

## Social inequality in higher education and labour market in a period of institutional reforms: Italy, 1992–2007

Gianluca Argentin · Moris Triventi

Published online: 16 October 2010  
© Springer Science+Business Media B.V. 2010

**Abstract** The focus of this paper is on the relationships between social origin, participation in tertiary education (enrolment, drop-out, enrolment at second level and post-tertiary education) and occupational instability among university graduates in a recent period of university and labour market reforms (the differentiation of higher education due to the “Bologna process” and the flexibilization of employment contracts). In the first part of the paper we review these institutional reforms, discussing how they have changed the structure of opportunities and constraints for students and graduates. In the second part we analyse data from several cross-section waves of the Upper Secondary Graduates Survey and the University Graduates Survey which cover both pre- and post-reform cohorts. Results from logistic regression models show a slight decline in the association between parents’ education and enrolment in tertiary education, whereas there is a reduction and a new increase of inequality in drop-outs. We also find remarkable effects of parents’ education on enrolment in post-graduate courses, but smaller on the risks of having unstable jobs and both are mainly stable over time. Only a slight reduction of the role of social origin in university participation and in the transition to the labour market took place, but it seems not to be too closely connected to the specific reforms which occurred in the 1990s.

**Keywords** Higher education · Bologna process · Social inequality · Graduates · Labour market · Institutional reforms · Flexibilization

---

**Electronic supplementary material** The online version of this article (doi:[10.1007/s10734-010-9379-6](https://doi.org/10.1007/s10734-010-9379-6)) contains supplementary material, which is available to authorized users.

---

G. Argentin  
Department of Sociology and Social Research, University of Milano-Bicocca, Building U7, Room 205,  
Via Bicocca degli Arcimboldi 8, Milan 20126, Italy  
e-mail: [g.arginin@campus.unimib.it](mailto:g.arginin@campus.unimib.it)

M. Triventi  
Department of Sociology and Social Research, University of Milano-Bicocca, Building U7, Room 315,  
Via Bicocca degli Arcimboldi 8, Milan 20126, Italy

## Introduction

The focus of this paper is on the relationships between social origin, participation in tertiary education and occupational outcomes of degree holders. Previous research on the Italian case shows a mix of inequalities in access and persistence in university and in the transition of graduates to the labour market (Schizzerotto 2002; Cappellari and Lucifora 2009). Moreover, these inequalities took place in a context characterized by low graduation rates, high drop-out and youth unemployment rates, and low returns to higher education (Reyneri 2002; Strauss and de la Maisonneuve 2007; Triventi and Trivellato 2009).

During the 1990s and 2000s, some relevant contextual changes took place. At more or less the same time, a vertical differentiation in the supply of university courses and a flexibilization of the labour market aimed at young people were established. In the same years, we also observe a substantial increase in university enrolment and in the number of degree holders entering the labour market. Therefore, the two main institutions where social inequality can be seen more clearly highlight a marked change at the end of the 1990s.

The aim of this paper is mainly descriptive; we analyse whether and how the role of social origin in higher education and in the transition to the labour market changed in the 1990s and 2000s alongside a changing context. We therefore try to connect social inequalities of participation in tertiary education with those in the labour market transition looking at incentives and constraints derived from the changing institutional context. We compare data on several pre- and post-reform cohorts of high school leavers and university graduates to examine these recent trends.

The structure of the article is as follows. In Section two we briefly describe the main characteristics of university and labour market reforms. Section three is dedicated to a review of previous literature on this topic and to the formulation of our hypotheses. In Section four, we briefly describe the data, variables and methods we use in the analysis. Section five reports the main results, which are then discussed in the last section.

## University and labour market reforms

Institutional reform and the “Bologna process” in the Italian University system

During the twentieth century Italian higher education system was not differentiated: all institutions were classified as universities with both teaching and research functions, most of them were public and with a negligible level of tuition fees. There was only one type of degree course available (*Laurea*), lasting 4 years for all fields of study, with some exceptions lasting 5 or 6 years. Moreover, degrees had “legal values”, meaning that graduates were considered to have the same level of knowledge and competence in their field irrespective of the university where they obtained their degrees. Given this rigid structure, Italian tertiary education has been affected by severe problems of student drop-outs and delays, especially after the 1969 reform, which allowed all high school leavers to enrol in most fields of study without any form of selection.<sup>1</sup> Furthermore, upper class

---

<sup>1</sup> This rule is still in place nowadays. Students who have successfully completed 5 years of upper secondary education—irrespective of the specific track (academic, technical, vocational)—is entitled to enrol in university without any form of restriction in the choice of type of university or field of study. However, some courses (mainly Medicine, Architecture, Psychology) have a *numerus clausus* in order to limit the number of students each year.

students had higher probability of enrolment and graduation than lower class students and there were also class-based disparities in the likelihood of dropping out (Cobalti and Schizzerotto 1993; Triventi and Trivellato 2009).

