



Need-Based Aid for Private, Not-for-Profit Colleges – The Iowa Tuition Grant

ABSTRACT

The costs incurred while earning a postsecondary credential are rising. While those costs are typically highest at private, not-for-profit colleges and universities, students attending those institutions often receive a substantial amount of student aid to offset the expense. In Iowa, the state-funded Iowa Tuition Grant (ITG) provides need-based aid to students attending private, not-for-profit institutions. This study explores how eligibility for ITG impacts students' postsecondary enrollment patterns. It also looks at the association between receiving an ITG award and completing a postsecondary credential. We found that financial aid applicants who were eligible to receive ITG were more likely to enroll in college and more likely to enroll at a private, not-for-profit institution by 3 and 25 percentage points, respectively. Students who received an ITG award were 4-5 percentage points more likely to complete a credential within four, five or six years than non-recipients at the same institutions.

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1 Introduction

As the cost of a postsecondary education rises, the efficacy of financial aid programs must be assessed to determine how to best improve student outcomes. Several studies have addressed the role of financial aid in a student's decision to enroll in college (Kane, 2003; Dynarski, 2000; Farrell, Kienzl, 2009). Dynarski (2000) showed that each additional \$1,000 in student aid (through Georgia's HOPE Scholarship) increased postsecondary enrollment by approximately 4 percentage points for middle to high income students.

Less is understood about the effect of additional funding for postsecondary education on persistence towards and completion of a credential. Focusing on the federal Pell grant, a need-based grant awarded to the lowest income FAFSA (Free Application for Federal Student Aid) filers, Bettinger (2004) found that each additional \$1,000 in aid decreased the percentage of students who "stopped out," did not persist from year one immediately into year two, by 3 to 4 points.

There is a well known gap in postsecondary completion rates between low and high income students, and scholarship aid for low-income students helps to close that gap (Goldrick-Rab et al., 2016). Castleman, Long (2016) investigated the causal effect of the need-based Florida Student Access Grant (FSAG) in promoting enrollment, persistence and completion of postsecondary education. The FSAG was awarded to very low-income students, those whose families had less than \$1,590 to contribute to a postsecondary education in 2000-01. They found that aid above the Pell grant not only increased enrollment and persistence at four-year universities, it also had a large effect on completion— a 22% increase in the percentage of students who earned bachelor's degrees within 6 years.

Here, we explore postsecondary enrollment and completion rates for students who were eligible for or received the Iowa Tuition Grant (ITG), a grant with an eligibility cutoff in family adjusted gross income (AGI) at approximately \$85,000. This grant is unique among many need-based grants due to the high income cutoff for eligibility and the requirement that students enroll in private institutions to receive it.

2 Current Research

In this paper we explore whether ITG is successful in increasing (a) enrollment in postsecondary institutions for Iowans who are eligible to receive the grant and (b) postsecondary completion rates for students who are awarded the grant and attend Iowa's private, not-for-profit institutions.

ITG was first appropriated funding in 1969 to address increasing demand at Iowa's three public four-year institutions by offsetting some of the cost at private, not-for-profit four-year institutions.

There is also an ITG grant available for students who attend private, for-profit institutions, but here we focus on not-for-profit institutions. Eligibility for ITG is determined by a student’s EFC (expected family contribution), as calculated on the FAFSA. Both the amount of appropriated funding and the eligibility cutoff in EFC have grown substantially since ITG’s inception. In 2017-18, ITG accounted for 76% of all state appropriated financial aid awarded to college students and placed Iowa as the state with the highest percentage of state aid awarded to students at private institutions (National Association of State Student Grant and Aid Programs, 2016). Table 1 shows the eligibility cutoff in EFC as well as the average and maximum awards by year. Academic year refers to the year a student would typically be enrolled in college, whereas the filing date of the FAFSA would fall in the prior academic year (although FAFSAs may be filed over a 20 month period of time, so this is not always true).

