

**AlmaLaurea Inter-University Consortium**

*Employability and Mobility of Bachelor Graduates in Italy:  
Mixed Outcomes of the Bologna Process*

by

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## Abstract

The present essay represents the contribution of AlmaLaurea (AL) to the volume on *Employability and Mobility of Bachelor Graduates in Europe - Results of the Bologna Process*.

First of all, in order to make more reasonable international comparisons between the different studies collected in the volume, two main stylized facts of the Italian setting are spelled out: the rapid ageing of the population and the scarcity of youths; the scarcity of highly qualified manpower.

In second place, a very compact comparison is carried out concerning the characteristics of graduates before and after the major, Bologna Process-inspired, reform introduced ten years ago and the strengths and weaknesses of the Italian higher education system.

This paper, after a short introduction, in paragraph 1 synthetically describes the study structure of the Italian higher education system and the main features of the Bologna Process reform in Italy. In paragraph 2 a short description is presented of the AlmaLaurea graduate surveys used for the analysis and the AlmaLaurea model. Paragraph 3 offers an account of the main characteristics of Bachelor graduates, especially in terms of socio-biographic background and course of study. Some evidence on graduates' international mobility is put forward in paragraph 4. In paragraph 5 the main features of the available evidence on employment and further studies of Bachelors are presented, while paragraph 6 is devoted to the presentation of the main evidence concerning the professional success of Bachelors. Paragraph 7 outlines the major conclusions that can be drawn, at this stage, on the open debate on the impact of the reform. The Appendix displays basic figures analysed in the previous paragraphs.

*Keywords:* Graduates' background; graduates' international mobility; graduates' profile; graduates' employment; graduates' earnings; graduates' knowledge; graduates' skills; mismatch; labour supply, human capital; Bologna Process; university reform.

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## 0. Introduction

The present essay represents the contribution of AlmaLaurea (AL) to the volume on *Employability and Mobility of Bachelor Graduates in Europe - Results of the Bologna Process*.<sup>1</sup>

Therefore, the research questions addressed in the paper are those shared by the other contributions to the volume, and the same is true for the paragraph structure which follows this short introduction.

Since international comparisons are always difficult, and this is especially true in the field of education, in order to make more reasonable an international comparison we have to spell out from the beginning at least two stylized facts of the Italian setting. First of all, in spite of the strong inflow of immigrants, in the last 25 years the absolute number of nineteen-year-old youths in Italy dropped by 38%<sup>2</sup>. This brings about, of course, strong direct and indirect effects, both on the demand for higher education and the potential supply of graduates. Secondly, even if in the last decade the catching-up process has been remarkable, in 2007 the ratio of graduates in the population in the 25-34 age range was only 19%, as compared with an Oecd average of 34% (Oecd, 2010, ch. 9)<sup>3</sup>. This is the effect of a delay with deep historical and structural roots<sup>4</sup>: in the 55-64 age range the ratio reaches only 9%, less than half of the corresponding Oecd average. Of course this also involves groups like entrepreneurs and managers, both in the private and public sector. This is why the setting of a minimum threshold of 40% for this ratio, in the framework of the European Higher Education Area (EHEA), can be very relevant for Italian development.

## 1. Study structure in Italy

Before the start of the Bologna Process, Italy was one of those few countries involved in the Process which did *not* have a two-cycle type degree structure. As we will see below, until the introduction of the “3+2” reform, which, for the system as a whole<sup>5</sup>, took place in the academic year 2001-2002, university study programmes (assigning a degree called *laurea*) were mostly four-year ones. Moreover, access to them, since the end of the Sixties, was allowed to virtually all upper secondary school graduates. Some programmes required five (e.g., engineering) or six (medicine) years of study. Universities also offered three-year programmes assigning a *diploma universitario*, but students enrolled in such programmes comprised a small minority.<sup>6</sup>

The Italian higher education system has been, however, strongly influenced by the Bologna Process, aimed at introducing a more transparent and comparable structure of university degrees, fostering mobility of students and scholars, promoting employability of graduates, assuring educational quality and placing emphasis on the European dimension of higher education. The first of these objectives has been pursued, in Italy, by organising university programmes in two main cycles: a first cycle (upon completion of which a *Bachelor* degree is obtained – “*laurea*”), geared

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<sup>1</sup> The project has been launched last March by Harald Schomburg and Ulrich Teichler in an inventive call, committed to collect together in a comparative framework tracer studies for the “Bologna countries”.

<sup>2</sup> For a more comprehensive analysis see Cammelli, di Francia and Guerriero (1997) and Antonelli (1987, p. 161).

<sup>3</sup> For further evidence see also Cammelli (2009a).

<sup>4</sup> Firm size and the evolution of local systems of production largely contributed to shape in this way the demand for graduates by Italian firms (Antonelli, di Francia and Guidetti, 2006; Antonelli and Guidetti, 2008).

<sup>5</sup> In some universities the reform was introduced in the academic year 2000-2001.

<sup>6</sup> Actually, as Tab. 1 shows, in the year 2000 they amounted to 17,592 (10.9% of the total degrees), while in the year 2001 their number was 16,556 (9.6% of the total degrees). In any case, apart from the fact that some of them were classified under the level 5B in ISCED 97 (such as, higher education in arts and music, in linguistic mediation, for archivists and palaeographers and physical education), also most of this category was classified under the level 5A, like it is also true for the *laurea*, before the reform, as well as the first and second cycle of higher education after the reform (Istat, 2003).

to professional outcomes and lasting (at least) three years; and a second cycle (leading to a *Master* degree – “*laurea magistrale*”, formerly “*laurea specialistica*”), conditional upon the completion of the first cycle.<sup>7</sup> In some fields of study – medicine, veterinary medicine, dentistry, pharmacology, architecture<sup>8</sup> – there is only a long “single-cycle” programme, lasting 5 years (6 for Medicine), and admission to these programmes is limited. Also law from the academic year 2007-2008 shifted to a single-cycle of 5 years.<sup>9</sup> University study programmes in Education science have exceptionally maintained their prior 4-year duration.

Two sets of legislative measures were adopted in Italy to implement the Bologna Process:

a. the first reform (Ministerial Decree No. 509 of 1999, “Regulation establishing rules on didactical autonomy of universities”, implemented since the academic year 2001-2002), introduced the so-called “3+2” system, on a general basis, with a two-cycle degree structure consisting of a first cycle (a Bachelor degree – called *laurea* – earned after at least 180 ECTS credits are obtained) and a second cycle (a Master degree – *laurea specialistica* – requiring at least 300 ECTS credits, including those previously obtained for a first cycle degree);

b. the second reform (Ministerial Decree No. 270 of 2004, “Amendments to the regulation establishing rules on didactical autonomy of universities” and the following decrees issued at the 16 March 2007) aimed at reducing the number of the new degree programmes and the number of the exams in each course, as well as introducing a budget constraint on resources, in addition to establishing the *laurea magistrale*, with a total workload of 120 ECTS credits, and increasing the number of single-cycle *laurea magistrale* courses (with special regard to the replacement of the “3+2” scheme with a single-cycle degree programme in the field of law).

The “3+2” reform was also aimed at achieving some specific “convergence” goals which were not expressly mentioned in the Bologna Declaration, addressing the following endemic weaknesses of the Italian university system: a low number of graduates; a high rate of drop-outs from university; a strong discrepancy between the allocated time-to-graduation and the actual duration of studies.

Italy has 61 state universities (including 4 polytechnics and 2 universities for foreigners), 17 non-state, but legally acknowledged, universities (4 are promoted by public institutions, 13 are privately run), 11 on-line (private) universities and 6 special schools or higher institutes (specializing in research and usually catering only to doctorate-level students). Italy’s higher education system is peculiar in that almost all participation in higher (post-secondary) education is university-based. Non-university higher education is offered through a variety of institutions, including arts academies, musical conservatories<sup>10</sup>, higher schools for linguistic mediators, psychotherapy training institutes, military and police academies, higher integrated training schools and institutes, and regional vocational training centres.

According to Oecd (2009), in 2007 the net entry rate to tertiary education institutions among Italians was an estimated 53% (56% in Oecd countries), up from 39% in 2000. Graduation rates in tertiary education are estimated to be 35% (38.5% in Oecd countries).<sup>11</sup> These data should be considered again in the framework of the low share of graduates in the Italian population in the 25-34 age group.

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<sup>7</sup> Since the Italian reform created also degree courses called “masters” (“*master di primo livello*” – typically following a first-cycle degree – and “*master di secondo livello*” – following a second-cycle degree), in order to avoid misunderstanding, in the present paper when mentioning a Master programme/degree we will refer only to a second cycle or single-cycle programme/degree.

<sup>8</sup> These courses are also regulated by specific European directives which define the scientific basis and the theoretical- practical training needed for practicing the corresponding professions.

<sup>9</sup> For further information see Antonelli et al. (2010), Cammelli (2006a).

<sup>10</sup> Arts academies and musical conservatories have been also heavily reformed (Law No. 508 of 1999) aimed at involving them in the “Bologna Process”.

<sup>11</sup> A more exhaustive interpretation can be found in Cammelli (2009b) and AlmaLaurea (2010a).

The “3+2” reform generated a very rapid and partly uncontrolled increase in the number of degree programmes: while in the academic year 2000-2001, 2,262 degree programmes (and less than 1,000 university diploma courses) were available within the framework of the old system, in 2003-2004 the educational programmes comprised more than 3,000 first cycle degrees, over 1,200 second-level degrees and approximately 180 single-cycle Master degrees. In 2007-2008, the same types of courses grew respectively to over 3,100, around 2,400 and around 270. Universities and their controlling ministry are attempting, with some success, to reduce the number of degree programmes.<sup>12</sup>

The reform led a higher number of young people (as well as older adults “returning” to formal education<sup>13</sup>) to undertake university studies: the number of new enrolled students passed from 284 thousand in 2000-2001 to a peak of 338 thousand in 2003-2004; the total number of university students grew from 1.69 million in 2000-2001 to 1.82 million in 2005-2006. From these peaks a reduction in the number of enrolments and in the overall number of students was recorded over the last few years, and this is due not only to demographic changes (fall in the absolute number of young people and therefore upper secondary school graduates), as from 2005-2006 a reduction of enrolment rates has been observed also among 19-year-olds and secondary school-leaving certificate holders. Furthermore, another determinant of the reduction in enrolments is the growing difficulty families are faced with when affording direct and indirect costs of higher education.

As Tab. 1 and Fig. 1 show, the reform process and the dynamics of the university system have proven to be slow and sticky, and the reform’s effects late in emerging, especially with regard to the characteristics of graduates, who are the “final product” of the university educational processes. This is also due to the fact that they are the result of a sequence of different legislative waves. The transformation of the graduate characteristics has been a gradual process that needed several years to produce substantial effects. The incidence of graduates of the new “3+2” programmes has steadily increased over the decade. Only in 2005 the “new system” graduates (i.e., first cycle, second cycle and single-cycle graduates) did account for over half of the total of university graduates. In 2007 new-type Master graduates were still fewer in number than pre-reform graduates. Only in 2008 the number of Master graduates did exceed that of old system-graduates.

The “3+2” reform has led an increasing number of students to complete their university studies.<sup>14</sup> If in 2000 the number of university degrees awarded (including university diplomas) was 161,484, in 2005 and 2006 the number of university degrees awarded was more than 300 thousand.<sup>15</sup> The number of graduates earning a second-level degree (pre-reform or new Master-*specialistica* or single-cycle) provides a less ambiguous framework: if in 2000 the number of graduates was 143,892, it was 171,332 in 2004; subsequently, it dropped to 120,910 in 2009 (Tab. 1). This trend could be interpreted in both negative (a decrease in the number of highly qualified graduates) and positive terms (a success in routing students towards shorter and employment-oriented university programmes).

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<sup>12</sup> The Bologna Process started earlier in Italy than in the other European countries, probably not only for reasons linked to the innovative spirit of Italian universities (Cammelli, 2009c). As Roversi Monaco (2008) suggests, in some Italian universities the reform has been implemented forgetting that the Bologna Declaration suggested a gradual approach with final horizon in 2010. Very likely the expectation of increasing the number of professorial tenures played an important role.

<sup>13</sup> And applying for accreditation of previous study or work activities for the purposes of degree completion. For a more comprehensive analysis see Cristofori (2008).

<sup>14</sup> Or, at least, it has implied the awarding of a greater number of university qualifications.

<sup>15</sup> This increase is, at least partially, due to the duplication of the degrees, because students graduating in a Master course are also counted for the Bachelor degree previously obtained. In fact, if instead of considering the number of the degrees awarded we take into account the number of years of higher education completed, the increase, although remaining high, is less strong, reaching 22.5% in the period from 2001 to 2009 (AlmaLaurea, 2010b).

The university reform has had a varying impact according to field of study. Among Bachelors, for the vast majority of fields, such as science<sup>16</sup>, engineering, architecture, economics-statistics, socio-political science, psychological science, the number of graduates initially increased and then reached a plateau. Humanities graduates stand out for their steadily increasing number. Law graduates have been characterised by an increase in their number up to the year 2006 and subsequently by a drop, as a result of the introduction of single-cycle programmes. Single-cycle and two-year Master graduates both display positive trends and no stabilisation has been reached yet as for the number of graduates. In terms of *university degrees as a whole* (excluding Ph.D earners), medicine graduates display a flat trend; law graduates show an inverted-U erratic evolution, which is probably due, at least in part, to a provisional reduction in the number of graduates caused by the introduction of single-cycle degree courses; other fields, such as healthcare professions and physical education, humanities, socio-political and psychological sciences, display a more regular and growing evolution.<sup>17</sup>

According to the AL survey for the year 2009, a share of 57.2% of the 2008 Bachelor cohort continued their academic studies in a Master programme at one year from graduation.<sup>18</sup>

## 2. Description of the AlmaLaurea graduate surveys used for the analysis

As Fig. 2 shows, in the year 2010 the total number of Italian universities associated in the AlmaLaurea Inter-university Consortium is 60. They represent 76% of the total number of Italian graduates. This result has been achieved gradually, in the frame of a bottom up approach based on the subsidiarity principle.

Students of the universities belonging to the Consortium get in contact with AL when they are about to finish their study course.<sup>19</sup> Final-year students apply directly on the AL website and gain their username and password required to access the available functions. Students fill in an on line

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<sup>16</sup> The degrees in the field of science (chemistry, physics, mathematics) need a further clarification. Considering only the mere increase of the number of degrees in this field between 2001 and 2009 we may reach the conclusion that they have increased much less than in the rest of the system. This is particularly critical, because Italy suffers a relevant delay as to international comparisons in this field. In the meantime, the number of years of education needed to graduate also decreases. A relevant effort has been implemented by the Ministry, the universities and the business associations in order to make more friendly the approach of younger generations to this field. But, since it started around 2005, its impact is not yet fully detectable (AlmaLaurea, 2010b).