In the 1990s and 2000s important changes occurred in a number of institutional characteristics of the university system. At the beginning of the 1990s a shorter type of course leading to a market-oriented degree (mainly in technical fields of study) was introduced (*Diploma universitario*), but only around 10% of the freshmen chose this option. In this period there has been also a relevant growth in the number of courses and small institutions, which were established especially in peripheral areas of the country. The most important change occurred at the end of the 1990s in the framework of the “Bologna process”. In 1999 a Ministerial decree was approved (M.D. 509/1999) and since 2001 a three-level structure for tertiary education has been implemented, constituted by a first-level degree (*Laurea triennale*, 3 years), a second-level degree (*Laurea magistrale*, 2 years), followed by doctoral studies (*Dottorato di ricerca*, 3 years). The reform has also changed university curricula and a considerable increase in the number of courses and programmes occurred. In particular, several short market-oriented courses after the first or second cycle have been activated in order to integrate the theoretical instruction of traditional academic programmes. Therefore, this reform has introduced important changes in the structure of higher education, leading to a transition from an undifferentiated to a vertically differentiated system of courses, even though other relevant institutional characteristics did not change.<sup>2</sup>

### Labour market reforms

One of the most significant peculiarities of the Italian labour market is the penalization of people entering the labour market (Reyneri 2002): young people face a high risk of unemployment and it usually takes a long time to get their first job, especially in the South of Italy. Despite the small proportion of tertiary graduates, a university degree does not lead to a great advantage in the labour market: the wage premium over diploma holders is modest (Strauss and de la Maisonneuve 2007) and university graduates also have a longer search for their first job (Bernardi et al. 2004).<sup>3</sup> Moreover, tertiary graduates have a higher risk of starting their job career in unstable positions than lower-educated people (Schizzerotto 2002; Barbieri and Scherer 2009) and from existing research it is not clear if it is easier for them to exit from this situation (Barbieri and Sestito 2008; Barbieri and Scherer 2009).

On the other hand, graduates in the labour market have had a lower risk of unemployment during their working life and obtained higher status occupations in the past few decades (Reyneri 2002; Schizzerotto 2002). Lastly, labour market outcomes are strongly differentiated according to the field of study, thus confirming the crucial aspect of horizontal differentiation of tertiary education (Ballarino and Bratti 2009).

In 1997, the left-wing government approved a labour market reform (“Legge Treu”, n. 196/1997) with the aim of increasing youth employment and facilitating entry into the

<sup>2</sup> No formal institutional differentiation occurred among universities and private institutions remain few. At present all higher education institutions are still labelled as universities, even if notable differences exist in their size, structure and organization, quality of research and teaching.

<sup>3</sup> This is usually due to two factors: the very small or medium size of Italian firms, oriented on hiring a lowly qualified labour force, and the backward public sector, with a prevalence of bureaucratic job positions (Reyneri 2006).

labour market (Treu 2001). The main tool adopted for this purpose was to make it possible for firms to use temporary work more easily, also giving employees fewer rights than the usual standard contracts. The idea was that temporary jobs should contrast unemployment and moonlighting, especially among young people, and that temporary jobs could be a better starting point than unemployment for a labour market career. In 2003 a second reform took place, the so-called “Riforma Biagi” (n. 30/2003), which simply reinforced the previous flexibilization process, but it left the labour market context almost unchanged (Barbieri and Scherer 2009).<sup>4</sup> It should be clear that the flexibilization process did not involve all the labour force; what took place was a “partial and targeted deregulation” (Esping-Andersen and Regini 2000), mainly directed at young cohorts entering the labour market. The usually well-protected segment of the labour force (employed in large industrial firms and in the public sector) mostly maintained the same rights it had before (Gualmini 1998).

### Objectives and hypotheses

Our paper aims to assess whether and to what extent the relation between social background, university participation and transition to the labour market has changed in a period of institutional reforms, looking at recent cohorts of high school leavers and university graduates. Given the data available to us, we focus on specific cohorts of young people and not on the whole population of university students. By this way, when we analyse enrolments and drop-outs we do not consider people who enter university when they are 22 years or over; nevertheless this is not a major problem because they are still a minority in the Italian higher education system.<sup>5</sup> We argue that both the institutional reforms in higher education and labour markets have changed the contexts, hence the opportunities and constraints of students’ decisions. Thus, it is interesting to understand how different kinds of social inequality have changed in this period: those related to entrance and persistence in higher education, those related to enrolment in higher courses within tertiary education and those related to the transition into the labour market.

In particular, on the university side we focus on changes in the probability of enrolment of high school leavers with different social backgrounds before and after the implementation of the “Bologna process”. Promoters of the reform have designed the shortening of the first-cycle as a way of increasing enrolments, reducing drop-outs, reducing delayed graduations, and diminishing social inequality, allowing more students from the lower classes to enter university and graduate. According to the Rational Choice Theory (Breen and Goldthorpe 1997) at each school transition individuals decide to continue to study or to enter in the labour market on the basis of a subjective evaluation of benefits, costs and probability of success linked to each alternative. The growth of universities’ autonomy, the provision of new institutions and the “Bologna process” have changed several characteristics of tertiary studies, which could affect the individuals’ evaluation of the benefits, costs and probability of success associated with further schooling.

<sup>4</sup> At the same time it should also be considered that the process of facilitation in the use of temporary employment began in the mid-1980s, a long time before the “legge Treu” (Gualmini 1998).

<sup>5</sup> According to data by the Ministry of Education, University and Research in the academic year 2003/04 the quota of students who enrolled at university when they were 22 years old or over was around 22% (Own calculations on data presented on the website: [www.statistica.miur.it](http://www.statistica.miur.it); last access: 12 July 2010).

