

**AWAY, BUT NOT TOO FAR FROM HOME.  
EVIDENCE ON UNIVERSITY ENROLMENT DECISIONS**

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*This paper investigates the impact of an educational programme recently introduced in the Province of Trento (North-East of Italy) aimed at fostering university enrolment of students from low-income families and at reducing inequalities in access to higher education. The programme consists in generous incentives: it targets university students from low-income families and is awarded upon both merit and demonstrated financial need. We exploit data from a survey conducted on a sample of upper secondary graduates linked to administrative records and employ a regression discontinuity design to estimate the impact of the intervention on the university enrolment decisions. We find that the programme has no significant effect on enrolment rates, but it exerts a positive effect on redirecting students already bound for university to enrol outside the place of residence.*

**JEL codes:** C31, I23, I24, I28, I38

**Keywords:** *financial aid, university enrolment, regression discontinuity, programme evaluation.*

# **Away, but not too far from home.**

## **Evidence on university enrolment decisions.**

### **1. Introduction**

Widening participation in higher education (HE henceforth) is a much debated topic in many advanced countries, mainly because of the positive externalities that a higher level of education has on the entire society (OECD 2008, Hanushek and Wössman 2010,). Many national and local governments play a key role in supporting the transition from secondary to HE with various forms of financial aid to students, and this results in substantial public contributions (OECD 2013: 222-236). By reducing the costs of university attendance, these programmes typically seek to persuade low-income families to invest in their children's HE, thus lessening or containing inequalities. Despite the considerable public spending intended to increase participation, the effectiveness of financial aids to students is still controversial because the design of such interventions poses practical problems, some of which relate to the choice of the eligibility criteria (Dynarski and Scott-Clayton, 2013).

In this paper, we study whether and to what extent transitions to HE are affected by lowering the costs of university attendance. To address this question we evaluate a merit-based programme for low-income students specifically introduced to enhance transitions to HE in the North-East of Italy. More specifically, the aim of this study is twofold: firstly, to assess the effectiveness of financial aids to students on university enrolment; secondly, to provide empirical evidence on how students' choices relative to university participation are affected by financial aids.

Although the impact of financial assistance on transition to HE has been a longstanding concern in the social sciences (Leslie and Brinkman 1988, Heller 1997), empirical evidence has so far been unable to provide a definitive answer regarding the effectiveness of such policies. On the one hand, van der Klaauw (2002), in a study on the effects of US college aid offers on enrolment, shows the importance of financial aid as an effective instrument in competing with other colleges. Other studies referring to the US context prove that students' decisions to enrol at a college respond positively to public financial transfers (Dynarski 2003), as well as to fees reduction (Manski and Wise 1983; McPherson and Schapiro 1991; Kane 1994). However, on the other hand, Hansen (1983) finds no significant effect of the federal grant programme known as BEOG on the access to HE, and Goodman (2008) has more recently shown that financial aids have no effect on the overall college attendance rate in Massachusetts.

These contrasting results are by no means peculiar to the US. In many European countries, where the cost of attending university is usually lower, findings support the uncertain effectiveness of these programmes in different educational contexts. Lauer (2002) and Stenier and Wrohlich (2008) find that the monetary benefits positively raise the enrolment rates of German students. Similar results have been obtained by Fredriksson (1997) and Nielsen et al. (2010) for Sweden and Denmark, respectively. However, as for the US, some studies draw different conclusions in European countries as well: in Germany, for instance, Baumgartner and Steiner (2006) find a non-significant effect of financial incentives on student decisions to attend university. Furthermore, Bruckmeier and Wigger (2014)

have recently shown that the introduction of tuition fees at public universities in some German states has not had any negative effect on aggregate enrolment rates.

Although most of the programmes mentioned above have been targeted on students from low-income families, in recent years there has been a shift toward programmes based on merit rather than financial need.<sup>1</sup> Assessments of these policies suggest that they are more effective, though the results are not conclusive. On studying Georgia's HOPE programme, Dynarski (2000) and Cornwell et al. (2006) report that merit-based incentives have positive and significant effects on the probability of university enrolment. Conversely, Binder and Ganderton (2002), exploiting data on a means-test policy set up in New Mexico also based on merit, find no empirical evidence that it exerted a positive effect in increasing college enrolment. However, they point out that the programme's most notable effect appears to be a redirection of students already bound for college to different institutions and types of courses. Turning to Italy, to the best of our knowledge, there are only two studies (Garibaldi et al. 2012, Mealli and Rampichini 2012) addressing the issue of the effects of financial aids, but they both consider only outcomes related to performance at university rather than students' decisions concerning HE participation.

Clearly, from a theoretical point of view, the central question concerns the role of family income and its effects on the transition from secondary to tertiary education. Drawing robust conclusions on this issue requires understanding how students and their families react to exogenous variation in educational costs. The underlying idea is that there is a liquidity constraint affecting the decision to enrol at a HE institution. If so, a generous grant would foster university enrolment by reducing the direct and indirect costs of attendance. Several studies stress that there is a direct influence of family income on child's attainment, although there is substantial variation in the strength of the relationship (Mayer 1997, Hobcraft 1998, Gregg and Machin 2001, Levy and Duncan 2000, Huston et al. 2001, Clark-Kaufman et al. 2003). These studies find that the negative effect of low income on students' enrolment decisions is still present even after controlling for family background and other key factors assumed to affect educational outcomes. Moreover, economic models underlying the relationship between scholarship programmes and optimal school choice are straightforwardly derived from the standard human capital framework (Becker 1993, Griliches 1977), suggesting that financial aid programmes should increase overall university enrolment, although they allow for a sub-optimal choice equilibrium (Dynarski 2000, Binder and Ganderton 2002).

Cameron and Heckman (2001) and Carneiro and Heckman (2002) challenge this approach by arguing that long-run family and environmental factors shape the abilities and expectations of children. Therefore, students from disadvantaged backgrounds do not enrol because of a lack of abilities, not because of liquidity constraints. This research strand suggests that financial aids are not effective. To increase HE participation, it is necessary to act on children's motivation during their school careers, and especially on the effects of social origins when they are very young, because cognitive abilities are formed very early in life and it is more difficult to intervene as children grow up (Cunha and Heckman 2009).

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<sup>1</sup> Theoretically, the debate on merit-based incentives is still open. Some scholars argue that incentives of this kind favour well-off students due to the strong correlation between social origins and educational attainment (Orfield 2002).

In what follows, we consider an educational programme introduced in the Province of Trento (North-East Italy) and known as Grant 5B, which is a generous scholarship awarded according to the merit and demonstrated financial need of applicants. In principle, one would expect the introduction of such programmes to raise the propensity of eligible students to enrol at university. However, the empirical results and theoretical arguments mentioned above suggest that financial incentives targeted on university students may be ineffective in sustaining transitions from secondary to tertiary education. Even if a programme proves not to exert any effects on the enrolment rate, it may still influence decisions concerning enrolment for those students already bound for university. In fact, students' decisions regarding the field of study and the location of the university may be restricted by budget constraints which the financial aid removes.

Using a regression discontinuity design, we study whether eligibility for Grant 5B causally affects the university enrolment probability of students, and whether there is a redirection of students already bound for university. In particular, we analyse the decisions of enrolled students in terms of the field of study and the chosen university's location and prestige. Exploiting information available from a unique dataset resulting from integrating administrative records with survey data on a sample of upper-secondary graduates in a regression discontinuity setting, we are able to provide unbiased estimates of the causal effects of considerable monetary incentives to support university enrolment with reference to the Italian educational context. We find that financial aid provided by the province of Trento has no effect on university enrolment probability. However, it exerts a large positive effect (about 40%) on the decision to enrol outside the province of residence, especially in fields of study not covered by the local university.

We conclude that Grant 5B – though not effective in raising the enrolment rate – allows for a better match between individual preferences and budget constraints. Exploiting the evaluation problem considered here, this study provides further empirical evidence concerning the role of liquidity constraints in university participation. This enables us to add a piece of evidence to the literature on the optimal educational choice by focusing on decisions made at the HE level. In regard to the interplay between family income and monetary incentives, as well as the related debate about the financing of university attendance and the choice of eligibility criteria for policies of this kind, we contribute to the design of educational programmes to widen participation. Better understanding of the effects of financial aid on university participation, and how this can enable students to match their school careers and life preferences, would be extremely beneficial from both a research and a policy-making perspective, especially considering the expansion of HE that has occurred in recent decades in many advanced countries like Italy. As far as many countries are concerned to broaden HE participation, this study may be relevant to other educational contexts.

The remainder of the paper is organized as follows. Section 2 describes the main characteristics of the Italian educational system and presents Grant 5B and the context in which this programme has been introduced. Section 3 is devoted to description of the data and some descriptive results, while Section 4 explains the evaluation strategy. Section 5 sets out the main empirical results. Section 6 makes some concluding remarks and draws some policy implications.

## 2. Description of the Grant 5B programme

### 2.1. Context: the Italian education system and the province of Trento

The Italian education system is currently organised into three stages: primary, secondary and tertiary. In the 1960s, a set of reforms made the Italian educational system more egalitarian by widening the university access to students with vocational qualifications. Nowadays, the only constraint that the Italian students face in accessing university is the so-called *Esame di maturità*, the final examination that students have to take to complete upper-secondary school. Passing the *Esame di maturità* allows access to HE regardless of the final score obtained, which ranges between 60 and 100.<sup>2</sup> Hence if a student graduates from a five-year technical or vocational school, she/he may enrol at university. In any case, there is a set of high schools – the so-called *licei* – which specifically prepare students for university.

In 2001, the ‘Bologna Process’ changed HE in Italy. Italian tertiary education is now based on a sequential system, which includes a three-year bachelor (*laurea triennale*) and a two-year master course (*laurea magistrale*). A decentralisation process completed in 1998 enabled universities to institute new faculties more easily. This process favoured an increase in the supply of degree courses, and new branch university campuses were opened. Consequently, Italy is characterised by a large presence of universities throughout the country.

