

**Reform of the Italian University Educational System
and Evolution of Selected Characteristics of Its Graduates (2000-2009)**

Report prepared for the Giovanni Agnelli Foundation

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1. Introduction

The harmonisation of the university educational systems at a European level has experienced a boost since the late 1990s with the implementation of the so-called “Bologna Process”. The need for harmonisation derived from the fact that the European higher education institutions were extremely differentiated and did not conform to any international standard. The Bologna Declaration, initially signed by the ministers of 29 European countries (now almost 50), was aimed at introducing a more transparent and comparable system of university degrees, fostering mobility of students and scholars, 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 the curricula in two main cycles: a first cycle (upon completion of which a *bachelor’s*-level degree is obtained) geared to the employment market and lasting (at least) three years; and a second cycle (leading to a *master’s*-level degree) conditional upon the completion of the first cycle. A third cycle, consisting of doctoral-level studies, is also envisaged by the Process (but will not be discussed here). The need for convergence also finds expression in the establishment of the European Higher Education Area.

In Italy, the Bologna Declaration has had considerable impact in terms of reform of the Italian university system, in particular with regard to curricula. It should be pointed out that Italy, before the start of the Bologna Process, was one of those few countries involved in the Process which did *not* have a two-cycle type degree structure. Two sets of legislative measures were adopted in Italy to implement the Bologna Process:

- a. the first reform (Ministerial Decree No. 509 of 1999, “Regulations establishing rules on universities’ teaching autonomy”, 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-level (a bachelor’s-type degree – or *laurea* – earned after at least 180 credits are obtained) and a second-level (a master’s-type degree – *laurea specialistica* – requiring at least 300 credits, including those obtained for a first-level degree), replacing the programmes of the old university system lasting at least four years)¹;
- b. the second reform (Ministerial Decree No. 270 of 2004, “Amendments to Regulations establishing rules on didactical autonomy of universities” and the following decrees of 16 March 2007) aimed at reducing the number of the new degree programmes and the number of the exams in each programme, as well as introducing a budget constraint on resources, in addition to estab-

* Thanks are due to Gian Piero Mignoli and Angelo Di Francia for their fundamental help.

¹ As we shall see below, in some discipline a “single-cycle” programme was introduced, lasting five or six years, fundamentally replicating the prior pre-reform system.

lishing the *laurea magistrale* (former “*laurea specialistica*”) with a total workload based on 120 credits, and increasing the number of single-cycle *laurea magistrale* programmes (with special regard to the replacement of the law degree based on the “3+2” system with a single-cycle degree programme).

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

The “3+2” solution has generated a fast and – partly – uncontrolled increase in educational provision: while in the year 2000-2001, 2,262 degree programmes (and less than 1,000 university diploma programmes) were available within the framework of the “old”, pre-reform system, in 2003-2004 the educational programmes included more than 3,000 first-level degrees, over 1,200 second-level degrees and approximately 180 single-cycle master’s degrees. In 2007-2008, the same types of programmes grew respectively to over 3,100, about 2,400 and about 270.

There is no doubt that the reform led a higher number of young and older adults to start 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. After these peaks, a reduction in the number of enrolments and in the overall number of students has been recorded in recent years, and it was not only due to demographic changes: from 2005-2006 a reduction of enrolment rates was observed among 19-year-olds and secondary school-leaving certificate holders (Cnvsu 2009).

However, the reform process and the dynamics of the university system have proved to be slow and sticky and its effects late in emerging, especially with regard to the characteristics of graduates, who are the “final product” of university educational processes, and this is also due to the fact that they are the result of a succession of different legislative measures. This is a key factor in explaining the limited availability and nature of existing data on graduates and the need to avoid drawing hurried conclusions, even though almost a decade has passed since the reform was introduced.

The analysis of data by sub-cohorts based on some formal criteria (pre-/post-reform, types of degree, fields of study) is any case difficult to perform since transition has been achieved only recently (three-year programmes) or is still in an on-going process (single-cycle programmes; second-level programmes). The prior system’s programmes have continued and still continue to produce a significant number of graduates (who clearly have different characteristics than the graduates of the late 1990s); single-cycle and second-level programmes have started to produce significant numbers of graduates only over the last few years. Furthermore, the first cohorts of “new” graduates are atypical for at least two reasons. First of all, the ability of some students to successfully complete their studies within a shorter time period is probably associated with their better-than-average “quality” in terms of background, motivation and access to resources. Secondly, the first cohorts of “new” graduates also included individuals who achieved graduation because they transferred from pre-reform programmes to post-reform ones, or because they applied for accreditation of previous study or work activities for purposes of degree completion. The empirical framework and the possibility to perform reasonable comparisons are further complicated if we also take into account the fact that the majority of three-year degree holders tend to pursue postgraduate education (rather than entering the labour market) and are likely to appear *again* in the cohort of second-level graduates.

Another factor should be added to the prior considerations: ALMALAUREA makes a distinction between “pure” and “hybrid” graduates; the latter are graduates who have begun their studies in the old system, but have gained their degrees in the new one (see section 5). The “hybrid” component further complicates the empirical framework.

This means that – considering the structure of ALMALAUREA data-bases and, above all, the phenomena observed – an undifferentiated analysis based on “logical time” is not advisable, but it is necessary to adopt an approach based on “historical time” and the real possibility of distinguishing between pre- and post-reform graduates and students, without the interference of confusing factors. The approach consists of making a comparison between a greater number of different types of pre- and post-reform degree programmes than that suggested by the legislative measures. The findings concerning levels of satisfaction, participation in educational activities, and completion of studies by the individuals belonging to these different groups will undoubtedly vary, but not because of factors closely linked to the reform contents. One may wonder if, under these circumstances, it is possible to establish a strong cause/effect relationship between the university reform and the results of the educational processes.

The aim of this work is to provide an extensive description of the evolution of a specific product of the Italian university system, i.e. the *graduates*. Such a description will be structured in terms of *type of degree programmes* and, then, of make-up of the totality of graduates according to the different types (sections 2 and 3). The make-up of the different types will be thoroughly investigated with respect to the available characteristics, such as social background (section 6), secondary school background and previous educational experiences (section 7), degree completion times (section 8), the characterization of the university experience, especially as regards study abroad experiences, participation in training periods and internships, work experiences during the studies and levels of course attendance (section 9) and the satisfaction with university experiences (section 10). The analysis will also be structured around fields of study (section 3).

2. Types of Degrees/Graduates

In the calendar year 2000 – before the introduction of the “3+2” reform – all educational qualifications awarded by Italian universities were “old system” university qualifications: approximately 9 out of 10 were “pre-reform” degrees; the remaining part consisted of university diplomas and diplomas from institutions (schools) providing higher education for specific purposes: the latter were comparable to the future first-level degrees (even if they were not regarded as “degrees” at that time, but they have been included in this category in that they were later granted three-year degree-equivalent status). Although the “3+2” system came into effect only starting from the academic year 2000-2001, already in 2001 some individuals began to complete the new programmes thanks – above all – to the option exercised by some students already enrolled on the university who decided to transfer from the old programmes to the new ones. Only in the following years, first-level degrees began to be awarded to students who had entirely completed the new system curricula since the beginning (Tab. 1).

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
Pre-reform diplomas, etc.	17,592	16,556	13,367	8,021	3,921	1,689	810	446	226	162
First-level degrees		1,267	20,626	50,705	91,653	137,545	160,861	173,270	172,591	171,115
Single-cycle degrees		6	817	5,825	7,299	7,855	9,423	11,616	15,422	19,525
Second-level degrees		1	99	1,132	2,983	10,280	29,109	50,139	64,975	73,588
Total	161,484	171,806	199,440	230,058	266,906	300,362	300,281	299,335	294,078	292,187
<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
Pre-reform diplomas, etc.	10.9	9.6	6.7	3.5	1.5	0.6	0.3	0.1	0.1	0.1
First-level degrees		0.7	10.3	22.0	34.3	45.8	53.6	57.9	58.7	58.6
Single-cycle degrees		0.0	0.4	2.5	2.7	2.6	3.1	3.9	5.2	6.7
Second-level degrees		0.0	0.0	0.5	1.1	3.4	9.7	16.8	22.1	25.2
Total	100	100	100	100	100	100	100	100	100	100

Source: MIUR-Ufficio di Statistica, *Indagine sull'istruzione universitaria* and, for 2009, *Rilevazione degli iscritti al 31 gennaio* (provisional data); qualifications in “defence and security” programmes are excluded from the analysis.

As previously mentioned, although the “3+2” approach and its consequences had been discussed before the implementation of the reform, in practice its effects have been (structurally, and therefore predictably) slow in becoming manifest and, conversely, the old system has been slow to disappear. After the introduction of first-level programmes, newly enrolled students would have been able to obtain the corresponding degree only after *at least* three years; students enrolled in single-cycle programmes would have gained their degrees in at least five or six years²; students enrolled in second-level programmes would have been only a few – since, to have access to these programmes, a pre-reform degree or a new three-year degree was necessary – until the new first-level programmes would begin to run “at a steady state” and produce a significant number of graduates and potential students who could enrol in second-level programmes.

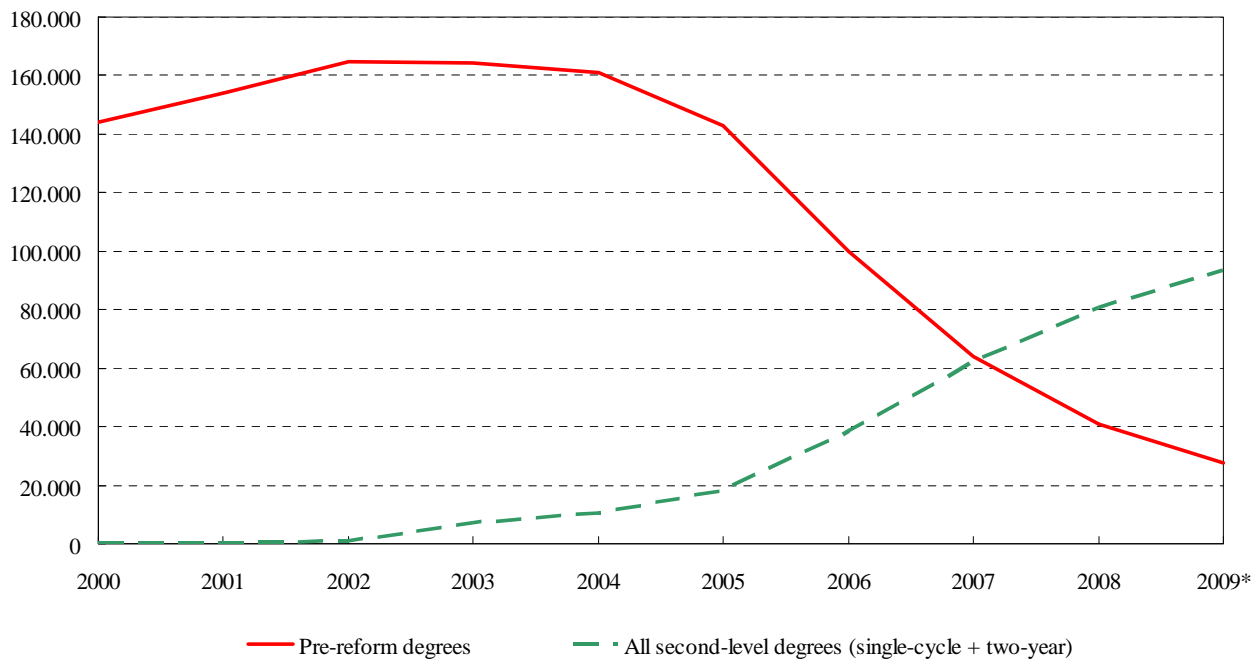
² Single-cycle programmes are only present in the following degree subject groupings: agriculture; architecture; chemistry and pharmacology; medicine; and, since 2007, law.

As can be observed in Tab. 1³ (and Fig. 2), in 2008 and in 2009, almost 41 thousand and 28 thousand individuals, respectively, completed a non-reformed degree programme (or a university diploma programme): a figure that is considerably lower than the over 161 thousand of 2000, but far from being insignificant. Even if one considers that some of these students graduated from non-reformed programmes of education science, which maintained their four-year duration, the vast majority consists of students who have graduated quite a few years after the expiry of the formal deadline. What is more, almost a decade after the introduction of the reform 10% of the university system's output was still a result of the – only apparently – “pre-existing” system. In addition, these figures do not take into account the incidence of graduates from post-reform programmes who have completed a – maybe large – part of their studies in pre-reform programmes.

Conversely, the incidence of graduates from the new “3+2” programmes has gradually increased over the decade. In 2002, these graduates accounted for one-ninth of the output of the university system, but they were – as already mentioned – mostly individuals who had begun their careers in the old system. In 2003, first-level graduates exceeded the threshold of 50 thousand and accounted for 22% of the total number of university degree or diploma holders. Only in 2005 did post-reform graduates (first-level, second-level and single-cycle graduates) account for half (barely: 51.8%) of the total number of new university credential-holders. In 2006, when two-year master's programmes and single-cycle programmes began to produce significant numbers of graduates, their incidence was however limited (lower than 13%); again in 2007, second-level graduates were *fewer* (61.8 thousand) than the new graduates of pre-reform programmes (63.8 thousand), i.e. their direct “competitor” in terms of qualification levels. Only in 2008 did second-level graduates exceed and indeed double old system's graduates (80.4 thousand versus 40.9 thousand: see Fig.1). In 2009, the divide became even more pronounced: over 93 thousand second-level graduates versus almost 28 thousand old system's graduates. When interpreting this data set, we must keep in mind that – as pre-reform graduates do not include students who began their studies in a pre-reform programme and then transferred to and graduated from a new programme – among graduates who are formally regarded as post-reform graduates there are individuals who have completed a significant part of their studies in pre-reform programmes. In other words, data shown in Tab. 1 tend to overestimate the incidence of the “3+2” programmes, in that it highlights the *final* moment of the study programme rather than its whole progression.