We may expect that the shortening of the first-cycle of study and the establishment of new institutions in peripheral areas constitute incentives to lower class students' enrolment, because of the reduction of the expected costs of obtaining a degree. This hypothesis is in line with the results of Cappellari and Lucifora (2009), who use the reform as an exogenous shock analysing two cohorts of secondary school leavers before and after the introduction of the new course structure.<sup>6</sup> They find that high school leavers after the reform have a higher probability of enrolment compared to individuals making the choice under the old system and this increase is concentrated among able students from disadvantaged parental background. On the other hand, the uncertainty of labour market outcomes related to the new short degrees could play a negative role in the evaluation of benefits and costs, counterbalancing the expected advantages of entering higher education. This expectation agrees with the results of Boero and Staffolani (2007), who found negligible changes of social inequality in access to university during the implementation of the reform.

Looking at the second outcome, the probability of dropping-out, we could expect a reduction of social disparities too. Previous research showed that after the reform an increase in the probability of passing intermediate examinations occurred. Moreover, an increase in the average marks and a reduction in the workload needed to pass examinations also took place (Boero and Staffolani 2007). These factors represent incentives to students' retention: if students have serious difficulties in passing the first exams or they have to study a lot, not receiving brilliant marks, it is likely they become discouraged, deciding to drop out from university. In fact, Boero and Staffolani (2007) find that the reduction in drop-out rates after the reform is mainly due to an easing of course contents, a decrease in the expected workload in order to pass examinations, a reduction in the probability of failing exams and a inflation of grades. Since students from lower classes have higher risks of not passing intermediate exams and in receiving lower marks, the easing of course content and the grade inflation could be more relevant among them.

To elaborate hypotheses on the following transitions, the decision to enrol in a second level course and in a post-graduate programme, we should consider the labour market flexibilization, the huge increase in the number of graduates in Italy in the last decades and the introduction of a new type of degree-holder ("triennialisti") through the "Bologna process". These transformations are likely to have increased the competition and uncertainty in the labour market among university graduates in the last cohorts (Schizzerotto 2002; Reyneri 2006; Barbieri and Scherer 2009; Barbieri and Sestito 2008).

Following the Rational Choice Theory, the credentialist argument (Collins 1979) or the Postponed Selection Hypothesis (Shavit et al. 2007) we would expect the same result about the enrolment in post-tertiary education, namely an increase of inequality according to social origin. This increase is due to the willingness of graduates from higher social background to maintain their advantage in the labour market, in a context where the degree is more common than in the past and where, thanks to the "Bologna process", there is a larger offer of post-tertiary courses. We then expect an increasing effect of social origin on the propensity to continue to study, both in second cycle courses and in post-graduate programmes.

---

<sup>6</sup> Cappellari and Lucifora (2009) use the same data source we employ in our analysis, but they only use the 1998 and 2001 cohorts of high school leavers to estimate the short-term causal effect of the reform. Instead we use a broader time span, covering two pre-reform and two post-reform cohorts of high school leavers in order to describe these phenomena over a longer period and to assess whether trends in social inequality are permanent or only transitional.

We have the same expectation considering the protection from bad jobs due to a higher social origin, namely from unstable labour market positions. Previous research did not pay much attention to the connection between instability and social origin. Ballarino and Bratti (2009) analysed the ISTAT graduates datasets (referred to later) without the post “Riforma Treu” cohort and conclude that there is a limited family origin effect on labour market outcomes and that the trend over time is not clear.

Our hypothesis is that this weak effect of social background protection from bad labour market outcomes should increase its strength in a context of growing uncertainty and competitiveness. This could be due to the stronger intervention of parents and relatives in a more difficult labour market context. This intervention of the family in the economy is possible thanks to some characteristics of the Italian labour market: the very high rate of small firms, the relevance of social networks in the labour market and the low transparency of public sector recruitment processes. Graduates coming from families with greater social opportunities should then be facilitated in their transition to a good job. Social origin could affect the graduates’ labour market results through many mechanisms. Two seem particularly relevant in the Italian context (Reyneri 2002): the inheritance of a family business and the higher social capital, which is strictly connected to parental education.

## Data, variables, methods

### Data

We analyze data of two surveys conducted every 3 years by the Italian National Statistical Institute: the Upper Secondary Graduates Survey (SGS, hereafter) and the University Graduates Survey (UGS, hereafter). These surveys collect information on school and work careers of secondary and university graduates, which are interviewed 3 years after their graduation.<sup>7</sup> To study changes before and after the reform we use a number of cross-sectional waves for each type of survey (9 waves in total). A detailed description of the sampling procedure can be found in the ISTAT’s manuals.<sup>8</sup> Table 1 summarizes survey years, corresponding years of graduation and total sample sizes. All analyses use sampling weights provided by the National Institute of Statistics.

### Variables

In all our analysis social origin is measured through parents’ education. The rationale of this choice is threefold. First, the occupational class variable collected by ISTAT is not easily translated into the traditional class schema elaborated by the social stratification literature. Second, the definition of social class varies according to different surveys and years, making it difficult to create a consistent definition of the indicator over time. Third, since we are mainly interested in the total effects of social origin, it is reasonable to assume that parents’ education is a “broader” indicator of social background. Moreover, additional

---

<sup>7</sup> A considerable part of graduates—around 15% in our sample—is at the same time inactive in the labour market and involved in further education, so we can not observe their employment at labour market entry. Moreover the data available does not allow to investigate the relation between social origin and the long-term unstable job positions.

<sup>8</sup> In English you can see Cappellari and Lucifora (2009) for a description of SGS data and Ballarino and Bratti (2009) for a description of UGS data.

