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Country Review on the Social Dimension in higher education in Croatia

Background Report

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1 General country information

The Republic of Croatia is located in Southeast Europe and covers a total area of 56,594 km². It borders Slovenia to the north-west, Hungary to the north and Serbia and Bosnia and Herzegovina to the east. In the very south it boarders Montenegro and in the west Croatia is embayed in the Adriatic Sea, bordering Italy overseas. Its capital city is Zagreb, located in the north of the country. Croatia joined the EU in 2013 and is expected to join the Schengen area in 2015. Currently the currency is Kuna (1 EUR = 7.63 HRK; ECB 2014), which will be changed to Euro as soon as the economic criteria is met in terms of inflation, public finances, exchange-rate stability and interest rates (EU 2014).

1.1 Population

About 4.3 Million people live in Croatia, of which more than half lives in predominantly rural areas. This share has been constant for the past 7 years (Croatian Bureau of Statistics, CBS 2006-2014). According to the last population census conducted in 2011 by the national statistical office, 18% of the total population live in the capital city of Zagreb. 90% of the population are ethnic Croats, 4% are Serbs, 0.7% is Bosnian and 5% are of other ethnic origin. 86% confess to a catholic religion, 4% are orthodox and 1.5% is Muslim. Also in terms of language there is only little variation within the population: 96% indicate Croatian as their mother tongue. 99% of the population are Croatian citizens. The biggest minority with a foreign citizenship are from Bosnia and Herzegovina and account for 0.1% of the population (ibid).

Since 2009 the population has been decreasing by 0.1%-0.3% per year. Since then, the total population decrease has been -1.1%. As the population pyramid in Figure 1 shows, a low fertility rate might be a reason for that. Also, the World Bank calculated a negative net migration rate of -20 for the period of 2009-2013 (The World Bank 2014).

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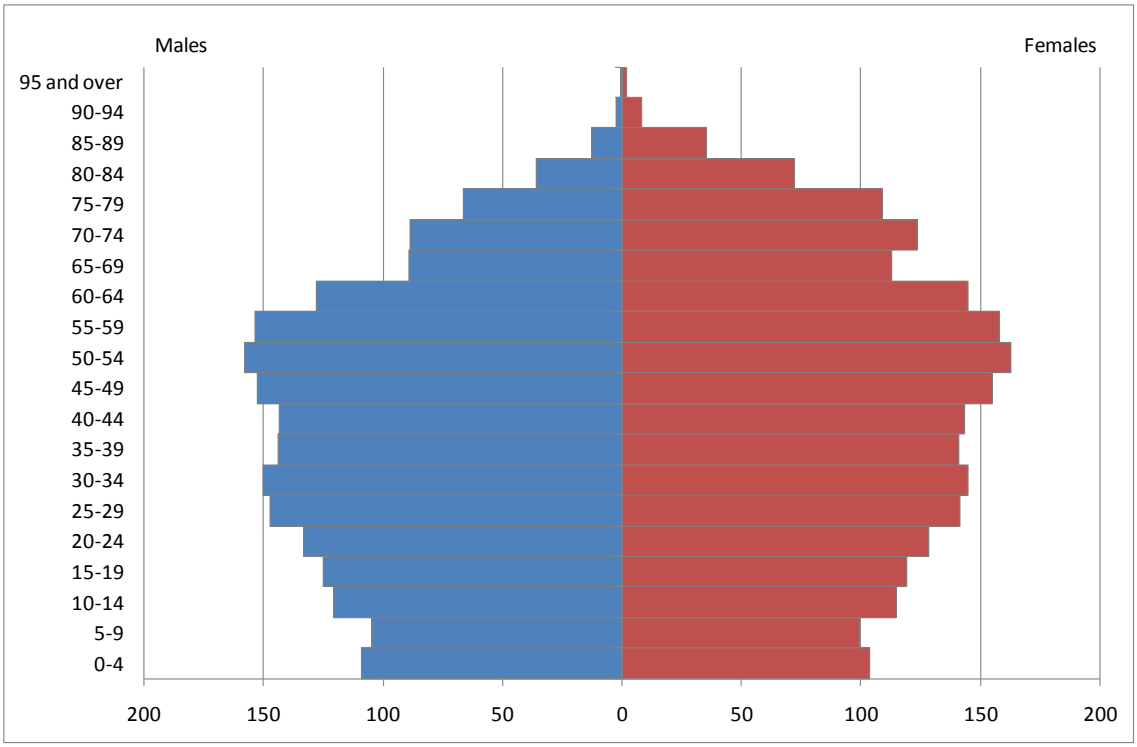
Figure 1: Population pyramid of Croatia



Population by sex and age in thousands.
Source: Population Census 2011, Croatian Bureau of Statistics 2006-2014.

Croatia faces similar challenges as other European countries, such as natural depopulation and thus ageing of society but also spatial polarisation (The Miroslav Krleža Institute of Lexicography)[1]. 24% of the Croatian population was 60 years or older, with a median age of 42 years. Thus, the Croatian population corresponds with EU average (Eurostat database 2014). File et al. (2013) follow Matković (2009) in the argument that the maximum number of potentially newly enrolled students has already been reached, due to the general population decline.

1.2 Economic situation

Compared to the European Union's (EU-27) average of EUR 25,900, the GDP per capita in Croatia is far lower, amounting EUR 15,700 in 2013 (Eurostat database 2014). Compared to Croatia's neighbouring countries in Southeast Europe (considering Montenegro, Macedonia, Serbia and Bosnia and Herzegovina), Croatia has the best economic situation, followed by Montenegro with a GDP per capita of EUR 10,700 in 2013 (ibid).

Looking at the long term development Croatia managed to increase its GDP per capita by the factor 1.3 over the past decade, quite correspondingly with the overall development within the EU-27 (increase of GDP p.c. by 1.2, see Figure 2). Regarding the yearly expenditure for education, Croatia spent in total 4.2% of the GDP in 2011, where 0.9% was spent

[1] http://www.croatia.eu/article.php?lang=2&id=14 (access on 21/08/2014).

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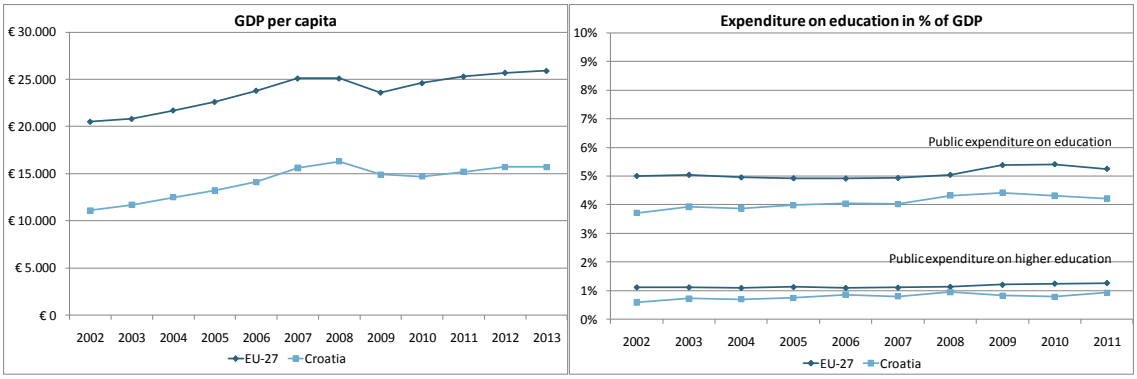
on higher education (see Figure 2). On EU average the expenditure for education is about 5.25% of the GDP, where 1.27% is spent on higher education.

Figure 2: Development of GDP per capita in the last decade and public expenditure on education in % of GDP



Data on expenditure on education only available until 2011.
Source: Eurostat database 2014.

1.3 Youth unemployment

Figure 3 clearly shows an uprising trend in the share of unemployed young people since the beginning of the economic crisis in 2008/09. Before that, the youth unemployment rate has been declining, to be then doubled within the following 5 years reaching a share of 50% of young people being unemployed in 2013, with no considerable gender difference. Within the EU-28, there has also been a slightly uprising trend within this period, though by far not as steep, reaching a youth unemployment rate of 24% in 2013.

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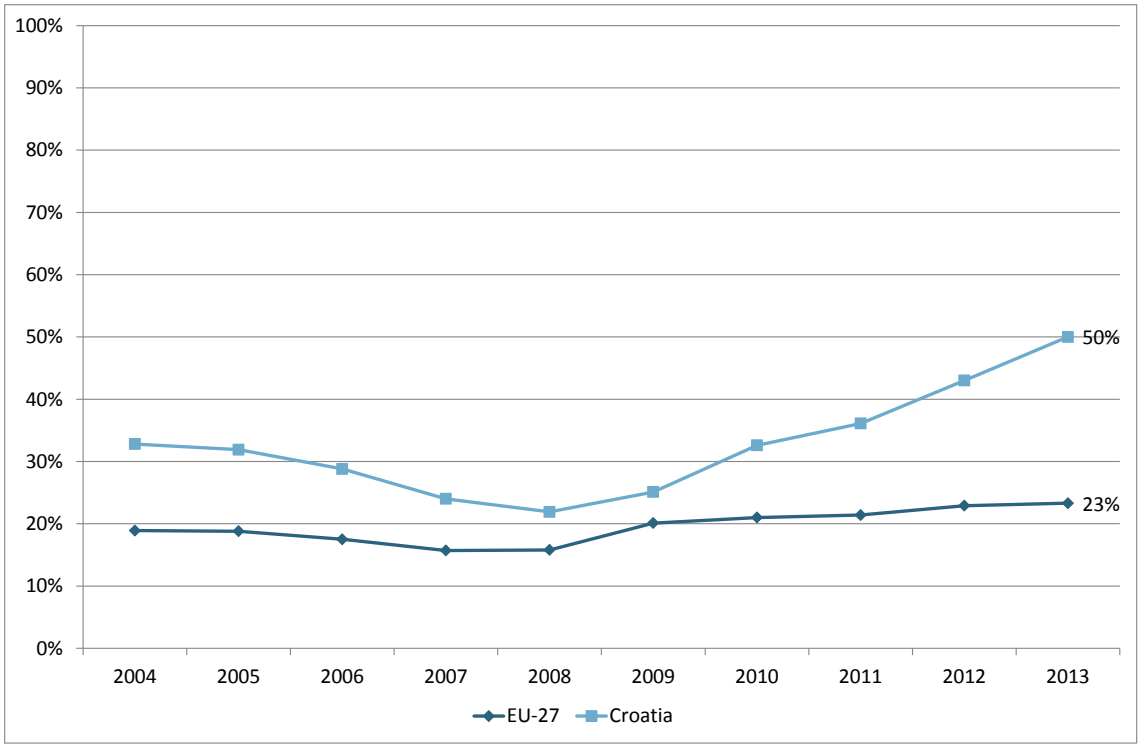
Figure 3: Youth unemployment in the last decade (population aged 15-24 years)



Source: Eurostat database 2014.

However, most recent data for 2014 indicate some positive trends regarding youth unemployment: Eurostat data show a decline of the unemployment rate among the population aged 15-26 years in Croatia during the first eight months of 2014 to 42% in September (Eurostat database 2014).

1.4 Educational attainment

Compared to the EU-27 states, the educational attainment in Croatia is below average. While on average within the EU-27 one quarter of the population (of 15-64 years of age) has attained tertiary education, in Croatia this share is less than one fifth. However, the share of people with low education is also below EU average. Thus, almost two thirds of the population attained medium education – compared to an EU-27 average of half of the population. Corresponding with the average EU trend, women in Croatia have attained higher educational levels than men. At the same time though, there are considerably more women than men that have only completed lower education. However, in younger birth cohorts (25-34 years of age) the share of lower educated persons is remarkably lower than in the overall population and the gender bias has disappeared with 6,6% of women with low educational attainment and 6,4% of men (Eurostat database 2014).

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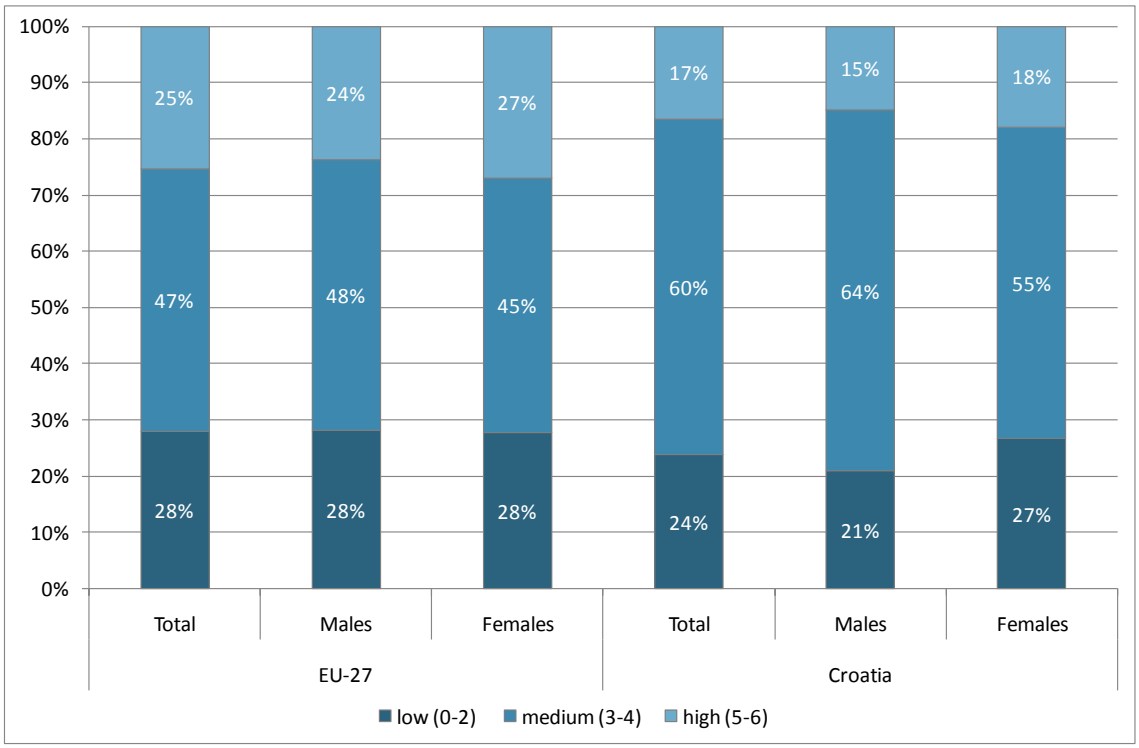
Figure 4: Educational attainment of people aged 15-64 years in Croatia



Data for 2013.