³ In this analysis, all graduates from the subject grouping “defense and security” have been excluded for a number of reasons: this grouping did not include any degree programme of the pre-reform system; it had a minor incidence (in 2008: 0.3% of first-level graduates and 0.7% of second-level graduates) and is poorly represented in the ALMALAUREA data. The analysis also excludes some categories of graduates who obtained university qualifications for special agreements: in particular, healthcare workers who were granted accreditation for their work experience for the purposes of awarding a three-year degree and members of the police force or the armed forces who completed one of the programmes reserved for them.

Fig. 1. Evolution of pre-reform degrees and two-year second-level degrees and single-cycle degrees awarded in the Italian university system, 2000-2009 (absolute values)

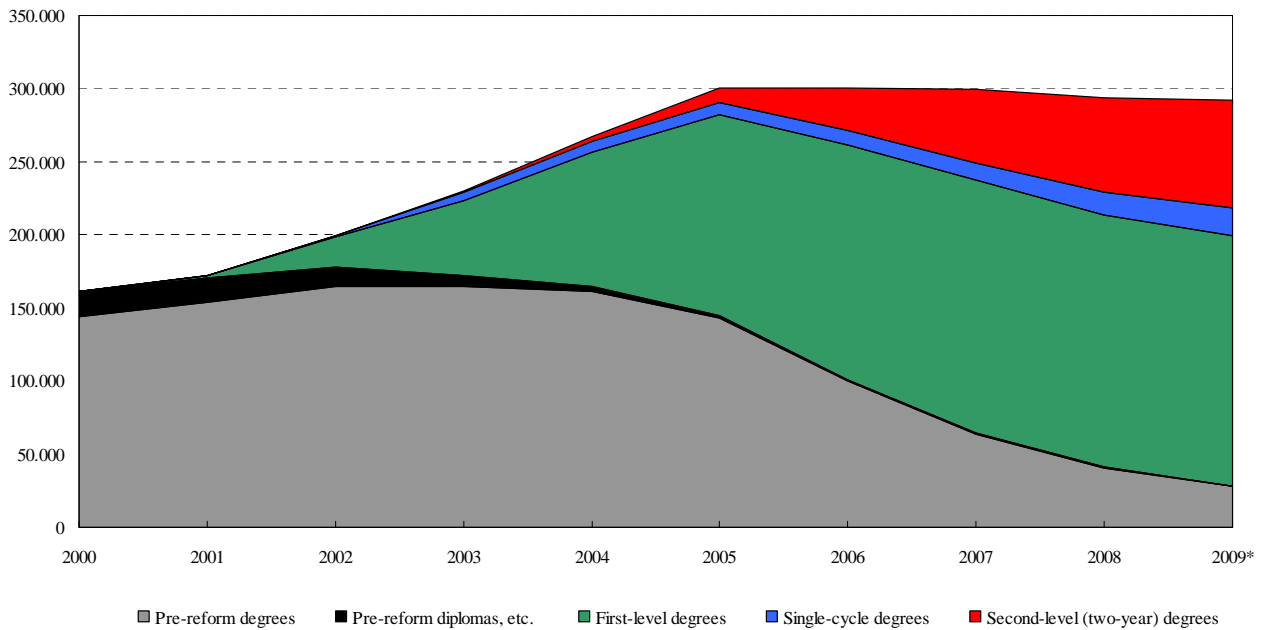


Source: MIUR-Ufficio di Statistica, *Indagine sull'istruzione universitaria* and, for 2009, *Rilevazione degli iscritti al 31 gennaio* (provisional data); excluding the qualifications within the “defence and security” field of study.

Thus, far from being immediate, the *transformation of graduates’ make-up* has been a gradual process which has taken several years to reach its “steady state”, provided that it is now doing so.

Tab. 1 and Fig. 2 also highlight another important effect of curricular reform: the *increase in the number of graduates*, or in the qualifications awarded by Italian universities. If in 2000 the number of qualifications (including university diplomas) was barely 161 thousand, both in 2005 and in 2006 the number of qualifications awarded was over 300 thousand: an increase of 86%, meaning that the number of graduates has almost doubled. Even those who earned a two-year, second-level degree are excluded from the calculation – on the assumption that these graduates had already earned a previous university qualification – the number of individuals who obtained a university qualification in 2005 was 290 thousand: meaning an increase of 80% as compared to 2000. In the following years the number of graduates has decreased slightly (292 thousand in 2009, 218 thousand if excluding second-level graduates) but still remains well above the pre-reform level.

Fig. 2. Evolution of educational qualifications awarded within the Italian university system, 2000-2009 (absolute values)



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 field of "defence and security".

In brief, thus, we may conclude that the "3+2" reform led a greater number of individuals to complete their university studies. On the other hand, if we focus on graduates earning a higher university degree (old-system programmes, or new-system, second-level programmes, two-year or single-cycle) a more equivocal picture emerges. In the year 2000 such master's-level graduates amounted to about 144 thousand, increased to 171 thousand in 2003 and 2004, and then decreased to only 121 thousand in 2009, a level that was appreciably lower than that reached at the beginning of the decade. These data are ambivalent because they may be interpreted in both negative (decrease in the number of highly qualified graduates) and positive terms (success in routing aspiring university students to shorter and more employment-oriented programmes).

3. Types of Degrees/Graduates and Fields of Study

The analysis of the dynamics of degrees and graduates by fields of study⁴ highlights (Tab. 3) a similar evolution for all fields, with some exceptions. As regards *pre-reform degrees*, the healthcare professions and physical education field experienced considerable growth in 2001 and 2002 – due to the fact that in those years the corresponding programmes that had been established only a few years before hence to reach their steady state – but it subsequently slowed down to the same pace as the other fields. The field of medicine, conversely, from 2003 began to produce a significantly lower number of graduates as compared to 2000. The socio-political science and psychology, law and humanities fields in an initial stage (2001-2004) experienced an increase in the number of graduates higher than the overall increase and subsequently (2005-2008) converged on the overall decreasing levels in the number of pre-reform graduates, which anyway continued to be *relatively* high. This may be due to a greater incidence and longer permanence of students exceeding the prescribed time (*fuori corso*) in these fields. Even in the humanities field, however, pre-reform graduates in 2008 were halved as compared to 2000.

As regards *first-level* degrees and graduates, all fields of study are clearly characterised by broadly positive dynamics, but with some noteworthy differentiations. Most fields – science, engineering/architecture, economics and statistics, socio-political science and psychology – saw an increase in the number of graduates each year, and then reached a plateau. The humanities field stands out for its ongoing increasing trend. Law programmes experienced a growth in the number of graduates until 2006, which was followed by a decrease because of a belated introduction of single-cycle programme in this field.

Single-cycle degrees and two-year second-level master's degrees (*lauree specialistiche/magistrali*) have shown positive growth and continue to do so, in that second-level programmes have yet to reach their steady state.

If we consider *university qualifications overall* (excluding Ph.Ds), we observe rather divergent trends. Medicine observes a flat trend: over the 2000-2009 period the number of graduates on a yearly basis has fluctuated between 7.5 and 8.5 thousand. Law shows an erratic trend: it started with 22.9 thousand graduates in 2000, reached a peak of 31.3 thousand graduates in 2005 and then dropped to 24.3 thousand in 2008: the inverted U-shaped curve is – at least in part – probably due to a temporary reduction in the number of graduates in correspondence with the previously mentioned introduction of the single-cycle programme. The remaining fields of study show steady growth, which is particularly more pronounced for healthcare professions and physical education (from 9.6 thousand graduates in 2000 to 26.7 thousand in 2008, although the strong growth is due to the low initial figures) and socio-political science and psychology (from 18.6 to 53.1 thousand).

⁴ For the purposes of the analyses carried out in this report, subject groupings have been aggregated according to criteria that are partly different from those used by the Ministry. In particular, a relatively limited number (8) of fields of study has been identified: science (including the following “ministerial” groups: science; chemistry and pharmacology; geobiology; agriculture); medicine (which is the same as the corresponding ministerial group); healthcare professions and physical education (also corresponding to the ministerial group); engineering/architecture (including the two homonymous ministerial groups); economics and statistics (the same as the ministerial group); socio-political science and psychology (including the political and social science group and the psychology group, according to the ministerial classification); law (corresponding to the ministerial group); and humanities (including the ministerial liberal arts, language and teaching groups).

Tab. 3. Number of qualifications awarded in the Italian university system over the 2000-2009 period, by field of study

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
<i>Pre-reform degrees</i>	143,892	153,976	164,531	164,375	161,050	142,993	100,078	63,864	40,864	27,797
Science	18,442	19,501	20,144	20,090	17,958	14,723	10,454	6,254	3,759	2,202
Engineering/Architecture	25,458	26,264	27,582	27,185	25,939	23,777	17,615	10,147	6,478	4,046
Medicine	7,392	7,486	8,022	4,876	3,543	3,227	2,211	1,660	1,081	679
Health Prof. and Physical Ed.	332	1,014	2,988	1,589	1,412	1,192	613	326	194	108
Economics and Statistics	27,261	27,450	28,061	28,308	26,711	21,545	12,441	7,116	4,194	2,638
Socio-Pol. Science & Psych.	16,865	18,356	19,084	21,793	23,314	21,751	15,184	8,314	4,801	2,670
Law	22,526	24,424	25,405	25,299	25,600	23,243	17,405	12,165	8,212	5,676
Humanities	25,616	29,481	33,245	35,235	36,573	33,535	24,155	17,882	12,145	9,778
<i>Pre-reform diplomas, etc.</i>	17,592	16,556	13,367	8,021	3,921	1,689	810	446	226	162
Science	985	1,081	905	541	319	190	105	44	30	21
Engineering/Architecture	2,658	2,779	2,529	1,849	889	393	212	121	45	27
Health Prof. and Physical Ed.	9,279	7,304	5,853	2,577	784	163	52	16	8	1
Economics and Statistics	1,934	2,393	1,765	1,389	989	552	244	156	78	44
Socio-Pol. Science & Psych.	1,729	1,210	939	735	247	108	62	39	19	13
Law	376	908	661	416	179	103	55	16	20	7
Humanities	631	881	715	514	514	180	80	54	26	49
<i>First-level degrees</i>			20,626	50,705	91,653	137,545	160,861	173,270	172,591	171,115
Science		247	2,571	5,756	9,992	13,982	16,365	17,437	18,279	18,679
Engineering/Architecture		421	4,463	11,781	17,696	23,510	25,343	27,239	27,675	27,762
Health Prof. and Physical Ed.		386	5,991	15,657	20,690	22,297	22,708	25,978	23,896	23,410
Economics and Statistics		15	2,708	6,178	13,827	19,783	23,702	25,300	25,336	25,436
Socio-Pol. Science & Psych.		118	3,324	6,735	15,660	28,495	33,491	35,616	35,443	34,642
Law		9	156	495	2,918	7,854	10,596	8,694	7,756	6,204
Humanities		71	1,413	4,103	10,870	21,624	28,656	33,006	34,206	34,982
<i>Second-level degrees</i>			99	1,132	2,983	10,280	29,109	50,139	64,975	73,588
Science				652	923	2,141	4,527	6,785	8,568	9,360
Engineering/Architecture		1	99	262	785	3,153	8,225	12,163	14,625	16,328
Health Prof. and Physical Ed.				9	254	977	2,276	2,558	2,613	3,038
Economics and Statistics				11	208	1,211	4,648	8,842	11,513	12,785
Socio-Pol. Science & Psych.				56	429	1,853	5,045	9,401	12,807	14,764
Law					16	76	1,776	4,330	5,453	4,790
Humanities				142	368	869	2,612	6,060	9,396	12,523
<i>Single-cycle degrees</i>			817	5,825	7,299	7,855	9,423	11,616	15,422	19,525
Science			496	1,512	2,013	2,236	2,889	3,425	3,981	4,341
Engineering/Architecture		6	114	504	689	890	1,065	1,412	1,794	2,256
Medicine			207	3,809	4,597	4,729	5,469	6,277	6,782	6,986
Law								502	2,865	5,942
<i>Total no. of "higher" qualifications</i>	143,892	153,976	165,447	171,332	171,332	161,128	138,610	125,619	121,261	120,910
Science	18,442	19,501	20,640	22,254	20,894	19,100	17,870	16,464	16,308	15,903
Engineering/Architecture	25,458	26,271	27,795	27,951	27,413	27,820	26,905	23,722	22,897	22,630
Medicine	7,392	7,486	8,229	8,685	8,140	7,956	7,680	7,937	7,863	7,665
Health prof. and Physical Ed.	332	1,014	2,988	1,598	1,666	2,169	2,889	2,884	2,807	3,146
Economics and Statistics	27,261	27,450	28,061	28,319	26,919	22,756	17,089	15,958	15,707	15,423
Socio-Pol. Science & Psych.	16,865	18,356	19,084	21,849	23,743	23,604	20,229	17,715	17,608	17,434
Law	22,526	24,424	25,405	25,299	25,616	23,319	19,181	16,997	16,530	16,408
Humanities	25,616	29,481	33,245	35,377	36,941	34,404	26,767	23,942	21,541	22,301
<i>Total no. of qualifications</i>	161,484	171,806	199,440	230,058	266,906	300,362	300,281	299,335	294,078	292,187
Science	19,427	20,829	24,116	28,551	31,205	33,272	34,340	33,945	34,617	34,603
Engineering/Architecture	28,116	29,471	34,787	41,581	45,998	51,723	52,460	51,082	50,617	50,419
Medicine	7,392	7,486	8,229	8,685	8,140	7,956	7,680	7,937	7,863	7,665
Health prof. and Physical Ed.	9,611	8,704	14,832	19,832	23,140	24,629	25,649	28,878	26,711	26,557
Economics and Statistics	29,195	29,858	32,534	35,886	41,735	43,091	41,035	41,414	41,121	40,903
Socio-Pol. Science & Psych.	18,594	19,684	23,347	29,319	39,650	52,207	53,782	53,370	53,070	52,089
Law	22,902	25,341	26,222	26,210	28,713	31,276	29,832	25,707	24,306	22,619
Humanities	26,247	30,433	35,373	39,994	48,325	56,208	55,503	57,002	55,773	57,332

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 field of "defence and security".

