Abstract

In this paper we measure the impact of need-based scholarship on university drop out in the first year, using student-level data from all Italian universities in the period 2003-2013. So far, the evidence of grants on college persistence is scant. In order to correctly capture the causal effect, our estimation strategy is based on a matching procedure between treated and untreated students with respect to some students’ and universities’ covariates. The results support the evidence of a negative relationship between need-based aid and university drop out.

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† Bank of Italy, Economic Research Unit, Trento Branch.
‡ University of Trento, Department of Sociology and Social Research.
§ Bank of Italy, Economic Research Unit, Milan Branch.
1. Introduction

The aim of this paper is to correctly evaluate the causal effect of need-based scholarships on students’ university drop out rate in their first year. Households’ economic conditions and credit constraints can be reasons for the lack of university affordability and for giving up the studies, especially for more disadvantaged families (Stinebrickner and Stinebrickner, 2008). In fact, the ability to pay educational and living expenses creates a strain on many students and on their family of origin, that may encourage the student to leave the university and start working in order to contribute to domestic income. Obtaining a scholarship which covers university fee and living costs may reduce the drop out probability, decreasing the direct and indirect cost of attendance.

The empirical literature on the effects of financial aid, and particularly need-based aid, on college persistence and drop out is scant. Although the decision to invest in human capital is defined by both university enrollments and drop outs, the latter have been studied less extensively in the literature because of the unavailability of retrospective information on dropout students. Also policymakers have usually paid more attention to improving student enrolment rather than student retention. Moreover, the design of these measures, in terms of eligibility criteria, makes difficult the implementation of correct identification strategies (Dynarski and Scott-Clayton, 2013).

In our analysis we use administrative data over the period 2003-2013 that cover the population of the Italian university students. The data follow the student from his enrolment to the graduation/drop out and provide several information on the academic career of the student. The availability of population-level data guarantees the universal validity of our results, differently from the majority of the other studies in this literature, which focused on specific case studies.

We focus on the Italian case for several reasons. Italy is among the European Union countries with the lowest percentage of university graduates, both due to low rate of enrolment and to high drop out rates that reached values well above 60 per cent until the early 1990s (Cingano and Cipollone, 2007). At the same time, in Italy total public expenditures for scholarships are particularly low in the international comparison and they have been constant in the last years, despite the strong recession that hit Italy starting from 2008. Mealli and Rampichini (2011) is, to our knowledge, the only work that studies the causal effects of need-based grant on drop out in Italy, but focusing only on 4 Italian universities in 1999. Using a Regression Discontinuity Design based on the grant assignment
rule, they do not find an effect of the scholarships in changing the decision of the poorest students to abandon their university studies. Other works study the determinants of university drop out in Italy, but authors did not give emphasis in measuring the impact of scholarship (Adamopoulou and Tanzi, 2017).

As mentioned, our goal is to correctly measure the probability to drop out, conditioning of having been awarded by a need-based aid. Evaluating the impact of the scholarship is not straight-forward, since eligibility for scholarships is not random but it is likely to be correlated with many observed and unobserved characteristics of the students that may affect schooling decisions. In our empirical setting, the treated group is made by those students that have been awarded by a need-based aid scholarship in the first year. The control group is made of students eligible for the scholarship because of their families’ financial condition, but not awarded because of unavailability of funds. These students are exempted by the payment of tuition fees.

Endogeneity concerns in our estimation may be related, firstly, to the fact that the drop out among students with scholarships can be lower for their higher abilities. However, in the first year scholarships are assigned only on the base of the families’ financial conditions and, consequently, the two groups of analysis should not be systematically different in terms of student’s merit and abilities. Sample heterogeneity can emerge also from differences in family financial attributes, which determine the access to aid and that are also directly associated with student outcomes. In fact, students from the poorest families tend to attend lower-quality high schools, have fewer resources for learning and, in general, parents who provide less support for their education. However, our treatment and control groups have very similar families’ financial conditions: to be eligible for scholarships, in fact, certain thresholds in term family’s yearly income and assets have not to be exceeded.

