

# 21<sup>st</sup> Report Occupational Condition of Graduates

## 2019 Summary Report

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# Summary of the 21st Survey on the Occupational condition of Graduates in Italy (AlmaLaurea Report 2019)

The 21st AlmaLaurea Survey on Occupational condition of Graduates in Italy involved about 640,000 graduates from 75 Italian Universities: 273,000 first- and second-level graduates - two-year and single-cycle masters - from 2017, contacted one year after graduation, 110,000 second-level students from 2015, contacted three years after graduation, and 110,000 from 2013, contacted five years after graduation. Finally, two other surveys focused on the first-level graduates from 2015 and 2013 who did not continue with higher university education (respectively 75,000 and 71,000) and who were contacted three and five years after graduation.

On an annual basis, graduates involved in the survey make up about 90% of all graduates of Italian Universities, a population that ensures a more than significant photograph for the entire university system, especially if one focuses on the main characteristics of the observed groups.

Graduates involved in the survey (excluding those of the first level at three and five years) were contacted through a two-step technique, Computer-Assisted Web Interviewing (CAWI) and CATI (Computer-Assisted Telephone Interviewing). The need to contain survey costs and the wide availability of email addresses (96.8% for 2017 graduates, 95.0% for 2015, 91.6% for those of 2013) suggested contacting graduates in a first phase via email, inviting them to fill out a questionnaire on AlmaLaurea's website. At the end of the CAWI survey, all those who did not respond to the online questionnaire were contacted by phone. The use of this two-step methodology has resulted in a total response rate (CAWI + CATI) of 78.2% among first- and second-level graduates of 2017 one year after graduation, 70.4% of second-level graduates of 2015 three years out and 64.5% from those who graduated in 2013, five years after graduation.<sup>1</sup> First-level graduates at three and five years were instead contacted via CAWI-only survey, achieving response rates of 19.7% at three years and 14.8% at five years, naturally a lower rate given the methodology used.

This Summary highlights the most relevant aspects of the employment performance of first- and second-level graduates,<sup>2</sup> the latter being further divided into two-year and single-cycle masters. However, It should be noted that first-level graduates largely continue their studies by enrolling in a second-level degree programme. Indeed, in the 2017 cohort this choice was made by 61.9% of respondents.

For these reasons, in order to better monitor the response of the job market, for first-level graduates it was considered appropriate to limit the analysis to those who did not enrol in another degree course after graduation (37.2%).

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<sup>1</sup>In the previous survey the overall response rates were 77.1% among first- and second-level graduates from 2016 one year after graduation, 69.3% among second-level graduates from 2014 three years out and 64.2% of those from 2012 after five years.

<sup>2</sup>The observations reported here refer to the 2007-2017 cohorts and do not take into account the first-level graduates of 2005 and 2006, though they were analysed by AlmaLaurea. Second-level graduates include two-year and single-cycle masters, as well as graduates from the pre-reform course in Primary Education Sciences. The employment outcomes of the latter are not taken into consideration due to their peculiarity and small number. The complete documentation is available at [www.alma laurea.it/universita/indagini/laureati/occupazione](http://www.alma laurea.it/universita/indagini/laureati/occupazione).

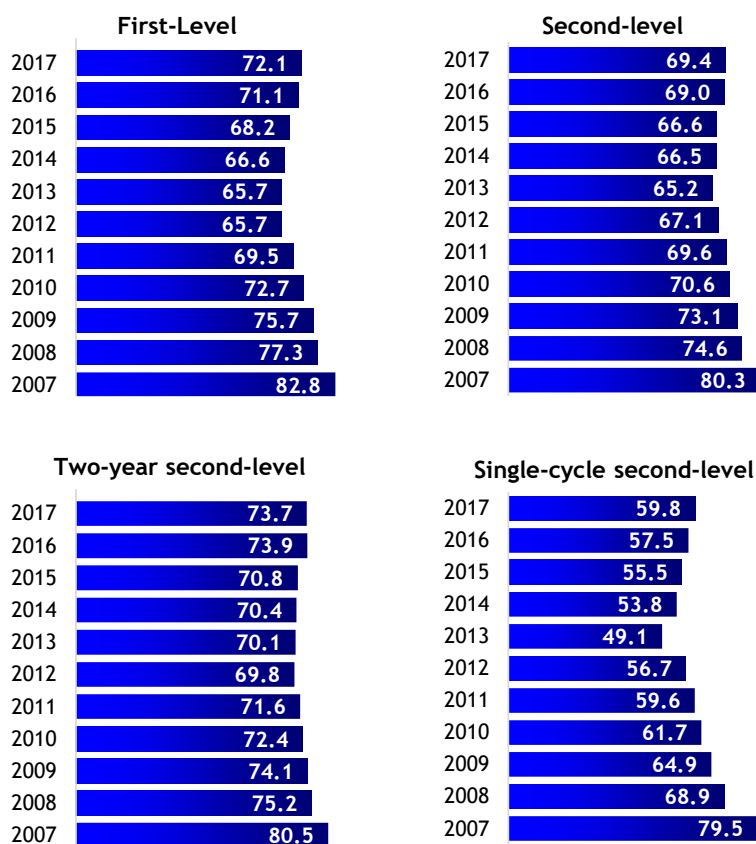
For each indicator analysed, the report shows the historical series of first- and second-level graduates from 2007 to 2017, interviewed one year after graduation (i.e. from 2008 to 2018) and first- and second-level graduates from 2007 to 2013 at five years (i.e. from 2012 to 2018).

## 1. Employment rate

In 2018, the employment rate one year after graduation, which also includes those engaged in paid training, was equal to 72.1% among first-level graduates and 69.4% among second-level graduates in 2017. Among two-year graduates the employment rate rose to 73.7% while for single-cycle masters it is 59.8% (Figure 1). ISTAT data show higher levels of employment among university graduates than those without a university degree. A comparison with previous surveys shows improvement in the employment rate which over the last four years has increased by 6.4 percentage points for first-level graduates and by 4.2 points for second-level graduates. These are positive signs that to a limited extent were also confirmed in the most recent year (the employment rate has increased by 1.0 percentage points for first-level graduates and by 0.4 points for second-level graduates). However, these results are not yet sufficient to recover from the significant contraction in the employment rate observed between 2008 and 2014 (-17.1 percentage points for the former; -15.1 percentage points for the latter).

Despite the inevitable problems experienced by those who entered the job market during the worst years of the global recession, even graduates three and five years after graduation show some signs of improvement in employment performance. In fact, for these graduates the first signs of a recovery in the job market have only become apparent in recent years. However, it should be noted that employment levels are decidedly high: more specifically, three years after graduation the employment rate reaches 87.6% among first-level graduates and 81.9% among second-level graduates (84.6% for two-year masters and 74.5% for single-cycle masters).

**Figure 1 - 2007-2017 graduates interviewed one year after graduation: employment rate by programme type. Survey years 2008-2018 (percentage values)**

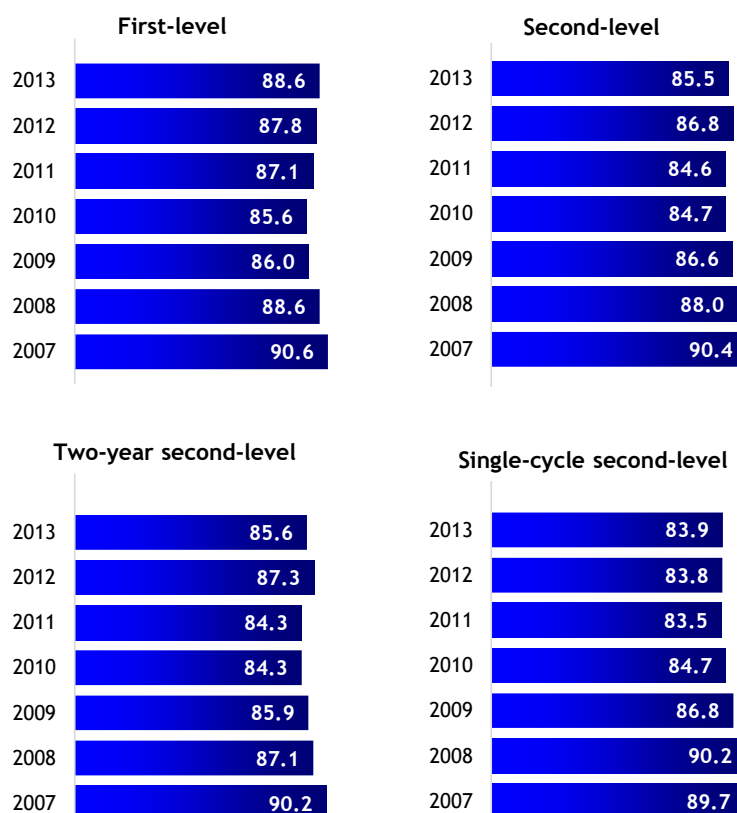


Note: For the first-level, only graduates who are not enrolled in another degree course are considered; second-level graduates also include graduates from the pre-reform course in Primary Education Sciences.