Academic Year	EFC Cutoff (\$)	Avg Award (\$)	Max Award (\$)	Recipients (N)
2002-03	9,000	2,906	3,600	15,741
2003-04	9,000	2,823	3,550	15,976
2004-05	9,000	3,138	3,875	13,892
2005-06	11,500	3,197	3,900	13,949
2006-07	12,000	3,227	4,000	14,409
2007-08	13,000	3,198	4,000	15,090
2008-09	13,500	3,218	4,000	14,836
2009-10	13,500	2,902	3,565	14,484
2010-11	13,500	3,011	3,700	14,853
2011-12	13,500	2,770	3,500	15,558
2012-13	13,500	3,027	3,840	14,946
2013-14	13,500	3,257	4,110	14,413
2014-15	13,500	3,617	4,550	13,378

Table 1: Summary of ITG award characteristics. For each academic year, we list the EFC eligibility cutoff, the average and maximum awards as well as the number of recipients.

In addition to receiving an ITG award, 75% of recipients were also awarded financial aid through ITG matching. Starting in 2014-15, institutions are required to match 100% of ITG dollars awarded to their students in order to be eligible. These match awards must go to ITG recipients but are not required to be equal in amount to the ITG award, as long as the sum of match awards equals the sum of ITG awards. Lifetime ITG match awards to ITG recipients ranged from \$0 to \$166,790 with an average award of \$19,230. The considerable range in match awards is due to the institutional flexibility to determine which ITG recipients receive a match award and the amount.

In the following sections, we use a logistic regression model to explore the association between ITG and postsecondary enrollment and completion. We discuss the data used in Section 3, our empirical strategy in Section 4 and results in Section 5. We test the sensitivity of our results to the sample analyzed in Section 6 and present conclusions in Section 7.

3 Data

We combined student performance and demographic data with postsecondary enrollment and completion information from the following sources.

3.1 FAFSA

Iowa College Aid receives Institutional Student Information Record (ISIR) data from the federal Department of Education for all Iowans who file the FAFSA. Completion of the FAFSA is required before any student may apply for ITG. We included several demographic data points from the FAFSA in our analysis, including dependency status, first-generation status, gender, Pell recipient status and age at the time the student completes the FAFSA. Also from the FAFSA, EFC is used to determine whether or not a student is eligible for ITG. Finally, students may select up to 10 institutions to send their FAFSA information to, and our FAFSA data includes vendor codes for each indicated institution. If a student with an ITG eligible EFC sent their FAFSA to an eligible private, not-for-profit institution, they would have been informed by that institution that they would be eligible for ITG upon enrollment.

3.2 National Student Clearinghouse

Iowa College Aid collects National Student Clearinghouse (NSC) data for all FAFSA and financial aid applicants in Iowa. NSC matches submitted student name and date of birth to postsecondary enrollment records, provided to NSC by colleges and universities. NSC returns one record for each term of enrollment, including the date of enrollment, college attended, enrollment status (full time, 3/4, half time, 1/4, withdrawn) and the type of institution, four versus two-year and public versus private. Finally, NSC returns information on all postsecondary credentials that a student earned, including the type of degree and program of study. We have received postsecondary enrollment information for FAFSA filers starting with those who filed for the 2002-03 academic year, and we continue to submit for updates bi-annually.

4 Analysis

In the following, we divide our analysis into two parts, focusing (a) on the association between ITG and postsecondary enrollment and (b) on the association between ITG and postsecondary completion. We initially attempted these analyses using a Regression Discontinuity design (RD); however, we found that the data violated assumptions necessary for the RD design to be valid. An RD design uses some cutoff, here the EFC eligibility, to compare students in a small bandwidth around that cutoff (Thistlethwaite, Campbell, 1960). A fundamental assumption is that there should be no discontinuity in the distribution at that cutoff. We found that there is a significant discontinuity in the number of FAFSA filers at the ITG eligibility cutoff and therefore we use the analysis discussed below instead of the RD design.

4.1 ITG and Postsecondary Enrollment

For the first part of our analysis, regarding postsecondary enrollment, we selected all students who filed the FAFSA and indicated that they were first-time college students. Any students with missing data on dependency status or first-generation college student status were excluded. We also omitted any student who did not indicate an institution to have FAFSA records sent to (missing vendor codes). NSC records corresponding to the year in which the FAFSA was filed were matched to ISIR records to determine if a student enrolled that year and the sector of institution the student enrolled in.