In order to be sure to minimize the risk that the different drop out probability we would observe can be due to pre-existing and systematic differences between the two groups, we apply a matching procedure between treated and untreated students with respect to some students’ and universities’ covariates, being able to control for the ability of student and for university specific traits. In particular, the empirical strategy is based on blocking on the estimated propensity score in combination with regression adjustments within the blocks. We find that being recipient of scholarship reduces the probability of drop out by 2.7 per cent, supporting the evidence of the positive effect of need-based aid on students persistence after the first year.
As mentioned, in the existing literature the evidence of the effect of financial aid is limited and the majority of the studies found a positive impact of need-based aid on college completion. Bettinger (2004) states that a $1,000 increase in a student's grant in public colleges in Ohio corresponds to a 6-9 percentage point decrease in the likelihood that students withdraw. Castleman and Long (2016) uses a regression-discontinuity approach to estimate the causal effect of need-based grant eligibility on a range of college outcomes in Florida. An additional $1,300 in grant aid eligibility increased the probability of staying continuously enrolled through the spring semester of students' freshman year by 4.3 percentage points. Bettinger and al. (2012), in randomized field experiment, finds that low income students who have been helped in applying for federal student aid are 8 percentage points more likely to have been enrolled in college for at least two consecutive years.

Singell (2001), using institution-specific data, compares the effects of need-based aid and merit-based aid on retention. Both seem to affect college retention, but merit based scholarships result more effective. Nonetheless, the findings also indicate that the most needy students are less likely to enroll and re-enroll controlling for the level of aid. Also Dynarsky (2008) exploited the introduction of merit based scholarship programs, which appear to increase the share of young people with a college degree by three percentage points. The positive effect of lower cost on retention outweighs any negative effect of enrolling marginally weaker students who are less likely to persist. On the contrary, in Sjoquist and Winters (2015) no significant effects of merit-based financial aid programs are found for college completion. Other works focus on the impact of scholarships on different outcomes: students grades (Cappelli and Won; 2016), attendance and completion (Dynarsky; 2003) and time to complete a degree (Garibaldi et al., 2012).

Differently from the literature on drop out rates, there has been considerable research examining the effect of scholarship grants on university enrolment (Lauer, 2002; Kane, 2003; Baumgartner and Steiner, 2006; Cornwell et al., 2006; Goodman, 2008; Steiner and Wrohlich, 2008; Deming & Dynarski, 2009; Nielsen et al., 2010; Vergolini and Zanini, 2015) but the empirical evidence has so far been unable to provide a definitive answer on the effect of scholarships on enrolment.

The remainder of the paper is organized as follows. Section 2 presents the data and describes the grant assignment rule; section 3 introduces the empirical strategy and discusses the identification issues. Section 4 discusses the results and includes robustness checks. Section 5 concludes.
2. Data

The Italian financial aid system for higher education is mainly based on “Diritto allo studio” (DSU), a program aimed to encourage enrolment and attendance of students coming from more disadvantaged families. The main objective of DSU is to give the opportunity to motivated students for obtaining higher education, irrespective of their income (Decree of the Prime Minister, April 9, 2001).

The main benefits offered by DSU are students’ scholarships. In the first year of enrolment, these scholarships are based only on the students’ family conditions. Applicants are ranked according to a score, computed on the basis of the family’s yearly income and assets (and that takes into account also the family’s composition). If this score is lower than a threshold the student becomes eligible for grants, but not all of them are awarded by the scholarship due to the lack of funds. The percentage of eligible students who actually received the scholarship declined during the crisis: it was about 82 per cent in the period 2006-08, it reached the minimum in 2011 (69 per cent) and then increased to 76,5 per cent in 2013, with strong differences among the regions (90 per cent in the North of Italy and 56 per cent in the South; Anvur, 2016).

The application for the scholarship is submitted after the enrollment and it is voluntary\(^1\). The size of grants depends on whether students are resident in the city where the university is located, if they can commute in order to reach the university or if they are out-of-site students. Every year the ministry of education sets the minimum amount of scholarship, but the differences over time are very small. For example, in 2013 the minimum amounts for the three categories of students were, respectively, 1,904, 2,785 and 5,053 euro; the average amount was about 3,400 euros\(^2\).

Even if not all the eligible students are awarded by the grant, these students are all exempted by the payment of tuition fees. In 2013 the average yearly amount of tuition fees in state universities was about 1,000 euro (about 700 euro in the South and 1,400 euro in the North), and it was lower for students coming from low-income families (the lowest bracket was 200 euro; Anvur, 2016). This implies that the economic impact of the grant, that is supposed to cover students’ living expenses, is higher compared to that of exemption.

After the 2011 constitutional reform, DSU became part of the exclusive competence of regional legislation; grants are generally managed by regional agencies, with some

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\(^1\) Notice of acceptance are in general communicated at the end of the first calendar year.

