11	23 745
TOTAL	1 351 069	56	68 287

ESA: Regional Development Database, 2005; Estonian Educational Information System (EHIS), 2005.

122. The role of the Ministry of Education and Research in supporting the creation of colleges of public universities has been selective and arising directly from regional political needs – support of the Narva College of the University of Tartu was caused by the need to assure preparation of teachers for schools with Russian language instruction in Ida-Virumaa, the Pärnu College of the University of Tartu is seen as the leader in training tourism and holiday economic specialists, and the potential of the Virumaa College of the Tallinn University of Technology in offering professional HE in technology fields is based on the industrial profile of the region. The Viljandi Academy of Culture of the University of Tartu is known in Estonia for its studies in folk culture. The legal status of Viljandi Cultural Academy changed relatively recently (in 2005) from a national institution of professional higher education to a regional college of the University of Tartu.

123. In parallel with the creation of structural units of public universities in different regions, four vocational educational institutions in the regions also started offering higher education based on the conceptual plan for development of vocational education approved by the Government of the Republic in 1998. By today, one of these educational institutions – Kohtla-Järve Polytechnic – has been merged with the Ida-Virumaa Vocational Education Centre and from the 2005/06 academic year, studies on the level of higher education have been transferred to the Virumaa College of the Tallinn University of Technology. Rakvere Pedagogical Seminar terminated its activities in 2000, whereas the specialty of social work was transferred to the Lääne-Virumaa Vocational High School and nursery teacher training to the Rakvere College of the Tallinn University. Activities of Kohtla-Järve Medical School were cut in 2006, although some of the program provision stays in the region in the form of the branch of Tallinn Health College. These steps have led to the situation where state-commissioned education is no longer duplicated for the same area of studies in different educational institutions in the same region.

124. The need for state intervention in offering higher education is most justified in the Ida-Viru region, where the share of Estonians in the population only amounts to approximately 20%, which is why offering higher education in the region clearly carries the idea of supporting the integration processes. Also, the number of young people in the 15-19 age group in Ida-Virumaa is also one of the highest when compared to other counties, being the third largest after Harju County and Tallinn. Research institutions have been historically located in this region, from the 1950s in the Soviet period,

¹³ According to the classifications of the Statistical Office, Harju County is considered the area of Northern Estonia, Hiiu, Lääne, Pärnu and Saare Counties form the region of Western Estonia, Järva, Lääne-Viru and Rapla Counties are considered Central Estonia, Ida-Viru County is considered North-eastern Estonia and Jõgeva, Põlva, Tartu, Valga, Viljandi and Võru Counties are Southern Estonia.

which means that launching third level studies has been somewhat easier due to the existence of historical traditions. The industrial enterprises in the region have a considerable potential as possible sources of internships and grants for students.

125. In general, the regional dimension of higher education, incl. state-commissioned education, is controversial according to current practice. The number of students in many regional education institutions is below critical mass and they do not differentiate from other educational institutions with the study they offer, they depend strongly on the lecturers of the “parent university” (who lecture as guest lecturers) with regard to staff and they do not have training programmes that would connect with clearly developed further education. Educational institutions in regions also differ significantly from each other in terms of the resources they have at their disposal – there are structural units who in all specialties depend on lecturers who come to teach for a day or two. We also have to consider that until now, the so-called regional coefficient has not been nationally applied to studies taking place in regions, which means that resources for conducting studies in regions are allocated on the same bases as for studies in Tallinn and Tartu. Development activities that contribute to securing the quality of studies are performed in only a few regional educational institutions. Offering study in the regions also has a different importance for different universities, depending on how the university defines itself in terms of its focus on Estonia and an international approach – it is simply impossible to cover the development needs of all directions with the necessary resources.

126. Broadening the options of e-studies through regional education centres has been seen as an addition to further education in offering regional higher education. In 2004, an initiative was launched in the framework of the government financed e-University consortium, which aims to create the option of self-development for people living outside the Tallinn and Tartu regions in 10 study centres. Using the ICT options allows people in different regions to participate in further and training programmes. Eight of the education centres created work together with public universities, and the premises of public libraries and vocational schools are also used. ICT equipment purchases are financed centrally through e-University and support is also given to educational technologist and tutor training in order to guarantee the even quality of the services of the centres. The project itself is still in its initial stage, which means it is too early to discuss its specific prospects and volumes.

127. Due to Estonia being such a small country, no clearly defined “regional policy” has been designed in the areas of research, development and innovation so far. Both the Ministry of Internal Affairs and the Ministry of Economic Affairs and Communications support regional development on the basis of projects (for example, the Ministry of Internal Affairs within the framework of the international INTERREF, Phare CBC programmes), where local initiative and the quality of applications are the determining factors. Objects of infrastructure have been the main focus in distributing the state budget funds of Estonia to different regions. The support schemes managed by Enterprise Estonia for the development of business infrastructure, where support is offered to companies outside Tallinn and a higher rate of self-financing is demanded from companies in Harju County that border Tallinn, and start-up assistance for new businesses is only meant for companies outside the capital, can be seen as a certain balance mechanism.

128. Estonia basically has to choose between two directions in the development of regional institutions of higher education – to create social guarantees (dormitory, transport and subsistence benefits) for students who come from areas outside the capital and Tartu, which allow them to study in institutions of higher education in Tallinn and Tartu or, to define on a national level these regional education centres that will receive support from the state to guarantee the critical number of students in the educational institutions and the quality of the education they offer. Important aspects in making choices are the decreasing number of potential students (as mentioned in Chapter 1, the number of potential new students in 2014 will have decreased approximately 60% when compared to 2004) as well as the need of areas for highly qualified specialists. The regional educational institutions that have launched their activities by today may have future prospects in the event of either of these scenarios, but some colleges may face the need to re-profile their activities from further education to offering training and e-studies. The future of colleges depends mostly on the largely autonomous public universities, who have the right to offer further education for a fee in addition to state-commissioned education.

CHAPTER 5. ROLE OF THE HIGHER EDUCATION SECTOR IN RESEARCH AND INNOVATION

5.1. Introduction

129. The basis for the current system of organisation of research and development in Estonia was established at the beginning of the 1990s with the reform of the system of research and higher education, within the framework of which the legislation governing national research and development and the financing system was founded, and alignment of the network of research establishments together with the institutes of the Estonian Academy of Sciences with integration to the universities was launched. Through the whole decade, international research evaluations¹⁴ played a significant role in the preparation of reorganisation, within the framework of which the real level of science was evaluated and the possibilities to increase efficiency of the Estonian research system were analysed. Several (branch) institutes, which were included in applied research activities under the military-industrial complex of the Soviet Union, were closed. The mentioned radical changes contributed to the reinforcement of higher education and the level of basic research in universities, but this brought along a drastic fall of applied research and development work oriented to industry. The sector was actually liquidated, and such a change was probably the most radical in Central and Eastern Europe¹⁵.

130. International cooperation and, particularly, participation in the European Union framework of research and development for Central and Eastern Europe since 1993 has had a remarkable effect on the upgrading of research and development. In addition to the fact that larger amounts of financial instruments became available for Estonian researchers, participation in international cooperation has created possibilities to create contacts, opportunities for the introduction of new technologies and for the acquisition of modern management competence.

131. The first research and development strategy was approved by the parliament at the end of 2001. For the first time, the priority key areas of R&D were determined in a strategy (user-friendly information technologies and development of information society, biomedicine, material's technologies), and objectives were set to achieve a total growth of expenditure on research and development of 1.5% of GDP by 2006, to reinforce development of coherence mechanisms between development and entrepreneurship, to develop international cooperation and public knowledge on opportunities offered by R&D. Although development has not proceeded at the expected rate since the approval of the strategy, the document has been of enormous importance particularly because the topic of R&D became a part of the high-ranking public policy agenda. Implementation of the EU Lisbon Strategy, in the context of which knowledge of the relevant issues in the public sector and business organizations has been increased, has intensified the actuality of R&D issues.

5.2. Structure of the research and development and innovation system

132. R&D and innovation policy in Estonia, under the management of the Prime Minister since 1993, is designed by the Research and Development Council (hereinafter RDC) which advises the Government of the Republic in matters relating to research and development strategy, directing thereby the systematic development of the national research and development and innovation system¹⁶. The RDC presents its opinion to the Government of the Republic on the national research and

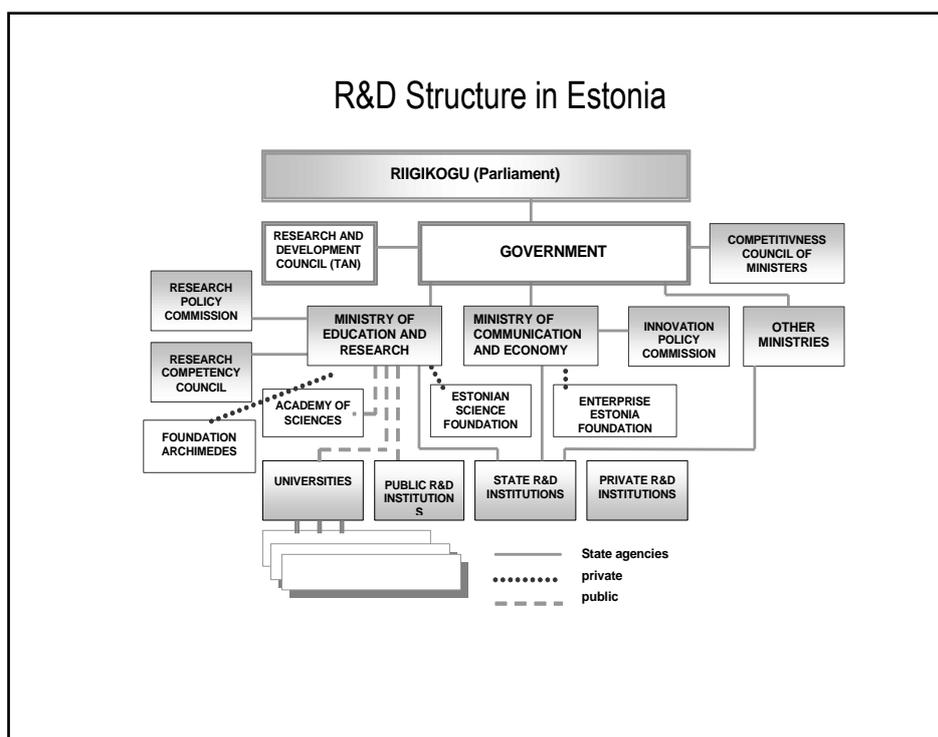
¹⁴ In 1991-1992, the Swedish Royal Academy of Science helped to organise the first evaluation, and the second evaluation was carried out by the Estonian Research and Development Council in 1994.

¹⁵ S. Radovisevic, „Restructuring and Reintegration of Science and Technology Systems in Economies in Transition” 1996, re-cited from the document „Teadus- ja arendustegevus Eestis 2000-2001” („Research and development in Estonia 2000-2001“).

¹⁶ The historical roots go even further back till 1990 when predecessor to RDC was formed under the name of Estonian Scientific Council or *Eesti Teadusnõukogu*.

development plans presented by ministries; submits a report on research and development in Estonia each year; and advises the Government of the Republic on the establishment and reorganisation of research and development institutions and the termination of their activities.

133. The Research Competency Council is an advisory body to the Minister of Education and Research, which is of strategic importance in designing the research policy in Estonia. One of the most important tasks of the Council is to make proposals concerning the targeted financing of research themes at research and development institutions and makes proposals to the minister for the approval of the results of the evaluation of research and development.



134. For improving inter-relatedness between R&D and innovation and entrepreneurship, enhancing cooperation between R&D institutions and enterprises, and stimulating introduction of new knowledge-driven technologies on a national level, the Foundation Enterprise Estonia (hereinafter FEE) has been established. The foundation, which is one the largest institutions of support structures to Estonian national entrepreneurship, provides financial products, counselling, cooperation opportunities and training to businesses, research institutions, the public sector and the third sector. The resources of the Structural Funds for the economic development, access to which was opened after joining the EU, were allocated through FEE in order to improve the infrastructure situation of a small number of R&D institutions that had high competence in priority areas, from the point of view of economic growth. Likewise, FEE administers the international SPINNO cooperation network, which assists

- the establishment of an advantageous and motivating environment in R&D institutions/higher educational establishments, through cooperation with the business sector,
- provides necessary assistance services to staff members of R&D institutions/higher educational establishments in the transfer of knowledge and technology,
- makes information available for entrepreneurs regarding the services and cooperation opportunities with R&D institutions/HEI-s.

135. The administration of individual small grants is one of the tasks of the Estonian Science Foundation (hereinafter ESF) established in 1990. The funding is allocated on the basis of an open application procedure. Compared with large-scale projects of collective grants allocated by RCC, the

grants of ESF are quite small – in 2005, the average size of a grant was 122 500 kroons (7850 EUR) and was aimed at participation in international cooperation networks and contributing to the preparation of the next generation of researchers by assisting PhD students participating in grant projects with fellowships and research-related travel expenses. The grant decisions of the eight expert committees of ESF, as opposed to the case of the RCC, are not approved by the Minister of Education and Research, but by the council of ESF which is appointed on the basis of a regulation of the Minister of Education and Research. The functions of the ESF are currently being reorganised – changes will be made in the management structure, integrating the work of the existing eight committees of experts into four committees.

5.3. R&D Financing System

136. Compared with the other EU member states, a quite low level of R&D investments is characteristic to the Estonian economy. Total R&D expenses in 2004 formed only 0.91% of GDP, compared with the EU average of 1.90%. The main reason is small investment in R&D and innovation by businesses. The investments of businesses in R&D formed only 38% of all expenses of R&D in Estonia, compared with the EU average of 55%. Based on research data carried out on the basis of a similar procedure in all EU Member States, the innovation expenses of businesses in Estonia in 2000 formed only 1.43% of the turnover of the businesses, whereas, at the same time, the EU average figure was 2.15 %.

137. National financing of R&D from the state budget and GDP also fall considerably behind the EU average. National financing has been increased slowly as from 2000, forming in 2003 0.40% of GDP – only 60% of the EU average. As a percentage of GDP, Estonia contributes less than half than the developed knowledge-driven economies (Finland, Sweden), and thus, this is a great obstacle in the training of a critical mass of top specialists and in the development of competitive trends of R&D.

138. The planned financing objectives (in 2003 – 0.9% of GDP and in 2006 – 1.5% of GDP) as set in “Knowledge-based Estonia” (the research and development strategy for 2002 – 2006), have not been achieved. A major setback, as regards the objectives set in the strategy, took place in 2004 when European Union structural resources were provided for Estonia in order to supplement country’s own budgetary resources for R&D and innovation. Instead of combining the European resources with the government funding, substitution was carried out – primarily concerning the measures of innovation policy.

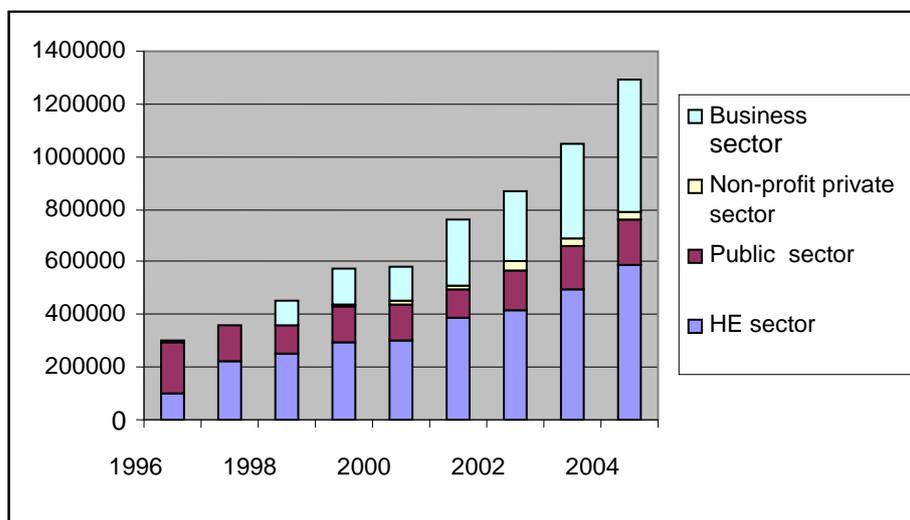
139. The Estonian position, as provided for in “Action plan on the growth of economy and employment of Estonia” and approved by the government on 13 October 2005 for the implementation of the Lisbon strategy, is to reach 1.9% of GDP for R&D investment by 2010, whereas investments of the public sector should reach 1.05% of GDP. The objective of the Lisbon strategy, a 3% share of GDP, is planned to be reached by 2014, whereas the share of the public sector will be increased to 1.2% of GDP. In this, the government has proceeded from the principle of setting realistic and achievable objectives, based on a conservative prognosis, and then ensuring compliance.

140. The intensive growth of R&D expenditure by the private sector has been positive, resulting in a 23.7% growth of the share of technological development aimed at the development of new products and services in 1999-2003. Although the proportions of basic and applied research and technological development have not achieved the dimensions of the proportions in developed countries, the new measures applied in 2004-2005 and the launching of new national R/D strategy give reason to believe that the growth trends will continue.

141. The bases for finance system for the budgetary financing of R&D and innovation has been laid down in the Organisation of Research and Development Act. The overview about the R&D financing structure is provided in appendix, diagram B8. In 2005, the finances directed to budgetary R&D and innovation totalled 837 million kroons (including European Union structural instruments). The capacity of the larger financial instruments was the following: targeted financing – 230.4 million kroons (14.8 MEUR), grant financing – 94.8 million kroons (6 MEUR), base-line funding – 64.4 million kroons (4 MEUR), national programmes – 66.9 million kroons (4.3 MEUR), assisting R&D and innovation of FEE – 285 million kroons (18.3 MEUR). As a new financial instrument, base-line

funding, which is based on such criteria as research publications, patents, number of Doctoral level degrees and share of R&D contractual capacity, was introduced in 2005. The comparison of the division of R&D expenditure by area in 1996 and 2003 is given in the Table A21 in annex. The private universities have not been able to meet the conditions for financing, consequently they have not received research funding.

Figure 5.1. R&D expenditure by sectors in current prices, in 1996-2004 (thousand kroons)



Source: Statistical Office of Estonia, 2005

142. All R&D funding instruments of the public sector are administered on the basis of an open application procedure using projects, and all applicants must be registered in the Register of Research and Development Institutions in order to participate in the procedure. There is no research funding allocated directly from MoER to institutions without open competition. Institutions' research budgets build up based on the performance of individual researchers and research groups. Thus, the funding is allocated to research groups with "the label" and it is not the subject of political negotiations between MoER and institutions or within institution. Although the R&D strategy has formulated the national priority areas, the main criterion for grants allocated through the Ministry of Education and Research is the quality of the proposed projects and project performers (e.g. efficiency figures of the earlier work done by the grant team on the basis of bibliometric and other data, formal educational qualifications of the members of the research group etc.). Thus, R&D In addition to the Ministry of Education and Research, other ministries responsible for the organisation of R&D in their administration area and for its funding coordinate R&D activities connected with their relevant areas.

143. The special programme for centres of excellence in research has been in operation since 2001. The aims of the programme are

- Creation of conditions for high level research compatible with the strategy of research and development in Estonia;
- Establishing the conditions for Estonian centres of excellence to join the international network according to the EU's research policy;
- Encouraging cooperation between the research groups working in the close or complementary areas;
- Creation of a mechanism for elaborating, developing and implementing innovative ideas.

The objectives and a set of criteria for the selection of centres were proposed by the Research Competency Council, using largely the Finnish experience. The procedures for selection involved assessments of the international peer-review and suggestion by the Research Competency Council to

the Minister of Education and Research for approval. Estonian centres of excellence are Centre of excellence in Analytical Spectrometry, Centre of Basic and Applied Ecology, Centre of Behavioural and Health Sciences, the Centre of Cultural History and Folkloristics in Estonia, Estonian Biocentre, Institute of Physics of the University of Tartu and Centre of Excellence for Gene and Environmental Technologies. The overall allocation from the state budget for the research excellence centres in 2006 was 39.3 million kroons (2.5 MEUR).

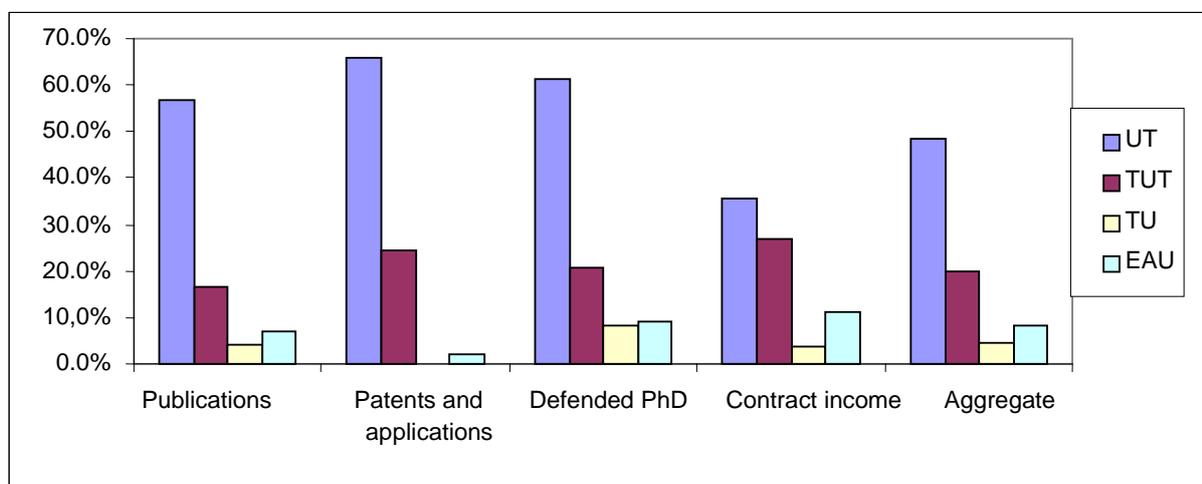
5.4. Higher education sector's role in R&D system

144. Universities play the key role in the Estonian R&D system – as centres creating new knowledge. The share of the higher education sector in all state research and development activity funding was approximately 45% in 2004, and higher education and R&D activities are concentrated, with a few exceptions, in four public universities and related institutions. The private universities' main priority is to provide study on a specialist-level, carried out mainly in so-called soft areas, so the extent of Doctoral study and R&D is very limited. Pursuant to current legislation, the main objective of institutions of professional higher education is teaching, performing applied research is secondary. There is no earmarked funding in state budget for these purposes, PHEI-s need to compete for the R&D funding on equal footing with universities and institutes. Although the personnel of institutions of professional higher education include research staff, the requirements extend to them on a common basis with universities, without specifications. Over the past few years, institutions of professional higher education have started to increase the extent of their development projects for business, but no official statistics exist on the financial extent of these contracts.