<sup>17</sup> For a more comprehensive analysis see Gasperoni (2010) and Camillo (2010).

<sup>18</sup> This is the actual outcome of the expectations expressed just before graduation. In order to compare pre and post-reform prospects of further studies we could refer to the overall expectations of the 2009 graduates' cohort as compared with the 2001 one. In this case, the share of graduates willing to pursue in their studies reaches respectively 76.9% and 62.6%. Main items in the last figure includes internships, postgraduate specialization schools and doctoral programmes.

<sup>19</sup> Five years ago AL started to be engaged in ad hoc initiatives aiming at increasing the interaction with upper secondary schools and upper secondary schools leavers. The object of these initiatives is to improve educational guidance in the domain of university studies. (AlmaDiploma: [www.almadiploma.it](http://www.almadiploma.it); AlmaOrientati: [www.almalaurea.it/lau/orientamento](http://www.almalaurea.it/lau/orientamento))

questionnaire<sup>20</sup> with the information required to complete a personal record aimed at generating graduates data sets for statistical analyses.<sup>21</sup>

After the graduation, each university sends to AL the administrative records, which cover 100% of graduates.<sup>22</sup> AL staff has the task to detect any inconsistency or incompleteness between the administrative data provided by each university and the information formerly provided directly by graduates, giving origin to the data certification (for the part regarding education and personal details).

Both sets of information contribute to create the cv of each single graduate, which accrue the AL cv data-base: the core source of all AL surveys. In fact, AL is today a *fully integrated information system* in which the graduate cv data-base represents the core of a large and compact set of research activities and services supply. At the end July 2010, the AL cv data-base included the curricula of almost 1.5 million graduates.<sup>23</sup>

The distinctive feature of the AL model lies in the realization of an integrated system capable of assuring the availability of a documentation which is *complete* (universities are accepted into the Consortium on condition that they make available information on their entire student body), *periodic* (the surveys are taken at regular intervals), *well-timed* (year after year, a 'snapshot' of the universities' internal and external performances may be obtained) and *updatable* (the data-base is kept 'alive' to the extent that the cv are updated by the graduates themselves and therefore kept up with the graduates' professional pursuits). All of these characteristics<sup>24</sup> are made possible by the extended use of information technologies, both for managing the cv data-base and for disseminating its services via the Internet.<sup>25</sup>

AL data became crucial for the governance of the university system, through the provision of effectiveness, efficiency and transparency indicators required by the Italian Ministry of Education and Research<sup>26</sup>, the satisfaction of the national agencies monitoring needs in assessing the Bologna Process reform accomplishments and the cooperation with local academic committees and evaluation units.

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<sup>20</sup> Only to give a hint on questionnaire contents, it includes information on: social background and parents degrees; details on university study (attendance rates, studies abroad, Erasmus mobility, fellowships, internships); employment during their studies; assessment of university experience (study behavior, teachers evaluation, fellow students, course workload); university facilities (libraries, IT workstations, lecture halls); language and IT skills; study and work prospect; students' allowances, student services; city facilities and infrastructures (transportation, cultural activities, leisure).

<sup>21</sup> Another objective is to manage personal records generating a curriculum vitae (cv), but only a minor part of the collected information in cv's is directly utilized; the majority of indicators are treated exclusively in an aggregated manner and for research purposes. At this stage, however, graduates can choose to publish or not their cv in the AL web site and, nevertheless, information is disseminated under strict protection of the graduates' privacy. The filled out questionnaires cover more than 90% of each year graduates (92% in the 2009 graduates' profile survey) and make this survey very accurate.

<sup>22</sup> They contain information on: nature of school-leaving diploma and marks obtained; age at matriculation and graduation; marks of exams and final degree; actual duration of undergraduate studies; type of upper secondary school degree.

<sup>23</sup> Companies have direct access to published cv's present in the data-base through a wide set of services. Companies may consult cv's through a self-service facility, with payment due when the names and addresses of the graduates are obtained. From the start of this activity around three million cv's have been yielded to firms and Italian and foreign organizations ([www.almalaura.it/en/aziende/](http://www.almalaura.it/en/aziende/)). AL has a non-profit statute and private companies co-finance the provision of AL services. Associated universities also co-finance the initiative, paying a share that, as matter of fact, has decreased over time, due to the efficient management of the Consortium.

<sup>24</sup> These characteristics comply with the European standards on statistical quality, recently re-formulated in the Regulation 223/2009 of the European Parliament and Council.

<sup>25</sup> An independent study assessing the AL model impact on the functioning of Italian labour markets can be found in Bagues and Sylos Labini (2009).

<sup>26</sup> Ministry Decree 544, 31 October 2007 and Ministry's General Director Decree 61, 10th June 2008.

Two are the main annual reports based on the AL cv data-base. The first one is the *Survey on graduates' employment condition*. Starting from graduates personal information kept in the cv data-base, graduates are tracked and interviewed on their employment conditions at 1, 3 and 5 years after graduation.<sup>27</sup> This survey is focussed on assessing the capability of the economic and social system to take advantage, through the labour markets, of the human capital created by universities and, conversely, the capability of the universities to meet the social and economic requirements. Data relating to occupational outcomes are subsequently supplemented with the broad pool of data collected by AL from the questionnaires administered to students immediately before the completion of their degrees (see above). The last released survey of this kind is the XII report on the graduate employment condition referring to the year 2009 (AlmaLaurea, 2010a).<sup>28</sup> This survey has investigated 210,000 graduates from 49 Italian universities.<sup>29</sup> The survey concerned all post-reform graduates (first cycle, second cycle and single-cycle) in the solar year 2008.

All graduates have been interviewed through a dual data collection system. The much higher number of post-reform graduates (e.g., 108,000 Bachelors), together with the requests of the Italian Ministry of Education, University, Research and the Consortium universities to keep the information as much detailed as possible, in order to assess the employment outcomes for each single degree course, determined a far-reaching revision of the survey's methodology, so as to make it even affordable in terms of costs and data collection time. This was obtained especially by introducing, after a positive test carried out on Bachelors in the 2006 survey, a dual data collection system based on CAWI and CATI.<sup>30</sup>

The survey response rates reached respectively the following figures: 90% for first cycle graduates; 89% for second-cycle graduates; 87% for single-cycle graduates. The survey also included pre-reform graduates from the summer sessions in the years 2006 and 2004, who were interviewed after three and five years from graduation. Their response rates have been respectively 82% and 76%. These very high response rates are possible thanks to the intensive use of updated information kept in the database that make easier to trace people and propose them the interview.<sup>31</sup>

In order to guarantee representative estimates for the entire population of Italian graduates<sup>32</sup>, the findings reported in the AL survey have been subjected to a statistical procedure known as "re-weighting" (AlmaLaurea, 2010a).

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<sup>27</sup> Every graduate is interviewed on her/his occupational status: attendance/not attendance of a second cycle post-degree course (only for first cycle graduates); reasons for further enrolment/not enrolment in second cycle post-degree course (only for first cycle graduates); graduate training activities; occupational condition at the time of interview; occupational condition at the time of graduation; match between the current job and the job held at the time of graduation; improvement in the employment position as a consequence of having the degree; number of months elapsed between obtaining the degree and seeking/finding the first job; job-seeking channel used to find the job held at the time of interview; type of job (employee/self-employed); professional position; legal and contractual characteristics of the job; full-time or part-time employment; sector and field of economic activity; private/public sector, firm size; region and province where the job is located; extent to which knowledge/skills acquired at the university are used; degree requirements for performing the job; satisfaction felt for various characteristics of the job; net monthly income; reasons for inactivity in the labour markets; frequency of the actions implemented to find a job.

<sup>28</sup> A subset of data presented in this paper is drawn from this survey.

<sup>29</sup> Out of the total number of AL Consortium universities (60). In order to be included in the survey a university must be an AL member for at least one year.

<sup>30</sup> Graduates have been contacted by e-mail and invited to fill in a questionnaire posted on the AL website. The survey also envisaged two reminders which were sent about one week apart. The CAWI technique, which was completed within a period of about three weeks, reported unusually high response rates for this type of investigations. Response rates, as calculated in relation to the number of e-mails sent out, amounted to 41% among first cycle graduates and to 38% among second cycle graduates. (Camillo, Conti and Ghiselli, 2009; Cimini, Gasperoni and Girotti, 2009).

<sup>31</sup> The traditional survey of pre-reform graduates was performed with the consolidated CATI method.

<sup>32</sup> Filling the gap due to the non-participation of some of the Italian universities.

The second annual report is the *Graduates' profile survey*, issued yearly and only four months after the end of the reference solar year: the information is fully available for free to everyone on the web. Main aims of this survey are to monitor graduates performance and characteristics, to report quantitative and qualitative characteristics of the human capital produced by the universities, looking at their effectiveness and internal efficiency, to supply every university, faculty and degree course with reliable data on their graduates.<sup>33</sup>

The most recent survey of this kind is the XII report on the graduate profile referring to the year 2009 (AlmaLaurea, 2010b). The survey investigated the 190,000 students who graduated in the year 2009 (namely: 110,000 Bachelors; 47,000 Master degree holders; 13,000 single-cycle degree holders) in one of the 51 universities members of the AL Consortium since at least one year. The response rate for the first cycle graduates was almost 92%. The survey, officially released in may 2010, reports extensive and detailed information up to each degree course, making it possible, therefore, to notice the extreme variability across the different aspects it covered, notwithstanding the common reform framework.<sup>34</sup>

It is worth to underline how the AL integrated model is capable of shedding light on features of great interest, which wouldn't be immediately observable otherwise without additional ad hoc surveys. Just to mention some of them, we can refer to: the analysis of graduates' socio-economic background, by focusing on the relationship between study performance and parents education; the impact of ERASMUS mobility on graduate characteristics and job conditions, by sorting out from the data-base information on mobile and non-mobile students<sup>35</sup>; the impact on graduates' performances of factors like residence in the same territorial area in which they attended university or work practices during their studies.

AL graduate profile and employment condition surveys provide a significant benchmark – a unique one, as far as we know, in the European context – which is able at the same time to: (i) help young people to find their way in the society and economy; (ii) support academic authorities in assessing the outcomes of their commitment; (iii) guide national and local university decision-makers to plan, improve, and adjust their choices; (iv) support employers to better know the features of human capital graduating from different universities so as to enhance it and suggest any useful change.<sup>36</sup>

### **3. Graduates' socio-biographic background and course of study**

In comparing pre and post-reform performances in Italy we have to be very careful because the transition phase is still under way. In particular, we have to take into account that every assessment of the characteristics of the human capital produced by the higher education system in the pre-reform and post-reform settings as well as its achievements in the labour markets puts forward very critical methodological issues. First of all, in comparing structural characteristics, study performances, employment outcomes of Bachelor graduates and pre-reform graduates we have to consider that we are dealing with results which reflect educational processes designed with entirely different objectives, features and study careers prospects. In second place, the entire period examined (2001-2009) is characterized by the co-existence of groups with different structural characters (pre-reform and post-reform graduates) with a varying size over time. In third place, the

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<sup>33</sup> The surveys on graduates profile allow us to compare evaluations by different generations of graduates (AlmaLaurea and Osservatorio Statistico dell'Università di Bologna, 2008).

<sup>34</sup> The other subset of data presented in this paper are drawn from this second survey.

<sup>35</sup> For a more comprehensive analysis see Cammelli et al. (2008).

<sup>36</sup> A more in-depth discussion of the methodological issues related to the AL model can be found in Cammelli et al. (2009).

performances of pre-reform graduates become more and more uneven (e.g., age at graduation, marks, study abroad). Lastly, the presence among the post-reform graduates of students passing from the old to the new degree structure (bearing specific problems and difficulties) made it essential to distinguish between “pure” graduates, who complete their curriculum entirely within the post-reform setting, and “hybrid” graduates, who end a curriculum started within the pre-reform setting. This distinction is of high value in studying the sticky dynamics of the reform process, in that it can help us to avoid distorted interpretations based on at least apparently puzzling data. However, in the present work, since we focus on the 2008 and 2009 Bachelor cohorts and after ten years the incidence of the “hybrid” graduates became marginal (the share of “pure” graduates reaches 91%), we will consider both categories together (Cammelli, 2005; Cammelli, 2006b).

In 2009, eight years<sup>37</sup> after the implementation of the first reform, 40% of the 110 thousand Bachelors having earned their qualification in one of the universities of the AL Consortium are concentrated in only three fields of study: social-political sciences (15.1%); economics-statistics (13.6%); medical/healthcare professions (12.3%). Slightly above the 10% threshold we find Engineering and humanities, while definitely much lower is the weight of the remaining fields, all included between the 6.5% for foreign languages and the 1.5% for chemistry-pharmacology.

### *3.1. Socio-economic background*

The analysis of the socio-economic background of graduates shows an over-representation of youngsters coming from socioeconomically advantaged families, with no discrepancy between geographical areas. Indeed, the parents of degree holders are still quite privileged in terms of both education and professional status, if compared with the general population of the same age group. In Italy, the percentage of graduates on the male population aged 45 to 69 lies below 9%, and it reaches 20% among graduates’ fathers. A comparison between female population and the graduates’ mothers leads to the same conclusions. Nonetheless, with reference to the 2009 graduate cohort, 72% of degree holders were the first in their families to gain a university qualification. As Fig. 3 shows, students with a disadvantaged social background appear even more frequent among Bachelors (74.6%): this is true in particular for the education science (87%) and health professions (84%) fields. This can be looked as a good outcome of the reform, taking into account that in 2001 only 73% of pre-reform graduates were the first in their families to gain a university qualification.

### *3.2. Work practice while completing their studies*

The assessment of work practice of students while completing their studies is very relevant in the Italian setting, since it is an important determinant of their choices and performances. Studying workers<sup>38</sup> reach 10% among all Bachelors, while their weight is slightly more than symbolic in the engineering and geo-biology groupings (3.6% and 4.0% respectively). On the contrary, they represent a bit less than 20% in the fields of Education science or Social-political science.

### *3.3. Age at first enrolment*

In the last decade, also due to the diversification in the study offer induced by the reform, the share of graduates enrolled with delay with respect the conventional age (late first enrolment) is raised. For graduates concluding their studies before the reform (2001) a delay of two years at the

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<sup>37</sup> Nine years for the universities that started the reform in the academic year 2000-2001.

