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THE LABOUR MARKET EFFECTS OF *ALMA MATER*: EVIDENCE FROM ITALY

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The Labour Market Effects of *Alma Mater*: Evidence from Italy

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Abstract

We use data from a nationally representative survey of Italian graduates to study whether *Alma Mater* matters for employment and earnings three years after graduation. We find that the attended college matters, and that there are important college related differences, both among and within regions of the country. These differences, however, do not persist over time and are not large enough to trigger substantial mobility flows from poorly performing to better performing institutions. We also find evidence that going to a private university pays off at least in the early part of a career. Only part of this gain can be explained by the fact that private universities have lower pupil - teacher ratios than public institutions.

Keywords: economic impact, efficiency, salary wage differential, school choice
JEL code: I21, J24

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1. Introduction

Does the attended college affect the earnings and employment prospects of graduates? This question is particularly important for those households sending their offspring to college and paying part of the cost, and for the government, which often runs universities and needs to know whether and why some institutions are delivering better outcomes than others.

Spurred by the interest on the quality of education, a recent literature has investigated the labour market effects of college quality, mainly but not exclusively in the US. Black and Smith (2004) and Brand and Halaby (2003) review the key contributions. The main focus in this literature has been on comparing elite versus non – elite colleges, and the degree of selectivity has been measured either with the average SAT score of the incoming freshmen – in the US – or with the average A-level score of the intake of students – in the UK (see Chevalier and Conlon, 2003). The basic finding of this literature is that college quality matters for labour market outcomes.

In this paper we investigate the Italian case and study the effect of the attended university on earnings and employment prospects three years after graduation. The Italian case is interesting. Compared to the experience of other developed countries, the system of Italian universities has resisted differentiation – in terms of recognized prestige or curriculum[1]. While selective admission criteria are not forbidden, they are not the standard practice of most public universities, which charge relatively low tuition fees to admitted students[2]. Given this institutional framework, the natural expectation is that the college an individual has graduated from – her *Alma Mater* – should matter little for labour market performance.

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[1] Arum et al. (2004) classify university systems into unitary, binary and stratified, and allocate the Italian system to the small club of unitary systems.

[2] With few exceptions, access to Italian universities during the period covered by this study required only a leaving high school certificate. Since the liberalization of access in 1969, almost all high school graduates can be admitted to the faculty of choice. See www.eurydice.org for further details.

Since we cannot measure unambiguously selectivity, we assess heterogeneity in the returns to college by focusing on college fixed effects, the public/private divide and on observable measures of college quality. We find that *Alma Mater* matters for the early labour market performance of Italian graduates, and that graduates of most universities located in the more developed Northern part of the country experience three years after graduation significantly higher employment weighted earnings than graduates from Southern universities.

In the absence of constraints to college choice, these significant inter-regional differences should be arbitraged away by the mobility of students from the South to the North. However, we find that such mobility is limited. One possible reason is liquidity constraints, but we find little evidence of their presence. Alternative explanations include: regional cost differentials, which reduce the rate of return gap between the North and the South; the possibility that the uncovered differences in returns are temporary, and therefore not sufficient to compensate the long run costs of studying in another area of the country.

We also find that graduating from a private university yields a 18 percent premium in terms of employment weighted earnings with respect to graduating from a public college. Measures of college quality and size go some but not all the way in explaining the private college premium. We speculate that additional factors are at play, especially for privileged individuals: private schools provide valuable network effects, and the value of these networks is higher for individuals with a good family background, because of the complementarity between family and school networks.

Our results have a number of interesting policy implications. First, we find that a 10 percent decrease in the pupil / teacher ratio should increase employment weighted college earnings by 2.4 percent. Therefore, reducing crowded classrooms is likely to improve the quality of graduates and increase private and social payoffs. Whether this increase is

sufficient to compensate the costs of having a higher number of faculties remains an open question[3]. Second, many commentators[4] have argued that student mobility is an essential part of the much needed reform of the Italian higher education system. Our findings suggest that the actual dispersion of employment weighted earnings by college of graduation is not sufficient to trigger relevant inter-regional mobility flows, and that a more pronounced differentiation of colleges in terms of quality may be an important ingredient to attain higher student mobility

2. The Data

The National Statistical Office (ISTAT) carries out on a regular basis a survey – the *"Indagine statistica sull'inserimento professionale dei laureati"* - on the transition from college to work of a representative sample of Italian graduates. In the last available wave individuals who graduated from Italian universities in 1998 are interviewed three years after completion of the degree, in 2001.[5] The interviewed sample corresponds to 16 percent of the population of graduates of 1998. The survey covers school curriculum, labour market experience in the three years after graduation, job search activities, household and individual information. We match these data to information on college quality disaggregated by faculty and provided by ISTAT for the academic year 1996-7[6].