\(^2\) Source: Osservatorio Regionale per l’Università e il Diritto allo studio universitario del Piemonte.
administrative tasks assigned to universities. Funds come mainly from regional
governments, from the central government (Fondo Integrativo Statale) and from a specific tax
payed by not eligible students. The amount of funding available for these grants is thus
different between regions, year and also between universities within regions.

We exploit a unique dataset, Anagrafe Nazionale Studenti (ANS) that contains
administrative records on enrolments, students’ schooling background and their academic
career in Italian universities. The main advantage of our database is that it is representative of
the entire population of university students in Italy. We focus on students aged between 18
and 20 years, enrolled for the first time in an Italian university over the period 2003-2013. On
average, about 11% of enrolled young people dropped out at the end of the first year, with
a slightly increasing trend until 2009 and then a decreasing one. In line with other studies
(Adamopoulou and Tanzi, 2014; Di Pietro, 2004), the probability of dropping-out varies with
individual characteristics: females, students from licei, those with better high school grades,
out-of-site students and those living in the North are less likely to drop-out.

Our working sample includes only first year students recipient of scholarship, the
treatment group, and those that were eligible but they were not awarded by the scholarship
and that are exempted by the payment of tuition fees (the control group). Unfortunately, our
control group is also made of students who are exempted by the payment of tuition fees for
other reasons (mainly disable students with high disability) but these categories are
residuals. After deleting observations with missing variables of interest (in particular, we
included only university/time observations with at least one treated student and one
belonging to the control group), 19.000 students per year are recorded (about 8 per cent of all
the 18-20 years new entrants in first level tertiary education); the sample size declined
slightly after 2009. Descriptive statistics of the sample are shown in Table 1. The drop-out
rate was, on average, 8 per cent, with a downward trend over the year.

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3 Calabria is the only region where grants are entirely managed by universities.
4 The rationale for this is to avoid problems of comparability between students who started university
immediately after leaving high school and those who started undergraduates programs later.
5 Data are updated to 2015. Data for the academic year 2015-16 are excluded since drop-out rates cannot be
computed as they are measured at the end of each academic year. We excluded also the data 2014-15 from the
baseline analysis since in that year the way in which data on scholarships were collected has been changed.
However, we included this academic year in the robustness checks.
6 The Decree of the Prime Minister, April 9, 2001 lists the categories of students exempted by the payment of
tuition fees. According to Anvur (2016) and considering all enrolled students, students eligible for scholarships
represent about 85 per cent of the exempted students. Since we are considering only students enrolled in the
first year of university, this percentage should be even higher in our sample, because for some students the
exemption is based on university performance, that in the first year cannot be still appreciated.
3. Empirical strategy

We are interested in estimating the following equation:

\[ Y_{iut} = \alpha S_{iut} + \beta X_i + D_{ut} + \varepsilon_{it} \]  \hspace{1cm} (1)

where student, university and time are indexed, respectively, by \( i, u \) and \( t \).

\( Y_{iut} \) is a dummy variable taking value 1 if the student dropped out at the end of the first year; we defined drop-out students as those who did not enroll in any university in the following academic year (ANVUR, 2016; De Angelis et al., 2016).

\( S_{iut} \) is a binary treatment status denoting recipients of scholarship: this dummy variable takes value 1 if the student got the scholarship, and 0 if the student did not have the scholarship but he was eligible for it (plus residual categories that are also exempted by the payment of the fees). In line with other studies (Adamopoulou and Tanzi, 2014; Di Pietro, 2004; Rumberg, 1983), \( X_i \) are individual characteristics that can influence drop out rates, namely gender, nationality, area of residence (north, center, south), a dummy for studying in a region different from the region of origin, high school type and grade, a dummy for urban local labour system (as a proxy for the economic status of the home town). Finally, \( D_{ut} \) are university dummies interacted by time dummies, in order to capture university/period specific patterns. We considered three periods: 2003-06, 2007-10, 2011-13.

Since we are interested in identifying the effect of the scholarship on the drop out probability, a few aspects of our identification strategy have to be noted. In order to correctly capture the causal effect of the grant, the treated and the control group should not be systematically different in terms of those characteristics that can be correlated with the dependent variable. There are three main potential endogeneity issues encountered in the estimation of the effect of the scholarships on drop out rates. First of all, the most evident concern could be that more at all on merit or academic ability reduces this source of endogeneity. Moreover, the richness of information available in the data offers extensive controls for factors related to academic ability, preferences and motivation. Second, it is necessary to distinguish the effect of the scholarship from the effects of family background, that might affect student outcomes independent of financial aid. However, in our setting the two group of students have very similar family financial conditions: both are made of students eligible for grants, and to be eligible the family yearly income should not exceed certain thresholds. The third endogeneity issue that has frequently emerged in the literature is related to the fact that the propensity to apply for the scholarship may depend on a set of
observables and unobservable individual characteristics, possibly correlated to the outcome. However, both the treated and the control group are students that voluntary applied for the scholarship and this reduces these concerns of self-selection.