145. The higher education sector's R&D is mainly financed by the state whose development funds and investments made up almost 70% of the sector's total financing in 2004, with 20% coming from foreign sources – international funds, pursuant to contracts and as foreign remuneration for contract work. The private sector's role as a donor was relatively small - around 6.5%, the rest of the funding was carried out from the higher education sector's own funds and the funds of the profit-making sector.

146. In observing the distribution of resources in the higher education sector, the leading role of the University of Tartu becomes very clear – both in the number of defended degrees, issued publications, approved patents and the financial extent of the acquired development funds and contracts. Comparison of the abovementioned four public universities is given in Figure 5.2. In addition to the said universities, the Ministry of Education and Research, within state-commissioned education, also allocates doctoral study places for the Estonian Academy of Arts and the Estonian Academy of Music and Theatre, but the extent of their PhD studies is marginal, approximately 2% of the overall commission.

Figure 5.2. Percentage of research publications, patents, defended Doctorates and percentage of R&D contracts in universities (2001-2003)



Source: Ministry of Education and Research, 2005

Explanation: the aggregate comprises weighted combination of different components (publications, etc.), which provide the basis for the allocation of state research basic financing.

UT – University of Tartu, TUT – Tallinn University of Technology, TU – Tallinn University
EAU – Estonian University of Life Sciences

5.5. Quality assessment of research and development

147. Pursuant to the Research and Development Organisation Act, every research and development institution must be assessed at least once every eight years. The objective of the evaluation is to assess the activities of R&D institutions and development themes covered by them, based on the internationally recognised R&D level of the respective area, identify and point out main shortcomings in the evaluated R&D area and give recommendations regarding the development of R&D areas and regarding questions on the strategy of research and development activities. Evaluation of research and development activities is carried out by an ad hoc evaluation committee of three to six members (hereinafter referred to as *evaluation committee*), which includes at least three outside experts. The organisation of the work of committees is coordinated via the Higher Education Accreditation Center, under Archimedes Foundation. In a research and development institution, the evaluation committee may be accompanied by a representative of the Research Competency Council. In the case of a public sector organisation, evaluation-related expenditure is covered by the state budget through the budget of the Ministry of Education and Research.

148. The evaluation committee's work is based on the research and development institution's self-analysis report, followed by a visit to the institution. A written summary of the experts' work must include an evaluation based on the following criteria:

- research and development activities' substantive quality and novelty compared to an internationally recognised level and the topic's significance for Estonia's economy, public sector and culture;
- qualification of the executors of development topics compared to an internationally recognised level and their sustainability considering the next generation of young researchers;
- research environment, including the existence of financial resources, equipment and premises;
- national and international cooperation, research group members' participation in international and Estonian research organisations and their management, as well as in scientific political assemblies, periodicals' editorial offices and conference organisation.

149. The results of assessment exercise have strong impacts as these are bases for the thematic and structural changes for target financing. Due to the problems of comparability of marks given to research groups during assessment exercise from different areas these are not used face value for decision-making. However, there is a perception that marks above “4” (or “good”) affirm the high quality, and less than “3” (or “satisfactory”) are problematical. Weak results in research evaluation are the reason for rejecting the state-commission to PhD graduates in specific area at particular university. By law negative mark in evaluation excludes the possibility for target financing. The results of evaluations are also considered when there are decisions made for selecting Doctoral schools partnership candidates, grant allocations for foreign students in PhD level, etc.

150. Regardless of limited resources, evaluation and competition-based financing have increased the quality of our researchers. For example, the number of Estonian researchers’ articles published in high-level periodicals indexed by ISI WEB of Science has doubled since 1993 and forms 0.07%. More than half of high-level publications are written on physics, clinical medicine, chemistry, botany and zoology, geology. According to *ISI Essential Science Indicators*, materials science stands out in the country ranking, based on the significance of articles (reference compared to the respective area’s average) and holds fifth place in significance ranking. Pharmacology-toxicology, botany and zoology and environmental sciences and ecology also rank a little above the average of significance, and chemistry ranks very close to the average. The growth in significance of materials sciences (60%), immunology, molecular biology and environmental sciences and ecology reflect the fastest development in the last three years.

151. Relatively big success in receiving predominantly competitive-based foreign aid also shows the competitiveness of certain R&D trends. So the percentage of foreign financing in Estonia was 15.2% of R&D total expenditure in 2003, compared to the EU’s ca 7%. The success rate was high in the EU 5th Framework Programme, where 195 applications of 809 or 24.2% have been successful. Specific projects under the topics such as Quality of Life and Organisation of Life Resources, User-friendly Information Society, Environment and Sustainable Development, Energy and Sustainable Development, and Development of Human Potential were the most successful.

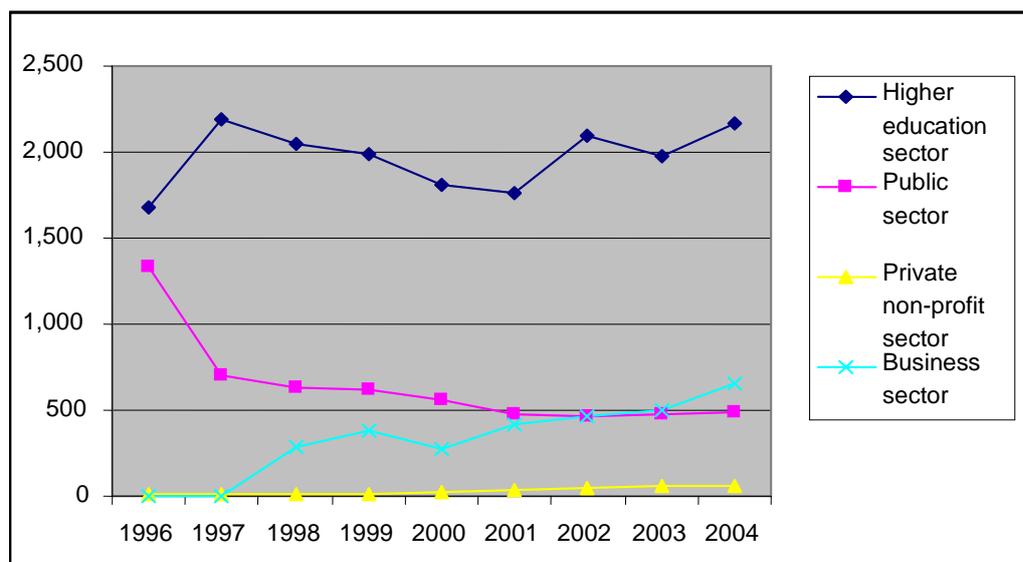
5.6. Human capital for research and development

152. To develop a knowledge-based society and economy, Estonia needs, compared to the current situation, a relatively bigger number of researchers and engineers who on the one hand would ensure the R&D of the public sector and the sustainability and competitiveness of the higher education system, and on the other hand would form an innovative business R&D human capital. According to the experience of developed countries, both the public sector and other fields of life need approximately the same number of degree-holding high-level specialists.

153. Although the number of researchers and engineers per 1,000 inhabitants (also in the calculation of full-time work) has increased a little, there is still a big development gap compared to developed countries. In 2003, a total of 4.6 researchers and engineers per 1,000 employees were employed in Estonia. The respective average of OECD countries is 6.5, in Finland 15.8, in the EU 5.8.

Figure 5.3. demonstrates the dynamics of the change in the number of researchers and engineers by institutional sector in 1996-2004, where the consistent growth of R&D-related individuals working in the business sector over the past few years has given ground for moderate optimism. Estonia does not collect official statistics on how the working time of R&D-related individuals is divided between R&D activities and teaching, thus it is not possible to present the respective statistics.

Figure 5.3. Researchers' and engineers' total equivalent of full-time work by institutional sector, 1996-2004



Source: Estonian Statistical Office, 2006

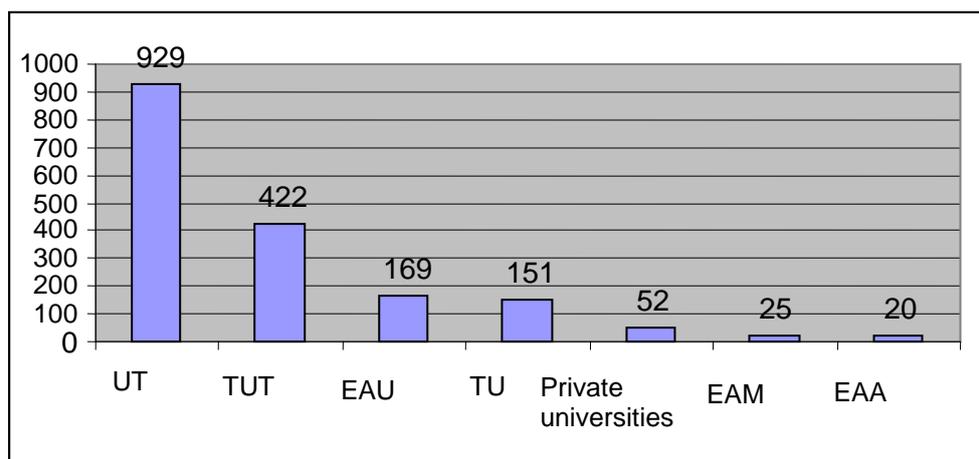
154. The state commissions PhD only from public universities, as the commission is based on the existence of accredited study programmes and positively evaluated research groups. The extent of research funding is also important. Over the past few years, the commission distribution by fields of study has remained stable, but based on the priority of research areas, the fields of natural and exact sciences and technology, manufacturing and construction are preferred. The extent of state-commissioned education per academic year has varied from 220 to 250 in the past few years. Considering the relatively low effectiveness of Doctoral studies, the universities have significantly increased admittance – more than 440 Doctoral candidates began their studies in the 2005/06 academic year. Figure 5.4. demonstrates the distribution of Doctoral candidates by institutions in 2004/05.

155. Arising from historical traditions, Doctoral studies in the natural and exact sciences form the largest share in Estonia - 38% in the 2005/06 academic year, followed by the social and behavioural sciences - 17%, technology and manufacturing - 14%, humanities and arts - 13%, health and welfare - 8%, agriculture - 5%, service - 3% and education - 2%.

156. Although the number of graduates from the fields of research and technology has increased in the past few years, its percentage of all graduates is still significantly lower than the EU average and even more so than the respective figures in Scandinavian countries. The increase in the number of graduates from research and technology has unfortunately not been accompanied by a significant increase in R&D employees (in full-time work). This may imply a brain drain and the fact that not enough attention has been paid nationally to supporting the creation of attractive jobs suitable for the graduates' qualification in the Estonian economy.

157. The addition of 300 individuals with a Doctoral degree every year is considered a sufficient preparation for the new generation of teachers and researchers and the public and private sectors' needs for highly qualified specialists. The number of graduates from Estonian universities' Doctoral studies has increased significantly over the past few years (2002/03 – 105 defended PhDs, 2003/04 - 138, 2004/05 – 118), but it is still a good deal below the expected. Problems result partly from underfunding – spending per researcher/ engineer (in FTE) in the enterprise sector was 2.8 times higher than in the higher education sector (respectively, 763 600 kroons in comparison to 271 900 kroons, 2004 data).

Figure 5.4. Number of Doctoral candidates in universities as of October 1, 2004



Source: Statistical Office

UT – University of Tartu

TUT – Tallinn University of Technology

TU – Tallinn University

EAU – Estonian University of Life Sciences

EAA – Estonian Academy of Art

EAM – Estonian Academy of Music and Theatre

158. At the same time certain problems are also born from the organisation of PhD programs at universities. In 2004 six public universities with the leadership of University of Tartu carried out the survey for analysing the reasons for low PhD studies. The project concluded with the following results:

- The topic of PhD theses is selected by the Doctoral candidate alone in 75% of cases;
- One of the biggest concerns for PhD students is the availability of advisers for the thesis. Often, academic advisers are occupied with multiple tasks that makes them unavailable for students;
- Almost one third of PhD candidates in the survey admitted that academic advisers were nominated only on a formal bases;
- One third of PhD students were nominated adviser who did not have a research grant/project and, hence, students were unable to contribute in the research group;
- Limited scholarship funding enforced PhD students take up tasks that were not necessarily related to their research topic.

159. In the light of the above, several mechanisms have been launched on the initiative of the Ministry of Education and Research, the co-effect of which should contribute to the improvement of the situation. The measures introduced were increase in scholarships for PhD candidates since 2004, launching the pilot projects of Doctoral schools, mobility support for various periods, preferably in Doctoral studies as of 2003/04 (to a lesser extent also to young teachers and Master's candidates), assignment of Doctoral candidates to foreign universities for full-time studies with an obligation to defend a degree over there and return to Estonia (since 2002/03), and opening state-commission education places for foreigners on equal conditions with Estonian Doctoral candidates.

160. On university level, more attention has been put into the efforts to improve the organisation of studies since then. There is a special follow-up project to the study referred earlier. The development project is supported via structural funds. It covers 2005-2008 and is aimed for analysing and restructuring PhD programs, developing the contractual system for PhD studies for raising the efficiency, etc.

5.7. Role of institutions of higher education in innovation, cooperation with businesses, intellectual rights

161. The current legislation on integrated projects does not differentiate between the universities' R&D activities and the respective activities of companies. Enterprise Estonia is implementing several programs, which are promoting the R&D activities in industry and cooperation between industry and R&D institutions.

162. The R&D project-financing program is providing applied research and product development grants for developing new or improved products and services. Both companies and R&D institutions may apply for this grant, but R&D institutions must always show the company involvement in their applications. The program was launched in 2001 and during these years 219 projects have been financed in amount of 28,1 million EUR. Approximately 75% of financed projects are submitted by industry and 25% by R&D institutions.

163. Estonian competence centre program is providing support for establishing new industry that are owned and governed in cooperation of industry and universities. Although the majority of ownership must belong to industry. The main aim of these centres is to carry out strategic basic and applied research for its owner companies. The results of competence centers research are inputs for companies' product development activities. Since 2004 five such centres have been established in fields of nanotechnologies, food technologies, embedded system and cancer diagnostics. Currently there are around 30 companies and 7 universities and R&D institutions involved in Estonian competence centres. During the period of 2004-2006 the financing for the program has been 9,1 million EUR.

164. Spinno program is an initiative aiming for better utilization of Estonian research by our industry. This program supports the active marketing of R&D institutions services, cooperation opportunities and intellectual property to companies through many different activities. It also provides in-house administrative support for academic personnel trying to establish cooperation projects with industry. The program was launched in 2001 and currently there are 10 R&D institutions and higher education institutions developing cooperation with industry with the help of Spinno program. During the period of 2001-2006 the financing for the program has been 5,7 million EUR.

165. Incubators and technology parks. Currently there are three well-established technology parks in Estonia. Two of them are publicly governed parks and one is based on private capital. In addition there is also at least eight already established or just about starting incubators. In 2005 Enterprise Estonia launched a program for supporting the establishment of incubators. The program provides financing for developing services for companies located in incubators. Budget for this program is almost 1 million EUR and at the moment it is mostly covered with financing decisions. There is also a program being designed for developing the infrastructure of technology parks. This program will launch during the second half of 2006 with the initial budget of 3,6 million EUR.

166. The cooperation between HEI-s, research institutions and industry is gradually strengthening, but the mobility schemes for researchers from both academic and industrial sector for exchange of staff have not been in place. Special schemes are in the phase of preparation within the Ministry of Economic Affairs for the new EU programming period (2007-2013).

Intellectual Property Rights¹⁷

167. The most important document for intellectual property rights (IPR) in Estonia is the Copyright Act. The Patents Act regulates the legal protection of patentable inventions. All universities have their own detailed IPR principles. The author has copyright in the work as of the creation of the work. An

¹⁷ This part of the chapter is extract from the text provided in the following web page - <http://www.smartestonia.ee/index.php?page=197> owned the Archimedes Foundation.

author also has copyright in the results of the intermediate stages of creating a work (drafts, sketches, plans, figures, chapters, preparatory design material, etc.). The original title of a work is subject to protection on an equal basis with the work itself.

168. Moral rights and economic rights constitute copyright. The moral rights of an author are inseparable from the author's person and are non-transferable. The economic rights of an author are transferable as single rights or a set of rights for a charge, or free of charge. The author of a work created under an employment contract or in the public service in the execution of his or her direct duties has moral rights in the work. The economic rights of the author are transferred to the employer unless otherwise prescribed by the contract.

169. A work purchased lawfully may be reproduced for private use without the authorisation of its author and without payment of remuneration. The public performance of works in the direct teaching process without the authorisation of the author and without payment of remuneration is permitted if the name of the author of the work is duly referred to. Patents legally protect inventions. An invention is patentable if it is new, involves an inventive step and is susceptible to industrial application. A utility model, like an invention protected by a patent, must be new; but, compared to the latter, it has lower inventive step requirements. The author of the invention is entitled to apply for a patent or a utility model.

170. In Estonian universities there is a general principle that the economic rights to industrial inventions created in the execution of duties are transferred to the employer. In the case of inventions and utility models, the economic rights are transferred to the employer on the basis of a contract. Such an agreement may be included in the employment contract or concluded with a separate contract. Applications for patents and utility models should be presented to the Estonian Patent Office. The IPR regulations of universities are available at their web pages.

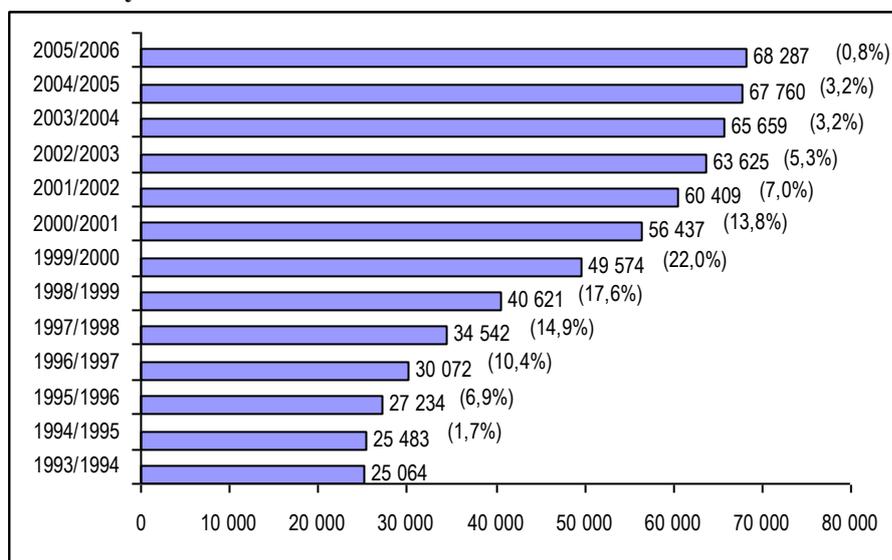
6. ACHIEVING EQUITY IN AND THROUGH TERTIARY EDUCATION

6.1 Student population

171. Over the last ten years, the number of people pursuing tertiary education has grown from about 27 000 to over 68 000 in Estonia (1995-2005). The population, however, has decreased from 1.5 million to 1.35 million over the same period. The number of people enrolled in higher education today is about 5 percent of the population.

172. Figure 6.1 shows the upsurge in the student population of Estonia over the last decade. Especially fast was the growth in 1998 and 1999 (18% and 22%, respectively), when the number of students rose by almost a fifth in both years. In recent years the growth rate has slowed down and is 2-3 percent a year, which means an average increment of about 2000 students. In the last year the growth has been 527 students, which makes the rate less than 1%.

Figure 6.1. Change in the total number of students in tertiary education from the academic year 1993/94 to 2005/06, the number of students and the percentage change from the previous academic year



Source: Statistical Office, EHIS (8.11.2005)

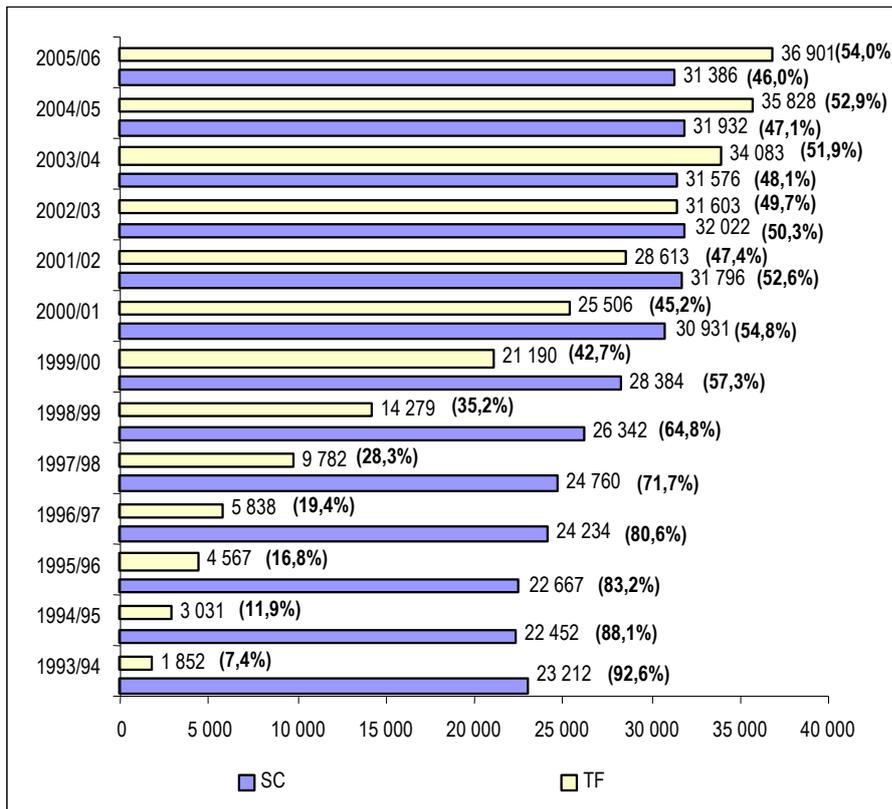
173. The student statistics can also be explained by a change in the number of higher education institutions in the same period. If in 1980 and in 1990 only six public universities provided tertiary education, the number of higher education institutions had risen to 20 by 1993. In 2000 it was near 50, and in the current academic year Estonia has 39 HEIs. The increase in the number of educational establishments is largely accounted for by a speedy set-up of private institutions, and the introduction of professional higher education programmes in vocational schools.