<sup>38</sup> In the AL definition used in the graduates’ profile survey, “studying workers” are the graduates who in filling the questionnaire declared that they held a full time job during at least half of their university career, both having or not classes. Instead, “working students” are the graduates who had only some work practice during their university studies.

first enrolment concerned only a share of 11%. Eight year after, this share is more than doubled (23%). Even more significant is the increase in the number of graduates enrolled for the first time 10 year after the conventional age: from 2.8% to 7% in the considered period. 21% of the 2009 Bachelor cohort were included in this category (8% enrolled with more than a 10-year delay).<sup>39</sup>

### 3.4. Age at graduation

Pre-reform graduates earned their qualification on average at 28 years of age, as opposed to 27.1 years of age for the 2009 graduate cohort. Even if expected, such data are even more appreciable because, as we have mentioned before, the access to university from new age brackets has determined a simultaneous rise in age at first enrolment (from 20.0 to 21.1 years). Thus, leaving late first enrolment aside, age at graduation decreases from 27.2 to 25 years for the overall graduate population: 23.9 years among Bachelors (Fig. 2). Accordingly, the percentage of graduates younger than 23 years of age is greater than before (it was almost non-existent when the reform started), as these students now account for 17% of graduates. In this respect, the role played by any work practice accumulated during university studies proves to be decisive. It is not by chance that the youngest to complete their studies are those in foreign languages (24.5 years) and engineering fields (24.6 years), whereas the oldest ages can be found in the education science (28.1 years) and the healthcare professions fields (28.5 years). However, as for the latter group, the reason may be traced back to the presence (around 22%) of graduates who enrolled at university with a delay of over 10 years.

Hence, 35-38% of the graduates in foreign languages, engineering, science, chemistry-pharmacology fields complete their course of study being younger than 23 years of age, while only 17.5% of the graduates in the field of education science and 14% in the law field achieve the same result.

### 3.5. Upper secondary school of origin

It must be stressed that 34% of the graduates hold a scientific lyceum leaving certificate, but they account for over 56% in the geo-biology and engineering fields, whilst only for minimum rates in the fields of education science and foreign languages (15.8% and 21.4% respectively). The fraction of graduates holding a technical secondary school leaving certificate is 30.2%. They are evenly distributed among the various fields, accounting for slightly less than 14% in the arts-humanities and psychology fields, while reaching between 45% and 49% in the economics-statistics and agriculture fields. Graduates with classical lyceum leaving certificate are 12.2%. Their fraction is low in the science, agriculture and engineering fields (less than 6%), whilst it is higher in the arts-humanities and law fields (29.0% and 22.6% respectively).

On the whole, if we compare the post-reform and pre-reform situation, we can observe that the reform has been able to lead to a degree a higher fraction of individuals holding a technical secondary school leaving certificate: the increase is from 27% in 2001 to 30.2% in 2009.

### 3.6. Time to graduation

Regular time to graduation<sup>40</sup> cover a higher share of post-reform graduates (39.2%), as compared with the share of pre-reform ones (9.5%). Taking also into account that a share of 25.1% of post-reform graduates conclude their studies with one year of delay, while this share was 17.9%

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<sup>39</sup> This could have been only a transitory effect generated by the existence of a basin of unsatisfied demand for higher education before the reform.

<sup>40</sup> I.e., the capability to complete their university course within the prescribed time limit.

for the pre-reform graduates, we should deduce that a substantial improvement has occurred with the reform.<sup>41</sup> The size of the increase in the first share is similar to the one assessed by means of a longitudinal analysis comparing the first three cohorts of post-reform graduates with those who had enrolled in the 1995-1996 academic year.<sup>42</sup> Therefore, regular time to graduation seems to be stabilising in the system after the reform. Nevertheless, the framework is quite diversified. As Fig. 4 shows, among the 2009 Bachelor cohort, 72.8% of the graduates in the medical/healthcare professions and 40.8% of the graduates in the chemistry-pharmacology field complete their studies within the prescribed time. At the polar opposite, only 18.2% of the law graduates and 28.4% of the architecture graduates manage to earn their degree on time. Moreover, another 22% and 30% of the two fields respectively complete their course within one year beyond the prescribed time.

### *3.7. Class attendance*

The reform process has also determined a strong increase in class attendance: 67% of the Bachelors attended more than 75% of the foreseen teaching classes – a much higher rate with respect to that recorded for the pre-reform graduates. Fig. 5 shows that this value range from 92.1% for medical/healthcare professions, 85.5% for engineering and 84.7 for chemistry-pharmacology, on the higher side, and 35.4% for law and 43.4 for education science, on the lower side.

### *3.8. Internships and training periods*

Internships and training periods acknowledged by the universities are very widespread. This highlights the strong commitment of the universities and their growing collaboration with the business community.<sup>43</sup> As Fig. 6 shows, these are experiences which enhance more than 60% of the Bachelors' knowledge: 91.1% for the agriculture graduates, 86.1% and 84.6% for the education science and psychology, but also 48.5% for the economics-statistics field and 23.8% for law graduates. It is worth mentioning that internships and training periods are associated with a higher employment rate: the latest survey on graduates' employment condition confirms a differential of 6 percentage points between those who underwent a training period and those who did not.<sup>44</sup>

## **4. Graduates' international mobility**

In the present paragraph we will describe some phenomena relevant in the study of graduates' international experience and mobility, during or after their study program, following four main dimensions.

### *4.1. Foreign citizenship*

In the year 2009 the graduates with foreign citizenship enrolled in the AL universities were 5,059.<sup>45</sup> Fig. 7 shows that the percentage of foreign graduates is growing steadily year after year.

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<sup>41</sup> A more than fourfold increase has taken place in the first share, while the second share is increased by two times.

<sup>42</sup> The longitudinal analysis was carried out using MIUR data on the universities member of the AlmaLaurea Inter-university consortium and further complemented with original data derived from AlmaLaurea records (Baldisserra, Galeazzi and Petrucci, 2009). Broadly speaking, the results are in line with those recently circulated by the Italian Statistics Institute (ISTAT, 2009).

<sup>43</sup> More than 80% of internships have been completed outside the universities.

<sup>44</sup> See AlmaLaurea (2010a, p. 168).

<sup>45</sup> Excluding those from the Republic of San Marino.

While they accounted for slightly more than 1% of the total population in 2001, they rose to 2.7% in 2009, more than doubling in seven years' time. Almost 70% of graduates with foreign citizenship are coming from European countries (with a rising share of those from non-EU and a decrease in those from EU countries), 11.4% from Asia, 11.2% from North and South America and 9.3% from Africa. Greek and Albanian graduates rank first. Since 2001, their respective shares have started to reverse: in 2009 the Greek graduates amounted to 7% of the overall population of foreign degree holders, while Albanians rose to 20.9%.

The highest number of graduates with foreign citizenship can be found in the medical/healthcare professions and dentistry (6.3%), followed by foreign languages (5.1%), while in 6 fields (education science, physical education, geo-biology, law, psychology and agriculture) the foreign graduates are less than 2%. The foreign graduates are 4.2% in single-cycle degree courses, as a result of their higher enrolments in the medical/healthcare professions and dentistry fields, 2.7% in first cycle (Bachelor) and 2.5% in second-cycle (Master) degree courses. The smallest percentage (2.1%) refers to the pre-reform graduates. Foreign students usually have a better social background than Italian students: 43% of the graduates with foreign citizenship has at least one parent graduated, while this percentage falls to 26% among Italian graduates.

Where do foreign graduates want to make use of their university qualifications? Do they tend to search for a job in Italy or do they wish to go back to their country of origin? In order to answer these questions, a comparison was carried out between the answers the graduates gave concerning their willingness to work in different geographical areas. The conclusion has been that: 23 graduates with foreign citizenship out of 100 were willing to find a job out of Italy; 48 out of 100 declared their readiness for a job both in Italy and abroad; 25 out of 100 declared that they really wanted to find a job in Italy.

#### *4.2. Study abroad of Italian graduates*

Study periods abroad for Italian graduates throughout the first years of the reform have steadily intensified and involved 13.9% of graduates in 2009. These were accomplished mainly by means of European Union programmes (Erasmus first of all), and other experiences acknowledged by the university programme (such as Overseas programmes) as well as on personal initiative. But, such results have been accompanied by an opposing trend, due to the fact that Bachelors enjoyed study periods abroad, particularly Erasmus, less than the pre-reform graduates.<sup>46</sup> Among the Master graduates, instead, up to about 18% of the student population is engaged in such activities, even not taking into account study periods on personal initiatives.<sup>47</sup> This means that Italian second-level graduates rank quite high in terms of study abroad. This is why the Education Ministers' Leuven meeting in April 2009 committed to extend such activities to the 20% of European graduate population by 2020. Instead, most first cycle graduates risk to be excluded from such important experiences, despite their great need for them, due to family reasons, upper secondary education, and private means availability.

#### *4.3. Erasmus programme*

As to studying abroad with Erasmus programme, after the decrease for Bachelors observed in the years immediately following the reform's implementation, it is gradually improving along with other study experiences abroad. Among pre-reform 2001 graduates, 8.4% had studied abroad under either the Erasmus or other EU programmes. The number of graduates who pass exams abroad and

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<sup>46</sup> This is quite understandable, if we take into account the shortening and compactness of the study period, together with, as we have just seen, the greater class attendance and internship experience.

<sup>47</sup> Study abroad experiences carried out on personal initiative involved 4% of the 2009 graduates. They show a great variety of modalities, not always easily readable in terms duration and contents.

then validate them when getting back home is slightly increasing too: about 19,000 graduates did so in 2009, i.e. 6.4% of the overall students. Similarly, the figure of those who wrote a significant part of their dissertation abroad shows an increasing pattern, even if the numbers are somewhat lower: they represent about 14,000 graduates, which means 4.9% of the total; and they were more numerous among second cycle graduates. In 2009, study abroad experiences related to the Erasmus programme have been enjoyed by 5.2% of the Bachelors and, namely: 22.7% for graduates in foreign languages; 7% for graduates in political-social sciences; between 1.6% and 1.9% for medical/healthcare professions, psychology and chemistry-pharmacology graduates. More extensively – including both Erasmus plus other programmes recognised by the universities and also personal initiatives – study periods abroad are currently involving 10.6% of first cycle graduates.

#### *4.4. Working abroad*

If studying abroad is still a not easy objective to pursue, especially for Bachelors, working abroad becomes more and more a possible objective for present and future graduates. The difficulties faced in finding a job in their own country push the graduates to be willing to move abroad, both in Europe and outside it. Indeed, independently from their citizenship, after one year from graduation, a 4% share of employed graduates works abroad. The figure is confirmed if we refer to the experience of graduates interviewed five years after graduation.

A dedicated study has been carried out by AL, using the 2007 survey, which allowed us to better evaluate the impact of migration on a relevant subset of the Italian labour force, namely the most educated and qualified workers.<sup>48</sup> The analysis required us to focus only on Italian citizens who left the country (accounting for 3% of Italians in total employment). The 2002 pre-reform cohort, interviewed five years from graduation, was distributed in the different fields of study as follows: foreign languages (16.5% of those in employment abroad); humanities (13%); economics-statistics and the social-political science (both 12%). Five years after graduation, 64% of Italian graduates residing abroad enjoy a fairly good degree of employment security: that is, 6 percentage points below the whole population of Italians in employment. Nevertheless, this is the result of the combined effect of a lower incidence of self-employment among Italian graduates abroad (10% as compared with 22%) and a higher incidence of permanent employment contracts (54.5%, as compared with 48%). Fixed-term contracts too are largely diffused, concerning 23% of Italians employed abroad as compared with 15% for the total.

In comparison with the overall population of Italian graduates, those employed abroad are more likely to hold jobs as officials, executives and middle managers (18% as compared with 8% of the total) or as researchers (10% as compared with 1%). Conversely professional freelance are less diffused (only as little as 2.4%, i.e. 14 percentage points below the total population).

The opinions expressed by Italian graduates working abroad turned out to be very interesting. In general, they rated the companies they work for as competitive and dynamic. Indeed, about three quarters work for business operating in an international framework (45 percentage points above the total), that invest significantly in training (+24%) and where there are high levels of innovativeness (+21%), competition (+14%) and competitiveness (+12.5%).

Satisfaction levels with virtually all aspects of work investigated were also found to be higher than in Italy. Mention has to be made of the prestige arising from the job, earnings and career prospects and the acquisition of professional skills as well as independence and autonomy in the workplace, beside the type of contract, as a result of the above-mentioned combined effect.

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<sup>48</sup> See: Cammelli (2008); Brandi and Segnana (2008).

Looking at the purpose to come back to Italy and the time planned to achieve this goal we can detect different states, which are subject to different interpretation. Among the graduates' employed abroad: a share of 45% regards very unlikely their coming back to Italy, whereas over one third of them wishes to do so, but they are not certain, and only as few as 17% of them are sure that they will be able to come back to Italy. For all of them, the coming back is not planned in the short term, and for over half it is not planned earlier than three years.

## 5. Employment and further studies of Bachelors

The extension of the survey on employment condition to five years after graduation<sup>49</sup> has allowed not only to explore entirely new dimensions of the graduate experience (e.g., in the medical field, which entail specialization studies, but also the law field, which entail internship and apprenticeship), but also to more deeply assess the outcomes of study careers structured in totally different ways.<sup>50</sup> In this more extended perspective, the study of the opportunities offered by non specialist degrees (the "weaker degrees") reaches more articulated results and allows us to appreciate the role played in the society and economy by them, often reducing the disparities as compared with the "stronger degrees", which soon after the graduation bring about good results in terms of employment. After all, we have to recognize that human capital accumulation is a long term phenomenon (Cammelli, 2007). However, in the present work, the not yet accomplished transition phase, do not allow us to employ data referring to three and five years after graduation.

In this paragraph we will separately deal with two main topics: the experience carried out by Bachelors in the labour markets<sup>51</sup>; the experience carried out by Bachelors in further studies.<sup>52</sup>

### 5.1. Employment conditions

One year after graduation, the 2008 Bachelor cohort reported a 46% rate of employment<sup>53</sup>: 31% of them just had a job; while 14.9% of them were combining work and study. Among the non employed Bachelors, 42.3% were entirely dedicated to their master degree studies, about 9% of them were not enrolled in a Master programme, but were searching for a job and, finally, about 3% of them were not searching for a job.

In comparison with the previous cohort results, Bachelors' employment outcomes have been worsening. On the one hand, the global economic crisis badly affected also this subset of graduates, on the other, the large offer of postgraduate courses, and namely Master programmes, suggested a suitable alternative to unemployment.