Referring to ISCED 97: low education: ISCED 0-2 (completion of compulsory school), medium education: ISCED 3-4 (completion of secondary education (3) or post-secondary non-tertiary education (4)), high education: ISCED 5,6 (completion of tertiary education).

Source: Eurostat database 2014.

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2 Croatian higher education and the social dimension

2.1 Institutional, legal and policy framework

In the 1990s, Croatia developed a binary system of universities and professional higher education institutions (polytechnics and schools of professional higher education)[2] that still remains today (OECD 2008).

The binary system of so-called "university studies" (*sveučilišni studiji*) and "professional studies" (*stručni studiji*) that is in place today is established in the Act on Scientific Activity and Higher Education (2003), last amended in 2013 and 2014. It regulates professional studies offered in polytechnics and schools of professional higher education[3] (exceptionally also in universities) and university studies offered solely in universities. Public and private institutions are treated equally in this Act (EACEA 2010).

In 2001, Croatia signed the Bologna Declaration and thus started a major reform process, aiming at bringing the national higher education system in line with European principles and standards (EACEA 2010). The aforementioned Act on Scientific Activity and Higher Education (2003) offered the framework for the implementation of the Bologna process and paved the way for overall modernisation of the organisational scheme, management and financing of science and higher education (Erawatch 2014). In 2005, the implementation of the Bologna Architecture actually began, introducing first, second and third cycle programmes (Šćukanec 2013).

In 2007, the Act on Student Council and other Student Organisations strengthened the role of the student in higher education governance. Also the quality of higher education has been addressed within the last decade through the establishment of the Agency for Science and Higher Education (AZVO), responsible for quality assurance in higher education, and the passing of the Law on Quality Assurance in Science and Higher Education (2009).

A review of the higher education system by the EACEA Tempus Project published in 2010 refers to Croatia's attempts to reform the system. At that point, reforms of the governance model and financing system, as well as the system for tuition fees and student welfare were discussed. In accordance with the reform of the Croatian Qualifications Framework also the curricula shall be reformed.

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2 Note on terminology *[by T.Farnell, IRO]*: the term "professional higher education" and "professional studies" refer to the part of higher education system that provides study programmes that are vocationally- oriented, compared to theoretically-based, academic study programmes provided at traditional research universities ("university studies"). This terminology is used in line instead of the terms "vocational higher education" or "non-university higher education", which are sometimes used internationally.

3 Note on terminology *[by T.Farnell, IRO]*: polytechnics in Croatia sometimes use the English translation "university of applied sciences" as the title of their institution; schools of professional higher education often instead use the term or "university college of applied sciences" or "college" as the title of their institution.

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Most recently in 2013, the latest major amendment of the Act on Science and Higher Education has been adopted by the parliament. Changes firstly refer to the system of financing scientific activities from the State Budget, and secondly address mainly governance and structural issues such as teacher/ researcher qualification and employment. Also, the obligation for HEIs to keep records and databases on study programmes, students and staff has been established by the new Act (Erawatch 2013).

On the whole, the past decade was flagged by a spirit of change and reform in (higher) education oriented along the Bologna principles, aiming at raising the quality of education to European standards in order to develop a competitive and effective higher education system.

Following these attempts, the network of higher education institutions (HEIs) changed rapidly. While in 2003 Croatia had 28 higher education institutions (6 universities, 7 polytechnics and 15 schools of professional higher education), this number doubled in the past 10 years, primarily due to the growth in number of private higher education institutions (Šćukanec 2013, see chapter 3 for more information).

2.2 Strategic background

A comprehensive strategy for the development of the education sector (*Education Sector Development Plan*) was set up for the period of 2005-2010 and addressed major changes in the secondary and tertiary schooling system. The strategy planned the introduction of the State Graduation Examination (introduced in 2009). For higher education, the document set out the following goals to be reached within 2010 (MSES 2005):

- Implementation of the Bologna Process
- Functional integration of universities
- Strengthening of professional (polytechnic) studies through binary system development
- Establishing a systematic monitoring and quality control mechanism for higher education teaching and scientific research work.

Regarding science and technology, a strategy launched in 2006 *(Science and Technology Policy of the Republic of Croatia 2006-2010*) also contained objectives and priorities for higher education (MSES 2006). The document mainly focused on the development and reform of the system towards excellent higher education and an effective collaboration between the science and technology/business sector. For that purpose, the funding for higher education was planned to be increased, expert evaluations would ensure highest quality as well as effectiveness and incentives (financial, tax) to encourage private investments into science, research and human resources shall be developed (Erawatch 2013).

Another strategic document adopted in 2011 (*Higher Education Institutions and Study Programmes Network),* identified challenges for the higher education system, arising from an uncontrolled expansion of the network that was noted in the most recent past. The devel-

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opment of these guidelines was obligatory according to the Law on Quality Assurance in Science and Higher Education (2009). Among others, the (at that time) still ongoing process of the development of a binary system (universities and polytechnics/schools of professional higher education), the orientation of recently established universities to mainly social and humanistic fields, overlapping and parallel supply of study programmes in different institutions, and the constant expansion of the network, considering the lack of additional financing by the state are identified as challenges for the whole network of HEIs. The document thus sets out guidelines for the establishment of higher education institutions and programmes, in order to prevent an uncontrolled expansion of the sector and establishes quality criteria and standards (National Council for Higher Education 2011). Among others, these guidelines refer to the teachers' workloads and the teacher-student ratio, labour marked needs and interest in fields of study (according to applications), correlation of priorities of the RC and the educational supply, entrance rates etc. (ibid, AZVO 2013).[4]

Two of most recent steering documents explicitly refer to the social dimension and related issues: *The Croatian Qualifications Framework Act* (MSES 2013) defines and describes Croatia's system of qualifications, learning outcomes and competences and thereof resulting professional profiles. It aims at improving opportunities of lifelong learning and second-chance access to higher education. Furthermore, it refers to social equality and equity in its principles and objectives (Article 3, CROQF). A most recent draft of a *Strategy for Education, Science and Technology* - profoundly referring to the social dimension - is currently debated in Parliament. It defines objectives for all educational stages from pre-school to higher education and refers to equal opportunities and inclusiveness as objectives for the education system. Moreover, the draft document refers explicitly to the social dimension of higher education as one of the principles for the development of higher education (Croatian Government 2014).

2.2.1 Underrepresented groups

According to Eurydice, Croatian higher education legislation does not specifically define target groups[5]. However, the following category of students are defined as underrepresented groups in various steering documents on higher education: According to the National Implementation Plan for Social Inclusion 2011-2012, underrepresented groups are students belonging to the Roma minority, students with special needs, students from rural areas and students from single parent families. The Bologna implementation report 2009-2012 adds mature students, students affected by the War of Independence, students with lower socio-economic status, students with full-time employment and students without parental care to the list of underrepresented groups.

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4 The document is only available in Croatian: https://www.azvo.hr/images/stories/visoko/Mre%C5%BEa_visokih_u%C4%8Dili%C5%A1ta_i%20studijskih_programa_u_RH_final.pdf (access on 25/08/2014)

5 https://webgate.ec.europa.eu/fpfis/mwikis/eurydice/index.php/Croatia:Support_Measures_for_Learners_in_Higher_Education (access on 05/09/2014)

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According to the Bologna implementation report 2009-2012, there are financial support measures for students belonging to groups identified as underrepresented, among them dedicated scholarships for students belonging to the Roma minority, students affected by the War of Independence, students from lower income families, students without parental care and students with disabilities (see also chapter 3.2).

Most recently, however, two analytical reports of the Institute for the Development of Education (File et al 2013; Farnell et al 2014), funded through a European Commission TEMPUS project and the Ministry of Science, Education and Sports, provided the following findings regarding underrepresentation and vulnerable groups in higher education:

- students of lower socioeconomic status are under-represented in the student population
- there are few students with children and mature students in higher education suggesting a lack of inclusiveness of the higher education system
- vulnerable groups in higher education have greater financial difficulties and workload (the most vulnerable groups are students of lower socioeconomic status and students with physical and mental disabilities). However, there are other groups that adversely evaluate their experience of studying such as students with children, mature students and students who have completed vocational school
- certain adverse study conditions can also negatively impact the experience of studying and learning outcomes, with data showing that the most vulnerable group of students are those who work while studying.
- Students studying at professional higher education institutions study in more adverse conditions than those in university studies

The same report also noted that, in the education system as a whole, students without parental care, with disabilities and Roma are the groups most vulnerable to education disadvantages in Croatia and that there are also regional inequalities in access to higher education (although these have not yet been sufficiently researched; ibid.). The findings of these reports will be further referred to in the following sections of the report.

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3 Organisation of Croatian (higher) education

Higher education in Croatia is mainly regulated by the Law on Science and Higher Education from 2003 and falls within the competence of the Ministry of Science, Education and Sports (MSES). Institutions which provide higher education studies are universities, polytechnics and schools of professional higher education.

Universities can comprise a range of constituent units, which are the following:

Faculties — are higher education institutions that organise and carry out university studies and scientific research (MSES 2009). They are university constituents and, according to ERAWATCH, sometimes have autonomous status which can undermine central governance (Erawatch 2014). Faculties may also establish and carry out professional study programmes (MSES 2009).

Academies of arts — are, like faculties, university constituents and organise and carry out university artistic studies. Furthermore, they develop first-rate artistic creative endeavour and scientific research in arts. Art academies may also establish and carry out artistic studies (ibid).

University departments — participate in the implementation of study programmes and university studies. They also develop scientific, artistic and professional work in one area of science (single field or interdisciplinary; ibid).

University institutes — perform scientific or highly professional activity and teaching normally related to higher education process at university and according to enactments passed by the university (ibid).

Croatian higher education used to be concentrated at the major traditional universities of Zagreb, Split, Osijek, and Rijeka, but in the past decade new public universities have been established: Zadar (2002), Dubrovnik (2003), and Pula (2006). The traditional universities are not functionally integrated (meaning they have faculties that are highly autonomous), but the recently founded ones are usually integrated universities (Šćukanec, 2013).

Professional higher education is offered either at polytechnics or schools of professional higher education and, exceptionally, universities. In very rare cases, schools of professional higher education hold an accreditation from the MSES allowing them to conduct university studies. In 2013, 13 students graduated from such programmes.

Croatia currently has 7 public and 3 private universities, 12 public and 4 private polytechnics as well as 3 public and 25 private schools of professional higher education (Study in Croatia 2012, access on 27/08/2014). Although universities by law may run professional

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programmes only in exceptional cases, 15% of admissions at university are admitted to professional programmes (Jokić and Ristić Dedić 2014).

3.1 Before entry to higher education

In Croatia, compulsory education starts from the age of six and is compulsory up to the age of 15 years. It is conducted in basic schools (*osnovne škole*), that cover primary and lower-secondary levels. Secondary education can be attended in general or vocational tracks.[6] General education schools[7] (*gimnazije*) provide a four year general education and usually prepare for continuing education at university. Vocational schools (*strukovne škole*) provide different curricula lasting from 1-4 years, depending on the curriculum. Students who attend school outside their place of residence may also study in residential schools ("dormitories"). Apart from regular schools, there are also special schools that provide basic and secondary education up to the age of 21 for students with disabilities (MSES 2014). A qualification that is sufficient to ensure progression to tertiary education can be obtained after four years of general or vocational education and is passed externally as a central examination.

6 Note on terminology *[by T.Farnell, IRO]*: some translations of Croatian terminology refer to "basic education" as "primary education" and to "upper-secondary education" as "secondary education" (e.g. in Figure 5), even though this is not completely accurate, technically speaking.

7 Note on terminology *[by T.Farnell, IRO]*: the term "grammar school" is used in official translations of the Croatian term *gimnazija*, although other possible translations include "general schools" or "gymnasia".

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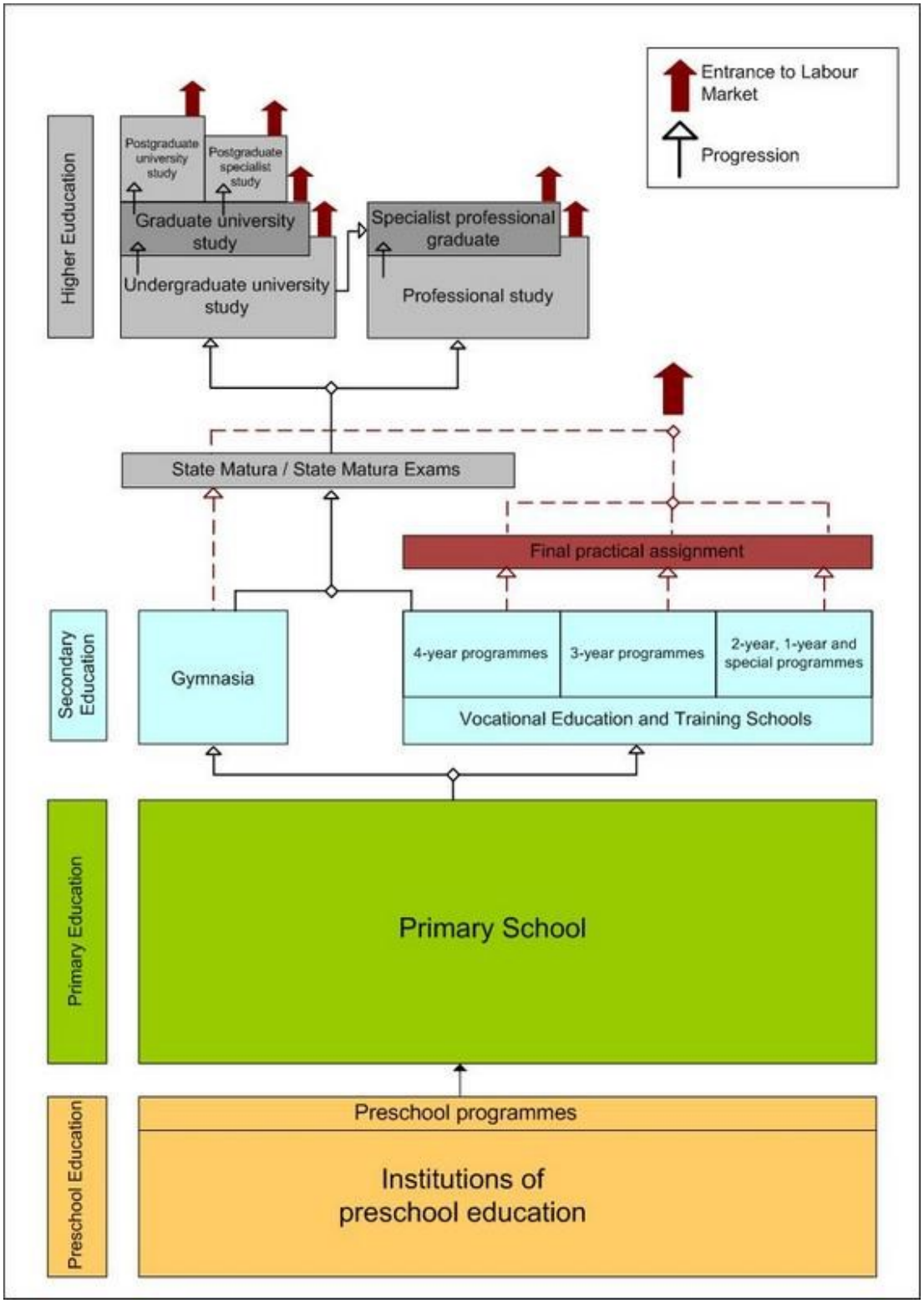
Figure 5: Scheme of the Croatian education system



Source: Agency for Vocational Education and Training and Adult Education (ASOO) 2011.