Distribution of students by the source of funding for the student place

174. From year to year, student enrolments in tertiary education have increased, both in respect of academic and professional higher education. This can be explained by the changed higher education system that is multi-centred and more flexible, but also the fact that young people ever more realize the value of education. This, in turn, has brought about a continued growth in the proportion of fee-paying students.

175. In 2005/2006, the students studying in state-funded student places account for 46 percent and the students in non-funded or fee-paying places account for 54 percent of the total student population. The number of fee-paying students is growing from year to year (as shown in Figure 6.2). The proportion of tuition fee based education is growing first and foremost in public universities and state educational institutions. In the biggest Estonian university – the University of Tartu – the students admitted to tuition fee based study places represent 44 percent of the University’s student body.

Figure 6.2. Number of students and their percentage in state-commissioned and tuition fee-based student places, from academic year 1993/94 to 2005/2006



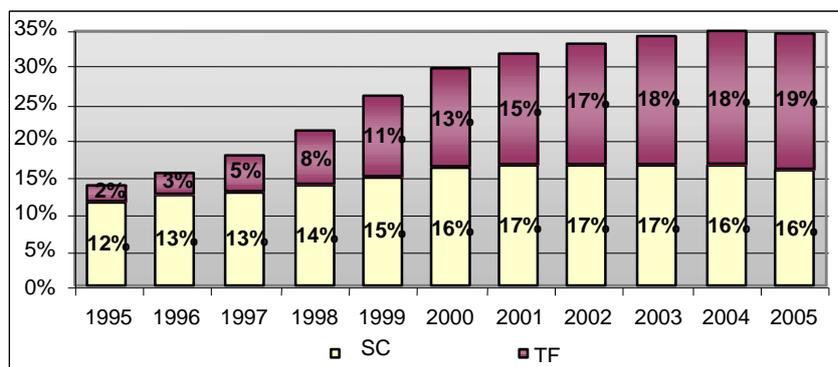
Source: Statistical Office, EHIS (8.11.2005)

□ SC – “state commissioned” study places

□ TF – study places covered by tuition fees

176. The number of students in “state-commissioned education” has increased from 22 667 students to 31 386 students over the last ten years (1995-2005), i.e. there has been a 1.4-times rise. The number of students in “tuition fee based” part has grown from 4 567 to 36 901 students, or by 8 times. In fact, we can have a picture of the growing student numbers only by comparing the data for a specific age group (see Figure 6.4). The proportion of students in “state-commissioned student places” in the age group 20-29 years has increased from 12% to 17%, the proportion of non-state-supported students has increased from 2% to 19%. This implies that government funding has created opportunity for ever more young people to pursue tertiary education for free. However, the demand for higher education has grown considerably faster.

Figure 6.3. Percentage of students in state-commissioned and tuition fee-based study places in age group 20-29 years

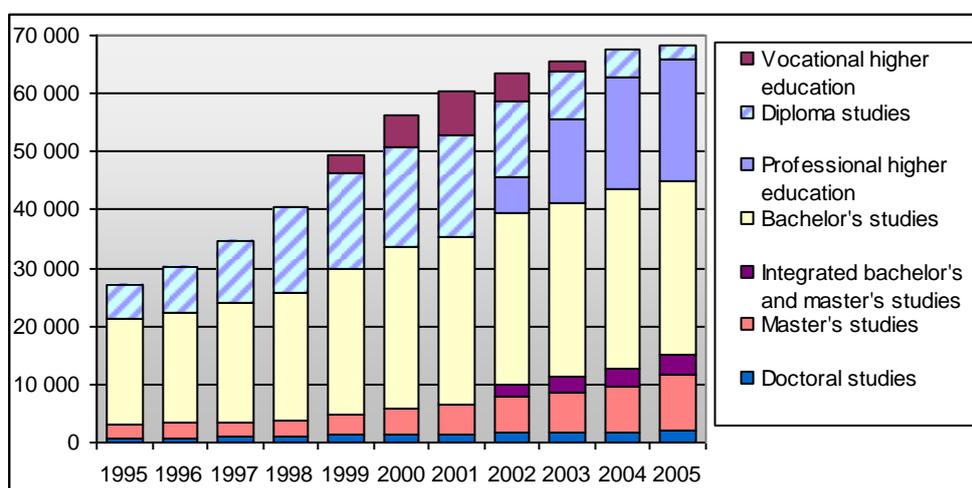


Source: Statistical Office, EHIS (8.11.2005)

Academic and professional higher education

177. During the last decade, more practically oriented or professional higher education has vigorously emerged in addition to academic higher education (see Figure 6.4). Doctoral enrolments as a percentage of total student enrolments in higher education have been relatively stable over the last ten years, ranging between 2.3 % to 2.9 %. Students enrolled in studies leading to the award of a Master's degree represent 14 percent of the total number of students in the academic year 2005/2006, eleven years ago this indicator was 10 percent. The proportion of students in bachelor's studies has dropped by a third in the last decade. Diploma studies and vocational higher education studies have been integrated into professional higher education studies since 2002.

Figure 6.4. Students in diploma/degree studies, 1995-2005

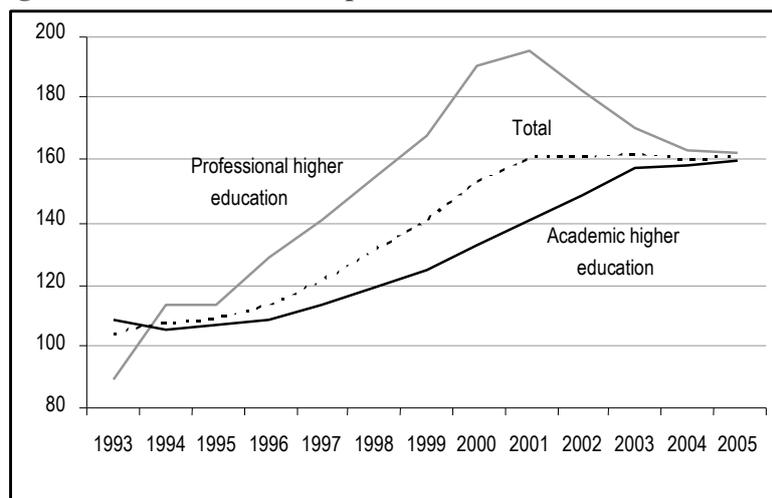


Source: Statistical Office, EHIS (8.11.2005)

Distribution of students by gender

178. The gender gap between male and female students in Estonia is growing. In 1993, there was a balance between the sexes – female students represented 51 percent of the student population, and male students even constituted the majority of enrolments in diploma studies. In 2005, female students represented 62 percent of the student population.

Figure 6.5. Female students per 100 male students, 1993-2005



Source: Statistical office, EHIS, 2005

179. Figure 6.5. shows how the gender disparity has been constantly growing, rising from the 1993 near-balance level to the 2005 level, where there are over 160 female students for every 100 male students. The variance in professional higher education is bigger than in academic higher education.

180. In academic higher education, the average annual increase in the proportion of female students from 1997 to 2003 has been 5.5 percent. A more detailed analysis shows that by 2005 the number of female students per 100 male students in academic higher education was as follows: 152 in bachelor's studies, 164 in integrated bachelor's and master's studies, 196 in master's studies and 115 in doctoral studies. The gender gap is the smallest in doctoral studies, where the number of female students exceeded that of male students in 1997/98 for the first time.

181. A similar disparity is evident in the data for the new entrants during the same period (see Table 6.1). The gender gap widens in favour of female students across the 1996-2004 admissions, reaching the peak in 2001 and slowly declining in the following years (except in 2003).

Table 6.1. New entrants to HE programmes¹⁸, female students per 100 male students, 1993-2004

1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
92	95	108	125	134	137	144	166	171	159	164	158

Source: Statistical Office, 2005

182. As regards entrance applications, the proportion of women has been even bigger throughout the years – for instance, 112 female applications in 1993 and 172 female applications in 2004 were received for every 100 male applications. On the one hand, this may mean that men are disproportionately less interested in higher education studies. On the other hand, however, this may show women's "diligence" in submitting applications for entry to more subject areas, but also that men have deliberated over the decision to apply and are more readily admitted and/or that the entrance competition is lower in the field of study popular with men.

Age distribution of students

183. In ten years, the average age of students has grown. One definite reason is the prolongation of general secondary education from 11 to 12 years, and this is why the formal age for starting tertiary education studies is 19 years. There is also another tendency: the proportion of students aged 25 and

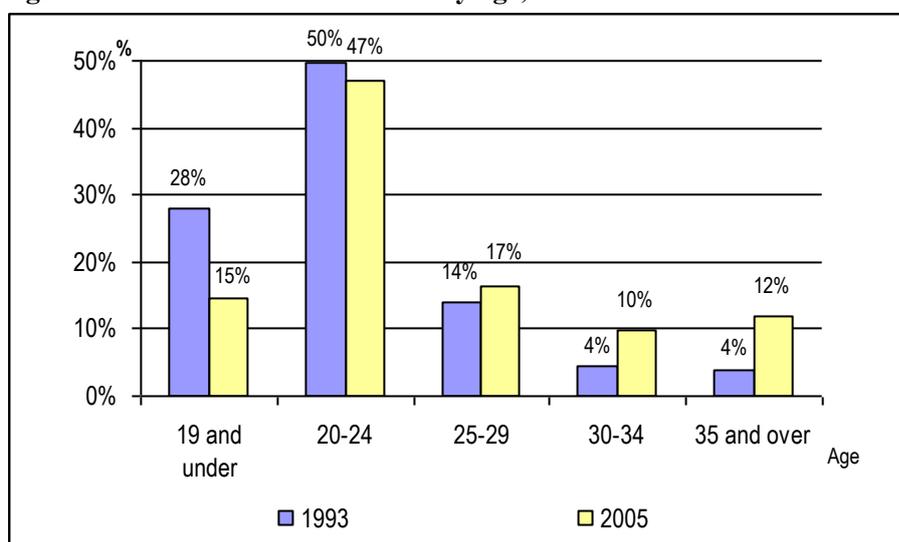
¹⁸ Including all types of HE programmes, also PhD training.

over has increased (as shown in Figure 6.7). Solely the larger number of students in master's and doctoral studies cannot explain this.

184. Another reason here is the inability of people to enter tertiary education due to the unfavourable economic conditions in the 1990s, and the postponement of studies, proved by the fact that in 1993 there were only 8 percent of mature students (aged 30 and over), whereas in 2005 they accounted for 22 percent. This age group (30 and over) is dominated by female students (see Table A10. in the Annex). In 2003, there were over 14 600 mature students and, in 2005, 14 900 mature students (aged 30 years and over) enrolled in higher education. In 1993 the number of students of this age was slightly over 2000.

185. Another reason for the changes in the age distribution of students is the growing popularity of tertiary education. The early 1990s was the period of the so-called cooperative enterprises, where active enterprising was very popular with young people, and higher education was not considered to be a priority. Many were forced to quit studies because of work. Due to the rise in the standard of living in the meantime, paid higher education has become more accessible. Employers, too, are laying greater emphasis on higher education, including it in job requirements.

Figure 6.6. Breakdown of students by age, 1993 and 2005



Source: Statistical Office, EHIS 2006.

Distribution of students by language of instruction

186. In 2005, 6891 students (or 10% of all students) pursued higher education in the Russian language, and 1007 students (1.5%) studied in the English language. 31 percent of the Russian-language upper-secondary school leavers have continued their studies in government-funded student places in some higher education institution. The respective indicator for the Estonian upper-secondary school leavers is 39 percent. Given the need for mastering the Estonian language in order to complete the studies, the Ministry of Education and Research has supported the provision of advanced Estonian language courses for new entrants. The language courses are offered during one year for those students who have been admitted to a “state-commissioned student place” according to the entrance ranking, but whose Estonian language proficiency is below the required level. However, it has been debated that agreed level of Estonian (below of what the state funds additional year) is too low for students of Russian-speaking background to take courses in higher education level. Therefore, some HEI-s has launched special support programs for first year students with language problem (e.g. TLU).

Nominal duration of study and graduation

187. The proportion of students who graduate after completing their studies within the nominal duration has been falling over the years. There is a major variance in professional and academic higher

education. In the former group, approximately 70 percent of students graduate after the nominal years, in the latter group the number of graduates dropped to nearly 50 percent by 2004, both in respect of public and private universities. The indicator is the highest – 87 percent – for state educational institutions. In academic higher education studies, female students are 1.4 times more likely than male students to complete studies within the nominal duration, whereas in professional higher education there is almost no difference.

Table 6.2. Proportion of graduates after nominal years of study by type of educational establishment, 1996-2004

Type of higher education	1996	1997	1998	1999	2000	2001	2002	2003	2004
<i>Public universities</i>									
<i>Professional</i>	48,0%	61,1%	71,8%	66,4%	72,4%	76,8%	70,9%	58,5%	44,6%
<i>Academic</i>	60,1%	58,4%	45,7%	50,6%	46,3%	52,5%	52,2%	51,3%	47,8%
<i>State educational institutions</i>									
<i>Professional</i>	92,5%	91,8%	91,8%	88,8%	92,5%	87,9%	90,8%	91,1%	87,3%
<i>Private educational institutions</i>									
<i>Professional</i>	95,2%	84,6%	90,3%	83,5%	71,9%	78,2%	69,6%	74,6%	72,0%
<i>Academic</i>	90,3%	90,6%	79,2%	71,3%	59,7%	66,6%	54,0%	55,1%	52,4%

Source: Statistical Office

188. In 2003/2004, 10 235 young people completed studies under higher education curricula. If the majority of students in vocational and professional higher education graduated within the nominal duration, then every second student in bachelor's studies exceeded the nominal study duration, whereas only 35 out of 100 male students completed their studies within the nominal years.

Withdrawal from studies

189. The percentage of students withdrawing from studies in the total number of students was 13.9 percent in 1993/94, dropped to 10.9 percent in 2001/02 and started to go up again, reaching 14.1 percent in 2004/05. Two-thirds of those who discontinued studies in 1993 did so because of academic deficiencies, but less than one third in 2005 (Estonian Statistical Office, 2005).

190. There is not much difference in the withdrawal rate across academic and professional higher education, but across the gender of students. In 2003, every sixth male student discontinued his studies, but only every tenth female student did the same.

Table 6.3. Withdrawal from studies by level of education and sex (in %), 2005

Educational level	Total	Female	Male
Professional higher education	14.1%	20.8%	10.2%
Vocational higher education	30.2%	30.0%	30.5%
Diploma studies	15.1%	17.0%	13.7%
Bachelor's studies	14.2%	17.9%	11.8%
Integrated bachelor's and master's studies	9.3%	10.7%	8.6%
Master's studies	15.9%	25.6%	10.9%
Doctoral studies	8.0%	6.7%	9.2%
TOTAL	14.1%	18.8%	11.2%

Source: Statistical Office; EHIS (8.11.2005)

191. There is no data collected on the ethnic background and socio-economic status of students, Also there is no gathering of information regarding how many students work during their studies, although, participation in Eurostudent project in 2006 will give some information in this regards. The

data about region of residence of students can be collected but the information is not reliable due to specifications of registration principles for residence in Estonia.

192. In 2005, there was a survey carried out by the University of Tartu researchers with the purpose to analyse the reasons behind withdrawal from studies. As findings suggest, the impact of weak career service development has clear results on choices young people do. Often, withdrawn students admit that they had made a wrong choice at first place in regards to the future profession. That by itself affects their study motivation. The reason can be also that some student may not have succeeded in their aspirations as some fields are very competitive to get in and then the studying decision is made on the bases what are the available places where one does not need to pay tuition fee. Respondents also admitted that did not have necessary skills to be successful in higher education studies – they did not have experience in taking notes, prepare for examinations, look for literature, write essays (Must, 2006). Due to the need to assist students and changed of financial principles institutions have started to offer tutoring opportunities, especially in the areas where there is high dropout rates (e.g. technology fields).

6.2. Policies in the tertiary education system to advance equity goals

193. No direct research has been carried out on the contribution of tertiary education to social mobility in Estonia. The most evident policy for equal opportunities has been the provision of free education on a higher education level, and this has been supported by all the recent coalition governments. From time to time, public debates are launched on the topic of introducing universal partial fees but most of the political parties in the parliament have not included this approach in their party programmes. However, as private education entails by nature strong private benefits and the Estonian taxation system is based on a flat tax rate, the question will certainly remain on the public agenda for the coming years.

Legislation for the enhancement of equity goals

194. In order to support young people in their pursuit of post-secondary education, there have been intentions to offer certain social safeguards for students in need. However, differently from many other countries this support system is not means-tested. During the preparation of the Study Allowances and Loans Act in 2003-2004 means-tested system management was proposed, entailing the establishment of centrally-based centre (under the Ministry of Social Affairs) for keeping the necessary background information regarding the students, and managing the payments. However, the idea was not supported by the political parties represented in the parliament due to the grave difficulties in measuring income level. As a result, the overall concept was changed to supporting the students most successful in their studies.

195. The system of social safeguards comprises educational assistance (provision of government guaranteed student loans and grants) and tax concessions on tuition fees. The integrated types of assistance are the educational allowance and the government guaranteed student loan, which are aimed at offering government aid for those pupils and students who are capable of completing their studies within the nominal duration. The rest may cover their living and tuition costs through non-government guaranteed loans. The student allowance is allocated to institutions that have performance contracts with the Ministry of Education and Research but payments to students are not dependent on whether one is studying in a state-commissioned student place or is paying a tuition fee. The specific conditions for distributing student allowance funds are approved on an institutional level, but they need to follow broad principles given by the MoER.

196. Students enrolled in doctoral studies are entitled to a doctoral stipend during the nominal study duration, and the amount of a stipend per month in state-funded student places is 6000 kroons during 10 months of a year. This doctoral stipend is allocated only to students who study in places that are commissioned by the MoER. Thus, students who have either selected the study program in private

university¹⁹, or whose academic records were not good enough to get a state funded study place, need to cover their costs on their own.

197. *Basic allowance* is meant to encourage students to undertake full-time study and make good progress, by covering the minimum expenses for lodging, transport, food, clothing and study materials. Payments are allocated to students based on academic results, by the HEI-s. *Supplementary allowance* is meant to cover any additional residential and transport expenses of students, whose residence is located outside the local government in which the educational institution at which they study is located or outside the bordering local governments. The supplementary allowance replaced the existing system of travel concessions (valid until 2003, when half the cost of travel between home and school was reimbursed four times a month) and it enables the support of those students whose education costs are higher due to their place of residence. The amount of basic allowance per month can be a maximum of 800 kroons. The amount for a supplementary allowance can be up to 400 kroons per month.

198. Allowances can be paid during the nominal period of studies. There is universal allocation, with no minimum or maximum amounts. There are no limits connected with age or marital status. The allowance is paid 10 months of the year.

199. In order to promote accessibility to tertiary education for gifted students who are unable, for substantial reasons, to meet all the requirements provided by law, the educational institutions are free to award within their discretion 5% of the basic allowance fund resources (before September 2005 it was 2%), by taking account of other relevant circumstances. Pupils and students are entitled to apply for financial assistance if they are enrolled in full-time or day study and their economic circumstances do not allow for further study (persons in demonstrated financial need; or with medium, moderate, severe or profound disability; persons who are orphans, from large families, parents of under-age children or whose parents are unemployed or retired, etc).

200. A student loan is a long-term loan guaranteed by the government, granted to students in tertiary or vocational education institutions towards education costs. The system of government guaranteed student loans was introduced in Estonia in the academic year of 1993/94 and originally the loan amounts were set according to minimum monthly wage rates. The maximum loan limit was up to 5 minimum monthly wage rates for undergraduate students and 6 minimum rates for Master's and doctoral students per each semester (half-year) during the nominal years. Today, the maximum student loan limit is set for each academic year (it was 17 500 kroons in 2004/05). Loans can be declined by students and there is no information about the percentage of students who take out the loan. Loan repayments are not income-contingent.

201. These loans are provided by banks founded by private capital but are guaranteed against default by the national government. This means that the government will reimburse the financial institution the outstanding loan amount if the borrower becomes insolvent. In earlier years, if the interest rates of the loans were considerably higher, the government reimbursed the banks the difference between the commercial interest rate and the interest rate on student loans fixed at 5 percent. The outstanding loan amount of a person who commences service or employment in the government sector is written off according to a schedule. It is also possible to write off half the outstanding loan amount upon the birth of a child.

202. The Republic of Estonia Education Act provides an opportunity to study for orphans and children without parental care. The Act provides that pursuant to the Republic of Estonia Child Protection Act, the national and local government agencies shall provide full state maintenance and the opportunity to study and receive education for orphans and children without parental care.

¹⁹ There is no positively accredited PhD programs in any private university, 2005/06. Few of the programs have passed the accreditation procedures that has resulted in negative, non-accredited conclusion. Majority of the PhD programs in private universities have not been accredited, consequently the diplomas awarded cannot be recognized by state. Principles of accreditation are discussed in chapter 9.

203. Teaching of persons with special needs is governed by Article 10 of the Education Act. Local government authorities shall provide persons with physical disabilities, speech impairments or sensory or learning disabilities and persons who need special support, with the opportunity to study at a school within the district of residence. If suitable conditions are not available, the central and local government authorities shall provide such persons, pursuant to the procedure and under the conditions prescribed by legislation, with the opportunity to study at an educational institution established for that purpose. The central and local government authorities shall provide children who need special treatment due to behavioural problems with the opportunity to study at an educational institution established for that purpose and shall ensure full state maintenance for such children pursuant to the procedure and under the conditions prescribed by legislation. The type of educational institution and the mode of study shall be determined for or recommended to children with special needs on the basis of medical, psychological and pedagogical assessments.

204. The Ministry of Education and Research has supported the post-secondary studies of people with special needs, covering the cost of sign language interpretation for the deaf. Tallinn University has concluded a cooperation agreement for assistance to visually disabled people, by reducing their tuition fee by 50 percent. Young disabled people studying in grades 10 to 12 in upper secondary schools, in vocational schools or higher education institutions are eligible for an educational allowance of 100 to 400 kroons per month, based on the actual additional expenses incurred because of the disability. Overall, 13 persons with visual disability, 5 persons with hearing impairment and 6 persons with reduced mobility enrolled in tertiary education in Estonia in 2004. The funding is allocated based on the HEI informing of a need.

205. According to the Building Act, physical accessibility of facilities should be ensured in all buildings, but it is done so only in a very limited number of institutions. There are not enough support structures in place in higher education: sign language interpretation is used, but there is almost no study materials adjusted for special needs.

