



# Working Paper:

## Here Today, Gone Tomorrow?

### Investigating Rates and Patterns of Financial Aid Renewal Among College Freshmen

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College affordability continues to be a top concern among prospective students, their families, and policy makers. Prior work has demonstrated that a significant share of prospective students forgo financial aid because they did not successfully complete the Free Application for Federal Student Aid (FAFSA), and recent federal policy efforts have focused on supporting students and their families to successfully file the FAFSA. Despite the fact that students must refile the FAFSA every year to maintain their aid eligibility, there are many fewer efforts to help college students renew their financial aid each year. We do not know of any study that has documented the rate at which freshman year financial aid recipients successfully refile the FAFSA, particularly students who are in good academic standing and appear well-poised to continue with their education. The goal of our paper is to address this gap in the literature by documenting the rates and patterns of FAFSA renewal. Using the Beginning Postsecondary Students Longitudinal Study, we find that roughly 16 percent of freshmen Pell Grant recipients in good academic standing do not refile a FAFSA for their sophomore year. Even among high achieving Pell Grant recipients who return for sophomore year, nearly 10 percent do not refile a FAFSA. Failure to refile a FAFSA is strongly associated with students dropping out later in college and not earning a bachelor's degree. These results suggest that interventions designed to increase FAFSA refileing may be an effective way to improve college persistence for low-income students.

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## HERE TODAY, GONE TOMORROW? INVESTIGATING RATES AND PATTERNS OF FINANCIAL AID RENEWAL AMONG COLLEGE FRESHMEN

*Kelli Bird & Benjamin L. Castleman*

### I. INTRODUCTION

College affordability continues to be a top concern for prospective students, their families, and policy makers. For low-income students, there are many sources of need-based financial aid (including grants, loans, and work-study programs) offered by the federal government, state-run programs, and individual colleges and universities. Eligibility for the vast majority of these financial aid programs is determined by the Free Application for Federal Student Aid (FAFSA), which requires prospective students to provide detailed information on their (and their families') income, assets, and family composition. Given the complexity of the current FAFSA filing process, researchers point to the FAFSA as a barrier to financial aid, and thus college access, for many low-income students (Dynarski & Scott-Clayton, 2006; Dynarski & Scott-Clayton, 2008).

In response to these concerns, there has been substantial policy investment to help high school seniors and their families complete FAFSA. These efforts include both governmental initiatives like the U.S. Department of Education FAFSA Completion Project, which provides school districts with real-time information about which students have completed the FAFSA, and privately-funded efforts like College Goal Sunday, which provides students in 34 states with free FAFSA completion assistance.<sup>1</sup> Results from a recent experiment show that providing lower-income families with FAFSA filing assistance can generate substantial improvements in both FAFSA filing and college entry (Bettinger et al., 2012). Yet there are many fewer efforts to help college students renew their financial aid each year, despite the fact that students need to refile their FAFSA on an annual basis to maintain their eligibility for federal, state, and institutional grant and loan aid.

Despite recent evidence that shows access to financial aid is important for students' ability to persist in college,<sup>2</sup> we do not know of any study that has documented the rate at which freshman year financial aid recipients successfully refile the FAFSA. The goal of our paper is to address this gap in the literature by documenting the extent of and patterns underlying FAFSA refile among college students. We pay particular attention to the refile behavior of Pell Grant recipients who are

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<sup>1</sup> For more information on these programs, see <http://www.ed.gov/blog/2012/05/ed-announces-fafsa-completion-project-expansion/> and <http://www.collegegoalsundayusa.org/pages/about.aspx>

<sup>2</sup> See, for example, Bettinger (2004), Castleman & Long (2013) and Dunlop (2013).

in good academic standing and whose stated expectation is to earn a degree; we view this population as having the most to gain from refiling the FAFSA. The failure of a substantial share of these students to refile would point to the need for greater policy attention to and intervention in this stage in the financial aid process. We use a nationally representative dataset, the Beginning Postsecondary Students Longitudinal Study (BPS:04/09), to document the rate of FAFSA refiling among college freshmen and to investigate whether FAFSA refiling behavior varies by student academic and demographic characteristics. We then use propensity score matching to estimate the extent to which FAFSA refiling is associated with students' college persistence and degree attainment.

To preview our results, we find that a substantial portion of freshmen Pell grant recipients with GPAs of 3.0 or higher do not refile a FAFSA (roughly 16 percent). Conditional on returning for their sophomore year, one in ten of these higher-performing low-income students do not refile the FAFSA, and thus continue on in college without the financial aid they received freshman year. Based on results from our propensity score matching analysis, students who do not refile are substantially less likely to persist in college or earn a degree within six years, compared with observationally similar students who do refile. The results of these analyses are informative for the design of financial aid policies as well as the potential importance of targeting resources to assist students with renewing their financial aid.

The remainder of our paper is structured as follows. In Section II, we discuss traditional and behavioral economic theories that inform why freshmen financial aid recipients in good academic standing may not refile a FAFSA. In Section III, we describe the data we use in our analysis, and in Section IV we discuss our methodology in detail. We present our results in Section V, and conclude with a discussion of the importance of our findings and direction for future research and policy in Section VI.