It should be pointed out that the HE system in Italy is mainly based on public universities, which award degrees with the same legal value. This means that, in particular for the competitive public-sector entrance examinations, what really matters is attainment of a degree and not the prestige of the university attended. Moreover, in the private sector, companies may have difficulties in evaluating graduates from the same field of study but from different universities. In recent years Censis (Research Institute for Social Study) and the newspaper *La Repubblica* have published a ranking of Italian universities and departments based on research and teaching. But still unclear is the impact of such rankings on university participation and on future employment chances. It should also be stressed that tuition fees in Italy are very low compared with those in the USA or the UK. For example, at the University of Trento (UniTN henceforth) the fees for bachelor degree courses vary from € 437 to € 2,007 per year based on family income (for further details see OECD, 2013: 232).

In general, the research reported here focused on the access to HE in the province of Trento. A brief description of this province’s economic situation with respect to the rest of the country may be useful. Trento is a small and well-developed area in the North-East of Italy, with a rather tight labour market and a per capita GDP about 20% higher than the national average. Figure 1 shows that this difference has remained stable in the last decade (panel *a.*), and that this trend is mirrored in the rate of poor families, which is lower in the province of Trento than in the rest of Italy (panel *b.*). In regard to youth, despite the onset of the 2009 economic crisis, labour market conditions are relatively

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<sup>2</sup> Students taking the *Esame di maturità* have to sit three written tests and an oral examination. Each written test accounts for 15% of the final score and the oral examination for 30%; the remaining 25% depends on the student’s school career in the three years prior to the examination. The Ministry of Education prepares two of the three written tests, while the rest of the examination is prepared and administered by a specific school examination committee. This committee is formed of four external examiners out of a total of seven members. Although marking schemes are provided by the Ministry of Education for two tests, along with some guidelines for the other written test and the oral examination, the examiners in the committee play a crucial role in student assessment (Falzetti and Fortini, 2010).

favourable in the province of Trento (panel *c.*), and also the mean income for young people is higher in the province of Trento than in the rest of the country (panel *f.*). Furthermore, to be noted is that, for students in Trento area, the enrolment rate at university is higher than in the rest of Italy, although this difference has diminished over the years (panel *d.*). At the same time, educational attainment levels at high school, measured by Pisa test scores, are higher in the province of Trento than in Italy (panel *e.*).<sup>3</sup> This means that in the province of Trento students and their families value education investments, although the outside option is good.

In recent years, more than half of upper-secondary graduates who decided to invest in HE enrolled at the University of Trento, which is the sole tertiary education institution in the province. Among Italian public universities, UniTN is a medium-size university with an excellent position in national rankings. It offers a large variety of courses; but some important faculties, such as Medicine, Veterinary Science and Architecture, are not yet available.

[FIGURE 1, ABOUT HERE]

As regards administration and policy-making, Trento is an autonomous province, which means that it enjoys a large degree of autonomy in fields like welfare, health, and education. Combined with public concern about the effects of the economic crisis, autonomy leads the local government to play a crucial role in supporting poor families in financial difficulties. Since the government of the province of Trento is particularly sensitive to educational issues, one of the dispositions relates to participation in HE.

## **2.2. The basic provision of the Grant 5B**

In Italy there are few programmes that try to foster HE via financial aid. The main programme is called *Diritto allo studio* ('Right to study'). This is administered by the universities and is financed by local authorities. It covers direct costs (tuition, accommodation, study materials, etc.). Students can access *Diritto allo studio* on the basis of family income and academic performance.

Since the 2009/2010 academic year, the local government of the province of Trento has assigned merit-based financial aid to students from low-income families wishing to enrol at university. The introduction of a means-tested scheme is an innovation in the field of transfer programmes in Italy, as well as in Southern Europe. Grant 5B should cover the indirect costs connected with participation in HE. The novelty of Grant 5B is that it works as a generous top-up of the usual schemes, providing a remarkable reduction in educational costs. In order to attract applications, the programme is widely advertised on local media before the end of the school year.

Grant 5B was introduced to counter the worrying negative trend in the enrolment rate documented in Figure 1 (panel *d.*), and the persistence of inequalities in access to HE among social classes<sup>4</sup> (Figure 2). Indeed, in the last years the enrolment rate fell from about 80% to 67% (Figure 1, panel *d.*),

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<sup>3</sup> Regarding the Pisa tests, it emerges that the scores of the province of Trento are higher than the average of OECD countries and the difference with Italy is statistically significant.

<sup>4</sup> Social class is defined according to the European Socio-economic Classification (Rose and Harrison 2010) and is based on the employment relations characterising different groups of similar occupations. We identify four social classes: a) Salariat: large employers, higher grade professional and managerial occupations; b) White collar: clerical and administrative occupations; c) *Petite bourgeoisie*: small employer and self-employed occupations; d) Working class: skilled and non-skilled manual occupations.

being accompanied by a class polarization (Figure 2) between the upper (service class and routine non-manual) and other classes (working class and self-employed). By introducing this programme, local policy-makers intend to reverse the negative trend in the enrolment rate, and at the same time reduce inequalities between social classes.

[FIGURE 2, ABOUT HERE]

Grant 5B is a monetary transfer conditional on university enrolment. The target population comprises students resident in the province of Trento for at least three years who have successfully completed the last year of secondary school, obtaining a final score above 93/100, and whose family equivalent income is below € 30,000.<sup>5</sup> According to administrative records the target population consists of 187 students and the number of actual beneficiaries amounts to 133. This means that the take-up rate is around 71%. The amount of the benefit varies according to the family income and the geographic location of the university chosen. In principle, students enrolling at universities located within the province of Trento are entitled to financial aid ranging from € 1,200 to € 4,800 per year. On the other hand, for students enrolling at universities outside the province the grants can range from € 1,800 to € 6,000 per year according to family income. In practice, 80% of Grant 5B recipients receive an amount larger than € 4,800 per year, which means a monthly grant in the range € 400–500. Students receive four monetary transfers to cover the total amount of the scholarship in a year.

Beneficiaries must fulfil the eligibility criteria for renewal at the beginning of each academic year. Firstly, the income criterion must be maintained, and the merit condition required on conclusion of high school is replaced by successful completion of a certain number of credits.<sup>6</sup> More precisely, to obtain renewal of the grant, the student must achieve at least 83% of the total amount of credits required.

### 3. Data and descriptive evidence

The unique dataset used in this paper was the result of a linkage procedure applied to information from different administrative archives and survey data. The list of the entire cohort of 2008/2009 high school graduates residing in the province of Trento who could enrol at university in the 2009/2010 academic year came from the records of the Department of Education of the Province of Trento. The reference population consisted of 3,168 students. These students were the frame of the 2009 edition of the survey originally conducted by the local government to monitor the destinations of leavers from secondary schools.<sup>7</sup> The fieldwork was carried out by the Department of Sociology and Social Research of UniTN. Exploiting a CATI (Computer-Assisted Telephone Interviewing) procedure, it was possible to contact students who had left the parental home, and to gather information on 2,737 students (86% of the target population).

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<sup>5</sup> This predetermined threshold is measured by an *ad hoc* index called Icef (Household Economic Condition Index) which summarizes the incomes and assets of each family using a scale of equivalence similar to the OECD one.

<sup>6</sup> In 2001 the Italian university reform law based on the Bologna Process introduced a credit system to facilitate the mutual recognition of degrees. Credits represent the student's total workload (class time, individual study, exam preparation, practical work, etc.) and are earned once the student has passed the assessment for each course or activity. The average full-time workload for one academic year is 60 credits, which is equivalent to 1,500 hours of work. However, the teaching regulations of each university may provide for regular reassessment of credit allocation and indicate the minimum number of credits that must be achieved each year.

<sup>7</sup> This survey was carried out for the first time in 2000 with the intention of being administered each year. However, due to a shortage of funding, it was not implemented in 2001, 2002 and 2008, and it is no longer administered.



Other sources of data were used to gather the necessary information. The archives of *Opera Universitaria* (the agency in charge of the programme's administration) provided the list of students entitled to Grant 5B and the exact amount of the monetary benefit for each of them. Data on the household socio-economic conditions for each student in the sample were extracted from the databases compiled by *Clesius* (the local agency which gathers information on the incomes and assets of households and which computes eligibility for social benefits provided by the local government). Additional information was gathered from publicly available databases. To measure the prestige of each faculty at the chosen university we used the most popular Italian ranking, i.e. the Censis Guide from *La Repubblica* newspaper (CENSIS 2008), published every year and advertised by the national media. The same source also reports an indicator of the monthly rent for a room in each location. We used this indicator as a *proxy* for the cost of living in the chosen location. We also measured the distance between Trento and the location of the course of study using Google Maps ([maps.google.com](http://maps.google.com)).

The linkage of survey data with administrative archives and other available data sources allowed us to rely on a comprehensive and unique datasets. For each 2008/2009 school leaver interviewed, we knew: a) participation decisions (enrolment status, and for those enrolled at university: the field of study, the prestige of the course attended of study, the distance from Trento of the university chosen, and the cost of living in that city); b) Grant 5B recipient status (whether the student was receiving the monetary transfer and, if so, the actual amount received) and eligibility for the grant (exact final score at *Esame di maturità*; if above or below the household equivalent income threshold, and for those below this threshold, the exact amount); c) background characteristics of students and their families (socio-demographic characteristics such as gender, family size, geographic area of residence, age; social origins such as parental social class, parental education, economic resources, parental support; type of upper-secondary school attended, and the grade obtained on conclusion of lower-secondary school as a measure of prior attainment).

Table 1 shows the breakdown of the reference populations by the two eligibility criteria. It is evident that the merit criteria is more selective than the financial need one, since only 11% of students attained a grade of at least 93 at the *Esame di maturità* while almost half of the cohort proved to come from a family with an equivalent income below the € 30,000 threshold. Consequently, there are 173 students eligible for both income and merit. However, the administrative archives show that only 133 students claimed Grant 5B, because either some of those eligible did not enrol at university or did not claim the grant.