Source: AlmaLaurea, Survey on the Occupational condition of Graduates

Five years after graduation, the employment rate is 88.6% for first-level graduates and 85.5% for second-level graduates: disaggregating by programme type, the employment rate is 85.6% among two-year masters, a value slightly higher than the 83.9% found among single-cycle masters (Figure 2). These rates have increased by 3.0 percentage points and 0.8 points respectively compared to 2015. However, it is true that these positive signs come after years of significant contraction in the employment rate, which between 2012 and 2015 decreased by 5.0 percentage points for first-level graduates and by 5.7 points for second-level graduates. The comparison with last year's survey shows a certain fragility of the job market since for first-level graduates there was an increase in the employment rate of 0.8 percentage points, while for second-level graduates there was a contraction of 1.3 points.

**Figure 2 - 2007-2013 graduates interviewed five years after graduation: employment rate by programme type. Survey years 2012-2018 (percentage values)**



Note: For the first-level, only graduates who are not enrolled in another degree course are considered; second-level graduates also include graduates from the pre-reform course in Primary Education Sciences.

Source: AlmaLaurea, Survey on the Occupational condition of Graduates.

## 1.1. Differences in employment outcomes of graduates

The employment outcomes described here show strong differentiations that in general involve all types of programmes examined. These are differences that concern gender, geographical area of residence, but also, of course, the programme completed.

In order to analyse the multiple factors that generally affect the probability of being employed, a logistic regression model was used. The 2017 graduates were considered - first-level graduates who did not continue their education by enrolling in a degree programme and second-level - contacted one year after graduation.<sup>3</sup>

The analysis below, which includes paid trainees among the employed, takes into account several factors related to socio-demographic aspects (gender, parents' education, geographical area of residence), the university degree (programme type, field of study, geographical area of the university, constancy of studies, age at graduation) and the experiences and skills gained during university studies (internships/curricular internships, work or study abroad experiences, computer skills). Finally,

<sup>3</sup> The model does not consider those who were already working upon graduation, those who live abroad, as well as graduates of the defence and security group, given their particular educational and work curriculum. Graduates of the pre-reform course in Primary Education Sciences were also excluded given the particular nature of their studies and their small number.

attention was paid to the aspirations and inclinations declared by the graduates on the eve of the end of their studies (intent to pursue further education, willingness to travel, job expectations after graduation, career opportunities, job stability/security, acquisition of professional skills, consistency with their cultural interests, flexible working hours).<sup>4</sup>

As can be seen in Table 1 (which shows only the significant variables) degrees in certain fields of study affect employment opportunities of recent graduates: all other things being equal, graduates in engineering, math, physics and natural sciences, chemistry, pharmacy and medicine (which also includes healthcare professions) are more likely to find employment. Graduates of psychology, law and humanities are less so.

Moreover, it was found that all else being equal second-level degrees show greater employment opportunities one year after graduation: compared to first-level graduates, two-year masters are 34.7% more likely to be employed, while single-cycle masters are 14.7% more likely to be employed. Any any case, this result must be interpreted with extreme caution, since very different populations are being compared in terms of instruction and professional and educational opportunities. By way of example, it should be noted that among single-cycle graduates there is a significant share of students who continue their education by enrolling in activities like internships or specialisation schools that, if paid, qualify them as being employed. These types of activities, preparatory to the start of professional self-employment, are obviously much less common among first-level graduates and among two-year masters. In this regard, as one might expect, those who at the time of graduation declared that they did not intend to continue their studies are 37.6% more likely to be employed one year out than those who intend to continue their studies.

The traditional gender and geographical differences remain significant, showing, all else being equal, the better position of men (16.1% greater probability of being employed than women) and of those who reside or have studied in the North (as far as residence is concerned, +41.2% more probability of being employed than those who reside in the South; as far as the geographical area of studies is concerned, +76.6% more probability of being employed than those who have studied in the South).

The socio-cultural context of origin supports propensities and expectations that condition not only the educational choices but also occupational orientation. Although the study found a limited influence, graduates from families with at least one parent with a university degree show a lower probability of employment (-10.0%) one year after graduation compared to those with parents without university degrees. The underlying assumption is that, in this case, the family environment allows graduates to delay their entry into the job market as they look for a better opportunity.

Concluding university studies on schedule is decisive in fostering better employment opportunities. Graduates who complete their studies within one year after the standard timetable are 12.5% more likely to find a job within one year of graduating than those who graduate at least two years late. Moreover, all else being equal, the age at graduation has a negative impact on the probability of being employed one year after graduation (-5.6% for each additional year). This is linked to the fact that those who enter the labour market at a younger age are more likely to find prospects and availability

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<sup>4</sup> As shown in Table 1, all parameters have a significance of 1%. Factors that were considered but found not to be significant include aspects of the pre-university education (high school diploma type and marks), geographical mobility for the purpose of studying, exam scores, as well as expectations related to the job sought as they relate to relationships with colleagues in the workplace, independence and autonomy, involvement in work and decision-making processes, earnings prospects, consistency with studies, social usefulness of the work, prestige, leisure, place of work (i.e. location and related physical characteristics) .

- not to mention contractual terms - that are more "attractive" to employers. This hypothesis is confirmed by the searches that companies using AlmaLaurea services perform on the graduation database for selection purposes. They seem to be very sensitive to the age of the candidates, more so than to the final marks achieved at the university.

Work experience, as well as certain types of skills acquired during university studies, are factors that have a positive effect on employment opportunities one year after graduation. In fact, all else being equal, worker-students (i.e. those who have had continuous full-time work experience for at least half the duration of their studies) are 65.1% more likely to be employed than students who graduate without any work experience; student-workers (i.e. those who have had other types of work experience) are 39.1% more likely to be employed than those who have not had any work experience. All else being equal, those who have undergone a curricular internship have a 9.1% higher probability of being employed one year after graduation than those who have not done this type of activity. Similarly, those who have studies abroad that are recognised by their degree programme are more likely to be employed than those who have never spent time abroad. For example, for those who have had such an experience under a European Union programme the probability is +12.7%.

Computer skills also have a positive effect on the odds of finding a job within the first year after graduation. Those who know at least five computer programs have a 26.1% higher probability of being hired than those who know at most two programs.

Some aspects of the work also have a positive effect in terms of employment and have been declared highly relevant by graduates on the eve of their graduation. All else being equal, those about to graduate and enter the job market who attributed significant importance ("definitely yes") to the acquisition of professional skills and opportunities for career advancement are more likely to be employed within one year of graduation (+16.4% and +8.0% respectively). The willingness to travel for work (regardless of frequency) is also rewarding in terms of employment (15.2% more likely than those who do not declare such openness). On the other hand, there is a lower probability of employment for those who consider it important to have flexible working hours, job stability and security and a job that corresponds with their cultural interests (the probabilities vary from -11.1 % to -6.6 %).

Table 1 - 2017 first- and second-level graduates interviewed one year after graduation: logistical regression model for assessing the probability of being employed. Survey year 2018

	b	S.E.	Exp(b)
<b>Gender (female=0)</b>			
male	0.149	0.017	1.161
<b>At least one parent with a university degree (no=0)</b>			
yes	-0.106	0.017	0.900
<b>Residence geographic area (South=0)</b>			
North	0.345	0.030	1.412
Centre	0.232	0.029	1.261
<b>Degree programme type (First-level=0)</b>			
Two-year second-level	0.298	0.024	1.347
Single-cycle second-level	0.137	0.029	1.147
<b>Field of study (Political-social science=0)</b>			
Agriculture, veterinary	0.515	0.057	1.674
Architecture	0.346	0.041	1.414
Chemistry, pharmacy	1.118	0.051	3.058
Economics, statistics	0.611	0.033	1.842
Physical education	0.238	0.074	1.269
Geology, Biology, geography	0.191	0.045	1.211
Law	-0.305	0.042	0.737
Engineering	1.480	0.041	4.393
Education	0.629	0.050	1.876
Humanities	-0.183	0.039	0.833
Foreign language	0.264	0.042	1.302
Medicine/Health professions	1.164	0.035	3.204
Psychology	-0.867	0.048	0.420
Math, physics, natural sciences	1.445	0.066	4.242
<b>University geographic area (South=0)</b>			
North	0.569	0.030	1.766
Centre	0.294	0.028	1.342
<b>Age at graduation</b>			
almost one year later	-0.058	0.003	0.944
<b>Degree completion time (2 or more years =0)</b>			
almost one year later	0.118	0.022	1.125
<b>Internships organised by the degree program (no=0)</b>			
yes	0.087	0.017	1.091
<b>Work during studies (no work experience=0)</b>			
studying workers	0.502	0.054	1.651
working students	0.330	0.016	1.391
<b>Studied abroad during the degree programme (no experience=0)</b>			
studied abroad Erasmus or other European Union programme	0.120	0.025	1.127
other experience	0.194	0.037	1.214
<b>Number of known IT tools (almost 2 tools=0)</b>			
3 or 4 tools	0.140	0.025	1.151
5 or more tools	0.232	0.022	1.261
<b>Plan to pursue postgraduate studies (yes=0)</b>			
no	0.319	0.017	1.376
<b>Willingness to travel for business (no=0)</b>			
yes	0.142	0.051	1.152
<b>Aspects important for job-seeking: career prospects (no=0)</b>			
yes	0.077	0.020	1.080
<b>Aspects important for job-seeking: acquisition of professional skills (no=0)</b>			
yes	0.152	0.023	1.164
<b>Aspects important for job-seeking: job security (no=0)</b>			
yes	-0.089	0.020	0.915
<b>Aspects important for job-seeking: relevance to cultural interests (no=0)</b>			
yes	-0.068	0.017	0.934
<b>Aspects important for job-seeking: flexibility of working hours (no=0)</b>			
yes	-0.118	0.018	0.889
Costant	0.104	0.104	1.109

Note: Correct classification rate of 67.1%, N = 86.647; R2 Nagelkerke = 0.199.  
All parameters are significant at 1% (p<0.01).