The focus of our analysis is on the effects of the university the individual graduated from – her *Alma Mater* - on the probability of being employed three years after graduation and on her net monthly earnings in the job held at the time of the interview. Employment in

[3] Italian universities are organized into faculties, and each faculty offers degrees in a well defined field of study. For instance, the Faculty of Economics offers degrees in the field of Economics.
[4] See for instance Perotti (2004).
[5] The survey does not include Italian graduates from foreign universities, who, according to Survey on Households Income and Wealth by the Bank of Italy, covered in 2002 only 2 percent of all graduates. We acknowledge that this exclusion could induce a sample selection issue; however, since these cases represent a relatively small proportion of the population, we believe that our estimates should not be affected too much.
[6] ISTAT, Lo stato dell'università, several issues. Since the publicly available micro-data do not include information on the university the interviewed individual graduated from, we carried out the matching at the ADELE ISTAT laboratory in Rome, where such information can be obtained.

the survey refers to all paid jobs, including training contracts[7]. About 4 percent of the currently employed are on a training contract – which includes post-graduate students funded by bursaries. Since the earnings in a training contract are likely to be rather far from normal earnings even for labour market entrants, we exclude individuals on a training scheme from our estimating sample.[8]

Monthly earnings in 2001 are in euros and net of taxes and social security contributions[9]. Average earnings in the sample are 1142 euros per month, with a standard deviation of 414.9, and range from a minimum of 103,2 € to a maximum of 4131,6 €. On the other hand, the average probability of being employed three years after graduation is 0.758, so that more than 7 graduates out of 10 are employed at the time of the survey.

On average, male graduates earn about 25 percent more than females, and are more likely to have a paid job three years after graduation. Having graduated from a private college yields a wage premium close to 10 percent, and a premium in the probability of employment around 15 percent. Finally, graduation from a college located in the Northwest yields a 20 percent wage premium and an almost 50 percent employment premium with respect to having graduated in a Southern college. The regional wage premium falls considerably from 20 to 8.3 if we compare individuals who graduated from a college in the Northwest and work in the same area with individuals who graduated in the South but work in the Northwest.

Average earnings are highest for graduates in Medicine, who face on the other hand the lowest employment probability, and lowest for graduates in Foreign Languages. There is

[7] The relevant question is: "Are you now – at the time of the survey – on a paid job? " Only a very small minority of those not currently employed were employed in the week before the interview. Since we do not have information on wages, we drop these individuals from the sample.

[8] Postgraduate students are about ten percent of the original sample, of which roughly half report receiving some forms of payment. Paid postgraduates are students in PhD programs and medical schools; while being a potential source of selectivity issue, their exclusion from the sample may not be particularly relevant in practice, given the small number. We have checked how the proportion of excluded postgraduate students varies by field across universities, and found their incidence to be remarkably similar across institutions located in different areas of the country.

[9] Earnings in the publicly available data are provided in brackets rather than as a continuous variable. All our computations based on continuous variables were carried out at the ADELE ISTAT laboratory in Rome.

also considerable dispersion in earnings and employment probabilities both within and between fields of study.

3. The Empirical Strategy

Our analysis consists of two steps. In the first step, we extract college-faculty effects from regressions involving individual earnings and employment probabilities. In the second step, we study the empirical relationship between the uncovered effects and cluster-level measures of educational inputs derived from official statistics, including the type of college – public versus private. By resorting to such a procedure we make it explicit that it is the cluster - level variability that provides identification of the effect of educational inputs: the same parameter would not be identified from individual level data, conditional on cluster effects.