**Table 1** Survey characteristics: year of interview, year of graduation and total sample sizes

Survey year	Year of graduation	SGS sample size	UGS sample size
1995	1992	–	13,511
1998	1995	18,843	17,326
2001	1998	23,262	20,844
2004	2001	20,408	26,006
2007	2004	25,880	26,570 <sup>a</sup>

<sup>a</sup> New bachelor graduates are excluded

Source: Own calculations, SGS (1998; 2001; 2004; 2007) and UGS (1995; 1998; 2001; 2004; 2007)

analysis on the Italian Household Longitudinal Survey showed that it is a better predictor of educational outcomes than social class of origin.<sup>9</sup> We consider the highest educational level of either father or mother and we create a variable with four categories: primary education, lower secondary, upper secondary and tertiary. The reference category in our analysis is always the primary level.

In the analysis conducted on the SGS we use three dichotomous dependent variables. The first one is *enrolment* (yes/no): we consider as enrolled high school leavers who entered university within 3 years from their high school completion. The second dependent variable is *drop-out* (yes/no): we consider as drop-outs students who enrolled at university the same year of their high school completion and who were no longer enrolled at the time of the interview.<sup>10</sup> The third variable is the *intention to enrol in a second level course* (yes/no); it is only available for the post-reform cohorts, those who experienced the differentiation of the course structure. We use as control variables sex and geographical area of residence (North-west, North-east, Centre, South, Islands). Further models include additional variables: lower-secondary and upper-secondary final grades (low, medium-low, medium-high, high), type of high school (grammar, technical, vocational, other), failure at high school (yes/no), high school change (yes/no). Unfortunately, a reliable variable of field of study is not available in all the SGS datasets and therefore we cannot include it in the models.

As regards *enrolment in post-graduation training* (UGS data), we consider as enrolled respondents who attended at least one of the following education/training activities in the 3 years after graduation: doctoral studies, university master, university scholarship, other university courses.

Since the Treu and Biagi reforms introduced more flexibility in labour contracts, we analyse *employment stability* as an indicator of the type of labour market entrance. We use a typology where we classify respondents into four categories: inactive, unemployed, employed in unstable jobs and employed in stable jobs.

The construction of this variable follows a hierarchical approach; we start from the last position, identifying as “stable workers” employees with a permanent contract and traditional self-employed persons (entrepreneurs, professionals, etc.).<sup>11</sup> We then consider as

<sup>9</sup> Results are available on request to the authors.

<sup>10</sup> Students who enrolled at university the same year of their high school completion correspond to respectively 94% of the 1995 cohorts and 86% of the 1998, 2001 and 2004 cohorts.

<sup>11</sup> This last assumption is quite usual (see for example Barbieri and Scherer 2009), but we tested it performing a sensitivity analysis. We tried to consider as unstable also traditional self-employed persons who are not satisfied about the stability of their job position. The conclusion of our analysis remains the same; we observed only a different distribution of cases among the categories of the dependent variable.

unstable jobs all the respondents working with temporary contracts, attending a “stage” (a sort of vocational apprenticeship, compulsory for some professions, e.g. lawyers and accountants),<sup>12</sup> working on the basis of new forms of self-employment that usually conceal employed labour (continuative and coordinated cooperation, project-based contracts) and also people working without contracts. We consider as unemployed the respondents who stated that they were not working at the time of the interview, that they were looking for a job and took action to find a job at least once in the month before the interview. The remaining part of the sample is considered inactive.

For the analysis on graduates, we also use as a control variable a dummy for age, dividing the sample between respondents aged under 30 or over. For these models, we also use a more detailed definition of respondents’ upper-secondary education, dividing the Lyceum into three different categories (classical, scientific, other) because in the university graduates’ sample the majority of respondents come from a Lyceum. Still in the models on UGS data, we use as mediation variables: field of study (eight categories: Natural Sciences, Medicine, Engineering, Economics, Socio-political Sciences, Law, Humanities, Agriculture), final graduation mark, length of studies at university.

## Methods

The analysis consists of two parts. In the first one we analyse whether the effect of parents’ social background on participation and persistence in tertiary education has changed over time. We use binomial logistic regression models to estimate the partial association between parents’ education and: (a) enrolment at university, (b) drop-out, (c) the intention of continuing to study after the first-cycle (only for the post-reform cohorts), (d) enrolment in post-graduation training. In the second part we analyse whether the relation between social background and the transition to labour market has changed after the labour market reforms using multinomial logistic regression models. Given that our main interest is on job stability 3 years after graduation, we present results only for this outcome. We estimate two series of models for each cohort: the first one includes as controls only relevant antecedent variables, while the second ones include additional intervening variables.

Since there are statistical shortcomings in comparing logit coefficients or odds ratios between different groups (Allison 1999) we estimate Average Partial Effects (APE), which allow comparability across groups, are well suited for independent categorical variables and have an easy interpretation. APE can be read as average differences in the probability of interest between categories, quantified in percentage points<sup>13</sup>; thus, in this context they are a measure of absolute inequality among people from families with a different educational level. APE refers to the probability of being in a specific condition of the outcome variable versus all the other possible categories. We only present estimates of the total effects of our main independent variable (parents’ education), controlling for relevant antecedent variables (sex and geographical area). The results of additional models, which also control for intervening variables are presented in the Online Appendix.<sup>14</sup> In general,

<sup>12</sup> We consider “stage” as being unstable contracts because they have been often used as a form of flexibility by employers (and they are still used in this way in the Italian context, as the public debate about this topic shows). The general idea behind stage in Italy is that young people could gain skills offering their working time for free (or with a low payment), at the starting point of their career. There is no guarantee of a further transition into a stable job after the stage. In any case, we developed sensitivity analysis and our conclusion does not change from considering graduates attending a stage as inactive in the labour market.