We identified students who would have been informed that they could receive the ITG grant. Students who indicated at least one ITG-eligible private, not-for-profit institution in the 10 vendor

codes on the FAFSA and who also had EFCs that fell below the eligibility cutoff would have received information about ITG. The demographics of the population of students who would have been informed of an ITG award versus those who would not have are provided in Table 2.

	ITG Informed	Not ITG Informed
Median Age (years)	18	18
Male (%)	41.6	44.7
first-generation (%)	32.4	35.7
Dependent (%)	79.0	60.3
Pell Recipient (%)	56.8	51.6
Median EFC (\$)	3,242	3,705

Table 2: Demographics of data set used to determine ITG eligibility and postsecondary enrollment.

We used Equation 1 to fit a logistic regression to the data, where $ITG_{Informed} = 1$ if a student was eligible to receive ITG and indicated an eligible institution on their FAFSA. The vector X contains demographic variables including sex, first-generation status, age, Pell recipient status and dependency status as well as the year the FAFSA was filed as a fixed effect. Y is a binary indicator of either enrollment at any institution or enrollment at a private, not-for-profit institution.

$$\text{logit } P(Y = 1) = \beta_0 + \beta_1 ITG_{Informed} + \beta_2 EFC + \beta_3 (ITG_{Informed} \times EFC) + \beta_4 X + \epsilon \quad (1)$$

4.2 ITG and Postsecondary Completion

For the second part of our analysis, regarding postsecondary completion rates, we identified first-time, full-time enrollees at ITG eligible private, not-for-profit institutions for inclusion in our sample. Identifying these students was complicated by Iowa’s Senior Year Plus program, through which high school students can complete college-level courses for credit. In 2016-17, over 43,000 Iowa high school students were enrolled in college courses (Iowa Department of Education, 2017). Enrollment in college courses during high school is reflected in NSC data.

Each student’s first enrollment in a private, not-for-profit institution was identified from NSC data and matched to the ISIR record corresponding to a FAFSA filed for the appropriate year. Students were omitted from analysis if they were enrolled in a private, not-for-profit institution anytime prior to receiving an ITG award; however, prior enrollment in another sector of higher education was not a reason for exclusion. Only students enrolled full time during their first term of enrollment at a private, not-for-profit institution were included. Finally, students who had received any degree prior to enrollment at a private, not-for-profit institution were omitted. When looking at completion rates, we did not require that a credential be earned at a private, not-for-profit institution, allowing students to transfer.

ITG recipients were identified in the scholarships and grants data system maintained by Iowa College Aid. A student who received any amount of financial aid through ITG was identified with $ITG_{Awarded} = 1$. Total lifetime awards ranged from \$19 to \$24,691. Students who never received an ITG award were identified with $ITG_{Awarded} = 0$. The demographics of the sample use for the completion analysis is provided in Table 3.

	ITG Awarded	Not ITG Awarded
Median Age (years)	18.7	18.7
Male (%)	41.8	45.6
first-generation (%)	30.4	14.4
Dependent (%)	87.4	94.8
Pell Recipient (%)	53.2	3.1
Median EFC (\$)	3,436	24,538

Table 3: Demographics of data set used to determine ITG award status and postsecondary completion rates.

We used Equation 2 to look for an association in postsecondary completion rates and the receipt of an ITG award. Equation 2 is the same as Equation 1, except for the independent variable of interest ($ITG_{Awarded}$). The outcome variable Y is a binary indicator of earning a credential within four, five or six years of enrolling at a private, not-for-profit institution.

$$\text{logit } P(Y = 1) = \beta_0 + \beta_1 ITG_{Awarded} + \beta_2 EFC + \beta_3 (ITG_{Awarded} \times EFC) + \beta_4 X + \epsilon \quad (2)$$

5 Results

Using Equation 1, we found that having received information regarding ITG is positively associated with enrollment in any postsecondary institution and specifically at private, not-for-profit institutions. Table 4 shows the results from the logistic regression with enrollment outcome indicators. The average marginal effects of meeting the criteria for ITG eligibility (EFC and appropriate vendor codes) show an increase in approximately 3 percentage points for enrollment at any institution and an increase of 25 percentage points in enrollment at private, not-for-profit institutions compared to those who would not have received information about ITG grants.