[TABLES 1 and 2, ABOUT HERE]

Table 2 reports descriptive information about the main outcomes. In general, the enrolment rate at university for high school graduates in the province of Trento is about 70%, higher for those below the income threshold. This unexpected result emerges because students from self-employed families are over-represented among those above the income threshold. With respect to other social groups,

self-employed families usually tend not to invest in HE, but prefer to place their children in the family business after high school.<sup>8</sup>

Moreover, Table 2 shows that 39% of students enrolled at university are attending universities outside Trento. Of these, 24% are studying a subject not offered by UniTN. On average, they are studying at universities located 47 km from Trento. Figure 3 shows that more than 60% of these students live within a radius of 150 km from Trento, mainly in Verona, Bologna and Padova. The last two are the most ancient universities in Italy, and among those offering the widest range of courses. As for the prestige of the course of study, this was measured by a normalised score that assumed value 1 if a student was enrolled at the top university for that specific field of study; values close to 1 denoted a high-ranked course, while measures far from 1 indicated low-ranked courses. Table 2 shows that the prestige of the course of study selected is on average very high. To be noted is that the majority of the students are enrolled at UniTN, which performs very well in the national rankings, with a set of courses (Sociology, Law and Natural Sciences) at the top of the faculty rankings considered here. As expected, Table 2 also shows that students from families above the income threshold tend to select university locations where the cost of renting a room is higher (such as Milan, one of the most expensive cities in Italy) than in those selected by low-income students.

[FIGURE 3, ABOUT HERE]

[FIGURE 4, ABOUT HERE]

The higher educational demand in the province of Trento follows what is known in the literature (Brand and Xie 2010). The main factors that may influence the enrolment probability are: social origins, parental style, family structure and prior school career.<sup>9</sup> An interesting point emerges if we consider the interaction between social class and the final score obtained at the *Esame di maturità*. Indeed, Figure 4 shows that class differences in enrolment behaviour tend to disappear once the final score is considered. In particular, working-class children with high scores behave similarly to the offspring of other social classes. Hence risk aversion (Breen and Goldthorpe 1997; Checchi et al. 2008) is weak for pupils from disadvantaged backgrounds but possessing high-school diplomas. Our empirical analysis for the province of Trento shows that disadvantaged families will tend to invest in HE if their children do well at school.

#### 4. Evaluation strategy

The evaluation problem that we faced in identifying the effects of the Grant 5B was twofold. First, since Grant 5B is awarded only to university students, study of the effects of this programme on the enrolment probability is operationally unfeasible. This is due to the fact that, in order to claim the financial aid, the recipients must, by definition, be enrolled at university. However, as we were interested in understanding whether the availability of a monetary transfer for students willing to enrol at university might change university participation, we focused on the effects of *eligibility* for Grant 5B. This led to the second issue. Eligibility for Grant 5B is conditional on merit (final score at *Esame*

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<sup>8</sup> In fact, our data revealed that the children of self-employed parents are more likely to work instead of studying with respect to the offspring of employees. More precisely, the difference is about 6 percentage points (24.5 in the former case and 18.4 in the latter).

<sup>9</sup> See Table A.1 in Appendix A for the complete results.

*di maturità* above 93) and financial need (household equivalent income below € 30,000). As mentioned above, since it is widely known that merit and financial constraints influence educational outcomes, the rough difference in the enrolment propensity and preferences between eligible and ineligible students may have been affected by *selection bias*, i.e. differences in the composition of the two groups that could remain also in the absence of the programme. To resolve this issue, we relied on the so-called counterfactual model of causality (Heckman et al. 1999; Rubin 1974; Morgan and Winship 2007) and we exploited the discontinuity in eligibility for Grant 5B induced by the merit and income criteria in a Regression Discontinuity Design (Rdd henceforth) logic.<sup>10</sup>

Since, as discussed in Section 3, accurate data on income were not available for students above the income threshold, it was unfeasible to implement a Rdd relying either on the discontinuity at the income threshold or on the income and the final score variables jointly considered (Imbens and Zajonc 2011). In order to identify the effect of the programme, we then conditioned the analysis on the subpopulation of students with incomes below the threshold (i.e. focusing on the ‘Eligible group’ and the ‘Control group A’ as they are denoted in Table 1). In this way, we compared the university participation decisions of those marginally above the 93 final score (i.e. eligible for the financial aid) with those marginally below it (ineligibles).

The basic idea underlying the Rdd was that a marginal variation in the final score should not have significant impacts on the individuals’ behaviours with respect to university participation. Although the final score depends on the performance at *Esame di Maturità* and previous scholastic career, which are determinants of the enrolment decisions, a small change in the final score cannot have any impact on the university participation. As a consequence, the difference between students’ outcomes immediately above and just below the 93 threshold should be univocally interpreted as the causal effect of eligibility for the Grant 5B.

Following the notation of the potential outcome approach, let  $E$  be the binary variable denoting the eligibility status indicator, with  $E=1$  for those students eligible for the monetary transfer and  $E=0$  otherwise, and let  $(Y_1, Y_0)$  be the two potential outcomes that would be realized if the student is eligible and if the student is not, respectively. In the context of this paper,  $Y_1$  and  $Y_0$  represent HE enrolment decisions (such as university attendance, location and prestige of the course attended), corresponding to students being eligible and ineligible, respectively. The causal effect of eligibility for Grant 5B on enrolment decisions is then defined as the difference between these outcomes,  $Y_1 - Y_0$ , which is not observable at the individual level since being eligible reveals  $Y_1$  but conceals  $Y_0$ . In fact, if a student is eligible for the grant ( $E=1$ ), then  $Y_1$  will be realized and  $Y_0$  will be a counterfactual outcome and *vice versa*. Since the individual effect is not identifiable, we focused on the average causal effects for the subpopulation of individuals actually eligible for the financial aid defined as  $E[Y_1 - Y_0 | E=1]$ , the so-called Average Treatment Effect on the Treated (ATT). As the comparison was only possible at the discontinuity in the eligibility for Grant 5B, an unbiased estimate of the mean causal effect was provided by the empirical counterpart of

$$E[Y_1 | E=1, final\ score=93^+] - E[Y_0 | E=0, final\ score=93^-]$$

that is, the ATT at the 93 threshold.

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<sup>10</sup> For recent developments regarding Rdd see Imbens and Lemieux (2008) and Lee and Lemieux (2010).

In order to estimate the conditional expectations around the threshold we followed the recent development of Rdd and made use of Local Linear Regression (henceforth Llr), a non-parametric estimation method which guarantees better statistical properties of the estimates (Hahn et al. 2001; Imbens and Lemieux 2008). The basic idea underlying the Llr is that of running simple linear regressions allowing for different slopes of the regression function in the neighbourhood of the threshold. Following this approach, the results are presented graphically.

A possible threat to our identification strategy might have been discontinuities in the distribution of students' characteristics associated with the outcome variables. The manipulability of the score variable is of particular concern in this case because teachers might be inclined to give students a 93 instead of a 92 one in order to let them claim the financial aid. To validate our strategy, we then carried out a set of tests for the possible bias affecting our estimates and resulting from any other discontinuities at the 93 threshold, as suggested by the recent literature (McCrary 2008, Lee 2008, Rettore et al. 2014). It should be noted that the underlying Rdd restriction was not directly testable because it required observing a counterfactual event (i.e. the outcome that students above the 93 threshold would have experienced had they not been eligible for the financial aid), which is not observable by definition. However, relying on the fact that any other discontinuities potentially affecting the outcomes at the 93 threshold for those below the income threshold also affected the outcomes of those above the income threshold, we could use the data on students with incomes above the threshold (i.e. in the 'Control group B' and 'Control group C' as referred to in Table 1). These students are, in fact, not affected by the programme. Therefore, finding a discontinuity at the threshold for these students would be clear evidence against the validity of the identification strategy.

## 5. Results

### 5.1. Validity of the design

As mentioned, in Rdd settings a sufficient condition for the continuity of the potential outcome in the absence of the programme is that it is not possible to manipulate the score variable. Testing this assumption is indispensable for demonstrating that in the absence of the treatment there would not have been any discontinuities on the threshold. This is particularly important in our case study since the final score threshold value was known to students and their teachers before the *Esame di maturità*. Inspection of the distribution in Figure 5 of each subsample of students considered in the main analyses above in a Rdd logic (McCrary 2008), shows that even if there is a slight discontinuity at the threshold, this is not statistically significant either for the target population of high school graduates overall or for students actually enrolled at university. Furthermore, there are larger changes at different values of the final score (e.g. 70, 80, 100). Hence, we can conclude that there is no reason to think that a manipulation of the final score took place at the threshold.

[FIGURE 5, ABOUT HERE]

Besides the McCrary's test presented above, an over-identification test *à la* Lee (Lee, 2008), as discussed in the previous section, was also conducted for each outcome considered. Llr estimates for students with incomes above the € 30,000 threshold were made, together with those for students

below the income threshold. In this way, it was possible to estimate the causal effect of eligibility for Grant 5B on a certain outcome and to validate the Rdd underlying assumption for each single outcome.

## 5.2. University enrolment

We first considered enrolment at university as the first outcome. Let  $Y$  be the variable taking value 1 if a student is enrolled at university and 0 if she/he is not, so that  $E[Y|final\ score=s]$  represents the mean enrolment rate at university for students with a final score  $s$ . Figure 6 shows actual and fitted values of the conditional expectation function for students below (panel *a*, on the left) and above (panel *b*, on the right) the income threshold.<sup>11</sup> Focusing on those below the income threshold, it is evident that just above and below the threshold, fitted expected values of the transition rates are substantially identical and that the confidence intervals (marked by the grey area) at the threshold are overlapped. Furthermore, the over-identification test provided by the Llr estimates for those students from families with incomes above the eligibility threshold confirmed the validity of this result.

[FIGURE 6, ABOUT HERE]

We conclude that there is no impact of the eligibility for Grant 5B on university enrolment decisions. In other words, we can stress that the policy-makers' aim to sustain HE participation has not been achieved. This result – combined with the empirical evidence that worthy students' families are inclined to invest in tertiary education regardless of their social-economic background (see Figure 4) – seems to suggest that the programme does not work in encouraging student to enrol at university, because it has been addressed to the wrong target population. Indeed, for students with a score at *Esame di maturità* of at least 93/100, liquidity constraints seem not to be an issue in the decision to enrol at university.

However, it should be possible that monetary incentives affect other decisions about university attendance, which means that students already bound for university can be redirected by eligibility for Grant 5B. Although liquidity constraints do not affect university enrolment decisions, financial aids can affect students' behaviour relative to other attributes of their choice, allowing a better match with their preferences in regard to university enrolment. Thus, in what follows, we to study other possible effects which have not been expected in Grant 5B's design and implementation.