Specifically, let the individual-level outcome of interest, y_i, be a function of the attended college-faculty cluster (denoted by the dummy d^{cf}_i) and of observable attributes (x_i), plus an error term. The first step regression is:

$$y_i=\alpha+\Sigma_f\Sigma_c d^{cf}_i\theta^{cf}+x_i'\gamma+u_i \qquad (i=1\ldots N), \quad (1)$$

In our case, y_i is either the log of net monthly earnings or the individual employment status; for the former we use a linear regression, whereas for the latter we assume normality of the error term and use a probit regression.[10] The vector of observables includes gender, region of employment (region of birth for the employment equation), labour market experience and type of job (only for the wage equation), parental background in terms of occupation and education, year of birth, the number of siblings, the duration of college studies, the final

[10] We experimented analysing earnings and employment simultaneously by means of a model with endogenous selection into employment, but did not find the correlation between the errors of the employment and wage equation to be statistically significant at usual levels of confidence.

graduation mark, the type of high school attended (whether generalist or technical/professional) and the marks reported in the high school graduation exam. We also include interactions between parental education and occupation, on the one hand, and marks and school types, on the other.

In estimating equation (1) we make the assumption that, conditional on the observables, there is no selection into college-faculty clusters according to students unobserved ability, so that the coefficients can be consistently estimated. Clearly, the validity of such an assumption depends on how well we control for factors that are related to individual ability and that may influence college choice. While there is no guarantee that our assumption is going to be met, we stress that the vector of observables consists of a detailed list of control factors, including interactions, which leads us to believe that omitted variables bias – if existent – is mild.

As discussed by Black and Smith (2004) in the context of the college quality literature, both regression methods and matching techniques are based on the 'selection on observables' assumption. One advantage of matching over linear regression is that it makes a non-parametric use of information on control factors, thereby avoiding any additional omitted variable bias stemming from functional form misspecification in linear models. However, since we allow many of the observables to enter equation (1) rather flexibly (i.e. either linearly and through interaction terms) we can expect functional form misspecification to be relatively unimportant in our case.

The inclusion of regional dummies in equation (1) captures local labour and product market effects. The identification of the college by faculty effects is ensured by the presence of more than one college per region, and by the inter-regional mobility of students. By using regional rather than provincial dummies we implicitly assume that local labour market conditions do not vary significantly within each region. This is reasonable in the Italian

context, where the key divide for labour market heterogeneity is the North versus the South[11]. Since one college per province is the general rule in Italy, this assumption is necessary for identification: the inclusion of provincial rather than regional dummies would capture in most of the cases the college effects we are interested in.

Regression (1) is the first step in our procedure and allows us to predict log-monthly earnings and employment probability by college/faculty clusters. In the second step we analyze the determinants of college-faculty wage and employment effects. Let q_{cf} be the estimate of θ^{cf} from the earnings or employment equation[12]. The second step equation is:

$$q_{cf} = \Sigma_j \phi_j f^j_{cf} + \Sigma_k \chi_k c^k_{fc} + \beta' z_{cf} + \varepsilon_{cf} \qquad (2)$$

where f^j, $j=1\ldots F$, is a set of faculty dummies, c^k, $k=1\ldots C$ is a set of college dummies, and z is a vector of variables measuring educational inputs. The coefficients associated to the dummy variables in (2) capture the effects of each college or faculty on average earnings or employment. The second step estimates are based on Weighted Least Squares, with weights proportional to the (inverse) of the variance of q^{cf} - estimated from (1), in order to account for the fact that the dependent variable is a generated variable from the first stage estimate. We get around to the fact that employment effects are bounded in the (0,1) interval by using a Box-Cox transformation.

Human capital theory suggests that educational choice is driven by expected returns. Therefore, an interesting measure of labour market performance three years after graduation is the employment weighted wage effect. Let e_{cf} be the average employment probability and w_{cf} be the average earnings in a given college-faculty cluster: expected earnings in the cluster

[11] For instance, most of the variation in local unemployment rates is between the Northern and the Southern regions, rather than within each area. See Brunello et al. (2001).

[12] In the case of employment, we transform the estimated coefficients associated with college-faculty cluster dummies into probabilities by using the standard normal cumulative distribution function and by evaluating all the other regressors at their sample means.

are therefore $ew_{cf}=e_{cf}w_{cf}$ which can be expressed in logs as $\log(e_{cf}) + \log(w_{cf})$, a quantity that we can compute (together with its variance) from our first stage regression, and use as an additional outcome in the second stage WLS regression. This variable will play a prominent role in the discussion below.