## II. LITERATURE REVIEW

Economists have traditionally modeled students' decisions about whether to pursue higher education as a cost-benefit analysis (Becker, 1964). However, the college access literature has documented several failures of this traditional decision-making model. For example, several studies have documented that students and families from disadvantaged backgrounds may struggle to estimate the cost of college tuition, and often overestimate what their actual tuition expenses would

be (Avery & Kane, 2004; Grodsky & Jones, 2007; Horn, Chapman, & Chen, 2003).<sup>3</sup> Students may lack information on what aid is available or how to navigate the application processes. For example, of college freshmen who did not apply for aid in 2011-12, 14 percent did not because they had “no information on how to apply”, and 43 percent did not because they thought they were ineligible.<sup>4</sup>

A more recent line of work in behavioral economics demonstrates how behavioral responses may interfere with students making well-informed decisions of the higher education investments they pursue (Castleman, forthcoming; Ross et al, 2013). Applying for college and completing the FAFSA requires students to access and digest a complex array of information, which requires a substantial investment of time and cognitive energy. Various studies also show that near-term costs or an inability to maintain attention on tasks can lead to individuals forgoing investments that they recognize are in their long-term interest to pursue, particularly when balancing multiple commitments in the present (e.g. Karlan et al., 2010; Thaler & Benartzi, 2004). In the context of postsecondary access and success, even small cost obstacles can prevent students from completing important stages of the college application process (Pallais, forthcoming). Furthermore, even students who understand the financial benefits of completing the FAFSA may nevertheless procrastinate or put off indefinitely completing their aid application, or become too frustrated with the complexity of the process to complete all necessary steps (Bettinger et al., 2012; Dynarski & Scott-Clayton, 2006; Dynarski & Scott-Clayton, 2008).

These behavioral responses—the tendency to become frustrated with or procrastinate in the face of complex information; the tendency to favor near-term costs over longer-term investments; and limited attention—may help explain why 13 – 23 percent of potential financial aid recipients do not apply (King, 2006; Kofoed, 2013). The tendency to procrastinate in the face of complexity may also explain why over half of students who do file the FAFSA miss state priority deadlines that would have qualified them for additional financial aid (King, 2004; authors’ calculations from BPS:04/09).

Recognition of these informational and behavioral barriers has motivated various efforts to increase the visibility of financial aid programs and the assistance available to students to complete the FAFSA, as well as efforts to reduce the complexity of the aid process. These initiatives include the FAFSA completion efforts described in the introduction; the USDOE has also mandated that

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<sup>3</sup> A potential student’s true cost of attendance at a specific college is only revealed after applying for admission and submitting the FAFSA for that institution.

<sup>4</sup> Source: authors’ calculations from the National Postsecondary Student Aid Study of 2012.

colleges post net price calculators on their websites to provide students with personalized estimates of the price their families would face at each institution. Researchers have also found that simple text-based nudges reminding students about required tasks for successful college matriculation can increase enrollment among college-intending high school graduates (Castleman & Page, forthcoming).<sup>5,6</sup>

While these behavioral theories help explain why financial aid-eligible students who enroll in college may not complete the FAFSA, to what extent do they predict that students who have already received financial aid for freshman year would struggle to refile their FAFSA for the subsequent year? After all, these students—perhaps with parental or school-based assistance—have already successfully navigated the FAFSA while they were in high school. In addition, students who filed a FAFSA the previous year are eligible to complete a “Renewal FAFSA” that auto-populates some of their responses.<sup>7</sup>

On the other hand, many college freshmen are living away from their families for the first time, and thus may be less likely to receive parental assistance when applying for financial aid. College freshmen are also removed from the high school counselors and teachers who may have supported them through the college application process and encouraged them to apply for financial aid. Students who live off-campus or attend non-residential colleges are less likely to be connected to their college community and/or aware of financial aid renewal supports available on campus. Additionally, college freshmen may be particularly prone to attentional failure given the wide slate of new academic and social commitments that many students maintain. And while both the United States Department of Education and students’ college send email reminders about FAFSA re-filing, email is likely not the most effective channel through which to communicate with college students (Castleman, forthcoming; Castleman and Page, forthcoming).<sup>8</sup> Finally, students may lack accurate information regarding their continued eligibility for financial aid programs. For example, over half

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<sup>5</sup> Researchers have also used such text-based nudges to improve other social outcomes, such as increasing flu-vaccination rates and workers’ contributions to retirement accounts (Karlan et al., 2010; Stockwell et al., 2013).

<sup>6</sup> Other researchers advocate for a simpler financial aid application process, such as using a much smaller set of financial questions or using prior-year information to determine eligibility (Dynarski & Scott-Clayton, 2008; Dynarski, Scott-Clayton, & Wiederspan, 2013; Kelchen & Jones, forthcoming).

<sup>7</sup> However, filing a Renewal FAFSA still requires applicants to fill in responses to the questions regarding income and assets, which are the most onerous to complete.

<sup>8</sup> The U.S. Department of Education sends reminder emails to refile the FAFSA to students who: (1) have previously received a federal PIN; (2) whose name, date of birth, and social security number match with Social Security Administration records; and (3) provided a valid email address on their previously file FAFSA. Source: CollegeUp.org (<http://blog.collegeup.org/tips-for-submitting-your-renewal-fafsa>)

of previous Pell grant recipients who were enrolled in 2011-12 did not re-apply for aid because they thought themselves ineligible.<sup>9</sup>

Thus, there are a variety of informational and behavioral barriers that may prevent students—even those who had received aid freshman year, are in good academic standing, and who plan to return for sophomore year—from successfully refiling their FAFSA. Failure to renew financial aid may be particularly detrimental for lower-income students who intend to continue on in higher education, as research has shown that need-based financial aid significantly improves students' persistence and success in college (Bettinger, 2004; Castleman & Long, 2013; Dunlop, 2013).