#### 5.1.1. By field of study

One year after graduation, we can observe significant disparities among the different fields of study. As Fig. 9 shows, a very large rate of employment for graduates in the medical/health professions (83.3%), while only 2% were both employed and enrolled in a Master course. This subset of Bachelors is of particular interest. As we will see better below, they can rely on greater

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<sup>49</sup> Started for the first time in 2003, while before the survey was concerning graduates 1, 2 and 3 years after graduation.

<sup>50</sup> Similar considerations led to adopt the same time interval in the European surveys CHEERS and REFLEX.

<sup>51</sup> In particular, we will try to assess to what extent employment conditions for Bachelors differ from conditions for traditional graduates in terms of position, contract typology, earnings and other variables.

<sup>52</sup> That is in the "pipeline" in which they flow all over their lifetime (Antonelli, Pegoretti, 2008).

<sup>53</sup> This figure is obtained if we consider both "pure" and "hybrid" first cycle graduates. If we consider only "pure" graduates it diminishes to 42%.

contractual stability, right from the first year after graduation,<sup>54</sup> as well as on higher levels of matching of the degree and economic reward. The high level of demand for these types of graduates, which is connected also to the professional skills learned in these courses, is the best explanation of this performance. The fields of physical education and education science also showed very high employment rates (67.6% and 61.4% respectively), while the weight of those employed, but continuing with a Master degree was somewhat higher (27% and 18.4% respectively). As will be seen below, in these two fields, the number of graduates pursuing the job held prior to graduation was significantly higher than in other fields. On the polar opposite, the field of study with the highest enrolment in Master courses were psychology (85.4% on the whole and 27.4% among the employed), geo-biology (82% on the whole and 12.9% among the employed) and engineering (79.9% on the whole and 13% among the employed).

### *5.1.2. By gender*

Fig. 10 shows that the employment conditions of male and female Bachelors are not significantly different: in both cases the rate of employment without further studies reaches a value around 31%, and the enrolment in a Master course reaches 43.8% for men and 41.1% for women. However, even if differences are small, women result less favoured than men in the labour markets. The discrepancy does not pertain so much to the rates of employment (46% both for males and 45.7 for females), but rather to the rates of unemployment (9.8% for women and 7.5% of men) and the shares of those not searching for jobs (3.4% and 2.8% respectively). This result is generally confirmed when looking across fields of study.

### *5.1.3. By geographical location*

If we consider geographical location, the employment conditions of Bachelors show small, albeit significant, differences in comparison with the findings for pre-reform graduates. For all cohorts examined in the pre-reform phase, the divergence in the rate of employment between the Northern and the Southern regions has been higher than 20 percentage points, at one year from graduation. This divergence is very relevant in that impinges in the North-South divide. When the geographical residence of the graduate is considered, rather than the geographical area of the university attended, the gap in the rate of employment becomes 14.8%. as Fig. 11 shows, the rate of employment for residents in Northern Italy results 52.5% (15.6% are the graduates combining study and work) and 37.7% in the South (12.7% are the graduates combining study and work). While in the North being employed without further studies is more diffused than in the South, the reverse is true for the South in which, on the other side, the enrolment in a Master course reaches a percentage of 61.6% , as compared with 52.5% in the North. These results are on the whole confirmed when looking at the study fields. Bachelors living in Central Italy seem in an intermediate position. If we look at their rate of employment, they resemble their Northern colleagues, while if we consider the choice to pursue a Master course, they seem more similar to graduates in the Southern Italy. In Central Italy the employment rate reaches 48.5%, lower than in Northern Italy, but higher than the South. 57% of Central Italy graduates declared they were continuing with second cycle studies, a figure which place them half way between their Northern and Southern colleagues.

Considering local labour markets effects on graduate employment means that we must take into account both direct and indirect determinants of employment prospects. This is especially the case for work practice during university studies, which is a much more frequent phenomenon in Northern Italy than the South: 42% and 28.5% respectively. Another aspect which must be taken into account is the intention to pursue own studies after the first cycle degree. In Northern regions,

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<sup>54</sup> Thanks to a general availability of permanent job contracts.

71% of undergraduates express, on the eve of obtaining their 3-year degree, the intention to pursue further studies, while in Southern regions this figure is 84%. This finding is confirmed when looking at the different fields of study.

Obviously, the economic situation influences the strategies young people adopt to increase their chances to be employed. It is therefore not surprising that a significantly higher percentage of Southern graduates declare they were following a Master course for reasons linked to employment (33%), as opposed to 20% of graduates living in the North. Some declare they believe that this was “necessary in order to find a job”, while another (smaller) group says that the reason for opting for a Master degree as “not having found a job”.

## *5.2. Further studies*

Even before the implementation of the university reform, further post-graduate education was something that the majority of graduates<sup>55</sup> wished or had to undertake. They mainly poured in schools of post-graduate studies (medicine and surgery), as well as training and access to the liberal professions (e.g., law and psychology). However, after the reform this opportunity was organized in a more structured system concerning courses counted in ISCED 5, as well as in ISCED 6 (e.g. doctoral and advanced studies). One year after graduating, Bachelors seem to have made a wide range of choices, as a consequence also of the wide range in the supply of post-graduate courses. Only 4 graduates out of 10 ended their academic studies with a Bachelor degree.<sup>56</sup> This means that a share of 57.2% of them was enrolled in a Master degree at the time of interview. Moreover, 42.3% of first cycle graduates were pursuing exclusively their studies, while a significant share of them (14.9%) was attempting to combine study and work.

### *5.2.1. Relevance of the previous field of study*

As we have seen, the decision to attend Master courses is strongly influenced by the type of first-cycle course completed. This was the case for 85.4% of all psychology graduates, 82% of the geo-biology field and 79.9% of the engineering field, while the physical education and education science fields, although slightly lower, were nonetheless at 44.3% and 41.4%, respectively. Actually, the lowest rate (4%) is found in case of medical/healthcare professions, where graduates are the most keen for a direct access to jobs.

### *5.2.2. High correspondence with the first-cycle course*

In the 2008 cohort, the choice of attendance of a Master course shows high correspondence with the Bachelor degree attained for almost three quarters of all graduates. This is practically the same value observed in the previous surveys, i.e. the choice of the subject in postgraduate studies is considered by graduates as a “natural” prosecution of their first cycle course. This feature is especially evident in the law (87%), engineering (84%) and sciences (82%) fields. Less correspondence is observed in the foreign languages and political-social fields. Even in these cases, however, around 65% of all graduates considered their choice of the subject in postgraduate studies a “natural” prosecution of their first cycle course. On the contrary, the medical/healthcare professions show a relatively lower correlation: “only” 45% of these graduates considered their Master degree a natural follow-up their previous studies.

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<sup>55</sup> Taking it just as an order of magnitude, we can remember that around 64% of pre-reform graduates of the 2001 cohort at one year from graduation were engaged or did complete a form of further education.

<sup>56</sup> A similar rate was recorded in the previous surveys.

In addition, 21% of the Bachelors were enrolled in a postgraduate course, which, although not a “natural” follow-up of their first cycle course, was at least partially of the same field of study. Only 5% were found to have chosen a different discipline. This was especially the case in the medical/healthcare professions (15%) and the foreign languages and political-social fields (both 8%). It remains to be seen whether the choice of the Master course to be attended is the result of personal preference or rather dictated by the enrolment qualifications required.

### 5.2.3. University and faculty choices

As Fig. 12 shows, 85.5% of Bachelors enrolled in the same university from which they had received their first cycle degree. 6% changed university, but remained in the same geographical area. This is especially true in the case for graduates from universities in Northwest Italy (91%) as compared with their colleagues in the other regions. Medical/healthcare professions seem to be the most likely to change university (43% had done so). An appreciable degree of mobility can also be observed among the foreign languages and political-social fields, with more than 20% of graduates changing university. However, this could be a relatively minor phenomenon, probably linked to particular course offerings, only available in certain regions of Italy, making the change almost obligatory. In fact, engineering and law fields, where courses are widely available throughout the country, saw more than 90% of all Bachelors continuing their studies in the same university.

Interestingly enough, first cycle graduates who, during their 3-year university career had spent time abroad under an Erasmus programme, showed greater willingness to change university for their Master degree. Although a study period abroad concerned only a small percentage of first cycle graduates (5.2%), the willingness to move was nonetheless evident, with some 30.5% of these changing university as compared with 13% who changed university, but had not been abroad. This figure is confirmed in all fields of study, except for the medical/healthcare professions.

In addition, regardless of the university chosen, 72.4% of graduates enrolled in a Master course chose the same faculty as before. This figure may well be higher, given the many different names faculties have assumed since the reform. In any case, 95% of law graduates chose the same faculty, as did 93% in the economics-statistics field, and 90% of the sciences field. At the polar opposite, 37% of all graduates of the medical/healthcare professions chose a different faculty from the one at which they achieved their first cycle degree. Graduates in foreign languages, physical education and engineering likewise showed greater propensity to change faculty (40%, 57% and 58% respectively). In these latter cases, however, the change was merely formal and often due to the faculty changing its name.

Combining geographical mobility with change in study subject, 65% of all graduates were found to be continuing their university careers with a Master degree in the same faculty at the same university. Only 7% of graduates had changed either one or the other. The rest confirmed only in part their previous studies choices, with 20% changing faculty, but not university and 7% changing university, but not faculty.

## 6. Professional success of Bachelors

As already noted, for the 2008 cohort, the rate of employment of Bachelors is 46% after one year from graduation, but this rate is significantly influenced by the fact that 45% of these graduates were pursuing the job held prior to graduation. A further 15.5% were working at the time of graduation, but declared they had changed job after finishing their studies.

Pursuing the job held prior to graduation is a distinctive feature of graduates in law (68%), physical education (66%), psychology (63%), political-social sciences (55%) and education science

(54%), while it is less diffused among graduates in foreign languages (36%) and chemistry-pharmacology (34%). It should also be noted that graduates in medical/healthcare professions showed far-reaching changes in their structural characteristics. During the first years after the reform, many nurses, radiotherapists and other healthcare professionals, holders of former university diplomas, had opted for a first cycle degree course. In this way they could make use of the credits acquired on the basis of their existing qualification and work experience. On the whole, these were older students with a work experience that significantly influenced their employment performance. The more recent cohorts of graduates in this field have been found very different from the first vintage. As a rule, they do not hold jobs before starting their course. 63% of them, subsequently found to be employed, had started their jobs after finishing university studies. Despite this, the employment figures are definitely good because the demand for these professional skills is high.

### *6.1. Type of employment*

Fig. 13 shows that, one year after graduation, 42.5% of all employed Bachelors had a secure job<sup>57</sup>, regardless of whether they were exclusively employed or working while continuing their studies. This was especially due to the diffusion of permanent employment contracts among one third of those employed. 40% of the employed Bachelors answered they had a flexible or “atypical” contract.<sup>58</sup> We should note the fact that, 16% of the employed Bachelors worked under an ad hoc or “collaboration” contract, while 19% declared they had a fixed-term contract.

#### *6.1.1. By field of study*

The high demand for medical/healthcare professions is confirmed also by the high weight of job security in this group one year after graduation (57%). Moreover, this performance is not correlated with the prosecution of a job started before graduation, which, as mentioned before, is at its lowest levels ever. Also the few law graduates employed enjoy a high level of job security (56%). Higher than average job security levels are also observed among political-social sciences (45%), education science (45%) and economics-statistics (44%) fields, while at the polar opposite, less than 30% of the graduates in humanities, geo-biology, physical education and foreign languages enjoy job security.

#### *6.1.2. By work practice*

We should not lose sight of the varied character of the employed Bachelor cohort that do not comprise only those who are only working (67%), but also a significant number of graduates who are both working and studying in a Master course (33%). In addition, besides those pursuing the job held prior to graduation (45% of those employed), 40% have been found to be in jobs started after graduation. As expected, job security (and especially, permanent employment contracts) is more

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<sup>57</sup> In our definition, job security is warranted by a permanent employment contract or self-employed professional work (i.e. working as a professional in one of the free professions, or as a self-employed individual). We classify self-employed positions as secure jobs because graduates do not consider self-employment as a ‘fall-back’ or a second-best situation in the absence of any better job opportunity. This assessment was carried out during the AL survey over the last few years with regard to job satisfaction, earnings, search for another job.

<sup>58</sup> An “atypical” contract work (temporary or interim work contracts for other investigations) includes fixed-term employment contracts (of various types: “co-ordinated and continual collaboration”; ad hoc, “specific project” and consultancy contracts), temporary work, contract work as “part of an association”, “provision of work” contracts, intermittent, “staggered”, and contracts known as “occasional accessory work” introduced on an experimental basis in a few Italian provinces.

commonly enjoyed by graduates who only works (49% of those employed), as compared with those who are also studying in Master course (29%). Moreover, 58% of those who started their job prior to graduation have a secure job, as compared with 30.5% for those who started their jobs after graduation.

In contrast, “atypical” or contract works are prevailing among workers who are also enrolled in a Master course (45.5%), as compared with 38% for those that were exclusively working), along with those who found their job only after graduation (50%, as compared with 27% for graduates who pursued the job held prior to graduation).

This is especially due to the high incidence among those who are both working and studying of employment contracts known as “collaboration contracts” (one fourth of all graduates who are both working and studying had this sort of job, as compared with 12% of those only working). Similarly, contract work has as also high incidence among those who started their job after graduation (28%, as compared with 9% of those who pursued the job held prior to graduation). In this group, “collaboration contracts” were also more diffused (18%, as compared with 13%, respectively.)

#### *6.1.3. By gender*

Fig. 13 shows that job security is enjoyed more frequently by men than women (48%, as compared with 38%). These gender gaps are linked to the different composition of the two categories included in job security, both of which work in favour of men: self-employment, which concerns 12% of men, but only 7% of women; permanent employment contract which is enjoyed by 36% of men and 32% of women. These figures are also confirmed in the different fields of study and if we limit our analysis only to those who started the current job after the degree. Among first cycle graduates, “atypical” employment contracts seemed to be typical of women (43%, as compared with 36% for men). This gap is especially due to the high incidence of fixed-term contracts among women (nearly 22%), as compared with men (16%).

Finally working without any contract at all was found to be more frequent among women than men (11% , as compared with 9% of men).

#### *6.1.4. By geographical location*

A significant disparity can be detected in job stability one year after graduation in the different regions. The evidence suggest that job stability is higher among Bachelors working in Southern Italy (50%, as compared with 42% in Northern Italy). This result seems to be correlated with the higher rate of Southern graduates pursuing the job held prior to graduation. On the contrary, in the North both “atypical” contracts and fixed term apprenticeship contracts are more diffused, with a gap of 8 percentage points (42% in the North and 34% in the South) and 5 percentage points (9% in the North and 4% in the South) respectively.