Even more interesting, in some ways, is the evolution of *graduates' make-up* over time (Tab. 4). If we consider *graduates* (and university diploma holders) *as a whole*, we will notice how – over the 2000-2009 period – the following fields have seen their “market share” grow: socio-political science and psychology (from 11.5% to 17.8%), humanities (from 16.3 to 19.6%) and healthcare professions and physical education (from 6.0% to 9.1%, partly due to the low initial figures, as mentioned above). The incidence of the science and engineering/architecture remained stable (around 12% and 17%, respectively). The following fields of study have lost ground: medicine (from 4.6% to 2.6%, even though there was no variation in absolute terms; the field has simply not followed the trend of the general increase in the number of graduates, also as a consequence of restricted access policy adopted by faculties of medicine), economics and statistics (from 18.1% to 14.0%) and law (from 14.2% to 7.7%, even if – as already said – this drop reflects, in part, a probably temporary reduction in the number of graduates due to the recent introduction of single-cycle programmes); economics and statistics saw its share contract in 2009 although it produced a greater number of graduates as compared to 2000.

The make-up of *first-level graduates* by field of study in 2009 highlights the performance of the humanities (20.4%), socio-political science and psychology (20.2% of the total) and healthcare professions and physical education (13.7%), which feature significantly higher percentages than in 2000. Engineering/architecture (16.2%), economics and statistics (14.9%) and science (10.9%) have considerable incidences as well, although they are lower than in 2000. Medicine is absent for structural reasons, and law has a marginal weight as an effect of the abolition of the three-year degree programmes (even in 2006, the peak year for first-level graduates in law programmes, this field accounted for only 6.6% of graduates).

Tab. 4. *Make-up, by field of study, of the qualifications awarded in the Italian university system (percentage values)*

	Science	Medicine	Health Prof. & Phys. Ed.	Eng. / Arch.	Econ. & Stat.	Soc., Pol. Sci. Psychology	Law	Humanities	Total
<i>Overall</i>									
2000	12.0	4.6	6.0	17.4	18.1	11.5	14.2	16.3	100
2009	11.8	2.6	9.1	17.3	14.0	17.8	7.7	19.6	100
<i>Pre-reform and second-level degrees</i>									
2000 (pre-reform)	12.8	5.1	0.2	17.7	18.9	11.7	15.7	17.8	100
2009 (2-year and single-cycle)	14.7	7.5	3.3	20.0	13.7	15.9	11.5	13.4	100
<i>First-level degrees</i>									
2009	10.9	–	13.7	16.2	14.9	20.2	3.6	20.4	100
<i>Two-year master's degrees</i>									
2009	12.7	–	4.1	22.2	17.4	20.1	6.5	17.0	100
<i>Single-cycle master's degrees</i>									
2009	22.2	35.8	–	11.6	–	–	30.4	–	100

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 field of “defence and security”.

As regards *master's-level degree holders* (graduating from two-year second-level or single-cycle programmes) – that is, the most “qualified” product of the system – it is useful to make a comparison between the graduates in 2000 (excluding, thus, university diploma holders) and second-level graduates in 2009 (Tables 3 and 4). We have already mentioned that such qualifications were approximately 144 thousand in 2000, 171 thousand in 2003-2004 and 121 thousand in 2009. As compared to the beginning of the decade, thus, almost 23 thousand highly qualified graduates have been “lost”. Half of this “loss” may be attributed to economics and statistics (–11.8 thousand graduates), and another quarter to law programmes (over 6 thousand fewer graduates). Medicine and the socio-political science and psychology are holding steady. The only field with an increasing trend is healthcare professions and physical education (which was, however, almost absent in 2000).

In relative terms, always as regards the “higher” qualifications, in 2009 the most weighty fields were engineering/architecture (20.0%) socio-political science and psychology (15.9%), and science (14.7%). Each of these fields has also increased its percentage incidence since 2000: for the first two fields, this is due to strategies (adopted by the universities and/or the students) favouring second-level programmes (i.e., those fields focusing on academic and/or specialist objectives) to the detriment of first-level programmes (i.e., those focusing on employment-oriented objectives); for socio-political science and psychology, “success” both for first-level and for second-level programmes was recorded. Medicine, as well as healthcare professions and physical education, saw their relative weight increase. Conversely, other fields contracted: humanities passed from 17.8% in 2000 to 13.4% in 2009; law went from 15.7% to 11.5% (but here, again, the already mentioned establishment of single-cycle programmes in law had a central role); economics and statistics dropped from 18.9% to 13.7%. Only humanities programmes showed a trend favouring three-year programmes to the detriment of second-level programmes, but we should keep in mind that second-level graduates in the humanities *do not* include the graduates from the non-reformed programmes of education science; if we took into account this component, the drop in humanities graduates would be significantly reduced.

4. The ALMALAUREA Data-Base

The remaining analyses illustrated in this report are based on datasets of the ALMALAUREA Inter-University Consortium involving graduates in the calendar years 2000, 2002, 2004, 2006, 2008 and 2009. In particular, they are drawn from the data-bases concerning Graduates' Profile, which contain information drawn from administrative sources and collected through a questionnaire filled in by graduates immediately before earning their degrees, i.e., upon submission of their application to sit the degree examination. These data-bases pertain to 46,124 graduates in 2000, 78,163 in 2002, 137,822 in 2004, 185,344 in 2006, 187,359 in 2008 and 189,746 in 2009, for a total of 824,558 graduates. 87.5% of graduates included in the data-base have filled in the ALMALAUREA questionnaire, and for these graduates complete information is available; for those who have not filled in the questionnaire, only information from administrative sources is available.

From the empirical data it may be inferred that information referring to the earliest years is less reliable than that concerning 2009, as the number of universities participating in ALMALAUREA (and thus the share of Italian graduates included in its data-bases) has grown over time. In 2009, the number of universities included in the data-base on Graduates' Profile was 51, and their graduates accounted for 65% of the total number of graduates in Italy⁵.

2008 has been set as the reference year, and data on the previous years and on 2009 has been re-weighted based on the make-up of the ALMALAUREA Consortium in 2008; the re-weighting has been performed based on the following variables: field of study (structured around 8 categories, as specified in footnote 4), universities' geographical area (4 categories: North-West, North-East, Central Italy, South and Islands), gender (2 categories). The re-weighting procedure makes data on each year the most comparable as possible. It must be stressed that the reference framework is that of all the universities which had contributed to the ALMALAUREA Graduates' Profile in 2008 and the overall number of graduates from these universities, and *not* the entire graduate population in Italy. As a consequence, the comparison among the data illustrated in previous sections and the data which will be illustrated from now on should be performed with caution.

The data display strategy in the following pages is mainly based on the illustration of three types of frequency distributions: an articulated historical series embracing the 2000-2009 period relative to the aggregate of *all* graduates, without any distinction by type of qualification; a less articulated historical series embracing the 2000-2009 period based on four different types of programme: pre-reform; first-level; single-cycle; second-level two-year.

⁵ The universities whose graduates in the calendar year 2000 are included in the ALMALAUREA data-base on Graduates' Profile were 19 (and the corresponding number of graduates 46,124, i.e. 29% of the total; in 2002 figures increased to 24 universities and 78,163 graduates (39% of the total); in 2004, to 35 universities and 137,822 graduates (52% of the total); in 2006, to 41 universities and 187,359 graduates (62% of the total); in 2009 to 51 universities (65% of the total). For the 6 years under examination, as a whole, the number of graduates included in the data-base on Graduates' Profile is 54% of all Italian graduates.

In 2000, the universities included in the data-base are the universities of Bologna, Cassino, Catania, Chieti and Pescara, Ferrara, Florence, Messina, Modena and Reggio Emilia, Molise, Parma, Western Piedmont, Rome LUMSA, Siena, Turin, Polytechnic University of Turin, Trento, Trieste, Udine and Venice IUAV. In 2002 the following universities were included in the data-base: Bari, Genoa, Padua, Sassari and Catanzaro. In 2004: Basilicata, Bolzano, Calabria, Foggia, Milan IULM, Perugia, Reggio Calabria Mediterranea, Roma Tre, Salerno, Venice Ca' Foscari and Verona. In 2006, the data-base also included the graduates from the universities of Cagliari, Camerino, Rome "La Sapienza", Rome Bio-Medical Campus, Salento and Viterbo Tuscia. In 2008: l'Aquila, Castellanza LIUC, Milan San Raffaele, Second University of Naples, University for Foreigners of Perugia, Rome Foro Italico, Sannio and Valle d'Aosta. In 2009, Teramo and LUM-Casamassima joined the other universities in the data-base.

5. “Hybrid” Graduates

ALMALAUREA makes a distinction of post-reform graduates for the purposes of its analyses: “pure” graduates and “hybrid” graduates. “Pure” graduates are those who belong to a post-reform programme since their first enrolment in a university degree programme; “hybrid” graduates are students who have completed a post-reform programme using credits originally earned in pre-reform programmes. “Hybrids” have formally obtained one of the qualifications envisaged by the “3+2” reform, but they are not a “pure” output of the new educational curricula and, therefore, are a *further* element of persistence and of the old system. The presence of hybrids blurs the empirical framework concerning the effect of the “3+2” reform, in that such hybrids – although possessing “new-type” qualifications – entered the university system when the previous educational curricula were in force and made their initial choices in that context; furthermore, they have often been encouraged to transfer to first-level programmes by their universities, which desired to clear up “pending charges” as soon as possible, and it is reasonable to believe that they have, in most cases, grabbed this chance in order to shorten their pathway to an educational credential.

As shown in Tab. 5, in 2004 at least 41.5% of first-level graduates were hybrid; to this percentage we should add, in all probability, a component taken from 20.7% of graduates on whom no sufficient information is available in order to classify them as “pure” or “hybrid”; only 37.8% of first-level graduates have completed their university programmes entirely within the reformed curricula. In some fields of study, the hybrid component is even (or almost) the greatest: science (51.6%), humanities (50.7%), engineering/architecture (45.5%); in other cases its incidence is much lower (law: 23.7%).

The hybrid component began to fade away over the following years and already in 2006 the majority of graduates was “pure”. In 2008, there still exists a significant component of hybrid graduates (at least 8.1%, with a strong convergence – as compared to the previous years – among fields of study). In 2009, the percentage of hybrids further decreased to 6.4%.