<sup>13</sup> For a description of the method used to calculate average partial effects see Bartus (2008).

<sup>14</sup> See Online Appendix (simply called “Appendix” hereafter).



adding more covariates reduces the magnitude of the associations, but it doesn't change the shape of trends over time.

## Research results

### Inequalities in enrolment and persistence

Table 2 shows descriptive statistics on access and persistence in tertiary education from the middle 1990s to the middle 2000s. A significant growth in the transition rate from upper secondary to tertiary education took place; in 10 years the percentage of diploma holders who entered university within 3 years after their high school completion increased more than 40%. On the contrary, there is not a clear trend in the drop-out rate,<sup>15</sup> because it fell in the earlier cohorts but increased again in the last one. The majority of Italian bachelor students declare they would like to continue to enroll in a second level course.<sup>16</sup> This may reflect not only the uncertain market value of the new degrees, but also the way universities have conceived the two levels—that is the first level as a first step to enter in more advanced studies rather than distinct cycles. Nevertheless, in 3 years we observe a remarkable reduction in the propensity to continue to study after the bachelor, from 72% to 64%.

Figure 1 shows the results from logistic regression models analyzing the total association between parents' education and the probability of enrolment (first graphic) and drop-out (second graphic), controlling for sex and geographical area. Each graph reports the year of upper-secondary graduation on the x-axis and the average partial effects on the y-axis. To give a sense of the sample uncertainty, 95% confidence intervals around the estimates are presented as well.<sup>17</sup> In each model the reference category is constituted by students whose parents have no more than primary education and they are compared with the other three categories.

As in most of industrialized countries, there is a strong relation between parents' education and the probability of entering higher education (Shavit et al. 2007): in Italy the most advantaged are students whose parents have a university degree, followed, respectively by those whose parents have an upper secondary diploma and a lower secondary qualification. Looking at trends over time, the average differences in the probability of entering university between students with primary educated parents, from one side, and students with lower and upper secondary educated parents, from the other side, are stable over time. The first ones are around 10% points and the second ones are larger and about 30–32 points. Differently we observe a reduction of the distance between students with primary and tertiary educated parents from 62% points in 1995 to around 54 points in 2004. Since the confidence intervals of these estimates do not overlap, this reduction is statistically significant; however, it seems not to be exclusively related to the implementation of

<sup>15</sup> We suspect that the drop-out rate in the SGS surveys is slightly underestimated, because it is lower compared to other sources of data. It is possible that part of those who declare they are still enrolled are "not-active" students, who are formally enrolled but do not attend courses and do not progress in their educational career.

<sup>16</sup> The rates presented here are very similar to those provided by Almalaurea on the actual transition rates between the first and the second cycle of study (Own calculations on data presented on the website: [www.almalaurea.it](http://www.almalaurea.it); last access: 12 July 2010).

<sup>17</sup> In the analysis on the UGS data the year of university graduation is reported on the x-axis.

**Table 2** Descriptive statistics on participation and persistence in tertiary education

	Bologna process				
	1992	1995	1998	2001	2004
Enrolment	–	44.9	52.3	61.7	64.0
Drop-outs	–	17.8	10.4	11.7	14.6
Intention of enrolment in 2nd cycle	–	–	–	71.7	63.8
Enrolment in post-tertiary training	29.1	29.2	31.6	38.8	39.5

*Source:* Own calculations, SGS (1998; 2001; 2004; 2007) and UGS (1995; 1998; 2001; 2004; 2007)

the “Bologna process”, because it mostly occurred between 1995 and 1998 and between 2001 and 2004.

In the second graph of Fig. 1 we analyze the partial association between parents’ education and the risk of dropping out from university within 3 years of enrolment. To make the time students spent into higher education comparable we include in this analysis only those who matriculated at university in the same year of their high school completion.<sup>18</sup> In general there is a negative relation between social background and the probability of abandoning higher education without a degree: students from highly-educated families are less likely to drop-out than those with a lower-educated background, but the magnitude of this difference is less pronounced than the one we observed for enrolment (not higher than 20 points).