#### *6.2. Graduates' earnings*

As Fig. 14 shows, one year after graduation, the average net monthly earnings of Bachelors was 1,020 euros<sup>59</sup>. A not insignificant differential can be found between those pursuing the job held

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<sup>59</sup> In spite of the delicate question, around 96% of all graduates answered the question “What are your net earnings from your current job?”.

prior to graduation (1,054 euros) and those who started working after graduation (998). Attention should be also paid to the depreciation of real earnings in the last decades.<sup>60</sup>

Pursuing post graduate studies and attending a Master course not only leads to less job security, but also lowers earnings as compared with Bachelors who are only working: 714 euros, as compared with 1,165 euros. This is confirmed for all fields of study.

#### 6.2.1. By field of study

Significant earnings differentials have been found also among the different fields of study, with the medical/healthcare professions, law and economics-statistics fields earning more (1,325, 1,111 and 1,086 euros respectively). We should remember, at the same time, that the latter two fields showed lower than average rates of employment.

Considerably lower earnings (less than 800 euros per month) have been detected for graduates in geo-biology, humanities, physical education, psychology, foreign languages and architecture. With the exception of the geo-biology, foreign languages and architecture fields, this was also due to the high percentage of graduates who were both studying and working.

#### 6.2.2. By gender

Our evidence (Fig. 14) shows that men Bachelors earn 23% more than their women colleagues (1,144 euros, as compared with 927). If we compare the 2008 cohort with the 2007 one, for both groups the nominal average earnings are decreasing (by 1% and 2% respectively). The decrease in purchasing power leads to a reduction in real average earnings of 2% for men and around 2.4% for women.

The gender-based differentials are substantial and pervasive: both for graduates exclusively working (1,294 as compared with 1,070) and for those who are both working and studying (839 euros, compared with 615). Gender differentials are also evident in each study group discipline.

These gender-based differentials are alleviated, although not cancelled out, among Bachelors at one year from graduation who are only working and not pursuing further studies. The gap reaches 4% in favour of men (1,253 euros, as compared with 1,201 for women). An in-depth study (AlmaLaurea, 2010a) taking into account the range of variables that influences gender earnings differentials (especially field of study, enrolment in a Master course, pursuing the job held prior to graduation, full or part-time job)<sup>61</sup> showed that, *ceteris paribus*, all men were earning more than women.

#### 6.2.3. By geographical location

The present debate on fiscal federalism makes regional differentials in earnings a crucial issue. Average nominal earnings for Bachelors appear slightly higher (4%) for the graduates employed in Northern Italy, who earn on average 1,048 euros with respect to their Southern colleagues, who earn on average 1,006 euros. Nevertheless if we limit our analysis to graduates having started the current work (full time contract) after the achievement of the bachelor degree, the differential becomes larger (10%): 1,239 euros in Northern regions versus 1,128 euros in Southern

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<sup>60</sup> For instance, wages were found to have fallen by 2% between 2008 and 2009. Earnings were reassessed using ISTAT indexes of consumer prices for work and employee households (FOI index in Italian) net of tobacco prices ([www.istat.it/prezzi/precon/rivalutazioni](http://www.istat.it/prezzi/precon/rivalutazioni)). A dedicated study has been carried out by AL on pre-reform graduates at one, three and five years from graduation, using the 2007 survey (Antonelli and Campiglio, 2009).

<sup>61</sup> A linear regression model has been estimated which considers earnings as a function of the above-mentioned set of variables.

regions. The region-based differential in favour of Northern Italy is confirmed for any field of study and ranges from 30% in the fields of law, psychology and education science and 2% in the agricultural field.

As already stressed, Bachelors engaged both in work and study activities on average earn less; this is particularly true in the South (636 euros, as compared with 686 in the North).<sup>62</sup>

### 6.3. Horizontal and vertical match

In order to measure the capability of graduates' endowment of knowledge and skills to cope with job needs we devised a matching index.<sup>63</sup> At one year from graduation it reaches a good level for Bachelors as a whole: 73.1% of all first cycle graduates declared their degree was at least "fairly effective" (Fig. 15). It reaches a particularly high level among the medicine/healthcare professions (96%), physical education (82%) and sciences (82%). Overall the matching of the degree results higher among graduates who started working after graduation (80.8%). It results less high for graduates pursuing the job held prior to graduation (66%).

Moreover, a more careful analysis of the variables included in the matching index shows that at one year from graduation, 40% of employed Bachelors were making large use of knowledge and skills learned while studying in their courses, while 36.5% declared they were making relatively little use of them. One graduate out of five was of the opinion that she/he was making absolutely no use of the skills learned during the first cycle course. The graduates in the fields of medicine/healthcare professions, physical education and education science stated that they were making most use of the knowledge and skills learned in their courses (76%, 53% and 46% respectively). At the polar opposite, 56% of the geo-biology and 48% of the humanities declared that they did not use what they had learned at the university.

As to the second dimension of the matching index (the formal requirement of a specific degree in order to keep the job), 27.6% of the employed graduates declared that a first cycle degree was mandatory for their job. 12.6% of them declared that, while not specifically required by law, a degree was in fact necessary. An additional, 37.4% of all employed graduates declared that a first cycle degree is useful, as compared with 22.2% of them saying that a degree was neither necessary nor useful. As expected, it is especially in the case of medical/healthcare professions that the formal requirement of the degree in order to keep the job attains a high value (82%). At the polar opposite, the graduates in geo-biology and humanities, more than any other field (49.5 and 42% respectively), claimed their degrees were of no use in the job they were keeping. It should be remembered that

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<sup>62</sup> Again considering separately those who started their current job after the degree.

<sup>63</sup> The match index combines two dimensions involved in measuring the capability of the graduate endowment of knowledge and skills to cope with job needs: the formal requirement of a specific degree in order to keep the job; the actual use of knowledge and skills learned while studying in a university course. Therefore, this index includes features related to both horizontal and vertical match/mismatch. We have defined five levels of matching:

- *very effective*: there is a legal or de facto requirement for the graduate to hold the specific degree and he makes great use of knowledge and skills learned in its course;

- *effective*: in spite of the fact that there is no legal requirement to hold a specific degree, this is nonetheless necessary or useful and the graduate make use of the knowledge and skills learned in its course;

- *fairly effective*: although not required, a degree is in practice necessary or useful, but the graduate do not make much use of the knowledge and skills learned in its course;

- *not very effective*: a degree is neither required by law, nor, in any way, useful and the graduate hardly ever use the knowledge and skills learned in its course; or a degree, although not formally required, is useful, but the graduate do not make any use of the knowledge and skills learned in its course;

- *in no way effective*: a degree is neither required by law, nor, in any way, useful and the graduate make no use whatsoever of the knowledge and skills learned in its course.

These levels are mutually exclusive, although not exhaustive, since they do not include the non-respondents or the answers that do not fit any of the levels.

these were study fields with particularly low rates of employment at one year from graduation, and especially the geo-biology field, which was also characterised by a high number of workers pursuing their studies. Graduates who only work find their degree more effective than their colleagues which pursue their studies in a Master degree. In this group, 80% of graduates declared that their degree was “fairly effective”: a much greater percentage (21.5 points higher) with respect to those who were working while enrolled in a Master degree.

In addition, the discrepancies in the matching index are certainly influenced by the different intensity of use of the knowledge and skills learned at the university. 46% of graduates working exclusively declared they made considerable use of them, while only 27.5% of those studying and working were of the same opinion.

The degree obtained proves at least “fairly effective” for 75% of men: a value 3 percentage points higher than that of their women colleagues. This finding is independent of the type of graduate considered (workers pursuing their studies, only working; pursuing the job held prior to graduation, starting to work after graduation). Moreover, this was confirmed for all fields in which numbers were sufficient to permit comparison. The only exceptions were the fields in physical education and education science, where the degree was considered at least “fairly effective” by more women than men (with a gap of 1 and 8 percentage points respectively).

#### *6.4. A comparison among the different post-reform degrees*

In order to give more hints on the Italian system of higher education after the reform, the present paragraph will report a synthetic comparative analysis among the different types of degree introduced with the Bologna Process, based on the matching index. This analysis is also complemented with a comparison of the data obtained for the 2007 and 2008 cohort of graduates, all interviewed one year after graduation. From this comparison it clearly emerges the impact of the global crisis on the employment conditions.

Any assessment of the labour demand willingness to absorb graduates must take into account the complex range of the available educational programmes. Moreover, we should not forget that the comparison is made between populations that differ in their objectives, learning processes, time to graduation, and age at graduation. In addition, to be truly accurate, the analysis should be sheltered from all possible bias, in particular those due to the different incidence of the prosecution of the job held prior to graduation. This is not a minor concern, since in Italy about one third of the first and second cycle graduates of the 2008 cohort were employed at the time of graduation, as compared with only 16% among the single-cycle graduates. Nor should it be forgotten that the share of graduates continuing their studies after a Bachelor degree is higher by nature than that of the second cycle.<sup>64</sup> Therefore, a direct comparison of the employment conditions would especially penalise first cycle graduates, most of whom choose to continue their studies and enrol in a Master degree, thereby delaying their entry into the labour markets. For the above mentioned reasons, a rigorous and in-depth study aimed at monitoring the labour demand and the labour markets reaction should first take into consideration only the population subset that start working after graduation, further scaling down the analyses to include only those who want to enter the labour markets.

The analysis of the employability of post-reform graduates shows positive signals, particularly if data are compared with all the above mentioned cautions in dealing with pre-reform graduates of the last few years. Nevertheless, looking at the main findings of the last two surveys on graduates employment conditions, the employment situation confirms the increasing difficulties of the labour markets due to the global economic crisis.

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<sup>64</sup> Single-cycle graduates are a very particular graduates category due to the large share of those who choose to continue their education in activities (often rewarded) mandatory for accessing to liberal professions in fields like architecture-civil engineering, law, medical/health professions, veterinary medicine.

As Fig. 16 shows, the rate of employment of post-reform graduates, one year after graduation, is 62.4% among Bachelors. This value is markedly higher than the rate of employment observed for second cycle graduates (45.5%) and for single-cycle degree holders (37.2%). The lower rate of employment for second cycle graduates is partly due to the fact that the survey was carried out on the first cohorts of graduates, who are by definition the best and therefore more inclined to pursue postgraduate studies. In fact, while the study performance of the first cycle graduates has stabilized, that of the second cycle graduates is still in a transition phase.

Comparing the 2008 cohort with the 2007 one, all types of graduates show a sharp slowdown in their capability to be absorbed by the demand for labour (Fig. 16). Among the Bachelor graduates the rate of employment dropped by almost 7 percentage points (62.4%, as compared with 69%), among the second cycle graduates the reduction is over 7 percentage points (45.5%, as compared with 52.9%), while among the single-cycle degree holders it is over 5 percentage points (37.2% as compared with 42.6%).

The examination of employment characteristics in Fig. 17 confirms the increasing difficulties faced by post-reform graduates over the last year. At one year from graduation, job security, which was already not particularly high, shows a decrease for all degrees considered, except for the single-cycle degree holders (who experience permanent employment in 36% of the cases). The reduction is of 3 percentage points for the Bachelor graduates (35.6% as compared with 38.6%), and almost 2 percentage points for the second-cycle graduates (26.1% as compared with 27.8%).

As Fig. 18 Shows that, at one year from graduation, net monthly earnings, expressed at 2009 prices, exceed on average 1,050 euros for all types of courses. Referring to the 2008 cohort, in particular, Bachelor graduates reach the level of 1,109 euros, second cycle graduates reach the level of 1,057 euros and single-cycle graduates reach the level of 1,110 euros.

In comparison with the 2007 cohort real earnings decrease for all types of graduates considered: the decrease is around 2% for the Bachelor graduates, 6% for the second-level graduates and 3% for the single-cycle graduates.

## 7. Conclusions

According to many commentators, within and outside the academic world, the “3+2” reform in Italy has been a failure or even a disaster. Furthermore, the attitude towards the Bologna Process is not always positive in Europe, especially in some fields of study. The surveys carried out by the AL Consortium suggest a less negative conclusion, even if positive and negative features lead to mixed outcomes in which variety is overriding.

First of all, we should observe that the empirical evidence and the data-base used in this debate have been usually rather poor and that the habit to project personal experiences and opinions at the general level has been strong. In this respect, there exists a large scope for improvement and the AL data-base is ready for this purpose.

But the task of AL is not to support one of the opposite stances. Instead its task is to favour a balanced assessment of the empirical outcomes of the reform. After all, AL cornerstones are the idea that, as Luigi Einaudi maintained, in order to govern you need to know, and the belief that, as Galileo Galilei puts it, in order to know, you need “to measure what is measurable, and to make measurable what it is not yet measured”. In this spirit, AL gathers the appropriate information, disseminates statistics, offers services and issues reports and papers useful in national and international debates.

Using this documentation we can say for sure that, at about ten years from the take-off of the reform, the Italian system of higher education has achieved the following positive results:

- (i) the number of graduates has increased;

- (ii) the age at graduation has decreased considerably and regular time to graduation covers a higher share of post-reform graduates with respect to the pre-reform ones;
- (iii) class attendance has improved;
- (iv) the interactions with the business world have improved, enhancing internship experiences;
- (v) the European targets in the field of studies abroad are almost met, at least for Master programmes;
- (vi) the number of graduates (especially Bachelors) coming from households in which no graduate was present before has increased, and there is no proof that their performances are weakening;
- (vii) the impact of social class is still relevant, but evidence points to the progressive inclusion of graduates coming from less privileged backgrounds;
- (viii) Bachelors' earnings do not seem to have declined in spite of the increase in their supply.

This means that the outcomes of the reform have been more positive than most commentators think. At the same time, these outcomes should be exploited for further improving the overall performance of the higher education system which continues to be unsatisfactory, also due to poor budgets. By the way, this means that the human resources engaged in higher education provision are valuable and that their efforts should be better assessed and provided with the appropriate incentives.

However, among the several persisting flaws characterizing the Italian system of higher education, despite the improvements obtained with the reform, we have to stress the following:

- (a) the high dropout rate, especially in the first twelve months after enrolment;
- (b) the still poor performance in granting the reduction in the age of graduation and regular time to graduation;
- (c) the rigidity of the overall syllabus organization and coursework recognition;
- (d) the lack of a comprehensive "open" university system, offering education both to adults and working students;
- (e) the low territorial mobility for study reasons;
- (f) the still low international openness of the system;
- (g) a tendency to engage in further studies with a twofold character – positive to the extent that it reflects an inclination to invest in human capital, negative to the extent that it corresponds to a low level of demand for graduate labour.

