Looking Beyond Enrollment

The Causal Effect of Need-Based Grants on College Access, Persistence, and Graduation

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Grant Aid: An Effective Public Investment?

- Major government investment (AY 2009-2010):
  - Pell Grants: $28 billion
  - State grants: $8.6 billion

- Has this investment improved college outcomes?
  College enrollment by family SES, 1984 – 2008

The Gap by Income is large and persistent

Source: Education Pays (2010)

Evidence on the Effects of Grant Aid

- Overall, strong and positive effects on enrollment (Dynarski, 2003; Kane, 2003)
- Small to no effects in harder to understand programs (Hansen, 1983; Kane, 1995)
- But very large effects on transparent, easy to understand programs (Dynarski, 2004)

Limited research on college success

- Pell Grants increase persistence? (Bettinger, 2004)
- Ending a large need-based program decreased attainment for those previously eligible (Dynarski, 2003)
- Increase persistence and educational attainment (Angrist, Lang, & Oreopoulos, 2009; Dynarski, 2008; Scott-Clayton, 2008)

Research Focus

Does eligibility for a need-based grant increase the probability that students will enter, persist in, and graduate from a public college or university?

Financial Aid in Florida, AY 2000

- Need-based Florida Student Access Grant (FSAG)
  - $1,300 (17% of cost of attendance at FL public universities and X% of tuition and fees at community college)

Other Common Grant Programs:

1. Need-based Federal Pell Grant (PELL)
   - Max $X,XXX (up to 44% cost of attendance at FL public universities)

2. Merit-based Bright Futures Scholarship (BF)
   - Tier 1: $X,XXX – Only X% of the sample
   - Tier 2: $X,XXX – X% of the sample
**Financial Aid Eligibility in Florida**

Need- and merit-based grant eligibility, by EFC level

- **FSAG cut-off**
  - FSAG: $3050
  - No FSAG: $1750

**Focus:** Effect of being just below the FSAG cut-off on students’ college outcomes, holding constant eligibility for other grants

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**Data Set and Sample**

- **Data:** Florida Dept of Education K-20 Data Warehouse
  - Census of all FL public HS seniors from 1999-2000 (N=101,094)
  - Detailed student-level data
    - Demographic information from senior year
    - Complete HS and college transcript records
    - Detailed records of financial aid eligibility and receipt

- **Sample:** 25,078 students
  - Completed the FAFSA (45% of sample)
  - Continuous enrollment at a Florida public high school

- We focus on the effect of grant eligibility, not grant receipt
- We only observe college outcomes at FL public institutions
  - 90% of FL freshmen stay in-state; 74% attend public institutions

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**Are students equivalent on either side of cut-off?**

- **Optimal Bandwidth:** EFC Window
  - $\pm$ $1,100$

  - Percent students of color
  - Other Aid Elig. (Pell & BF)
  - Cumulative HS GPA
  - Composite SAT score

  - Difference of 0.05
  - Not stat. significant

**Bandwidth selection:** Imbens and Kalyanaraman (2009)

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**Student Outcomes: Short and Long Term**

- **Immediate Enrollment**
  - Persist to Spring 1st Year

- **BA/BS within 4 Years**
- **BA/BS within 6 Years**
Regression Discontinuity Model

Sharp discontinuity: Compare outcomes for students just above and below the FSAG cut-off

\[
COLLEGE_{ij} = \beta_0 + \beta_1 CEFC_i + \beta_2 FSAG_i + \lambda ACAD_i' + \gamma DEMO_i' + \zeta SCHOOL_i' + \phi DIST_i + \epsilon_{ijk}
\]

Causal effect of FSAG eligibility

Academic and demographic covariates (e.g. GPA, gender, race/ethnicity, etc)

Fixed-effects for districts and school-level covariates to model variation by school in aid eligibility and college-going

Results: Positive effects on Short-Term Outcomes

<table>
<thead>
<tr>
<th>EFC Window ± $1,100</th>
<th>Immediate Enrollment</th>
<th>Persist to Spring</th>
<th>Credits 1st Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eligible for FSAG</td>
<td>0.053**</td>
<td>0.055**</td>
<td>1.130*</td>
</tr>
<tr>
<td>EFC (centered)</td>
<td>0.059**</td>
<td>0.064**</td>
<td>1.680**</td>
</tr>
<tr>
<td>Pell/BF aid eligibility amt</td>
<td>0.016</td>
<td>0.021*</td>
<td>0.776***</td>
</tr>
<tr>
<td>High School GPA</td>
<td>0.058***</td>
<td>0.090***</td>
<td>3.193***</td>
</tr>
<tr>
<td>District FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Demogr. And Acad. Controls</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*p<0.10, **p<0.05, ***p<0.01
N = 4,363
Standard errors clustered at the HS level

Students just below the FSAG eligibility cut-off are 5.3 percentage points more likely to enroll immediately and 5.5 percentage points more likely to persist into spring Freshman year

…but any Long-Run Impact?

<table>
<thead>
<tr>
<th>EFC Window ± $1,100</th>
<th>Persist to 3rd year</th>
<th>BA/BS in 4 years</th>
<th>BA/BS in 6 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eligible for FSAG</td>
<td>-0.010</td>
<td>-0.001</td>
<td>0.022</td>
</tr>
<tr>
<td>EFC (centered)</td>
<td>0.037</td>
<td>0.025*</td>
<td>0.067***</td>
</tr>
<tr>
<td>Pell/BF aid eligibility amt</td>
<td>0.037***</td>
<td>0.023***</td>
<td>0.051***</td>
</tr>
<tr>
<td>High School GPA</td>
<td>0.123***</td>
<td>0.078***</td>
<td>0.173***</td>
</tr>
<tr>
<td>District FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
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<td>Demogr. and Acad. Controls</td>
<td>Yes</td>
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<td>Yes</td>
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</tbody>
</table>

FSAG eligibility does not seem to affect students’ longer-term persistence or degree attainment

*p<0.10, **p<0.05, ***p<0.01
N = 4,363
Standard errors clustered at the HS level

Additional Analyses

Additional Outcomes
- FSAG-eligible students accumulated 2.3 more college credits over two years...
- … But no effects found for longer-term credit accumulation, continuous enrollment, degree completion in different time frames (4, 5, and 6-yr for a bachelor’s degree)

Robustness Checks
- Little evidence of endogenous sorting around the cut-off
- Results robust to window band width and/or functional form of relationship between each outcome and EFC
- Results robust to using school fixed-effects instead of district fixed-effects and school-level covariates
- Credit accumulation results robust to fitting Tobit instead of linear probability models
Conclusions and Next Steps

• Magnitude of enrollment effects in line with estimates of other grants (Dynarski, 2003; Kane, 2003)

• In terms of persistence effects: Our rich set of outcomes suggest grants have a positive impact on early persistence and credit accumulation but may not improve completion

• Even if FSAG does not increase completion rates, we estimate that the public and private returns stemming from FSAG should exceed program costs within 5 years

• Other Questions/Work in Progress
  – Heterogeneous Effect of Aid – How do the effects differ by type of student?
  – Bright Futures RD Study – Do the effects differ for merit-based aid? Does the amount matter?