## 5.3. Redirecting students already bound for university

Since the monetary transfers provided by Grant 5B cannot foster university participation, enrolled students are not a selected subsample of the population of graduate students entitled to enrol at university. Thus we could focus on the 985 graduates below the income threshold to study the effects of the Grant 5B on their enrolment decisions without any loss of generality. Accordingly, we further replicated the Rdd in order to investigate the effects of the programme in redirecting students already

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<sup>11</sup> The Llr estimates in this section were obtained using the Epanechnikov kernel method and implementing the optimal bandwidth choice algorithm suggested by Imbens and Kalyanaraman (2010). Results proved to be stable across different choices of the kernel function and of the size of the bandwidth. Parametric estimates provided by the specification of flexible linear and non-linear probability models also confirmed that the findings presented in this section were not driven by functional form assumptions and, more generally, by estimation methods. A selection of these results are presented in Appendix B.

bound for university.  $Y$  was the variable indicating the location of the chosen university: it took value 0 if the student was enrolled at UniTN and 1 if she/he was enrolled outside the province of Trento. This led to defining  $E[Y|final\ score=s]$  as the mean enrolment rate at universities located outside Trento, conditioning on the final score.

It is evident from our analysis that monetary incentives favour students' decision to enrol outside Trento. Figure 7 (panel *a*) shows that, for students eligible by income, the predicted values of the enrolment rate outside Trento at the threshold are notably higher (about 40%) for students above the 93 threshold than for those below. Figure 6 also shows that for students above the income threshold (panel *b*) there is no jump at the 93 threshold, which means that the Rdd approach leads to unbiased estimates of the causal impact of the monetary incentives on redirecting students already bound for university. Interestingly, the effect of Grant 5B on redirecting students boosts the transition rates at universities located outside the province of Trento from around .15-.20 to .40-.55, exactly the same levels as shown by students with incomes above the threshold.

[FIGURE 7, ABOUT HERE]

These results suggest that, although eligibility for Grant 5B does not affect the enrolment rate, it gives students the chance to move away from home, solving potential mismatch problems between preferences and economic constraints. A possible explanation is that, given the amount provided by Grant 5B, eligible students face a conspicuous reduction in moving costs and they can follow their preferences with fewer constraints. Furthermore, in terms of university choice, the monetary incentives seem able to guarantee the same opportunities to students with different economic backgrounds.

#### **5.4. Students' preferences in university enrolment decisions**

Grant 5B seems to provide students from low-income families with the same opportunities to follow their preferences with respect to the university enrolment decision. Replicating the Rdd exercise and considering attributes of the chosen university as outcomes, we investigated how Grant 5B, removing the liquidity constraints, might affect decisions in terms of attributes of the university chosen. In this way, we did not model students' choices directly, but we obtained empirical evidence about students' preferences in the decision to enrol at university and how these could be influenced by liquidity constraints. This may be particularly informative on how monetary aids extend the range of options connected to university enrolment: faculty (i.e. degree subject area) and its prestige, location (distance from Trento), and cost of living.

Figure 8 shows the Llr estimates for these outcomes. Looking at the dichotomous variable equal to 1 for students studying in a faculty not available at UniTN and 0 otherwise, it is evident that eligible students decide to enrol outside Trento in order to attend faculties not present at UniTN (such as Medicine, Veterinary Science and Pharmacy). The fitted values of the enrolment rate at faculties absent from UniTN for eligible students is some .42 higher than for ineligibles for Grant 5B (panel *a* of fig. 7). Interestingly, the Rdd applied to the distance between Trento and the chosen university showed that, on average, there is a barely significant impact of less than 50 Km. This result is coherent with the fact that students enrolled at university from the province of Trento do not choose to

attend universities far away from their home towns (Figure 7, panel *b*) as anticipated by the descriptive evidence shown by Figure 3.

Furthermore, we also investigated whether the decision to enrol outside Trento was fostered by the chance to attend top universities according to the national rankings. Panel *c* of Figure 6 clearly shows that eligibility for the financial aid does not shift choices towards more prestigious faculties, since the estimated impact is negative (less than .2 score points), though not significant.<sup>12</sup> A similar result is shown by the impact of the programme on the average cost of a rented room in the city of the university chosen. Indeed, students may reject some options because in some big cities where universities offer a wide range of degree courses the cost of living is very high. However, neither in this case is the impact significant, although it is positive.

[FIGURE 8, ABOUT HERE]

## 6. Concluding remarks

Financial aid may be important means to weaken the influence of social background on tertiary education and to make it accessible to students that otherwise would not consider the option of enrolling at university. In our research we studied the effects of the introduction of Grant 5B in the province of Trento, which provides merit-based grants for students from low-income families, and we found two main results. First, despite a considerable reduction of indirect costs connected to university attendance, the programme does not exert any impact on the enrolment rate. Nevertheless, it has a remarkable causal effect on the moving decision, since students eligible to receive the monetary incentive are more likely to attend universities outside their province of residence.

The null effect on the enrolment decision may be a sign of the absence of a liquidity constraint and, therefore, of the presence of the long-run family effects advocated by Heckman and colleagues. At the same time, it is also possible that these results are due to the fact that the programme has not been properly designed. More precisely, the financial aid is addressed to a target population which would have enrolled at university even in the absence of Grant 5B. Indeed, we have shown that the differences in enrolment rates among the various social classes surprisingly decline when the marks increase. This means that worthy students and their families are willing to invest in HE even if they come from disadvantaged backgrounds. In other words, we find that the risk aversion for low-income families is very low. It may be that the outstanding results of their offspring are considered as signalling future academic success.

Thus, in order to improve the effectiveness of the programme, a solution could be to reduce of the final score threshold in order to favour the enrolment of students that otherwise would not go to university. If the aim is to increase enrolment, the policy should focus on students not particularly inclined to progress at university, and the most problematic students are working-class ones with low school performances. For this reason, a policy recommendation could be to target financial incentives on students from ‘true’ low-income families. Therefore, in this particular case, since also middle-

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<sup>12</sup> A possible explanation is that UniTN performs very well in the national rankings with a set of faculties (Sociology, Law and Natural Sciences) in first place.

income students are eligible for the grant, we suggest reducing the financial threshold, together with the merit one, to improve the programme's efficacy.

As for interpretation of the effect on redirecting students already bound for university, we have found a remarkable effect of Grant 5B. Thus, even though financial aid is not able to foster enrolment, it influences the choice of university. Specifically, empirical evidence shows that eligible students tend to study at universities located outside the province of Trento, at faculties not present at UniTN. Moreover, their choices do not seem to be determined by the prestige<sup>13</sup> of the faculty at which they have decided to study but rather by the location of the university, which must not be too far from their home towns. Interestingly, on comparing students below the income threshold with those from families with incomes above the threshold for eligibility for the programme, we found that Grant 5B removes the liquidity constraints for low-income students, allowing eligible students to take decisions connected to university attendance that are similar to those taken by their peers from families with better economic backgrounds.

In conclusion, our results seem to support Heckman's view on the transition rate from secondary to tertiary education. Nevertheless, the empirical evidence set out in this paper suggests that policies foreseeing financial incentives conditional on merit and financial need have a crucial role in solving potential mismatch problems between students' preferences and economic constraints. Our results highlight that, although there is no effect of Grant 5B on sustaining the enrolment rate, public policies can definitely be used as leverage to provide equality of opportunities among students from different backgrounds.

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<sup>13</sup> The null effect of prestige is not uncommon if referred to the Italian educational system. Indeed, as stressed in Section 2, in Italy university rankings have not been valued as in other countries.



## Appendix A

The aim of this appendix is to demonstrate the reliability of our data collected at local level. Table A.1 shows the results of the OLS regression for the probability of students from the Province of Trento of enrolling at university fitted on the data used for the evaluation problem presented in this paper. Two nested models are presented in order to appreciate variations in the coefficients when including measures of prior attainment. As stressed in Section 3 the determinants of university enrolment are in line with what is well known in the literature on this topic.

In order to validate the data used in this paper, a comparison was made between these data and those collected by a national survey on high school leavers in 2007 by Istat (The Italian National Institute of Statistics).<sup>14</sup> Table A.2 shows the results of the modelling of the enrolment probability with the two data sources. The results are very similar, confirming that our data are reliable. In interpreting the slight differences, it may be worth mentioning that the two datasets do not refer to exactly the same graduate cohort. Furthermore, the Istat sample is smaller than the one used in our dataset and this clearly affects the size of the standard errors of the estimated coefficients.

[TABLE A.1, ABOUT HERE]

[TABLE A.2, ABOUT HERE]

## Appendix B

In order to show that Rdd estimates presented were not driven by the choice of the estimation method, following the recent literature we present here a variation of the Llr estimation method based on different values of the bandwidth used by the kernel function to smooth results of each local linear regression. It should be noted that this method entails that considering (or not considering) observations distant from the 93 threshold do not affect the prediction of the expected value of the outcome variables at the threshold. Figure B.1 shows Rdd estimates using twice and half the bandwidth used to obtain the main results presented in Section 5.

Turning to the parametric estimates, Table B.1 reports the results obtained with OLS regressions:

$$y = \alpha + \beta \cdot score + \gamma \cdot D + \delta \cdot (D \times score) + \vartheta X + \varepsilon ;$$

where  $X$  is a set of students' characteristics (see Table B.1 for the entire list). In this specification, by including the interaction term  $D \times score$  we allow for different slopes of the regression line below and above the threshold. The parameter of interest indicating the ATT at the threshold and reported in Table B.1 is  $\gamma$ . To be noted is that these robustness checks strongly confirmed what emerged from the non-parametric estimates presented in Section 5.

[FIGURE B.1, ABOUT HERE]

[TABLE B.1, ABOUT HERE]

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<sup>14</sup> Istat collects information on high school graduates every three years, and the available data cover the following cohorts of high school graduates: 1995, 1998, 2001, 2004 and 2007.