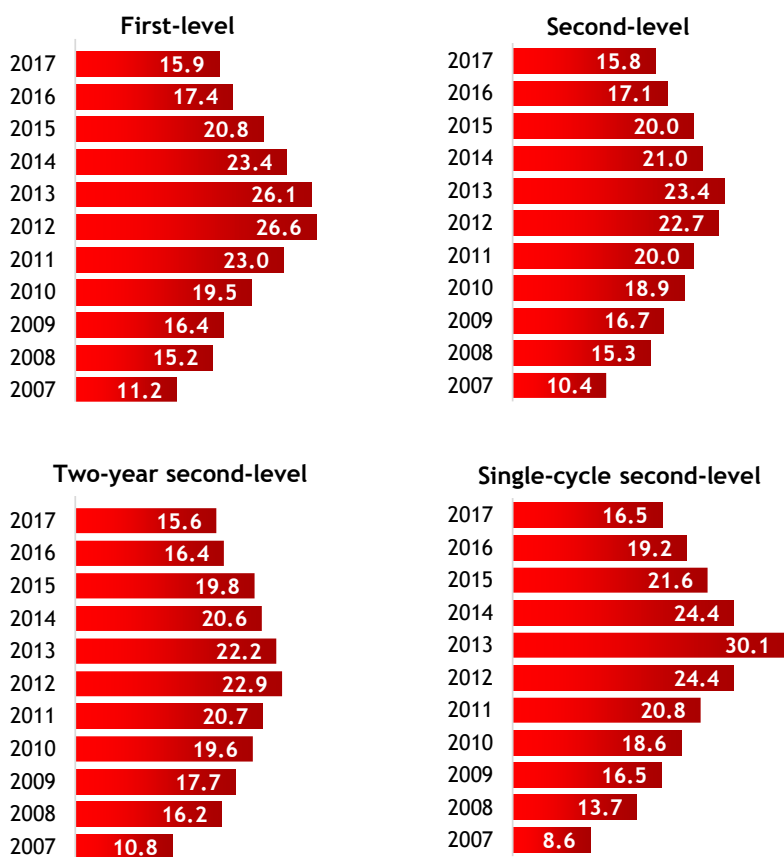
Source: AlmaLaurea, Survey on the Occupational condition of Graduates.



## 2. Unemployment Rate

The analysis of the unemployment rate confirms the observations made to this point (Figure 3). One year after graduation the unemployment rate is 15.9% among first-level graduates and 15.8% among second-level graduates, with only a small difference between two-year (15.6%) and single-cycle (16.5%) master graduates. Compared to the 2014 survey, the unemployment rate fell by 10.2 percentage points for first-level graduates and by 7.6 points for second-level graduates. This drop is also confirmed when limiting the analysis to the last year alone (-1.5 points and -1.3 points, respectively). However, this improvement has not yet resulted in a return of unemployment levels to pre-recession levels. In fact, between 2008 and 2014 the unemployment rate increased by 14.9 percentage points for first-level graduates and 13.0 points for second-level graduates.

**Figure 3 - 2007-2017 graduates interviewed one year after graduation: unemployment rate by programme type. Survey years 2008-2018 (percentage values)**



Note: For the first-level, only graduates who are not enrolled in another degree course are considered; second-level graduates also include graduates from the pre-reform course in Primary Education Sciences.

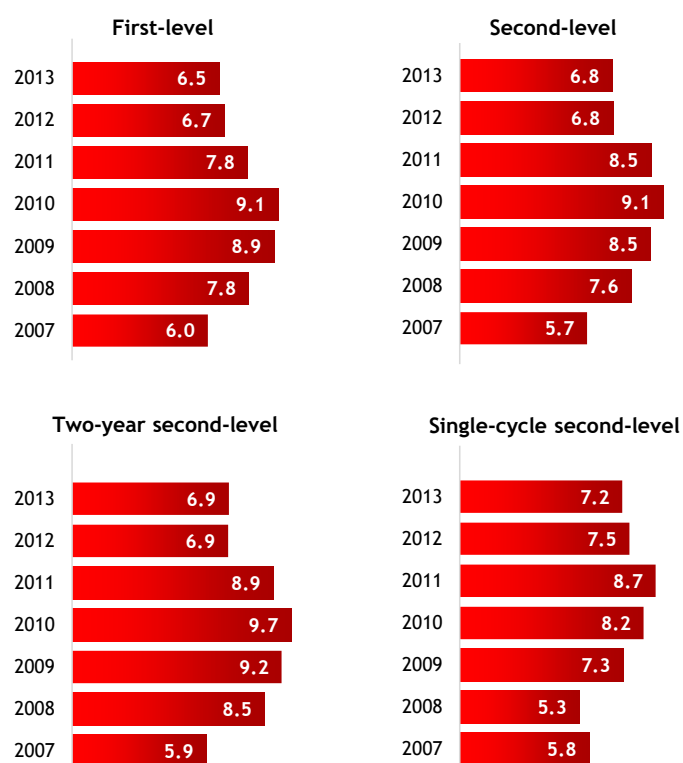
Source: AlmaLaurea, Survey on the Occupational condition of Graduates.

Three years after graduation the unemployment rate reaches 7.4% among first-level graduates and 9.4% among second-level graduates (specifically, 8.5% for two-year masters and 12.0% for single-cycle masters).

Five years after graduation, unemployment levels are around 7% (Figure 4). In 2018 the unemployment rate was 6.5% among first-level graduates and 6.8% among second-level graduates. Broken down by programme type, the unemployment rate is 6.9% for two-year masters, which is slightly lower than the 7.2% of the single-cycle masters.<sup>5</sup> Compared to the 2015 survey, the unemployment rate has fallen by 2.6 percentage points for first-level graduates and by 2.3 points for second-level graduates. These are significant values, although they are the result of a contraction that occurred in particular in the period 2015-2017 given the substantial stabilisation of rates in 2018. However, this contraction comes after a period of progressive increases in the unemployment rate which, between 2012 and 2015, increased by 3.1 percentage points for first-level graduates and by 3.4 points for second-level graduates.

<sup>5</sup>The values included here are higher than the average unemployment rate of the group of second-level graduates, which is influenced by the normal levels found among pre-reform graduates in Primary Education Sciences, not described in this Summary Report.

**Figure 4 - 2007-2013 graduates interviewed five years after graduation: unemployment rate by programme type. Survey years 2012-2018 (percentage values)**



Note: For the first-level, only graduates who are not enrolled in another degree course are considered; second-level graduates also include graduates from the pre-reform course in Primary Education Sciences.

Source: AlmaLaurea, Survey on the Occupational condition of Graduates.

### 3. Types of employment

The analysis of the characteristics of the work carried out and in particular of the type of employment provides a picture that is closely linked to the regulatory actions<sup>6</sup> that have taken place in recent years. As is well known, these actions have had different effects on the public and private sectors.