In the school year of 2012/13, about 334,000 students were enrolled in primary education, most of which attended public schools. 1,884 students (0.7%) were enrolled in schools for

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children and youth with disabilities. About 49% of the primary student population is female (CBS 2014). Regarding social equity in primary education, it has to be meantioned that there are significant differences in the educational outcomes depending on the regional location of primary schools. Educational outcomes are higher in urban and more developed areas and lower in rural and socioeconomically less developed areas (Burušić et al. 2012). Thus, there is a selection process already at this stage of education.

In the school year of 2012/13, 183,039 pupils were enrolled in general or vocational education, of which 177,149 (72%) in state institutions. The majority of pupils are enrolled in vocational education: 46% of all pupils are enrolled in Technical and related schools, 21% in Industrial and crafts schools. 3% of pupils study in Art schools.

50% of the total student population in general and vocational education is female. Taking a closer look, gender segregation in different sectors of general and vocational education becomes evident. In general education schools (gymnasium), almost two thirds of enrolled students are female, while in vocational schools males are slightly overrepresented. In art schools however, the vast majority of students are female (see Table 1).

Table 1: Enrolment in general and vocational education by sex

	Females	Males
General education schools	62%	38%
Vocational schools (total)	45%	55%
Technical and related schools	48%	52%
Industrial and crafts schools	35%	65%
Art schools	70%	30%

End of the school year 2012/13.
Source: Croatian Bureau of Statistics 2014.

Gender aspects also have an effect on educational outcomes and student performance, which corresponds with general European trends. According to the 2012 PISA study (OECD Education GPS), Croatian girls perform better than boys in reading. The Croatian gender gap in reading results is greater than the OECD average (Croatia: difference of 48 points; OECD average: 38 points). On the other hand, boys perform better in Mathematics with a difference of 12 points (OECD average: difference of 11 points).In the context of considering transition from general and vocational education to tertiary education, it is crucial to note that Industrial and crafts schools are three years or less in length and do not allow direct progression to higher education upon completion. Since these schools are attended by a fifth of all general and vocational education pupils, this represents a structural aspect of the Croatian education system that is an obstacle to wider access to higher education for a significant proportion of school-leavers (File et al. 2013). Students in these schools have also been shown to be from the most disadvantaged social groups: they have a higher proportion of students of lower socioeconomic status, Roma and students with disabilities and a higher drop-out rate (estimated at around 15%, compared to a national average of 4.2%; Matković et al. 2013). While an initiative has been launched to allow stu-

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dents from these vocational schools to take an additional year of courses in their schools in order to take the State Graduation Exam, there has so far been little impact of this initiative: most schools fail to organise this additional year due to a lack of material and human resources and a lack of interest in the scheme (ibid.). According to the law[8], schools can organise remedial instruction for the State Matura preparation.

3.1.1 Higher education entrance qualification

Students from four-year general and vocational schools in Croatia can qualify for higher education by passing the centralised State Graduation Exam (državna matura). Generally, this exam completes general education. Without this exam, general education is not considered completed. For students of vocational and art schools the central exam is optional but mandatory for HE entrance. Vocational education (4-year curriculum) can also be completed upon a paper defence (MSES 2014).

A pupil with lower level of secondary education (e.i. a pupil who completed three year secondary shool) has the right to acquire the higher level of qualification by continuing his/her studies or by passing an exam. This would qualify him/her for the State Matura exam which allows further entry into higher education. To continue his/her education the pupil must do so within two years of his/her completion of vocational education.[9]

The central exam first came into effect for students who enrolled in the first year of a general or four-year vocational curriculum in the year 2006/07 and were first conducted in 2009/10. Mandatory exams are taken in Croatian language, mathematics and a foreign language. All other exams are taken in subjects that were taught in school and have to be prerequisite for the enrolment in professional or university studies. For those optional exams, separate confirmations are granted.

The exams are assessed by the National Centre for External Evaluation of Education[10] but not (as before the reform) by school teachers. This agency sets out materials and handbooks for preparation for the exams and delivers the exam materials to schools. Furthermore, it comprises a database with data of all pupils passing the exam (subjects, grades) and issues diplomas on the passed exams. All pupils of Croatia that take the State Graduation Exam at the end of general or vocational education take the exam at the same time, which ensures mutual comparability. The introduction of the State Graduation Exam itself shall ensure higher objectivity in assessing pupils' capacities and aims at encouraging pupils as well as teachers to work harder and thus increase the quality of education as a whole (MSES 2014).

8 Pursuant to the provisions of the Article 33 of the the Primary and Secondary Education Act (Official gazette 87/08, 86/09, 92/10, 105/10, 90/11, 16/12, 86/12, 94/13 and 152/14)

9 Pursuant to the provisions of the article 24 of the Primary and Secondary Education Act (Official gazette 87/08, 86/09, 92/10, 105/10, 90/11, 16/12, 86/12, 94/13 and 152/14)

10 http://www.ncvvo.hr/drzavnamatura/web/public/home (access on 26/08/2014).

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Generally, the rate of pupils who successfully pass the State Graduation Exam is very high (99% of general education school students and 78% of four-year vocational school students). Thus, this central entrance examination cannot be seen as an obstacle for entry into higher education. However, only three-quarters of all school graduates[11] (again 95% of general education school graduates and 61% of four-year vocational school graduates) actually enrolled in degree programmes in the year they graduated (Jokić and Ristić Dedić 2014).

Adult education is well established in Croatia and exists as formal, informal, non-formal or self-directed learning. It provides primary, general, vocational and other training programmes (Eurypedia 2013). However, graduates from adult education programmes have to pass the State Graduation Exam to enter HE *[Note by T. Farnell]*. Currently there are attempts of introducing recognition of prior learning, which is reflected in the Law on Croatian Qualifications Framework (CROQF) adopted in 2013. Vranešević et al. 2014 sum up the attempts as follows:

> *"The Law on CROQF recognizes that acquisition of learning outcomes is not achieved exclusively through formal pathways, but through all other non-formal and informal paths, which should be validated. In order to ensure the quality and transparency of the CROQF implementation, the CROQF Registry is currently being developed with the aim to ensure better links between education and labour market needs. The CROQF Registry will list all occupations with the accompanying competences, and the competences or learning outcomes will be linked to particular qualifications. According to the Law on CROQF, a Rule Book on CROQF Registry should be published untill the end of 2013 and within a year after the Law is passed (in 2014) the Rule Book on validation of non-formal and informal learning should also be published, thus ensuring a legal framework for RPL in Croatia." (Vranešević et al. 2014: 10).*

3.2 At entry to higher education

Since the Bologna reform which started in 2005, universities offer undergraduate (Bachelor, 3-4 years), graduate (Master, 1-2 years) and post-graduate (PhD) studies as well as integrated studies (combining both undergraduate and graduate, and resulting in a Master degree). Mostly Law and Medicine were transferred into integrated programmes lasting 5, respectively 6 years (Šćukanec 2013). Professional higher education is offered in polytechnics and schools of professional higher education and may be of different types: short professional studies (2-2.5 years), undergraduate (3 years) and specialist professional graduate studies (1-2 years; AZVO 2013, Law on Science and Higher Education 2013). All second cycle programmes give access to third cycle programmes, whereby after completion of professional graduate studies additional courses are required to be admitted to third cycle HE (Šćukanec 2013). Third cycle programmes exist as 3 year programmes, leading to an aca-

[11] This refers to graduates who are eligible to enter higher education. Students who finish a three year vocational programme cannont apply directly to tertiary level institutions.

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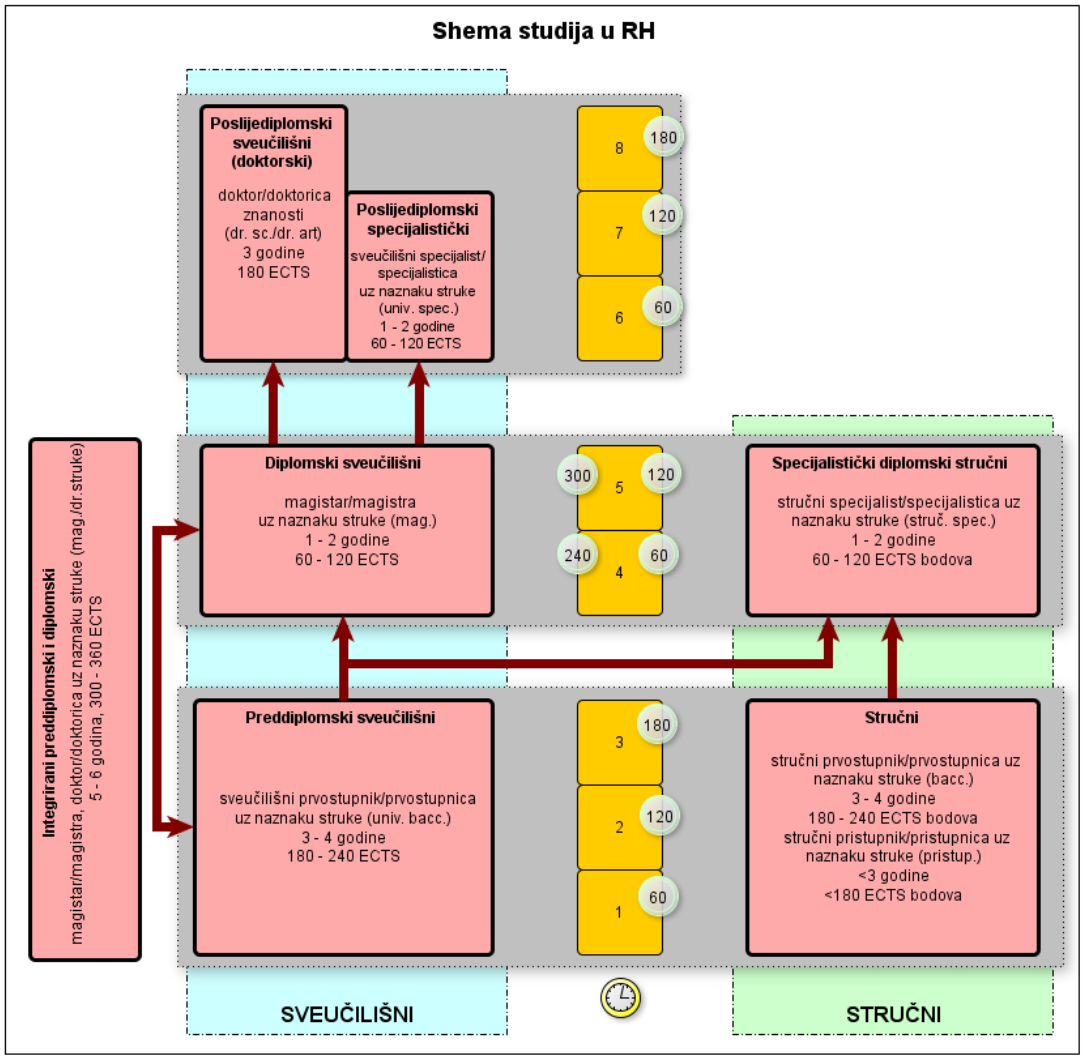
demic doctoral degree. Furthermore, there are 1-2 year professional 3rd cycle programmes, awarding a so-called "postgraduate specialist" degree.

An interactive diagram of the organisation of HE in Croatia can be found on https://www.azvo.hr/addons/shema/shemastudija.html, linked to a list of available study programmes. Figure 6 shows a screenshot of the diagram.

Figure 6: Scheme of higher education in Croatia



Sveučilišni: University; Stručni: Professional.
Duration and ECTS per programme duration provided.
Source: AZVO 2013.

Access to higher education is organised centrally in a general admission procedure. Prospective students have to register at the Central Application System and enter their personal and educational data. An online system (www.postani-student.hr) set up by the central information and administration service (NISpVU) allows students to apply for 10 different study programmes in their priority order. The system provides the possibility for candidates

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to look up specific requirements for any study programme and see where they stand in the rankings of places available for each applied study programme at any time. Students can also register for the State Graduation Exams or check for their results. Final registration for a programme to which access is granted is also done via this system (Study in Croatia 2010).

In general, admission requirements are set individually by each HEI. Criteria such as admission quota, importance of school grades and State Graduation Exam or recognition of prior learning is set and weighed per institution. The Central Application Office only carries out the technical aspects (Šćukanec 2013). If the number of applicants exceeds the capacity of the higher education institution, the selection of students follows their achievements in the admission criteria (Law on Science and Higher Education 2013).

Students may be admitted to full-time or part-time studies. The latter are financed by the student him- or herself, while full-time studies might be fully or partly financed by the state (see chapter 3.2.1). The organisation of part-time studies is not further specified within the Law on Science and Higher Education, except for such studies to be organised within the curriculum, requiring specially adapted terms and ways of carrying out the programme (ibid: Art. 86, 6).[12]

According to the Bologna implementation report 2009-2012, the introduction of the status of part-time students originally aimed "to enable mature students and persons holding employment access to higher education. In practice, it has developed into an alternative method for 18-year-olds to bypass numerus clausus on full time student status" (National Report regarding the Bologna Process implementation 2009-2012, Part 2.1: 7). File et al. (2013) state that part-time students in most cases have the same workload for their studies as full-time students, i.e. most part-time students are de facto full-time students who could not enrol under the enrolment quotas as full-time students (e.g. due to insufficient academic results). The main differences between the status of part-time and full-time students are that part-time students are partially exempted from attending classes, that they have to pay tuition fees and are not eligible for any kind of financial student support (see chapter 3.2.2).