An additional flaw which does not pertain, strictly speaking, to the higher education system, but puts into effect a manifold influence on it, is the low level of earnings, in general and specifically for highly qualified manpower. This is connected, in turn, to the productive structure of the country and its sectoral/territorial organization. Just to give an evidence of this, while the predicted need for graduate manpower in Italian firms<sup>65</sup> hardly reaches a share of 12%, in the United States this share attains 31%.<sup>66</sup>

More controversial is the issue concerning the relevance of mismatch and over-education. In this respect, AL is carrying out dedicated studies which combine supply-side and demand-side analyses, in conjunction with other data-bases available for Italy. The results of the descriptive investigation are summarized in paragraph 6.3. An experimental study (Camillo, 2010) has been carried out estimating a regression model in which the dependent variable is the opinion of the interviewed about the on-the-job use of the skills learned while studying in a university course: a dichotomic variable whose modalities correspond to a higher or lower use in comparison with pre-reform graduates. The independent variables are: gender; pre or post-reform degree; age at

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<sup>65</sup> See Unioncamere-Ministero del Lavoro (2009).

<sup>66</sup> See US Department of Labor (2009).

graduation; graduation mark; delay at graduation; social class. This experiment seems to exhibit a lower probability of Bachelor graduates to be satisfied with their on-the-job use of the skills acquired at university, as compared with the pre-reform graduates.

However, we have to stress again, as we did before, that this study refers only to graduates' situations one year after graduation, and this limits very much the understanding of an intrinsically long-term phenomenon. Moreover, we should take into consideration the scale effect implicit when we speak about mismatch and over-education. The very low share of graduates in the employed labour force contributes to make the Italian context not easily comparable with more developed countries.

Further investigation has to be done in order to improve the methodology of the study, which is rather straightforward. However two are the likely interpretations for this result. In a *wage-competition* framework<sup>67</sup>, the mismatch increases in the transition from the pre to post-reform setting. Even a privileged social class origin does not seem to lessen the gap and work experience seems to foster criticism. The natural interpretation, therefore, is: in the post-reform courses a redefinition of contents has taken place which, on the one hand, tends to reduce the perceived usefulness of the learned skills and, on the other, excessively raises the Bachelors' expectations.

In a *job-competition* framework, in which part of the mismatch is physiological and firms actively contribute to lowering it, an increase of the mismatch (measured as lower satisfaction in the use of own skills), in the transition from the pre to the post-reform setting, is to some extent natural, due to the mandatory reduction of the duration of studies determined by the reform. Moreover, it can be at least partly explained as the result of the transfer to firms of a higher portion of educational requirements. Incidentally, the job-competition framework can better explain the absence of a price adjustment for the Bachelors while their supply is increasing.

The more appropriate assessment of the reform process and which of the two interpretations is more convincing need to be further explored in other studies. However, all the authorities involved in the management of the higher education system should take into more firm consideration the risk that a whole generation of young graduates, including the best equipped, can be trapped, especially in the midst of a global economic crisis, between a production system which is not able to recruit them and a research system deeply lacking resources.

Taking into consideration the entire decade, we have observed a first phase characterized by an increase in first-year enrolments, followed by a second phase of decline. In both phases expenditure did not match the needs of a quality-driven system.

In the same period the employment conditions of all pre-reform and post-reform graduates have worsened, and the economic cycle seems to have brought about serious shocks for all types of graduates in Italy.

These are the graduate cohorts which form the fundamental resource for any country. But this is especially true for Italy, due to the rapid ageing of the population and the scarcity of youths, both in absolute terms and in terms of highly qualified manpower.

This is why we consider as highly beneficial the adoption by the Council of European Union, as one of the five EU headline targets of the new decennial strategy "Europe 2020", of the goal to improve education levels, in particular by aiming to reduce school drop-out rates to less than 10% and by increasing to at least 40% the share of 30-34-year-olds having completed tertiary or equivalent education.

Finally, we would like to stress the strong need for comparative studies helpful in developing both methods and empirical evidence on the production processes in higher education and on the functioning of graduates' labour markets. And, in our view, the Euro-Mediterranean area is particularly significant in this respect.

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<sup>67</sup> For the distinction between the wage-competition and the job-competition model see Antonelli and Guidetti (2008).

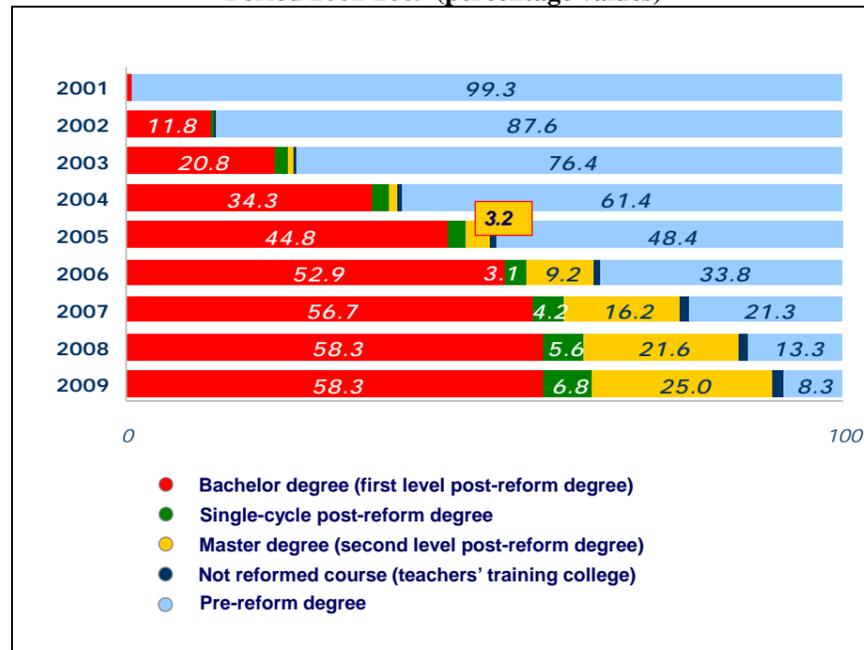
## Appendix – Tables and figures

**Tab. 1. Evolution of educational qualifications awarded within the Italian university system, 2000-2009**

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
<i>Absolute Values</i>										
Pre-reform Degrees	143,892	153,976	164,531	164,375	161,050	142,993	100,078	63,864	40,864	27,797
Diplomas and Higher Education for Specific Purposes	17,592	16,556	13,367	8,021	3,921	1,689	810	446	226	162
First cycle Degrees		1,267	20,626	50,705	91,653	137,545	160,861	173,270	172,591	171,115
Single-cycle Master Degrees		6	817	5,825	7,299	7,855	9,423	11,616	15,422	19,525
Second cycle Master Degrees		1	99	1,132	2,983	10,280	29,109	50,139	64,975	73,588
<b>Total</b>	<b>161,484</b>	<b>171,806</b>	<b>199,440</b>	<b>230,058</b>	<b>266,906</b>	<b>300,362</b>	<b>300,281</b>	<b>299,335</b>	<b>294,078</b>	<b>292,187</b>
<i>Percentage Values</i>										
Pre-reform Degrees	89.1	89.6	82.5	71.4	60.3	47.6	33.3	21.3	13.9	9.5
Diplomas and Higher Education for Specific Purposes	10.9	9.6	6.7	3.5	1.5	0.6	0.3	0.1	0.1	0.1
First cycle Degrees		0.7	10.3	22.0	34.3	45.8	53.6	57.9	58.7	58.6
Single-cycle Master Degrees		0.0	0.4	2.5	2.7	2.6	3.1	3.9	5.2	6.7
Second cycle Master Degrees		0.0	0.0	0.5	1.1	3.4	9.7	16.8	22.1	25.2
<b>Total</b>	<b>100</b>									

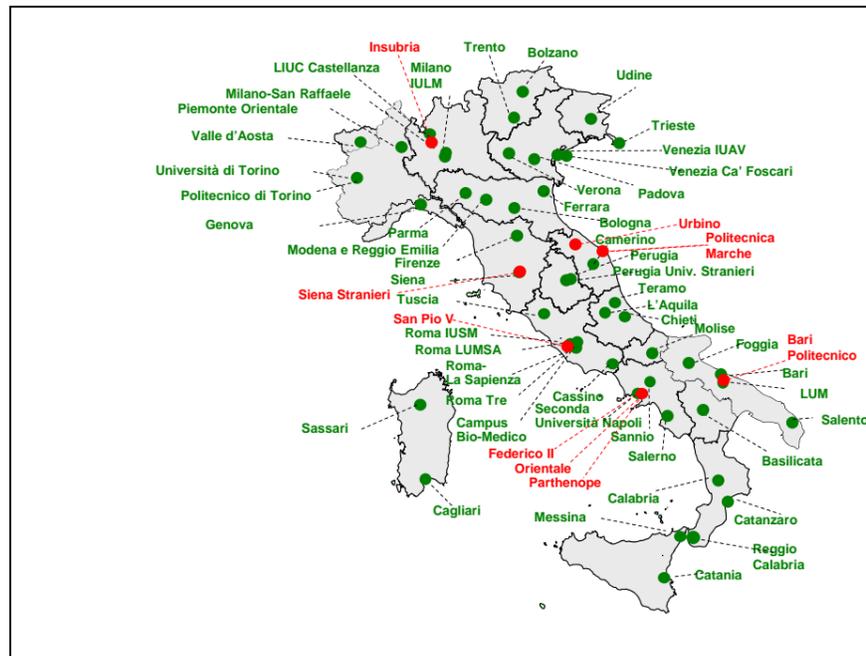
*Source:* MIUR-Ufficio di Statistica, *Indagine sull'istruzione universitaria* and, for 2009, *Rilevazione degli iscritti al 31 gennaio* (provisional data); excluding the qualifications within the "Defence and security" field of study.

**Fig. 1. – Pre and post-reform graduates' composition in each solar year.  
Period 2001-2009 (percentage values)**



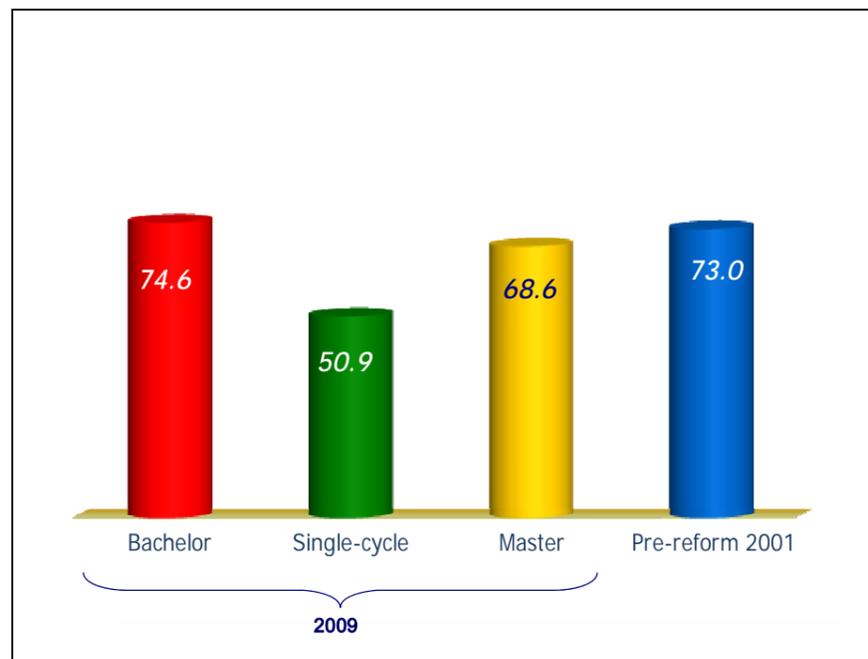
Source: AlmaLaurea (2010b, p. 56).

**Fig. 2. – Italian universities associated in the AlmaLaurea Inter-university Consortium**



Note: Universities joining AL in years 2009 and 2010, not yet included in survey data-sets.  
Source: AlmaLaurea.

**Fig. 3. – Incidence of parents with no university qualifications among pre and post-reform graduates. Comparison between 2009 and 2001 cohorts (percentage values)**



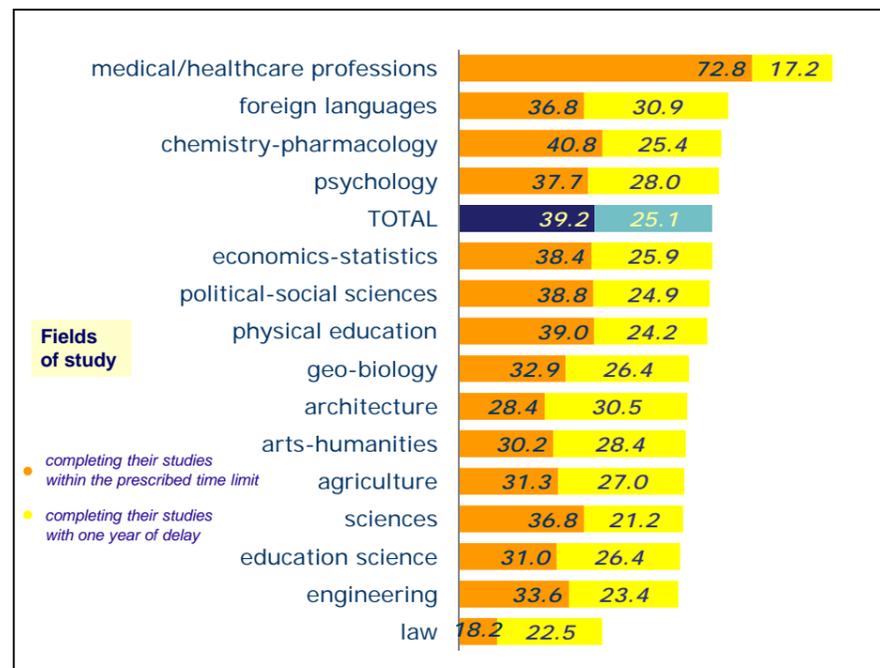
Source: AlmaLaurea.