To correct any remaining possible biases, we apply a matching procedure between treated and untreated students with respect to some individual covariates, that correspond to the control variables $X_{it}$ and $D_{ut}$ described in equation (1). Hence, we are able to control for the ability of student, educational background and the level of difficulty that differs across universities.

We estimated the propensity score $e = e(x)$, defined as the probability of receiving treatment given the covariates $X$ (described in Table 2, plus university dummies interacted by time):

$$e(x) = \mathbb{E}[S_{iut} | X_i = x] = \Pr(S_{iut} = 1 | X_i = x),$$

where the estimator is based on a logit model (we then used $\hat{e}(x)$ in place of the propensity score).

In details, the empirical strategy is based on blocking on the estimated propensity score in combination with regression adjustments within the blocks. The idea behind this method, proposed by Rosenbaum and Rubin (1983, 1984), is to split the sample into subclasses according to the propensity score and then run regressions within the subclasses. There are two main advantages of this estimator (Imbens, 2015): first, the sub-classification approximately averages the propensity score within the subclasses, smoothing over the extreme values of the propensity score; second, the regression within the subclasses adds a lot of flexibility compared to a single weighted regression.

Following Imbens (2015), we need to partitioning the range $[0,1]$ of the propensity score into $J$ intervals $[b_{j-1}, b_j)$, for $j = 1, \ldots, J$, where $b_0 = 0$ and $b_J = 1$. Let $B_i(j) \in \{0,1\}$ be a binary indicator for the event that the estimated propensity score for unit $i$, $\hat{e}(x)$, satisfies $b_{j-1} < \hat{e}(x) < b_j$. In particular, we choose to partition the sample into 5 blocks according to the following propensity score values: $j = 1$ if $0 \leq \hat{e}(x) < 0.2$; $j = 2$ if $0.2 \leq \hat{e}(x) < 0.4$; $j = 3$ if $0.4 \leq \hat{e}(x) < 0.6$; $j = 4$ if $0.6 \leq \hat{e}(x) < 0.8$; $j = 5$ if $0.8 \leq \hat{e}(x) \leq 1$.

Within each block the average treatment effect is estimated using linear regression with all of the covariates $X_{it}$ and $D_{ut}$ described in equation (1), and including an indicator for the treatment. Standard errors are corrected for the potential clustering of residual at the university class level. This leads to $J$ estimates $\hat{\alpha}_j$, one for each block. These $J$ within-block
estimates are then averaged over the J blocks, using the proportion of treated units in each block, $\frac{N_{tj}}{N_t}$, as the weights:

$$\alpha_{block, treat}(Y, S, X) = \sum_{j=1}^{J} \frac{N_{tj}}{N_t} \cdot \hat{\alpha}_j$$  \hspace{1cm} (3)

The coefficient $\alpha$ is then the estimated effect of the scholarship on the probability to drop out.

4. Results

4.1. Baseline

Table 2 shows the main descriptive statistics for treated and control groups. The drop out rate is statistically lower for treated students. Moreover, treated students are more likely to live in the North of Italy and to study in a different area from that of origin; they have a lower high school grade and a higher proportion of students graduated from technical high school.

Figure 1 plots the distribution of the propensity score for the two groups, within the region of common support\(^7\): the mean (median) value is 0.85 (0.95) for treated students and 0.37 (0.29) for untreated ones.

Table 3 reports the baseline results. We find that scholarship has a negative and significant effect on drop-outs: the estimated average effect is a reduction of 2.7 per cent in the drop out rates (with a standard error of 0.0036). Looking at the within-block estimates, the average effect is driven, as expected, by the fifth block (which includes 78 per cent of treated students).

These results are robust to different estimation methods: kernel matching and propensity score reweighting. Results are reported in Appendix.

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\(^7\) We dropped only 0.2% of the initial working sample.
Tables and Figures

Table 1. Descriptive statistics of the working sample. Mean values over each period.