Generally, the student number has increased from the 1990ies until today. The highest number of admissions was in the academic year of 2008/09 and has been decreasing since then (Jokić and Dedić 2014, see also chapter 3.3). According to the authors, half of the generation who enrolled in elementary school 12 years ago enrolled in higher education. The authors therefore speak of a massification of higher education, which brings about the need for structural changes (the massification is referred to in other documents, e.g. File 2013, MSES 2013). For more information on the development of the student body see chapter 3.3.

[12] The amended Law on Science and Higher Education from 2013 is only available in Croatian. Due to a lack of resources of personnel and time, the translation of the document has provisionally been conducted with google translator. The author cannot be held responsible for any mistranslations.

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In the academic year 2013/14, a total of 45,534 students were enrolled to their first year of higher education, 16,937 or 37% of which for professional higher education. In total, the share of female students among these first-year students is 52%. Among students in the academic track, women account for 55% of the population, whereas among students in professional higher education, the share of men and women is almost even.

Table 2: 1st year students enrolled in higher education in Croatia by HE sector

	Number of students in 1st year	Distribution of students by HE sector	Share of female students in 1st year
Academic (university)	28,597	63%	55%
Professional	16,937	37%	49%
Total	45,534	100%	52%

Academic year 2013/14.
Fist-cycle students in pre-Bologna, Bachelor and integrated programmes .
Source: Croatian Bureau of Statistics 2014.[13]

3.2.1 Study costs

Since the 1990s, higher education financing policy has shifted from a primarily state funded system towards a system that is based fundamentally on students' own financial contribution. In 1993, about 88% of students did not pay tuition fees, whereas only 49% of the total student population were exempted from paying fees in 2010/11 (Šćukanec 2013: 23f).

From 1993 to 2010, the Croatian tuition fee system was a dual-track system: The state set quotas for the total number of study places for full-time students that were covered by the state budget. HEIs had the autonomy to set higher enrolment rates and to charge tuition fees to additional students whose study places were not covered by the state budget. In other words, the MSES decided on the number of state-subsidised study places whereas the university senates decided on full enrolment quotas. The eligibility for tuition fee exemption depended primarily on general or vocational education school results (Doolan et al. 2012). Students who entered the higher education system as fee paying students were not able to switch to the state subsidised category at a later point in time during their studies. Part-time students were excluded from these quotas and were always charged fees. Within the dual-track system, 59% of all students paid tuition fees in 2009/2010 (File et al. 2013: 23f).

The current tuition fee system

Beginning in 2007, universities in Croatia developed their own systems of variable tuition fees. In the academic year 2010/2011 the so-called "linear" tuition fee system was adopted

[13] CBS provides numbers of students per year of study for all 1st and 2nd cycle programmes. In order to assess the number of newly admitted students, the number of undergraduate students in their first year of study is shown. These figures include the number of undergraduate students (both pre-Bologna and Bologna) and students in integrated studies in their first year of studies. The Croatian Bureau of Statistics did not identify them as newly admitted students. The original figures are available at http://www.dzs.hr/Hrv_Eng/publication/2014/08-01-07_01_2014.htm (access on 18/09/2014)

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at a national level through a government decision to replace the dual-track system (Doolan et al. 2012). Today, all undergraduate and graduate full-time students are exempted from paying fees for the first year of study. After their first year, full-time students may continue to study free of charge if they have accumulated a required number of ECTS credits in the previous year (55 credits, while 60 credits are determined as the full annual workload). Students who do not meet this requirement are charged tuition fees according to a linear model: The amount of fees is variable and increases proportionally with the number of ECTS credits that students are short of the targeted full-time equivalent (File et al. 2013). This new system of charging tuition fees depending on accumulated ECTS credits is unique in Croatia (ibid). According to Doolan et al. (2012), the major difference to the dual-track system besides the introduction of variable fees is that not only students who fall outside the ministry's subsidised quota pay full tuition fees but also those who are within the state-subsidised quota may also pay fees. Table 3 displays the linear model of tuition fees using the example of a HRK 7,000 tuition fee study programme at the University of Osijek.

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Table 3: Illustrative example of linear model of tuition fees based on ECTS credits at University of Osijek, Faculty of Law, academic year 2012/2013

Number of ECTS points obtained	Number of ECTS points to pay	Tuition fee amount (HRK)*
60	**Paid by Ministry**	**3,650.00**
59	**Paid by Ministry**	**3,650.00**
58	**Paid by Ministry**	**3,650.00**
57	**Paid by Ministry**	**3,650.00**
56	**Paid by Ministry**	**3,650.00**
55	**Paid by Ministry**	**3,650.00**
54	6	916.62
53	7	1,069.39
52	8	1,222.16
51	9	1,374.93
50	10	1,527.70
49	11	1,680.47
48	12	1,833.24
47	13	1,986.01
46	14	2,138.78
45	15	2,291.55
44	16	2,444.32
43	17	2,597.09
42	18	2,749.86
41	19	2,902.63
40	20	3,055.40
39	21	3,208.17
38	22	3,360.94
37	23	3,513.71
36	24	3,666.48
35	25	3,819.25
34	26	3,972.02
33	27	4,124.79
32	28	4,277.56
31	29	4,430.33
30	30	4,583.10
29	31	4,735.87
28	32	4,888.64
27	33	5,041.41
26	34	5,194.18
25	35	5,346.95
24	36	5,499.72

Note: The maximum fee for the study programme presented here (Law) is 5.500,00 HRK. The maximum fee is paid by students who are "lacking" 36 ECTS points. The value of 1 ECTS point is therefore 152.77 HRK.

Source: University of Osijek (2012)

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Post-graduate (PhD) students still are excluded from tuition fee exemption within the linear model, unless they are employed by their HEI (Doolan et al. 2012). Art. 86 (6) of the Law on Science and Higher Education 2013[14] states that in accordance with the regulations of the HEI, part-time students may also pay only partial tuition fees. However, according to File et al. (2013), all part-time students have to pay tuition fees as well.[15]

As stated above, eligibility to a state-subsidised study place is based on merit while students' socio-economic status is not taken into account. One exemption is a state programme that provides state-subsidised study places to students on a need-basis. Students in the following categories do not have to pay tuition fees: Students with a disability of 60% or more, a disability that originated from Croatia's War of Independence, war veterans, students who lost a parent in the war or whose parent have 100% disability that originated from the war and students whose parents were lost or imprisoned in the war (Doolan et al. 2012: 85).

For each fully-subsidised study place HEIs receive a fixed amount from the Ministry of Science, Education and Sports with the purpose of covering the costs of state-subsidised study places. This fixed rate is consistent for every HEI and study programme. It is set every year by the MSES and amounted to HRK 3.650/EUR 485 from 2010 to 2012. This amount is significantly lower than the average level of tuition fees charged at Croatian HEIs (HRK 8.800/EUR 1.170) which leads to the paradoxical consequence that HEIs with higher study progress rates might receive less combined income from state subsidies and gained tuition fees than other institutions (File et al. 2013: 25f).

One impact of the new system that has been noted so far is a slight decline of the number of fee paying students: In the academic year 2009/10, about 59% of all students (and 45% of full-time students) were charged tuition fees, whereas in 2011/12 the number of fee paying students dropped to 51% (and 34% of full-time-students; File et al. 2013: 25). However, no data could be found on the number of fee paying students in 2012/13 and 2013/14.[16]

File et al. (2013) state that the new linear tuition fee system aims to widen access to higher education due to a removal of financial barriers, to encourage students to complete their studies within the official duration of study programmes and to promote excellence. However, the report points out that the new system and its impact in meeting such objectives have not yet been evaluated.

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14 The amended Law on Science and Higher Education from 2013 is only available in Croatian. Due to a lack of resources of personnel and time, the translation of the document has provisionally been conducted with Google translator. The author cannot be held responsible for any mistranslations.

15 In addition, Thomas Farnell (IRO) confirmed via e-mail that part-time students still are excluded from state-subsidised study places.

16 Note *[by T.Farnell, IRO]*: The major problem for evidence-based policy evaluation or policy making is that CBS no longer has data on full-time, fee paying students (which they did until the introduction of the linear system). We only have "total full-time students" (without a breakdown of who is paying or not) and total part-time students (who all pay fees).

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However, File et al. (2013: 24ff) see several weaknesses in the current tuition fee system. The stability of the system is questioned since it is based on a series of ministerial decrees between 2008 and 2012 instead of being legislated by parliament. In addition, the lack of financial sustainability is mentioned as another weakness of the linear system: Due to the system's dependency on students' performances, the state on the one hand has difficulties to accurately predict the financial allocation needed, while HEIs cannot accurately plan the expected income from tuition fees. In addition, it is pointed out that lacking transparency of the linear system might prevent young people especially from low-income families from pursuing higher education. The linear system makes it nearly impossible to calculate costs of studying beforehand (due to its dependence on student performance) although this information plays a key role in the decision whether to pursue higher education or not. Another issue raised by File et al. (2013) is the question of fairness, since student's study progress is seen only as responsibility of the student him- or herself. The linear system does not consider institutional responsibility to provide quality and good study conditions to ensure the students' study progress. In addition, File et al. (2013: 26) argue that the linear system has a severe equity problem since it is based on merit: The dependence of tuition fee exemption on students' performances disproportionally favours students from more privileged backgrounds.

Costs of studying

According to the EUROSTUDENT report, the average total expenditure of students in Croatia amounts to HRK 31,500 (EUR 4,200) per year – including both living expenses and study related costs. Direct costs (tuition fees, study materials, etc.) account for 18% of the total study costs, while indirect costs (accommodation, daily expenses, etc.) amount to 82% of the total costs. The highest expenses are related to costs of accommodation and living costs. However, the third highest costs are tuition fees (see Figure 6).

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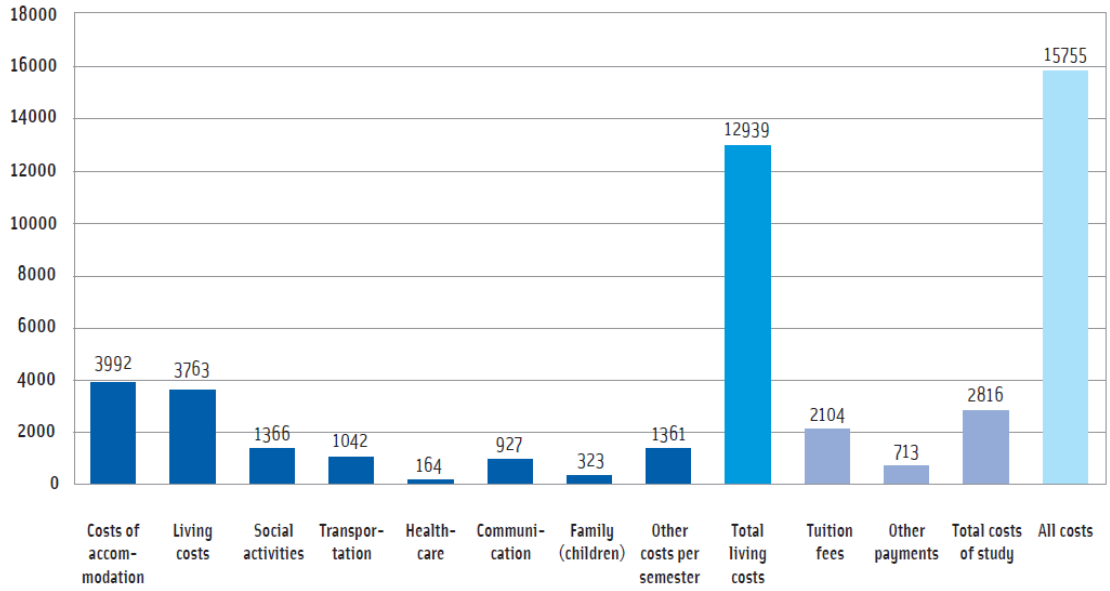
Figure 7: Structure of average total students' costs per semester, in HRK



Source: National EUROSTUDENT report (Farnell et al. 2012: 50)

File et al. (2013: 32) point out that certain groups of students are more likely to incur higher costs than others. Tuition fee paying students are at a significant financial disadvantage, part-time students thereby in particular (see chapter 3.3.3). As Figure 8 shows, part-time students both have higher study related costs and significantly higher living expenses as well (food, transportation, health, etc.). One reason for this financial disadvantage is that part-time students are not eligible for any form of financial student support (see Figure 8 and chapter 3.2.2).

Students enrolled in professional studies incur higher costs than university students. They pay tuition fees remarkably more often than students in university studies – in 2011/12 around 77% of students enrolled in professional study programmes paid fees in comparison to 39% of students in university programmes. As Figure 8 shows, students enrolled in professional studies also have higher costs relating to living expenses. This is partially explainable by the fact that the student body of professional studies has a larger share of part-time as well as mature students than the student body of university studies (File et al. 2013: 32f).

Students at private HEIs incur significantly higher costs than students at public HEIs, especially regarding direct study-related costs, which amount to almost 30% of total expenses – in comparison to a 20% share in public HEIs (Farnell et al. 2012: 58).