4. Results

As mentioned in the previous section, the identification of college by faculty effects relies both on the fact that most regions have several universities[13] and on the presence of movers, who study in a region and work in another region. Table 1 illustrates the mobility flows across four macro areas, North-West, North-East, Centre and South, which group the 20 regions of the country. Needless to say, flows between areas are lower than flows between regions, because aggregation cancels out the flows within a single area. As expected, individuals completing a degree in the Centre or in the South are more likely than individuals in the North to relocate and work in another macro-area, typically the North West, where many college jobs are located. Overall, the percentage of individuals who currently work in a region after graduating in another region is close to one quarter of the population of graduates.[14]

<Table 1 around here>

4.1 College effects on wages and employment

We interpret the estimated coefficients of the 362 dummies as the impacts of college and faculty on individual earnings and employment three years after graduation. Under the

[13] Lombardia, the largest region, has 11 universities.

[14] It is worth noting that the North-East is a net exporter of college graduates towards the North-West, at least in relative terms. Part of this finding may reflect return migration: while almost 8 percent of natives from the North-West go to college in the North-East, the figures halve when considering the opposite flow. Still, the finding can be seen as a symptom of the different productive structure in the two areas, dominated by small manufacturing firms in the North-East, and by large enterprises in manufacturing and banking in the North-West, leading to a different structure of the demand for skills.

assumption that individual ability has been adequately captured by our first step controls, these estimates are consistent[15].

We disentangle the contributions of the faculty and the university to wage and employment by regressing the estimated effects on faculty and college dummies – see equation (2) above. In order to have sufficient observations for each university, we restrict our attention to institutions with at least three faculties. The college dummies in these second step regressions measure the impact of each university on earnings and employment probabilities, conditional on the field of study and on the individual effects controlled in the first stage[16]. The employment weighted college wage effects in the second step regression are significantly higher for the graduates of many colleges located in the North of the country than for the graduates of most Southern colleges, and the difference between the highest and the lowest college effect is close to 130 percent. There are important exceptions, however, with some of the southern universities producing higher returns in terms of expected earnings than colleges in the North. Sharp differences occur not only between universities located in distant regions, but also within regions.

One might object that the uncovered inter-regional differences reflect local labour market rather than college differences. In the first stage, however, we have explicitly controlled for local labour market effects by adding to the regressions regional dummies for the region where the job is located. To assess the robustness of our findings, we have re-estimated first stage regressions by omitting regional labour market dummies. We find that inter-regional gaps widen considerably, and that the highest employment weighted college wage effects are registered now in Lombardy and in part of the North-East, the areas of the country with very active local labour markets.

[15] These are net impacts because the college and faculty can affect some of the controls, such as labour market experience, performance in college, type of job, region where the job is located and actual time to complete the degree.

[16] For reasons of space results of the second step regressions are not reported here and are available in Brunello and Cappellari (2005).

If students were perfectly mobile across universities, and the private costs of graduating from each institution were homogeneous across the country, we would expect these large differences in college–specific labour market returns to be washed away by arbitrage activities. Mobility of university students, however, is limited. The data provide information both on the region of residence before going to college and on the region where the college is located, thereby allowing observation of mobility flows.

<Table 2 around here>

As shown in Table 2, there is limited mobility across macro-regions, not only in the Northern and Central areas, where many better performing universities are located, but also in the South, where universities are among the worst performing in the sample. More in detail, students who resided in the South before college either remain there for college (73.5%) or move to the nearby Centre (18.8%): less than 8% move to the North.

How do we explain the observed limited mobility flows between macro-areas in the presence of substantial differences in employment weighted college wage effects? Since most universities do not restrict admissions by applying *numerus clausus*[17], the explanation must rely on the demand for college education. One natural possibility is that Southern students are restrained from enrolling in Northern colleges because of liquidity constraints.

If liquidity constraints had played a significant role in hampering the mobility of students from the South to the North, we would expect to find that inter-regional mobility is much lower for students belonging to less educated and less wealthy households. Surprisingly enough, this is not the case. If we replicate Table 2 separately for individuals with "advantaged" and "disadvantaged" family background at age 14 – advantaged background

[17] With a few exceptions, *numerus clausus* in Italy is restricted to specific fields – such as Medicine – and to newly established faculties.

being defined when the father was an entrepreneur, a manager, a high ranked director, a teacher or a high ranked white collar, and disadvantaged background when the father was in a low paying occupation – there is no difference worth noticing – see Table 3 below. The percentage of students in our dataset residing in the South who went to college in the South is 72.99 percent if from a good family background and 74.12 percent if from a bad background. On the other hand, the percentage of students residing in the South before college who moved to the North for college is 8.22 among those with good background and 6.94 percent among those with bad background. These differences remain small even when we measure background with parental education[18].