One year after graduation, 13.7% of employed first-level graduates and 10.9% of employed second-level graduates are self-employed<sup>7</sup>: this value is equal to 7.4% for two-year masters, while due to the very nature of these programmes which are oriented towards the start of professional activities, it rises to 23.6% for single-cycle masters. 24.5% of first-level graduates and 24.6% of second-level graduates are employed with permanent contracts. Again in this case, the differences between two-year (27.4%) and single-cycle (14.5%) masters are significant (Figure 5). Graduates hired with non-standard contracts (in particular with fixed-term contracts) represent 39.9% of first-level graduates and 35.8% of second-level graduates, with no obvious differences by programme type: 35.3% for two-year masters and 36.7% for single-cycle masters. On the other hand, 11.3% of first-level graduates and

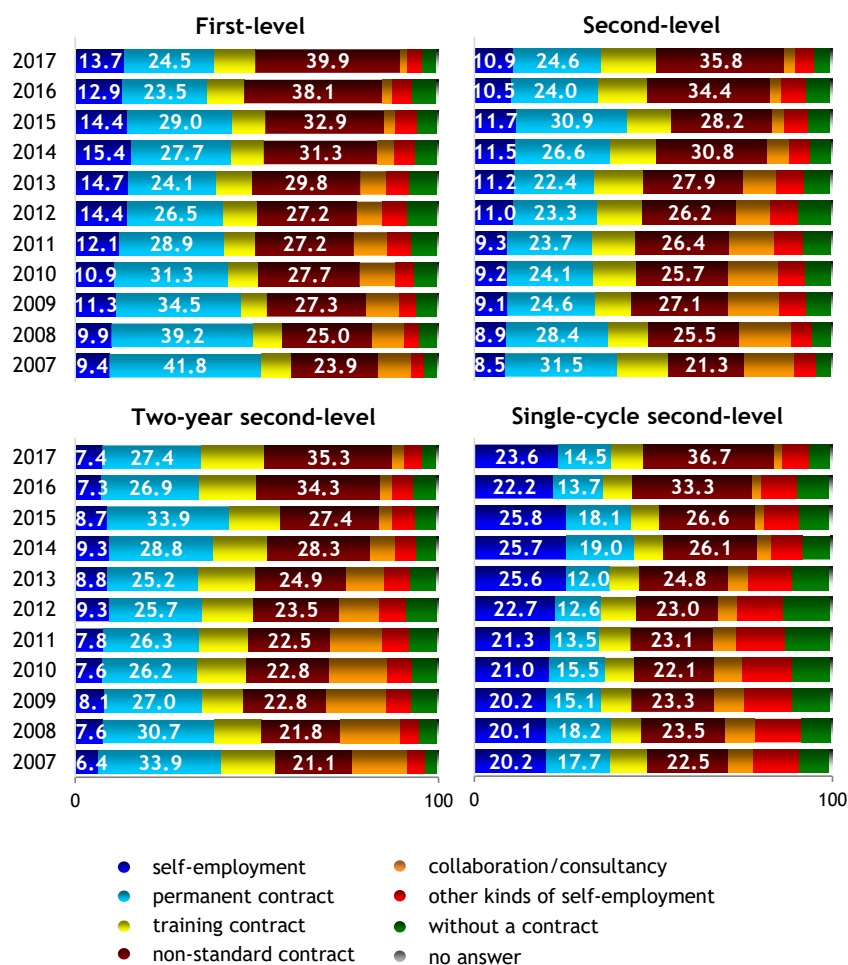
<sup>6</sup>In addition to the Jobs Act (Italian law no. 183 of 10 December 2014), it is worth recalling the Stability laws and legislative decrees attached to them.

<sup>7</sup>The characteristics of the work carried relate to graduates who carry out a paid activity, with the exception of educational activities.

15.4% of second-level graduates (more specifically, 17.3% of two-year masters and 9.0% of single-cycle masters) are employed with a training contract. The other forms of self-employment (mainly occasional professional services contracts) account for 4.1% of first-level graduates and 5.5% of second-level graduates (respectively 5.0% and 7.6% for two-year and single-cycle masters), while semi-subordinate work concerns 2.1% and 2.9% (respectively 3.1% and 2.1% for two-year and single-cycle masters). Finally, unregulated work accounts for 3.9% of first-level employed graduates and 4.4% of second-level employed graduates (4.0% for two-year masters and 6.0% for single-cycle masters).

A comparison with the surveys of previous years shows trends that are not always linear and that are difficult to fully explain given the multiplicity of factors that affect the results. These factors include regulatory actions taken in recent years, the fact that the employed include graduates hired in different periods of time, the recession itself which has had a varying impact on the labour markets. Compared to the 2008 survey there was a marked increase in non-standard work, up 16.0 percentage points among first-level graduates and 14.5 points among second-level graduates. This increase was also confirmed in the past year (+1.8 and +1.4 points, respectively). This is also in line with the latest trends in the overall job market in Italy. In contrast, compared to 2008 the number of permanent employment contracts decreased by 17.3 percentage points among first-level graduates and by 6.9 points among second-level graduates. However, in the last year there was a slight increase in the number of permanent contracts for both populations. Semi-subordinate work also decreased by 6.9 percentage points and 11.1 points compared to 2008. This decrease was also confirmed in the last year, albeit to a lesser extent. Other changes are more limited. In particular, compared to 2008 there was an increase in self-employment of 4.3 percentage points among first-level graduates and 2.4 points among second-level graduates. With respect to unregulated work, the 2008-2018 comparison shows an increase of 2.8 percentage points for both populations. This is the result among other things of a considerable increase in off-the-book jobs at the height of the recession, a situation that more recently has in part dropped back to lower levels.

Figure 5- 2007-2017 graduates employed one year after graduation: employment type by programme type. Survey years 2008-2018 (percentage values)



Note: For the first-level, only graduates who are not enrolled in another degree course are considered; second-level graduates also include graduates from the pre-reform course in Primary Education Sciences.

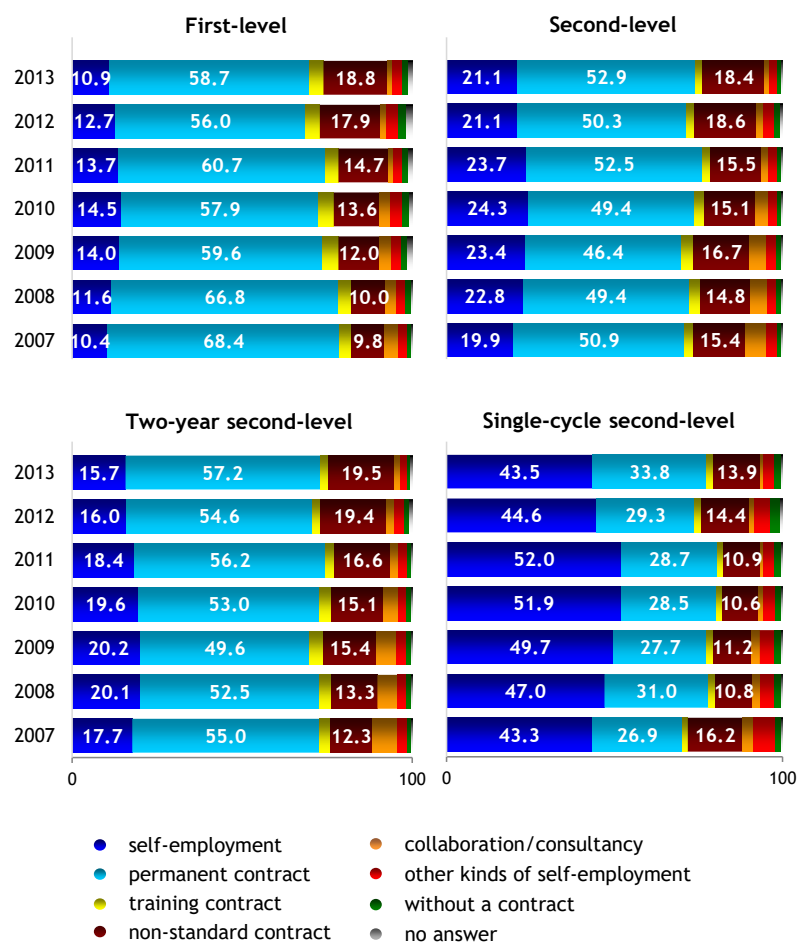
Source: AlmaLaurea, Survey on the Occupational condition of Graduates.

The extension of the observation span beyond the first year after graduation allows for a more complete assessment of the characteristics of the type of work being done by graduates. Three years after graduation, 11.1% of first-level graduates and 16.8% of second-level graduates are self-employed. This figure stands at 12.8% among two-year masters, while it rises to 32.4% among single-cycle masters. Permanent employment contracts were signed with 43.3% of first-level graduates and 42.9% of second-level graduates (a value that rises further to 46.6% for two-year masters and drops for the reasons already mentioned to 28.1% for single-cycle graduates). Non-standard work is still widespread, involving 27.4% of first-level graduates and 24.2% of second-level graduates (24.8% for two-year masters, 20.3% for single-cycle masters).

Among 2013 graduates, five years after graduation, self-employment accounts for 10.9% of first-level graduates, rising to 21.1% among second-level graduates. The varying intensity of self-employment among the two populations of second-level graduates is further accentuated when the period of observation is extended to the first five years following graduation: in fact, the values are equal to 15.7% among two-year masters and 43.5% for single-cycle masters (Figure 6). The share of

those employed with permanent contracts exceeds half of the graduates, reaching 58.7% among first-level graduates and 52.9% among second-level graduates (57.2% among two-year masters and 33.8% among single-cycle masters). 18.8% of first-level graduates and 18.4% of second-level graduates (19.5% and 13.9%, respectively, for two-year masters and for single-cycle masters) are employed with a non-standard contract. All other forms of work are decidedly limited, with percentages always below 5.0%. Compared to the 2012 survey, there was an increase in non-standard work (+9.0 percentage points for first-level graduates and +3.0 points for second-level graduates). Permanent employment dropped for first-level graduates by 9.7 percentage points and increased by 2.0 points for second-level graduates. Finally, all in all self-employment remained at constant levels given the size of the time interval considered for both populations (+0.5 and +1.2 points, respectively).