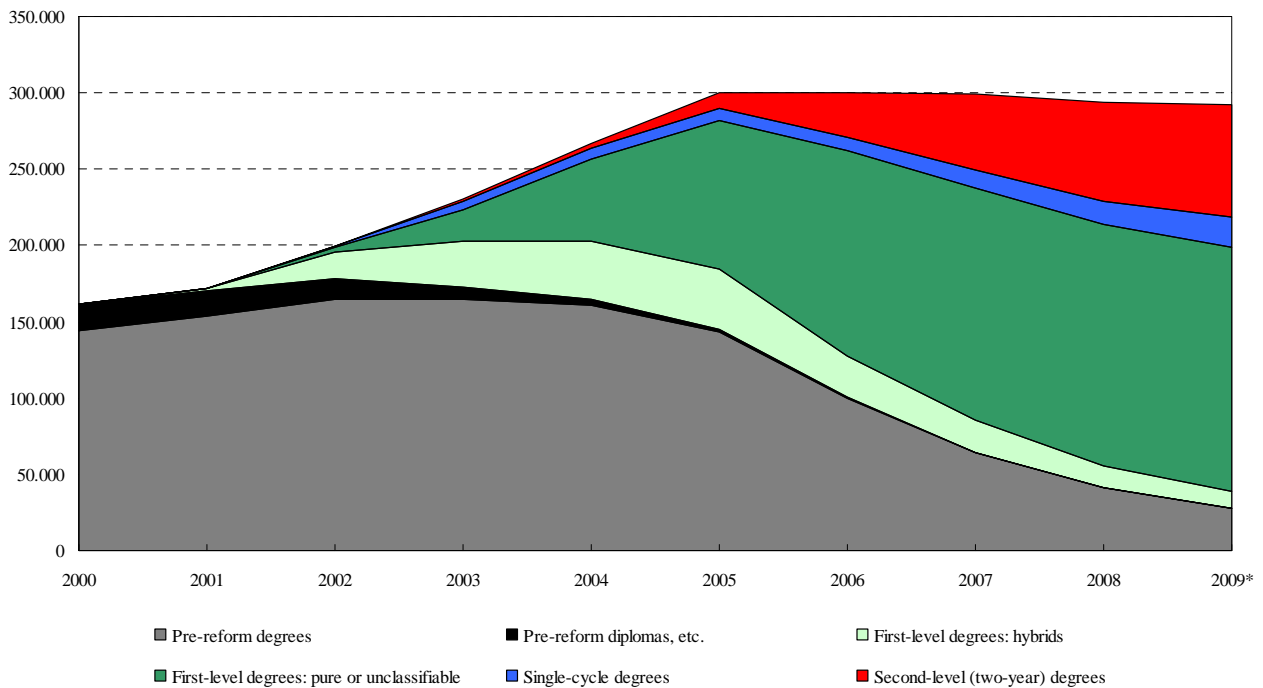
Tab. 5. *Evolution of the incidence of “hybrid” and “pure” first-level graduates, as a whole and by field of study (percentage values)*

	2004	2006	2008	2009
<i>First-level graduates</i>				
Pure	37.8	69.3	83.8	86.8
Hybrid	41.5	16.7	8.1	6.4
Unclassifiable	20.7	13.9	8.2	6.8
Total	100	100	100	100
<i>Minimum incidence of “hybrids”:</i>				
Science	51.6	22.2	9.7	3.7
Engineering/architecture	45.5	18.7	9.5	3.6
Healthcare professions and physical education	34.2	16.0	9.2	4.5
Economics and statistics	41.2	14.1	6.1	2.4
Socio-political science and psychology	38.2	16.3	7.8	3.4
Law	23.7	10.2	7.4	4.5
Humanities	50.7	17.1	7.2	3.1

Source: ALMALAUREA.

In the light of the *ascertained* hybrid graduates in the ALMALAUREA data-bases, a revised version of Fig. 3 may be proposed, in which the incidence of these hybrids is also represented (see Tab. 5). The black, grey and light green areas in Fig. 4 correspond to individuals who have gained old-system qualifications or, even though they may have earned “new” qualifications, did so on completion of an experience which had begun in the pre-existing system. It should be pointed out that the incidence of “old type” or “semi-old type” graduates is any case *underestimated* in Fig. 4, since no data is shown on: three-year graduates for whom there is no information concerning previous university experiences; possible hybrids amongst second-level graduates (who are actually difficult to be classified as “hybrids” within the ALMALAUREA dataset). Even applying these conservative criteria, we can assert that the majority of the qualifications awarded within the university system can be classified as “new” and “pure” *not before* 2006, that in 2008 the incidence of old-system or hybrid qualifications was higher than 19% of the total and that in 2009 the same incidence was higher than 13%.

Fig. 4. *Evolution of educational qualifications awarded within the Italian university system, with an estimate on the presence of first-level hybrid graduates, 2000-2009 (absolute values)*



Source: ALMALAUREA Processing on data from MIUR-Ufficio di Statistica, *Indagine sull'istruzione universitaria* and, for 2009, *Rilevazione degli iscritti al 31 gennaio* (provisional data); excluding the qualifications awarded within the field of “defence and security”.

6. Social Background

In this section ALMALAUREA data will be analysed in order to verify whether there are any variations in graduates' social background – in a broad sense – over the 2000-2009 period. First of all, we should consider the *place of residence* of graduates and how far it is from the place of study (Tab. 6a). No noteworthy variations over time are observed, except for a slight increase in the percentage of graduates residing in the province of the place of study, i.e., a small drop in the incidence of graduates coming from a region other than the one in which the teaching institution is located (this – rather than an effect of the “3+2” reform – is maybe due to the proliferation of decentralised university campuses allowing a greater number of students to choose a study location closer to their place of residence). This trend is particularly evident for the graduates from universities in Southern and Insular Italy: among such graduates, those residing in the province of the place of study increased from 50.9% in 2000 to 60.8% in 2008; in the same time span, graduates coming from regions other than that in which the place of study was located decreased by half (from 22.1 to 10.4%).

This poor geographical mobility of graduates has persisted over time and has involved all programmes of study in almost equal measure. Only second-level graduates showed a slightly higher tendency to study in a region other than that of residence.

Tab. 6a. *Evolution of the place of residence of graduates over the 2000-2009 period (percentage values)*

	2000	2002	2004	2006	2008	2009
Same province as the place of study	47.7	40.2	50.5	52.4	51.3	50.8
Other province, same region	27.4	24.9	26.9	25.2	25.9	26.1
Other region	24.4	19.6	22.2	22.0	22.1	22.4
Abroad	0.6	0.4	0.4	0.5	0.7	0.7
Information not available	–	14.9*	–	–	0.0	–
Total	100	100	100	100	100	100
<i>Residing in the same region:</i>						
– Pre-reform degrees	75.1	76.4	76.7	76.7	78.2	78.5
– First-level degrees			78.6	78.4	78.4	78.5
– Single-cycle degrees		89.0	73.8	76.6	78.1	76.2
– Second-level, 2-year degrees			77.2	74.9	72.7	72.1

* The high percentage of non-available information is almost entirely due to the lack of this kind of information for first-level graduates.

Source: ALMALAUREA.

Tab. 6b enables a comparison between graduates of 2000, first-level graduates of 2009 and second-level graduates (without any distinction between single-cycle and two-year programmes) of 2009. In other words, the table highlights the situation of the pre-reform system in a stable state, the new first-level system in the most recent calendar year, and the new second-level system in the most recent calendar year. Although the latter set of graduates does not yet reflect a stable state, it is the best possible approximation. (Tab. 6b's format will be used repeatedly from this point onwards.)

Thus, as already mentioned, no significant differences are observed among the three cohorts. About three graduates out of four – regardless of the type of programme – live in the region where their institution is located, and approximately one out of two lives in the same province. Geographical immobility is slightly more pronounced among graduates from the new, shorter programmes, but generally – especially for pre-reform and new second-level graduates – no significant variations are observed over the 2000-2009 period.

Tab. 6b. *Evolution of graduates' place of residence over the 2000-2009 period (percentage values)*

	Pre-reform graduates 2000	1st-level graduates 2009	2nd-level graduates 2009
Same province as the place of study	47.7	52.6	47.1
Other province, same region	27.4	25.9	25.9
Other region	24.4	20.9	26.0
Abroad	0.6	0.6	0.9
Total	100	100	100

Source: ALMALAUREA.

Other variations concerning family background are more revealing. Unfortunately, for graduates' *social class* of origin, operationalised through their parents' employment (Tab. 7a)⁶, data is available only from 2004. Over this time span, there were no overall variations: about one graduate out of five comes from the upper class, a little less than one out of three from the white-collar middle class, one out of five from the self-employed middle class. However, an increase in the percentage of graduates from the working class is observed: such graduates account for 20.9% of all graduates in 2004 and 23.4% in 2009. This trend reflects other ALMALAUREA findings which highlight how the relative weight of graduates from the lower classes has risen over the last decade. The second part of Tab. 7a shows that this progress is concentrated among pre-reform programmes (suggesting that the students from the lower classes are those who have greater difficulties in completing their studies, achieving graduation only after a long time from the beginning of their university careers) and in first-level programmes.

Again, data suggests considerable social differentiation among the various types of programme. In particular, single-cycle programmes – which, as previously mentioned, involve the fields of agriculture, architecture, chemistry and pharmacology and medicine, as well as law since 2007) – are characterised by a high social profile with low percentages of graduates from the working class and high

⁶ In order to operationalise graduates' social class, ALMALAUREA adopts the scheme proposed by Cobalti and Schizzerotto (1994). Social class, based on the comparison between the *socio-economic standing* of the graduate's father and that of his/her mother, is established taking into account the highest standing between the two (dominance principle). Socio-economic standing is defined according to four categories: *upper class*, *white-collar middle class*, *self-employed middle class* and *working class*; The upper class dominates the other three, the working class occupies the lowest position, while the white-collar middle class and the self-employed middle class are basically at the same level (neither dominates the other; both dominate the working class and are dominated by the upper class). Social class of graduates having a parent from the self-employed middle class and the other from the white-collar middle class corresponds to the father's standing (in this situation, the principle of dominance alone would not allow univocal identification of social class). Socio-economic standing of each parent is a function of the most recent professional position: upper class = liberal professionals, executives, entrepreneurs with at least 15 employees; white-collar middle class = clerical staff with coordination tasks, managers and middle managers; self-employed middle class = own-business owners; family workers; members of cooperatives; entrepreneurs with less than 15 employees; working class = blue collars, subordinates and similar workers, staffers.

percentages of graduates from the upper class. Conversely, first-level programmes are characterised by a low social profile: a relatively high number of graduates coming from the working class and a small number of graduates from the upper class.

Tab. 7a. *Evolution of graduates' social class of origin over the 2004-2009 period (percentage values)*

	2004	2006	2008	2009
Upper class	20.6	21.2	21.3	21.8
White-collar middle class	31.3	31.2	30.5	29.7
Self-employed middle class	22.3	21.7	21.4	21.6
Working class	20.9	22.0	23.1	23.4
Information not available	4.9	4.0	3.7	3.5
Total	100	100	100	100
<i>Upper class:</i>				
– Pre-reform degrees	21.3	21.2	18.7	18.8
– First-level degrees	18.4	20.2	19.6	19.9
– Single-cycle degrees	35.6	35.4	36.6	37.4
– Second-level, 2-year degrees	22.6	23.3	23.8	23.6
<i>Working class:</i>				
– Pre-reform degrees	19.9	21.4	23.5	23.5
– First-level degrees	23.4	23.2	24.5	25.0
– Single-cycle degrees	12.4	13.4	14.4	14.1
– Second-level, 2-year degrees	20.1	20.0	21.1	21.8

Source: ALMALAUREA.

This characterisation is better articulated in Tab. 7b, where a downward shift of first-level graduates and an upward shift of second-level graduates can be noticed – as compared to graduates' social class in 2004. In brief, we may conclude that – vis-à-vis the pre-existing system – the “3+2” reform has entailed a greater social aperture at the “3” level (the shorter, more employment-oriented programmes), and a greater social closure at the “2” level (higher social profile of the more qualified graduates as compared to the previous situation). We should also consider that the social characterisation of pre-reform graduates of 2004 was, presumably, slightly lower than that we would have observed for the year 2000; it follows that, possibly, the social aperture attributed to first-level programmes is overestimated, and social closure of second-level programmes is underestimated. On the other hand, it is possible that second-level programmes are still producing graduates of higher quality, and thus, presumably, coming from higher social classes, as compared to those from stabilised programmes in the same fields.

Tab. 7b. *Evolution of graduates' social class over the 2004-2009 period (percentage values)*

	Pre-reform graduates 2000	1st-level graduates 2009	2nd-level graduates 2009
Upper class	21.3	19.9	26.7
White-collar middle class	31.4	29.3	30.5
Self-employed middle class	22.3	22.3	19.8
Working class	19.9	25.0	20.1
Information not available	5.0	3.5	3.0
Total	100	100	100

Source: ALMALAUREA.

Graduates' social background can also be operationalised in cultural terms, via *parents' level of education* (Tab. 8a). In general, an improvement of graduates' socio-cultural conditions is observed over the 2000-2009 period: graduates with neither parent holding a school-leaving certificate have dropped from 38.5% to 27.8%. Graduates with at least one parent holding a degree maintain their incidence: around 24-25% during the period under examination. Since it is reasonable to assume that the education levels of university students' parents have improved over the last ten years – as parents born more recently, and therefore more educated, progressively replace those born previously – the decrease in the incidence of parents without a school-leaving certificate supposedly reflects this changing scenario.

The drop in the incidence of parents with no school-leaving certificate is observed in all types of degree programmes (second part of Tab. 8a), even though it is less marked among pre-reform graduates: it may be assumed that, for such graduates, having well-educated parents is an advantage, in that it increases the odds that such students will complete their studies, although after the allocated time-to-graduation. More significant is the fact that the percentage of poorly-educated parents changes considerably depending on the type of programme: in “3+2” programmes, it is relatively high for first-level graduates, low for single-cycle graduates, intermediate for second-level graduates. In other words, similarly to what occurs in relation to social class, shorter, more employment-oriented programmes feature greater social aperture (towards students with less-educated parents), while the social profile is higher in second-level programmes, especially the single-cycle ones.

The apparently abnormal (because not in line with those recorded in the following years) values for first-level graduates in 2002 must be properly contextualized: we should keep in mind that in that year first-level graduates were equally distributed between “pure” and “hybrid” graduates (see section 5), and the latter feature lower education levels among parents. The abnormal characterisation of this graduate cohort in 2002 recurs again in other parts of this report.