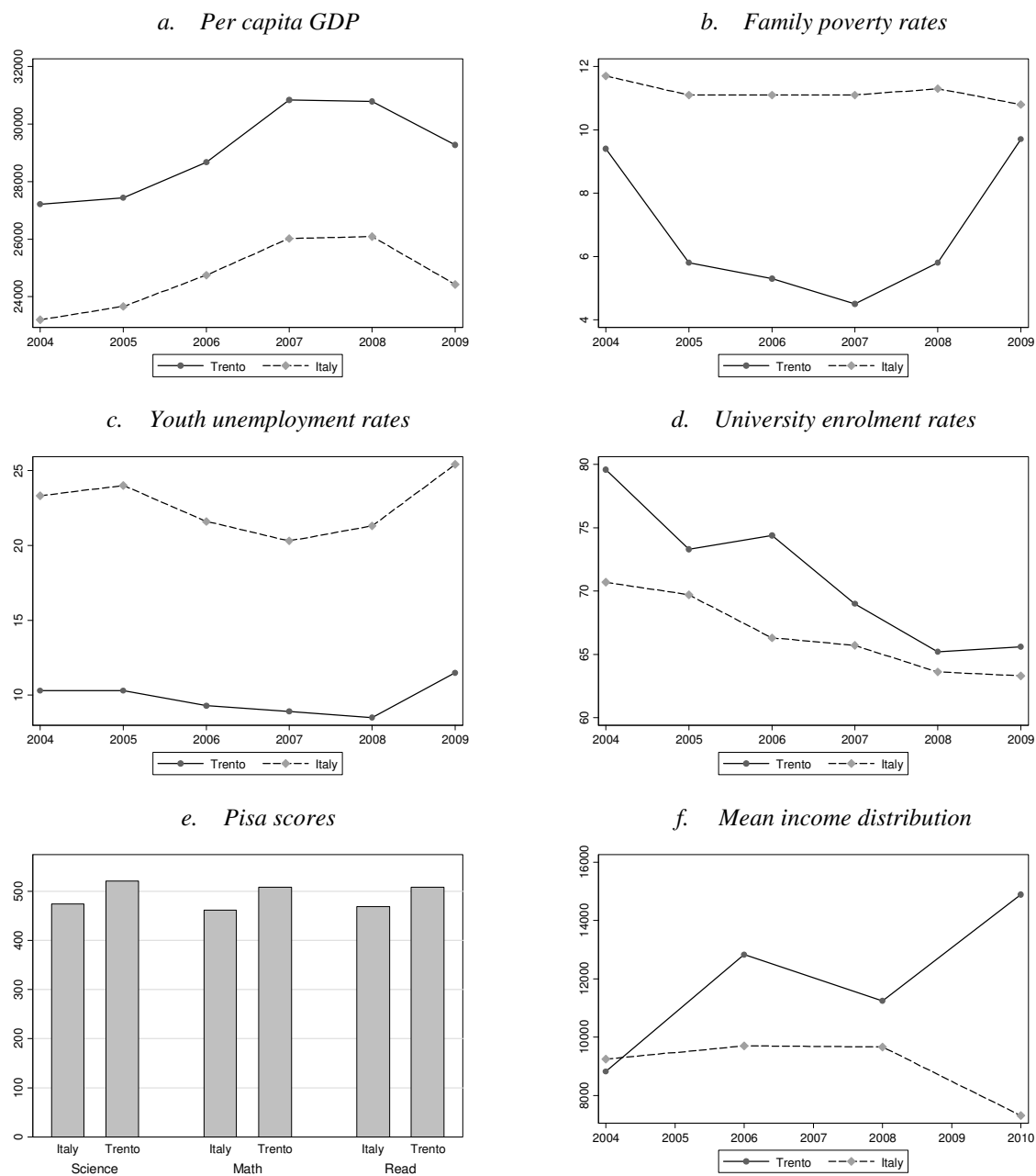
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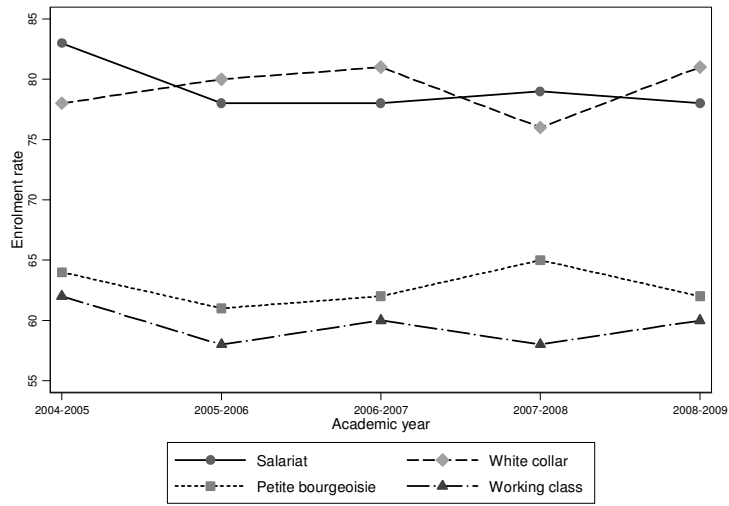
## FIGURES



*Note:* Panel *a* reports per capita GDP in PPS expressed in Euros; panel *b* shows the percentage of poor families measured according to their consumption. Panel *c* reports the unemployment rates for people aged 15-24, and in panel *d* enrolment rates are calculated as the ratio between students enrolled at the university in year  $t+1$  and high school graduates in year  $t$ . Panel *e* displays the mean scores in different fields of the Pisa tests in 2006, and panel *f* shows the real (adjusted for inflation) income distribution of people aged 19-21.

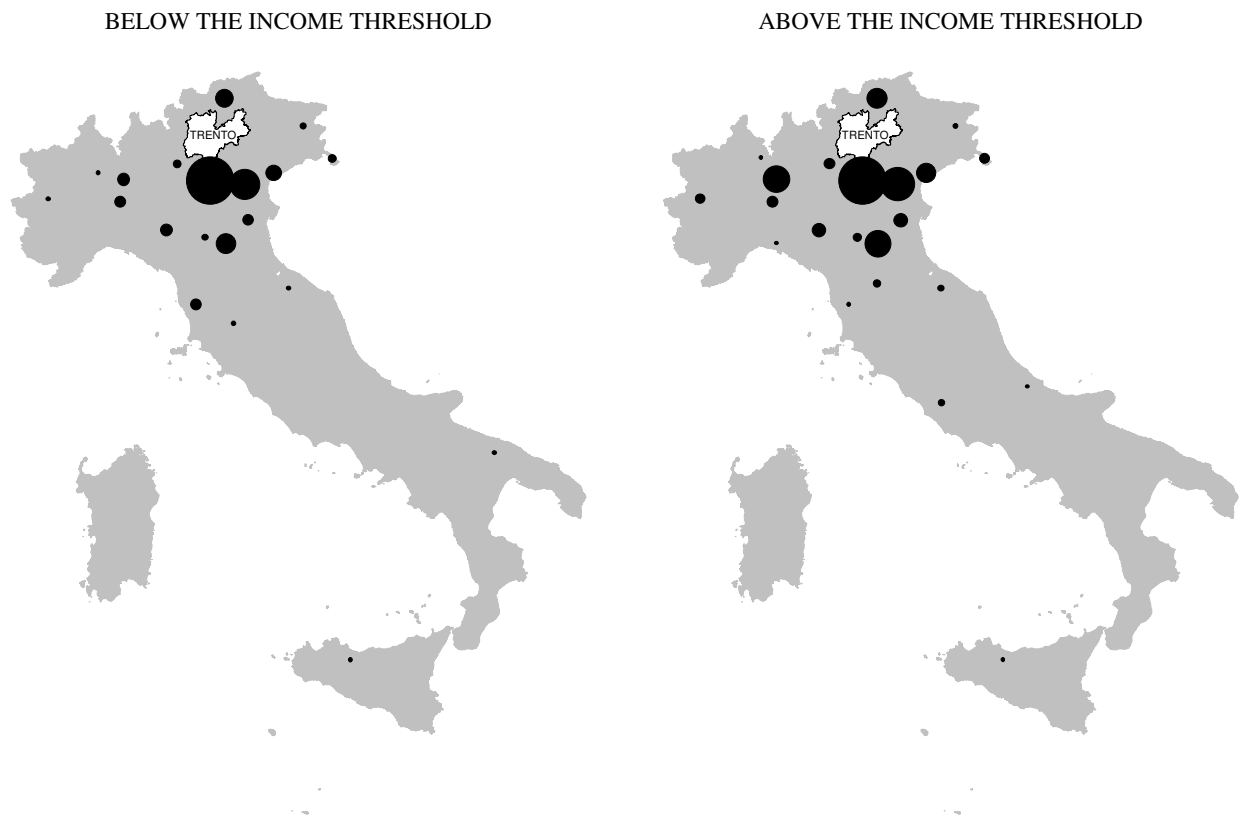
*Sources:* Province of Trento Statistical Office (panel *a, b, c, d*); OECD (panel *e*) and Bank of Italy (panel *f*).

Fig. 1. Italy and province of Trento at a glance: some macro indicators



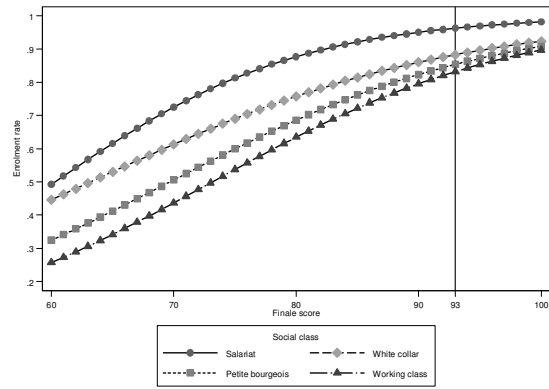
*Note:* The figure reports the trends in enrolment rates according to different social classes.