<Table 3 around here>

An alternative and we believe more plausible explanation of the limited mobility flows from the South to the North is that the internal rate of return to going to college does not differ significantly across macro-areas. There are three pieces of evidence favouring this explanation. First, tuition is higher in the North. Even though fees are not high by international standards, Northern colleges have used to a much larger extent than other universities in the country the opportunity to raise tuition in the second part of the 1990s above the centrally established ceiling (Law 122/94). This and the endogenous selection of students to college have implied that average tuition in 1995 was about 50 percent higher in Northern than in Southern public universities – 511 € versus 326 € at current prices (see Silvestri et al, 1996). Second, both opportunity and living costs – including housing – are higher in the North. A recent survey of living costs in a sample of Italian universities has shown that in 2000 the annual cost – inclusive of rent, transportation and food - of going to a

[18] Results available from the authors upon request.

university located in a different region was 6135 € in Pavia, 5866 € in Venice – both in the North, and 4668 € and 5402 € in the Southern cities of Cagliari and Napoli respectively, with a North–South gap close to about 30 percent (Catalano and Fiegna, 2003).

These differences in costs, however, are too small to compensate for the differences in expected returns. A third factor at play is that the observed employment weighted college wage gaps three years after graduation could be temporary effects, which are washed away over time, as individuals settle down in the labour market and in permanent jobs, and accumulate labour market experience. Evidence that the effects of college quality on earnings and employment probabilities wane over labour market careers is discussed by Warren, Hauser and Sheridan (2002) and Brand and Halaby (2003) for the US. Employers use credentials, including college quality, as a signal of skills at labour market entry, but as individuals age this signal loses importance relative to other sources of information, such as direct screening. Support for this explanation comes from the 2002 wave of the Survey on the Income and Wealth of Italian Households (SHIW), carried out by the Bank of Italy, which includes information on the college of graduation. The sample of graduates is much smaller than the one we are using in this paper, but has the advantage of covering individuals of different age rather than only labour market entrants. We define a dummy for the young – aged from 25 to 34 – and for the adult – aged from 35 to 55, and regress both monthly earnings and employment propensities on individual controls, area of residence, faculty dummies and age dummies. We also interact both age group dummy with a dummy equal to 1 if the college of graduation was located in the North and to zero otherwise. Our key results are presented in Table 4[19]. They show that monthly earnings do not differ in a significant way with the area where the college of graduation was located. Employment propensities, however, differ, because the young age group from Northern colleges enjoys a significantly

[19] These regressions consider only employees, because the self-reported earnings of professionals are notoriously unreliable. Notice however that results do not change significantly if professionals are added to the sample. The results are available from the authors upon request.

higher probability of employment. More importantly for our purposes, however, is the finding that this relative advantage disappears among adults.

<Table 4 around here>

Consistent but temporary employment weighted wage gains may not suffice to trigger the mobility of students from Southern to Northern universities in a society where the establishment and maintenance of informal networks is key to social promotion and to the access of good job opportunities[20]: moving to a Northern college can generate temporary wage gains, but at the more permanent cost of severing and / or failing to improve the existing network of local connections.

While economic considerations certainly play a role in explaining limited student mobility, historical, social and cultural factors also matter. For instance, decomposing mobility flows by region, rather than by macro-area, reveals that mobility is rather heterogeneous across Southern regions, and is much larger in Calabria than in Sicily. This fact does not seem to depend on expected earnings differentials. An important additional reason is that the largest university in the former region was established fairly recently, in the seventies. Before that, students from Calabria had to move elsewhere to study, and moving for college education was part of the social custom, contrary to the Sicilian experience, where universities where established in the nineteenth century.

4.2. Private and public universities

Why do earnings and employment probabilities three years after graduation vary depending on the attended college? The natural answer is that colleges differ in quality, and

[20] See Pistaferri, 1999.

that this quality is priced by the labour market. One important dimension of college quality is whether the university is public or private. We investigate this dimension by replacing the college dummies in the second step regression either with a dummy equal to 1 if the university is private and to zero otherwise or with the interactions of this dummy with faculty dummies. By using interactions, we allow the effects of the private college dummy to vary with the faculty[21]. These effects can be identified because there is within-field variation in college status – either public or private. Table 5 presents the results separately for earnings, employment probabilities (Box Cox transformations) and employment weighted earnings.