Tab. 8a. *Evolution of the cultural level of graduates' family of origin over the 2000-2009 period (percentage values)*

	2000	2002	2004	2006	2008	2009
No qualification	0.6	0.5	0.5	0.4	0.4	0.4
Primary school education	13.3	12.2	8.8	6.9	5.7	5.1
Lower secondary school education	24.6	24.9	23.5	22.6	21.7	21.2
Upper secondary school education	35.7	36.5	40.4	42.6	44.2	44.8
One parent with a university degree	15.3	14.7	15.2	15.6	15.8	16.1
Both parents with a degree	8.9	8.5	9.2	9.3	9.8	10.2
Information not available	1.6	2.8	2.5	2.5	2.5	2.2
Total	100	100	100	100	100	100
<i>Neither parent with secondary school ed.:</i>						
– Pre-reform degrees	38.5	36.7	32.6	32.0	34.5	35.5
– First-level degrees		44.8	33.6	29.8	28.6	27.8
– Single-cycle degrees		36.6	21.4	18.9	16.6	15.6
– Second-level, 2-year degrees			33.4	27.0	23.9	23.8
<i>At least one parent with a degree:</i>						
– Pre-reform degrees	24.3	24.1	25.4	24.8	22.2	22.0
– First-level degrees		15.1	21.6	23.2	22.9	23.3
– Single-cycle degrees		30.9	43.3	45.1	45.3	46.6
– Second-level, 2-year degrees			25.3	29.2	30.3	29.6

Source: ALMALAUREA.

This reasoning is also applied to the results shown in Tab. 8b: first-level graduates of 2009 have higher socio-cultural origins than graduates of 2000, at least in terms of incidence of less-educated parents; second-level graduates of 2009 have a considerably better profile as compared to the other two cohorts, especially as regards the presence university-educated parents.

Tab. 8b. *Evolution of the cultural level of graduates' family of origin over the 2000-2009 period (percentage values)*

	Pre-reform graduates 2000	1st-level graduates 2009	2nd-level graduates 2009
No qualification	0.6	0.4	0.3
Primary school education	13.3	4.9	4.0
Lower secondary school education	24.6	22.6	17.7
Upper secondary school education	35.7	46.7	42.6
One parent with a university degree	15.3	14.9	18.9
Both parents with a degree	8.9	8.4	14.4
Information not available	1.6	2.2	2.1
Total	100	100	100

Source: ALMALAUREA.

Interestingly, the qualification attained by individuals included in the ALMALAUREA data-base, in most cases (74.2% in 2000; 71.5% in 2009), is the *first* university degree in the family (assuming there are no older brothers or sisters having earned a degree). However, some revealing differences emerge if we break down the findings in terms of field of study (Tab. 8c). A graduate in medicine (a field that includes only single-cycle degrees in the new system) had a one-in-two chance of having at least one graduate parent in 2000, and this chance has increased over the last decade. Graduates in engineering/architecture or law have greater chances, compared to graduates as a whole, of coming from families with at least one university-educated parent (and, at least for the former field, this chance has increased over time). Healthcare profession and physical education graduates feature the most modest socio-cultural background: over 4 degrees out of 5 are the first to be obtained in the family.

Tab. 8c. *Evolution of the cultural level of graduates' family of origin over the 2000-2009 period, by field of study: percentage values of situations in which neither parent has a university degree*

	2000	2002	2004	2006	2008	2009
Science	73.4	73.4	72.4	70.5	70.3	68.6
Engineering/architecture	73.8	72.6	70.0	68.9	67.9	66.9
Medical	53.0	54.8	50.7	47.4	45.0	43.6
Health professions and physical education	80.8	78.4	86.0	83.2	82.7	83.2
Economics and statistics	80.1	78.3	76.9	76.4	74.5	74.8
Socio-political science and psychology	74.1	75.4	72.4	74.0	74.6	74.6
Law	64.3	66.2	63.9	64.0	64.0	63.6
Humanities	77.5	76.3	76.5	76.2	74.7	74.2

Source: ALMALAUREA.

7. Previous Educational Experiences

Graduate's *school background* over the 2000-2009 period shows high stability: little more than half of graduates have received secondary-school education from a classical or a scientific lyceum (*liceo classico*, or *liceo scientifico*) (Tab. 9a). Over half of the remaining graduates come from technical secondary schools. The make-up of graduates offers two – in some ways – contrasting readings.

Tab. 9a. *Evolution of graduates' school background (type of secondary education and mean grade on state exam) over the 2000-2009 period (percentage values)*

	2000	2002	2004	2006	2008	2009
Classical lyceum	17.8	15.9	17.1	16.8	15.8	15.4
Scientific lyceum	34.6	33.7	36.7	36.6	36.2	36.4
Secondary education in pedagogy	7.1	7.4	7.2	7.6	7.8	7.9
Secondary education in foreign languages	5.3	5.1	4.9	5.5	6.1	6.6
Secondary education in arts	2.3	1.8	1.5	1.7	1.9	1.9
Technical secondary education	27.6	27.0	25.5	26.5	27.0	26.6
Vocational secondary education	3.0	3.6	3.4	3.0	2.9	2.8
Other type of secondary education	2.4	2.5	3.3	2.1	2.1	2.2
Information not available	0.0	3.1	0.3	0.3	0.2	0.2
Total	100	100	100	100	100	100
Mean school-leaving grade (on a 60-100 scale)	79.9	79.5	81.2	81.8	82.6	82.8
<i>Classical or scientific lyceum:</i>						
– Pre-reform degrees	52.3	52.2	56.8	56.8	53.8	52.1
– First-level degrees		33.4	47.4	49.1	46.4	46.3
– Single-cycle degrees		78.5	82.0	80.0	79.6	78.3
– Second-level, 2-year degrees			55.7	58.0	60.3	58.4
<i>School-leaving grade (mean)</i>						
– Pre-reform degrees	79.9	80.0	81.0	80.1	78.4	78.0
– First-level degrees		76.4	81.3	82.1	82.0	81.8
– Single-cycle degrees		85.2	86.4	86.3	87.6	87.7
– Second-level, 2-year degrees			82.3	85.3	85.7	85.6

Source: ALMALAUREA.

First of all, there is no doubt that lyceum-based secondary education is strongly over-represented in the graduate population as compared to the undergraduate population; classical and scientific lyceums produce approximately one undergraduate (secondary school-leaving certificate holder) out of three. (Even more over-represented are those having received secondary-school education in foreign languages; but they have little incidence in terms of absolute values). Conversely, and not surprisingly, technical school-leaving certificate holders (who are more numerous than those who have received lyceum-based secondary education) and, to an even greater extent, vocational school-leaving certificate holders are under-represented among graduates. This imbalance reflects the different orientation of Italian secondary schools: lyceums are more oriented to providing a background for university studies; vocational and technical secondary education institutions are more oriented to immediate employment.

Secondly, however, we should keep in mind that, over the last decade, a significant change in the school choices of Italian youth has been taking place: classical and scientific lyceums (especially the latter) have been increasingly recording more enrolments and producing a greater number of school-leavers, to the detriment of – above all – technical institutions. This trend is also reflected in

the make-up of university enrolments: over the last decade, the percentage of lyceum-educated undergraduates has risen, although it suddenly dropped by some percentage points between 2000 and 2001, maybe as a consequence of the start of the “3+2” university curricula (Galeazzi 2010). In general, steadiness in the make-up of graduates by secondary school background may be read as a sign of improved academic performance of non-lyceum-educated school-leavers, who maintain their incidence among graduates notwithstanding their lower incidence among secondary-school diploma holders.

The second part of Tab. 9a provides a more-detailed analysis and highlights some important differences among the various types of degree programmes. The incidence of lyceum-educated graduates has remained substantially unchanged among pre-reform graduates. It is lower in first-level programmes, suggesting greater access to these programmes among non-lyceum-educated undergraduates. Among second-level graduates a higher incidence of former lyceum students is observed, and their weight is overwhelming (around 80%) in single-cycle programmes.

The final grade attained on the school-leaving state exam, upon completion of secondary education studies, is an indicator of school-leavers’ actual level of competence. The fact that the average grade is higher among second-level graduates is an expected outcome, reflecting the fact that more skilled students are, presumably, more likely to enrol in longer degree programmes. The fact that the average grade tends to increase over time can be interpreted as an improvement of the level of education of freshmen and graduates-to-be (and may also depend on the adoption of more effective selection criteria by the university system), but it may in part merely reflect grade inflation.

In order to thoroughly understand the reason for the low incidence of lyceum-educated school-leavers and the school-leaving grade recorded among the first-level graduates of 2002, we must remember that this cohort is made up of pure graduates and hybrid graduates in equal measure (see section 5).

Tab. 9b. *Evolution of graduates’ school background (type of secondary education and mean grade on state exam) over the 2000-2009 period (percentage values)*

	Pre-reform graduates 2000	1st-level graduates 2009	2nd-level graduates 2009
Classical lyceum	17.8	12.2	20.3
Scientific lyceum	34.6	34.1	42.5
Secondary education in pedagogy	7.1	8.1	5.5
Secondary education in foreign languages	5.3	7.5	5.4
Secondary education in arts	2.3	2.2	1.2
Technical secondary education	27.6	30.1	20.7
Vocational secondary education	3.0	3.5	1.6
Other type of secondary education	2.4	2.1	2.6
Information not available	0.0	0.2	0.2
Total	100	100	100
School-leaving grade (mean)	79.9	81.8	86.0

Source: ALMALAUREA.

Tab. 9b compares pre-reform graduates of 2000 and post-reform graduates of 2009. Graduates from first-level programmes display a lower profile, in terms of secondary school background, compared to graduates of 2000 (especially as regards the low incidence of school-leavers from classical lyceums), whereas second-level programmes show a higher profile, as could be expected. As previously argued in relation to social background (see section 6), the introduction of short programmes has provided greater opportunities to engage in academic studies to those with weaker school backgrounds, while the attainment of higher university qualifications has remained a prerogative of school-leavers with secondary education from classical and scientific lyceums (generally having higher social backgrounds and higher academic performance).

A particularly “high” social background characterises graduates in medicine and law (Tab. 9c), although the latter group experiences a drop in lyceum-educated students over time. Conversely, former lyceum students are relatively less present among graduates in healthcare professions and physical education or economics and statistics, as well as – to a lesser extent – in the humanities or socio-political science and psychology.

Tab. 9c. *Evolution of graduates’ school background over the 2000-2009 period: incidence in percentage terms of school leavers from classical and scientific lyceums by field of study*

	2000	2002	2004	2006	2008	2009
Science	63.2	61.3	65.0	64.7	64.2	64.6
Engineering/architecture	54.6	53.1	60.6	61.2	60.2	60.0
Medical	80.5	74.6	78.2	81.6	84.6	85.2
Health professions and physical education	31.7	26.3	33.0	32.3	35.6	36.5
Economics and statistics	39.5	42.1	43.7	42.6	41.9	42.3
Socio-political science and psychology	49.9	48.3	55.1	53.0	48.5	47.8
Law	70.1	65.0	67.8	65.8	64.0	63.5
Humanities	45.6	45.6	46.8	47.2	45.4	44.4

Source: ALMALAUREA.

An expected effect of the “3+2” reform is the increase in the share of graduates who pursue a programme after previous university experiences (Tables 10a and 10b): it is “expected” in that, obviously, having a previous university experience is a prerequisite for enrolment in a second-level programme. If we examine the evolution of this factor over time, and by type of degree programme, there emerge a number of interesting findings. Firstly, we observe a high presence of three-year graduates with previous university experiences in 2002, a year characterised by a significant incidence of “hybrid” graduates; in the following years, this presence drops by half but remains significant. Secondly, among second-level graduates, the presence of those having previous university experiences becomes structural only in 2006, while in 2002 and 2004 there are graduates who report that they have *not* had previous university experiences. Thirdly, the presence of students with previous university experiences has increased, over time, in single-cycle programmes, presumably due to the fact these programmes have absorbed many students who were initially enrolled at a first-level programme, waiting to pass an admission test for a single-cycle programme. In brief, once again, the empirical framework is complicated due to interactions between old and new systems. Nevertheless, if we compare pre-reform graduates of 2000 and first-cycle graduates of 2009 (Tab. 10b), there are no noteworthy variations.

Tab. 10a. *Evolution of the presence of previous university experiences among graduates over the 2002-2009 period (percentage values)*

	2002	2004	2006	2008	2009
University experiences completed	4.9	3.7	9.8	24.4	27.7
University experiences not completed	10.1	9.3	8.9	8.5	8.2
No previous university experience	82.8	85.6	80.2	66.3	63.1
Information not available	2.1	1.4	1.0	0.8	0.9
Total	100	100	100	100	100
<i>With previous university experiences:</i>					
– Pre-reform degrees	12.3	9.0	9.3	10.0	10.3
– First-level degrees	37.6	18.2	13.8	14.6	14.7
– Single-cycle degrees	6.5	9.8	10.8	15.5	13.6
– Second-level, 2-year degrees	85.7	86.2	99.5	99.5	99.2

Source: ALMALAUREA.

Tab. 10b. *Evolution of the presence of previous university experiences among graduates over the 2002-2009 period. (percentage values)*

	Pre-reform graduates 2000	1st-level graduates 2009	2nd-level graduates 2009
University experiences completed	3.2	2.9	78.6
University experiences not completed	9.1	11.8	1.8
No previous university experience	85.6	84.4	18.7
Information not available	2.1	0.9	0.8
Total	100	100	100

Source: ALMALAUREA.