Despite the potential importance of FAFSA refiling to students' persistence in college, we know of no prior study that has documented FAFSA renewal rates or investigated whether renewal rates vary by students' academic or demographic background. Nor are we aware of any study that looks at how FAFSA refiling is associated with future academic outcomes. Our paper is therefore organized around the following research questions:

1. At what rate do college freshmen financial aid recipients successfully refile their FAFSA?
2. Does the probability that students refile their FAFSA vary based on student academic and demographic characteristics?
3. How is successful FAFSA refiling associated with future academic outcomes, including persistence beyond freshmen year and degree attainment?

### III. DATA

For our analysis, we use data from the Beginning Postsecondary Students Longitudinal Study (BPS:04/09), which is administered by the National Center for Education Statistics (NCES). BPS respondents are first-time students enrolled at postsecondary education institutions during the 2003-04 academic year, and constitute a nationally-representative sample. BPS first interviews students at the end of their first year in college (Spring 2004), and then follows these respondents for six years. In addition to interviewing respondents again in 2006 and 2009, the BPS collects and compiles extensive student-level data from a variety of sources. These data include college entrance exam scores from the ACT and College Board; financial aid information from the FAFSA, aid disbursement information from the National Student Loan Data System; and enrollment and degree

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<sup>9</sup> Source: authors' calculation from the National Postsecondary Student Aid Study of 2012.

attainment records from the National Student Clearinghouse (NSC) for each institution attended during the study period that is covered by NSC.<sup>10</sup> The BPS also collects data on the characteristics of the institution(s) each respondent attended, including the sector (i.e. public, private non-profit, or private for-profit), level (i.e. four-year, two-year, or less-than-two-year), and published tuition and fees of each institution.<sup>11</sup> We supplement the BPS's institutional information with data from the Integrated Postsecondary Education Data System (IPEDS), an NCES-maintained database containing detailed information for all U.S. postsecondary education institutions. From IPEDS, we merge institutions' admissions rates and 25<sup>th</sup> and 75<sup>th</sup> percentile scores on the ACT and SAT, when available.<sup>12</sup>

Most variables used in our analysis come from students' FAFSA records. For each FAFSA a student filed for the six academic years in the study, we observe the student's responses to and outcomes from the FAFSA, including: family income and assets, family composition, demographic information, the resulting Expected Family Contribution (EFC), and the federal financial aid the student is offered (i.e. Pell grants, Stafford loans). From the NSC data, we observe BPS respondents' college enrollment status at each institution attended for every month between July 2003 through June 2009; we also observe degree or certificate receipt during the study period. This information gives us a near complete picture of BPS respondents' college persistence and degree attainment up to six years after their initial enrollment. Additional measures of interest, such as college GPA and employment information, are available for the select survey years (2004, 2006, and 2009).

In all of our analyses, we first limit our sample to students who filed a FAFSA for their first year in college (2003-04), expect to earn a degree (associate or bachelor's), and were enrolled during April 2004. These restrictions focus our analyses on students who we can reasonably infer had the intention of continuing their education beyond their first year. We focus most of our analyses on students who received a Pell grant their first year, and thus have the most to benefit in terms of

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<sup>10</sup> In Fall 2003, the NSC enrollment data covered 86.5 percent of all postsecondary institutions. In Fall 2009, the coverage rate increased to 92 percent. Source: <http://nscresearchcenter.org/workingwithourdata/>.

<sup>11</sup> Some students attended more than one institution during the 2003-04 academic year, and some students switch institutions between their first and second year of college. Unless otherwise specified, we use the characteristics of the first institution a student attended during 2003-04 in our analysis.

<sup>12</sup> Entrance exam percentile scores are available for institutions with no open admission policy, require entrance exam scores for admission, and 60 percent or more of students submitted scores for a given entrance exam. Admission rates, derived from the total number of applicants and admitted students, are available for all institutions with no open admission policy.

continued grant assistance from re-filing a FAFSA.<sup>13</sup> For some of our analyses, we add a third restriction of students who earned a GPA of 3.0 or higher during their first year, as these students appear academically-poised to continue and succeed in college. Finally, we focus some of our analyses on students who re-enroll during the following academic year, 2004-05.<sup>14</sup>

Table 1 provides descriptive statistics for five relevant samples of students: All freshmen FAFSA filers (column 1, n=10,750); freshmen Pell grant recipients (column 2, n=5,050); freshman Pell Grant recipients who re-enrolled for sophomore year (column 3, n=4,370); freshmen Pell recipients who earned a 3.0 GPA or higher (column 4, n=2,830); and freshmen Pell recipients who earned a 3.0 GPA or higher and re-enrolled for sophomore year (column 5, n=2,500).<sup>15</sup> As expected, Pell recipients differ from the full sample of freshmen FAFSA filers on most measures. Pell recipients are more likely to be female or underrepresented minority (black or Hispanic), and less likely to be classified as dependent for financial aid purposes. Pell recipients score lower on college entrance exams and earn slightly lower GPAs as college freshmen. By construct, Pell recipients are of lower socio-economic status: their total household income is less than half that of the average college student, and they are more likely to be a first generation college student. Pell grant recipients are less likely to live on campus, and more likely to live on their own; they are also much more likely to have dependent children. Interestingly, even though Pell grant recipients are lower-income and have more financial need, Pell grant recipients are no more likely to work at an outside job or for a work-study program, and those who do work similar hours on average to the full sample of students. Pell grant recipients have a lower cost of attendance, largely due to the fact that Pell recipients are less likely to attend four-year institutions and more likely to attend two-year or less-than two-year institutions. Pell grant recipients are significantly less likely to persist after their freshmen year or earn a bachelor's degree within six years of initial enrollment. While these differences are attenuated upon conditioning on high freshmen GPAs (column 3), enrollment in sophomore year (column 4), or both high freshmen GPA and sophomore enrollment (column 5), we still observe significant gaps in persistence and degree attainment between these conditioned