**Figure 6 - 2007-2013 graduates employed five years after graduation: type of work by programme type. Survey years 2012-2018 (percentage values)**



Note: For the first-level, only graduates who are not enrolled in another degree course are considered; second-level graduates also include graduates from the pre-reform course in Primary Education Sciences.

Source: AlmaLaurea, Survey on the Occupational condition of Graduates.

### 3.1. Smart working and remote working

For the first time, the 2018 survey focused more intently on the spread of smart working and remote working, solutions that allow greater flexibility in the organisation of working time and methods. These are organisational methods introduced at different times: smart working, also known as "agile work", was established by Law no. 81/2017, while remote working has been active in our country for some time and has been regulated in different ways by the public and private sectors.

Below are some initial observations on this issue, referring the reader to subsequent in-depth studies for a more detailed analysis. These working methods are still not at all widespread among graduates, involving a total of 3.0% of first-level graduates and 4.1% of second-level graduates employed one year after graduation. More specifically, among first-level graduates 1.1% declared that they participate in smart working and 1.9% in remote working. Among second-level graduates, these figures are slightly higher, respectively equalling 1.5% and 2.6%.

Five years after graduation these working methods reach a total of 4.7% of first-level graduates and 4.2% of second-level graduates who declare themselves to be employed. Further breaking down first-level graduates, smart workers accounted for 3.1% while remote workers were 1.6% of the employed. Among second-level graduates, these percentages tend to be higher and respectively equal 1.8% and 2.4%.

The levels observed are consistent with the findings of Eurostat, although the definitions adopted do not entirely overlap. In 2018, 3.5% of all Italian workers aged 25-49 years old "usually work at home". This is a lower percentage than the 4.9% recorded for all European countries.

Both one and five years after graduation and for both smart working and remote working the solution is relatively more widespread among men. This may be surprising, but Eurostat has made similar findings.

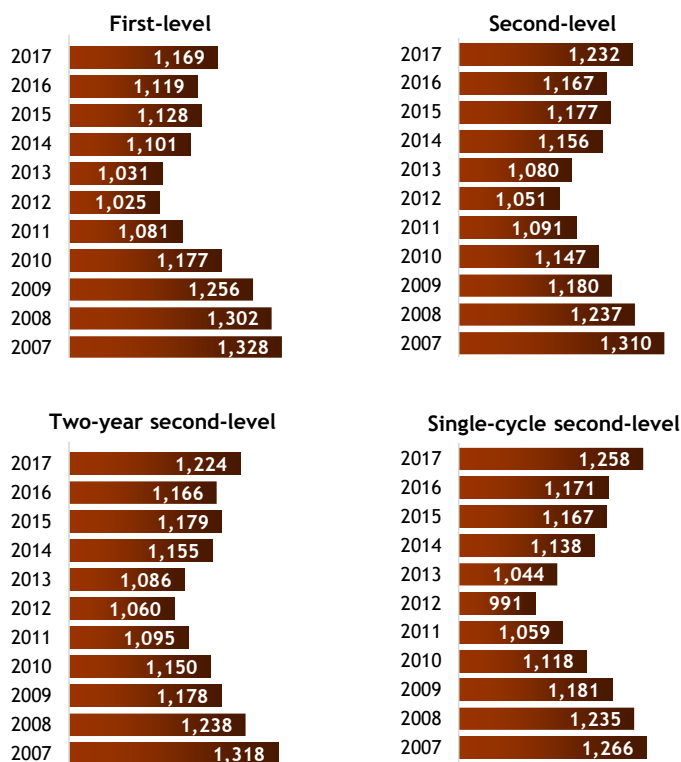
## 4. Salaries

On average, the net monthly salary in 2018 one year from graduation is €1,169 for first-level graduates and €1,232 for second-level graduates. There are no significant differences between the salaries received by two-year graduates, equal on average to €1,224 net per month, and those of single-cycle masters, which amount to €1,258 (Figure 7).

Against a background of broadly stable consumer prices, real wages one year after graduation are on the rise compared to the 2014 survey: +13.4% for first-level graduates, +14.1% for second-level graduates. The improvement in pay was particularly marked over the past year: +4.5% for first-level graduates and 5.6% for second-level graduates. However, the increase observed is not yet able to make up for the significant loss of salary recorded during the most difficult period of the economic crisis that hit recent graduates, i.e. between 2008 and 2014 (-22.4% for the first-level, -17.6% for the second-level). Obviously, these trends are affected by the different incidence of part-time work, which in 2018 involved 27.9% of first-level graduates and 22.9% of second-level graduates. These percentages have tended to decrease in recent years (compared to 2014, -9.3 percentage points and -8.3 points respectively for first- and second-level graduates) after the sharp increase seen during the recession (in the period 2008-2014, +18.3 percentage points among first-level graduates and +12.3 points among

second-level graduates). Specific studies have confirmed the salary trends described above, also taking into account the spread of part-time work.

**Figure 7 - 2007-2017 graduates employed one year after graduation: net monthly salary by programme type.**  
Survey years 2008-2018 (values recalculated based on ISTAT consumer prices, average values in euros)



Note: For the first-level, only graduates who are not enrolled in another degree course are considered; second-level graduates also include graduates from the pre-reform course in Primary Education Sciences.

Source: AlmaLaurea, Survey on the Occupational condition of Graduates.

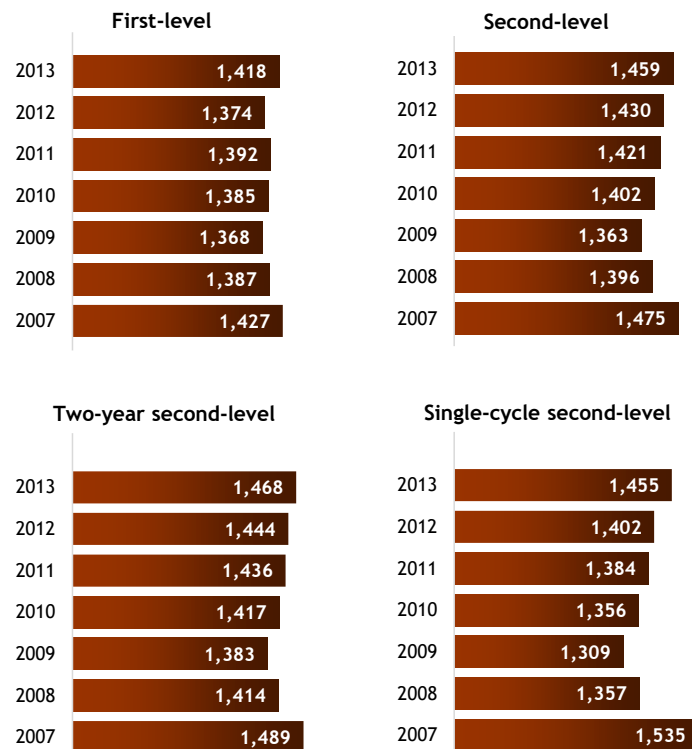
Three years after graduation, the net monthly salary reaches €1,331 for first-level graduates and €1,352 for second-level graduates. Broken down even further, €1,361 for two-year masters and €1,327 for single-cycle masters.

Five years after graduation, the net monthly salary is €1,418 for first-level graduates and €1,459 for second-level graduates. Further distinguishing the second-level graduates by programme type, we see some modest differences: €1,468 for two-year masters and €1,455 for single-cycle masters (Figure 8). Compared to 2015, there has been an increase in real salaries among both first-level graduates (+2.4%) and second-level graduates (+4.1%), which took place after the generalised contractions of previous years (just in the last year +3.2% and +2.0%, respectively). While the increase has not yet made up for the wage losses that occurred in the period 2012-2015 (equal to -3.0% and -5.0% respectively for first- and second-level graduates), the difference with respect to 2012 is decidedly small. Again, these trends are affected by the different incidence of part-time work, which in 2018 involved 18.5% of first-level graduates and 14.0% of second-level graduates. In recent years the share of part-time jobs has decreased (compared to 2015, -2.8 percentage points for first-level graduates and -2.7 points for second-level graduates) after the increase seen in the years 2012-2015 (+7.1



percentage points and +2.4 points, respectively). In any case, the salary trends described above are confirmed even considering the evolution of the share of part-time workers.

**Figure 8 - 2007-2013 graduates employed five years after graduation: net monthly salary by programme type.**  
Survey years 2012-2018 (values recalculated based on ISTAT consumer prices, average values in euros)



Note: For the first-level, only graduates who are not enrolled in another degree course are considered; second-level graduates also include graduates from the pre-reform course in Primary Education Sciences.

Source: AlmaLaurea, Survey on the Occupational condition of Graduates.