**Tab. 2. - Age at graduation. Comparison between 2009 and 2001 cohorts (average values in years)**

	2009			2001
	Bachelor	Single-cycle	Master	Pre-reform
age at graduation	26.2	26.5	27.3	28.0
first enrolment delay	2.3	0.4	2.3 <sup>(*)</sup>	0.8
net age at graduation, avoiding delayed enrolment effect	23.9	26.1	25.0	27.2
delay to graduation index	0.40	0.20	0.19	0.69

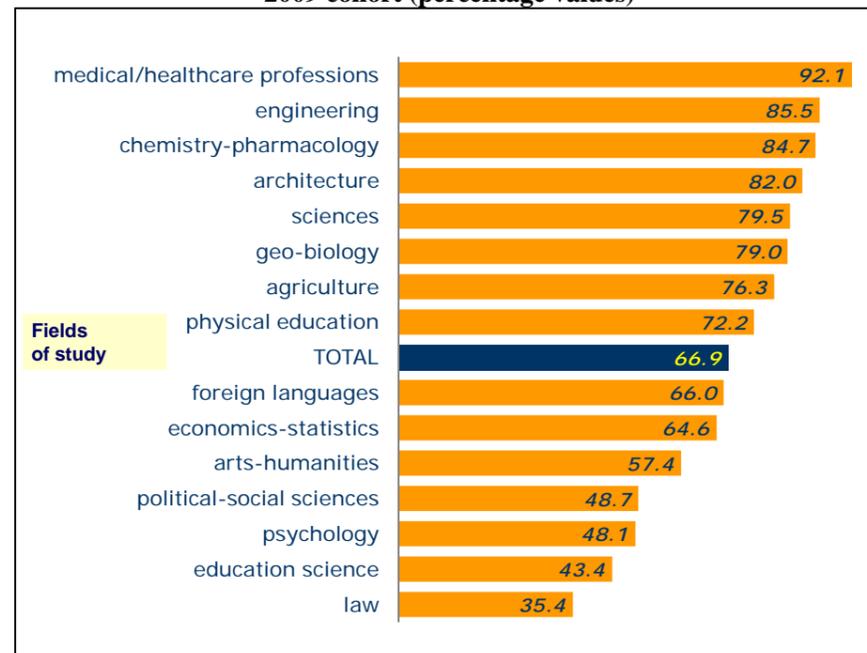
Note: <sup>(\*)</sup> It includes also the possible delay cumulated in previous Bachelor-level education.  
Source: AlmaLaurea.

**Fig. 4. - Bachelors completing their studies within the prescribed time limit or one year of delay  
2009 cohort (percentage values)**



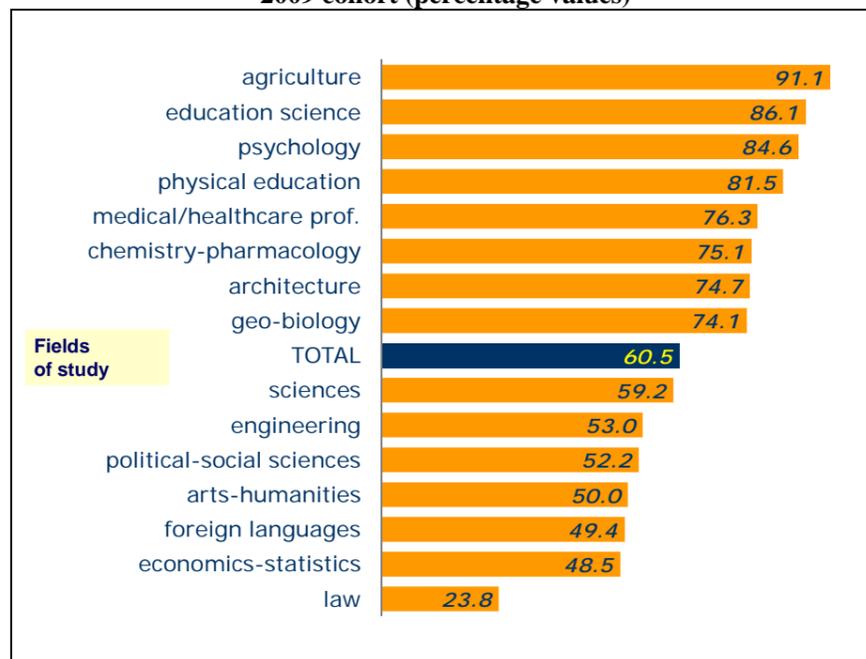
Source: AlmaLaurea.

**Fig. 5. - Class attendance of Bachelors.  
2009 cohort (percentage values)**



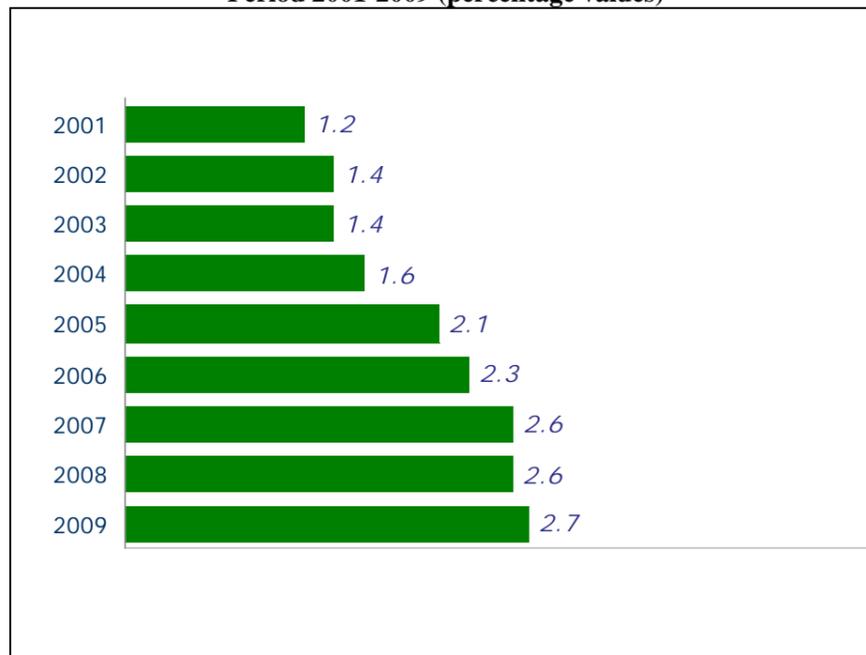
Note: Attendance for more than 75% of the foreseen teaching classes.  
Source: AlmaLaurea.

**Fig. 6. - Internships of Bachelors.  
2009 cohort (percentage values)**



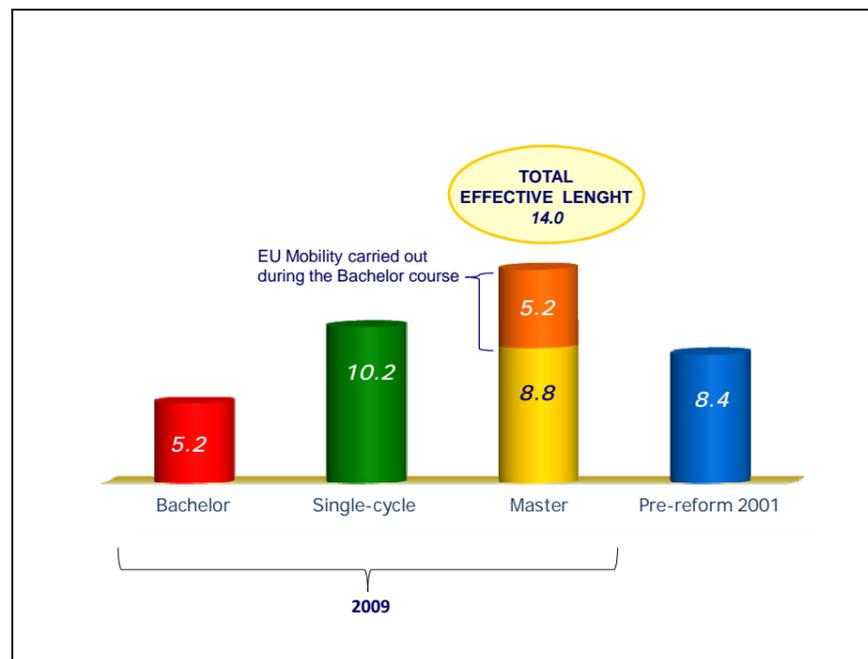
Source: AlmaLaurea.

**Fig. 7. - Graduates with foreign citizenship in each solar year.  
Period 2001-2009 (percentage values)**



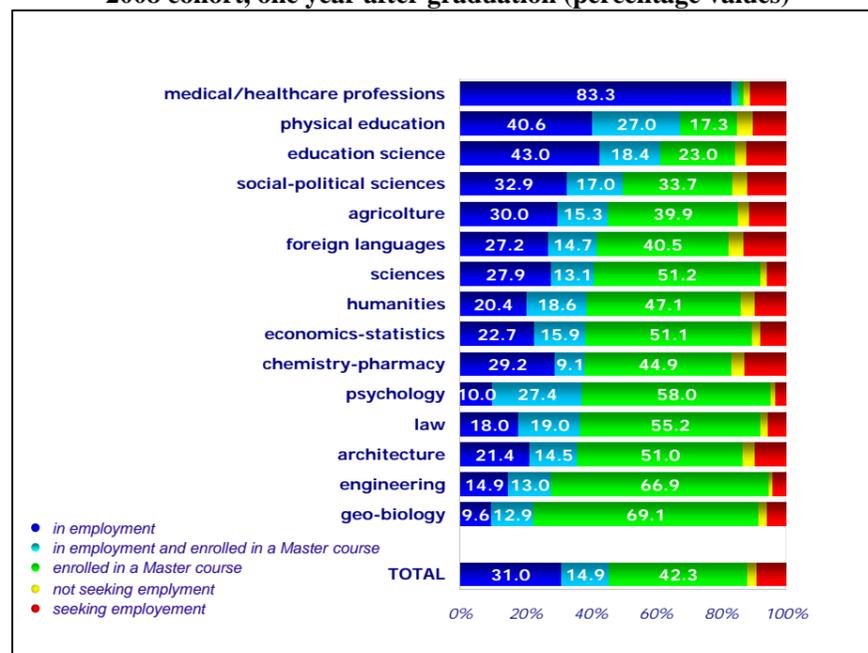
Source: AlmaLaurea (2010b, p. 176).

**Fig. 8. - Study abroad under Erasmus or other EU programmes. Comparison between 2009 and 2001 cohorts (percentage values)**



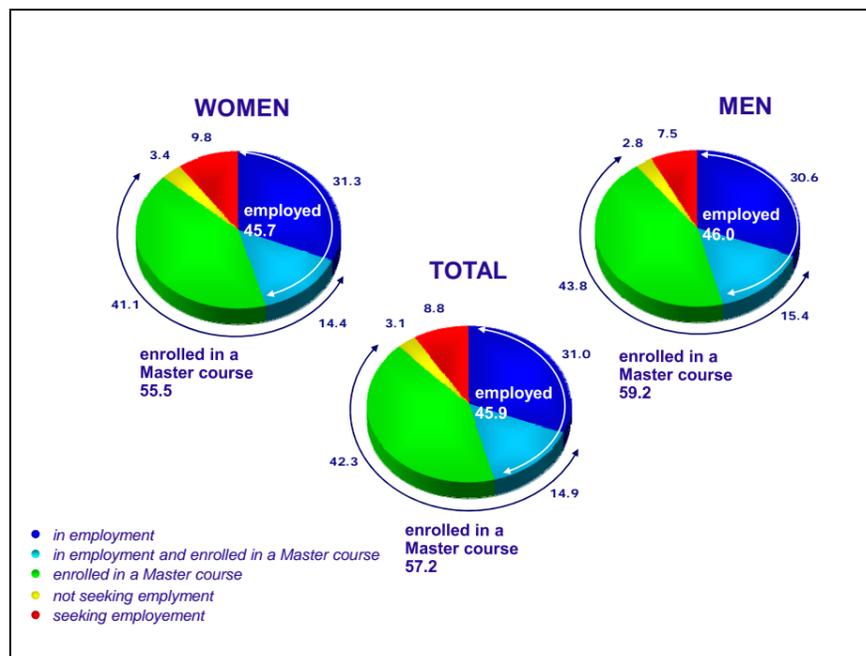
Source: AlmaLaurea.

**Fig. 9 – Bachelors’ employment conditions and further studies by field of study. 2008 cohort, one year after graduation (percentage values)**



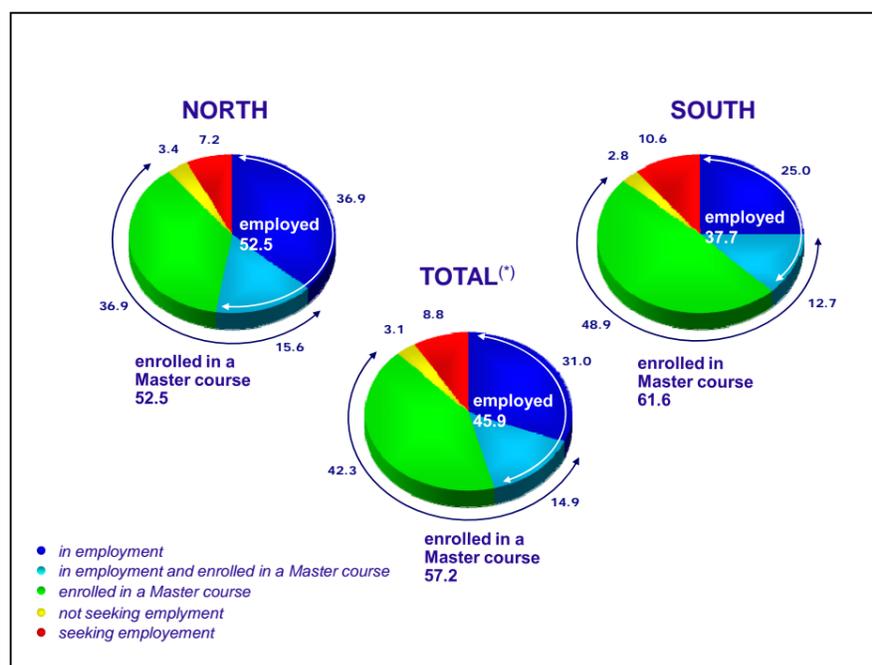
Source: AlmaLaurea (2010a, p. 42).

**Fig. 10. – Bachelors' employment conditions and further studies by gender. 2008 cohort, one year after graduation (percentage values)**



Source: AlmaLaurea (2010a, p. 47).