Fig. 2. Enrolment rate according to parental social class, province of Trento (2004-2009)



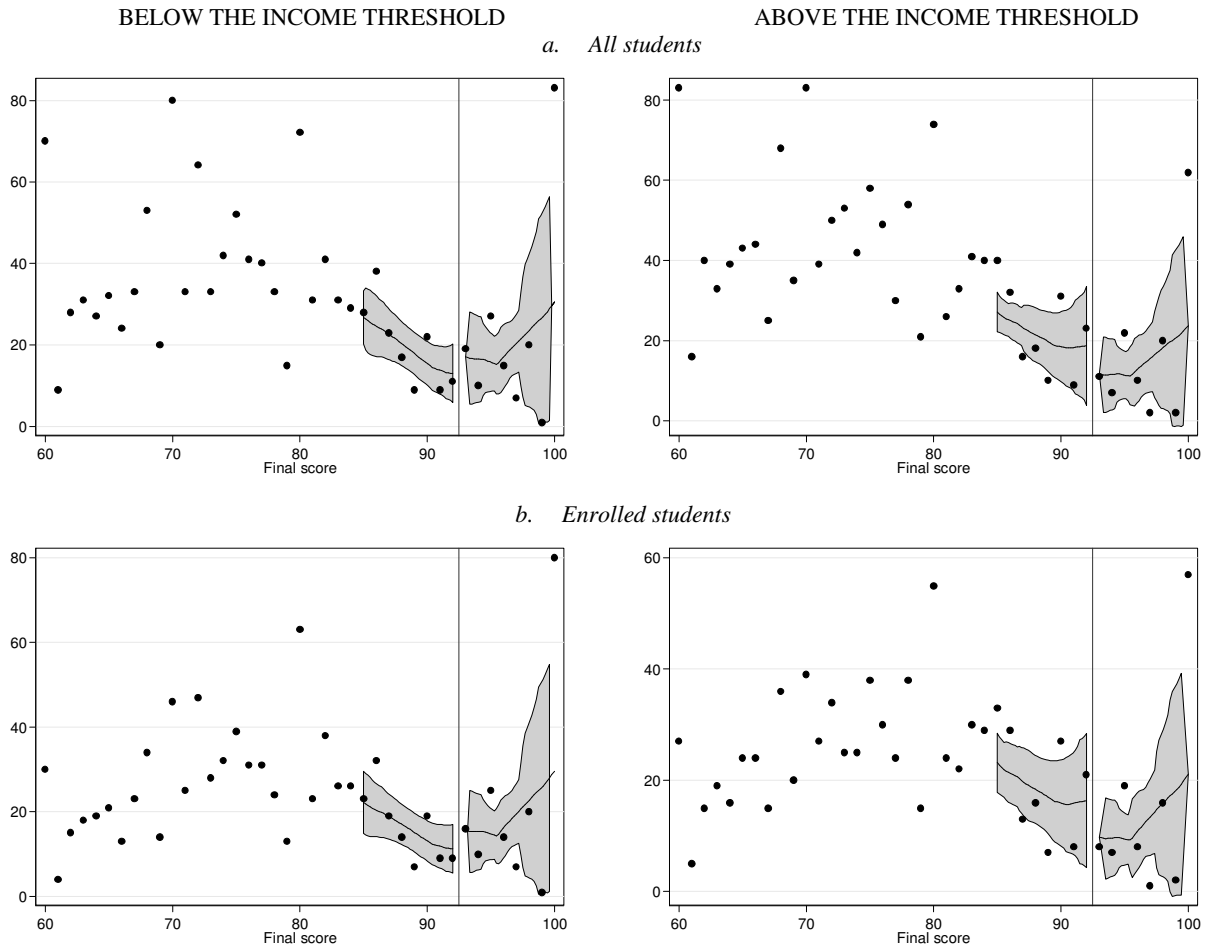
*Note:* The figure shows the choice of university location for students enrolled outside the province of Trento, represented by the white area. The circles are proportional to the number of students enrolled in a specified university.

Fig. 3. Enrolment locations outside Trento.



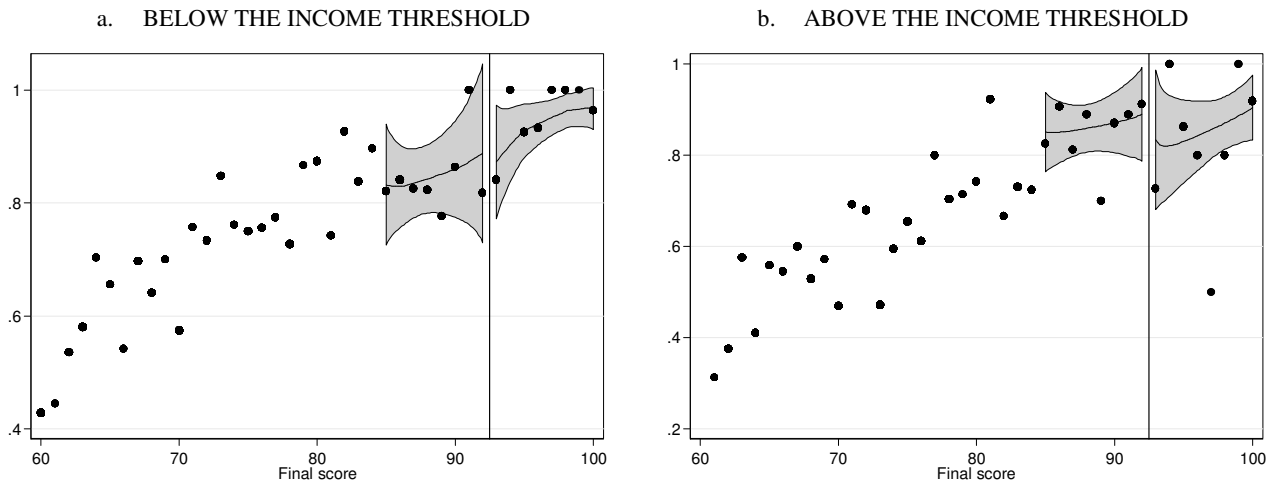
Note: the figure represents the interaction between the final score and social class on the overall sample. It has been constructed using the Stata routine *predxcon* (<http://ideas.repec.org/c/boc/bocode/s402602.html>).

Fig. 4. Enrolment rate according to social class and final score at *Esame di maturità*.



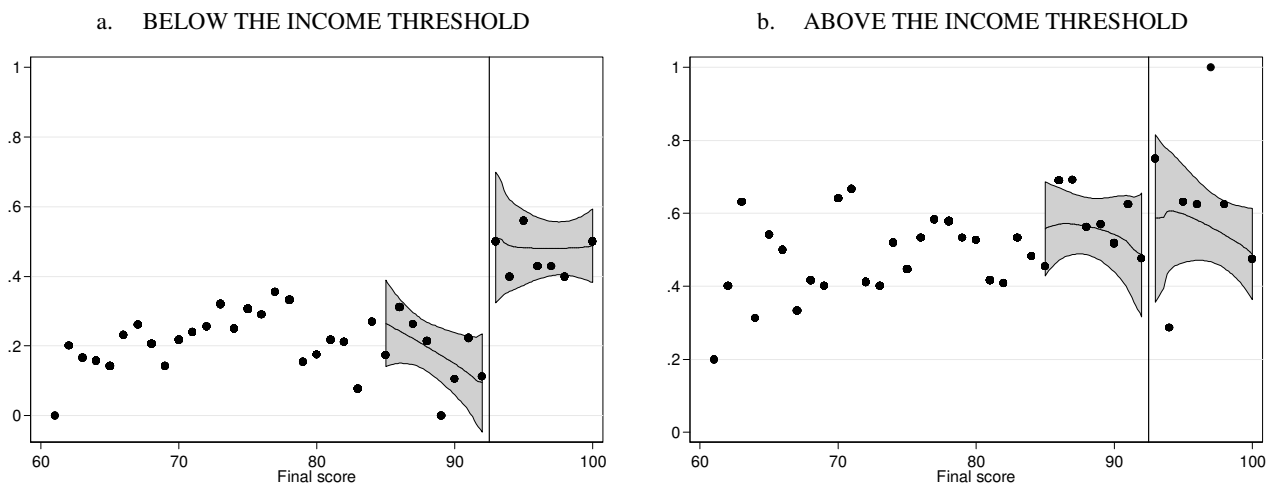
Note: The observed distributions of the final score are represented by black dots. Local linear regression fitted values for eligibles and ineligibles, above and below the final score threshold (the solid vertical line at 93) respectively, are shown by the solid line. The grey area represents the 95% confidence intervals. Panel *a*. refers to all students, 1,303 from families with incomes below the eligibility threshold (on the left) and 1,434 from families above it. Panel *b*. refers to the subsample of enrolled students, 988 from families with incomes below the income threshold and 928 from families above it.

Fig. 5. McCrary test: the non-manipulation of the score variable.



*Note:* The observed enrolment rates by each value of the final score are represented by black dots. Local linear regression fitted values for eligibles and ineligibles, above and below the threshold (the solid vertical line at 93) respectively, are shown by the solid line. The grey area represents the 95% confidence intervals. Estimates refer to 1,303 students from families with incomes below the income threshold for eligibility (on the left, panel *a*) and to 1,434 above the threshold (on the right, panel *b*).

Fig. 6. The effect of Grant 5B on university enrolment 5B.



*Note:* The observed enrolment rates outside the province of Trento by each value of final score are represented by black dots. Local linear regression fitted values for eligibles and ineligibles, above and below the final score threshold (the solid vertical line at 93) respectively, are shown by the solid line. The grey area represents the 95% confidence intervals. Estimates refer to 988 enrolled students from families with incomes below the income threshold for eligibility (on the left) and to 928 above the threshold (on the right).

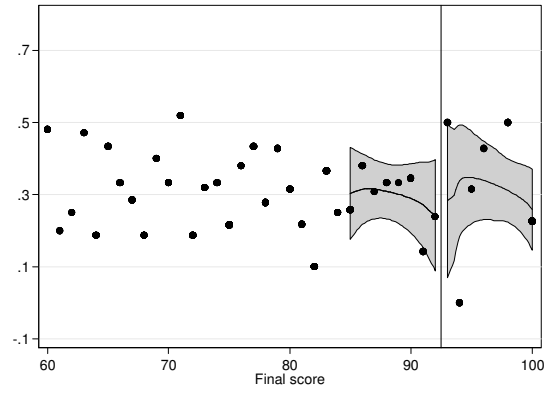
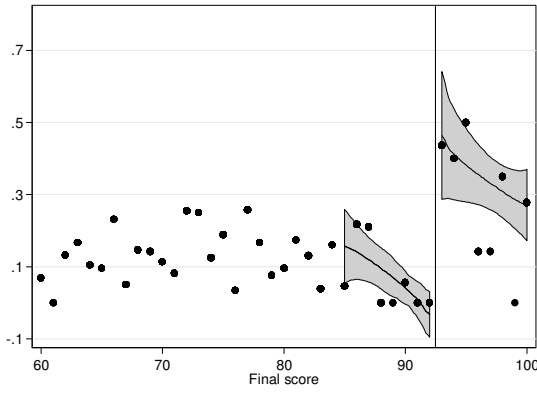
Fig. 7. The effect of Grant 5B on redirecting students already bound for university.