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<sup>13</sup> The Federal Pell Grant Program awards needs-based grants to low-income students who attend participating postsecondary institutions. The award amount is determined by a student's expected family contribution (EFC), which is calculated using the income and assets data from students FAFSA (source: <http://www2.ed.gov/programs/fpg/index.html>). In 2003-04, students with EFCs less than or equal to \$3,850; and Pell awards for full-time students ranged from \$400 to \$4,050.

<sup>14</sup> We define "re-enroll" as enrolling at any postsecondary institution during the 2004-05 academic year, not necessarily the institution that the student first attended in 2003-04.

<sup>15</sup> In accordance with IES reporting standards for restricted-use data, all sample sizes are rounded to the nearest ten.



samples of Pell grant recipients and the full college freshmen population of FAFSA filers. The relatively low persistence and graduation rates of Pell recipients make this population a high priority for policy makers, which is one of the reasons we focus on Pell recipients in our analysis.

#### IV. EMPIRICAL STRATEGY

To address our first research question, we use the BPS to estimate the proportion of college freshmen who refile their FAFSA for the following academic year for the full sample, as well as sub-samples of interest based on freshman Pell grant receipt, freshmen GPA, and re-enrollment as a sophomore. Next, we perform two sets of regression analyses to address our research questions of: (1) how the probability of refiling a FAFSA varies by student and institution characteristics; and (2) the association between successful FAFSA refiling and future success in college. To investigate (1), we estimate a linear probability model in which the dependent variable is an indicator equal to one if the student refiled a FAFSA for the next academic year (2004-05), and zero if not.<sup>16</sup> Specifically, we estimate the following equation:

$$\Pr(\text{Refile}_i) = \beta_0 + \beta_1 X_i + \beta_2 Z_s + \epsilon_i \quad (1).$$

$X_i$  is a vector of student characteristics, including demographics (gender, race, household income, and first generation college student status); academic achievement (SAT score, freshman year GPA)<sup>17</sup>; financial aid information (dependency status, Pell grant award, other need-based grant awards, merit-based grant awards, loan borrowing, cost of attendance); employment status (has job outside of school, hours worked); household information (has dependent children, has spouse with an income); and living situation (lives on campus, lives with parents, or lives on own).  $Z_s$  is a vector of institution characteristics, including level (i.e. four-year, two-year, or less-than two-year); control (public, private non-profit, or private for-profit); and admission rate, ACT Composite 25<sup>th</sup> percentile score, and SAT Math 25<sup>th</sup> percentile score.<sup>18</sup> Together,  $X_i$  and  $Z_s$  contain all variables shown in Table 1 (with the exception of subsequent enrollment and degree attainment).  $\epsilon_i$  is the error term,

<sup>16</sup> Our results are robust to using probit or logistic regression models in place of the linear probability models.

<sup>17</sup> For student who took the ACT, the BPS converts their ACT score to an SAT score for comparison; we use these converted ACT scores in our analysis. For students with no record of either entrance exam scores, we convert their missing value for SAT score to zero, and include an indicator for missing entrance exam score in the regression.

<sup>18</sup> For institutions with missing data on test score percentiles, we convert the missing values to zero and include an indicator for missing this variable in the regression.

which in addition to noise absorbs differences in refiling rates explained by unobservable characteristics, such as motivation and organizational skills.

We acknowledge that the decisions to refile and re-enroll are likely inter-related in a complex manner. Some proportion of the students who do not refile a FAFSA likely make this decision because they do not intend to re-enroll for the following academic year. At the same time, it is also likely that some students do not re-enroll because they did not refile a FAFSA and therefore did not receive the aid they needed to continue in college.<sup>19</sup> Unfortunately, given our data we cannot observe the direction of causation of this relationship. What we are able to do, however, is investigate patterns of FAFSA refiling (or failing to refile) among Pell Grant recipients who re-enroll for sophomore year. We therefore estimate a second set of linear probability models in which we restrict the sample to students who re-enrolled for their sophomore year. Because we are particularly interested in the refiling behavior of students who are academically well positioned to continue in college, we also estimate both sets of models for the sub-sample of students who earned a 3.0 GPA or higher during their freshman year in college.