206. In order to provide study opportunities for young people from outside Estonia who have some relationship with Estonia and who are economically needy, fellow nationals and kindred peoples programmes have been introduced. *The fellow nationals programme* is targeted at Estonians living outside the territory of the Republic of Estonia and who need financial assistance, including aid for studies in tertiary education. In 2005, scholarships were awarded to seven young expatriate Estonians from Russia, Georgia, Latvia and Sweden for study in Estonian higher education institutions. In the period 2002-2004, scholarships were awarded to 15 Estonians from Eastern communities, but in 2005 the competition was opened for the first time to Western communities of expatriate Estonians. The scholarship is expected to cover the cost of tuition, health insurance and the government fee payable for a residence permit, and in addition residential, educational and travel allowances are paid.

207. *The kindred peoples programme* is meant for the support of the indigenous languages and cultures of the Uralic peoples (Finno-Ugrian and Samoyed) living on the territories of the Russian Federation and the Republic of Latvia. Within the framework of the programme, the studies of the representatives of the kindred peoples in Estonian higher education institutions (primarily in universities) are supported, with the government financing the cost of student places and paying the scholarships. Since 1992, over 100 young people from Finno-Ugrian ethnic groups study or have studied in Estonian higher education institutions.

6.3. National scheme for entry to tertiary education

208. A general prerequisite for entry to a higher education institution is a completed secondary education. The general trend in national educational policy has always been to provide funded student places for at least 50 percent of upper secondary graduates (as a basis for calculations). There has been tough competition for funded student places in tertiary education, in 2003 there were on average 2.6 applications per place. Furthermore, young people prefer public universities and state educational establishments. There were 4.7 applicants per student place in full-time bachelor studies in public universities, and also 4.7 applicants per student place in professional higher education studies in state

educational institutions. In terms of single curricula, the competition was as high as 12 to 18 applicants per place; the maximum was 33.7 applications per place. As a rule, new curricula are very popular. In private universities, the competition for full-time student places in bachelor studies and professional higher education studies was 1.7. However, the general competition statistics need not reflect the true situation, because in Estonia no limitations are set concerning choice, meaning that a student may, without restriction, submit applications for entry to different subject areas and different educational establishments, though application is limited to two student places within one educational establishment.

209. Since 1997 secondary school leavers must take state examinations. The results of state examinations are the most important criterion in the running for a funded student place. In addition to general conditions, which are completed secondary education and the respective certificate, a higher education institution may establish special requirements for admission. These may include entrance exams, results of the state examinations, subject area tests, interview, etc. Special requirements are usually established for a faculty (in universities) or a subject area. Disciplines are usually related to the subject area. Widespread is the combination when the results of the state examinations are taken into account along with the subject area test(s) at entry, which may comprise a general test in addition to questions about the specialty.

210. The admissions process is administered by the educational establishments, and each school establishes its own entrance regulations. Student candidates apply directly to an educational institution. The institutions may impose different requirements on certain groups. Very common are special requirements with regard to academic achievements, for instance students with good attainments in national and international competitions may be granted free admission to the chosen field of study.

211. Some universities have started to introduce threshold-based entry, pioneered by the University of Tartu in 2004 for some curricula. The principle of threshold-based entry lies in admission to the university of all student candidates who submit all required documentation on time and whose score of state examinations and entrance examinations is equal or above the established threshold. In such cases, a student candidate knows already before applying whether he/she can enter the chosen specialty.

212. The threshold is the minimum score of 100 required for entry to tertiary education. The thresholds are different according to area of specialisation – for instance, in the field of English language and literature at the University of Tartu, the threshold is 93, but in physics it is 65. The score in state examinations required for threshold-based entry are also different according to specialisation. For example, in order to qualify for admission to the English language and literature programme at the University of Tartu, one must have written an essay in one's native tongue and taken the state examination in the English language; for entry to theology, the scores of the state examinations in history, a foreign language and the essay in one's native tongue are taken into account. (Source: homepage of the University of Tartu).

213. There is no state examinations requirement for study at an open university. Several open universities admit all applicants, but at the Open University of the University of Tartu, applicants are ranked by the grades on the upper secondary school leaving certificate and the results of entrance exams. Entrance exams mainly consist of a written test, essay or interview. In some areas of specialisation, prior work experience may be required or advisable.

214. In vocational schools providing higher education, the ranking of applicants is based on the grades on the upper secondary school leaving certificate (or state examinations, if applicable) and interview results. Sometimes a general test and an Estonian language test must be taken. As regards the grades on the school-leaving certificate or the state examination results, the grades in the main subject or in subjects related to the area of specialisation are taken into account. Some schools may require work experience for entry to certain specialties certified by a letter of reference by the company operating in the same area of specialisation.

215. In terms of professional higher education establishments, the requirements vary as well. As a rule, all schools take account of the scores of certain state examinations (or grades on the school-leaving certificate, if applicable) – native tongue and foreign language, mathematics in technical schools or specialisations. These may be coupled with entrance tests and entrance exams (e.g. in arts). In certain specialties points may be earned from work experience and completion of vocational education in a similar subject area or in a certain school.

216. Before 1997 the admissions process was based mainly on the specialisation-related entrance exams organised by the higher education institution. Calculation of the average of final grades earned in the upper secondary school leaving examinations was also widespread – mainly the average score in subjects related to the field of specialisation.

217. As concerns foreign students, a prerequisite for entry is proficiency in English, but the examination results of specialisation-related subjects may also be required. For instance the medical faculty of the University of Tartu requires a minimum score in biology and in chemistry.

6.4. Implications of current methods of financing tertiary education (incl. tuition fees) for equity

218. The country has set an objective to ensure that not less than 50 percent of upper secondary graduates and 10 percent of secondary vocational graduates are granted funded student places in tertiary education. From year to year, the proportion of funded student places provided for a specific age group has exceeded 50 percent. However, the demand for tertiary education has also increased every year (see Figures 6.3 and 6.4 above), incited by the social attitude that only a higher education diploma enables one to enjoy a well-paid job and a higher standard of living. Competition for funded student places has become more intense and thus places are offered to the most capable, because the proportion of funded places per age group has not decreased. At the same time, this induces tension in society, since young people feel that the government does not provide “free” student places for them, which were taken for granted in earlier years.

219. Free or “state-commissioned education” does not imply other expenses such as the cost of study materials and living. Most higher education institutions offer student residential facilities, which are usually cheaper than rental flats available in the rental property market. The majority of students actively use library services and buy as few study books as possible. Expenditure on study materials and living can be recovered through student loans and educational allowances, but these are not completely sufficient. Furthermore, in 2006 an educational allowance is paid to only about 15 percent of students (except PhD students) and 17% are eligible for supplementary allowances or travel concessions. However, if a student who pays for his/ her own studies has good academic results and she/he follows the programme that in turn has a state commission, he/she can successfully apply for an educational allowance. Thus, a student’s possibilities are greatly affected by the economic welfare of his/her family or whether the student’s parents are able to support their child during studies or whether the student can work as well as study.

220. Students in great financial need, like other socially vulnerable groups, are eligible for a subsistence allowance, which is meant to cover the residential expenses and provide a minimum monthly income in addition. At the same time, the law sets restrictions on the person’s place of residence, thus it is not always possible for a student to apply for a subsistence allowance. The government in turn tries to reign in exploitation of this type of assistance, but in fact it is nearly impossible to verify the standard of living and income of a student. During a certain period, reliance on the subsistence allowance was fairly common.

221. Special grants have been provided to certain population groups under private initiative. For example a well-known programme is the Arno Tali Scholarship awarded to gifted young people in rural areas. But generally, there is no wide discussion in a society regarding the equity of outcomes in higher education. One reason for that can be also the reluctance to review the concept of limited state as income-contingent support structure implies considerable management costs on state level.

222. Occasionally, the discussions regarding the financing principles of higher education come up. Lately, one of these debates was started by the former rector of Tallinn University (Heidmets, 2006). He argued on the equity bases for the need to introduce a partial tuition fee, paid by all students. His article was soon followed by number of other authors arguing from both sides. Students' organization's FESU argumentation goes, obviously, for the Scandinavian type "free education for all" model. Obviously, on students' side there is no interest to discuss any other models that imply cost sharing.

223. There is no consensus in a society whether Estonia – having a completely different taxing regime in comparison to the Nordic countries – can afford to follow "free education" model. At the same token, the perception that current system is fair enough is strong as its gives the access to state funded, "free" study places based on merit. As long as there is no research made on equity of outcomes under the current system, these positions are hardly going to change.

7. PROVISION OF RESOURCES FOR THE TERTIARY EDUCATION SYSTEM

7.1 Staff

7.1.1. Career model: filling academic positions and promotion

224. In Estonia, all higher education institutions are directly in charge of appointing personnel and designing a remuneration policy. Employees of HEIs are not part of the civil service and their contracts must follow general labour law requirements. The general qualification expectations are described in legislation; these include requirements for qualification level and work experience. In universities, scientific competence is regarded as the most important asset; teaching competence is valued but not equally. Based on the law, personnel in some positions in professional higher education institutions and VET schools (for PHE programmes) must have work experience of at least three years.

225. An academic career at university contains three major ranks – professor, docent, and lecturer. In addition, there are positions of assistants and teachers whose work and responsibilities have a more limited scope. Historically, Estonian universities have been following the traditional German model with few important differences. Designation to professorship is based on a position. Different fields of research and teaching are allotted a certain number of chairs, and only one candidate can be appointed to a chair. Based on the Universities Act, professors are required to hold a PhD (or comparable qualification), they need to be recognized specialists in his or her field and have teaching experience. For docents (or comparably Associate Professors in the North-American career system), a PhD is also the minimum requirement. In practice, appointment to a position in public universities comes primarily on the basis of research achievements and successful work in advising PhD students working for a degree. Teaching responsibilities are valued somewhat lower, in reality. In fields where there are connections with industry, R&D contracts are a significant bonus. The successful advising of dissertations is not obligatory for applying for the first time for professorships or for a docent position. In contrast to the German model, there is no requirement to take a Habilitation. Some of the public HEIs have introduced the requirement of *venia legendi* for candidates for docent and professor positions.

226. Positions for academic staff members in PHEIs are similarly to universities – professor, docent, and lecturer. There are no differences in the broad requirements for academic personnel described in law, dependent on the type of the institution since requirements focus on the type of programme. VET schools providing higher education programmes do follow the legislation meant for VET schools, which means that there is no similar hierarchy for members of the staff as in universities or PHEIs.

227. Based on the Universities Act, a member of the ordinary teaching staff or research staff is elected to a position for up to five years with a fixed term contract (usually the term is for 5 years). It is required by law that all selections are done by way of public competition with conditions equal for all applicants. In the case where there is no suitable candidate, the post can be filled without a public competition, but in this case the staff member filling the post carries the title *extraordinary* (respectively extraordinary professor or docent, etc.) and his/ her contract is fixed for up to three years. Since 2003 a contract of employment for an unspecified term is fixed in law with any person who has been working as a professor at the same HEI for at least eleven years (thus, has successfully been elected to professorship three times). This is a change that applies only to professor positions and not to other members of the academic staff who still have to compete each time after the end of the fixed contract for renewal. Stipulated by the Universities Act, professors are elected by the council of the university, and other members of the teaching staff and research are elected by the collegial decision-making body of the structural unit.

228. Most public universities do generally include peers from outside the university (from other Estonian universities or the international community) in committees for the assessment of candidates for professorships. The University of Tartu is the only institution that has started to publish information regarding the placements for professors internationally. Generally, the competition per position for professors is rather low – in 2004 it remained on the level of 0.7-1.7 on average in universities (*Rektorite Nõukogu kvaliteedikomisjoni aruande projekt, 2005*). Obviously practice varies heavily, dependent on institutions and disciplines, but many faculties do have problems with filling posts with good candidates for a five-year period.

229. Based on the law, members of the teaching staff (except staff holding an extraordinary position) have the right to a sabbatical semester with maintained pay once every five years in order to supplement their professional skills or for other creative activity. Members of the academic staff are expected to cover the costs for these self-developmental activities from their research grant or otherwise. Usually, this opportunity is used for research or work in a library abroad.

230. The council of a university can award the title of professor *emeritus* to a member of the teaching staffs who has worked at the university as a professor for at least ten years and who is retiring. The age for retirement is 65, as for all employees. After retirement, a professor emeritus can be involved with teaching and research, but he/ she does not have the right to hold elected positions. The state covers the salaries of professors emeritus based on the law, which also stipulates the bases for payment. In 2003, an amendment was made to the Universities Act to introduce the status of docent emeritus. The amendment came into force in 2006.

231. Although VET teachers are selected based on a public competition their contracts are on a permanent basis, not with fixed terms.

232. The University of Tartu has put under discussion a proposal to change the current academic career system into the individual career model used in North America (Aaviksoo, 2006; Saarniit, 2006). The main principles would be to introduce tenure track where positions would be fulfilled first time by way of public and equal competition, promotion is carried through tenure review and a permanent contract is signed after the third tenure review. Under the proposal, project-based positions would be filled through simplified procedures. Fixed term academic positions continue to be filled by public and equal competitions. The reasoning for the planned change comes mostly from the need to make an academic career more attractive to researchers of the younger generations, and to keep all good candidates at the university (by offering them perspectives for career advancement dependent only on their individual achievements). There is no information regarding similar plans for other HEIs.

7.1.2. Remuneration policies

233. Determination of the wages of academic staff is at the discretion of the educational institutions. On average they comprise up to 58% of the operational expenditure of public²⁰ universities and 60% in institutions of professional higher education. In 2004, the average salary in public universities, taking into account both state budget and non-state budget means, for the academic staff (incl. research staff) was 10 300 kroons a month (or 1.5 times the Estonian average wage) and for the non-academic staff 6 800 kroons a month (approx. the Estonian average wage). The average wage for the academic staff of the state's five institutions of professional higher education was 8200 kroons per month (or 1.2 times the Estonian average wage). For a more detailed breakdown regarding the monthly salary levels according to the academic positions in public universities, see Appendix, Table A20.

234. A limited supply of qualified candidates for academic positions is one of the most strategic issues for HEIs in Estonia. Reasons for this problem are multiple – a relatively low output from PhD

²⁰ In 2003, the average monthly salary in public universities was 16 910 kroons for professors, 11 800 kroons for docents, 8940 kroons for lecturers, 7970 kroons for assistants, 7300 kroons for teachers and 7870 kroons for research staff.

studies at universities, the business sector's drive for qualified personnel, a widened spectrum of activities at public HEIs, and an increase in the number of private institutions during the 1990s. One of the reasons for the private sector flourishing was the uncompetitive salary level at public universities, which resulted in a number of professors from public universities taking up teaching responsibilities in the private sector. Public universities have tried to improve this situation by increasing wages and developing internal policies that restrict working at other HEIs. There is a perception that due to these measures, multiple employments has been decreasing. On a national level there are regulations that require 51% of academic personnel associated with a certain study programme to work full-time at HEIs but in reality there are limited ways of controlling this. In the future, it is expected that central database *EHIS* that is under construction for academic personnel at the Ministry will ease the analysis of these issues.

235. The multiple employment of academic personnel in Estonia (as in many Central and Eastern European countries) has meant a scheme where someone with an academic position at a public university teaches on a contractual basis at a private institution or state PHEI. Usually it is a part-time position with a limited teaching load. As the multiplicity of contracts with different institutions affected the quality of the work (mostly regarding time available for advising and research) in the main organization (not to mention the part-time teaching in other organisations), the terms of employment have been made more rigid. More information regarding the statistics about academic staff with employment contracts can be obtained in annex, diagrams B6 and B7.

236. The number of students per academic staff for the overall system was 1/16 in 2004/05. Diagram B5 in the Appendix shows how the rate between students and staff changed for all the institutions during the last 7 years.

7.1.3. Issues for concern

237. It has to be admitted that most of the academic personnel in Estonia frequently use only traditional teaching methods. There is limited evidence of systematic work on improving teaching quality and the use of active teaching methods, although a few good examples serve as models to follow (especially under the e-University initiative). A few development initiatives on a larger scale have been implemented in this area by a universities' consortium, taking advantage of Structural Fund resources.

238. It is difficult to generalize the issues of concern for academic staff on a national level, besides questions related to wages. The topic is especially sensitive for fields where there are a limited number of fee-paying students or where the instruction involves a lot of individual work with an adviser (in fields like music, art, etc.). The issue is gaining further importance as teachers in general education (and lately also in VET schools) have received a pay raise every year. No similar raise has been happening for staff in higher education institutions, and as a result the minimum monthly salary for an experienced teacher (*vanemõpetaja-metoodik*) in a general education school can be in the same league with the salary of a lecturer at a public university or a docent in a state professional higher education institution. The situation differs considerably for academic staff members with research grants for whom there are literally no salary ceilings.

239. With the purpose of supporting the internationalisation of Estonian higher education and strengthening the potential of the Estonian HEIs, the means of European Social Fund are being used for bringing highly qualified specialists on a professorial level (under long-term contracts) to Estonia. This instrument has been very popular among universities after Estonia's integration with the EU. In addition, a limited number of PhD students (ca 5% of the total state commission to the Estonian universities) are provided each year with the opportunity to start full-time studies at foreign universities, and they are expected to return to Estonia after the conferral of the doctorate. The beneficiaries are viewed as the next generation of Estonian faculty. Curiously enough, there are institutions that are not interested in the recruitment of an international staff as it poses new challenges for the institutional leadership and academic culture.

240. Time after time, the discussion regarding qualification requirements for staff at professional higher education institutions heats up due to the aspiration to enable only a PhD qualification to be the

minimum requirement for professorships in PHEIs (an exception would apply only to the arts). Currently, the regulations have been somewhat open to interpretation, which have allowed PHEIs to recruit personnel who have fulfilled the criteria set on an institutional level. Institutions see – in offering professorships to well-regarded specialists not holding PhD degrees – a way to enrich programmes and increase their interest in employment. From the ministerial point of view, the contra argument has been concern over quality control, given the current diversity of PHEIs.

241. Currently, there is no central overview regarding the age, gender and qualifications of academic staff on a national level. It is expected that with the launching of the new database, *EHIS*, information regarding the number of academic staff members, unfulfilled positions, gender, qualifications, ranks of positions, area of focus, institutions they work at, etc. will be available.

7.2 Financing

7.2.1. Financing higher education in Estonia

242. In higher education, the **financing from the public sector** has increased in the past 10 years by 3.6 times – from 0.4 billion kroons in 1995 to 1.5 billion in 2005 (see Table 7.1). As a percentage of GDP, the financing has slightly decreased from 1.0% in 1995 to 0.9% in 2005.

Table 7.1 Educational expenditure by the public sector* on the higher education level and as a percentage of GDP (millions of kroons)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004**	2005**
Higher education, in total	421	606	687	737	978	982	1058	1286	1374	1592	1517
% Of GDP	1.0 %	1.1 %	1.0 %	0.9 %	1.2 %	1.1 %	1.0 %	1.1 %	1.1 %	1.1 %	0.9 %
---In budget of MoER	363	514	631	688	792	772	814	997	1085	1264	1304
--- % Of GDP	0.8%	0.9%	0.9%	0.9%	1.0%	0.8%	0.8%	0.9%	0.9%	0.9%	0.8%
Expenditure in real terms (not taking account of inflation)											
Higher education, in total	421	492	502	498	639	617	628	737	778	875	801
In budget of MoER	363	418	461	465	518	485	484	572	614	695	688

Source: MoER Analyses Department, 2006

*Educational expenditure in the meaning of international statistics, not the total financing of education. In the field of higher education, for example, the own-revenue of institutions of professional higher education and the expenditure of the University of Tartu Hospital and residency are excluded from the educational expenditure of the public sector in Estonia.

**Provisional data

243. The reason for the biggest decrease – in comparing the financial years 2005 and 2004 – lays in the legislative changes associated with the writing off of study loans, where the principles of financing were changed in both 2004 and 2005. This meant an extraordinary growth of nearly 50 million kroons in 2004 and a cutback in financing of 120 million kroons in 2005. The rest of the expenditures on the higher education level nevertheless rose (3%). The indicator “educational expenditure as % of GDP” has also been greatly influenced by the very rapid economic growth in Estonia – in 2005 the nominal growth of GDP was ca 16%, which is exceptionally high even for a transition country such as Estonia.

244. In 2005, data on educational expenditure in the private sector was collected (on 2004) for the first time by the Statistical Office of Estonia (but as it was the first time, some questions and hesitations about the quality of the data remain). The data shows that educational expenditure by the private sources in private universities and professional higher educational institutions in 2004 was 246.8 million kroons (excluding transfers from the government). Expenditure in public universities totalled 495.3 million kroons (transfers from government excluded). Total educational expenditure (public + private sector) in higher education in Estonia in 2004 was 2353.3 million kroons, which

counts for 1.7% of GDP. The private sector counts for about 1/3 of educational expenditure in tertiary education. (No household data yet collected in Estonia). Total expenditure per student (public + private sector) in 2004 was 29 138²¹ Estonian kroons, which counts for 28% of GDP per capita.

245. Taking into consideration only students in state-commissioned education, the allocation of the public sector per student was 38 012 kroons in 2004. It should be borne in mind that this indicator cannot be compared to international statistics, as it does not include private sector expenditure and all students. As the data for the private sector in Estonia exists only for 2004, in comparison with international data (expenditure per student and as % of GDP), only data for 2004 should be used (29 138 kroons and 28% of GDP).

Table 7.2. Public expenditure per student in state-commissioned education (excluded: subsidies to students, military school - Estonian National Defence College) (in kroons)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004*	2005*
Public expenditure per GF-student	16 211	21 702	25 189	25 714	28 088	25 053	25 677	31 417	34 044	38 012	40 819
<i>Growth rate</i>		34%	16%	2%	9%	-11%	2%	22%	8%	12%	7%
GDP per capita	29 973	39 486	48 999	56 291	59 445	67 862	76 577	86 053	94 074	104 865	122 547
<i>Growth rate</i>		32%	24%	15%	6%	14%	13%	12%	9%	11%	17%
Expenditure in real terms (not taking account of inflation)											
<i>Public expenditure per SC-student</i>	16 211	17 630	18 401	17 361	18 358	15 745	15 252	18 013	19 269	20 888	21 547

Source: MoER Analyses Department, 2006

**Provisional data

246. The biggest part of the higher educational expenditure of the public sector is contributed by the Ministry of Education and Research (almost 80 % in 2004). Additionally, two state institutions of professional higher education belong to the area of administration of other Ministries (where they are financed), and the expenditure of study loans is administered by the Ministry of Finance.