<Table 5 around here>

We find that going to a private university has a positive and statistically significant effect. Since wage effects are estimated from a first step log earnings equation, we can interpret the estimated coefficient attached to the private college dummy as the approximate percentage change in earnings associated to graduating from a private college. To ease interpretation, coefficients on (Box-Cox) employment effects are complemented by the implied effects on employment probabilities, which is the third number in each cell.

It turns out that going to a private university increases employment weighted earnings three years after graduation by close to 18 percent, a significant effect. Behind the average effect there is substantial heterogeneity: the graduates of private universities in the fields of Law and Economics earn respectively close to 50 and 20 percent more than graduates of public colleges in the same fields. On the other hand, the graduates in the Humanities and Natural Sciences do not gain significantly from going to a private college.

[21] Notice that there are some fields of study – Engineering for example – which are only available in public universities. We pool together some fields – Psychology, Foreign Languages and Education with Humanities, Agricultural Studies with Natural Sciences – in order to have a sufficient number of observations in the second step estimation.

4.3. College quality

Is the difference made by private colleges due to observable measures of college quality? We capture quality with the (log) pupil – teacher ratio, the classical indicator used in the related literature (see Hanushek, 2002), but also control for the (log) number of students in the college and faculty. Since selection at entry is rare in Italian universities, and mobility is limited, a larger size - conditional on the pupil-teacher ratio - reflects relative demand for college education in the area. We include our selected measure of college quality and college size in the vector *z* of equation (2) and present the associated estimates in Table 6. We find that the coefficients of the log pupil – teacher ratio and log size attract a negative and positive statistically significant sign respectively.

<Table 6 around here>

With both the pupil – teacher ratio and the number of students in logs, the associated coefficients can be interpreted as elasticities. Our evidence suggests that a 10 percent reduction in the pupil-teacher ratio should increase employment weighted earnings by 2.41 percent. The pupil-teacher ratio and the size of private universities in our sample are on average 47 and 23 percent lower than in public universities. According to our estimates, these combined differences account for a private college wage premium of 7.6 percent. The additional premium of 12.6 percent associated to private colleges needs to be explained by considering additional factors.

A natural candidate is the presence of network effects. Private universities are valuable not only because of the higher average quality associated to a lower pupil – teacher ratio, but also because they provide access to labour market networks, which are key in the

search of good job market opportunities (Pistaferri, 1999). In a society characterized by relatively limited inter-generational mobility – see Checchi et al. (1999)- we expect the returns from access to these networks to be complementary with the networks associated to privileged parental background.

To investigate this hypothesis, we classify the family background of college graduates in our sample into "disadvantaged" and "advantaged", depending on the profession of the father when the surveyed individual was 14, as we did in the previous subsection. We run separate first stage regressions for advantaged and disadvantaged, retrieve the estimated college by faculty effects and replicate the second step estimates in Table 6 separately for each group. The results are reported in Table 7.

Going to a private college matters significantly, independently of parental background. However, while the gain from going to a private college is driven by the lower pupil – teacher ratio for students with a "disadvantaged" background, it is associated to the private college dummy for students with an "advantaged" background. We interpret this as pointing to complementarity between family and school labour market networks: when enrolled students are from a less privileged family background, access to the best networks is difficult and the measured quality of the private college, captured by the pupil – teacher ratio, makes a difference. When students come from a privileged background, school quality does not affect future labour market performance, because all that matters is the additional connections afforded by peer interactions in private schools.

<Table 7 around here>

5. Conclusion

Compared to the experience of other developed countries, the system of Italian universities has resisted differentiation. This institutional setup suggests that the college an individual has graduated from – her *Alma Mater* – should matter little for labour market performance. In this paper, we have used the data from a nationally representative survey of Italian graduates to study whether this implication is correct. We have found that *Alma Mater* does matter in the short run, and that college related differences are large both among regions – the developed North and the less developed South – and within regions, but not large enough to trigger substantial mobility flows from poorly performing to better performing institutions, which is driven by medium and long run considerations. Over the longer time horizon, the uncovered differences are washed away.

We have also found that going to a private university – there are a few such institutions in Italy – pays off at least in the early part of a career: the employment weighted college wage gains from going to a private college are close to 18 percent. Only part of this gain can be explained by the fact that private universities have lower pupil-teacher ratios; at least as much depends on other factors, and we speculate that the network effects are particularly important in this perspective. Interestingly, school quality in private colleges matters more for the less privileged who gain access, and less for the privileged, who can combine the informal networks endowed by the family with those provided by the schools.