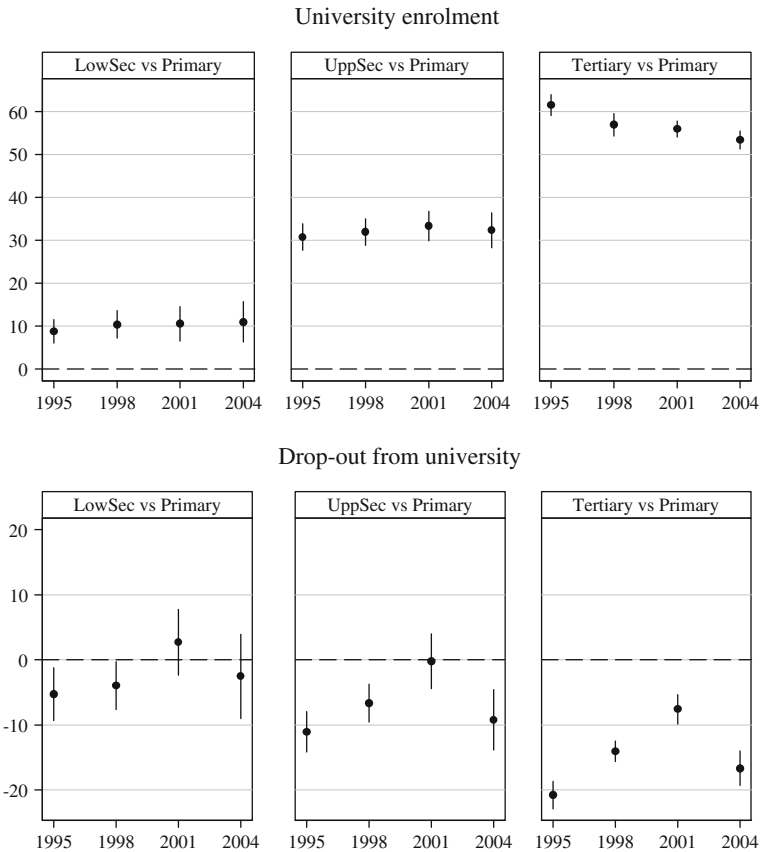
As pointed out by Cameron and Heckman (1998), this may be an artefact of the “transition model” which does not explicitly account for the selection process that occurs in a transition from an educational level to another. With this limitation in mind, we observe that the predicted differences among groups are striking and corroborate previous research results, which showed that the social selection of students in Italy also occurs within higher education rather than entirely in the transition from high school to university. Looking at trends over time, we do not observe a monotonic reduction in the total effect of parents’ education on the probability of drop-out. A decline took place between 1995 and 2001, but in the 2004 cohort the advantage of the offspring of highly-educated parents has become again apparent and similar to that observed 10 years before.

Figure 2 presents the results of two binomial logistic regression models which predict the intention of carrying on with the studies after the bachelor degree. Since the provision of a two-cycle structure has been available since 2001 (the year of implementation of the “Bologna process”), we estimate only two models for the post-reform cohorts.

Parents’ education affects the intention of continuing to study after the first cycle in the way we expected: students whose parents have a university degree have the highest propensity of enrolling at a second cycle course. Nonetheless, a significant reduction of group differences took place, and in the last cohort the only statistically significant estimate is the one which compares students with tertiary and primary educated parents.

Moreover, Table A3 in the Appendix shows that also the effects of the type of upper secondary school, final marks and failures on the probability of further study after the bachelor’s degree decreased over time. We think that this decline is mainly due to an

<sup>18</sup> Unfortunately, this operation introduces a sample selection bias, because it is likely that these students are on average more able and/or motivated than those who postpone their enrolment. We estimated additional models on all the students who enrolled in tertiary education within 3 years after graduation (controlling for year of enrolment) and trends of inequality over time are rather similar to those presented here.



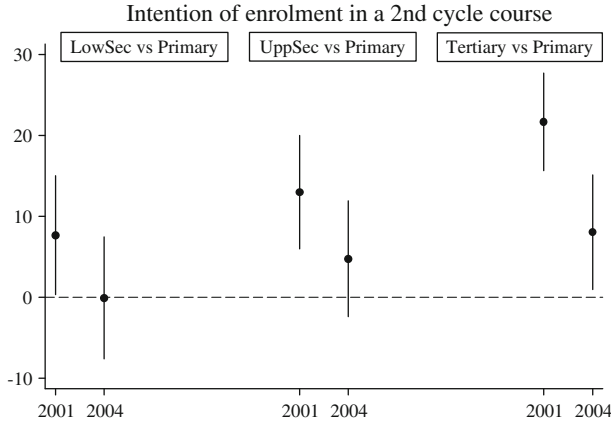
**Fig. 1** Average partial effects (in percentage points) and 95% confidence intervals from binomial logistic regression models predicting enrolment (first graph) and drop-out (second graph) according to parents' education, controlling for sex and geographical area. *Source:* Own calculations, SGS (1998; 2001; 2004; 2007)

underlying differential selection process in these two cohorts: since in the 2004 cohort the number of drop-outs of poor educated families is higher than in the 2001 cohort, it is plausible that lower class students who persisted in tertiary education are on average more motivated than those of the previous cohort and they are more likely to continue to study after 3 years of academic instruction.