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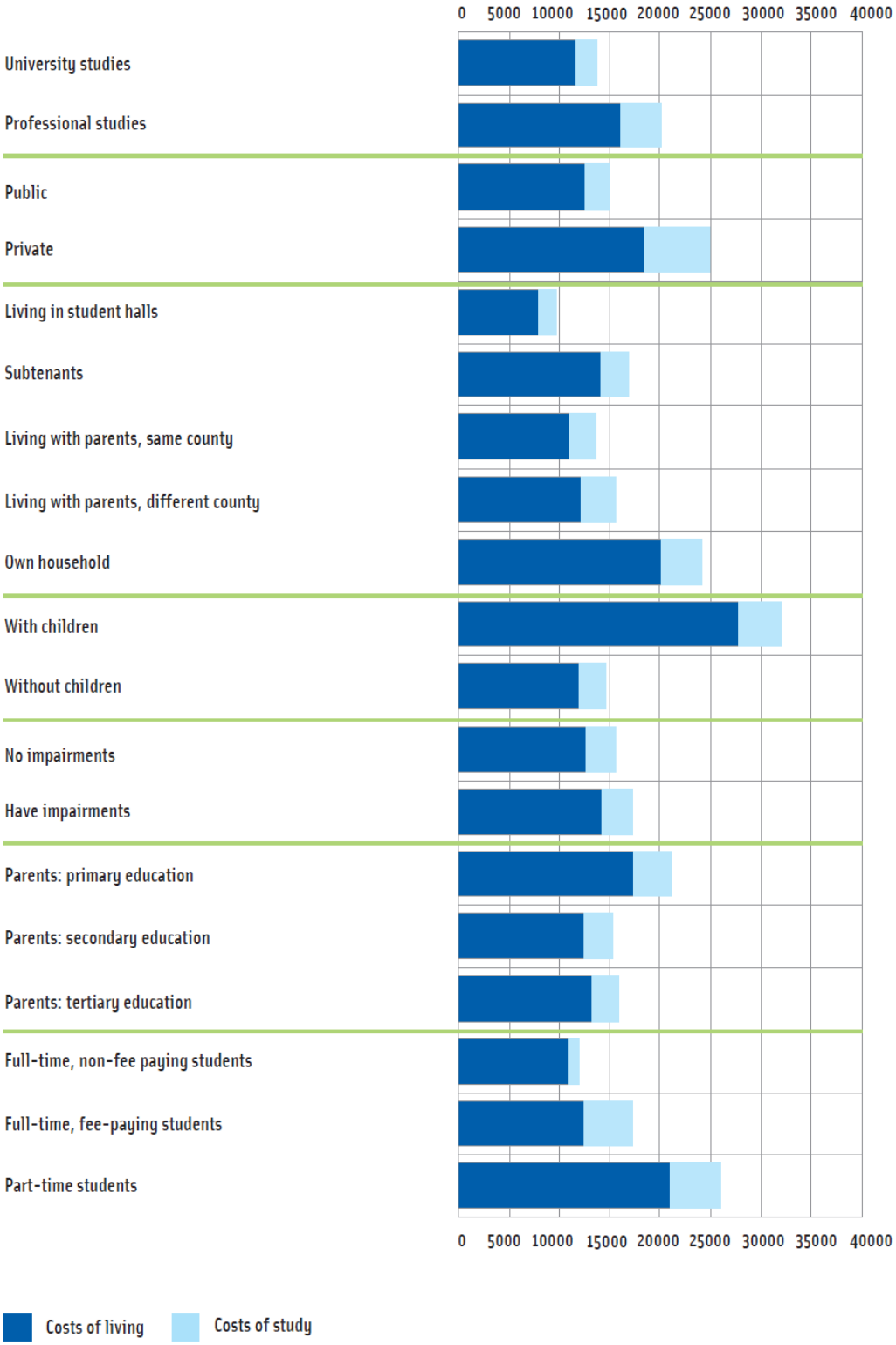
Figure 8: Average costs per semester by expenditure tiers - direct study-related costs and living expenses, in Croatian Kuna (HRK)



Source: National EUROSTUDENT report (Farnell et al. 2012: 54)

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Tuition fees

The maximum amounts of tuition fees for undergraduate and graduate study programmes at universities are determined by the MSES and the Rectors' Conference every year. In principle, all universities abide by this joint decision. However, in practice, tuition fee amounts are set freely by HEIs without any legal upper limit and hence differ strongly between institutions and academic disciplines (Doolan et al. 2012).

Tuition fee levels in Croatia are considerably high in international comparison. However, since there is very little national data on tuition fees, information on tuition fee amounts found for this report are not completely consistent. According to the national EUROSTUDENT report, students pay HRK 8,714-8,948 (EUR 1,157-1,188) on average per year for tuition fees (Farnell et al. 2012: 51).

Fees for 1st and 2nd cycle study programmes at universities range from EUR 700 to 1,400 per year and amount up to EUR 5,227 at professional HEIs, i.e. are substantially higher at professional HEIs. This finding is related to the fact that many professional HEIs are private institutes which generally charge higher amounts of fees (Doolan et al. 2013; EACEA 2012; Šćukanec 2013). As stated above, fee levels vary strongly by institution and field of study. According to File et al. (2013: 28), annual tuition fees for Social Sciences and Humanities are comparatively low (average of EUR 735), for Natural, Technical and Biotechnical Sciences fees are significantly higher (EUR 920) and highest for Art and Medicine (EUR 1,200). Fees for 3rd cycle programmes amount to much higher levels than for 1st and 2nd cycle programmes: Šćukanec (2013: 25) estimates that the range of annual tuition fee levels for postgraduate programmes amount up to EUR 8,000.

International students have to pay tuition fees unless there is a bilateral agreement for mobility with the country of origin (Doolan et al. 2013: 57). According to the website "Study in Croatia", tuition fee levels for incoming undergraduate students range from EUR 800 to 3,600 per year. There is no information provided on the website regarding costs for graduate and postgraduate programmes since it varies strongly by programmes and institutions. However, the Law on Science and Higher Education 2013 (Art. 77, 8) states that foreign nationals study under the same conditions as Croatian citizens but that they may have to cover partial or full costs of their study place.

3.2.2 Student support

The financial student support system in Croatia consists of direct and indirect financial student support. However, the vast majority of support is in the form of indirect support such as meal subsidies. Public expenditure on financial student support is considerably low in international comparison. The entire investment in both indirect and direct financial student support amounts to 11.65% of the total higher education expenditures. With 1.62% of the higher education budget invested into student grants, Croatian higher education policy spends significantly less money on direct student support than most other European countries (e.g. Austria, Germany, Hungary and Italy invest 15-20% of the total

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higher education expenditures on direct support; File et al. 2013: 36). According to File et al. (2013), student financial support has not been reformed since the 1990s, although numbers of fee paying students have increased significantly. Funding levels have not been changed in spite of market prices e.g. for meals or accommodation having increased fundamentally.

Financial student support is predominantly provided on the basis of either merit (direct support) or universally to all full-time students (indirect support). Apart from some exemptions financial support is not based on social and financial need (see below).

Part-time students are excluded from every form of financial student support (File et al. 2013) as well as international students. However, there are some scholarships provided to international students through bilateral agreements (administered by MSES or HEIs) or programmes like Erasmus or Erasmus Mundus (Doolan et al. 2013: 57).

Direct financial student support

File et al. (2013) state that data on student support is not collected centrally which makes evaluation of financial student support difficult. It is not possible to identify the precise number of grant recipients, since there is no official register of grants available. However, EUROSTUDENT data shows that about 28% of students list grants as source of income with an average grant level of EUR 107 per month (File et al. 2013: 38).

In the academic year 2010/12 about 3.7% of full-time-students received a "State Scholarship", the main national grant programme awarded by MSES. Apart from this programme, four other ministries and one foundation provide grants at the national level. The second largest grant programme is provided by the Ministry of Family, War Veterans and Intergenerational Solidarity: In 2011/12, 3,770 grants were provided for children of war veterans. Additional grant programmes are provided at the national level by the Ministry of Sea, Transport and Infrastructure, Ministry of Defence, Ministry of Foreign Affairs and European Integration and the National Foundation for Supporting the Pupil and Student Standard of Living. The total number of recipients of these grants at national level amounts to about 9,000 students or 6% of the total undergraduate and graduate student population (File et al. 2013: 38). According to Doolan et al. (2013: 25), State Scholarship grants range from EUR 66 to 106 per month.

In addition to national grants, a range of international organisations, foundations, NGOs, private companies and local and regional authorities provide grants as well. This partially explains why EUROSTUDENT data shows that 28% of all students receive grants, although only 6% of all 1st and 2nd cycle students receive State Scholarship grants (File et al. 2013).

According to File et al. (2013), the data on criteria for awarding grants is unclear but generally indicate a predominance of merit- instead of needs-based criteria. On the one hand MSES data on State Scholarship recipients suggest that the social dimension is a predomi-

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nant criterion for awarding grants: According to Doolan et al. (2013: 25), 63% of State Scholarship recipients are full-time students from lower income families, while 31% are "especially gifted" full-time students. However, other data point out that in practice grants are primarily awarded on the basis of merit. According to a World Bank study (2008: 117), the state spends almost 10 times the amount on scholarships for students from households in the highest income quintile than for students from the lowest income quintile. Students from the highest quintile receive both the largest share of total scholarships and the highest value scholarships. File et al. (2013: 39) add that even the scholarships awarded on the basis of social need have a merit-component since the total number of grants is very limited.

According to EUROSTUDENT, grants in Croatia are generally rather low. The average grant level (EUR 107 per month, 10 months per year) is lower than the average costs of tuition fees and therefore does not cover tuition fees and living costs (File et al. 2013: 39). In addition, it has to be noted that scholarships are most likely awarded to students with the lowest costs of studying and that the majority of scholarship recipients are students who do not pay tuition fees. Only 21% of full-time fee paying students receive some kind of scholarship, while around 40% of students in state-subsidised places receive scholarships. Students enrolled in professional studies have significantly lower chances of receiving a grant than students of university studies (Farnell et al. 2012: 9).

Following the Bologna implementation report 2009-2012, groups of students identified as underrepresented (e.g. students belonging to the Roma minority, students with disability, students without parental care) receive grants at national level.

Student loan system

Croatia does not have a state guaranteed student loan system at national level. Apart from few examples of local and regional authorities that subsidise the interest on student loans, student loan opportunities predominately are provided by commercial banks. However, the terms and conditions for taking such loans are similar to other bank loans and therefore do not foster equal access to higher education. About 3% of students take student loans (File et al. 2013: 39f).

Indirect financial student support

As stated above, indirect financial student support measures represent the main component of the student support system. Around 78% of the total funds for financial student support are in form of meal subsidies. Other forms of indirect support are subsidies for transport, healthcare and tax benefits (File et al. 2013: 37). The support measures mentioned are universally provided to all full-time students in Croatia and generally are not dependent on social criteria. The right to meal subsidies partially is conditioned by the distance between the student's residence and the place of study. Financial need is not taken into account within the support measures in question (ibid).

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Another indirect student support measure is subsidised student accommodation in form of places at student halls of residence or in form of direct subsidy for private accommodation at HEIs without halls of residence. Student accommodation is awarded primarily on the basis of merit. Socioeconomic criteria such as family income or disability are also taken into consideration. However, File et al. (2013) state that merit criteria such as grade point average and achieved ECTS credits are the predominant criteria for awarding support for student accommodation.

According to File et al. (2013) it is unclear if indirect student support is equally available to all eligible students at all HEIs in Croatia. Especially regarding accommodation subsidies, it is questioned whether students are adequately compensated by direct subsidy for private accommodation if there is no hall of residence at their HEI. In addition it is not clear if subsidised meals and tax-exempt work is equally available throughout Croatia and if there are differences in the quantity of supply and prices.

The authors identify the rather low level of funding, especially regarding direct student support as another problematic issue of the Croatian student financial support. In addition, they criticise that financial need is not taken into account for most support measures. Thus, the support system in Croatia is lacking social accuracy due to the focus on either merit or universally available measures. Finally, lacking transparency as a result of the high degree of complexity of the support system is mentioned as another weakness of the system (ibid).

3.3 Student body

3.3.1 Recent development of student numbers

Since the 1990s, the total number of higher education students in Croatia has increased significantly: Šćukanec (2013: 18) states that there has been an expansion of 110% in student enrolment and that the growth of the overall student population is mainly based on the growth in professional studies enrolment.

Considering the data on student numbers provided by the Croatian Bureau of Statistics, it seems like the student population has grown continuously until today. While in the academic year 2001/02 a total of 108,000 students was enrolled in higher education, the student numbers amounted to 138,000 in 2007/08 and increased to 162,000 in 2013/14. However, it has to be noted that the numbers provided by CBS include both undergraduate and graduate students. The comparability of these figures is limited since the majority of study programmes was transformed from a one-cycle program into a two-cycle programme through the implementation of the Bologna architecture in 2005.

Figure 9 shows that the growth of the overall student population is caused by the increasing number of graduate students: While in 2006/07 (one year after implementation of the Bologna architecture) only 792 students were enrolled in graduate study programmes, the number of graduate students amounted to 34,208 in 2013/14. However, the number of

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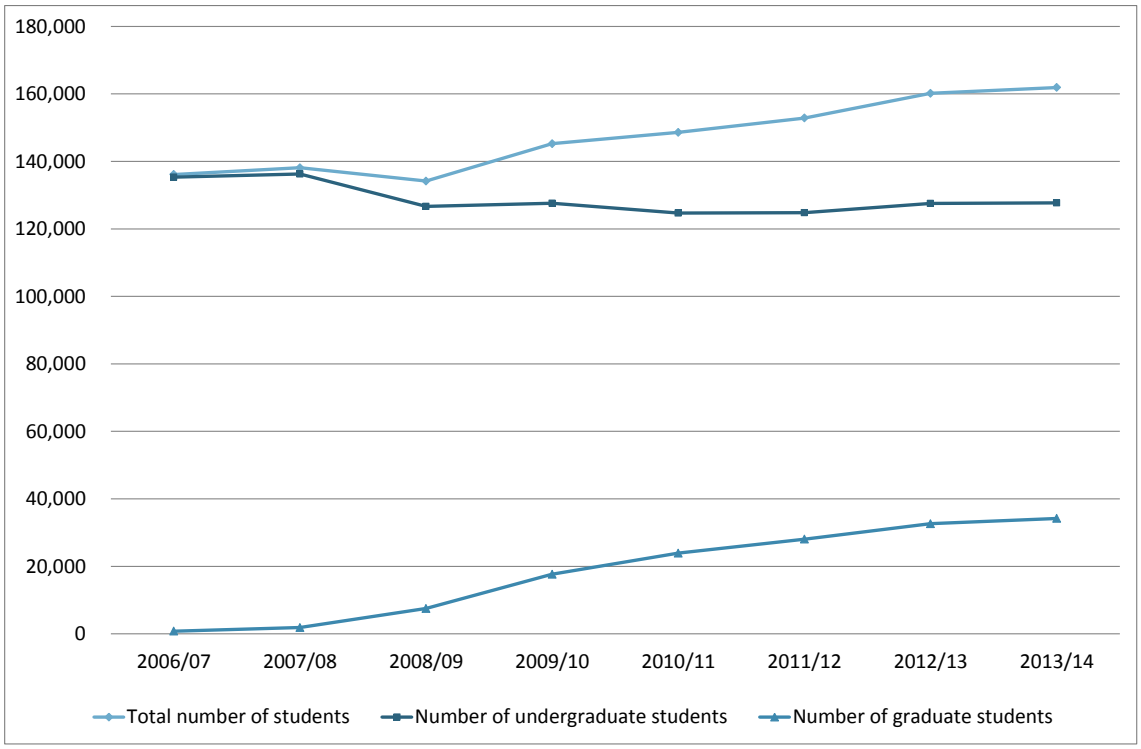
undergraduate students has not increased since 2006/07 but on the contrary declined and amounted to 127,703 students in 2013/14 (7,634 less students than in 2006/07).