Tables 11a and 11b show some findings relating to graduates' enrolment age. Usually we think of a university freshman as a school-leaver aged 19 or 20. Obviously, the introduction of second-level programmes has complicated the framework, in that the enrolment in this kind of programme can take place only after the attainment of a first-level degree. ALMALAUREA defines enrolment age within 19 years as "regular"; for second-level two-year programmes regular age at enrolment has been defined as 22 years (the theoretical ages at which, respectively, pre-university school cycles and university first-level cycles are completed).

Age at enrolment is a characteristic available in the ALMALAUREA data-base only since 2004. Over the 2004-2009 period, graduates with an "irregular" enrolment age (i.e., enrolled at least 2 years above the aforesaid theoretical ages) were one out of five. "Irregular" graduates are almost absent among graduates from single-cycle programmes. As regards first-level and second-level programmes, we observe an appreciable presence of individuals – among the initial cohorts of graduates – who enrolled at university at least 2 years above the theoretical age of, respectively, school-leavers and first-level graduates. This is probably due to the fact that many individuals who had not undertaken university studies (or had dropped out of them, or had completed them many years earlier) decided to enrol in a programme after the introduction of short curricula (3 years, or 2 years for those who held a pre-reform degree and wished to enrol in a second-level two-year programme). This effect is, however, disappearing, as testified by the gradual increase in the percentage of "regular" ages at enrolment.

Tab. 11a. *Evolution of graduates' enrolment age over the 2004-2009 period (percentage values)*

	2004	2006	2008	2009
Regular enrol. / with 1 year delay	81.7	81.4	79.0	77.6
2 or more years delay	18.3	18.6	21.0	22.4
Total	100	100	100	100
<i>Regular enrol. / with 1 year delay:</i>				
– Pre-reform degrees	89.4	89.0	85.9	85.5
– First-level degrees	68.8	78.6	79.0	79.4
– Single-cycle degrees	95.4	94.9	92.3	92.7
– Second-level, 2-year degrees	54.9	67.5	73.8	68.8

Source: ALMALAUREA.

Tab. 11b. *Evolution of graduates' enrolment age over the 2004-2009 period (percentage values)*

	Pre-reform graduates 2000	1st-level graduates 2009	2nd-level graduates 2009
Regular enrolment / with 1 year delay	89.4	79.4	74.1
2 or more years delay	10.6	20.6	25.9
Total	100	100	100

Source: ALMALAUREA.

8. Degree Completion Times

Several indicators suggest improvement of students' performances as regards *degree completion times* over the 2000-2009 period. First of all, the number of students completing their studies far above the prescribed graduation time (3 or more extra years) has dropped from 55.7% in 2000 to 22.6% in 2009 (Tables 12a and 12b). Conversely, the percentage of students completing their university studies within regulation time, or no more than one year after due time, has increased (from 11.0% to 39.1% and from 25.5% to 65.1%, respectively). Clearly, this trend is partly due to the prescribed duration of degree programmes, which is considerably shorter as compared to pre-reform degree programmes (except for single-cycle degree programmes, whose duration has remained practically unaltered). For this reason it is worth analysing the evolution of time to graduation separately for each type of programme.

Tab. 12a. *Evolution of time to graduation and duration of degree programmes in the 2000-2009 period (percentage and mean values)*

	2000	2002	2004	2006	2008	2009
Students graduating within regulation time	11.0	22.0	31.7	34.8	39.4	39.1
1 year after prescribed graduation time	14.5	15.6	19.9	22.4	24.2	26.0
2 years after prescribed graduation time	18.7	15.5	14.2	14.9	11.5	12.3
3 or more years	55.7	46.9	34.1	27.9	24.8	22.6
Total	100	100	100	100	100	100
<i>3 or more years after graduation time:</i>						
– Pre-reform degrees	55.7	53.4	49.3	62.4	95.3	99.0
– First-level degrees		11.1	10.0	11.4	18.6	21.2
– Single-cycle degrees		22.5	19.4	23.4	16.7	17.5
– Second-level, 2-year degrees			14.7	1.7	1.2	2.5
<i>Programme duration (mean n. of years):</i>						
– Pre-reform degrees	7.4	7.7	7.7	8.7	11.1	12.4
– First-level degrees		3.8	3.9	4.2	4.4	4.5
– Single-cycle degrees		6.7	7.0	7.1	6.7	6.7
– Second-level, 2-year degrees			3.3	2.3	2.6	2.7
<i>Delay at graduation (mean n. of years):</i>						
– Pre-reform degrees	2.7	3.0	2.9	3.9	6.3	7.6
– First-level degrees		0.7	0.7	0.9	1.1	1.2
– Single-cycle degrees		1.2	1.1	1.3	1.0	1.1
– Second-level, 2-year degrees			1.2	0.2	0.3	0.4
<i>Delay index (mean):</i>						
– Pre-reform degrees	0.6	0.7	0.7	0.9	1.5	1.8
– First-level degrees		0.2	0.3	0.3	0.4	0.4
– Single-cycle degrees		0.2	0.2	0.2	0.2	0.2
– Second-level, 2-year degrees			0.6	0.1	0.1	0.2
<i>Age at graduation (mean):</i>						
– Pre-reform degrees	28.4	28.3	27.8	28.8	31.4	32.9
– First-level degrees		29.6	26.5	25.8	26.0	26.1
– Single-cycle degrees		26.2	26.5	26.7	26.5	26.5
– Second-level, 2-year degrees			29.5	28.3	27.0	27.3

Source: ALMALAUREA.

University completion times (in years) and the delay in graduation (in years⁷) of pre-reform students have worsened over time; however, this depends to a considerable extent on the lack of new enrolments in these programmes: graduates from these programmes are increasingly “long-term” students who have been enrolled in their programmes for quite some time. It should be highlighted that, in 2000, over half of graduates from these programmes completed their studies at least 3 years above the prescribed times and that the delay in graduation was on average 2.7 years.

Among first-level graduates, time-to-graduation tends to worsen over time: mean programme duration increased from 3.8 years in 2002 to 4.5 years in 2009, and the mean delay increased from 0.7 to 1.2 years. Nevertheless, in the first years of the period considered there were several hybrid graduates and pure graduates were necessarily students who had rapidly completed their studies. The worsening of time-to-graduation observed for three-year programmes over the last few years could be mirrored, in the future, in second-level degree programmes, as these programmes start to stabilise and “slower” students start to complete their degree requirements.

To make degree programmes more comparable, a delay index – corresponding to the ratio between the delay time to graduation and prescribed duration of degree programmes – may be taken into account. Such an index standardizes the delay *vis-à-vis* the prescribed duration of degree programmes. The mean value of the index was 0.6 in 2000 (only pre-reform programmes) and decreased considerably in 2009 to 0.4, 0.2 and 0.2 respectively for first-level, single-cycle and two-year second-level programmes.

Despite increased students’ age at enrolment and greater duration of long degree programmes (*at least* 5 years: 3+2, to be exact), the mean age of graduates has decreased. In particular: pre-reform graduates normally completed their studies at an average age of 28.4 years, in 2009 second-level graduates completed their studies, on average, at the age of 27.3 (second-level, two-year programmes) and 26.5 (single-cycle programmes). However, it is worth mentioning that second-level degree programmes are still not stabilised.

Tab. 12b. *Evolution of time to graduation and duration of degree programmes in the 2000-2009 period (percentage and mean values)*

	Pre-reform graduates 2000	1st-level graduates 2009	2nd-level graduates 2009
Students graduating within regulation time	11.1	39.1	48.0
1 year after prescribed graduation time	14.5	25.1	34.9
2 years after prescribed graduation time	18.7	14.6	11.3
3 years after prescribed graduation time	16.6	9.2	3.4
4 years after prescribed graduation time	12.5	5.6	1.1
5 or more years	26.6	6.4	1.4
Total	100	100	100
University career duration (years)	7.4	4.5	3.6 [6.7 / 2.7]
Graduation delay (years)	2.7	1.2	0.5 [1.1 / 0.4]
Delay index	0.6	0.4	0.2 [0.2 / 0.2]
Age at graduation	28.4	26.0	27.1 [26.5 / 27.3]

Source: ALMALAUREA.

Note: The values in square brackets refers to graduates of single-cycle Masters’ degree programmes or second-level (two-year) degree programmes, respectively.

⁷ The delay value includes the number of months and days between the conclusion of the academic year (April 30) and students’ graduation date.

9. Engagement in University Studies

Assessing the evolution of students' level of attendance of educational activities is not an easy task, due to changes in the operational definitions adopted by ALMALAUREA. In the years 2000 and 2002 graduates were asked to indicate their level of attendance of lectures according to the following response categories: no attendance / intermittent attendance of some lectures / regular attendance of some lectures / regular attendance of all lectures. In subsequent years the classification pattern was different: attendance of less than 25% of lectures / 25% to 50% of lectures / 50% to 75% of lectures / over 75% of lectures. Other conditions being equal, the two extreme categories of the new classification are wider than the corresponding categories in the previous response scheme.

Moreover, data shows that the first cohorts of post-reform graduates, at least in first-level and single-cycle programmes, have considerably higher class attendance levels than their successors.

Overall data indicates that engagement levels are very unlikely to have worsened significantly during the last decade (Tables 13a and 13b). In 2009, two-thirds of first-level graduates indicated that they had attended at least 75% of their courses, and three-quarters of second-level graduates affirmed the same; particularly low levels of class attendance (less than half of lectures) involve only very marginal shares of graduates.

Tab. 13a. *Evolution of graduates' attendance levels of educational activities over the 2000-2009 period (percentage values)*

	2000	2002	2004	2006	2008	2009
No attendance Less than 25% of courses	2.3	2.3	5.8	6.2	6.3	6.4
Occasional attendance to only some courses 25-50%	6.0	5.3	8.3	8.4	7.6	7.5
Regular attendance to only some courses 50-75%	35.1	28.1	19.7	20.3	18.8	18.8
Regular attendance to all courses >75% of courses	56.1	63.0	63.9	64.0	65.7	66.0
Information not available	0.6	1.3	2.3	1.2	1.4	1.3
Total			100	100	100	100
<i>Regular attendance to all courses >75% of courses:</i>						
– Pre-reform degrees	56.1	60.2	55.1	49.1	40.9	38.9
– First-level degrees		84.5	78.3	69.2	67.0	66.7
– Single-cycle degrees		93.2	85.9	84.7	78.5	73.0
– Second-level, 2-year degrees			78.6	81.4	74.1	72.0

Source: ALMALAUREA.

Tab. 13b. *Evolution of graduates' attendance levels of educational activities over the 2000-2009 period (percentage values)*

	Pre-reform graduates 2000	1st-level graduates 2009	2nd-level graduates 2009
No attendance Less than 25% of courses	2.3	5.9	4.8
Occasional attendance to only some courses 25-50%	6.0	6.9	5.9
Regular attendance to only some courses 50-75%	35.1	19.2	16.0
Regular attendance to all courses >75% of courses	56.1	66.7	72.2
Information not available	0.6	1.3	1.1
Total	100	100	100

Source: ALMALAUREA.

A study abroad period during university career is an opportunity for students' educational and personal development allowing them to practice a foreign language, to learn about different cultures, to widen their perspectives about their own culture, as well as to start social relationships at an international level. Despite the several exchange programmes and initiatives fostering internationalisation, "only" 17.9% of graduates of the class of 2000 had joined experiences of study abroad (Tables 14a and 14b). In subsequent years the share of graduates participating in study abroad programmes fell to 12.2% in 2009.

Normally students may apply for exchange programmes from the second year onwards; probably, the "3+2" reform – introducing shorter university careers as compared to previous degree programmes lasting at least four years – has discouraged students' participation in such programmes. This effect has been particularly marked in three-year programmes, even if participation in such programmes has recently increased. Periods of study abroad are more widespread in single-cycle and second-level, two-year programmes. However, students' participation levels have not (yet?) reached the level that was typical of the pre-reform system.

Tab. 14a. *Evolution of graduates' experience of study abroad over the 2000-2009 period (percentage values)*

	2000	2002	2004	2006	2008	2009
Study abroad experiences	17.9	16.1	11.0	10.3	11.7	12.2
No experience	79.1	80.0	87.6	87.9	87.9	87.2
Information not available	3.0	3.8	1.4	1.8	0.4	0.5
Total	100	100	100	100	100	100
<i>Study abroad experiences:</i>						
– Pre-reform degrees	17.9	17.3	13.5	11.9	11.0	10.9
– First-level degrees		6.8	6.6	8.5	10.5	10.6
– Single-cycle degrees		7.7	9.2	11.3	14.6	16.3
– Second-level, 2-year degrees			12.4	15.1	14.7	15.5

Source: ALMALAUREA.

Tab. 14b. *Evolution of graduates' experience of study abroad over the 2000-2009 period (percentage values)*

	Pre-reform graduates 2000	1st-level graduates 2009	2nd-level graduates 2009
Study abroad experiences	17.9	10.5	15.7
No experience	79.1	89.1	83.8
Information not available	3.0	0.4	0.5
Total	100	100	100

Source: ALMALAUREA.

Changes in the figures of study experiences abroad have affected the various fields of study differently (Table 14c). In 2000 graduates in the humanities (especially students of modern foreign languages) or socio-political science and psychology were more likely to have studied abroad (29.9% and 23.9% respectively). In 2009 – despite a decline (19.8%) – the humanities continued to express their primacy, whereas socio-political science (12.3%) was outstripped by medicine and was equalled by economics and statistics. The weakness registered by socio-political science and psychology might be due to the fact that this subject area attracted a greater share of students in first-level programmes over the last decade.