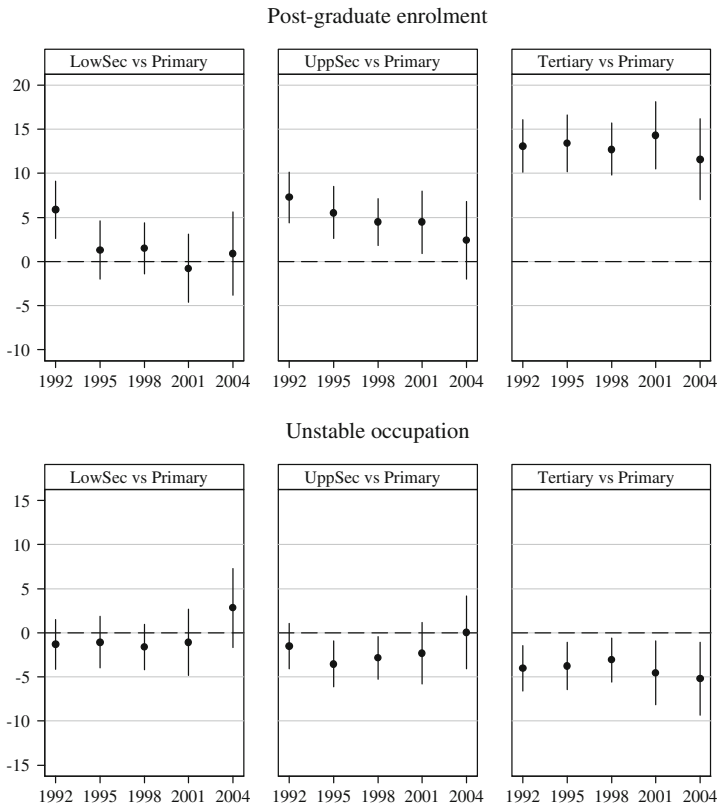
### Inequalities after graduation

As we expected, following the credentialist theory, we also observe an increase in the rate of persons enrolled in post-tertiary education/training (see Table 2).<sup>19</sup> The first graphic in Fig. 3 illustrates the relationship between parents' education and the probability of being enrolled in post-graduate training within 3 years after graduation, obtained through a logistic regression model controlling for sex, geographical area and age.

<sup>19</sup> The enrolment rate seems very high and we suspect that our data overestimates the overall amount of degree holders enrolled in post-tertiary education.



**Fig. 2** Average partial effects (in percentage points) and 95% confidence intervals from binomial logistic regression models predicting the intention of enrolling in the second cycle of study according to parents' education, controlling for sex and geographical area. *Source:* Own calculations, SGS (2004; 2007)



**Fig. 3** Average partial effects (in percentage points) and 95% confidence intervals from logistic regression models predicting enrolment in post-tertiary training (*first graph*) and unstable job (*second graph*) according to parents' education, controlling for sex, geographical area and age. *Source:* Own calculations, UGS (1995; 1998; 2001; 2004; 2007)

**Table 3** Labour market condition 3 years after graduation

	Treu law			Biagi reform	
	1992	1995	1998	2001	2004
Inactive	21.2	18.6	18.8	19.5	20.6
Unemployed	7.9	8.5	5.3	6.6	7.1
Unstable jobs	27.3	24.6	26.7	30.0	31.4
Stable jobs	43.6	48.3	49.2	43.9	41.0
Total	100.0	100.0	100.0	100.0	100.0

Source: Own calculations, UGS (1995; 1998; 2001; 2004; 2007)

As for the probability of entering higher education, we observe a clear advantage for graduates whose parents have a university degree, about 10% points. The advantage is instead less marked and sometimes close to zero for those whose parents have an upper or lower secondary school diploma. Moreover, if we consider uncertainty around the estimates, trends over time are fairly stable. When we include in the models previous school and university paths, the effect of social origin becomes lower: only graduates whose parents have a university degree continue to show a net advantage (about 7% points), but declining in the last cohort (see Table A6 in the Appendix).

Looking at the labour market outcome, Table 3 shows the situation regarding the graduates entering the labour market in different years. We observe an increase in the amount of unstable jobs, especially in the last two cohorts and if we consider only employed respondents. Nevertheless, in line with previous studies (Reyneri 2006), the increase of instability is not huge, the trend in time is not monotonic and it is not clearly associated with the timing of the labour market reforms.

The second graph in Fig. 3 presents the results of the multinomial logistic regressions showing only the association between social origin and the risk of having an unstable job 3 years after graduation. As we expected, parents' education has a limited effect of protection from this risk (no more than 5% points), but contrary to our expectations the differences among groups seem fairly stable over time, even if the uncertainty around the estimates is not negligible. We do not present here the social origin effect on the probability of having a stable job or of being unemployed, but in both cases the protection effect is not only limited, but it also seems to decline over time. Moreover, the net effect is not significantly different from zero for the last cohorts, after including several other control variables (see Table A7 in the Appendix).

## Discussion and conclusion

In the previous sections we have explored the relationships between social origin, educational opportunity at tertiary level, degree holders' occupational outcomes and their trends in the last decade. As we described, it was a changing time for the subpopulation of young people going through tertiary education, because of the "Bologna process" and the University reform, on one side, and the labour market reforms (Treu and Biagi), on the other.

Looking at participation in higher education, our hypotheses were to find a decrease of inequality in enrolment and drop-out, due to diminished costs of attending an

undergraduate course. On the other hand, we expected an increase in the association between social origin and access to further education after graduation (enrolment in the second cycle and in post-graduate courses) because of the increased necessity for upper-class students to be at the “top of the queue” in labour market entrance. We have found that the pattern of social inequality is quite clear and it resembles the one found in previous studies: the most advantaged are the children of tertiary educated parents, followed by those whose parents have an upper secondary diploma. Social origin is remarkably important both in the decision to enter higher education and to drop-out, whereas the differences among social groups are weaker if we look at the propensity to continue to study after the first cycle. Empirical evidence indicates heterogeneous trends of social inequality on different indicators. Our first hypothesis seems partially corroborated because we found a modest reduction both in the effect of parents’ education on enrolment at university and in post-graduate training. On the contrary, the second one is not supported by the data, as the difference in the propensity to continue to study after graduation among students from well-educated and poor-educated families are fairly stable. The data also shows that the association between parents’ education and drop-out declined in the first three cohorts but it increased again in the last one. The determinants of this trend are unclear and further data is needed to understand whether this worsening is persistent or not and whether it is generalized or typical of specific disciplines.

The (small) changes of social inequalities within higher education are only partly overlapped with the implementation of the university reform. Moreover, changes over time are only visible if we compare those whose parents have primary education with those from tertiary educated families and not for the intermediate categories. Hence, if the “Bologna process” has produced some changes in social inequality patterns, these seem to be short-term and confined to specific social groups.