247. The biggest part of financing higher education in the area of administration of the Ministry of Education and Research is the financing of public universities (see Figure 7.1), which has increased from 315 billion kroons in 1995 to 1073.6 billion kroons in 2004. At the same time, financing the institutions of professional higher education has increased from ca 47 million to 157.5 million. Since 1999, the state-commissioned education of the institutions of professional higher education has also been directed to vocational educational institutions and its financing had increased to 98 million kroons by 2004. Financing of other expenditure (expenditure, which cannot be divided by school types) has been around a few million kroons in recent years, except in 2002, with the expenditure on higher educational reform (15 million kroons), and in 2004, when students' foreign studies (45.2 million kroons) were financed. A more detailed classification by school type and expenditure type in the budget of the Ministry of Education and Research is given in the Annex, table A18. There is no statistics on unit costs per types of institutions.

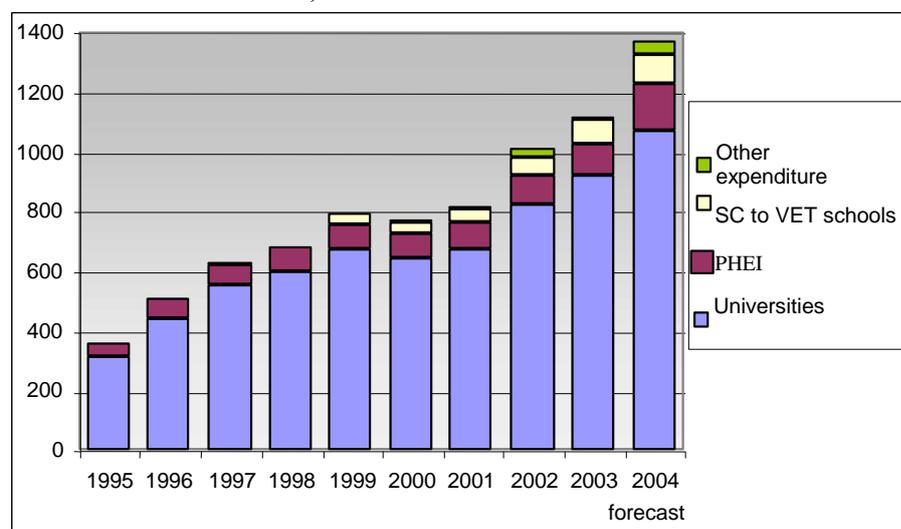
248. In absolute figures, the total financing of the universities (with the biggest financing percentage) has been decreasing through the years as a percentage of the total educational expenditure of the Ministry of Education and Research – from 87% to 78% (see Table 7.3). Also, the percentage of financing the institutions of professional higher education has decreased. If we also include in the financing of the public sector the revenue earned by state institutions of professional higher education²² on their own, the percentage of the financing of institutions of professional higher

²¹ Subsidies for students are excluded and the data of one military school (The Estonian National Defence College) is excluded

²² Own revenue is not included in the education expenditure of the public sector under international methodology. At the same time, own revenue is part of the state budget, and is in certain cases included in the total financing.

education has basically stayed the same – 13 % of the total expenditure of higher education of the Ministry of Education and Research.

Figure 7.1 Financing of higher education by school type in the budget of the Ministry of Education and Research, million EEK



Source: Ministry of Education and Research

249. Financing the state-commissioned education of the professional higher education of vocational schools has increased from 4% in 1999 to 7 % in 2004, of the expenditure of higher education of the MoER. That, and financing the students' foreign studies under other expenditure, has influenced the decrease in the percentages of universities and institutions of professional higher education, although in absolute numbers their financing has increased.

Table 7.3 Percentage of financing according to institutional type in higher education expenditure of the Ministry of Education and Research

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004 forecast
Universities	87 %	87 %	87 %	87 %	85 %	84 %	83 %	82 %	82 %	78 %
Institutions of professional higher education	13 %	13 %	12 %	13 %	11 %	11 %	11 %	10 %	9 %	11 %
incl. own revenue *	13 %	13 %	12 %	13 %	11 %	13 %	14 %	12 %	12 %	13 %
SC to vocational schools					4 %	5 %	6 %	5 %	7 %	7 %

* financing of institutions of professional higher education with own revenue as a percentage of total financing (incl. own revenue)

Source: Ministry of Education and Research

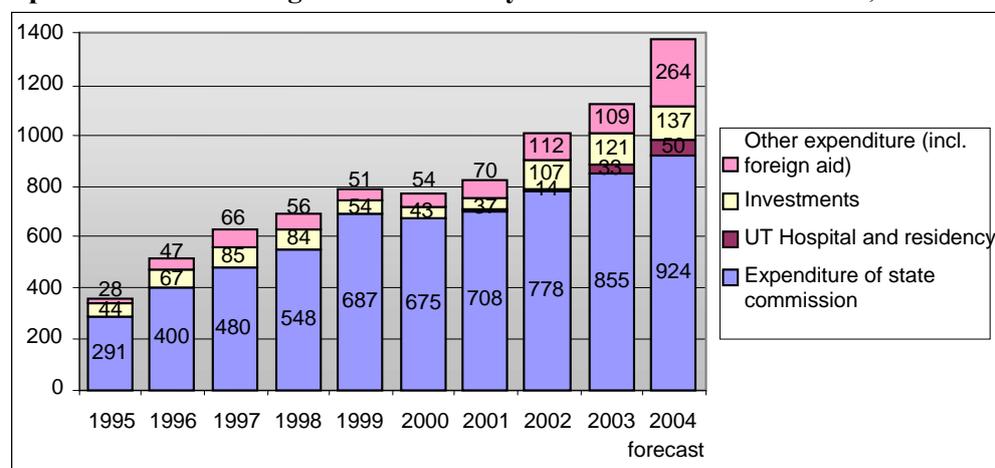
SC – “state commissioned” education

250. If we divide the financing of the higher education in the area of administration of the MoER into expenditure of commissioned education, investments and other expenditure (Figure 7.2 and Table 7.4), it can be seen that most of the expenditure (70-80%) goes to the financing of state-commissioned education, which, in absolute numbers, has increased from 291 million in 1995 to 924 million in 2004. The percentage of investments has been an average 10% of total expenditure, increasing from 44 million kroons in 1995 to 137 million kroons in 2004.

251. The percentage of other expenditure has also been approximately 10% and the value of 2004 has been increased by foreign aid projects (64.4 million kroons) and the students' foreign studies programme (45.2 million kroons). Other expenditure includes foreign aid projects (except

investments), education allowances, scholarships, ICT funds, library expenditure, wages of professors emeritus, expenditure of higher educational reform and students' foreign studies, and expenditure of higher education development.

Figure 7.2. Financing of state-commissioned education, investments and other higher education expenditure in the budget of the Ministry of Education and Research, in million kroons



Source: Ministry of Education and Research, 2006

Table 7.4. Percentage of state-commissioned education, investments and other higher education expenditure in higher education total expenditure of the Ministry of Education and Research

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004 forecast
Expenditure of state commissioned education	80%	78%	76%	80%	87%	87%	87%	77%	76%	67%
UT Hospital and residency								1%	3%	4%
Investments	12%	13%	13%	12%	7%	6%	5%	11%	11%	10%
Other expenditure (incl. foreign aid)	8%	9%	10%	8%	6%	7%	9%	11%	10%	19%
	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Source: Ministry of Education and Research

252. As shown above, the biggest part of the state financing to the institutions of higher education is made up from students' state-commissioned education. In the case of institutions of higher education, this means commissioning a certain number of graduates, or the institution of higher education has to guarantee a fixed number of graduates in a certain field of study.

253. Most of the state financing is directed to public institutions of higher education, but if an institution of higher education based on private capital provides education in a field of study important to the state, where the quality of teaching is evaluated by external evaluation, study places financed from the state budget can be directed also to private institutions of higher education. In 2005 1.1 millions of kroons for financing student places were directed to private universities and 7.4 millions of kroons to private professional higher education institutions. From state commissioned education admission, the bigger part is made up of the priority fields of the state (in Estonia, technology and manufacturing, computer sciences, biosciences, environmental protection, in professional higher education in addition personal services and health and welfare study). Fewer places are directed to fields (subjects) where a bigger demand for paid education among students already exists. In these fields there applies a principle that within the framework of the state-commissioned education, a certain number of places have to be set-aside for able students, to ensure the opportunity for a capable young person from a poorer family to acquire the desired profession.

254. In addition to students financed by the state, the schools may accept students who pay for their own education. In that case, the tuition fee is fixed by the school and there are no limits to it from the state. The tuition fee may also be paid by a third person, for example, an employer or on the basis of a stipend, by the issuer of the stipend.

255. Students, who hold a student place as part of state-commissioned education, do not have to pay any additional tuition fees (but the institutions of higher education have the right to ask for a fee, if the student has exceeded the nominal study period). A tuition fee fixed by the school is only paid by students studying in paid places. All students finance their own subsistence expenses and obtain study aids. In rare cases, the cost of the study aids is included in the tuition fee (in private schools, for example) or a free dormitory place is provided by the school, which has been paid for by the state (for example, the institution of higher education providing military education). It is possible to cover the subsistence expenses and study aid costs from state subsidies, but mostly the subsidies do not fully cover these. (For study loans and education allowances and using the subsistence benefit, see Ch. 6.2.).

256. The main financing sources of the institutions of higher education are the state budget (state-commissioned education, economy expenditure, investments, and finances for specific purposes) and the amount collected from the students' tuition fees; for universities, also R&D. The institutions of higher education also provide in-service training. The institutions of higher education are seldom financed from the budgets of local governments. The institutions of higher education may receive donations, scholarships etc, financing from third persons (employers, graduates, etc.). There is no reliable detailed data about sums of external funding or the proportion of different funding sources of the institutions as the institutions are not obligated to present this data to the Ministry of Education and Research. As it has been said before, in 2005 for the first time such a data was collected by the Statistical Office of Estonia, but the quality is not reliable enough to make a detailed overview of different sources of finance by types of institutions.

257. The bigger changes in the last 10 years are directly related to the increase of the percentage of tuition fee-paying students in the institutions of higher education. In the academic year of 2004/05 there were 35 827 students studying in the so-called paid places (53% of the student body). As no data was collected about private educational expenses in Estonia, there exist no official data about changes in the percentages of financing. As the state has increased its financing over the years, it can be assumed that the schools' total revenue base has significantly increased over the last 10 years, which has at the same time motivated the establishment of numerous new private schools. In 1994 there were 8 private institutions of professional higher education in total, but 11 years later (2005) the number of private schools providing higher education was 18 – 5 private universities and 13 private institutions of professional higher education.

7.2.2 Allocation mechanism of financing between institutions. Financing and quality

258. From 1999 the state finances the study costs through a system called state-commissioned education. State commission to education is planned with partners, which are the Ministries, Estonian Employers' Confederation, Statistical Office, Qualification Authority, Rectors' Council, Rectors' Council of Institutions of Professional Higher Education, Rectors' Council of Private Universities, and the Federation of Estonian Student Unions. Also, different professional associations submit their proposals.

259. The planning of state resources for higher education institutions (for "state commissioned" education) takes place in three stages:

207.1. *Preparatory stage* -The Ministry of Education and Research prepares and renews statistical overviews, elaborates principles for the following year. The information is forwarded to the institutions of higher education and their reasoned requests for "state commission" are requested. Other partners are included in the process – the information is forwarded to them and they are asked to submit proposals for planning the proportions of state commission regarding groups of study, fields of

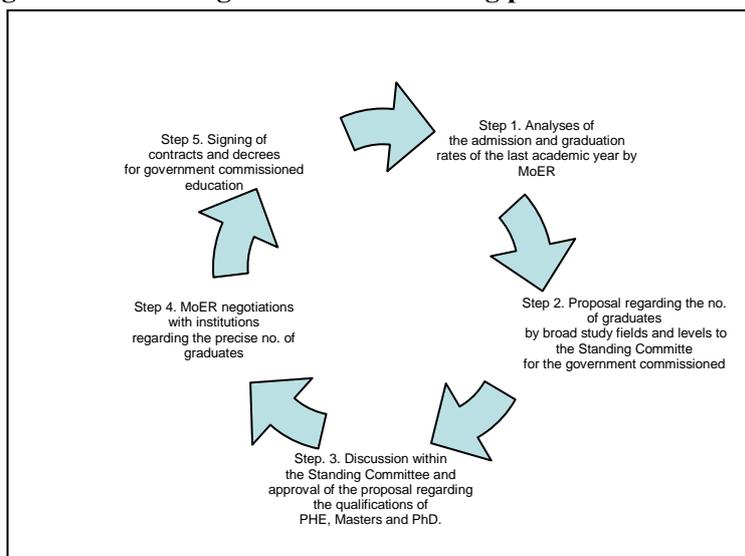
study and areas of specialisation belonging to their economic field. At the end of the stage, the requests/proposals are received from the partners and the institutions of higher education.

207.2. *Committee meetings for state-commissioned education* - In the second stage, the division of proportions of groups of study and fields of study, incl. state priorities, is agreed on in the special standing Committee for state-commissioned education. The sources of the decision are state development plans approved by the Parliament and by the Government of the Republic, and the results of Delphi's expert poll. Considering the limited resources, agreeing on priorities in the special standing committee for state commissioned education also means a decision about groups of study and fields of study with decreasing or stable percentages. The Committee is made up of representatives from Ministries and social partners, and its decisions on state priorities establish a stable base for planning state-commissioned education and determining the actual implementation of state priorities.

207.3. *In the third stage* - the study places are divided between the institutions of higher education according to the proportions of groups of study and fields of study approved in the committee for state commissioned education. The division process of study places takes place through negotiations between the Ministry of Education and Research and the representatives of all public universities, according to the agreed principles, most important of which are quality and efficiency. The results of the negotiations are confirmed with a contract. Study places for the state's institutions of professional higher education are allocated through a regulation of the Minister.

207.4. The above-described process is visualised in Figure 7. 3.

Figure 7.3. Planning and decision-making process for “state-commissioned education”.



260. The state has tied the financing and quality with an accreditation condition. The SC is allocated according to the accreditation results. There are exceptions to this rule: when signing the contract, it is possible to also provide state-commissioning to unaccredited study²³ programs. In that case, the specific study will be listed in the contract signed with the university. In the case of institutions of professional higher education, it is assumed that opening a study programme is at least previously approved by the Ministry of Education and Research. Accreditation is a periodic self-evaluation of an educational institution or a study programme with impartial external expert analysis, to make sure that set study objectives will be met and standards set by accreditation institutions will be fulfilled.

²³ Universities Act, §13¹, point 5.

261. Master's and doctoral places are commissioned from universities, whereas the commissioning covers the widest range of fields possible. One Master's conditionally equals 1.5 bachelors, i.e. compared to the commission for Master's, 1.5 times more students at the bachelor level may study in free (paid by state) places. The base value of a study place as of September 1, 2005 was 18 000 kroons in professional higher education, 20 000 kroons in bachelor studies, 30 000 kroons in 3+2 Master's studies and 500 000 kroons in doctoral studies. At the moment, Master's of the old system (4+2) are also still being commissioned, where the study place's base value is 25 200 kroons.

262. According to the Universities Act, the base value of a study place is the minimum value of the study place approved by the Government of the Republic each year, which includes expenditure on teaching one student, except expenditure on investments (Universities Act, §2). Base value is based on the universities' calculated costs, of this ca 60% is wages, ca 25% managing costs and the rest study aid costs.

263. For different groups of study, coefficients have been established by the Regulation of the Government of the Republic (Establishing the coefficients of study and forms of study. Regulation of the Government of the Republic). The coefficients range from 1 to 6 and the average value is around 2. Also, coefficients for different forms of study have been developed (full-time 1 versus distance learning 0.2). The actual cost of the study place of one student develops as a result of multiplication of coefficients and base value and may vary considerably within different school types and areas of specialisation.

264. If an institution of higher education has not succeeded in providing the requested number of graduates, the Ministry of Education and Research has the right to decrease the financing of the institution of higher education. The system starts for the first time in the 2009/2010 budget.

265. The financing of investments is currently carried out under the national investment plan, where every institution of higher education applies for investments for a specific object from the Ministry of Education and Research. The Ministry of Education and Research decides the allocation of the existing resources within the framework of the limits given by the Ministry of Finance. After that, the Ministry of Education and Research submits its proposals to the Ministry of Finance who delivers these to the Government of the Republic for approval. Institutions of higher education in the area of administration of other Ministries apply for financing from their own Ministry.

7.2.3 Changes in financing higher education over the past 10 years

266. Over the past 10 years, the financing system of institutions of higher education has changed considerably, with the objective of guaranteeing a higher quality of education through the financing, and at the same time to make the tertiary education system more efficient. Also, the financing system tries to order the general higher education landscape. For this, state budget funds are directed with more concentration, thereby reducing unfounded duplication of areas of specialisation, and promoting the merger of smaller institutions of higher education and the concentration of the best teaching staff.

267. Before 1995, the universities were financed based on the total number of the students. As of 1995, the universities are being financed according to the number of admissions approved by the Ministry, which is called state-commissioned education. The number of admissions was fixed for the education levels and study programmes, and the expenses of student places were covered during the nominal study period. As of 1996, the universities also started to admit non-state-commissioned education students through the Open University, who paid for their own studies.

268. In 2002 a new financing system was introduced, which was part of a larger bigger reform of higher education. The reform was based on the idea of modernising HE according to the so-called Bologna principles. In financing, a new system was introduced, where the commissioning was directed towards larger study fields, giving no specific directions about the allocations per programme. Another important change was moving from an input-based financing system to an output financed system under which an institution of higher education has to prepare a certain number of graduates of a certain study level. Under the new system, specialists mostly on the Master's and the doctoral level are

commissioned from universities. Financing rules assume a success rate of approx. 70%, which means that for every Master's graduate, 1.5 students get the chance to start studies on the Bachelor level.

269. In the same year, the financing system of doctoral studies also changed: in the first two years the state finances 60% (30% each year) of the submitted request. The rest of the sum (40%) is received by the university according to the number of defended doctoral degrees. The objective of such a financing system is to increase the efficiency of doctoral studies, which is very low. Before 2002, the financing of the doctoral studies took place in annual equal amounts.

270. During the last years, more attention has been paid to directing degree students to foreign universities and the participation of the teaching staff in EU exchange in the priority fields of the state's development (science and technology fields). The reason is the need to increase the success of Estonia's research and education, and enhance the production of scientists and teaching staff. Each year up to 15 Doctoral candidates may get state scholarships (in addition to 250 places domestically) to study in foreign universities.

7.2.4. Problems in financing higher education and possible solutions

271. Over the last few years the institutions of higher education have expressed more strongly their discontent with the financing of higher education, especially because of the scarcity of resources. On the other hand, the society is not entirely satisfied with the mushrooming and the quality of higher education. The task force for developing a new master plan for higher education analysed the issues and came up with policy suggestions.

272. Universities and other institutions of higher education need a wider scope of sources of income, which expects the inclusion of private capital into the financing of higher education. At the same time the institutions of higher education have to become more efficient in using the resources and be able to manage their money and property more strategically, taking into consideration the need for long-term sustainability. One of the instruments of strategic and flexible management can be in the form of a performance-oriented contract, which enables the description of clearer objectives not only by providing education by fields of study, but in a more complex way. Currently signed contracts of state-commissioned education cover the tasks of the universities relatively narrowly. Additionally, different contracts have to be signed with the universities, e.g. for financing museums or libraries, conducting development projects for teacher training, etc. In the future, all these different contracts should be incorporated into one contract per institution.

273. The Committee proposed to the Government of the Republic that the current form of state-commissioned education be abandoned and replaced with three-year performance-oriented contracts, in which the minimal number of graduates by field of study, and strategic activities for the state, are set. The comprehensive contract would describe the contribution of the institution in developing community life on a broader level (financing of museums, libraries, etc.). Performance-oriented contracts would be signed in negotiations between the Ministry of Education and Research and the institution of higher education, which would be based on the possibilities of the state budget, and the current quality and efficiency of the studies at the institution of higher education. The possible subjects of performance-oriented contracts would be the institutions of higher education, irrespective of the form of ownership.

274. Transition to long-term performance-oriented contracts should take place in 2008 at the latest. The objective will be to also associate investments in infrastructure with the result-oriented contracts. Meeting the objectives and obligations set in the agreement will be the source of the signing of the following result-oriented contract, and financing the studies and research. With this contract and financing model the state will provide more freedom and responsibility to the institution of higher education, which has to react flexibly to the needs of the market, and at the same time fulfilling the agreement made with the state.

275. The most important expectations related with the transfer to the result-oriented contracts:

- Instead of financing fragmented activities it is possible to achieve complete financing with one contract.
- The supporting activities' harmony with the mission and national objectives of the university or institution of professional higher education.
- Defining the necessary number of graduates preserving current principles, but also more flexible opportunities for implementing different studies (incl. training courses, adult education etc.).
- Making the investments part of the contract (introducing for a certain period a separate infrastructure programme).

7.2.5. Taxation of private expenses in higher education

276. People living in Estonia can deduct from their annual taxed income their own training costs and those of their dependents under 26 years of age (including study loan interest). Training costs are certified expenses paid for education in a state or local government educational institution, public university, private school which holds a training licence or has been positively accredited with regard to the given study programme, or in an equal foreign educational institution. Training expenses incurred by an individual on account of a scholarship, which is exempt from income tax, are not deducted from income. Interest on a study loan secured by the state is also regarded as a training expense (Income Tax Act, §26). In the case of other expenditure (subsistence expenses, costs of study aids etc.) the tax incentive is not implemented.

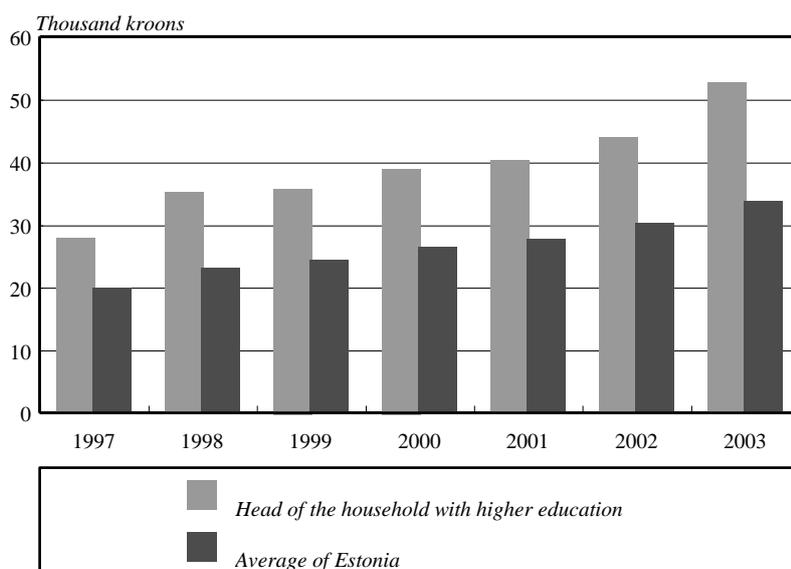
277. Coverage of expenses relating to formal or informal education acquired in the adult education system by the employer are taxed with fringe benefits, except for the expenses relating to the formal education acquired within the adult education system by an official of a security authority. (Income Tax Act, §48)

278. Income tax is not charged on gifts and donations made to state or local government research and educational institutions, which do not exceed a certain fixed sum in a year. For a private person, the maximum limit is 3% of the sum taxed with individually registered social tax in the same calendar year. For entrepreneurs, it is 10% of the income of the last economic year. (Income Tax Act, §49).