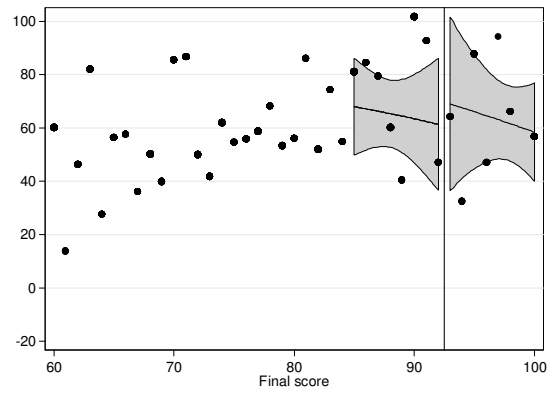
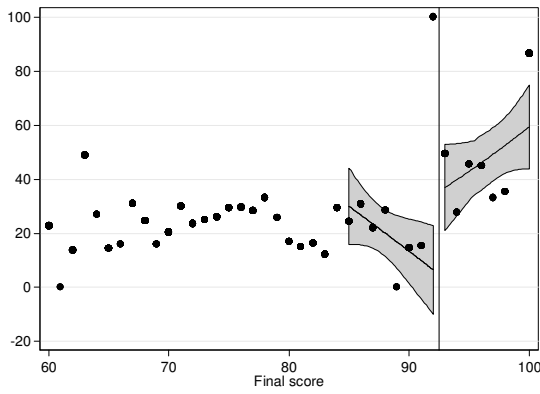
BELOW THE INCOME THRESHOLD

ABOVE THE INCOME THRESHOLD

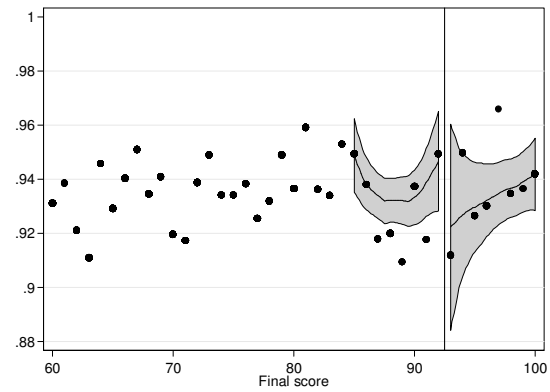
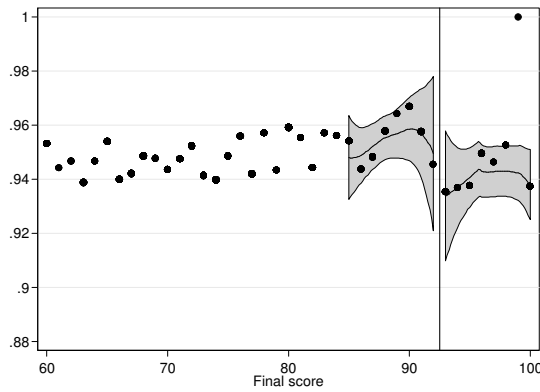
a. *Faculties absent from UniTN*



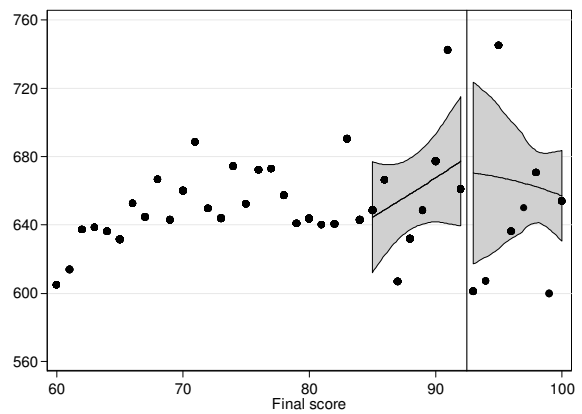
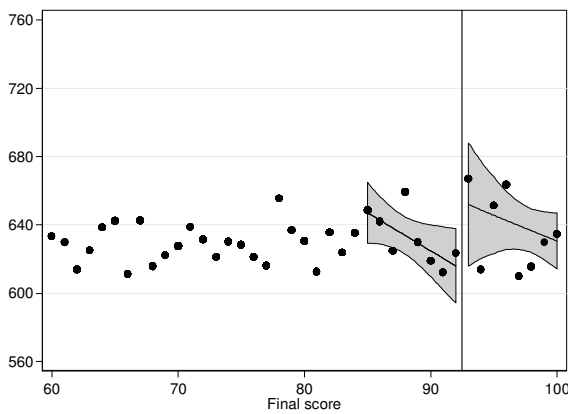
b. *Distance from Trento*



c. *Normalised prestige score*



d. *Rent of a room*



*Note:* The observed enrolment rates outside the province of Trento by each value of final score are represented by black dots. Local linear regression fitted values for eligibles and ineligibles, above and below the final score threshold (the solid vertical line at 93) respectively, are shown by the solid line. The grey area represents the 95% confidence intervals. Estimates refer to 988 enrolled students from families with incomes below the income threshold for the eligibility (on the left) and to 928 above the threshold (on the right).

Fig. 8. Redirecting students already bound for university: effects of Grant 5B on students' preferences.

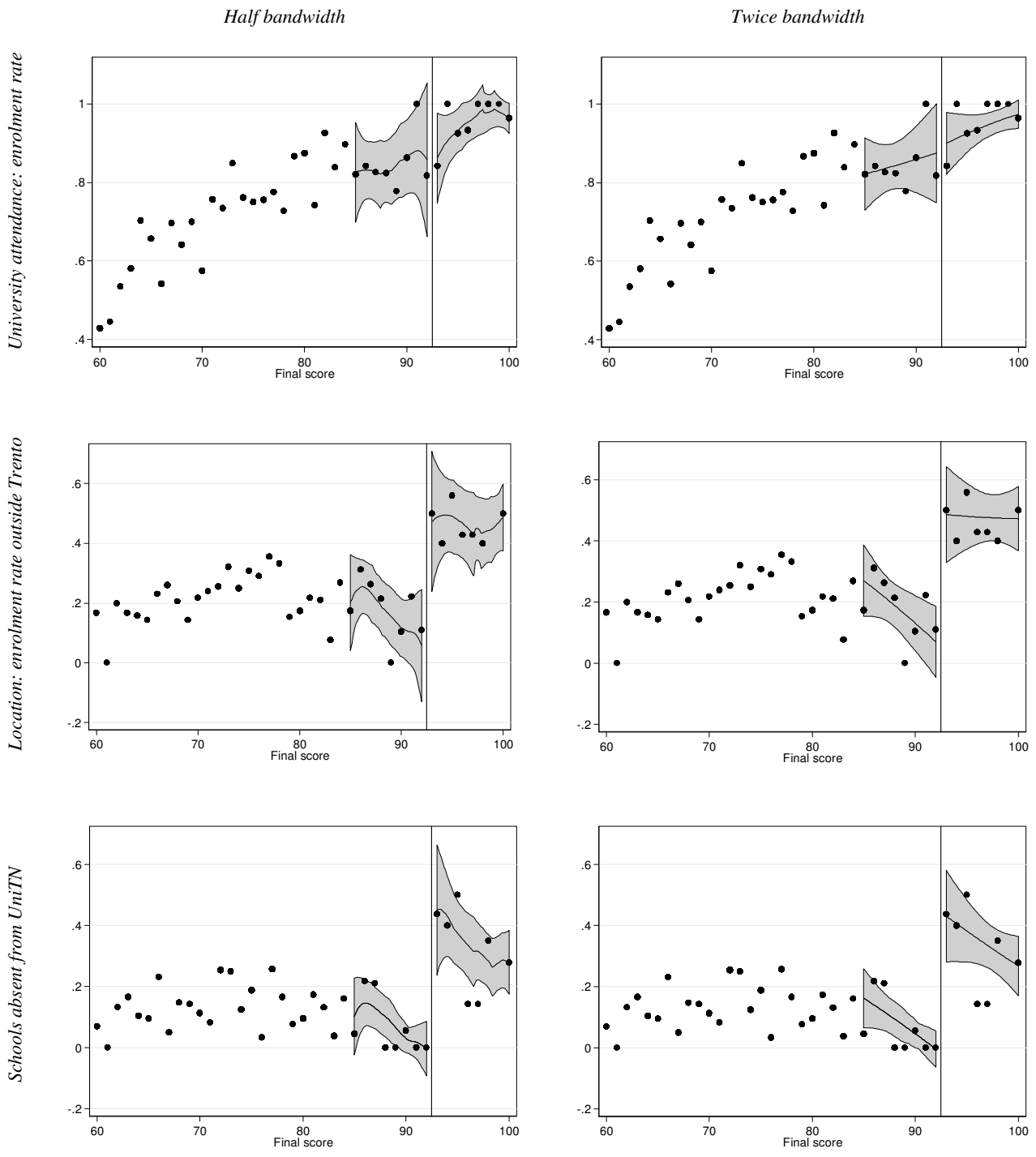


Fig. B.1. Sensitivity analysis: twice and half the bandwidth used in section 6.