#### 4.1. Differences in the remuneration of graduates

A linear regression model has been used to analyse the multiple factors affecting graduates' monthly net remuneration. The parameters of the analysis are similar to those described in paragraph 1.1 with respect to the assessment of the probability of being employed, although with some aspects unique to the different phenomenon being studied. The 2017 graduates were considered - first-level graduates who did not continue their education by enrolling in a degree programme and second-level - contacted one year after graduation.<sup>8</sup> At the same time, the analysis considers factors related to socio-demographic aspects (gender), the university degree (programme type, field of study, average exam scores) and particular experiences (work and study abroad). Given the descriptive purposes, for

<sup>8</sup> As with the in-depth study of the probability of being employed, the model does not consider those who were already working upon graduation, those who live abroad, as well as graduates of the defence and security group, given their particular educational and work curriculum. Graduates of the pre-reform course in Primary Education Sciences were also excluded given the particular nature of their studies and their small number.

a more detailed analysis it was decided to also consider some characteristics of the job itself, closely related to the salaries of graduates (geographical area of the job, full/part time, type of work, company's sector and branch of economic activity, coordination of work done by other people, effectiveness of the degree<sup>9</sup>). These are concomitant factors that were added purely for descriptive purposes.<sup>10</sup>

The model shown in Table 2 confirms the presence of strong differentiations by programme type: all else being equal, compared to a first-level degree a single-cycle master's degree corresponds on average to an estimated increase in pay of €260 net per month and a two-year master's degree offers a pay advantage of €55.

The field of study also has a decisive influence on the pay differentials of recent graduates. Graduates in medicine (including healthcare), engineering, science and business-statistics receive significantly higher salaries on average: compared to graduates in political and social sciences the salary difference varies between €231 and €88 euros net per month. On the other hand, graduates in architecture, law, agricultural and veterinary sciences earn less. In this case, the salary penalty, again compared to the graduates in political and social sciences, ranges between -€150 and -€71 euros net per month.

Exam scores have a positive impact on pay differentials. Compared to an employed person who earned an average exam score of 18 out of 30, a graduate with an average of 30 out of 30 earns about €100 more per month.

Traditional gender differences remain significant. In fact, the model estimates that all else being equal one year after graduation men receive on average an additional €84 net per month. Pay differentials can also be seen in geographical terms. Compared to those employed in the South, graduates working in the North receive on average an extra €147 net per month, while those working in the Centre receive an extra €76 per month. But it is the graduates who work abroad that enjoy the highest salaries (over €430 euros net per month more). Of course when comparing Italian salaries with those who work abroad the different costs of living should also be taken into account as this has an impact on wages, as also underlined in recent studies on AlmaLaurea data.

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<sup>9</sup> This factor was taken into consideration while being aware of the limits linked to possible endogenous causes.

<sup>10</sup> As shown in Table 2, almost all parameters have a significance of 1%. Factors that were considered but found not to be significant include aspects like the family of origin (parents' education), the geographical area of the residence and that of the university, the constancy of studies and the age at graduation, computer skills, the declared intent at graduation to continue with studies, the willingness to travel, as well as expectations related to the desired job like: career advancement opportunities, job stability/security, acquisition of professional skills, correspondence with cultural interests, flexibility of working hours. The age at graduation, on the other hand, was excluded from the model given the modest value of the information.

Table 2 - 2017 first- and second-level graduates interviewed one year after graduation: linear regression model for assessing net monthly remuneration. Survey year 2018

	b	S.E.
<b>Gender (female=0)</b>		
male	83.926	3.836
<b>Exam marks</b>	8.284	1.032
<b>Degree programme type (First-level=0)</b>		
Two-year second-level	55.031	5.663
Single-cycle second-level	260.397	6.797
<b>Field of study (Political-social science=0)</b>		
Agriculture, veterinary	-70.615	13.149
Architecture	-149.972	11.120
Chemistry, pharmacy ***	-5.742	11.839
Economics, statistics	88.228	8.461
Physical education ***	-18.190	16.824
Geology, Biology, geography ***	9.304	12.262
Law	-130.316	12.980
Engineering	154.198	8.860
Education ***	-12.949	11.865
Humanities	-49.021	10.760
Foreign languages *	-24.645	10.031
Medicine/Health professions	231.162	9.983
Psychology	-41.083	14.589
Math, physics, natural sciences	137.226	12.285
<b>Studied abroad during the degree programme (no experience=0)</b>		
studied abroad Erasmus or other European Union programme	29.153	5.629
other experience	56.756	7.615
<b>Work experience (no work experience=0)</b>		
studying workers	97.736	11.676
working student	10.610	3.657
<b>Work geographic area (South=0)</b>		
North	147.054	4.733
Centre	76.476	5.580
Abroad	436.349	8.890

(continued)

(cont'd) Table 2 - 2017 first-level, two-year master and single-cycle master graduates interviewed one year after graduation: linear regression model for assessing net monthly remuneration. Survey year 2018

	b	S.E.
<b>Full time/part-time (part-time=0)</b>		
full time	384.815	4.706
<b>Type of work (non standard contract=0)</b>		
self-employment	-15.320	6.193
permanent contract	63.060	5.058
training contract	-63.782	5.418
collaboration/consultancy	-204.826	11.194
other kinds of self-employment	-269.718	8.663
without a contract	-396.654	10.436
<b>Company sector (not-for-profit=0)</b>		
public	143.774	10.266
private	29.028	8.946
<b>Company branch (social and personal, recreational and cultural services=0)</b>		
agriculture	81.046	18.938
engineering industries and precision engineering industries	123.306	10.758
building industry	-24.902	11.828
chemistry/energy	117.909	11.023
manufacturing industry	102.282	10.514
commerce	58.524	8.913
credit and insurance	183.950	12.052
transport, advertising and communications	69.793	10.895
consulting ***	5.494	9.034
computer science	86.353	11.178
other services for companies	51.390	12.846
public administration, armed forces ***	29.366	18.808
education and research	-70.380	9.434
public health	112.090	8.494
<b>Formal coordination of the work done by other people (no=0)</b>		
yes	60.545	5.011
<b>Effectiveness of the degree (not very effective/ineffective=0)</b>		
very effective/effective	106.551	6.493
fairly effective	67.906	6.737
<b>Costant</b>	225.475	29.129

Note: R-squared = 0.469 (adapted R-squared = 0.468), N = 42.114

\* Significance at 5% (p<0.05) - \*\*\* Not significant

Where not expressly indicated, parameters significant to 1% (p<0.01).

Source: AlmaLaurea, Survey on the Occupational condition of Graduates.

Work experience and studies abroad have a positive effect on net monthly salaries one year after graduation. In particular, all else being equal, worker-students receive €98 more than students who graduate without any work experience. Similarly, those who have completed a period of study abroad that is recognised by their degree programme receive higher pay than those who have not had such an experience. For example, those who have spent time abroad as part of an EU programme can count on a higher net monthly salary of €29 per month.

Turning to the specific characteristics of the work found, it is interesting to see the differences in remuneration between full-time and part-time employment, all else being equal. Indeed, the model estimates that full-time workers receive almost €400 net monthly more than those working part time.

All else being equal, the model also finds differences in remuneration when it comes to types of contracts. Compared to graduates hired with a non-standard contract (mainly fixed-term), those hired

with an open-ended contract receive an additional €63 net per month. On the other hand, pay differentials are particularly negative for jobs without any contract, occasional professional services ("other self-employed" in the table) and semi-subordinate work. In fact, all else being equal the pay disadvantage compared to non-standard contracts fluctuates between -€397 and -€205 net per month. Those who are employed with a training contract or self-employed also earn less than workers employed under non-standard contracts, but in this case the penalty is less pronounced (respectively -€64 and -€15). The results of the study show that in Italy short-term, temporary forms of contract no longer correspond to high wages.

The model also estimates that those coordinating the work done by others can count on higher average wages: the advantage is €61 net per month. This is linked to the relative professional classification of employed graduates in positions where formal coordination of other people is required.

The sector and branch of economic activity have a significant impact on the salaries of graduates. In fact, all else being equal, compared to the non-profit sector, the public sector has an estimated salary advantage of €144, while the private sector has a higher value of €29. The branches of economic activity with the largest estimated wage differentials compared to social and personal, recreational and cultural services are in the credit sector (+€184), the mechanical engineering and precision mechanics industry (+€123), the chemical and energy sector (+€118), the health sector (+€112) and manufacturing (+€102). Lower wages are earned by graduates working in the field of education and research: compared again to the field of social and personal, recreational and cultural services the wage penalty is equal to -€70.