7.2.6. Profile of the income of graduates of higher education

279. No data on the age-income profile is collected in Estonia on graduates of higher education, but labour force surveys show that the higher the person's educational level, the higher is the average annual income in their household per household member. In households where the head of the household has higher education, the net income or disposable income per household member increased in the period of 1997 to 2003 faster than Estonia's respective average indicator (see Figure 7.6). In the mentioned households, the average annual increase was 11.3 %, the total in all households was 9.2 %. In 2003, the net income per household member in the households where the head of the household had higher education was 1.6 times bigger than the average for Estonia.

FIGURE 7.4. ANNUAL DISPOSABLE INCOME PER HOUSEHOLD MEMBER, 1997-2003



Source: Statistical Office

280. The difference regarding households where the head of the household has a lower level of education is also reflected in the structure of the income (see Table 7.5). In the case where the head of the household has higher education, the percentage of paid employment is bigger and the percentage of transfers smaller.

TABLE 7.5. THE STRUCTURE OF NET INCOME, 2003

	Income from wage labour	Income from self-employment	Transfers	of which pensions	of which child benefits	Other income
Head of the household with higher education	72.8	4.1	13.6	9.2	1.5	9.5
Average of Estonia	64.0	4.5	24.9	18.1	2.6	6.6

Source: Statistical Office

CHAPTER 8. PLANNING AND REGULATING THE SYSTEM

8.1. Division of responsibilities on the system level

281. The activities of the educational institutions of different types are regulated by laws on different types of educational institutions - the Universities Act, the Institutions of Professional Higher Education Act, the Vocational Educational Institutions Act and the Private Schools Act. Pursuant to the law, general conditions for the commencement and organisation of studies, awarding degrees, the competence of the main decision-making bodies of an educational institution, the rights and obligations of students and academic personnel, the minimum requirements for persons to be selected for academic positions, grounds for the formation of budgets and the scope of and the mechanisms of the execution of state control and supervision are specified centrally. Private HEIs are governed by the same principles on academic matters as state or public HEIs.

282. Educational institutions in Estonia have broad discretion to further specify the conditions for the admission to educational institutions and the content of the curricula thereof. Unlike other countries where more specific requirements have applied to the content and results of studies by field, this was given up in Estonia immediately after regaining its independence. However, there is an exception to this principle as regards internationally regulated professions, such as an architect, a medical doctor, etc. Additionally also teacher training, to which requirements for content, established on the level of a Regulation of the Government, apply. At the same time, as regards these framework requirements, HEIs may decide completely autonomously about the volume of one or another subject and naturally the teaching methods and the character of practical work.

283. In association with the rapid expansion of the sector of higher education, the desire to increase the security of students, and due to one negative example regarding the bankruptcy of one private educational institution (2003), both quality requirements and requirements demonstrating financial capabilities have gradually started to be made more strict. Legislative amendments were made in this direction in 2003. A range of amendments of a principal nature have also been drafted in the framework document of the higher education strategy for 2006-2015, which, at the time of writing the report is waiting to be discussed in the Estonian parliament but has already been approved by the Cabinet of the Government. For example this document lays down distinguishable criteria for universities and specialised universities (e.g. for those dealing with fine arts and for business institutions of higher education); the existence of a positively evaluated research group in the same scientific field is seen as the precondition for opening a PhD programme; the introduction of the principle of feasibility in the registration of curricula, etc are foreseen.

284. Dependent upon the legal status, strategic decision-making power varies enormously among HEIs. As regards both state vocational educational institutions and institutions of professional higher education, the MoER has the right to make feasibility decisions in regards to new fields of study and the opening of curricula. There is no such supervisory right in regards to private HEIs and public universities, but they do need to meet the general quality criteria described in the Higher Education Standard. Certain strains continue to exist as regards the decision during the second half of the 1990s, which granted vocational schools the right to extend to the level of higher education. Although rules extend to the professional higher educational studies similarly to the institutions of professional higher education and the colleges of universities, the requirement that applied research be conducted, the selection of teachers through a public competition, etc., do not extend to vocational educational institutions that provide professional higher education. An orientation according to which the institutions of higher education would have the exclusive right to issue higher educational diplomas is laid down by the higher education strategy with a view to better integrating the sector of higher education. The existing vocational schools must either change their legal status into institutions of professional higher education (firstly passing institutional accreditation) or give up the provision of higher education. In the event of giving up higher education, granting these vocational schools the right to provide short studies on the third level of study is regarded as a compromise. Discussions on what the content of the new qualification would be, and how this could be compared to the vocational education currently followed for 1-2 years after secondary education, have not yet ended.

285. Negotiations regarding the contract for the provision of state-commissioned education are the most important event of the year in the framework of which educational institutions receive feedback regarding their activities and strategic planning. In the framework of these negotiations, the number of specialists commissioned by the state at the levels of Master's studies and professional higher education and in Doctoral studies by fields of study becomes evident. After the transition to the so-called Bologna quality assurance system, as a general rule, the MoER does not²⁴ commission any more the provision of state-commissioned education for future graduates on the Bachelor level since this is regarded as an intermediate qualification, which does not give the graduates the right to work as an independent specialist. The so-called result-based determination of state-commissioned education was initiated as from the academic year of 2002/03 together with the structural changes in the qualifications system within the framework of the reform of higher education. The funds for commissioned education are allocated to the institutions of higher education as a block grant, the exact division between structural units is decided upon at an institutional level. The total amount of an allocation is formed by multiplying the number of future graduates who study in government-commissioned student places by the basic cost of studies (they vary according to different types of studies) and the coefficient of broad field of studies. The coefficients of broad fields of studies and the rates of basic costs at different levels of study are established by a regulation of the Government. Over recent years, the Council of Rectors of Universities has tried to link the signature of the contracts of the state-commissioned education to increasing the amounts allocated from the state budget for raising the rate of the basic cost as well. These endeavours have been crowned by a certain success, although not to a satisfying extent, since the transition to the 5-year specialist studies at universities has given rise to the need for additional resources (the former 4-year specialist studies has been replaced by 5-year studies), the ensuring of which within the framework of the agreed admission volume has been developed in a complex manner at a political level in the course of preliminary negotiations. The negotiation space for institutions of professional higher education and vocational educational institutions is smaller since the state-commissioned education that they provide is determined on the basis of a directive of the Minister.

286. Universities have broad autonomy, which is expressed in their right to possess assets and buildings, to contract a loan, to freely use their budgets with a view to fulfilling their statutory objectives, to develop an appropriate organisational structure and a content of instruction, to employ staff and release them from work, to determine the wage level of employees, to decide upon the total number of students admitted and to specify the rate of tuition fees for fee-based study places. A university has the right to establish legal persons in private law. This possibility is used as the support services of the activities supporting the university's statutory activities (publishing, bookshops, rental of premises, etc.), as well as the masterly use of business possibilities (e.g. pharmacies). In addition, a university may provide services related to the main activities of the university for a charge (continuing education for a charge, in-service training for a charge, contractual research, professional consultations, etc.) and any revenue received thereby accrues to the budget of the university. Pursuant to law, a university does not have the right to sponsor support, grant loans or credit or make donations to foundations or to secure the obligations of other persons with its assets. Founding private schools and research and development institutions in private law through legal persons in private law founded by the university is also prohibited²⁵. Although universities have extensive rights in using their property and in entrepreneurship, however, such activities must be related to the main activities of the university and necessary for achieving its teaching and research goals.

287. The limits of the powers of the state institutions of professional higher education and the vocational educational institutions providing higher educational curricula are more limited. Unlike

²⁴ The only exception is nursery school teachers who are trained both at professional higher educational level and at the level of Bachelor studies. This is undoubtedly a widely discussed topic, the interim result of which is a compromise, which allows the provision of training in both professional higher educational instruction with a more practical orientation and Bachelor studies of a more academic nature.

²⁵ Here the exemptions are foundations, one of the founders of which is the state. The Estonian Foundation of Development Information Technology, which in turn has established the IT College, is an appropriate example.

public universities they are state authorities, which subordinate to the Minister under service procedure. For example, their statutes are established respectively by the Government or the Minister, their development plans are approved by the Minister; unlike public universities, the minimum tuition fee for a non-state commissioned student place is regulated by the requirement to keep it at least at the level of the price payable for a student place by MoER (contrary to public universities among who some charge fees that are lower than the commission paid by the state for a study place); in opening curricula, a related decision by the Minister is needed; the Minister also establishes the procedure for the admission and the expulsion of students. Nevertheless, they are free to decide upon their structure, content of studies, employees to be employed and their wage levels. They have the right to provide services related to their main activities for a charge (continuing education for a charge, in-service training for a charge, contractual research, professional consultations, etc.). The autonomy of the institutions of professional higher education has been increased in the field of teaching activities – e.g. the Minister no longer decides upon the broad fields and forms of in-service training organised by institutions of professional higher education and this freedom is planned to be increased, e.g. they are planned to be granted broader freedom in organising the election of teachers, which is strictly regulated by the Minister at the moment. In the conduct of professional higher educational studies and in the organisation of its activities, the situation of a vocational educational institution is similar to that of an institution of professional higher education; moreover, its rights, resulting from the particular nature of the type of the educational institution are even unlimited. As regards the use of assets, institutions of professional higher education and vocational educational institution are the users of state assets, which they use and govern with the Minister's authorisation and under his or her supervision.

288. The constitutional institution, the State Audit Office – and not the Ministry of Education and Research – has the right to monitor the efficiency of the activities of public universities. The Audit Office decides up on their own priorities the visits to public universities. The results of these audits are published in the web of the State Audit Office. So far there has not been major problems found with the financial management of state resources in public universities. The Ministry of Education and Research has the right to monitor the lawfulness of the activities of universities in the framework of state supervision. The economic activities of a university are monitored by regular and special commissions appointed by the council of the university. In order to inform society, a university reports of its activities according to the procedure prescribed by or pursuant to law, by providing statistical reports and reports on the implementation of the budget. Overviews of the financial situation of a university are regularly received by the Ministry of Education and Research each spring at the time of planning a new budget. A university must report on the spending of targeted financing to the financier at the latter's request. In addition, universities are required to inform the Ministry of Education and Research of all decisions of the council, on which a corresponding documentation is submitted to the Ministry.

289. The councils of universities are the highest decision-making bodies into the competence of which making all key decisions conducting the activities of the university falls. The council of a university comprises the Rector, the Vice Rectors, representatives of the teaching and research staff and representatives of the students (students have to make up at least one-fifth of the membership of the council of the university). In order to better serve as a link between a public university and society, there are boards of governors (*kuratorium*), which have a counselling function and may make proposals to the Minister of Education and Research and the council of the university on issues concerning the development of the university. Pursuant to the Universities Act, *the kuratorium* must present its assessment of the university to the public once a year. Although the Government determines the number of members of a *kuratorium* and their term of authority, appoints the members and approves the rules of procedure (after having taken into account the opinion of the university), they have developed into working bodies, which have relatively disconnected ties with the state higher education policy and forums. Usually, universities suggest as members of their boards of governors their own well-known alumni who have gained a high position in society and who contribute to the development work of the university primarily through their professional work. The legislation does not leave sufficient possibilities for debate regarding the universities' strategic goals and development plans with the MoER.

290. The connection between the board of governors (*nõunike kogu*) for state-owned PHEI and the government is more extensive as institutions are more specialized in the area and usually hold monopolistic power in certain kinds of specialist training (aviation, medicine, etc.). Thus, state administration, represented by high-level civil servants from various ministries and state agencies act based more on a “client” logic.

291. Private educational institutions must have an education licence that grants them the right to provide instruction. An education licence issued for a specified term is issued and revoked by a directive of the Minister of Education and Research. The manager of the private school approves the curriculum of a private school and the Ministry of Education and Research registers it upon the issue of an education licence. Requirements for private higher education institutions in comparison to state or public institutions do not differ as far as academic matters (regulations for programs, fulfilment of academic positions, accreditation, licence regulations, requirements for the candidates of the rector position, etc.) are concerned. However, management models are different depending whether private institution is owned by a non-profit organisation or school is an agency of a public limited company or private limited company. In addition, the issue of an education licence and the registration of the curriculum is made dependant on additional requirements (the development plan of the private educational institution, the written consents of teaching staff to work in the private educational institution, information about the material resources etc) and the minister may form a committee for the assessment of the curriculum and of the material resources or development. As a result of the bankruptcy of one private educational institution in 2003, new requirements were introduced to better protect the rights of students (e.g. capital requirements, requirements concerning the contract between the student and the private educational institution, notification of the MoER about the results of compulsory audits, requirements for the head of the private educational institution and the persons belonging to the directing bodies of the manager of the private educational institution etc).

292. Similarly to the public/ state institutions private HEI-s are required to make one-fifth of the membership of the board of students’ representatives. The size of tuition fee is determined by the manager of the private school and that amount based on law cannot be changed during an academic year. Again similarly, to other types of institutions the size of tuition fee may be increased by up to 10 per cent between two academic years unless otherwise provided by the contract between the private school and the student. In the case, MoER has a contract for state commission with private institution the costs of student places are covered from the state budget to the extent of rates for in specific fields under state-commissioned education, not on actual costs or adopted fees.

293. The contribution on the part of students and employers to the governance structures of HEIs varies a lot among institutions. Participation of students is formally guaranteed in the decision-making bodies at the highest level. However, it remains somewhat more fragmentary on a practical level in structures where they can have a direct influence on the administration of studies. As a rule, student participation is better organized among full-time students in the first and second cycles. Part-time student and PhD student involvement is much less organized for obvious reasons. It should be noted that the turnout rate for elections of bodies of students’ representatives is usually quite low. It differs among institutions but usually remains at the level of 5-10%.

8.2. Strategies of expansion for the higher education sector

294. It must be admitted that in Estonia, after regaining its independence, the state for various reasons has not been able to set explicit goals concerning higher education policy. As a result the expansion of the sector has been submitted to a significant extent to the rules of market competition – new programmes have been primarily created for specialities that have a market demand and this particularly means the so-called soft fields – business management and public administration, law and economy.

295. The state’s relatively lenient attitude towards the generation of new educational institutions (absence of clear criteria in the form of criteria stipulating the role and mission of educational institutions and their financial capacity), uncontrolled opening of new programmes, (for example giving up the decision on feasibility in the registration of curricula for public universities), inconsistent

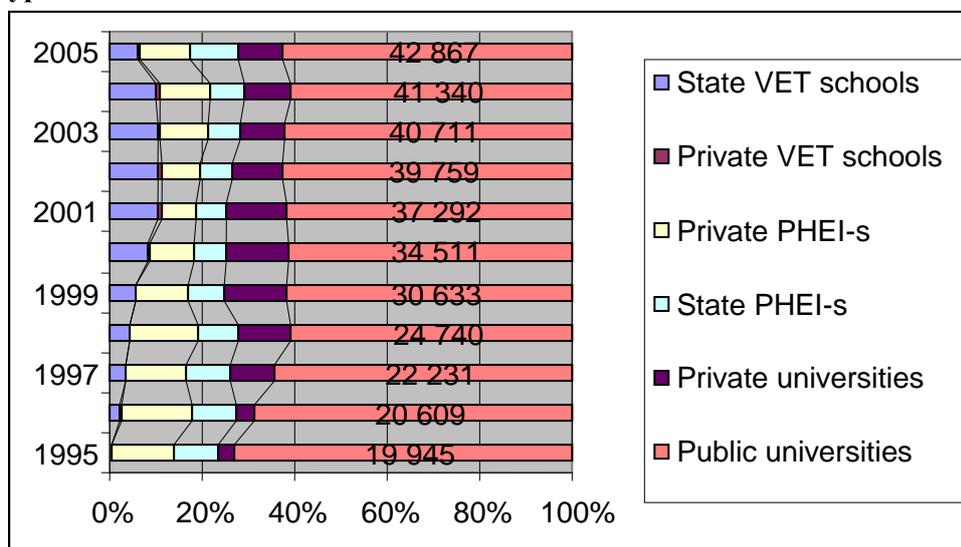
state quality control and the inflexible language policy of the beginning of the 1990s all have contributed in their way to the expansion of the sector.

296. The widening of activities and competition between institutions increased the number of students as HE has enjoyed a very high reputation with the public. The expansion was so intense that in the second half of the 1990s the number of students was increasing by up to 22% per year. A large proportion of the increase can be subscribed to the strategy of public universities. Namely – with the purpose of generating additional income for institutional development, maintaining the diversity of programmes, satisfying the high demand on the side of potential students but also with the objective of pushing private institutions of higher education out of the market – all served as causes for public universities to increase their share of non-state commissioned education.

297. Today it seems that the times of rapid growth are over. During recent years, the growth in the number of students has remained within the limits of 3 %. Until today, the impacts of these processes have given rise to vehement discussions, and as regards the expansion of the sector of higher education, the representative organisations of employers have more and more frequently spoken critically on this issue.

298. The higher education strategy for 2006-2015, which was approved by the Parliament, provides for ensuring that the issue of higher educational diplomas remains exclusively with institutions of higher education²⁶. In addition, higher demands are set for universities as institutions and as regards the instruction of the institutions of higher educations in public law, the use of the principle of feasibility is recommended. By building an electronic database - the Estonian Information System for Education (EHIS) - a better overview concerning the number, qualification, and workload of academic personnel is expected. This serves the purpose of defining more clearly the institutions that do depend extensively on the academic staff employed by other HEIs – part of the problem of the sector’s expansion. State vocational educational institutions will be modified into institutions of professional higher education only after they have passed institutional accreditations.

Figure 8.1. Students on the higher educational level during the academic year of 1995-2005, by type of institution



Source: Statistical Office, 2006.

299. Changes in the number of institutions of higher education will be influenced in the coming years by amendments provided for in the Private Schools Act in 2004. The Act sets higher demands for the equity capital of private institutions. This is an amendment to legislation, which was unambiguously brought about by the bankruptcy of the private university Concordia in 2003. In

²⁶ According to the draft strategy, exceptions are allowed only pursuant to law and after having been approved by the Riigikogu.

solving the very complex case (which also gave rise to an international response), the MoER counselled the parties of the process, due to their wish to ensure the protection of the rights of the students. First of all, the role of the state was to provide legal assistance; the allocation of financial support was disclaimed on the grounds of creating a precedent for a future. Keeping this strong position was particularly due to the fragmented private higher educational sector with its limited financial resources. In the coming years, the volume of the sector of higher education is expected to decrease, primarily due to a drastic decrease in the number of young people. The merger of institutions is inevitable.

300. It is planned to keep the state-commissioned education stable during the forthcoming years (2006-2008), allowing approximately 6300 young people to commence their studies in the first cycle of higher education. The calculations have been based on the principle that 50% of graduates from upper secondary schools and 10% of the graduates from vocational schools will be able to commence their studies with the support of state funds.

8.3. Relations between educational institutions and transitions of students

301. The movement of students between public universities is regulated by the protocol of good intentions signed by the Rectors of six universities in 1995 and in which the principles for the admission of guest students and the approval of one's own students' studies completed elsewhere are provided for. The approval of studies completed elsewhere is also based on the protocol and to the knowledge of the Ministry of Education and Research, students have had no problems with it. Although the protocol prescribes the possibility of mutual settlements between universities, however this possibility has not been used so far. The official data on students movement from one institution to another is not been gathered by MoER.

302. The question regarding the transitions upon graduation, from one institution of higher education to the next cycle of studies at another HEI, is more diverse. During the higher education reform of 2002 where the transition to the system of studies of 3+2 was prepared, one of the reasons for the introduction of a uniform 3+2 programme structure was the intention to increase student mobility within the country. The idea was for more specialised and diversified Master's programmes to widen students' options across universities. In reality, this idea has not proven to be wholeheartedly implemented. Each institution of higher education provides in their internal legislation the conditions for admission to Master's studies, and universities vary a lot according to how the large the potential target group is foreseen to be. For example, the University of Tartu has established prerequisite subjects for admission to Master's studies in a number of specialities, by referring at the same time to the completion of the curricula at institutions of higher education that are considered to meet the requirements (in some cases, graduation on the basis of an accredited curricula suffices, in other cases special curricula of special institutions of higher education are specified). In all universities the council approves the curricula and universities publish detailed information on their websites.

303. As a rule, public universities mutually approve studies completed at these universities at Bachelor level²⁷; the attitude towards the approval of the education acquired at private universities is somewhat more selective. In general, the graduates from state institutions of professional higher education have not had problems with the continuation of their studies in Master's studies. Critical points primarily concern specialities with minor state commissions where universities may rather prefer the graduates who have completed their bachelor studies at their own university. As regards all graduates who have completed their studies following professional higher educational curricula in 2005²⁸, 7.5% of them mostly continued their studies in Master's study or followed the one-year curriculum for teacher training. This in turn formed 7.7 % of the total admissions in these

²⁷ Here the difference may be based on whether a curriculum has a valid accreditation or not.

²⁸ This comprises the graduates who have completed their studies in the diploma studies of professional institutions of higher education and universities and those who have completed their studies following vocational higher educational professional higher educational curricula.

programmes. These transfers to the next level were mostly possible for graduates from universities and institutions of professional higher education. Although pursuant to legislation, unified requirements apply to professional higher educational studies, notwithstanding which type of institution provides this education, universities have not generally accepted the higher education that is provided in vocational schools. Before drawing any conclusions one needs to realise that the curricula of VET institutions on the higher education level have only in recent years passed the accreditations. In addition, the Master's level as second cycle studies were introduced only recently – in the academic year 2002/03.

304. The strategic cooperation between educational institutions on the state level has been favoured through the projects like e-university and the projects of Doctoral schools. In the framework of the e-university, the course of action is to create the possibility for students to take courses at all HEIs involved in the consortium. In the allocation of the resources of the European Structural Funds to Doctoral schools, an essential criterion, in the event if the research groups of two universities acted in the same narrow niche, was the concentration of resources and avoiding duplication through joint applications. Substantial cooperation between institutions has gradually begun through these projects.