<table>
<thead>
<tr>
<th>Year of enrolment</th>
<th>2003-06</th>
<th>2007-10</th>
<th>2011-13</th>
</tr>
</thead>
<tbody>
<tr>
<td>% drop-out</td>
<td>8.2</td>
<td>7.6</td>
<td>6.7</td>
</tr>
<tr>
<td>% recipients of grants</td>
<td>68.3</td>
<td>73.6</td>
<td>72.4</td>
</tr>
<tr>
<td>% female</td>
<td>63.3</td>
<td>62.8</td>
<td>62.1</td>
</tr>
<tr>
<td>% resident in the North</td>
<td>26.8</td>
<td>32.5</td>
<td>31.4</td>
</tr>
<tr>
<td>% resident in the Centre</td>
<td>15.4</td>
<td>17.6</td>
<td>16.5</td>
</tr>
<tr>
<td>% resident in the South</td>
<td>57.8</td>
<td>49.9</td>
<td>52.1</td>
</tr>
<tr>
<td>average high school grade</td>
<td>85.0</td>
<td>82.8</td>
<td>83.5</td>
</tr>
<tr>
<td>% from licei</td>
<td>51.7</td>
<td>59.5</td>
<td>62.3</td>
</tr>
<tr>
<td>% study in a different area from that of origin</td>
<td>14.0</td>
<td>18.0</td>
<td>21.3</td>
</tr>
<tr>
<td>% living in an urban LLS</td>
<td>39.8</td>
<td>39.8</td>
<td>40.0</td>
</tr>
<tr>
<td>% foreign students</td>
<td>1.4</td>
<td>3.4</td>
<td>4.5</td>
</tr>
<tr>
<td>N</td>
<td>20,918</td>
<td>19,149</td>
<td>14,985</td>
</tr>
</tbody>
</table>

Notes: our elaboration on ANS data. The working sample includes only students aged between 18 and 20, enrolled for the first time in an Italian university, who were recipient of scholarship or exempted by the payment of tuition fees.

Table 2. Descriptive statistics for treated and control groups. Mean values over the period 2003-2013.

<table>
<thead>
<tr>
<th>Year of enrolment</th>
<th>Treated</th>
<th>Untreated</th>
<th>Standardized diff.</th>
</tr>
</thead>
<tbody>
<tr>
<td>% drop-out</td>
<td>0.07</td>
<td>0.10</td>
<td>-0.10</td>
</tr>
<tr>
<td>% female</td>
<td>0.64</td>
<td>0.61</td>
<td>0.07</td>
</tr>
<tr>
<td>% resident in the North</td>
<td>0.32</td>
<td>0.24</td>
<td>0.18</td>
</tr>
<tr>
<td>% resident in the Centre</td>
<td>0.18</td>
<td>0.13</td>
<td>0.14</td>
</tr>
<tr>
<td>% resident in the South</td>
<td>0.50</td>
<td>0.63</td>
<td>-0.27</td>
</tr>
<tr>
<td>average high school grade</td>
<td>83.31</td>
<td>85.26</td>
<td>-0.15</td>
</tr>
<tr>
<td>% from licei</td>
<td>0.55</td>
<td>0.61</td>
<td>-0.12</td>
</tr>
<tr>
<td>% study in a different area from that of origin</td>
<td>0.21</td>
<td>0.06</td>
<td>0.46</td>
</tr>
<tr>
<td>% living in an urban LLS</td>
<td>0.39</td>
<td>0.43</td>
<td>-0.08</td>
</tr>
<tr>
<td>% foreign students</td>
<td>0.03</td>
<td>0.01</td>
<td>0.16</td>
</tr>
<tr>
<td>N</td>
<td>145,851</td>
<td>59,144</td>
<td></td>
</tr>
</tbody>
</table>

Notes: our elaboration on ANS data. The working sample includes only students aged between 18 and 20, enrolled for the first time in an Italian university, who were recipient of scholarship or exempted by the payment of tuition fees. We deleted observations out of common support (less than 0.1%).
Figure 1. The distribution of the propensity score in the treated and untreated group, within the region of common support.