*Half bandwith*

*Twice bandwith*

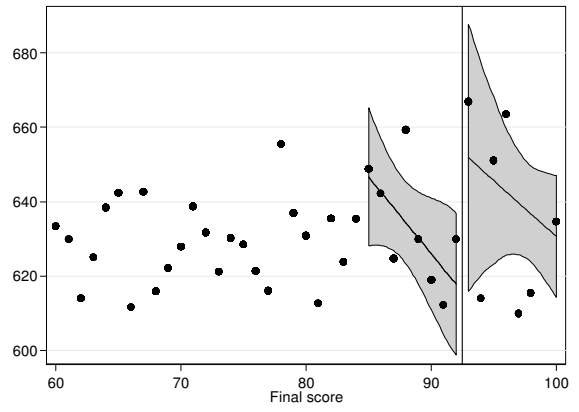
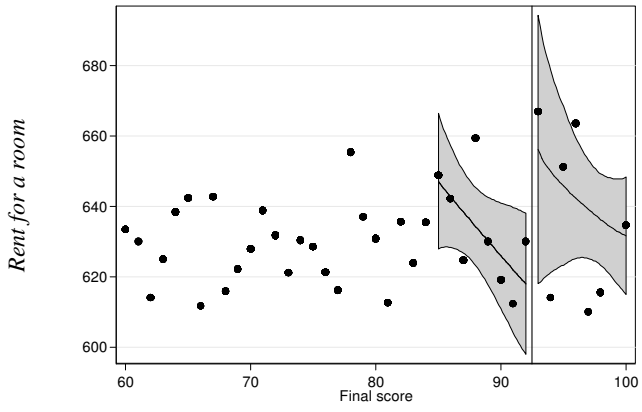
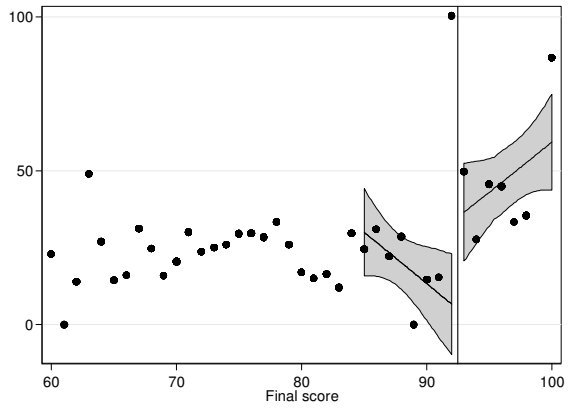
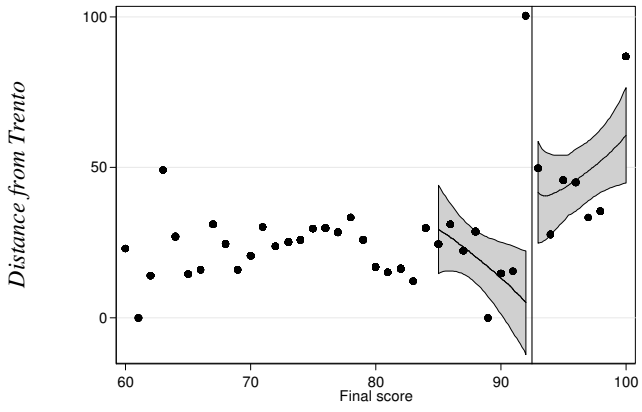
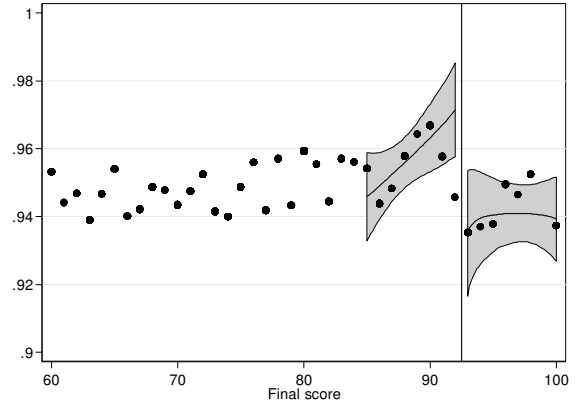
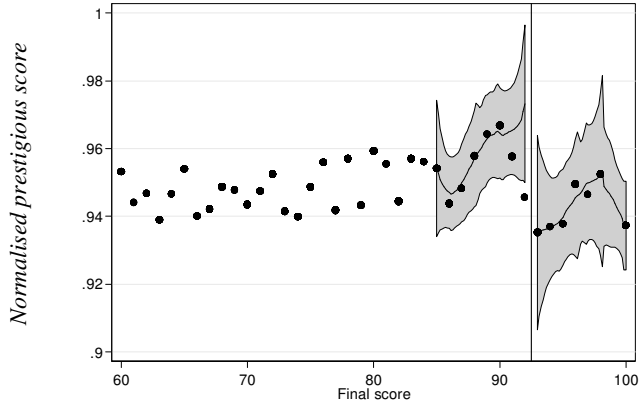


Fig. B.1. (continued)

## TABLES

**Table 1**

Subpopulations for the high school graduates: 2008/09 academic year

		<i>Final score on Esame di maturità</i>		<i>Total</i>
		<i>&lt; 93</i>	<i>≥ 93</i>	
<i>Income</i>	<i>≤ € 30,000</i>	Control group A N=1,130	Eligible group N=173	N=1,303
	<i>&gt; € 30,000</i>	Control group B N=1,298	Control group C N=136	N=1,434
<i>Total</i>		N=2428	N=309	N=2,737

**Table 2**

Descriptive evidence on outcomes variables by income level.

	Overall		Income threshold			
			Below		Above	
	Mean/%	Std. err.	Mean/%	Std. err.	Mean/%	Std. err.
Enrolment rates	70	0.99	76	1.2	65	1.2
Enrolments outside Trento	39	1.11	26	1.64	52	1.41
Faculties absent from UniTN	24	0.99	17	1.20	31	1.56
Distance from Trento (Km)	47	2.00	32	2.64	63	2.95
University prestige	0.94	0.001	.95	.001	.94	.002
Rent of an apartment (euros)	643	2.25	631	2.09	654	4.04

**Table A.1**  
University enrolment in the Province of Trento.

	Descriptive	Model 1	Model 2
<b>Gender</b>			
Male	43.5	ref.	ref.
Female	56.5	0.066*** (.0183)	-0.00205 (.0165)
<b>Family support</b>			
Low	73.1	ref.	ref.
High	26.9	0.215*** (.0205)	-0.0346*** (.00896)
Family size	2.8 (.893)	-0.0284*** (.0100)	0.190*** (.0182)
<b>Parental social class</b>			
Salariat	27.8	ref.	ref.
White collars	29.8	-0.0375 (.0266)	-0.00953 (.0237)
Self-employed	10.3	-0.111*** (.0363)	-0.0478 (.0325)
Lower white collars	13.4	-0.106*** (.0340)	-0.0392 (.0306)
Working class	18.7	-0.159*** (.0324)	-0.108*** (.0292)
<b>Parental education</b>			
University degree	19.2	ref.	ref.
Upper-secondary diploma	43.6	-0.0188 (.108)	-0.0248 (.0976)
Lower-secondary certificate	36.5	0.0661 (.109)	0.0190 (.0983)
Primary degree	0.7	0.178 (.111)	0.0634 (.101)
<b>Lower secondary school grade</b>			
Grade C	11.5		ref. 0.0742***
Grade B	33.1		(.0277)
Grade A	34.5		0.139*** (.0293)
Grade A*	20.9		0.103*** (.0349)
<b>High school</b>			
Non-academic track	60.2		ref. 0.287***
Academic track	39.8		(.0191)
Final score	76.9 (11.016)		0.0108*** (.000827)
Constant		0.674*** (.113)	-0.284** (.119)
Observations		2,412	2,318
R-squared		0.114	0.312

*Note:* the table presents the OLS estimates for the probability of enrolling at the university in the province of Trento. Robust standard errors in parentheses. Model 1 considers only variables connected to the family background, while model 2 takes also the scholastic career into account. The first column reports descriptive statistics, where for the categorical variables the values presented are percentages, while for the continuous variables we report mean values and standard deviations in parentheses. Legend: \* p<0.10; \*\* p<0.05; \*\*\* p<0.01.

**Table A.2**

University enrolment in the province of Trento, comparison between our and Istat data.

	Data used in the paper	Istat
Gender		
Male	ref. 0.00299 (0.0172)	ref. -0.0230 (0.0312)
Female		
Social Class		
Salariat	ref. 0.00440 (0.0291)	ref. 0.0194 (0.0534)
White collars	0.00275 (0.0295)	-0.00822 (0.0496)
Self-employed	0.0243 (0.0359)	0.0217 (0.0482)
Lower white collars	-0.0446* (0.0259)	0.0125 (0.0458)
Working class		
Parental education		
University degree	ref. -0.0601*** (0.0230)	ref. -0.0692 (0.0475)
Upper-secondary diploma	-0.148*** (0.0280)	-0.119** (0.0546)
Lower-secondary certificate	-0.0793 (0.112)	-0.251** (0.115)
Primary degree		
Lower secondary school grade		
Grade C	ref. 0.0817** (0.0330)	ref. 0.130*** (0.0445)
Grade B	0.162*** (0.0343)	0.241*** (0.0490)
Grade A	0.127*** (0.0378)	0.284*** (0.0558)
Grade A*		
High school		
Non-academic track	ref. 0.295*** (0.0193)	ref. 0.293*** (0.0347)
Academic track		
Final score	0.0104*** (0.000835)	0.00668*** (0.00136)
Constant	-0.263*** (0.0692)	-0.112 (0.104)
Observations	2,215	929
R-squared	0.285	0.238

*Note:* the table presents the OLS estimates for the probability of enrolling at the university in the province of Trento. Robust standard errors in parentheses. The table reports a comparison between the data collected by the University of Trento (see section 3) and used in our analyses (first column) and data on high school graduates collected by Istat (second column). Istat data come from the *Survey on the education and work careers of upper secondary graduates* carried out in 2011 on the high school graduate cohort of 2007. Our data are from an ad hoc survey carried out in 2009 on the high school graduate cohort

**Table B.1**

The effects of Grant 5B, parametric estimates.

	<i>N</i>	<i>ATT estimate</i>	<i>Std. Error</i>
<i>Effects on enrolment decisions:</i>			
university attendance: enrolment rate	1,303	0.01	0.095
university location: enrolment rate outside Trento	985	0.40 ***	0.109
<i>Preferences on enrolment decisions:</i>			
faculties absent from UniTN	985	0.45 ***	0.092
distance from Trento	985	46.05 **	19.860
normalised prestige score	985	-0.03 **	0.012
rent of a room	985	41.11	40.010

Legend: \* p&lt;0.10; \*\* p&lt;0.05; \*\*\* p&lt;0.01.

*Note:* the parametric models are estimated using OLS regression with robust standard error.