305. The character and limits of the cooperation between educational institutions are naturally formed at the level of institutions. Legislation specifies only one clause regarding these relations according to which an educational institution may take account of a person's previous study results accomplished at another educational institution to the extent of only up to 50 per cent. Information regarding how widely these flexible options are implemented is not centrally collected.

8.4. Diversity within the higher education sector

306. Similarly to other countries, in Estonia's system of higher education there is also a tendency for educational institutions to try to expand their activities in fields, which traditionally would not belong to their main field of activity, and this trend has become stronger over recent years. One of the examples characterising this is the strengthening desire by institutions of professional higher to expand their instruction to the level of Master's study. Encouraged by foreign examples, the wish to be involved in international cooperation and in particular to increase the attractiveness of educational institutions on the domestic "market of higher education", many educational institutions see a clear development perspective in the provision of education at the second level. Through the amendment to the Institutions of Professional Higher Education Act of 2003 the possibility of developments in this direction was created while at the same time providing for conditions in which the Government grants respective permission. These criteria comprise of requirement of fully accredited programmes on a professional HE level, students' candidates work experience of at least one year in a field of study; cooperation agreement with a university, etc. The first programmes on the Master's level for state PHEIs are under consideration in spring 2006.

307. Creating possibilities for opening Master's studies in institutions of professional higher education in legislation does not mean that the Ministry of Education and Research would see in the near future the need for the determination of government-commissioned student places at this level of qualification education within the framework of state-commissioned education. Except for a few exceptions, so far, employers have not informed the Ministry of Education and Research of the demand for specialists with qualifications of the corresponding level. In technological specialities where transitions from professional higher educational studies to Master's studies are of strategic importance for the state, the continuation of study in Master's studies at universities has so far been relatively easy.

308. The same question of the "academic drift" of the mission of educational institutions has been on the agenda in relation to the ambition of vocational educational institutions to provide training at a higher educational level. The decision, which was made at the end of the 1990s has justified itself in some specialties in connection with international trends (e.g. nursing studies) but it has often given rise to the continuation of studies of those who have obtained their qualification at the same institution. Thus there is a threat that skilled workers are kept away from the labour market for a

longer period of time and this is not justified, neither from the aspect of the rational use of state budgetary funds nor from the aspect of the needs of the labour market.

8.5. System linkages

309. All institutions of higher education and vocational educational institutions providing higher educational curricula offer short-term and long-term training courses. The broad fields of study, the forms and the procedure of training courses conducted in institutions of higher education are approved by the council of a university or an institution of professional higher education pursuant to law. An institution of higher education has the right to issue certificates to its students. Usually, accepting credits points from training courses as part of formal education takes place for free and elective, not compulsory courses. Practice in this regard varies enormously among institutions. The educational institution, which conducts the training, is responsible for the content and the quality of the training; the activities related to training courses of institutions of higher education is subject to the same free market rules as the activities of training companies in private law. There is no obligation for institutions to register their activities with the MoER, the only exception to this rule are the courses over 120 hours provided by the private HEIs. The Ministry of Education and Research does not centrally collect information regarding the volume and target groups of the training courses provided by institutions of higher education. Pursuant to the documentation of the Rectors' Council of Universities the total financial volume of the six public universities and two universities in private law was 52.5 million kroons in 2004.

310. All major universities have commenced secondary school student-oriented activities, generating interest in subjects taught at particular universities. In this manner, as of the academic year of 2002/2003, the University of Tartu initiated the Science School²⁹, which coordinates the preparation of all-Estonian scientific competitions and prepares Estonian teams for international subject competitions held under the auspices of UNESCO. The Science School sees generating the interest of school pupils in studying and research as its broader mission. During the academic year of 2005/2006, Tallinn University of Technology commenced their science school and city camps where during school holidays students are familiarised with how natural sciences function in everyday life, how in the course of technological processes the idea leads to a product and through practical exercises students learn to design and construct.

311. Institutions of higher education often provide courses to pupils, which help them to prepare themselves better for national exams. The strategy of higher education specifies, in relation to regional colleges, the need for providing training courses to people with higher education, however, in general the institution of higher education itself decides upon the potential target group of the training. In comparison with practices developed elsewhere, business enterprises or organisations of public sector do not order the so-called tailor-made training sessions from institutions of higher education due to their relatively high prices. However, the teachers of institutions of higher education take part in training events provided by the public or private sector as lecturers. Due to the labour market situation, institutions of higher education in Estonia do not provide training courses or retraining for the unemployed who have registered themselves with the Labour Market Board. This role has to be fulfilled rather by vocational educational institutions and private training companies.

312. Pursuant to current law, the council of a university or an institution of professional higher education establishes the conditions and procedure for taking into account the previous study results and professional experience of students (APEL). At the moment, the possibility of accreditation exists only in professional higher educational studies and Master's studies, whereas in Bachelor studies only previous study results are entitled to be taken into account. APEL is not allowed to be applied in the admission of students to compensate for the absence of the candidate's diploma of formal education. In the framework of the preparation of the higher education strategy, there have discussions about the

²⁹ The history for these kinds of activities at the University of Tartu go back as far as 1965, although the special institutional structures have been developed later.

need to make admission conditions more flexible, particularly in Master's studies, in this way favouring the continuation of studies by people who have not completed their studies at the higher educational level and by those who lack adequate work experience in formal education. The exact ideology of and the mechanics of the implementation of the amendment to an appropriate Act have not yet been negotiated. Institutions of higher education apply different practices to the APEL as regards the cost of this process. For example, the University of Tartu has established a procedure, according to which if the applicant wishes that the APEL be applied, he or she must pay for both the credit point(s) and for the reviewing of his or her application. The maximum amount payable is also simultaneously determined.

313. The Ministry of Education and Research has no information regarding to which extent APEL is applied. Institutions of higher education have probably little experience in this field and based on the principle of equal treatment of students, the opinions and rules here must be harmonised at the level of basic principles.

CHAPTER 9. ASSURING AND IMPROVING THE QUALITY OF TERTIARY EDUCATION

9.1. Introduction

314. The rapid growth of the HE sector has created an understanding in society that the quality of higher education varies both on the level of the institutions and fields of study. In one institution one may find programmes offered that are comparable to the good examples of internationally well-respected universities. Especially, in research there are areas of basic science (physics, for example) in which scientists in Estonia measure well when compared with the best in the world. However, liberal regulation for initiating new institutions as well as programmes has resulted in an influx of provision where only a minimum quality level is met. Legislative changes in 2003-2004 were targeted for setting higher requirements for private HEI behaviour and it is expected that the gradual enforcement of all regulations by 2007 will result in the contraction of the number of institutions and a better use of the national limited resources.

315. The regulations and requirements for quality assurance and state recognition are similar for all higher education institutions regardless of the type of ownership. Some differences, however, apply concerning the right to initiate new study programmes. Differently from other countries there is no political decision-making involved in regards to the judgement whether the opening of new study programmes is justified. The MoER does not have authority in this regard in connection to public universities and private HEIs. For state professional higher education institutions, the introduction of new study fields requires the approval of the Minister. The basic requirement for registering the study programmes for public universities and state professional higher education institutions or awarding licences for private HEIs is fulfilling the regulations defined in the Higher Education Standard.

316. As a result, activities of public universities and private HEIs expanded considerably in the 1990s. The expansion, especially in private institutions, was largely caused by hiring part-time faculty from public institutions, taking advantage of the low wages of these faculty in their regular institutional assignments. The pressures were especially intense in high demand areas such as law, business, economics, foreign languages, and information technology/computer science. By today, public universities have started to introduce regulations that restrict their academic staff taking up work in other HEIs. The main instrument for the state to influence the behaviour of institutions in this respect has been funding through state-commissioned education, and as such the impact has been rather limited.

317. Surveys regarding the satisfaction levels of graduates and employers are carried out on an institutional level. There is a general understanding that the professional knowledge and skills of graduates are usually good but views differ concerning soft skills like teamwork, foreign language skills, initiative-taking, etc.

9.2. Accreditation system for higher education

318. Similarly to other Central and Eastern European countries Estonia started to build up its national quality assurance system on the mid-1990s in answer to the rapid expansion of the higher education sector, and due to the need to create a transparency instrument for society and a support for the academic community in self-improvement. Given the rather large autonomy of HEIs, an accreditation system was created as the main vehicle for accomplishing these goals.

319. Accreditation is a process by which an institution, a study programme or a specialised unit of higher education periodically evaluates its educational activities. Through the accrediting process the institution seeks an independent judgment by experts that it achieves its own educational objectives and meets the established standards of the body from which it seeking accreditation. Based on the law, the costs related to accreditation are covered from the state budget through the budget of the Ministry of Education and Research or, at the request of the university, through the budget of the university.

The annual cost for the Accreditation Center provided by MoER was 4.9 million Estonian kroons (314 000 EUR) in 2005.

320. According to the Law on Universities (1995), accreditation is voluntary, however, it is strongly recommended for getting state funding. In reality this means that no state funding can be allocated to private institutions as programs without accreditation cannot be recognized by the state. For public universities state commission has been allocated programs without positive accreditation in few cases if there is a clear national need for certain specialists (e.g. interpreters before Estonia joined EU, programs for training the specialists in innovation and technology management, or similar) and the programs have been just established. In this case, the list of new programs is part of the signed contract between public university and MoER. Making these exceptions means that these programs are included in the waiting list as the requirement in the law has passed (it is stipulated that for the program to be admitted for accreditation students have to pass two third of the program's content in order to assess how it functions in reality). To some extent this can be considered a preferential treatment as, especially in the past, some institutions had to wait long for accreditation visits to take place. These problems arose due to the limited resource allocation. Lately, the situation has somewhat improved.

321. To obtain the status of full accreditation, all study in the university must be evaluated and accredited once every seven years. This applies also to professional higher education institutions. The accreditation of universities and professional higher education institutions and their study is granted by the Higher Education Quality Assessment Council (*Kõrghariduse Hindamise Nõukogu*), which was established in 1995. The Council forms evaluation committees on the recommendations of which the Council makes proposals to the Minister of Education and Research regarding universities or applied higher education institutions and their operation. These committees are made up of representatives of research and development institutions as well as of researchers from two foreign countries. The participation of foreign researchers is intended to guarantee the greater objectivity of the evaluation.

322. Pursuant to the laws of Estonia, accreditation is not compulsory; however, it is the only possibility for an institution of higher education to acquire the right to issue officially recognised higher education credentials. Exceptions include only such diplomas of public universities that are issued for completion of study registered before the beginning of the reform of study (2002). As an exception, in the case of substantial deficiencies or problems in an institution of higher education, the HEQAC or the MoER may also initiate accreditation. The Standard of Higher Education, which specifies general requirements for different stages of higher education in Estonia and on the basis of which decisions regarding the issuance of education licences and accreditation are made, has an essential role in the legislation relating to quality.

323. The Higher Education Quality Assessment Council is comprised of twelve members and is formed and its membership is approved for three years by the Government on the proposal of the Minister of Education and Research. Candidates for the post of member of the council are submitted to the Minister of Education and Research by universities, institutions of professional higher education, research and development institutions, registered professional associations, associations of employers and associations of Student Bodies. No more than two members from the same university, institution of professional higher education, research and development institution, registered professional association, association of employers or association of Student Bodies may belong to the Higher Education Quality Assessment Council.

324. In 1997, the administrative office of the Estonian Higher Education Accreditation Centre (*Eesti Kõrghariduse Akrediteerimise Keskus*) was established within the Archimedes Foundation. The centre (HEAC) prepares all relevant documentation for the Higher Education Quality Assessment Council, including self-analysis reports and reports by expert commissions, as well as the main documents for accreditation of study. The HEAC is a member of the European Network of Quality Assurance in Higher Education (ENQA) and the International Network of Quality Assurance (INQA). In the assessment procedure the HEAC is responsible for the smooth functioning of the organising aspect. Additionally, the HEAC makes public the accreditation decisions through the Internet.

325. Two types of accreditation are available:

- Institutional accreditation: focused on a higher education institution as a whole or for its structural units, the purpose is to evaluate the institutional organisation and management, the effective use of resources, and the creation of a favourable environment of studies.
- Programmatic accreditation: Focused on individual study programmes, the purpose: to evaluate the conformity to the Standard of Higher Education, including the level of the applicable theoretical and practical instruction, the research and teaching qualifications of the teaching and research staff. It also serves to evaluate the quality of education received by the students, especially by graduates.

326. There are three accreditation categories:

- Accredited: Indicates that the higher education institution or the study programme meets the set of requirements. The decision may also include recommendations for eliminating minor shortcomings. Accreditation is valid for seven years from the date of decision.
- Conditionally Accredited: Indicates that an institution or study programme under review has major shortcomings that need to be eliminated or addressed. In this case accreditation will be in force for three years from the date of the decision. At the end of this period the re-accreditation is relevant, but the “Conditionally Accredited” status cannot be renewed.
- Not Accredited: Indicates that the institution or study programme has serious shortcomings that jeopardise the quality of graduates’ knowledge and skills.

327. Accreditation results are accessible to general public via Internet, on Centre’s web. Centre publishes the HEAC decisions regarding all programs that have been part of the accreditation procedures as well as the summary of the experts’ assessment for each program, no matter what were the results.

328. Upon receipt of a negative accreditation (“Not Accredited”) decision concerning a curriculum, the university has to terminate the admission of students and the provision of education pursuant to the curriculum and, in cooperation with the MoER, ensure that the students have the opportunity to continue their studies at the same or another university in the same or a similar field of study. In the event of a negative accreditation decision concerning a university, dissolution of the university shall be initiated and the university shall, in cooperation with the MoER, ensure that the students have the opportunity to continue their studies at another university in the same or a similar field of study.

329. After two years have passed from the approval of an accreditation decision, the HEAC on the proposal of the Minister of Education and Research or the Higher Education Quality Assessment Council has the right, in cooperation with the Higher Education Quality Assessment Council, to verify the compliance of a HEI or its curricula with the information submitted upon accreditation. If it becomes evident that there are significant deficiencies or violations of law in the activities of a university or in its curricula, the Minister of Education and Research may, in cooperation with the Higher Education Quality Assessment Council, revoke the accreditation decision as of the academic year following verification. In practice, this opportunity has never been used.

330. Accreditation results are approved by a directive of the Minister of Education and Research on the proposal of the Higher Education Quality Assessment Council. The Minister of Education and Research has the right to reject the proposal of the Higher Education Quality Assessment Council by a reasoned directive and to submit the proposal to the Higher Education Quality Assessment Council to be reviewed for a second time. After the second review, the Minister of Education and Research approves the accreditation results on the proposal of the Higher Education Quality Assessment Council or refuses to approve the accreditation results and initiates a new accreditation of the university or its curricula. When a new accreditation is conducted, the members of the evaluation committee that carried out the previous evaluation of the same university or curriculum may not be members of the temporary evaluation committee.

331. In 2002, the first round of accreditation was completed. In the years 1997-2005, altogether 721 study programmes were accredited, of which 609 were granted full accreditation, 184 were conditional and 28 negative. In the academic year 2005/06, 16% of students study in programmes that have not yet been positively accredited. In addition to these, three institutional accreditations were carried out – for the Estonian Academy of Music and Theatre (2000), Tartu School of Health Care and Tallinn School of Health Care (both 2004). For the health care schools, institutional accreditation was used for assessing whether the change of status from VET to HEI was justified.

332. Based on the Universities Act, upon the accreditation of a curriculum for a profession regulated by international legislation, the Higher Education Quality Assessment Council may take into account the results of accreditation arising from the international legislation regulating the profession and, on the basis thereof, make an accreditation decision without following the usual accreditation procedure. International accreditation or evaluation agencies have been used to a limited degree – University of Tartu (2002, *European University Association*), Tartu Aviation College (*the International Civil Aviation Organisation and the Joint Aviation Authorities*), Estonian Maritime Academy (*Lloyd's Register Certificate of Compliance*, 2002), and the Department of Veterinary Sciences at the Estonian University of Life Sciences (*European Association of Establishments for Veterinary Education and the Federation of Veterinarians of Europe*, 2005).

333. The main problems often found in the Estonian HEIs, based on the foreign experts' reports, are the following (Laasberg, 2005):

- In developing curricula, institutions usually base their work on traditions and existing lecturers rather than the competencies needed to develop in a certain speciality and study level;
- There are no traditions in using external evaluators in exams that would guarantee greater objectivity,
- The efficiency of graduate education is too low, PhD students do not graduate during the nominal length of studies;
- Qualification of academic personnel needs to be improved, both pedagogically as well as professionally;
- Extensive work responsibilities in order to guarantee income hampers students' advancement in studies and their success rate;
- Overly limited contacts with potential employers and professional associations.

The problems listed are applicable to all institutions to varying degrees, of course.

334. The introduction of the system of accreditation has been an effective impetus for developing intra-institution quality assurance systems, and a number of recommendations by foreign experts were applied upon implementation of the reform of study in the years 2001-2002.

9.3. Evaluation of research

335. The Organisation of Research and Development Act requires that the research and development at a research and development institution which operates as a state agency, a local government agency, a legal person in public law or an agency of a legal person in public law is evaluated at least once every eight years. The costs associated with this evaluation are covered from the state budget through the budget of the Ministry of Education and Research. For institutions of

private ownership there is no such requirement, the evaluation is carried out by the request of an institution, funded by the organization itself.

336. As referred earlier, evaluation is carried out by the HEAC. For this a temporary evaluation committee is formed that consists of three to six members, at least three of whom must be foreign experts. A separate body – the Research Competency Council (which is an advisory body to the Ministry of Education and Research, appointed by the Government) makes proposals for the approval of the results of the evaluation of the R&D. Based on the evaluation, the Council makes proposals concerning the targeted financing of research, which is the biggest funding scheme in Estonia for research.

337. The MoER communicates the evaluation results by post or electronic means to the research and development institution whose activities were evaluated, to the other institutions established by the state for the financing of research and development, and to the Estonian Academy of Sciences. The results of evaluations are also publicly accessible on the Internet.

338. It is important to note that the accreditation of PhD programmes and the evaluation of research groups are carried out separately, so far. This has caused some discrepancies in results and makes the interpreting of assessment outcomes difficult for policy purposes. Under the new higher education strategy document the intention is in the future to integrate the evaluation of the research groups and training.

9.4. Expansion, quality and new developments

339. It is justified to ask whether the doubling of student numbers and the mushrooming of new providers has had an impact on quality. In order to obtain an independent view on the functioning of the system, MoER in cooperation with the Universities' Rectors' Conference commissioned a report in 2003 analysing the present practice and development of the shared quality assurance system. The work was entrusted to the then President of the Estonian Academy of Sciences, Prof. Jüri Engelbrecht. International experts were invited to the team and the report was delivered to the Ministry at the end of 2004. The international panel came up with suggestions that were mostly incorporated in the new higher education strategy paper for 2006-2015.

340. Under the new draft HE strategy, quality is the main issue framing all the other important questions. In addition to the actions already taken at the national level there is a need for clear strategic thinking in institutions. As an example, universities have acknowledged the strategic importance of the quality issue by signing the Quality Agreement in June 2003. Financially, the process was supported by the MoER but the Ministry did not get involved content-wise. The agreement establishes rather detailed requirements for curricula, academic posts and degrees (full text is available in appendix). In accordance with the Agreement universities harmonised quality requirements in the three indicated areas and undertook application of the requirements in line with the provisions of the Agreement since the start of the academic year 2004/05. The Agreement includes an obligation to assess every year the performance of the agreement in the previous academic year. The first round of the self-evaluation was carried out in 2005. There are two private universities that are associated with the Agreement. A similar type of initiative was started by the professional higher education Rectors' Conference in 2005.

341. It is widely acknowledged that the main responsibility for the quality of the teaching processes lies on the level of higher education institutions. It is also clear that the state-funding level per student in Estonia has left institutions with a situation where the developmental work for quality assurance and programme improvement was largely limited. With the opening of the structural funds there are new prospects for investments in the human capital in Estonia. HEIs, especially public universities, have taken full advantage of these new opportunities and in the coming years there are a number of projects carried out through the European Social Fund enabling the recruitment of foreign professors, establishing doctoral schools, programme development, quality assessment, etc.

342. The most crucial question for the sustainability of the Estonian higher education sector is the state funding for improving the infrastructure. The Government decision from 2004 estimates the financial volume for the infrastructure needs as 400 million Estonian kroons over 10 years. State funding combined with EU structural funds is expected to meet these needs.

343. Summing up, there are many elements of a quality assurance system already in place in Estonia. However, building up a well-functioning system takes time and resources. Not the least, it requires political agreements over the role of the MoER, the rights and responsibilities on an institutional level. To large extent, these changes have been debated and agreed within the framework of the new national higher education strategy.

CHAPTER 10. INTERNATIONALIZATION OF TERTIARY EDUCATION

10.1. Introduction

344. International relations have been of great importance to Estonian higher education institutions during the years after the restoration of independence. It is through international relations that Estonia has tried to make up for its lag on organisation and management of studies, a legacy inherited from the Soviet era. Many developmental projects were run for updating the activity of higher education institutions and for establishing international contacts with the support of foreign embassies and international organisations. In recent years the development of the Bologna process has had an extensive impact.

345. Although the exchange of students and research staff has been relatively intense under these projects, few contacts have led to long-term cooperation, which would produce an outcome beneficial to large numbers of Estonian students, in terms of joint curricula or exchange of teaching staff. The few positive examples do not constitute a continuous and systematic activity. The need for such strategic perspectives is recognized by the majority of higher education institutions, but only some universities are taking particular steps towards the development and implementation of the internationalisation strategy.

346. At the national level, internationalisation is increasingly the factor to be considered in the design of domestic policies. Developments in the common European higher education area and the European research area refer to the need for concentrating resources and promoting the specialisation of higher education institutions in order to develop competitive research and higher education centres. These steps are first and foremost targeted at the enhancement of competitive power. A major question for Estonia is that of our strategic strengths: what are the fields of study for which Estonia could be preferred, as a destination, in comparison to other foreign universities. Finding our own niche in the global market for higher education will be an essential issue in the near future.

347. National measures for the internationalisation of tertiary education have so far been aimed at promoting the mobility of Estonian students and lecturers, and concrete action in this field was started only in 2002. Of earlier initiatives, the kindred peoples programme should be mentioned, under which more than 100 young people from Finno-Ugrian ethnic groups have studied in Estonia since 1992. The fellow nationals programme, started in 2004 and aimed at supporting the studies of young expatriate Estonians in Estonian higher education institutions, can also be regarded as inviting foreign students to Estonia.