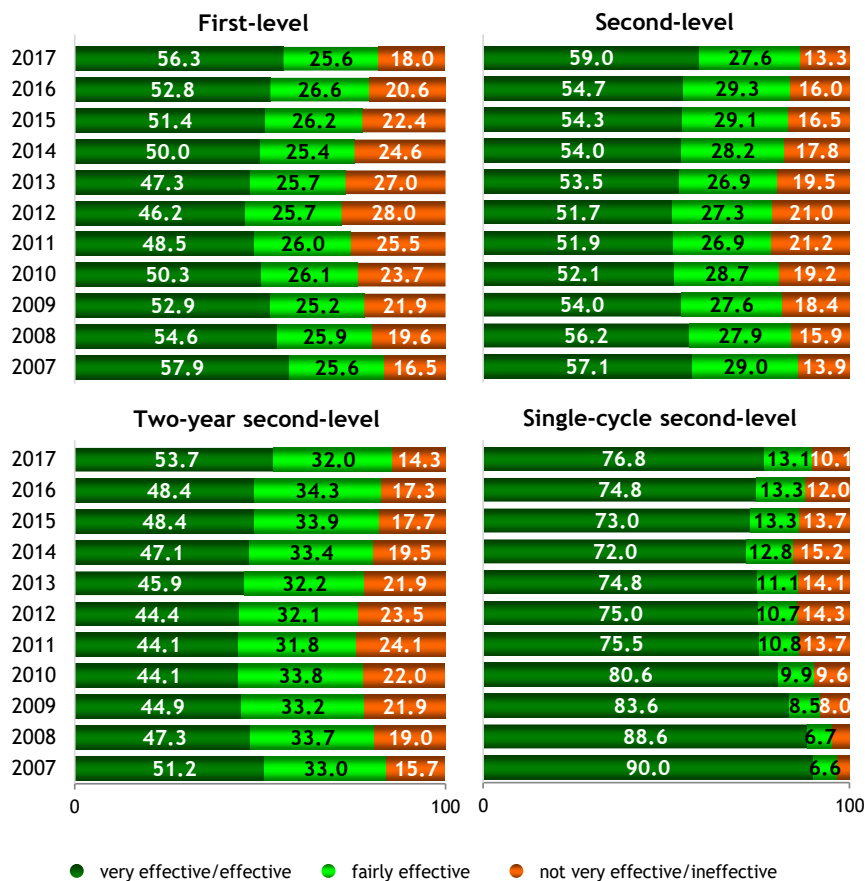
Finally, the analysis presented here estimates that the degree's effectiveness with respect to the job has a positive effect on the remuneration of graduates. All else being equal, those who consider their qualifications to be very effective or effective in their work receive €107 more than those who consider their qualifications to be little or not at all effective. This result is very interesting because degree effectiveness measures the correspondence between university studies and the actual work done. It therefore represents a subjective measure of the alignment that, as demonstrated by other studies, is generally positively related to the salary received.

## 5. Effectiveness of the degree on the job

Regarding the graduates' responses with respect to the use of skills acquired during studies, as well as the formal or substantial need for the degree to do the job, it is noted that for more than half of graduates who are employed after one year the degree is considered "very effective or effective": 56.3% for first-level graduates and 59.0% for second-level graduates. Given the different nature of the programmes and related employment opportunities, it is only natural to find significant differences between the two-year master graduates, among whom the degree is "very effective or effective" for 53.7% of the employed, and the single-cycle master graduates, for whom effectiveness rises to 76.8% (Figure 9). Compared to the 2014 survey, there has been an increase of 9.0 percentage points for first-level graduates and 5.5 percentage points for second-level graduates (only in the last year, +3.5 and +4.3 points respectively). The difficulties encountered in the period 2008-2014 led to a reduction in the number of graduates who declared the degree very effective or effective: -10.6 percentage points for first-level graduates and -3.6 points for two-year masters. The improvement observed in recent

years has almost completely overcome the contraction that occurred during the years of the recession, for first-level graduates, while for second-level graduates 2018 actually saw the highest value of effectiveness.

**Figure 9 - 2007-2017 graduates employed one year after graduation: degree effectiveness by programme type. Survey years 2008-2018 (percentage values)**



Note: For the first-level, only graduates who are not enrolled in another degree course are considered; second-level graduates also include graduates from the pre-reform course in Primary Education Sciences.

Source: AlmaLaurea, Survey on the Occupational condition of Graduates.

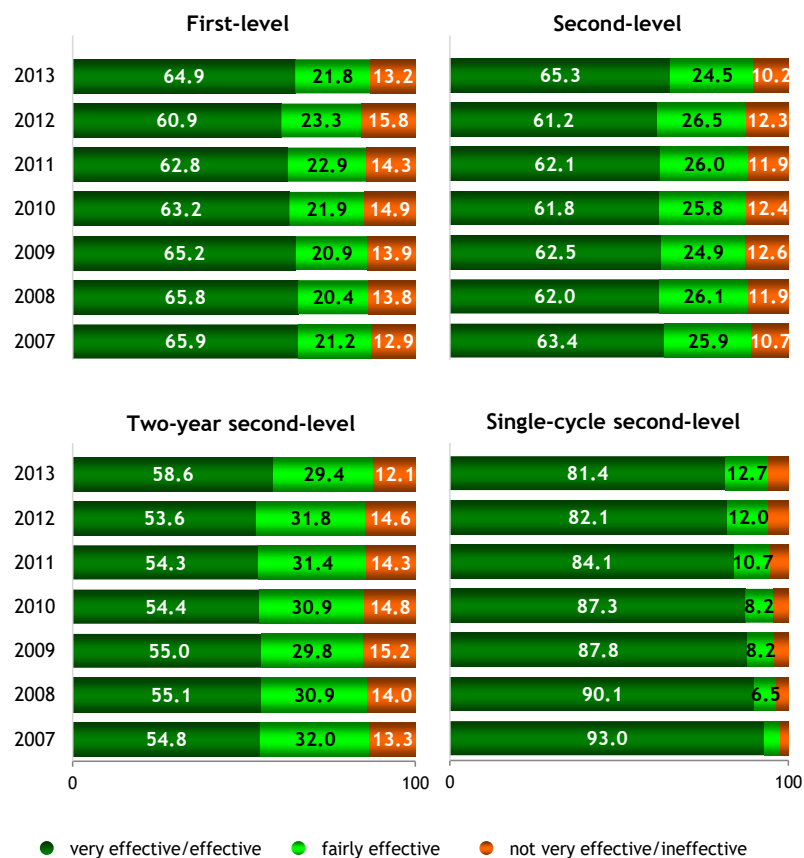
As we have seen, as time passes, the characteristics of the job and the effectiveness of the degree improve. In fact, three years after graduation 63.7% of first-level graduates and 61.7% of second-level graduates find the degree to be "very effective or effective" (more specifically, 56.1% of two-year masters and up to 77.2% of single-cycle masters).

After five years, these rates increase further, reaching respectively 64.9% and 65.3% of the first- and second-level employed. While for graduates of the two-year master's programme the effectiveness of the degree is limited to 58.6%, for single-cycle masters the levels are even higher than 80%, reaching 81.4% (Figure 10). Here again a comparison was made with the 2015 survey, showing an increase in levels of effectiveness among both first- and second-level graduates (+1.7 and +3.5 percentage points respectively). It should be noted, however, that the increase in levels of effectiveness is entirely attributable to the improvement recorded in the most recent year, equal to +4.0 percentage points for first-level graduates and +4.1 points for second-level graduates. The increase in the levels of

effectiveness observed here allowed second-level graduates to exceed even the values recorded in the 2012 survey (thus cancelling the 1.6 percentage points contraction in the period 2012-2015). However, this recovery has not yet been fully matched by first-level graduates (who experienced a contraction of 2.7 points in the same period).

The situation outlined here is essentially confirmed if the two components of the effectiveness are considered separately, i.e., the use of the skills acquired at the university on the job and the formal or substantial need for the degree to perform the job.

**Figure 10 - 2007-2013 graduates employed five years after graduation: degree effectiveness by programme type. Survey years 2012-2018 (percentage values)**



Note: For the first-level, only graduates who are not enrolled in another degree course are considered; second-level graduates also include graduates from the pre-reform course in Primary Education Sciences.

Source: AlmaLaurea, Survey on the Occupational condition of Graduates.

## 6. Focus on geographical mobility for working

### 6.1. Geographical mobility for studying and working

Geographical mobility for studying and working is a phenomenon that AlmaLaurea has been monitoring for some time. The focus here is on mobility flows, specifically with regard to 2013 second-level graduates employed five years after graduation. In more detail, the analysis combines information on the geographical areas of residence,<sup>11</sup> university and work. The picture that emerges shows a geographical mobility that varies among graduates from Northern, Central and Southern Italy.

Among the residents in the North, five years after graduation 88.9% completed their university studies and work in the same geographical area as their residence. The only mobility flow of a certain entity (6.3%) is to work abroad, after having attended a university in the same geographical area as the residence.

Young people living in the Centre tend to travel more frequently for studying and working, even though the majority of graduates never leave their areas of residence (74.0%). 8.3% of graduates who reside in the Centre move North to work after having studied in their region of residence. To these are added a further 3.4% who went to university in the North where they then also found a job after graduation. 4.9% of the residents in the Centre, after having studied in their region of residence, are employed abroad; on the other hand, 4.1% return to work in their region of residence after having studied in the North. Other mobility flows are of lesser significance.