Figure 9: Development of student numbers between 2006/07 and 2013/14



Undergraduate students incl. professional and university undergraduate students in pre-Bologna programmes, professional and university undergraduate students and students in integrated programmes. Number of graduate students incl. specialist professional graduate and university graduate students. Source: Own calculations based on Croatian Bureau of Statistics (2010; 2011; www.dzs.br[17])

In fact, the major dropdown in the number of undergraduate students happened in the academic year 2008/09, when it dropped by nearly 10,000. This drop is mainly caused by the decline of the number of 4th year undergraduate students (from 23,307 in 2007/08 to 9,937 in 2008/09), due to the transformation of four-year programmes into three-year Bachelor plus two-year Master programmes. Although the drop of undergraduate student numbers between 2007/08 and 2008/09 is partially explainable by the implementation of the Bologna structure, the reorganisation of study programmes cannot be interpreted as the only reason for the overall decline of undergraduate student numbers between 2007/08 and 2013/14. Taking a closer look to the development of the numbers of 1st year undergraduate students, this becomes more evident. The numbers of newly admitted undergraduate students has declined by more than 3,000 since 2006/07.

Especially in the academic year 2010/11, the numbers of 1st year students dropped significantly by more than 4,000 (see Figure 10) and caused a decline of the total number of un-

17 http://www.dzs.hr/Eng/Publication/FirstRelease/firstrel.asp. Students enrolled on professional and university study. 2005/2006-2013/2014 (Access on 05/09/2014)

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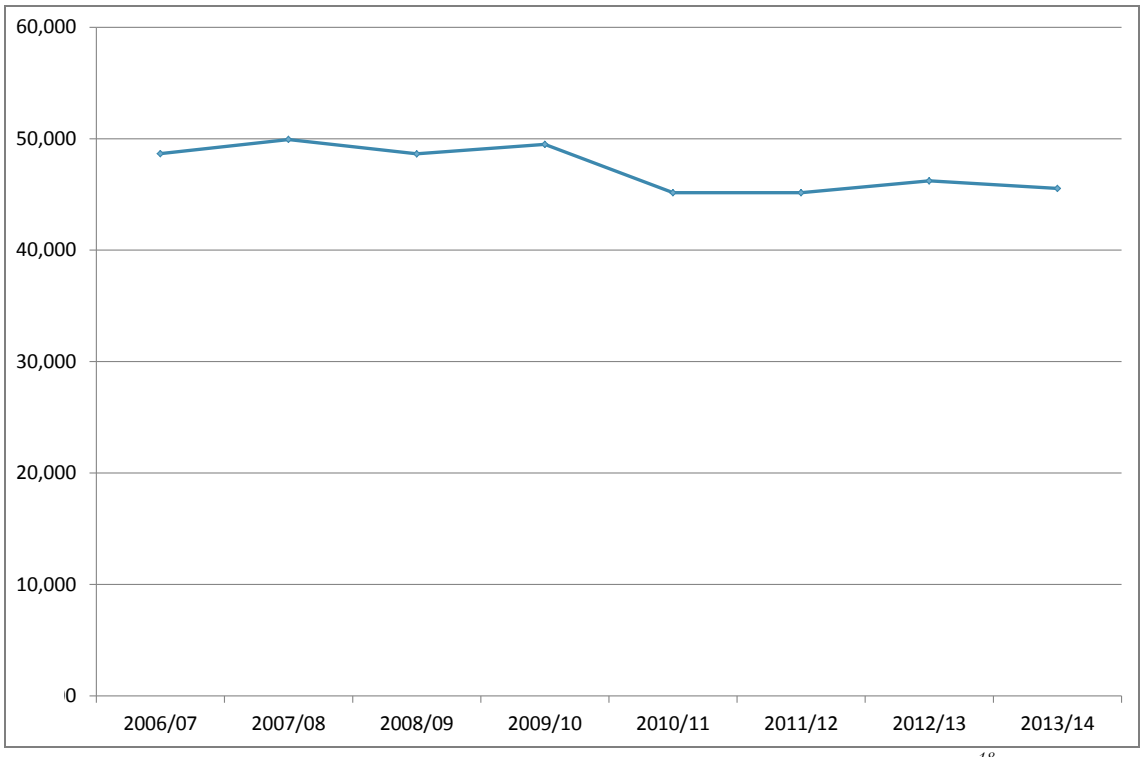
dergraduate students by nearly 3,000 students in the same time period. This drop of newly admitted students occurred in the same year as the implementation of the new linear tuition fee system (see chapter 3.2.1). At the same time, the centralised State Graduation Exam was conducted for the first time (school year 2009/10; see chapter 3.1). Hence, the question has to be raised whether the decreasing number of 1st year undergraduate students is a direct result of the new tuition fee policy and/ or the new central exam or if there are other reasons.

Figure 10: Number of 1st year undergraduate students, 2006/07-2013/14



Source: Own calculations based on Croatian Bureau of Statistics (2010; 2011; www.dzs.br[18])

According to T. Farnell [IRO] there are three factors that could have impacted this: (1) introduction of the State Graduation Exam as criterion for enrolment, which could have put off all those who completed school in earlier year from trying to enrol (i.e. they would need to re-take the school leaving exam); (2) possible fall in pre-Bologna students (some measures by faculties to "get rid" of students who never graduate); (3) possibly lower size of that age cohort.

In the academic year 2013/14, the total number of undergraduate and graduate students amounted to 161,911 (64% undergraduate students, 21% graduate students, 15% integrated undergraduate and graduate students). Out of the total number of undergraduate and graduate students, around 32% were enrolled in a professional study programme while 68% studied within a university study programme. At the level of 2nd cycle less students were

18 http://www.dzs.hr/Eng/Publication/FirstRelease/firstrel.asp. Students enrolled on professional and university study. 2005/2006-2013/2014 (Access on 05/09/2014)

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enrolled in professional study programmes than at the level of 1st cycle: Only 21% of all graduate students were enrolled in professional programmes in comparison to 35% of all students in undergraduate (incl. integrated) programmes. Overall, 57% of all students are female. The share of female students in graduate university studies is significantly higher than in undergraduate studies. Thus it seems that more female than male students within university studies choose a continuous programme after completion of an undergraduate study. On the contrary, more male students tend to continue within professional studies after completion of the 1st cycle.

Table 4: 1st and 2nd cycle students enrolled in higher education

		Number of students	Distribution of students by HE sector	Share of female students
Undergraduate	**total**	**103,370**	**64%**	**54%**
	University studies	58,349	36%	55%
	Professional studies	45,021	28%	52%
Graduate	**total**	**34,208**	**21%**	**58%**
	University studies	27,001	17%	61%
	Professional studies	7,207	5%	49%
Integrated	**total** (only univ. studies)	**24,333**	**15%**	**68%**
Total 1st and 2nd cycle			**100%**	**57%**

Academic year 2013/14

Source: Own calculations based on Croatian Bureau of Statistics[19]

The number of postgraduate students amounted to 5,034 in the academic year 2012/13 (no data available for 2013/14 so far), out of which 3,632 were candidates for doctorate and 1,402 were enrolled on postgraduate specialist studies. Around 57% of all 3rd cycle students were female students, with a considerably larger share of female students among students enrolled in postgraduate specialist studies than among candidates for doctorate (see Table 5).

Table 5: 3rd cycle students enrolled in higher education, academic year 2012/13

	Number of students	Share of female students
total	**5,034**	**57%**
Candidates for doctorate	3,632	54%
Postgraduate specialist studies	1,402	64%

Source: Own calculations based on Croatian Bureau of Statistics 2014.

3.3.2 Field of study

According to UNESCO data, 42% of higher education students in Croatia are enrolled in the field of Social Sciences, Business and Law, 15% in Engineering, Manufacturing and Construction, 10% in Humanities and Arts, 9% in Health and Welfare, 8% in Science, 8% in Services, 4% in Education and 4% in Agriculture. Figure 11 shows that the enrolment

[19] http://www.dzs.hr/Hrv_Eng/publication/2014/08-01-07_01_2014.htm (Access 05/09/2014)

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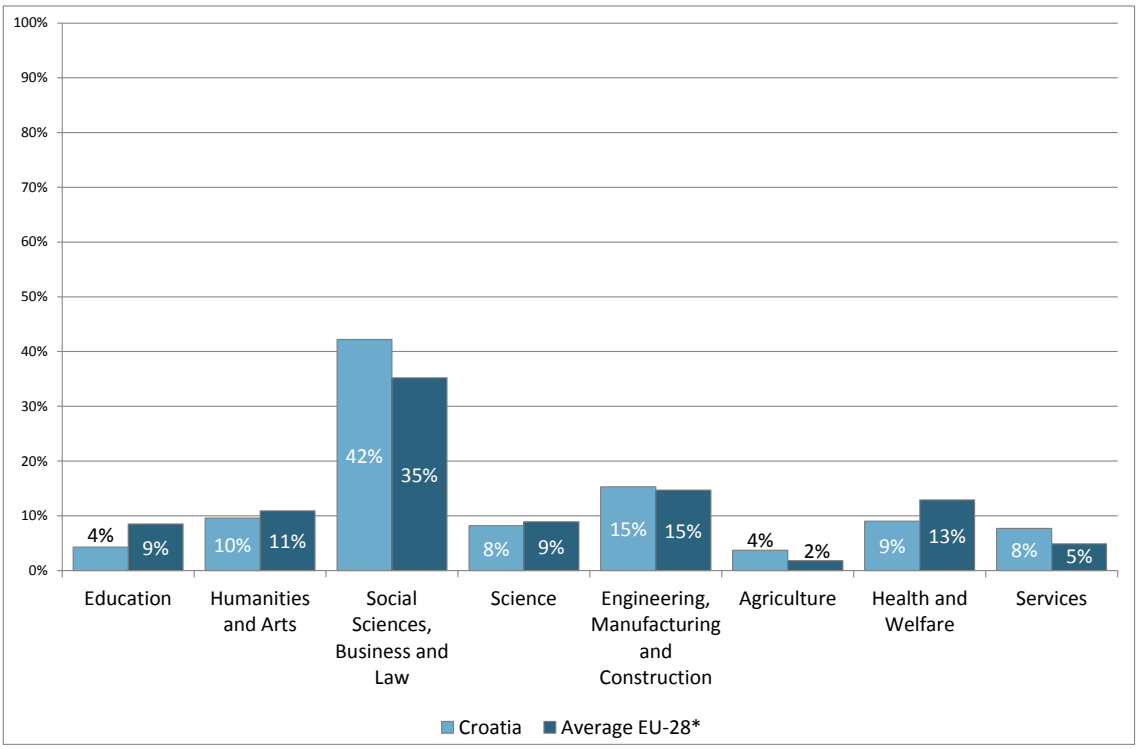
numbers in Social Sciences, Business and Law and in the field of Services is significantly higher than the average of the EU-28 countries. On the other hand, enrolment in the field of education and Health and Welfare is lower than the average of EU-28.

Figure 11: Fields of study



**calculation by IRO based on average of individual data for all EU-28 countries*
Source: UNESCO Institute of Statistics (2014), calculations by IRO

According to EUROSTUDENT IV data (calculations by IRO), Technical Sciences and Social Sciences are the largest fields of study in professional studies and private HEIs exclusively provide study programmes within these two fields of study. Social Sciences are the largest field in university studies as well, though smaller than in professional studies. University studies provide a more diverse range of fields of study than professional studies.

The study "Becoming a student in Croatia", edited by the Agency for science and higher education Croatia, addresses the topic of preffered study programmes in Croatia. According to the authors, highly preferred study programmes are in the field of Biomedicine and Health, Film and Theatre Art, Psychology, Architecture and Design, Dental Medicine, Pharmacy and Medical Science. Study programmes lacking popularity are related to economic activity and industries that were highly developed in the past, such as Metallurgy, Wood Technology, Shipbuilding and Textile Technology. In the academic year 2013/14, the least popular study programmes were in the field of Theology (Jokić et al. 2014).

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3.3.3 Part-time students

In the academic year 2013/14, 71.9% of the total student population were enrolled as full-time and 28.1% as part-time students (CBS 2014).

Most of part-time students are enrolled in professional studies. While 79% of all students at faculties were full-time students, only 55% of students at polytechnics and 52% at schools of professional higher education were enrolled as full-time students in 2012/13 (calculation based on CBS 2014).

As described in chapter 3.2, most part-time students are de facto full-time students with the difference that they have to pay tuition fees and are not eligible for financial student support, although they are predominantly from lower socioeconomic backgrounds and on average older than the majority of students.

According to File et al. (2013), a common justification for the part-time student status is that these students are already employed and therefore do not require public subsidies. However, EUROSTUDENT data show that only 54% of part-time students are employed. Part-time students are more likely to come from lower socioeconomic status and to be older students than full-time students. File et al (2013) describe part-time students as most vulnerable in terms of higher education access and completion and criticise that these students are faced with additional financial burden through fees and ineligibility of financial support.

3.3.4 Students in professional studies

There are substantial inequalities between university students and students enrolled in professional studies. As Figure 12 shows, the latter are more likely to experience adverse study conditions. Half of all students enrolled in professional studies have the status of part-time students and 77% of them have to pay tuition fees (in comparison to only 39% of university students). Students enrolled in professional studies are less likely to receive a grant or a place in student accommodation and are more likely to work full-time. The figures presented in Figure 12 all indicate that students enrolled in professional studies face a significantly higher financial burden than students enrolled in university studies (see also chapter 3.2.1).

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Figure 12: Study conditions in university and professional studies in Croatia

	University studies	Professional studies	Source of data
Proportion of students who pay tuition fees (2011/2012)	39%	76.9%	CBS, 2013
Proportion of part-time students (2011/2012)	14.7%	50.1%	CBS, 2013
Proportion of students receiving a grant (2009/2010)	33%	18%	EUROSTUDENT Farnell et al., 2012)
Proportion of students who work full-time during their studies (2009/2010)	13%	31%	EUROSTUDENT (Farnell et al., 2012)
Proportion of students who live in student accommodation (2009/2010)	16%	3%	EUROSTUDENT (Farnell et al., 2012)
Proportion of students with children (2009/2010)	2%	13%	EUROSTUDENT (Farnell et al., 2012)

Source: File et al. 2013: 21

3.3.5 Sex

The majority of students in Croatia are female: 54% of undergraduate students, 68% of students enrolled in integrated programmes, 58% of graduate students and 57% of post-graduate students are women (see Table 4 and Table 5, page 36).