348. Invitation to Estonia of foreign students outside the framework of the said two programmes has taken place under the initiative of single higher education institutions. According to the Estonian Statistical Office, the number of foreign students in Estonian higher education institutions in 2004/05 was 884³⁰, representing 1.3 percent of the total student population. The number of students studying abroad, about whom there are data available in Estonian financial institutions, was 405 in the academic year 2004/05, whereas almost one-third of them are enrolled in the higher education institutions of the Russian Federation.

10.2. Reasons for the internationalisation of tertiary education

349. Action related to the internationalisation of higher education in Estonia has been triggered by the intention to improve the competitive power of tertiary education and to assure academic sustainability. Generally speaking, research without international output and the value of higher education studies based thereon are subject to question, because only active international cooperation

³⁰ The number includes students by the country of permanent residence, not by citizenship.

provides fertile ground for the adoption of new ideas and the set-up of contacts for mutually rewarding cooperation. There is a special strategy document worked out in 2005 that focuses on these issues. Citing from the strategic paper for the internationalization of HE that “the Estonian academic community should promote active participation in international networking, because the pursuit of a scientific career in only one university is exceptional. It should become commonplace to pursue post-doctoral studies in another university after the conferral of the doctorate and to assess the work experience in a foreign university upon election to an academic position. Acceptance of the right of others to hold differing opinions is a prerequisite for academic success. Active measures in this field as a strategic goal should be targeted first and foremost at research and doctoral study, where the inclusion of the international component is of essential importance” (Kõrghariduse rahvusvahelistumise strateegia aastateks 2006-2015, projekt).

350. In order to design an internationalisation strategy, a questionnaire was distributed to higher education institutions funded through the state budget in 2004. It appeared from their responses that higher education institutions are very interested in internationalisation, the more important components of which are considered to be international cooperation on teaching and research, participation in international networking and greater mobility of Estonian students and academic staff. Specific mention was made of the need for increasing the number of foreign students in order to offset the anticipated decline in student population.

351. Currently, the improvement of academic mobility is hindered by the infrastructure of academic and research institutions needing substantial improvements and this means the setting of clear priorities at the national level in terms of objectives. A wider implementation of student exchange requires the provision of modules in a foreign language. The decision about the language of instruction falls within the competence of an institution of HE, but this is no doubt a very sensitive matter for Estonians, for whom the provision of higher education in the native language has been the symbol of cultural self-definition and identity. A cautious and balanced strategy for these issues is yet to be agreed – one cannot escape the dominance of English as a language of science, but the development of Estonian language terminology and its widespread usage should also be encouraged. It is important to make sure that in Master’s and especially in bachelor study there would be no transition to curricula delivered solely in a foreign language. In specialised studies, Estonian should be run in parallel if possible with a foreign language in order to ensure the mastery of Estonian specialist language at the top level among highly educated professionals. At the same time obviously, however, one should consider that foreign language skills in a professional area is a prerequisite for a professional breakthrough as a scientist.

10.3. National support for academic exchange

352. In order to facilitate student mobility and to validate studies carried out in another country, a number of amendments to the legislation have been made, and student and young lecturer exchanges have been launched in Estonia. In order to integrate into the common higher education area of Europe, a two-cycle system of higher education has been adopted, the parliament has ratified the Lisbon Convention, and the Diploma Supplement in English is issued to all graduates free of charge and automatically.

353. In order to encourage the mobility of academic staff, Master’s and doctoral students, the Kristjan Jaak national initiative has been launched, under which a short stay abroad is supported – visits to libraries, working in laboratories and attendance at conferences. No clear priorities as to the field of study have been set for the allocation of scholarships under this programme – the determining factor is the quality of the application.

Table 10.1. Kristjan Jaak Scholarship Programme

	Beneficiaries	Budget
2003/04	113	2 259 000
2004/05	225	5 959 000
2005/06	207	8 892 783

Source: Archimedes Foundation, 2006

354. A scholarship scheme for doctoral study at foreign universities is different by nature, for the beneficiaries are viewed as the next generation of Estonian faculty. The beneficiaries are given the opportunity to undertake full-time studies at a foreign university and they are expected to return to Estonia after the conferral of the doctorate. State scholarships cover tuition as well as subsistence costs, calculated based on the country's living standard index.

Table 10.2. Doctoral students in foreign universities within the framework of state-commissioned education (in kroons)

	Beneficiaries	Budget*
2002/03	11	1 504 000
2003/04	13	3 792 000
2004/05	15	6 110 000
2005/06	12	7 301 479

Source: Archimedes Foundation, 2006

* Total expenditure on students enrolled in foreign universities, incl. those who started studies in previous years

355. Scholarships administered under international agreements comprise smaller amounts. Given the limited financial resources, the number of states with whom Estonia has entered into bilateral agreements for the exchange of students is not very big – mainly the countries of Central and Eastern Europe with whom we share a similar history, but there are also contracts with countries like Israel, Switzerland, Belgium and Denmark.

Table 10.3. International agreements - outgoing Estonian students

	2002	2003	2004
Bilateral contracts	28	30	25
Summer courses	29	27	30
Unilateral grants	28	32	31

TABLE 10.4. INTERNATIONAL AGREEMENTS - INCOMING FOREIGN STUDENTS

	2002	2003	2004
Bilateral contracts	24	23	27
Summer courses	11	12	12

Source: Archimedes Foundation, 2005

356. The “busiest” is the mobility of Estonian students within the EU Erasmus programme, where participation has grown dramatically in recent years. In terms of geography, the countries preferred under the programme in the early 2000s were Southern European countries, with which Estonia until recently had fewer contacts (in contrast to Finland, for instance, which has been a popular destination for some time). Erasmus will remain an exchange programme for Estonian students, which will help to broaden their general outlook on the world and to better learn about the European cultural environment.

Table 10.5. Implementation of the Erasmus Programme in Estonia

	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05
Outgoing students	183	255	274	304	305	444
Incoming students	55	84	110	170	166	266
Outgoing academic staff			78	77	84	243
Incoming academic staff			61	103	114	158

Source: Archimedes Foundation, Socrates Programme

357. For academic staff and researchers, a separate international exchange scheme is administered through the Estonian Academy of Sciences. Estonian scientists collaborate most actively with scientists from Finland, Hungary, Latvia, Lithuania, Poland and Sweden. However, the rankings of countries in terms of the field of study may differ greatly.

Table 10.6. Researcher mobility 1993- 2004

Year	Visiting researchers in Estonia		Estonian researchers in foreign countries	
	Number of days	Number of visits	Number Of days	Number of visits
1993	413	47	996	51
1994	891	80	1164	74
1995	797	98	1315	96
1996	739	105	1384	104
1997	714	87	1326	133
1998	1051	121	1316	148
1999	629	85	1479	173
2000	935	119	1485	161
2001	776	99	1715	207
2002	1038	116	1569	185
2003	805	86	1610	215
2004	775	95	1522	194

Source: Dept. of Academic Exchange at the Academy of Sciences, 2005

358. Active cooperation with Nordic and Baltic countries is proven by a range of internationalisation initiatives launched by higher education institutions, where the biggest sending countries are Finland, Latvia and Lithuania. The relatively large number of Finnish students in Estonia can be explained by the *numerus clausus* restriction used in their home country, which makes students mainly in the medicine-related subject areas come to study in Estonia (primarily in the Medical Faculty of the University of Tartu and the Faculty of Veterinary Science at the Estonian University of Life Sciences). Along with our neighbouring countries (Finland, Latvia, Lithuania), another country which has been dominating in recent years as a sending country is China.

359. In conclusion, it should be noted that educational exchange has intensified over recent years, but international cooperation is still rather moderately developed. The implementation of a more active policy presumes the wider introduction of a foreign language and a greater inclusion in instruction of foreign teaching staff. These measures, in turn, presume that certain new social agreements are reached: Estonia has until now been a country with a relatively homogenous population.

10.4. Topical issues involved with internationalisation

360. Issues and impacts associated with internationalisation are usually manifested in top intellectuals leaving for employment abroad. The possibility that in the development of the common

European research and higher education areas Estonia faces the risk of remaining a peripheral area has been overlooked so far. Application of countermeasures calls for well-designed policies and purposeful action by the parties concerned, incl. the preparedness of higher education institutions for specialisation in Estonia but with due regard to the developments in the whole region and the prevailing correlation of forces.

361. A significantly greater inclusion of foreign students is becoming a priority. It is still unclear to what extent society is ready to accept such crucial changes. The motive for a greater inclusion of foreign students will be the assurance of academic sustainability and the endeavour of higher education institutions to offset the imminent decline in total enrolments. Discussion about the export of higher education in terms of volume is still to be held in society. The option of the massive import of students presumes good conditions for the admission of foreign students (personal tutors, courses on the Estonian language and culture, accommodation), but first and foremost the successful introduction of modules in a foreign language, which in turn means a greater inclusion of foreign lecturers.

362. These measures are a must if we seek to participate in mobility on equal terms. Furthermore, it should be taken into account that the tuition fees in the most popular specialties of fee-based education (economics, law, business administration) are not that much different any more in Estonia and abroad. Estonian institutions have to compete with HEIs that have had years for finding their own niche. Therefore the higher education institutions funded through the state budget should aim to improve the academic standards and quality of higher education and research in Estonia, and provide the best possible education to the Estonian people. Studying together with foreign students or carrying out part of the studies abroad is simply inherent to contemporary student life.

CHAPTER 11. CONCLUSION

363. Summing up the developments in Estonia we should, still, start with the usual statement of the enormous change that has taken place in this country during the last 15 years. The two most strategic among these changes are obviously becoming a member of the EU and NATO – the two great tasks that are believed to have turned Estonia's history finally into more secure "waters". During these years the country has gone through major economic restructuring, and people consider change a constant part of their lives. The country's small economy has been the fastest growing in Europe, the growth rate being an average of almost 10% since 1995. The key words for the economic success are believed to be entrepreneurial spirit, modest state involvement and openness to new technologies. The local culture has strongly been influenced by the Protestant culture and, to a certain extent, pragmatism – the values that have certainly contributed further to the country's rapid development. The main beneficiaries of this economic success have been the cities like Tartu and, especially, Tallinn. The capital and Northeast area generate more than half of the country's economic growth (approx. 60%). Inequalities between the regions remain one of the country's main economic challenges. Some observers have characterised the first 15 years as *survival of the fittest*. The social costs for this rapid economic development becomes evident when we look to indicators such as decline in birth rates, long term unemployment, but also HIV infection.

364. Largely, the same logic of development – modest state intervention and entrepreneurial spirit – was applied to all spheres of life, higher education included. Very simplistically said – at the beginning of the 1990s, when the memories of the totalitarian state were fresh, the state represented an evil to whom one should give very little power. Thus, with the steps that were absolutely necessary to carry out – eliminating the Soviet ideology from the programmes, withdrawal of military training as a compulsory part of HE, introducing the free and democratic election of rector and deans – extensive autonomy was granted to public universities, and the legal basis was established for creating the private sector. On one hand, this sudden deregulation caused large heterogeneity between institutions, faculties and programmes, and not all the institutions had the capacity and experience to handle newly emerged opportunities. The complexity of the situation was developed even further by the rapid expansion of the sector during the second half of the 90s. However, limited regulation, by the same token, had made it possible to flexibly adjust to the changing environment (i.e. curriculum development for the new emerging economy, income generation for keeping alive the diversity of programmes during the scarcity of public funds, etc). It should be noted that limited state intervention was also in coherence with the limited administrative capacity on a ministerial level.

365. The fact that all reforms had not been able to be implemented fully during the first attempt has caused confusion and concern among the public about the transparency of the system. There have been altogether four qualification structures in place since the end of Soviet system. First, the two level Soviet higher education (diploma and candidate) was replaced by three qualifications (university diploma, Master's degree and doctorate degree) lengthening researcher training from 9 nominal years to 10-11 years, and keeping the specialist training (university diploma) in one long cycle. In 1995, with the approval of Universities Act, this system was given the Anglo-Saxon model bachelor-master names without making any changes in the learning outcomes. The Bachelor degree was, still, considered a final degree for a specialist. The Master's degree fell between specialist and researcher training. The qualification reform was completed only in 2002, since when the programmes in the university type of education are fully "Bologna compatible". Changes have happened also for the more practically oriented non-university type education, where *kutsekõrgharidus* and *diplomiõpe* were integrated into professional higher education in 2002. It is difficult to assess in retrospect all the reasons for these developments – part of it was certainly due to academic conservatism, little knowledge about labour market needs or about other countries' education systems (Kalm, 2004) – but it is clear that too frequent changes in the qualification structure have had an impact on the transparency of the higher education system. In order to guarantee the equal treatment of people for work and further study, a special government decree was approved in 2005 for the correspondence of qualifications earned under different qualification structures.

366. During the first 15 years the development of the higher education sector has in many cases been left to drift. Most importantly, political initiatives for developing certain sub-sectors were seldom backed with the much-needed human and financial resources, not to mention investments into infrastructure. The first decade of the developments was often characterised by the bottom-up approach where regulations and compromises achieved on HEI level were later put into legislation. The first plan for higher education development was only passed in 2001 for guiding the Bologna reforms. The second strategic document was in preparation with stakeholders for two years and is directed towards improving the quality and attractiveness of the Estonian higher education institutions to the wider world, increasing mobility and developing the specialization of institutions. During these two years the situation of higher education sector was analysed thoroughly. The strategic goals and action lines were agreed with all main stakeholders for higher education. The higher education strategy covers the period 2006-2015 and was approved by the Government in June 2006 and by the parliament *Riigikogu* in November 2006.

Strengths and concerns of the tertiary education system in Estonia

The following strengths can be identified:

- The rules and regulations for quality and recognition for different types of higher education programmes are the same throughout the system. All higher education provision is integrated at the national level, led by the Ministry of Education and Research. Although the governance of two HEIs is incorporated under the Ministry of Defence and the Ministry of the Interior, the main legislation governing the activities of these institutions is the same as for the rest of the sector.
- Higher education is valued very highly in the country. Participation rates are close to 35% among the younger cohorts (20-29 age cohort, in 2005/06). The rapid expansion of the public universities to accommodate this demand in soft areas has largely been strategically wise as they could provide a study environment meeting certain standards and academic culture. A better-guided expansion in the professional higher education sector and technology related fields would have been good in the long-term but at that time it presumed investments that were not affordable.
- Large institutional autonomy enables institutions to find the best ways for fulfilling their missions and generating their budget from outside sources. Institutions can own property and have a free hand in setting the salary levels for their academic and administrative personnel. In principle, this allows the payment of competitive salaries for the best researchers and professors.
- Another major area of the reforms were taken in the strategically-right direction – the institutes of the former Academy of Sciences were integrated with universities in order to concentrate the limited human capital, and the research funding system was built up based on competitive principles from the very beginning of the reforms. Lately, the base-funding idea has been introduced with the purpose of enabling the introduction of new research topics and enabling to cover cofinancing requirements in international projects. There is a constant feedback, regarding the research conducted, in the form of research evaluation although further work is needed to make the results of different fields comparable.
- All bigger institutions acknowledge that quality is a key word in an environment operating in an increasingly competitive context. We can say that the principles of the current accreditation system follow international standards set by ENQA and are largely well received by institutions. Regular outside assessment of the study process and institutional leadership is considered to be part of the academic culture and is well received. Over the years more emphases are being put on an internal quality assurance mechanisms, the main principles of which have been agreed in the joint Quality Agreement for universities. It is encouraging that although problems were found with the implementation of the Agreement in the first

assessment exercise (for the 2004/05 academic year) the process was considered highly valuable and will be continued. Professional higher education institutions are in the process for developing similar initiatives.

- There is a strategic thinking in emergence for dealing with the human capital issue for research and teaching by absorbing structural funds for inter-university graduate schools, and schemes for foreign scholars working in Estonia for long-term basis.
- There are structures in place for the development of distance learning in higher education, catering to the interests and needs of people all over the country. Use of modern ICT technologies can support, among other things, the quality improvement and efficiency of programme provision by drawing together the courses of similar content at the same institution and transferring them into the e-learning environment. Distance learning is supportive for students who work during their studies (as they can choose their studying time) or who live outside the major cities of higher education, Tallinn and Tartu. These developments would come rather naturally given the high level of Estonian computerisation, Internet use and especially public access points for Internet
- Awareness among society and educationalists about the market value of professionally oriented programmes next to university studies is growing. Feedback from the institutions suggest that PHEIs are doing a good job in the management of practical training, and by involving the representatives of enterprises and professional organizations in the assessment of students.
- During last few years there is discussion going on in the Estonian media over whether there is an “overproduction” of graduates with tertiary qualifications. At the moment the labour board statistics show little reason for concern. The transition to the labour market for graduates has been successful. We could say even more – higher education in Estonia has provided people with a sense of security during the period of 1997- 2004. Despite this, institutions need to pay more attention to developments in labour market, ensuring that potential employers are aware and involved in programme development. Adapting the learning outcomes-based programme delivery has certainly a strong potential in this regard.
- The consolidation of the sector and preparation for the decrease in student numbers has already started – several mergers between institutions and closures have taken place, and the students’ study aspirations are not suffering from these arrangements. However, for the sustainability of the sector these changes are not sufficient.

Concerns of the current system

- Limited funding for higher education is a foremost threat for the sustainable development of the sector. Many developments globally and in the European Research Area raise the question whether a country the size of Estonia can sustain brain drain from the research sector. Many more investments are needed in the areas where the country could be internationally competitive in the long run.
- There is insufficient stability over the election cycles regarding priorities, and too little emphasis is given to systematic feedback grounded on analytical arguments for strategic developments. It is not rare that development plans on a sector level are not implemented as the funding is not following the proposed and approved commitments. More work needs to be put into efforts for the creation of a shared understanding of the status and developments for the sector among different stakeholders, and motivating institutions for the implementation national tasks.
- There are concerns that extensive university autonomy – despite the benefits it brings – has not allowed the best balance between organizational and public interests. Further work is

needed to develop accountability mechanisms, monitoring and analysing the activities of institutions. There is a clear need for more focus for the areas of activities on institutional level, and motivation mechanisms to support the cooperation within the country as well across the borders on national level.

- Despite the structural and legislative reforms that have been happening on an extensive scale there has been little attention to innovation in teaching. Large classroom sizes and limited funding have not supported changes in the institutional culture that in Estonian higher education is mostly focusing on the teacher's input, and formal, written examinations as the primary means of assessment. Identification of good practice, and the design and provision of special training programmes for academic staff are planned under the structural funds project, which has been running since 2005 in cooperation between the six public universities. The success of the project is crucial for implementing the learning outcome based programme development and delivery under the aegis of the Bologna process.
- The role and status of professional higher education have a much bigger potential for the economic development of the country than is utilised today. The mission drift noted in other countries can also be found in Estonia where VET schools want to provide professional higher education, PHEIs at the same time, however, are interested in introducing Master's programmes. There is too much competition for students, and too little strategic thinking in how to improve the delivery of current programmes.
- Crucially important for the future of higher education and industry is the strengthening of PhD training, and supporting technology transfer between higher education institutions and industry. Today the contacts between the academic community and the private sector are of a limited nature.
- As of 2005/06 many factors contribute to the pressure for deteriorating the quality level in higher education. There are examples that the perspective of a dramatic drop in student numbers makes the leadership of institutions to take up strategies of even further expansion (for preparing the larger base for "the iceberg melting"). Due to the economic growth and open labour market there is a serious lack for human resources that makes students finding a job easy during their studies, not even mentioning after graduation. Thus, although there might be voices criticising the quality of the work of higher education institutions, it is hard to get a clearly defined feedback for improvement of the quality of study programs. Curiously, looking to the experience of other countries, substantial changes in the management processes have been made in the period of economic difficulties (e.g. Finland, Holland), not in a growth period that is characteristic to Estonian economy today, in 2006.
- The small size of Estonia is at the same time an advantage and disadvantage for its higher education sector. In small countries, networks can facilitate agreements and shared purposes, allowing for piloting and rapid implementation. However, small societies may also face the other side of networks – avoidance of crucial decisions potentially having a critical impact on the interests of various institutions.

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LIST OF ACRONYMS AND ABBREVIATIONS

APEL – accreditation of previous education and learning
ECTS – European Credit Transfer System
EEK – Estonian kroon
EHIS – Eesti Hariduse Infosüsteem (Information System for Estonian Education)
FESU – Federation of Estonian Students' Unions
FTE – full time equivalent
HE – higher education
HEI – higher education institution
ICT – information and communication technology
ISCED – International Standard Classification of Education
LLL – lifelong learning
MoER – Ministry of Education and Research
PHE – professional higher education
PHEI – professional higher education institution
VET – vocational education and training

GLOSSARY

Base-line funding - the state funding of research and development in order to attain the strategic development objectives of research and development institutions, particularly to co-finance foreign and national projects and to open new research directions

Doctoral schools – partnerships between universities or within university (between structural units) for carrying out research training. In this report, reference is made to Doctoral schools that have been funded by the EU structural funds resources.

Kuratorium – or a board of governors of university that is an advisory body which serves as a link between a university and society. The Government of the Republic determines the number of members of a board of governors and their term of authority, appoint the members of a board of governors and approve the rules of procedure of a board of governors, after having heard the opinion of the university. By law, board of governors shall make proposals to the Minister of Education and Research and the council of the university on issues relating to the development of the university, presents its assessment of the university to the public at least once a year. An authorised representative of the board of governors shall participate in the sessions of the council of the university with the right to speak.

Residentuur - postgraduate special medical training programmes lasting 3-5 years. The final examination completing *residentuur* of training is given in front of a committee, whose members are the current professionals of the specialty of graduation. If passed, the resident will be granted the title of a medical specialist in the field studied. Only successful graduation of these programmes gives the right to work as a specialist.

State-commissioned education (SC) - legal term with the meaning of the number of graduates by academic levels in a broad group of studies or, if necessary, in a field of study or as per a curriculum, as determined by a contract under public law between the Ministry of Education and Research and a university. The university is required to ensure certain number of graduates by the end of the standard period of study and which the Ministry of Education and Research, on the other hand, is required to finance, during the standard period of study, from the state budget through the budget of the MoER.

Targetted financing – funding for research and development institutions from the state budget through the budget of the Ministry of Education and Research for research groups. The conditions and procedure for targeted financing of research themes at research and development institutions is approved by a regulation of the Minister of Education and Research. The annual amount of targeted financing of research themes is approved by a directive of the Minister of Education and Research on the proposal of the Scientific Competence Council.