Table 14c. *Evolution of graduates' experience of study abroad over the 2000-2009 period by field of study (percentage values)*

	2000	2002	2004	2006	2008	2009
Science	7.8	9.6	6.1	5.9	7.3	8.0
Engineering /Architecture	13.0	13.1	8.3	8.6	10.3	11.2
Medical	11.0	10.0	8.6	11.7	14.7	16.9
Health Profession and Physical Education	6.3	2.5	2.0	2.2	3.4	3.1
Economics and Statistics	14.9	14.3	10.0	9.3	11.5	12.3
Socio-political science and psychology	23.9	20.6	13.6	11.0	12.0	12.3
Law	10.5	10.3	6.9	6.1	8.2	9.6
Humanities	29.9	26.3	19.6	18.6	19.7	19.8

Source: ALMALAUREA.

In-house training experiences and internships during university careers are valuable educational opportunities for students, allowing them to approach the labour market, acquire skills that cannot be developed in the university system, as well as develop relationships within the perspective of a future inclusion in the marketplace. Such experiences are now more frequent as a result of curricular reform. In the year 2000 only 14.0% of graduates had performed an internship experience that was officially acknowledged in their university career, but the figure increased to 54.2% in 2009 (Tables 15a and 15b). Internship periods are more frequent in the curricula of first-level graduates than in those of second-level graduates; this difference adequately reflects the employment-oriented nature of programmes attended by first-level students.

However, a decrease in the number of university internship experiences has been registered over the last few years in all post-reform programmes. This may depend on several factors: decreased investments by universities in the development of contacts with the labour market; a drop in employers' ability/will to host apprentices; a decreasing tendency of "slower" students to take advantage of these training opportunities; the gradual disappearance of students having performed working experiences accredited as internship educational activities for purposes of degree completion.

Tab. 15a. *Evolution of graduates in-house training and internship experiences over the 2000-2009 period (percentage values)*

	2000	2002	2004	2006	2008	2009
Accredited training and internship experiences	14.0	24.4	34.8	44.6	53.3	54.2
No experience	80.6	72.3	64.0	53.7	45.8	44.7
Information not available	5.4	3.3	1.2	1.7	0.9	1.2
Total	100	100	100	100	100	100
Incidence of internship experiences performed within university on the total of training and internships	25.2	18.7	20.7	21.1	21.9	20.0
Accredited training and internship experiences:						
– Pre-reform degrees	14.0	18.9	17.6	15.7	14.7	13.2
– First-level degrees		66.6	62.5	59.0	60.2	60.3
– Single-cycle degrees		78.3	68.9	68.1	54.9	46.3
– Second-level, 2-year degrees			62.9	54.8	54.9	53.2
Incidence of internships performed within the university system:						
– Pre-reform degrees	25.2	18.9	15.6	17.9	19.8	19.5
– First-level degrees		17.5	20.9	19.6	20.7	19.1
– Single-cycle degrees		30.3	56.4	46.4	38.7	33.3
– Second-level, 2-year degrees			18.3	23.3	22.3	20.2

Source: ALMALAUREA.

Tab. 15b. *Evolution of graduates in-house training and internship experiences over the 2000-2009 period (percentage values)*

	Pre-reform graduates 2000	1st-level graduates 2009	2nd-level graduates 2009
Accredited training and internship experiences	14.0	60.3	51.7
No experience	80.6	38.6	47.3
Information not available	5.4	1.1	1.0
Total	100	100	100

Source: ALMALAUREA.

Graduates may enter the labour market through university-mediated internship experiences, but also through direct approaches to the marketplace. In fact, the number of graduates having working experiences during their university career has risen. ALMALAUREA sorts these students into two categories: “studying workers” (students who carried out an ongoing full-time working activity for at least half of their university careers) and “working students” (students carrying out remunerated temporary and part-time working activities). The number of graduates belonging to the first category dropped over time (and its importance has always been limited), while the second category has undergone considerable growth. In particular, the incidence of graduates who have been *above all* students but have performed a working activity during their studies increased from 49.0% in 2000 to 64.2% in 2009 (Table 16a). Overall, the incidence of graduates completing their studies without performing any working activity decreased from 36.8% to 24.4%.

Working experiences may provide useful contacts with the job market, but they are also an obstacle to regular university careers; for this reason, the improvement in time-to-graduation is considerably important in view of the increase of students’ needs to perform working activities. Working stu-

dents are more numerous among first-level and second-level two-year-programme graduates, while their incidence is meagre among single-cycle graduates, who can afford studying at university without the need to work, also thanks to their more privileged social standing.

Tab. 16a. *Evolution of graduates' working experiences during their university career over the 2000-2009 period (percentage values)*

	2000	2002	2004	2006	2008	2009
Studying workers	13.1	8.1	7.3	8.7	10.1	10.3
Working students	49.0	51.5	67.3	65.9	64.5	64.2
No working experience	36.8	36.6	24.7	24.3	24.4	24.4
Information not available	1.1	3.8	0.8	1.1	0.9	1.1
Total	100	100	100	100	100	100
<i>No working experience:</i>						
– Pre-reform degrees	36.8	36.3	21.6	19.4	15.4	13.6
– First-level degrees		37.3	28.8	26.2	24.3	24.2
– Single-cycle degrees		67.0	47.4	43.3	42.1	40.1
– Second-level, 2-year degrees			19.7	25.0	25.7	24.3

Source: ALMALAUREA.

Tab. 16b *Evolution of graduates' working experiences during their university career over the 2000-2009 period (percentage values)*

	Pre-reform graduates 2000	1st-level graduates 2009	2nd-level graduates 2009
Studying workers	13.1	10.3	7.7
Working students	49.0	64.5	63.5
No working experience	36.8	24.2	27.7
Information not available	1.1	1.1	1.0
Total	100	100	100

Source: ALMALAUREA.

In new, post-reform curricula, the drafting of a final dissertation (or the preparation of other forms of “final exams”) is included among the university credit-accruing activities; the number of training credits may vary depending on the university or the degree programme. This is an important consideration, since preparing a dissertation was a mandatory in the pre-reform system even though there was no time specifically allotted for it. It can be affirmed therefore, that the excessive duration of pre-reform university programmes was due to the additional time necessary for writing up dissertations. The incorporation of the dissertation/final test in the curriculum has probably contributed to improve time-to-graduation in the “3+2” degree programmes.

In any case, the time spent by students on preparing their dissertations has decreased; if in the year 2000 students spent on average 9 months on their dissertations, with the new system their commitment has considerably decreased to only 4 months for three-year programmes (where the final dissertation can be very different and less effort-demanding than in the pre-reform system), to 7 months in two-year programmes and 8 months in single-cycle programmes (Table 17).

Tab. 17. *Evolution of the number of months spent by graduates to prepare their final dissertation over the 2000-2009 period (mean values)*

	2000	2002	2004	2006	2008	2009
Overall	9.4	8.3	7.0	6.3	5.9	5.8
– Pre-reform degrees	9.4	8.7	8.6	8.9	9.3	9.3
– First-level degrees		4.9	4.0	4.1	4.3	4.3
– Single-cycle degrees		8.5	8.0	8.7	8.5	8.2
– Second-level, 2-year degrees			7.5	7.3	7.5 {	7.3

Source: ALMALAUREA.

10. Satisfaction with University Careers

Post-reform graduates are more satisfied with their university studies than their pre-reform colleagues. Post-reform graduates express more positive judgments concerning their university careers as a whole: from 80.7% in 2000 to 86.7% in 2009 (Tables 18a and 18b). Moreover, such improvement is mainly concentrated in the “top” level of their responses: extremely positive judgments have increased in the same time span, from 27.3% to 35.1%. Positive responses are even more widespread among second-level graduates.

Tab. 18a. *Evolution of graduates’ overall judgment of their university careers over the 2000-2009 period (percentage values)*

	2000	2002	2004	2006	2008	2009
Extremely negative judgment	2.2	1.5	1.3	1.3	1.4	1.5
More negative than positive judgment	16.4	12.9	10.1	10.1	10.6	10.7
More positive than negative judgment	53.4	53.1	50.9	50.7	50.9	51.6
Extremely positive judgment	27.3	30.5	36.3	36.5	35.8	35.1
Information not available	0.7	2.0	1.4	1.4	1.3	1.1
Total	100	100	100	100	100	100
<i>Positive judgment:</i>						
– Pre-reform degrees	80.7	84.1	87.1	86.5	84.3	83.4
– First-level degrees		79.8	87.4	87.0	86.3	86.2
– Single-cycle degrees		89.9	81.7	84.8	87.2	87.2
– Second-level, 2-year degrees			91.2	91.6	88.8	88.3

Source: ALMALAUREA.

Tab. 18b. *Evolution of graduates’ overall judgment of their university careers over the 2000-2009 period (percentage values)*

	Pre-reform graduates 2000	1st-level graduates 2009	2nd-level graduates 2009
Extremely negative judgment	2.2	1.5	1.4
More negative than positive judgment	16.4	11.2	9.5
More positive than negative judgment	53.4	52.4	50.4
Extremely positive judgment	27.3	33.8	37.7
Information not available	0.7	1.1	1.1
Total	100	100	100

Source: ALMALAUREA.

Graduates’ assessment of their relationships with teachers is almost identical (Tables 19a and 19b), even if their corresponding level of satisfaction is slightly lower than the level of satisfaction with their university careers as a whole. In the year 2000 positive judgments accounted for 72.7% of all evaluations (19.0% of which fell within the category of absolute satisfaction), and in 2009 positive judgments increased to 84.3% (22.2%). Relationships with university teachers are assessed positively above all by second-level, two-year programme graduates.

Tab. 19a. *Evolution of graduates' overall judgment of their relationships with teachers over the 2000-2009 period (percentage values)*

	2000	2002	2004	2006	2008	2009
Extremely negative judgment	3.5	2.0	1.6	1.5	1.2	1.2
More negative than positive judgment	22.8	19.4	15.7	14.7	13.4	13.0
More positive than negative judgment	53.7	59.4	60.6	61.1	61.8	62.1
Extremely positive judgment	19.0	17.2	20.6	20.9	22.0	22.2
Information not available	1.0	2.0	1.5	1.7	1.7	1.5
Total	100	100	100	100	100	100
<i>Positive judgment:</i>						
– Pre-reform degrees	72.7	76.2	78.8	77.7	77.1	78.2
– First-level degrees		79.0	85.9	83.7	84.0	84.3
– Single-cycle degrees		79.1	71.3	75.5	78.3	76.8
– Second-level, 2-year degrees			90.4	89.8	88.1	87.9

Source: ALMALAUREA.

Tab. 19b. *Evolution of graduates' overall judgment of their relationships with teachers over the 2000-2009 period (percentage values)*

	Pre-reform graduates 2000	1st-level graduates 2009	2nd-level graduates 2009
Extremely negative judgment	3.5	1.1	1.2
More negative than positive judgment	22.8	13.1	12.0
More positive than negative judgment	53.7	63.2	61.5
Extremely positive judgment	19.0	21.0	24.1
Information not available	1.0	1.5	1.3
Total	100	100	100

Source: ALMALAUREA.

ALMALAUREA has submitted some questions to graduates in order to assess their level of satisfaction with their university careers, through a more indirect approach. In particular, students were asked to imagine that they could go back in time and make different decisions: would their choice be the same as the one already made, or would they opt for a different programme and/or university? More than two-thirds of graduates confirmed their initial choice (Tables 20a and 20b). About one graduate out of ten would opt for another degree programme, but choose the same university, and one graduate out of ten would do the opposite, i.e., change their university but opt for the same degree programme. A small share of graduates (6-7%) would make a more radical choice, changing both university and degree programme, and an even slighter share would *completely* give up their university career. No significant differences have been registered over time (however, these questions have been submitted in their current form only since 2004).

Tab. 20a. *Evolution of graduates' willingness to confirm their university degree programme choice (if they could go back in time), over the 2004-2009 period (percentage values)*

	2004	2006	2008	2009
Same programme, same university	68.4	67.7	69.0	68.4
Different programme, same university	11.5	11.1	9.9	9.9
Same programme, different university	10.3	11.4	10.9	11.3
Different programme, different university	6.8	6.6	6.5	6.6
No enrolment at any university	1.7	1.7	2.1	2.4
Information not available	1.3	1.4	1.5	1.3
Total	100	100	100	100
<i>Same programme, same university:</i>				
– Pre-reform degrees	67.6	65.2	62.5	60.8
– First-level degrees	69.4	67.7	67.2	66.3
– Single-cycle degrees	68.3	70.7	71.6	71.2
– Second-level, 2-year degrees	72.9	75.2	76.4	74.4

Source: ALMALAUREA.

Tab. 20b. *Evolution of graduates' willingness to confirm their university degree programme choice (if they could go back in time), over the 2004-2009 period (percentage values)*

	Pre-reform graduates 2000	1st-level graduates 2009	2nd-level graduates 2009
Same programme, same university	68.4	66.3	73.7
Different programme, same university	11.5	11.8	6.2
Same programme, different university	10.3	11.6	10.8
Different programme, different university	6.8	7.2	5.1
No enrolment at any university	1.7	1.9	3.0
Information not available	1.3	1.2	1.2
Total	100	100	100

Source: ALMALAUREA.