To estimate the degree to which FAFSA refiling is associated with future outcomes, we use a propensity score matching model.<sup>20</sup> We match the sample of Pell recipients who did not refile a FAFSA for their second year ( $n=710$ ) to Pell recipients who did refile, using nearest neighbor matching method (with replacement).<sup>21</sup> Specifically, we estimate the propensity score using a logit model:

$$\Pr(\text{DoesNotRefile}_i) = \frac{1}{1 + e^{-\gamma_1 X_i - \gamma_2 Z_s}} = \text{pscore}_i \quad (2)$$

where  $\text{DoesNotRefile}_i$  is an indicator equal to one if student  $i$  at institution  $s$  did not refile a FAFSA for their second year, and  $X_i$  and  $Z_s$  are the same vectors of student and institution characteristics described above. The predicted probability of not refiling,  $\text{pscore}_i$ , is estimated for all students in the sample, and students who did not refile are matched to the students who did refile

<sup>19</sup> While there is no deadline for filing the FAFSA and receiving a Pell grant, the majority of states and institutions have priority deadlines for their aid programs that are typically no later than April 1<sup>st</sup>, although some are as early as February 15<sup>th</sup>.

<sup>20</sup> For a detailed discussion of this estimation method, see Dehajia and Wahba (2002).

<sup>21</sup> We use the STATA command `-psmatch2-` developed by Edwin Leuven and Barbara Sianesi to perform the PSM analysis. Our results are robust to a variety of other matching methods (including nearest neighbor matching with no replacement and radius matching with `caliper=0.0001`). Our results are also robust to estimating linear probability models with the full sample of Pell recipients, Pell recipients who re-enrolled, Pell recipients with good freshmen GPAs, and Pell recipients with good freshmen GPAs who re-enrolled. In fact, the results we present are the most conservative (i.e. estimates and t-statistics are smallest in magnitude) than these alternative specifications.

with the smallest absolute difference in  $pscore_i$ . Once matched, we compare the outcomes of students who did not refile a FAFSA to those who did within matched pairs. Specifically, the estimate we report is the “average treatment on treated”, which is the average difference in outcomes between matched pairs. The outcomes we consider are enrollment in subsequent years, associate degree (AA) attainment by June 2009, and bachelor degree (BA) attainment by June 2009.<sup>22</sup>

Our propensity score matching method (PSM) does not account for unobservable characteristics that are likely related to both students’ propensity to refile a FAFSA and ability to succeed in college, such as motivation and organizational skills. For this reason, we do not interpret our PSM results as the causal effects of not refiling a FAFSA, but instead as associations between failure to refile and student outcomes. However, we believe this analysis is still valuable to understand how the outcomes of observably-similar students diverge after the FAFSA refiling decision is made.

## V. RESULTS

### A. Probability of refilling the FAFSA

We first report raw means for the share of students that refile the FAFSA for our various samples of interest (Table 2). Panel A shows that among our sample of freshmen who initially applied for financial aid ( $n=10,750$ ), approximately three-fourths of students refile a FAFSA for the following year, while one-quarter do not refile. Refiling rates are higher for Pell grant recipients (83.3 percent) and for Pell grant recipients who earn a 3.0 or higher freshman GPA (84.5 percent). This result is intuitive as higher-income students generally do not qualify for need based aid and many do not borrow student loans, giving these higher-income students less incentive to refile a FAFSA. Still, one in six Pell grant recipients in our sample (who were enrolled through Spring 2004 and expect to earn a degree) did not refile a FAFSA; this is true even among those with good GPAs who appear well positioned to successfully continue their studies.

When we restrict our sample to students who did re-enroll for their second year (Panel B), we find that 10 percent Pell grant recipients do not refile their FAFSA, which is true even of Pell grant recipients with good GPAs. Therefore, 1 in 10 of lower-income students who are in good

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<sup>22</sup> We also estimate these models with cumulative GPA in 2006, certificate attainment by 2009, and on-time BA degree attainment (i.e. by June 2007). Across specifications, the associations between refiling and these outcomes are insignificant, and we omit these results from our tables.

academic standing enter their second year of college without receiving the need-based grant aid for which they likely would have been eligible had they refiled their FAFSA.<sup>23</sup>

### *B. Refiling patterns by student and institutional characteristics*

We first explore how FAFSA refilers and non-refilers differ by comparing uncontrolled means of observable characteristics for both groups of students in Table 3. The characteristics of student who fail to refile suggest they are substantially more likely to be from populations that have been traditionally underrepresented in higher education.<sup>24</sup> Non-refilers are lower achieving academically, as demonstrated by their lower freshman GPAs and SAT scores. Non-refilers are less likely to be full-time students, and more likely to be female or underrepresented minorities. Non-refilers are less likely to be financially dependent or to come from households with larger incomes, and are more likely to be first-generation college students. Non-refilers are less likely to live on campus, and more likely to live on their own. Non-refilers are more likely to have dependent children or spouses with income. Non-refilers attend less expensive colleges with higher admission rates, are less likely to attend public or private non-profit institutions (compared to private for-profit institutions), are less likely to four-year institutions, and are more likely to attend less-than two-year institutions.<sup>25, 26</sup>

In Table 4, we formalize this analysis by estimating the association between FAFSA refiling and student and institution characteristics with our linear probability model (equation 1). Each column displays results from a separate regression with the following restrictions on our overall sample: all freshmen Pell recipients (column 1); Pell recipients who re-enrolled for their sophomore year (column 2); Pell recipients with freshman GPAs of 3.0 or above (column 3); and Pell recipients with GPAs of 3.0 or above who re-enrolled sophomore year (column 4). In these regression models (as well as in the PSM models in the following section), we create categorical variables for freshman GPA and Pell award amount, with the reference categories being GPA=0 – 0.99 and Pell award = \$1 – \$1350. The reference category for institution control is for-profit institutions; the reference category for institution level is less-than two-year institutions.