Despite the relative gender balance within the student body at all levels of higher education, there are certain inequalities in the representation of students by gender, particularly horizontal inequalities concerning fields of study (vertical inequalities are outlined in chapter 0). Male students are significantly overrepresented in Technical Sciences (68%), female students on the other hand are overrepresented in Humanities (78%; File et al. 2013: 14). The share of female students enrolled in university studies on average is higher than in professional studies (see Table 4).

Interestingly, the share of female students is lower in the first year of study than in the following years: According to CBS data, the share of female students was 52% of all university undergraduate students in the first year of study in 2013/14, increasing to 55% in the 2nd year, to 58% in the 3rd and to 67% in the 4th year. Data on the share of female students in professional studies shows the same tendency for the first three years (from 49% female students in the 1st to 54% in the third year) but then shows a drop of the share of female students in the 4th year (43%). Within integrated study programmes the percentage of female students also increases during the first years of studying and declines again during the last two years.

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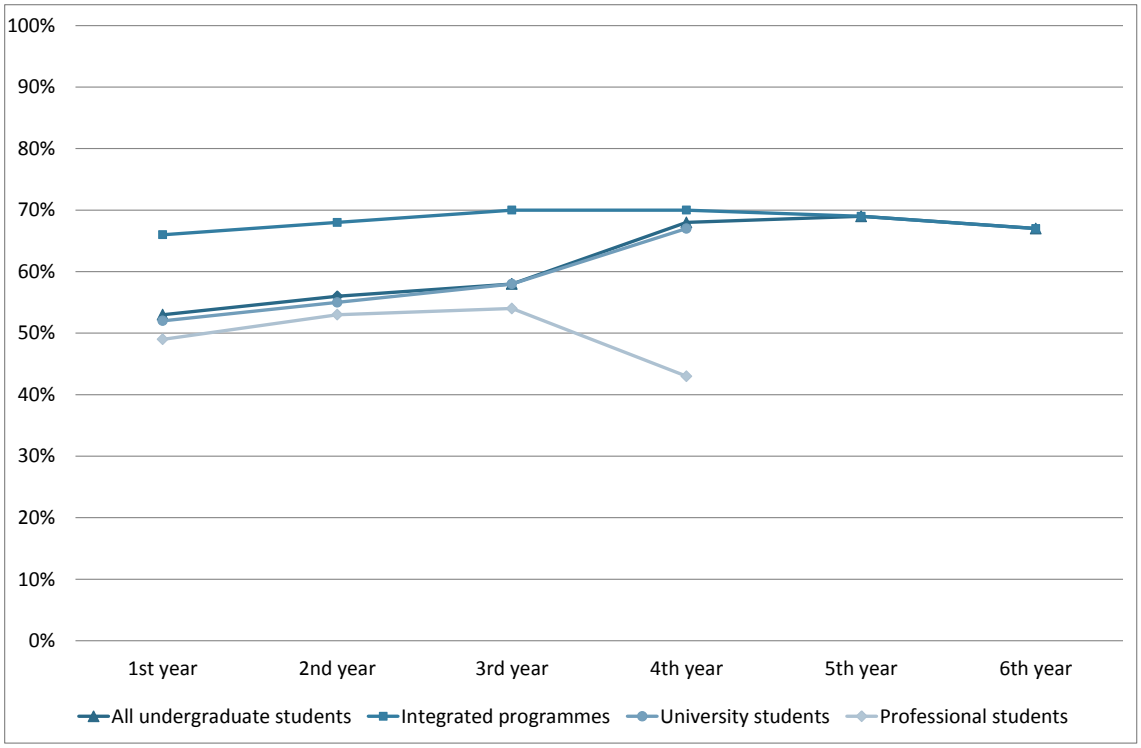
Figure 13: Share of female students in undergraduate programmes, by year of study



Academic year 2013/14

Source: Own calculations based on Croatian Bureau of Statistics.[20]

A possible explanation for the increasing share of female students during the first years of study could be that there is a higher dropout rate among male students than among female students. In addition, a possible explanation for the abrupt increase of female students in the 4th year could be that male students complete their studies within less time than female students. During the research for this report no further information that supports either one (or both) of these possible explanations could be found.

3.3.6 Age distribution

Croatia has a comparably young student body. According to the EUROSTUDENT IV database, the average age of university students[21] in Croatia is 22 years, 91% of all students are up to 24 years old, 8% are between 24 and 29 years old and about 2% are 30 years old or older. The average age of Bachelor students is 21 years, while the average age of Master students is 23 years. Female students are slightly younger than male students: While 12% of male students are 25 years old or older only 7% of female students are in that age group.

20 http://www.dzs.hr/Hrv_Eng/publication/2014/08-01-07_01_2014.htm (Access 05/09/2014)

21 No data available for professional students.

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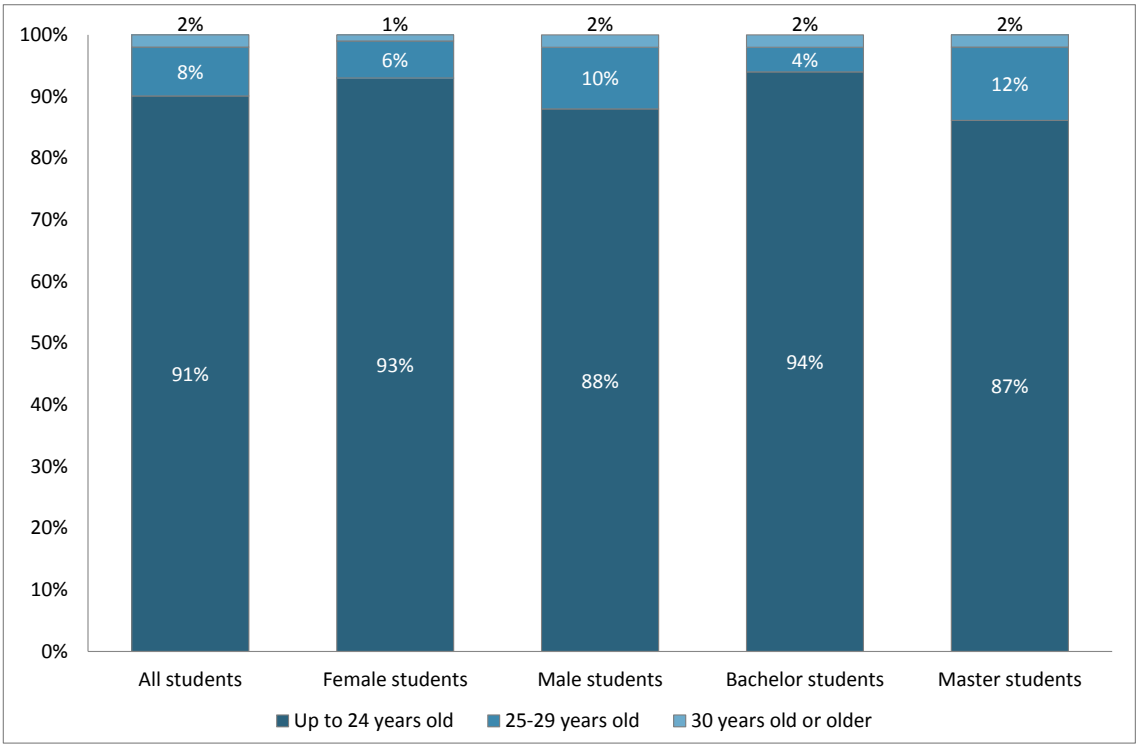
Figure 14: Age profile by characteristics of students



Only university students. Students in professional HEIs are not included.
Source: EUROSTUDENT IV database

According to the Croatian national EUROSTUDENT report, most students (55%) enter higher education for the first time at the age of 18. The percentage of students who enrol before the age of 20 amounts to 88% which is high in international comparison. Only 7% are 21 years old or older at the entry to higher education. Students entering higher education after the age of 20 more often enrol in part-time studies than younger students. In addition, the proportion of students enrolling after the age of 20 is much higher in professional studies (18%) than in university studies (2%; Farnell et al. 2012: 6, 22).

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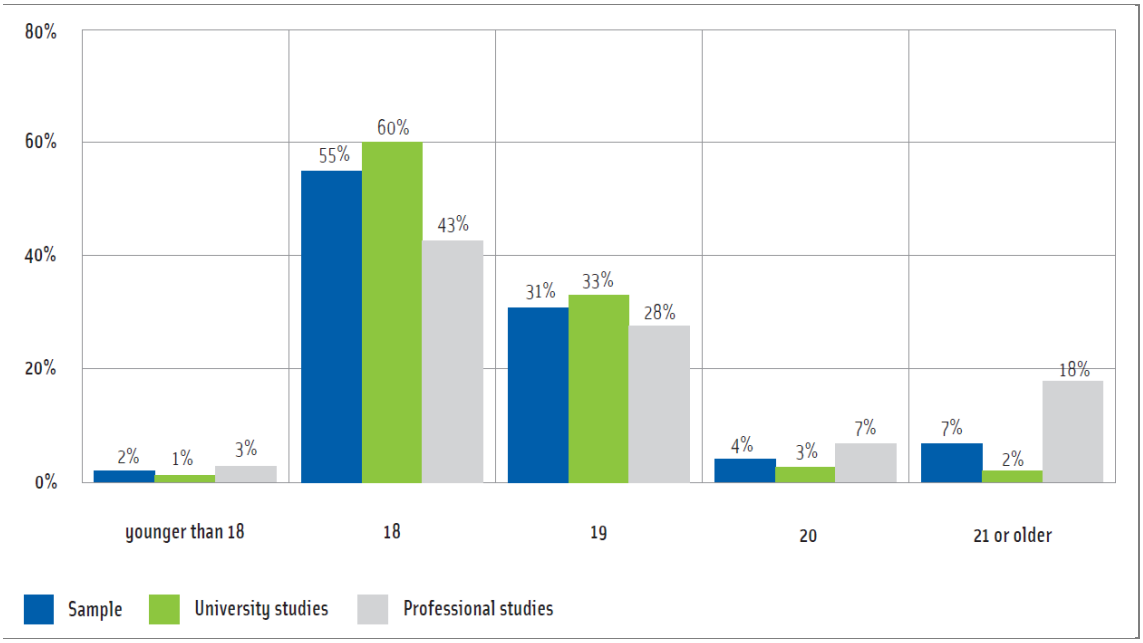
Figure 15: Age of students entering higher education for the first time



Source: Croatian National EUROSTUDENT report (Farnell et al. 2012: 22)

Within the Croatian higher education system the proportion of mature students is low in international comparison: Less than 10% of students in Croatia are over 24 years of age. Around 75% of mature students are enrolled in professional study programmes which indicates that vocationally-oriented programmes are more attractive to mature students. Mature students are more likely to be enrolled as part-time students than their younger colleagues and to be engaged in full-time employment during their studies. In addition, mature students assess their workload significantly higher and their financial situation as being worse than other students (File et al. 2013: 13ff).

According to File et al. 2013, there are considerable barriers for potential students with children regarding access to higher education. In Croatia only 6% of all students have one or more children. Students with children experience financial constraints, time constraints, conflicting demands of being a student and a parent, as well as constraints due to undertaking paid work. With 13%, the proportion of students with children is significantly higher within professional study programmes than within university programmes (2%; File et al. 2013: 14).

3.3.7 Educational background

In the Croatian higher education system students with parents with lower levels of education are significantly underrepresented while students with parents with high levels of education are clearly overrepresented.

Figure 16 shows that 45% of the students have at least one parent who completed tertiary education and 52% have at least one parent who completed secondary school, while only

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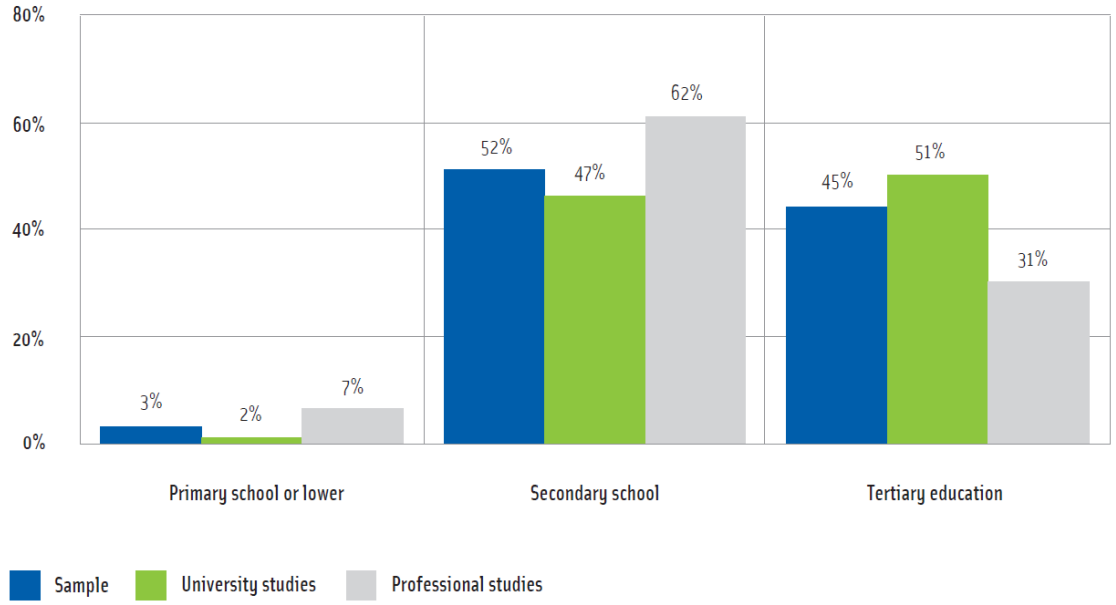
3% of the students have at least one parent with a primary education level or lower. Students enrolled in professional studies more often have parents with low education background than students enrolled in university studies.