Table 3. Estimated effect of scholarship on drop-out

<table>
<thead>
<tr>
<th>block #</th>
<th>weight</th>
<th>$\hat{\alpha}_j$</th>
<th>st.err.$(\hat{\alpha}_j)$</th>
</tr>
</thead>
<tbody>
<tr>
<td>j=1</td>
<td>0.0158</td>
<td>0.0256</td>
<td>0.0075</td>
</tr>
<tr>
<td>j=2</td>
<td>0.0762</td>
<td>0.0008</td>
<td>0.0035</td>
</tr>
<tr>
<td>j=3</td>
<td>0.0382</td>
<td>-0.0047</td>
<td>0.0053</td>
</tr>
<tr>
<td>j=4</td>
<td>0.0916</td>
<td>-0.0236</td>
<td>0.0049</td>
</tr>
<tr>
<td>j=5</td>
<td>0.7781</td>
<td>-0.0323</td>
<td>0.0046</td>
</tr>
<tr>
<td>average</td>
<td></td>
<td><strong>-0.0270</strong></td>
<td><strong>0.0036</strong></td>
</tr>
</tbody>
</table>

Notes: our elaboration on ANS data. The working sample includes only students aged between 18 and 20, enrolled for the first time in an Italian university, who were recipient of scholarship or exempted by the payment of tuition fees. We deleted observations out of common support (less than 0.1%). The average effect is computed as the weighted average over the J blocks, using the proportion of treated units in each block as weights.


Appendix

In order to show that our results are robust to the choice of different estimation procedure, we present here two alternative methods. First, we used kernel matching (with a caliper 0.01 percentage points) with bootstrap.

```
bootstrap att=r(att), reps(10) strata(treated) : psmatch2 treated $X i.atetime3, qui outcome(drop_out) common kernel caliper(0.01)
(running psmatch2 on estimation sample)
```

Bootstrap replications (10)

```
-----+--- 1 ---+--- 2 ---+--- 3 ---+--- 4 ---+--- 5
..........
```

Bootstrap results

```
Number of strata   =         2                  Number of obs     =    204,759
Replications      =         10
command:  psmatch2 treated female centro_res sud_res straniero migr_area classe_voto_dip dip2 dip3 urban_sll_petr i.atetime3, qui outcome(drop_out) common kernel caliper(0.01) 
att:  r(att)
```

```
<table>
<thead>
<tr>
<th></th>
<th>Observed</th>
<th>Bootstrap</th>
<th>Normal-based</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coef.</td>
<td>Std. Err.</td>
<td>z</td>
</tr>
<tr>
<td>att</td>
<td>-.039657</td>
<td>.0037018</td>
<td>-10.71</td>
</tr>
</tbody>
</table>
```

Second, we used a propensity score reweighting:

```
reghdfe drop_out treated $X [aw=peso], absorb(atetime3) vce(cluster chiave_corso)
(converged in 1 iterations)
```

```
HDFE Linear regression Number of obs   =    204,759
Absorbing 1 HDFE group F(  10,  20126) =      37.10
Statistics robust to heteroskedasticity Prob > F        =     0.0000
R-squared       =     0.0890
Adj R-squared   =     0.0883
Within R-sq.    =     0.0453
Number of clusters (chiave_corso) =     20,127 Root MSE        =     0.2776
```

```
(Std. Err. adjusted for 20,127 clusters in chiave_corso)
```

```
|       | Coef. | Robust Std. Err. | t   | P>|t| | [95% Conf. Interval] |
|-------|-------|------------------|-----|-----|----------------------|
| drop_out |       |                  |     |     |                      |
| treated | -.0389446 | .0058549    | -6.65 | 0.000 | -.0504207 | -.0274685 |
| female  | .0048161  | .0072325     | 0.67  | 0.505 | -.0093602 | .0189924  |
| centro_res | .0221103  | .0144944     | 1.53  | 0.127 | -.0062999 | .0505205  |
| sud_res | .0366287   | .0143946     | 2.55  | 0.011 | .0085022  | .0647551  |
| straniero | -.0524144 | .0143876    | -3.64 | 0.000 | -.0806152 | -.0242135 |
| migr_area | -.0262186 | .0106503    | -2.46 | 0.014 | -.0470941 | -.005343  |
| classe_voto_dip | -.0277113 | .0023869    | -11.61 | 0.000 | -.0323898 | -.0230329 |
| dip2  | .0805087   | .0066257     | 12.15 | 0.000 | .0675218  | .0934955  |
| dip3  | .0883127   | .0118428     | 7.46  | 0.000 | .0650999  | .1115255  |
| urban_sll_petr | .0178595 | .0071684    | 2.49  | 0.013 | .0038088 | .0319102  |
```
Absorbed degrees of freedom:

<table>
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<th>Absorbed FE</th>
<th>Num. Coefs.</th>
<th>Categories</th>
<th>Redundant</th>
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<td>153</td>
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