<sup>23</sup> For additional reference, Appendix Table A1 shows the refiling rates by institution-level.

<sup>24</sup> Appendix Table A2 shows these means comparisons with the sample restricted to Pell recipients with good freshman GPAs; the patterns we describe in this section are also consistent for that population.

<sup>25</sup> For the subset of students who re-enroll, one question is whether failure to refile is associated with where students enroll for their sophomore year. However, we find that that refilers and non-refilers are similarly likely to remain at the same institution as they were enrolled for their first year (91 percent versus 90 percent, respectively).

<sup>26</sup> As expected, freshmen who fail to refile but remain enrolled are significantly less likely to file a FAFSA for the 2005-06 academic year (17 percent versus 71 percent of freshmen refilers).

In column (1), we find that Pell recipients with strong GPAs (3.0 or higher) are 29.4 percentage points (87 percent vs. 57 percent) more likely to refile a FAFSA than those with the lowest GPAs (less than 1.0).<sup>27</sup> Institution level and control are also strong predictors of refile. For example, Pell recipients at four-year institutions are 36.1 percentage points more likely to refile than students at less-than two-year institutions and 8 percentage points (10 percent) more likely to refile than Pell recipients at two-year institutions. Pell recipients at public and private non-profit institutions are roughly 5 percentage points (6 percent) more likely to refile than Pell recipients at for-profit institutions. Other significant coefficients from column (1) show that full-time and underrepresented minorities are slightly (in magnitude and statistical significance) more likely to refile, and that working additional hours at an outside job is associated with a very small decrease in the probability of refile (i.e. one additional hour of work is associated with a 0.2 percentage point decrease in the probability of refile). When we restrict the sample to Pell recipients who re-enrolled for their second year for college (column 2), freshman GPA and institution type remain strong predictors of refile. When we restrict the sample to Pell recipients who earn high GPAs their freshman year (columns 3 and 4), we find similar associations between refile and institution level, although the associations with institution sector disappear.

Another striking pattern that emerges from Table 4 is that recipients with higher Pell awards (above \$2,700) are no more likely to refile than recipients with lower Pell awards (below \$1,350). This result is consistent across all four samples, and in spite of the fact that recipients with higher Pell awards their freshman year should expect the greatest return from refile their FAFSA. In fact, Table 4 shows that a student's financial aid award, consisting of other need-based grants, merit grants, and loans, have minimal bearing on the probability of refile a FAFSA.

Because institution level is consistently the strongest predictor of refile, and because students who attend four-year, two-year, or less-than two-year institutions are on average quite different from each other, we also estimate the associations between student characteristics and refile separately for each institution level.<sup>28 29</sup> Table 5 shows our estimates from these models.

<sup>27</sup> To calculate these predicted probabilities, we set the rest of the control variables in the model at their means.

<sup>28</sup> Appendix Table A3 shows the means of our analysis variables by institution level for freshmen Pell recipients. Compared to Pell recipients at 2-year and less-than 2-year institutions, Pell recipients at 4-year institutions are higher-achieving academically (as measured by their SAT scores), are less likely to be minority or first generation college students; are more likely to live on campus; are less likely to have dependent children; and are more likely to persist and graduate.

<sup>29</sup> Appendix Table A4 compares certain characteristics of institutions by level. Two-year and less-than two-year are much more likely to have open admission policies. Less-than two-year institutions are much more likely to have a

The results in columns (1) – (3) correspond to models estimated with all Pell recipients (four-year, two-year, and less-than two-year, respectively); columns (4) – (6) correspond to models with the sample restricted to Pell recipients who re-enroll for sophomore. We find that the association between higher GPA and re-filing is driven by students at four- and two-year institutions, as the coefficients on the GPA categories are not significant for the less-than two-year sample.<sup>30</sup> Other noteworthy results from Table 5 are that institution sector and Pell award amount are important predictors of re-filing for students at two-year institutions, but not at four-year or less-than two-year institutions. Specifically, Pell recipients who attend public two-year institutions are 9.8 percentage points more likely to refile than Pell recipients who attend for-profit two-year institutions, and recipients who receive a Pell award higher than \$2700 are 9.4 percentage points more likely to refile than recipients who received a Pell award of \$1350 or less (column 2); results for the re-enrolled sample are very similar (column 5). One possible explanation for the differential re-filing by Pell award at two-year institutions is that the Pell award constitutes a larger percentage of their total cost of attendance, and therefore the incentive to refile may be stronger for students with higher Pell awards at these institutions.

To emphasize the main takeaways of our analysis thus far, we find that institution type is the strongest predictor of FAFSA re-filing, with Pell recipients at four-year institutions being the most likely to refile (91 percent predicted probability), followed by recipients at two-year institutions (83 percent) and less-than two-year institutions (56 percent). Freshman GPA is also a strong predictor of re-filing, but only at four-year and two-year institutions.

### *C. Association between FAFSA re-filing and longer-term college success*

In Table 6, we present the results of our propensity matching estimation of the association between FAFSA re-filing during freshman year and longer-term college outcomes. We consider the relationship between FAFSA re-filing and enrollment over time in columns (1) – (3), and the relationship between re-filing and degree receipt in columns (4) and (5). Each grouping of rows corresponds to different sub-samples of students: all freshman Pell recipients, freshman Pell recipients in good academic standing; freshman Pell recipients who returned for sophomore year;

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continuous calendar system. Two-year and less-than two-year institutions share many of the same top degree or certificate programs; less-than two-year institutions also award degrees and certificates in vocational trades, such as “transportation and materials moving”, “construction trades”, and “precision production.”