	Enrolled Anywhere	Enrolled at Private, not-for-profit
$ITG_{Informed}$.159*** (.022)	2.211*** (.023)
EFC (\$10,000)	.079*** (.004)	.201*** (.005)
$ITG_{Informed} \times EFC$.021 (.024)	-1.32*** (.026)
Average Marginal Effects	.026*** (.002)	.245*** (.002)
N	499,290	499,290

Table 4: Results from Equation 1 for enrollment outcomes. Average marginal effects of being informed of ITG are included. Standard errors are shown in parentheses. * $p < .10$. ** $p < .05$. *** $p < .01$.

Results from the second part of our analysis, using Equation 2 with graduation rates at four, five and six years as the outcome variables, are shown in Table 5. We found that receiving an ITG award was associated with an increased likelihood of graduating in four, five or six years. The average marginal effect of receiving ITG was roughly 4-5 percentage points for each outcome.

	Graduated (4 yrs)	Graduated (5 yrs)	Graduated (6 yrs)
ITG _{Awarded}	.282*** (.044)	.361*** (.053)	.346* (.058)
EFC (\$10,000)	.073*** (.011)	.087*** (.015)	.121*** (.018)
ITG _{Awarded} × EFC	.206*** (.054)	.248*** (.065)	.187*** (.070)
Average Marginal Effects	.051*** (.008)	.047*** (.008)	.044*** (.008)
N	34,065	31,350	28,837

Table 5: Results from Equation 2 for graduation outcomes. Average marginal effects of being awarded ITG are included. Standard errors are shown in parentheses. * $p < .10$. ** $p < .05$. *** $p < .01$.

6 Robustness

To determine the sensitivity of our results to the sample, we performed several robustness checks by repeating the analysis for specific sub-samples. In Tables 6 and 7 we show the average marginal effects of being informed of ITG eligibility and receiving ITG, respectively. We considered three sub-samples; students who were eligible for Pell, those who were not eligible for Pell and students within \$5,000 of the ITG eligibility cutoff (either above or below). In Table 6 we found that being informed of ITG eligibility was associated with a 1-4 percentage point increase in enrollment anywhere, depending on the sub-sample; however, the average marginal effect was insignificant for those students near the ITG eligibility cutoff. Having received information regarding ITG eligibility was associated with a 30-35 percentage point increase in enrollment at private, not-for-profit institutions for all sub-samples.

Sub-Sample	Enrolled Anywhere	Enrolled Private, not-for-profit	N
Pell Flagged	.037*** (.003)	.299*** (.002)	261,299
Not Pell Flagged	.011* (.006)	.319*** (.012)	237,991
±\$5,000 EFC	.013 (.004)	.350*** (.005)	111,360

Table 6: Average Marginal Effects of having received information regarding eligibility for an ITG award, restricting the data set by sub-sample. * $p < .10$. ** $p < .05$. *** $p < .01$.

The average marginal effects of completion remained significant when isolating the analysis by sub-sample in Table 7. We omitted the Pell-eligible sub-sample because only 307 students were Pell-eligible but did not receive ITG. We found larger average marginal effects on completion, when focusing on these higher income samples.

Sub-Sample	Graduated (4 yrs)	Graduated (5 yrs)	Graduated (6 yrs)
Not Pell Flagged	.053*** (.012)	.047*** (.009)	.034*** (.009)
±\$5,000 EFC	.095*** (.025)	.077*** (.023)	.086*** (.023)

Table 7: Average Marginal Effects of having received an ITG Award, restricting the data set by sub-sample. * $p < .10$. ** $p < .05$. *** $p < .01$.

7 Conclusion

We found that the Iowa Tuition Grant is associated with an increase in postsecondary enrollment, both at any institution (by approximately 3 percentage points) and specifically at private, not-for-profit institutions (at 25 percentage points). Receiving an ITG award is also associated with 4-5 percentage point increases in four, five and six year graduation rates.

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