Among graduates residing in the South (including the Islands), however, less than half (47.7%) have studied and work in their geographical area of residence (Figure 11). As a result, 52.0% of graduates living in the South engage in some form of mobility. In detail, 18.9% of graduates moved for studying and did not return, though still remaining in Italy to work: 9.4% studied and work in the North, 5.5% studied and work in the Centre, the remaining flows are insignificant. In contrast, 18.6% of the residents in the South went to university in their geographical area of residence and then found work in the North (13.3%) or in the Centre (5.3%). 2.6% move abroad after studying in the South. Finally, 9.7% of graduates from the South return to their home region after studying in another geographical area, particularly in the Centre (5.9%).

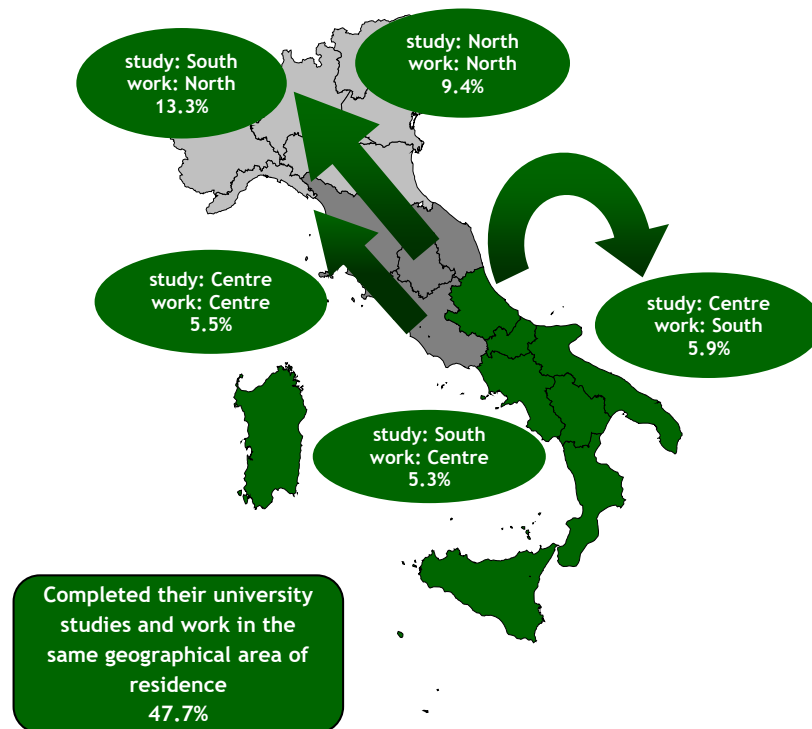
There are different mobility flows for studying and working when considering fields of study. This result is obviously affected by the different educational programmes offered by the various universities.

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<sup>11</sup> The analysis considers the residence of the graduates at the time of graduation.



Figure 11 - 2013 second-level graduates resident in the South employed five years after graduation: main migration flows for studying and working (percentage values)



Source: AlmaLaurea, Survey on the Occupational condition of Graduates.

## 6.2. Work abroad

The following analysis explores the phenomenon of work abroad, which involves a significant proportion of graduates of Italian universities. For a more precise assessment of the phenomenon, it was decided to focus only on Italian citizens. Among these, one year after graduation 4.9% of first-level graduates and 5.1% of second-level graduates are employed abroad. Two-year master graduates (among which 5.6% are employed abroad) tend to be more inclined to move outside Italy for work reasons than single-cycle masters (3.6%). Five years after graduation, the phenomenon of working abroad is growing and affects 8.3% of first-level graduates and 5.7% of second-level graduates: 6.3% for two-year masters and 4.5% for single-cycle masters. The share of graduates employed abroad is rising, partly due to the difficulties encountered in the Italian job market during the recession.

For the sake of simplicity, the general analyses described below only concern 2013 second-level graduates interviewed five years after graduation. With respect to the reasons for moving abroad, 40.8% of graduates stated that they had made this choice due to a lack of adequate job opportunities in Italy. A further 25.4% left Italy having received an interesting job offer from a company based abroad. On the other hand, 10.3% stated that they had studied abroad (Erasmus, thesis preparation, postgraduate training, etc.) and that they had stayed or returned there for work. This confirms the observation that mobility leads to mobility, i.e. gaining experience far from one's place of origin fosters a greater willingness to move, even outside one's own country. Finally, 9.8% moved for personal or family reasons, while 3.4% did so at the request of the company they worked for in Italy.

A further element taken into consideration to assess whether the choice of moving abroad is temporary or not is related to the possibility of returning to Italy. Overall, 33.2% of those employed abroad consider this scenario to be very unlikely, at least in the next five years. On the other hand, only 12.9% are decidedly optimistic, considering a return to Italy very likely. 30.3% consider this hypothesis unlikely, while 13.6% are unable to express an opinion.

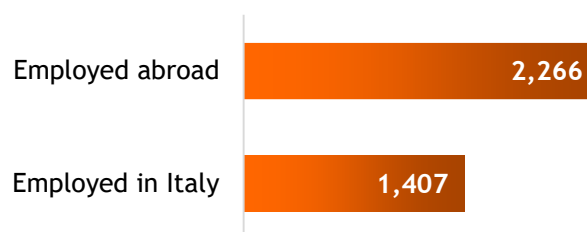
Second-level graduates employed abroad come mainly from engineering (19.0%), business-statistics (16.2%), political and social sciences (11.2%) and architecture (10.6%) confirming the main trends highlighted below. Moreover, most of them come from economically and culturally favoured settings, as seen in the previous section they reside and have studied in the North, and they have studied abroad. Those who decide to move abroad for work tend to have higher marks than those who decide to stay in Italy. Among 2013 graduates from the same degree programme, 58.4% of those employed abroad have a higher average score in their exams compared to graduates of the same programme (this value is equal to 50.7% among those employed in Italy). There are also interesting differences when it comes to constancy of studies: 83.2% of those who work abroad earned their degree within one year beyond the standard timetable compared to 76.5% among those who work in Italy.

Five years after earning a second-level degree, 85.6% of those employed abroad work in Europe; the share of those employed in the Americas is lower (5.9%), followed by Asia (4.8%). There is a residual proportion of graduates working in Africa and Oceania. More specifically, five years after graduation, 22.8% of graduates of Italian citizenship work in the United Kingdom, 11.6% in Switzerland, 11.4% in Germany, 9.4% in France and 6.0% in Spain.

Among those working abroad, permanent employment contracts are more widespread (63.2% compared to 52.2% of those who remained in Italy), but also non-standard contracts (26.1% compared to 17.9% of graduates remaining in Italy). As one might expect, however, only a modest share of graduates are self-employed abroad (5.8% compared to 22.1% of graduates employed in Italy).

Average salaries received abroad are considerably higher than those of graduates employed in Italy: five years after graduation second-level graduates who moved abroad receive €2,266 net per month, +61.0% compared to the €1,407 for those who stayed in Italy (Figure 12).

**Figure 12 - 2013 second-level graduates employed five years after graduation: net monthly salary by geographical job area (average values in euros)**



Note: only Italian citizens are considered.

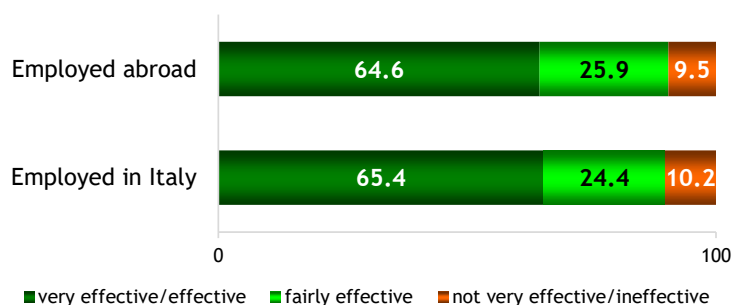
Source: AlmaLaurea, Survey on the Occupational condition of Graduates.

Obviously, in addition to the different costs of living (as underscored in paragraph 4.1), these results are influenced by the different proportions of part-time work, which affects 7.0% of the employed abroad and 14.5% of the employed in Italy.

In terms of the effectiveness of the degree, there are no significant differences between those employed abroad and those employed in Italy: in fact, five years after graduation the degree is "very effective or effective", respectively, for 64.6% and 65.4% of the employed (Figure 13).

A specific analysis was carried out on the graduates of the engineering field of study who, it should be remembered, are those most likely to work abroad. From a salary point of view, if it is true that in Italy engineers are highly valued, abroad they are even more so. In fact, outside of Italy they earn more than €2,600 net per month, 57.3% more than the €1,682 taken home by those who work in Italy. The effectiveness of the degree is also greater among engineers working abroad (74.0% consider the degree "very effective or effective") compared to engineers employed in Italy (62.4%).

**Figure 13 - 2013 second-level graduates employed five years after graduation: degree effectiveness by geographical job area (percentage values)**



Note: only Italian citizens are considered.

Source: AlmaLaurea, Survey on the Occupational condition of Graduates.

The complete documentation is available at: [www.almalaurea.it/universita/indagini/laureati/occupazione](http://www.almalaurea.it/universita/indagini/laureati/occupazione).

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