<sup>30</sup> This pattern may be explained by grade inflation at less-than two-year institutions: 74 percent of students in our base Pell recipient sample who attended less-than two-year institutions earned a GPA of 3.0 or higher, compared to 50 percent of students at four-year institutions and 55 percent at two-year institutions.

and freshman Pell recipients in good academic standing who returned for sophomore year.<sup>31</sup> Consistently across samples, failing to refile the FAFSA is negatively associated with continuing in college and earning a degree. For instance, freshman year Pell recipients who do not refile are 22.3 percentage points less likely to be enrolled in what would be their junior year in college (column 2) and 4.9 percentage points less likely to earn a bachelor's degree within six years (column 5) compared with observationally-similar students who do refile. When using the mean outcomes of the comparison students as a benchmark, these effects translate to 39 percent and 42 percent decreases in the probability of still being enrolled junior year and earning a degree, respectively. These associations between not refileing and attainment are similar when the sample is restricted to Pell recipients with GPAs 3.0 or higher. When we further restrict the sample to students who re-enroll for sophomore year, the estimates of not refileing decrease in magnitude and some loose statistical significance, but are still quite meaningfully large.

Because we found that institution level is a strong predictor of refileing, we next examine whether the longer-term outcomes of FAFSA refilers differ across institution level. We present the results of these models for the sample of freshmen Pell Grant recipients in Table 7. Because there are significant differences in persistence and graduation rates across institution, we also provide the mean of the dependent variable for the comparison group in order to show the difference in magnitude between institution types. In general, the magnitude of the negative associations between refileing and future persistence are similar across institution type. Otherwise observationally similar students who fail to refile the FAFSA are between 25-35 percent less likely to still be enrolled three years after their initial enrollment (column 3).

## VI. DISCUSSION

Prospective college students need to complete a lengthy and complicated application in order to qualify for financial aid for college. A large body of research has demonstrated that the complexity of this application may deter college-ready low-income students from successfully enrolling in college. Both the federal and state governments as well as non-profit and community-

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<sup>31</sup> The first row in each grouping is the PSM estimate of how these outcomes differ across otherwise similar refilers and non-refilers, and the second entry is the standard error of this estimate. The third row in each grouping is the mean of the corresponding outcome of the comparison group (i.e. the refilers who were matched to the non-refilers using the PSM model). The final row in each grouping shows the number of non-refilers observations for each model (i.e. 710 non-refilers in the first row grouping) and the number of corresponding refilers matched to the non-refilers that serve as comparisons (i.e. 560 in the first row grouping).

based organizations have invested substantial resources to assist students and their families to complete the FAFSA. Yet there has been considerably less attention to helping students successfully re-apply for financial aid once they are in college, despite the fact that they need to complete the same financial aid application each year to maintain grant and loan assistance. Our paper provides the first evidence of which we are aware that documents rates and patterns of FAFSA refiling for a nationally-representative sample. This evidence is informative for policy efforts to increase college completion among economically disadvantaged students.

We find that a substantial share of freshman year Pell Grant recipients do not successfully refile the FAFSA. This is true for students in good academic standing and who return for sophomore year in college. Roughly 16 percent of Pell recipients with strong freshman year GPAs do not refile, and approximately 10 percent of these students who return for sophomore year do so without the financial aid they received for their first year in college. FAFSA refiling rates are particularly low among students who start out at two-year institutions or less-than two-year institutions. Overall, students who receive high Pell awards are no more likely to refile than those who receive low Pell awards, despite the greater incentive for the former students to refile.

We also find that among freshman Pell Grant recipients, failure to refile the FAFSA is strongly and negatively associated with staying in college or earning a degree. College sophomores who received a Pell Grant freshman year, had a first year cumulative GPA of at least 3.0, and did not refile the FAFSA were 11.2 percentage points less likely to still be enrolled junior year and 3.4 percentage points less likely to earn an associate's degree within six years. When we focus on four-year and two-year institutions, the relationship between failure to refile and bachelor's degree attainment is more pronounced and significant. While we do not interpret these results as the causal effects of not refiling a FAFSA, they do suggest that refiling may be an important factor in students' ability to persist to graduation.

Given the reasons why students may fail to refile the FAFSA that we discuss in Section II, one implication of our analyses is that students would benefit from proactively-delivered prompts to refile the FAFSA and from the offer of individualized assistance with renewing their aid application. Castleman & Page (forthcoming) conducted a pilot experiment in which they randomly assigned college freshmen in Massachusetts a series of text message reminders to refile the FAFSA. The messages informed students about key deadlines and steps associated with FAFSA refiling and encouraged students to seek help with FAFSA refiling, either from the financial aid office at their



college or from uAspire, a community-based organization focused on college affordability. The text campaign led to substantial increases in the probability that community college students persisted into sophomore year, though had no effect on sophomore-year persistence for students who started at four-year institutions. The positive impacts for community college freshmen are consistent with our findings, which indicate that, after controlling for other characteristics, students at two-year institutions are roughly half as likely to refile a FAFSA, and therefore may benefit from additional refiling-related reminders and the offer of assistance.<sup>32</sup> Due to data limitations, Castleman & Page were unable to observe whether students actually refiled their FAFSA, so one clear implication from both their experiment and our analyses is that additional research needs to be conducted to investigate whether personalized refiling messages combined with the offer of assistance leads to increases in successful refiling as well as persistence in college.