Looking at the labour market side, we expected an increase of social inequality in the probability of having an unstable job 3 years after graduation, due to the increased competition among graduates. Even with regards to this outcome, we did not find relevant changes over time. The association between parents’ education and the risk of having unstable jobs is rather small and it did not change much between the middle 1990s and 2000s. Therefore results do not corroborate the hypothesis of a growth of social background protection from the risk of entering in the labour market with an unstable contract. In sum, despite the relevant institutional reforms that occurred in Italy during the 90s, we did not detect relevant changes in social inequality in higher education in this period.

**Acknowledgments** We would like to thank the participants at the Equalsoc Workshops and Meetings in Mannheim (April 2009), Tallinn (June 2009), Copenhagen (November 2009) and the ISA-Rc28 Spring Meeting in Beijing (14–16 May 2009) for useful comments on a previous version of this paper. We would also thank, in particular, Gabriele Ballarino, Carlo Barone, Giovanna Fullin, Michael Gebel, Walter Müller, Emilio Reyneri, Steffen Schindler, Domingo Scisci, Paolo Trivellato, Felix Weiss, the guest editors’ and an anonymous referee for their help and comments during the preparation of this paper. This research was funded by a grant to Moris Triventi from the University of Milano-Bicocca, co-financed by Regione Lombardia through the “FSE-Dote Ricercatori” programme (Project: 25-AR). Statements and opinions expressed in the article are those of the authors and cannot be attributed to the financing institutions.

## References

- Allison, P. (1999). Comparing logit and probit coefficients across groups. *Sociological Methods & Research*, 28(2), 186–208.

- Ballarino, G., & Bratti, M. (2009). Fields of study and university graduates' early occupational outcomes in Italy during 1995–2004. *Labour*, 23(3), 421–457.
- Barbieri, P., & Scherer, S. (2009). Labour market flexibilization and its consequences in Italy. *European Sociological Review*, 25(6), 677–692.
- Barbieri, G., & Sestito, P. (2008). Temporary workers in Italy: Who are they and where they end up. *Labour*, 22(1), 127–166.
- Bartus, T. (2008). *Methods and formulas for Margeff command*. <http://web.uni-corvinus.hu/bartus/stata/margeff.htm>.
- Bernardi, F., Gangl, M., & van de Werfhorst, H. G. (2004). *The from-school-to-work dynamics. Timing of works and quality of work in Italy, the Netherlands and the United States, 1980–1998*. Estudio/working paper 2004/201.
- Boero, G., & Staffolani, S. (Eds.). (2007). *Performance accademica e tassi di abbandono. Una analisi dei primi effetti della riforma universitaria*. Cagliari: Cooperativa Universitaria Editrice Cagliariitana.
- Breen, R., & Goldthorpe, J. H. (1997). Explaining educational differentials: Towards a formal rational action theory. *Rationality and Society*, 9, 275–305.
- Cameron, S. V., & Heckman, J. J. (1998). Life cycle schooling and dynamic selection bias: Models and evidence for five cohorts of American males. *Journal of Political Economy*, 106(2), 262–333.
- Cappellari, L., & Lucifora, C. (2009). The “Bologna process” and college enrolment decisions. *Labour Economics*, 16, 638–647.
- Cobalti, A., & Schizzerotto, A. (1993). Inequality of educational opportunity in Italy. In H. Blossfeld & Y. Shavit (Eds.), *Persistent inequalities*. Boulder: Westview Press.
- Collins, R. (1979). *The credential society*. New York: Academic Press.
- Esping-Andersen, G., & Regini, M. (Eds.). (2000). *Why deregulate labour markets?*. Oxford: Oxford University Press.
- Gualmini, E. (1998). *La politica del lavoro*. Bologna: Il Mulino.
- ISTAT. (1995; 1998; 2001; 2004, 2007). *Indagine sull'inserimento professionale dei laureati*. Rome: Istituto nazionale di statistica.
- ISTAT. (1998; 2001; 2004, 2007). *Indagine sui percorsi di studio e di lavoro dei diplomati*. Rome: Istituto nazionale di statistica.
- Reyneri, E. (2002). *Sociologia del mercato del lavoro*. Bologna: Il Mulino.
- Reyneri, E. (2006). Lavoro e lavori nel contesto italiano. Paper presented at the conference “Il futuro del lavoro in Italia”, Università di Cà Foscari, Venice, 3–4 November.
- Schizzerotto, A. (2002). La ricerca di un impiego & Lavori protetti e non protetti. In A. Schizzerotto (Ed.), *Vite ineguali. Disuguaglianze e corsi di vita nell'Italia contemporanea* (pp. 187–280). Bologna: Il Mulino.
- Shavit, Y., Arum, R., & Gamoran, A. (Eds.). (2007). *Stratification in higher education. A comparative study*. Stanford, CA: Stanford University Press.
- Strauss, H., & de la Maisonneuve, C. (2007). *The wage premium on tertiary education: New estimates for 21 OECD countries*. OECD-Economics Department, Working papers No 589.
- Treu, T. (2001). *Politiche del lavoro. Insegnamenti di un decennio*. Bologna: Il Mulino.
- Triventi, M., & Trivellato, P. (2009). Participation, performance and inequality in Italian higher education in the 20th century. Evidence from the Italian Longitudinal Household Survey. *Higher Education*, 57(6), 681–702.