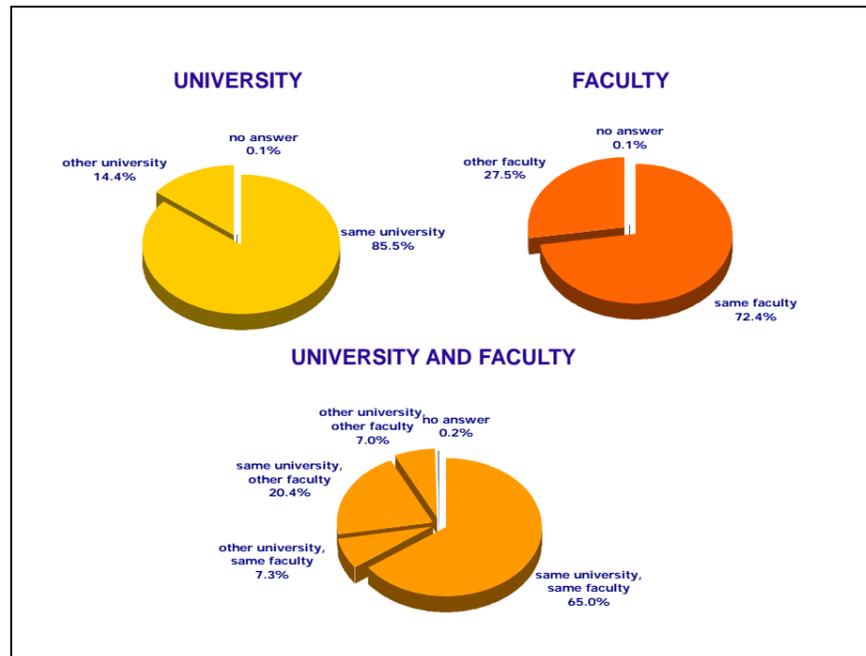
**Fig. 11. – Bachelors' employment conditions and further studies by geographical location. 2008 cohort, one year after graduation (percentage values)**



Note: (\*) It includes also graduates residing in Central Italy and abroad.

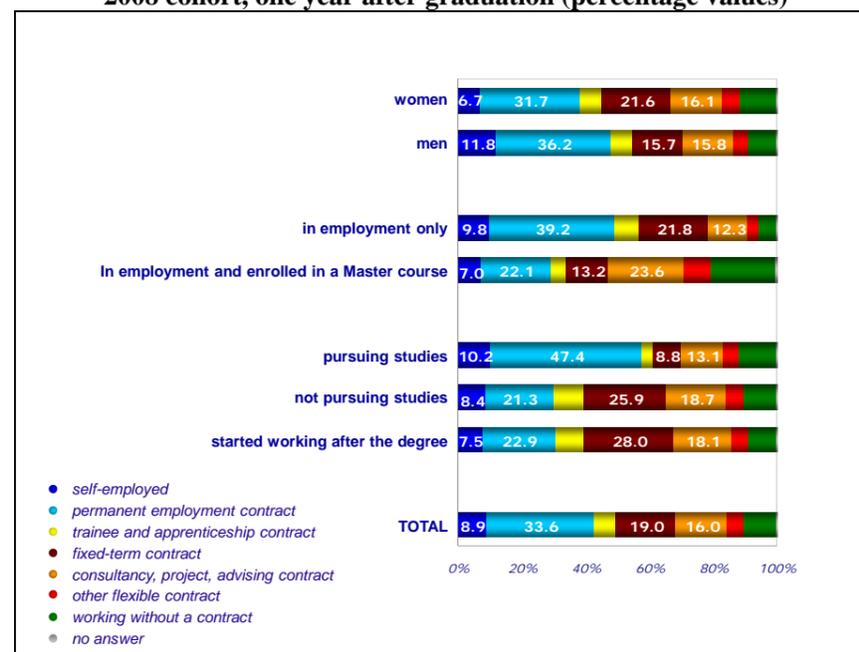
Source: AlmaLaurea (2010a, p. 49).

**Fig. 12 – University and faculty choices of Bachelors enrolled in Master courses. 2008 cohort (percentage values)**



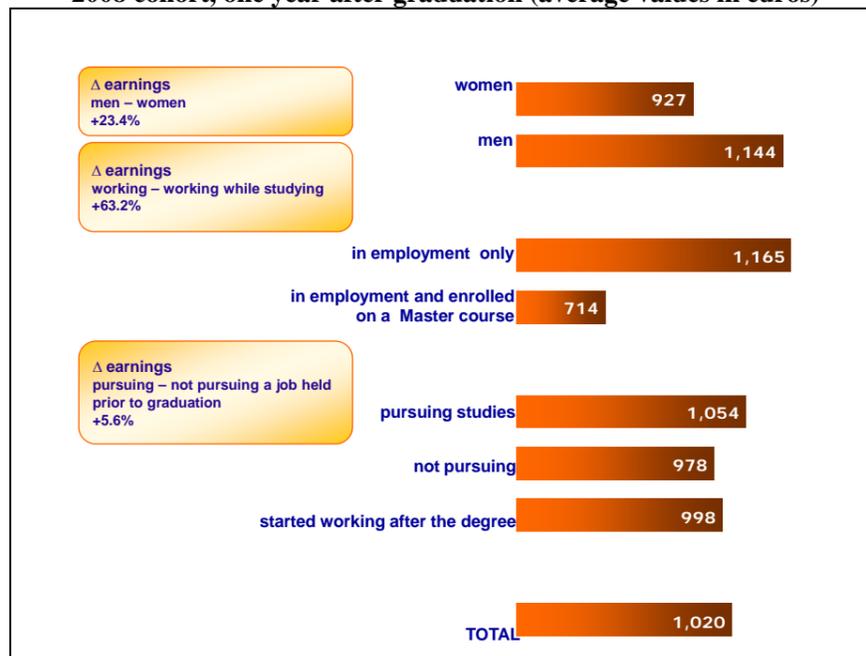
Note: the choices referring to the Master courses are expressed in relation to those referring to the initial degree.  
Source: AlmaLaurea (2010a, p. 54).

**Fig. 13. – Bachelors' employment characteristics by gender, enrolment in Master courses and connection with the job held prior to graduation. 2008 cohort, one year after graduation (percentage values)**



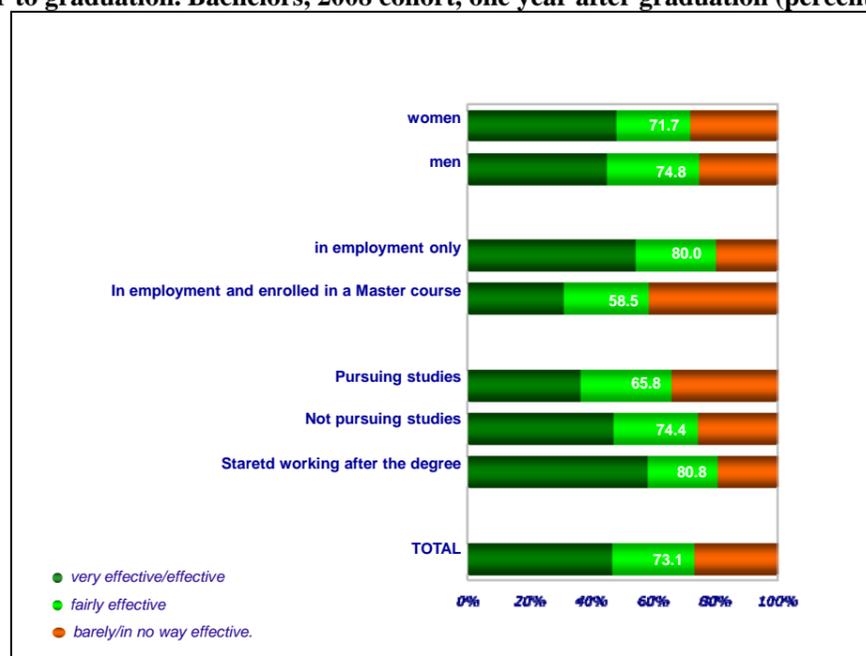
Source: AlmaLaurea (2010a, p. 60).

**Fig. 14. – Bachelors’ net monthly earnings by gender, enrolment in Master courses and connection with the job held prior to graduation. 2008 cohort, one year after graduation (average values in euros)**



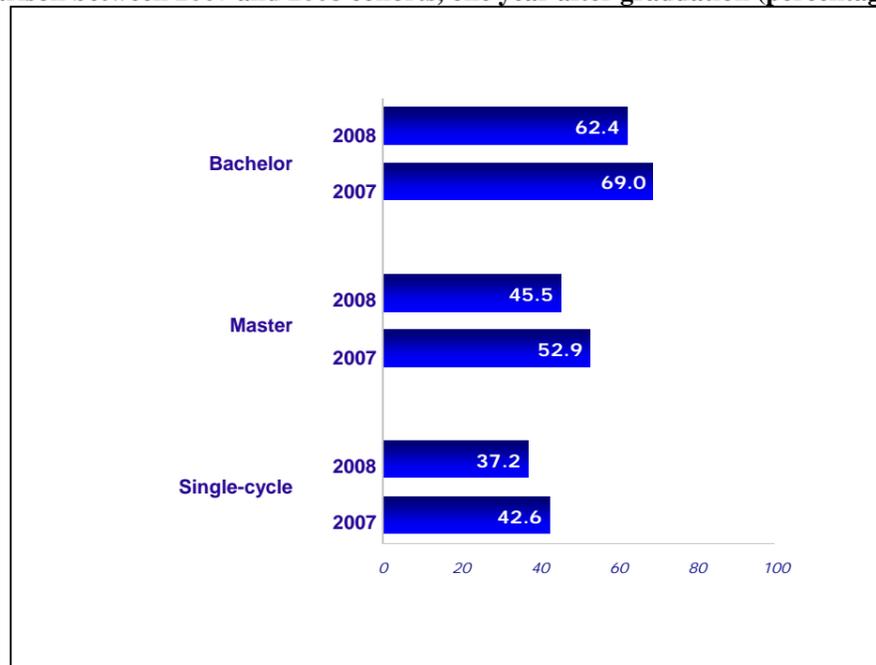
Source: AlmaLaurea (2010a, p. 64).

**Fig. 15. - Matching of the degrees by gender, enrolment in Master courses and connection with the job held prior to graduation. Bachelors, 2008 cohort, one year after graduation (percentage values)**



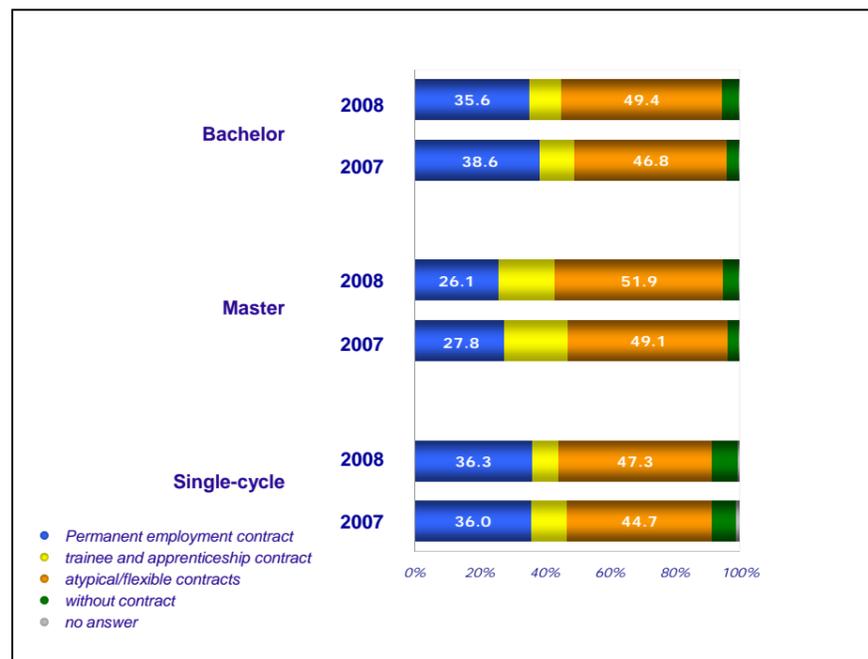
Note: The matching index is defined in note 42. The percentage values refer to graduates for whom the degree is considered at least “fairly effective”.  
 Source: AlmaLaurea (2010a, p. 69).

**Fig. 16. – Graduates' rate of employment by type of degree.**  
**Comparison between 2007 and 2008 cohorts, one year after graduation (percentage values)**



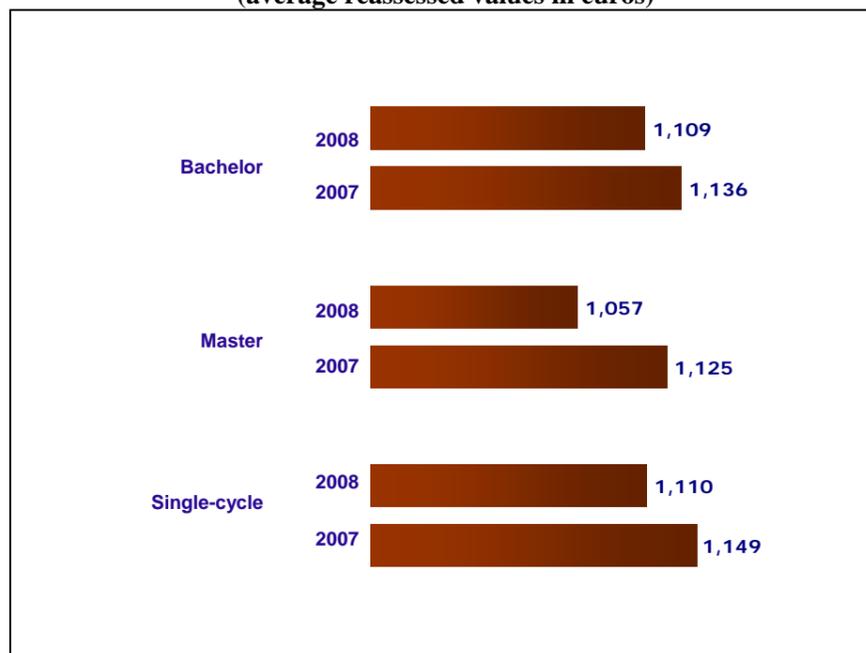
Notes: the data refer only to graduates not employed at graduation and, in the case of Bachelors, only to those not enrolled in further studies.  
 Source: AlmaLaurea

**Fig. 17. – Graduates' employment characteristics by type of degree.**  
**Comparison between 2007 and 2008 cohorts, one year after graduation (percentage values)**



Note: the data refer only to graduates not employed at graduation and, in the case of Bachelors, only to those not enrolled in further studies.  
 Source: AlmaLaurea (2010a, p. 20)

**Fig. 18. – Graduates' net monthly earnings at 2009 prices, by type of degree.  
Comparison between 2007 and 2008 cohorts, one year after graduation  
(average reassessed values in euros)**



Note: the data refer only to graduates not employed at graduation and, in the case of Bachelors, only to those not enrolled in further studies; the earnings value has been reassessed using Istat consumer prices indexes.

Source: AlmaLaurea

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