This section ends with some findings concerning future postgraduate studies. Do graduates intend to further their postgraduate studies and expand their training credentials? About two-thirds of graduates state that they intend to continue their studies, and the figures do not reveal any important variations over time, at least at an initial analysis (Tables 21a and 21b). Some significant differences emerge when attention is focused on each type of degree programme.

Pre-reform graduates are progressively less intent on furthering their specialisation; this trend is predictable, since their delay to graduation is increasingly significant over time. It is indeed somehow surprising that almost half of pre-reform graduates (44.8%) are still willing to further their postgraduate training.

One of the most unexpected consequences of the “3+2” reform is the intention of three-year graduates to further their training through educational qualification processes instead of directly entering the job market on a full time basis. After the “abnormal” cohort of 2002 – characterised by the presence of many hybrid graduates – first-level graduates are even more inclined (76.8% in 2009) than pre-reformers to pursue postgraduate studies (Table 21a). However, it must be pointed out that, on the whole, the intention to engage in postgraduate studies (and therefore, somehow to avoid enter-

ing the labour market completely) – a “flaw” attributed by many observers to the “3+2” reform – was already (and equally) widespread among pre-reform graduates.

There is a significant gap among graduates of second-level degree programmes: graduates of single-cycle programmes are extremely determined (and very often obliged *de facto*) to further their studies (69.8% in 2009), while only a minority of second-level, two-year programme graduates (41.3%) intends to continue on to postgraduate studies.

Over time graduates have also changed the *orientation* of their postgraduate studies. If in 2000 graduates mainly opted for postgraduate programmes/advanced training programmes, schools of postgraduate studies and traineeship/professional training experiences, second-level graduates of 2009 are less inclined to participate in postgraduate programmes and are more determined to further their studies through advanced training schools and Ph.D programmes (Tab. 21b). First-level graduates who intend to engage in further studies focus their options mainly on another degree programme (presumably, second-level two-year programmes).

Tab. 21a. *Evolution of graduates’ intention to engage in postgraduate studies over the 2000-2009 period (percentage values)*

	2000	2002	2004	2006	2008	2009
Intention to engage in postgraduate studies	64.6	58.8	63.1	66.6	64.9	64.3
– Other degree programme	1.9	3.5	12.3	36.8	37.8	37.5
– Ph.D programme	6.8	6.9	5.8	4.2	4.1	4.4
– School of postgraduate studies	11.7	13.4	16.9	6.5	6.7	5.9
– Postgraduate programmes /advanced training programmes	20.0	18.5	16.4	11.0	9.1	9.5
– Internship/professional training	11.3	7.5	5.5	3.6	3.3	3.2
– Other activities with scholarships	3.3	2.4	2.0	1.0	0.7	0.6
– Other professional training activity	9.2	6.2	3.9	3.2	3.0	3.0
No intention to pursue further studies	33.6	38.8	36.2	32.7	34.4	36.0
Information not available	1.8	2.4	0.7	0.7	0.6	0.6
Total	100	100	100	100	100	100
<i>Intention to engage in postgraduate studies:</i>						
– Pre-reform degrees	64.6	58.4	55.4	52.0	46.9	44.8
– First-level degrees		62.0	76.9	79.3	76.9	76.8
– Single-cycle degrees		60.4	78.8	75.8	70.4	69.8
– Second-level, 2-year degrees			46.5	43.8	42.9	41.3

Source: ALMALAUREA.

Tab. 21b. *Evolution of graduates' intention to engage in postgraduate studies over the 2000-2009 period (percentage values)*

	Pre-reform graduates 2000	1st-level graduates 2009	2nd-level graduates 2009
Intention to engage in postgraduate studies	64.6	76.9	47.6
– <i>Other degree programme</i>	1.9	62.4	1.8
– <i>Ph.D programme</i>	6.8	0.5	11.2
– <i>School of postgraduate studies</i>	11.7	2.1	12.6
– <i>Postgraduate programme/advanced training programme</i>	20.0	8.3	10.9
– <i>Internship/professional training</i>	11.3	0.7	6.3
– <i>Other activities with scholarships</i>	3.3	0.2	1.4
– <i>Other professional training activity</i>	9.2	2.2	3.1
No intention to pursue further studies	33.6	22.6	51.8
Information not available	1.8	0.6	0.7
Total	100	100	100

Source: ALMALAUREA.

11. Summary and Conclusions

The aim of this report is to provide an exhaustive overview of the evolution of a specific “product” of the Italian university system, i.e., *graduates* in the 2000-2009 period. This stretch of time started before the implementation of the “3+2” reform, in compliance with the Bologna Process, that has profoundly affected university curricula over the past decade. The analysis mainly focuses on the *type of university programme* (sections 2 and 3 based on ministerial data). The ALMALAUREA database (section 4) has been employed for the remaining part of the analysis, starting with the assessment of “hybrid” graduates (section 5), who earned their degrees in the new, post-reform system but who started their studies within the framework of the old, pre-reform system. Graduates have also been described in terms of social background (section 6), secondary school background and previous educational experiences (section 7), as well as time-to-graduation (section 8) and other significant aspects of their university careers (sections 9 and 10).

It has been stressed that the *transformation of graduates’ make-up* was far from being an instantaneous process; on the contrary it has been a gradual process that has required several years before reaching stability, and indeed may have yet to do. The incidence of new “3+2” programme graduates has steadily increased over the decade. Only in 2005, however, did post-reform graduates (i.e., first-level, second-level and single-cycle graduates) start accounting for over half of all graduates. In 2007 various types of second-level graduates were still *fewer* than pre-reform graduates. Only in 2008 did the number of post-reform second-level graduates exceeded that of pre-reform ones.

Beyond the make-up of graduates, it may be said that the “3+2” reform has led an increasing number of students to complete their university studies (or – at least – it has involved the awarding of a greater number of university credentials). If in 2000 the number of university qualifications (including university diplomas) was 161 thousand, in 2005 and 2006 the number of university qualifications obtained by students was more than 300 thousand. The number of graduates reaching the second-level (pre-reform, second-level two-year, or single-cycle programmes) provides a less unambiguous framework: in 2000 the number of graduates was about 144 thousand, 171 thousand in 2003 and 2004, only 121 thousand in 2009. This trend could be interpreted in both negative (decrease in the number of highly qualified graduates) and positive terms (success in routing students towards shorter and employment-oriented university programmes).

The university system reform has had a different impact on specific fields of study. As regards first-level degree programmes, most fields – including science, engineering/architecture, economics and statistics, socio-political science and psychology – the number of graduates has increased year by year and has then reached a plateau. The humanities stands out for its steadily increasing number of graduates. Law graduates have featured an increase up to the year 2006 and subsequently a drop as a result of the introduction of single-cycle degree programmes. Single-cycle and two-year second-level degree programmes both display positive trends, and no stabilisation has been reached yet as regards the number of graduates. If we analyse university qualifications as a whole (excluding Ph.D programmes), medicine displays a flat trend; law shows an inverted-U, erratic evolution, which is partially due to a provisional reduction in the number of graduates, as a result of the introduction of single-cycle degree programmes; the other fields of study display more regular tendencies based on growth, especially healthcare professions and physical education, humanities and socio-political science and psychology.

A correct interpretation of the evolution of graduates in Italy must take into account the so-called “hybrid” graduates, i.e., graduates completing their university studies after the reform, but with

some credits earned during pre-reform careers. Thanks to the ALMALAUREA database it has been demonstrated that in 2004 at least 41.5% of first-level graduates were hybrid students. This number subsequently declined, and in 2006 the majority of graduates were “pure” graduates, even if in 2009 a non-marginal component of hybrid graduates (6%) continued to exist. In the light of the incidence of hybrid graduates, it can be assumed that “new” and “pure” qualifications earned in the university system were the majority only in 2006 and that in 2009 the incidence of pre-reform or hybrid qualifications was still no less than 13% of the total.

Families are the place *par excellence* where individuals establish social relationships and, as such, they have an overwhelming – and often underestimated – impact on the development of students’ skills and motivation which are reflected in their educational careers. Families provide their children with material and cultural capital that are crucial resources for their educational and cognitive success. At a material level, thanks to relatives’ jobs and incomes (*social class*), some families are more able to afford the costs of their children educational careers than others and to bear the costs/opportunities of a postponed entering of their children in the labour market. At a *cultural* level, more endowed families (thanks to parents’ level of education, but not limited to it) offer their children a perception of the world fostering the intrinsic value of education, encouraging them to build up career expectations requiring a high level of education, are more able to help children with their homework and expect their children to reach important goals.

A marked difference among the graduates from several degree programmes has been observed as regards their families’ social status and cultural level: single-cycle programmes feature a high social profile, with a low incidence of students from working-class families or whose parents do not possess a school-leaving certificate and a high incidence of students from upper class families or with graduate parents. Conversely, first-level programmes feature a lower social profile: a relatively high number of students from working class families, or with low educational levels, and a low presence of students from the upper class or with graduate parents. It seems reasonable to maintain that – as compared to the pre-reform system – the “3+2” system has implied a greater social aperture in shorter-term employment-oriented degree programmes, counterbalanced by a greater social closure in second-level programmes (especially single-cycle ones, that can be accessed only after the passing of an admissions test). In other words, the social selection effect, as a result of families material and cultural resources, has a *lower impact* on first-level programmes, but a *greater impact* on second-level programmes (above all in the fields of medicine and architecture/engineering), as compared to pre-reform programmes.

Interestingly, still nowadays a degree obtained by a young student is, in a sizeable majority of cases (three out of four), the *first* university degree obtained in his/her immediate family.

A slight decline in the incidence of graduates coming from a region other than the place where they study (probably due to the decentralisation of universities, rather than as an effect of the “3+2” reform) has been observed.

Data concerning graduates’ *school background* over the 2000-2009 period is highly stable: slightly more than half of graduates come from the *classic* or *scientific lyceums*; this implies an overrepresentation of former students from *licei* in the graduates’ population which accurately reflects the more academic orientation of *licei* as compared to technical and vocational schools. However, if we take into account that, over time, school-leavers’ make-up has changed in favour of *classic* or *scientific lyceums*, the steadiness of graduates’ make-up implies greater accessibility to degree programmes for non-lyceum-educated school-leavers. The introduction of three-year programmes has

offered greater opportunities for technical and vocational school-leavers to undertake university studies, while they are less intent on pursuing second-level studies.

In the initial cohorts of graduates of first-level and second-level programmes, a considerable number of individuals had enrolled at universities 2 years above the “theoretical” enrolment age. Several individuals who had not started university studies (or who had dropped out of them, or had completed them earlier) decided to engage in a study programme after the introduction of short curricula. This effect is, however, disappearing, as testified by the increase in the percentage of regular-age enrolment.

Several indicators suggest certain improvement of students’ performances as regards *time-to-graduation* over the 2000-2009 period. The number of students completing their studies far above prescribed graduation time has dropped, university careers have shortened, delay at graduation and age at graduation have decreased (despite the already mentioned increase in the enrolment age). However, the worsening of degree-completion times in three-year programmes observed over the last years could be replicated in second-level programmes, as the latter start to stabilise and “slower” students start completing their degree requirements.

The “3+2” reform – introducing shorter university careers as compared to previous degree programmes lasting at least four years – has discouraged students’ participation in exchange programmes with foreign universities and study periods abroad. Such experiences are less widespread in first-level programmes than they were in pre-reform programmes, and also slightly less common in second-level and single-cycle programmes.

In-house training experiences and internships are now more frequent as a result of curricular reform. However, a decrease in the number of internship experiences has been registered over the last few years in all types of programme. This may depend on several variables: decreased investments by universities in the development of contacts with the labour market; a drop in employers’ ability/will to host apprentices; a decreasing tendency of “slower” students to take advantage of these training opportunities; the gradual disappearance of students having performed working experiences accredited as internship educational activities for purposes of degree completion.

If in 2000 students spent on average over 9 months to draw up their dissertations, with the new system their commitment has considerably decreased: only 4 months for three-year programmes, 7 months in two-year programmes and 8 months in single-cycle degree programmes.

Compared to the beginning of the decade, the share of graduates performing working activities during their university studies has increased. Working experiences may provide useful contacts with the job market, but they are also an obstacle to regular university careers; for this reason, the improvement in time-to-graduation is considerably important in view of the increase of students’ needs to perform working activities. The increase in working experiences is limited to “working students”, i.e., students carrying out paid temporary and part-time working activities. Working experiences are more common among first-level and second-level graduates, while they are relatively marginal for single-cycle graduates, who apparently can afford to study without the need to work.

Post-reform graduates are more satisfied with their university studies than their pre-reform colleagues. Post-reform graduates express more positive judgments for their overall university experience, and for their relationships with teachers, and are more willing to confirm their choices, if they could go back in time. The positive nature of such judgments is more pronounced among second-level graduates.

One of the most unexpected consequences of the “3+2” reform was probably the trend – among first-level graduates – to further their studies by enrolling in postgraduate programmes instead of entering the labour market directly and on a full-time basis. First-level graduates are even more determined than pre-reform and second-level graduates to continue their studies, even though three-year programmes are supposed to be more oriented to the employment market. Among second-level graduates, there is a large gap: graduates from single-cycle programmes are highly intent on furthering their studies, while most second-level graduates tend not to continue.

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