It is an open question whether the gains associated to a private university are large enough to compensate the higher tuition costs, and whether they continue as the individual progresses in her labour market history. To answer the second question would require that graduates be re-interviewed significantly later than 3 years after college, as it happens in some countries but not in Italy.

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Tables

Table 1. Mobility flows among the four macro areas of Italy

	Employment North West	*Employment North East*	*Employment Centre*	*Employment South*
College North West	93.52	3.47	1.65	1.36
College North East	12.30	81.87	3.86	1.97
College Centre	6.95	3.95	75.91	13.18
College South	9.17	3.34	6.87	80.62

Note: the numbers in the table are percentages, which add up to 100 by row.

Table 2. Mobility flows among the four macro areas of Italy, before college and during college

	College North West	*College North East*	*College Centre*	*College South*
Before College North West	90.78	7.39	1.52	0.30
Before College North East	3.79	93.41	2.50	0.31
Before College Centre	0.88	4.79	93.69	0.64
Before College South	3.56	4.04	18.86	73.54

Note: the numbers in the table are percentages, which add up to 100 by row.

Table 3. Mobility flows among the four macro areas of Italy, before college and during college.

Advantaged background

	College North West	*College North East*	*College Centre*	*College South*
Before College North West	91.37	6.77	1.55	0.31
Before College North East	4.49	92.50	2.73	0.28
Before College Centre	1.15	4.64	93.48	0.73
Before College South	3.99	4.23	18.79	72.99

Disadvantaged background

	College North West	*College North East*	*College Centre*	*College South*
Before College North West	90.06	8.17	1.49	0.29
Before College North East	2.97	94.46	2.24	0.33
Before College Centre	0.53	4.99	93.45	0.53
Before College South	3.10	3.84	18.94	74.12

Table 4. Monthly wages and employment probabilities , by age group and region where the college is located. Weighted least squares

	Monthly wages	*Employment probabilities*
Young * College North	.129 (.117)	.751** (.312)
Adult	.339*** (.091)	1.475*** (.214)
Adult * College North	.044 (.082)	.430 (.351)
Nobs	518	870

Note: Source: Survey on Households Income and Wealth 2002, Bank of Italy. Each regression includes gender, region of residence and faculty dummies. The wage regression also includes a part-time dummy. The young age group in the Centre and South in the baseline. One, two and three stars for coefficients statistically significant at the 10, 5 and 1 percent level of confidence. Heteroskedasticity consistent standard errors.

Table 5. The effects of private universities on earnings and employment. WLS estimates

Private college dummies	*Earnings*	*Earnings*	*Employment*	*Employment*	*Employment weighted earnings*	*Employment weighted earnings*
Private universities	.074*** (.023)		.381*** (.194) .046		.180** (.070)	
Economics		.033 (.038)		.622*** (.257) .069		.190*** (.049)
Law		.173*** (.040)		.650*** (.220) .072		.540*** (.078)
Humanities		.087** (.036)		.181 (.344) .023		.101 (.108)
Natural Sciences		.006 (.055)		-.201 (.239) .029		.159 (.108)
Political Science		.047 (.071)		.696 (.482) .076		.230 (.123)
Nobs	362	362	341	341	341	341
R Squared	.499	.502	.398	.403	.381	.387

Note : each regression includes faculty dummies. One, two and three stars for statistically significant parameters at the 10, 5 and 1 percent level of confidence.

Table 6. The effects of private college dummies on employment weighted earnings

Private college	.308***	.126*
	(.057)	(.073)
Log pupil - teacher ratio	-	-.241***
		(.054)
Log number students	-	.164***
		(.051)
Nobs	279	279
R squared	.312	.443

Note: see Table 5. The reduction in the number of observations compared to Table 5 is due to missing information on school quality in some fields of study and universities.

Table 7. The effects of private college dummies on employment weighted earnings

	Advantaged background	*Advantaged background*	*Disadvantaged background*	*Disadvantaged background*
Private college	.355***	.348***	.276***	.023
	(.056)	(.074)	(.099)	(.138)
Log pupil - teacher ratio		-.033		-.462***
		(.047)		(.107)
Log number students		.091**		.264***
		(.040)		(.072)
Nobs	257	257		257
R squared	.325	.326		.401

Note: see Table 5