Figure 16: Parents' education - joint overview of education level of students' mothers and fathers



Source: Croatian National EUROSTUDENT report (Farnell et al. 2012: 36)

Besides the education level of students' parents it is relevant to take a look at students' prior learning to describe their educational background adequately. According to the national EUROSTUDENT report, most students (53%) enter higher education after completion of a gymnasium and 41% after completion of a four-year vocational school. Around 67% of students enrolled in university studies graduated at a gymnasium while only 30% are four-year vocational school graduates. In comparison, only 22% of students enrolled in professional studies enter higher education after completion of a gymnasium and 63% after completing a four-year vocational school. Hence, vocational school graduates tend to enrol in professional study programmes while gymnasium graduates predominately choose university studies. About 4% enter higher education after completion of a three-year vocational school or a three-year vocational school with additional education up to four years and 2% obtain their higher education qualification outside of Croatia (Farnell et al. 2012: 38). Since only students from four-year general or vocational schools can qualify for higher education (see chapter 3.1), the question arises how it is possible that graduates of a three-year vocational school enter higher education. According to Vranešević et al. 2014, school-leavers from three-year vocational schools can enter higher education by passing additional examinations, or by entering certain vocational study programmes that have an exception to the rule of enrolment based on the completion of the State Graduation Exam.

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According to the national EUROSTUDENT report, 89% of all students entered higher education directly after graduating general or vocational education (within one year). While 24% of students enrolled in professional studies interrupted their educational career between general or vocational and higher education for at least one year, only 5% of university students did so (Farnell et al. 2012: 38). The high percentage of students entering higher education directly after general or vocational education graduation corresponds with the relatively low average age of students entering higher education (see chapter 3.3.6).

3.3.8 Students with disabilities

In the Republic of Croatia, no reliable data exist on the number of students with disabilities because there is no systematic data collection (TEMPUS 2013). According to EUROSTUDENT, 15% of the students state that they are impaired in their studies by some kind of health problem: Most of them (53%) reported "other health problems" as their category of impairment, followed by mental problems (26%), chronic illness (16%) and physical disabilities (5%; Farnell et al. 2012: 25f).[22]

Students with disabilities are highly dissatisfied with the support they receive during their studies, most of them (68%) reporting that their impairments were "insufficiently taken into account" or "not taken into account at all". In addition, students with disabilities experience a significantly higher workload and higher dissatisfaction with the quality of their study programme regarding the programme's contribution to their future employability than other students (File et al. 2013).

Finally, students with disabilities experience a higher degree of financial burden than students without impairments. They tend to have higher living costs than those with no impairments (see Figure 8, page 29) and considerably earn less when they work to cover their expenses. This indicates that work is a less viable option of funding for students with impairments (Farnell et al. 2012: 58ff).

Support measures

According to the Bologna implementation report 2009-2012, "students with disabilities have dedicated scholarships, special admission regulations, significant funding of disabled students´ NGOs (including transportation and adaptation of study materials) and dormitory accommodation".

A document developed by a national working group within the Tempus project EduQuality acknowledges that a number of good policy measures are currently in place in Croatia. However, it identifies remaining problems and the need of improved support policies. The document states that financial aid in form of tuition fee subsidies and grants is an example of good practice. Students with an impairment of at least 60% receive full tuition fee subsi-

[22] According to Farnell et al. (2013:15), the category "other health problems" is ambiguous and difficult to interpret critically. Therefore the category is excluded from their calculations, which correspondingly is based on the figure of only 7% of students with impairments.

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dies if they accumulate at least 30 ECTS credits (students without impairment have to accumulate 55 ECTS credits). The MSES awards state grants to full-time undergraduate and graduate students and partially reimburses tuition fees to postgraduate students with disabilities. Furthermore, some HEIs, bodies of local or regional government and NGOs award grants (TEMPUS 2013: 28f). However, EUROSTUDENT IV data show that students with impairments on average receive less money through scholarships and loans than students without impairments (Farnell et al. 2012: 66).

Regarding the admission process, the EduQuality document states that the State Graduation Exam is well adapted to students with disabilities. Some HEIs grant students with impairments the right to priority admission. However, remaining problems are the lack of information to potential and existing students with disabilities and that the implementation of individualized testing has not been systematically regulated at national level (TEMPUS 2013).

Almost all Croatian HEIs have introduced institutionalised support services for students with disabilities. However, these services sometimes do not function sufficiently (e.g. due to the lack of resources). Additionally, none of the Croatian polytechnics have set up any type of support service for students with disabilities. Another remaining issue is the fact that physical accessibility has not been ensured at most HEIs so far. Problems do not only arise in the case of historical buildings but also because existing laws regarding physical accessibility are not observed when new buildings are built or when old ones are renovated (ibid).

Regarding transportation subsidies, it is noted that some bodies of local governments have taken steps to provide accessible transport services. However, accessibility to transportation for students with mobility impairments has not been systematically solved at any HEI but is left to local arrangements. According to the EduQuality document, all students with an impairment of 50% or more are automatically granted a place in a student dormitory. While newly built student dormitories are mostly physically accessible, older ones are not. Correspondingly, the number of accessible rooms at many HEIs is insufficient relative to the growing number of students with disabilities. Also, the document notes the lack of a support system that would assist students with impairments in their activities of daily living (ibid).

3.3.9 Accommodation

According to the EUROSTUDENT IV database, around 43% of all students live with their parents and about 15% live in student halls. Students who live in private accommodation have higher costs than students living with their parents or in student halls. However, housing in private accommodation seems not associated with a higher likelihood of experiencing financial or other types of difficulties. This suggests that predominately students who receive adequate financial support have the opportunity to live in private accommoda-

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tion. Moreover, students who do not live with their parents are more likely to complete their studies than students who do (File et al. 2013: 18).

Students who live with their parents outside the county where their HEI is located are identified as most vulnerable regarding the type of accommodation. They experience higher financial burden, are more likely to work and less likely to receive either grants or financial support from their families than other students. Presumably, this form of accommodation primarily is chosen due to the lack of financial resources for living in the location of the HEI (ibid).

Part-time students are not eligible for receiving a place in a student hall. In addition, full-time students who pay tuition fees have significantly less chances of being awarded housing in student halls compared to full-time students who do not pay fees. Tuition fee exemption and obtaining a place in a student hall both are based on academic performance, which conceivably can explain this finding. Full-time, fee-paying students on average have 1,000 HRK/130 EUR higher accommodation costs per semester than full-time students who do not pay fees (ibid: 17).

3.3.10 International students

Among students in Croatia international student mobility is not very common. According to EUROSTUDENT IV data (Farnell et al. 2012: 84), only 2% of the students participated in international exchange programs (including both degree and short term mobility). The number of outgoing and incoming students has been increasing rapidly due to the full membership in the EU Lifelong Learning Programme since 2011 and the implementation of the Bologna degree structure but still remains low. According to data from the Agency for Mobility and EU Programmes, the number of outgoing students increased from 545 to 1,317 and the number of incoming students from 333 to 600 from 2010/11 to 2012/13. According to the MSES, the main obstacles for outgoing student mobility are recognition and study organisation, while the most significant obstacle for incoming student mobility is language (Šćukanec 2013).

3.3.11 Students belonging to the Roma minority

According to the Bologna implementation report 2009-2012, students who belong to the Roma minority are identified as underrepresented group in higher education and as one of the most vulnerable group to education disadvantages. In the academic year 2011/12 only 29 students belonging to the Roma minority were enrolled in a higher education institution. A major issue related to access to higher education is the underrepresentation of Roma in general and vocational education. Although the number of Roma students has been increasing during the last decade (from 172 students in 2006/07 to 378 Roma students in

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2011/12), it is still considerably low; MSES.[23] An ECRI (European Commission against Racism and Intolerance) report states that the trend is moving towards the majority of Roma children finishing compulsory primary education. However, still many Roma children drop out before completion of primary education. In one Croatian county the drop-out rate is as high as 84% (ECRI 2012: 18).

Table 6: Number of Roma students in formal education

	2006/2007	2011/2012
Primary education	2,010	4,882
General and vocational education	172	378
Tertiary education	10	29

Source: MSES: Action Plan: Decade of Roma Inclusion 2005-2015.

In 2011/2012, the 29 Roma students in higher education received an annual state scholarship of HRK 10,000 (EUR 1,315; MSES).

3.4 Graduation and transition

In 2013, more than 35,000 students graduated from Croatian higher education institutions. Two thirds of all graduates did their degree at universities, nearly one third at professional HEIs. The share of female graduates is remarkably higher among university graduates (including professional programmes) than in polytechnics or schools of professional higher education.

Table 7: Graduates from higher education in Croatia by type of institution

	Number of graduates	Distribution of graduates	Share of female graduates
Polytechnics	4,882	14%	50%
Schools of professional HE	2,641	7%	52%
Professional programmes at universities	3,829	11%	66%
Universities	23,286	66%	60%
Art academies	614	2%	62%
Total	35,252	100%	59%

Data for 2013.
Excl. doctoral studies.
Source: Croatian Bureau of Statistics 2014.[24]

[23] The Action Plan: Decade of Roma Inclusion 2005-2015 is only available in Croatian. Due to a lack of resources of personnel and time, the translation of the document has provisionally been conducted with Google translator. The author cannot be held responsible for any mistranslations.

[24] These figures have been deducted from the number of undergraduate students and students in integrated studies in their first year. The Croatian Bureau of Statistics did not identify them as newly admitted students.

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The majority of graduates (45%) are between 22 and 24 years old, only 12% are older than 30 years. At Universities, two thirds of graduates are up to 25 years old, whereas at professional higher education institutions one half or more of students are 25 years or older when they graduate.

In most European Countries, men continue their studies after graduating from their first cycle programmes more often than women. In Croatia however, this is at the first glance not the case: 59% of graduates from undergraduate studies as well as from graduate studies are female. Despite, on a closer look, it appears that especially in professional studies transition to graduates is gender biased. Thus, the share of females among graduates from 2nd cycle programmes is about 12% lower than among 1st cycle graduates in polytechnics (53% vs. 51%) and schools of professional higher education (47% vs. 54%) and 14% lower in professional programmes at university faculties (58% vs. 67%).

As described in chapter 1.3, the high youth unemployment rate is considered a crucial issue for the Croatian economy. However, the first eight months of 2014 showed some positive signs, i.e. a decline of the youth unemployment rate. Higher education graduates are less often affected by unemployment than less educated groups: While the overall unemployment rate amounted to 17% in 2013, it is remarkably lower for higher education graduates (11%; Eurostat database 2014)[25]. According to a report conducted by the Croatian Employment Service (2014), the positive effect of education on preventing unemployment has further intensified in 2014. In the first eight months of 2014, the percentage of young people entering unemployment from formal education decreased by 8%. However, the high share of unemployed among young people – including academics – remains a crucial challenge for Croatia.

In addition, like many other European countries Croatia faces a skill mismatch regarding labour market demands. Already in 2008, a joint assessment of the employment policy priorities of the Republic of Croatia by the European Commission addressed this skill mismatch. The document points out that graduates of specific fields of study tend to remain far longer in unemployment (e.g. Social Sciences, Social Work or Journalism) than graduates of other fields of study (e.g. Engineering, IT, Pharmacy or Construction; European Commission 2008). Based on a government dicision from 2010, a study on forcasting labour market demands and its implications for educational enrolment policies was conducted in 2013 by the Croatian Employment Service. The study offers recommendations for each Croatian region whether enrolment numbers in specific education programmes at general or vocational education and tertiary level should be increased or decreased due to labour market demands. As an example, for the region of Zagreb it is recommended to increase enrolment numbers in programmes like Medicine, Anglistics or Software Engineering, whereas to reduce enrolment numbers in programmes such as Political Science, Economics or Philosophy (Croatian Employment Service 2013).

[25] These figures refer to the age group between 15 and 75 years since there are no reliable Eurostat data available for youth unemployment (age group 15-24) among higher education graduates.

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The Croatian Employment Service (CES) has a long tradition of providing services for lifelong career guidance and counselling of different target groups. All of the activities are the result of systematic partnership-based approach to early intervention activities on national, regional and local levels. The process of career guidance starts with a survey on vocational intentions of pupils finishing elementary and secondary school. Results of the survey indicate the trends in pupils'/students' vocational intentions and are delivered to the stakeholders in the field of education and employment on the county and national level. According to the survey and forecasts of the needs of the labour market for certain occupations, annual recommendations for enrollment policy and scholarship policy are made and passed on to the educational institutions, local and regional stakeholders, sector councils and the Ministry of Education (e.g. which higher education programmes should increase the number of students enrolled at which levels)[26].

3.4.1 Student assistance

There is an initiative for unemployed youth, namely those who cannot find employment when first entering the labour market (Erawatch 2014). For those who graduated from higher education, the programme lasts for one year (two years for other occupations). In this period, the state provides health insurance and allowance of HRK 1,600 for an internship, in replacement of the employers' cost. Thus, the ministry does not create jobs directly, but encourages employers to hire young, unexperienced employees (SupraZdravlje 2010).

[26] This paragraph is based on a comment from the Ministry of Science, Education and Sports. See also: http://www.elgpn.eu/elgpndb/view/111 (Access on 25/03/2015)

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4.2 Further relevant initiatives and publications

List kindly provided by Thomas Farnell from the Institute for the Development of Education (http://www.iro.hr)

The social inclusiveness of higher education in Croatia: situation analysis (2014):
Report (in Croatian) analysing in more detail vulnerability in access, participation and completion of HE based on EUROSTUDENT data and other sources.
http://www.iro.hr/userdocs/File/Publikacije/Socijalna_ukljucivost_visokog_obrazovanja.pdf

Ensuring minimal accessibility standards for students with disabilities in Croatia (2013):
Result of a TEMPUS project, which was approved by the Croatian Rector's Conference.
http://www.unizg.hr/uredssi/images/datoteke/nacionalni_dokument.pdf

Project: Linking Quality and Social Inclusion in HE (2013-2014):
Project (in progress) aiming to develop an institutional quality culture at higher education institutions in Croatia which values social inclusion as one of its core elements.
http://www.ipa-equality.eu/eng/

Social identities, higher education access and course choice (2013-2016):
Project (in progress) by the Institute of Social Research.
http://www.idi.hr/sipvoos/index_en.html

Policy recommendations for equal access to higher education (2009):
http://www.iro.hr/userdocs/File/IRO_Policy_preporuke_2008.pdf

Column of access to higher education (2008-2010):
Short critical texts on access to higher education commissioned by DIE between 2008 and 2010
http://iro.hr/hr/javne-politike-visokog-obrazovanja/kolumna/view-columns-archive-2008/

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