One clear appeal of these types of interventions is that they can be conducted at scale and at low cost relative to other more labor-intensive strategies to increase FAFSA re-filing. Colleges or universities could collect students' cell numbers during the college application process and send students personalized refiling reminders in the spring of freshman year, or incorporate FAFSA refiling as part of their re-enrollment process. The Department of Education could collect cell phone numbers as part of the initial FAFSA application and send students similar text reminders to renew their aid. One important point to emphasize is that reminders alone may not be sufficient to increase refiling rates, given the complexity of the FAFSA. Therefore, colleges and universities or state and federal governments should investigate strategies that leverage personalized messaging technologies to connect students to FAFSA refiling assistance (either campus-based or remote) when they need help.

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<sup>32</sup> This statistic is based on the results from Table 6, which show that students at two-year institutions are roughly 8 percentage points less likely to refile than students at four-year institutions.

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TABLE 1: Summary Statistics

	All students	Received Pell grant first year	Received Pell grant first year, enrolled 2004-05	Received Pell grant first year, GPA>3.0	Received Pell grant first year, GPA>3.0, enrolled 2004-05
	(1)	(2)	(3)	(4)	(5)
First year GPA	2.93	2.88	2.92	3.5	3.49
Received Pell grant in 2003-04	0.49	1.00	1.00	1.00	1.00
Pell award amount	\$1,264	\$2,575	\$2,617	\$2,536	\$2,562
Other need-based grants	\$1,338	\$1,504	\$1,678	\$1,459	\$1,619
Merit-based grants	\$908	\$516	\$286	\$599	\$663
Student Loans	\$2,227	\$2,524	\$2,655	\$2,543	\$2,647
Full-time	0.78	0.81	0.83	0.81	0.82
Female	0.60	0.64	0.64	0.70	0.68
Underrepresented Minority	0.35	0.50	0.49	0.46	0.44
Dependent	0.76	0.64	0.66	0.58	0.60
Took entrance exam	0.82	0.76	0.77	0.76	0.78
SAT score	992	914	921	949	958
First Generation College Student	0.48	0.64	0.62	0.65	0.63
Total income	\$51,722	\$22,711	\$23,310	\$22,825	\$23,535
Cost of Attendance	\$14,577	\$13,393	\$13,736	\$13,567	\$13,844
Lives on campus	0.35	0.21	0.24	0.19	0.21
Lives with parents	0.34	0.37	0.37	0.35	0.34
Lives on own	0.31	0.41	0.39	0.46	0.44
Has dependent child(ren)	0.16	0.26	0.25	0.31	0.29
Spouse with income	0.06	0.07	0.06	0.09	0.08
Any outside job	0.6	0.6	0.59	0.58	0.58

Hours worked at outside job	25.1	26.8	26.2	27.7	27.3
Any work study	0.14	0.15	0.16	0.13	0.15
Hours of work study	11.8	12.8	12.5	12.9	12.8
Public institution	0.66	0.61	0.61	0.57	0.57
Private, not-for-profit institution	0.19	0.15	0.17	0.14	0.16
Private, for-profit institution	0.14	0.24	0.23	0.28	0.27
Four-year institution	0.53	0.43	0.46	0.38	0.42
Two-year institution	0.41	0.46	0.44	0.46	0.45
Less-than two-year institution	0.06	0.12	0.09	0.16	0.13
Admission Rate	0.84	0.87	0.86	0.87	0.86
ACT 25th Percentile	20.2	19.5	19.5	19.6	19.7
SAT Math 25th Percentile	497	476	476	477	479
Enrolled in 2004-05	0.86	0.84	1.00	0.86	1.00
Enrolled in 2005-06	0.73	0.63	0.71	0.63	0.71
Enrolled in 2006-07	0.63	0.53	0.58	0.54	0.57
Received AA by June 2009	0.05	0.05	0.05	0.05	0.06
Received BA by June 2009	0.36	0.23	0.27	0.28	0.32
N	10750	5050	4370	2830	2500

Notes: all entries in these tables are based on the authors' calculations from the Beginning Postsecondary Students Longitudinal Study (BPS:04/09). All samples sizes are rounded to the nearest ten to comply with the Institute of Education Sciences' reporting standards.

**TABLE 2: Distribution of FAFSA refilers, by second year re-enrollment**

	A: All Students		B: Re-enrolled in second year	
	Refiled (1)	Did not refile (2)	Refiled (3)	Did not refile (4)
All students	75.4%	24.6%	80.2%	19.8%
Received Pell grant first year	83.3%	16.7%	90.0%	10.0%
Received Pell grant first year, GPA>3.0	84.5%	15.5%	90.4%	9.6%

Notes: all entries in these tables are based on the authors' calculations from the Beginning Postsecondary Students Longitudinal Study (BPS:04/09). All samples sizes are rounded to the nearest ten to comply with the Institute of Education Sciences' reporting standards.

**Table 3: Differences in student characteristics by refiling behavior**

	All Pell Recipients		Re-enrolled	
	Refilers (1)	Non-refilers (2)	Refilers (3)	Non-refilers (4)
First year GPA	2.91	2.72	2.93	2.77
Pell award amount	\$2,598	\$2,460	\$2,629	\$2,513
Other need-based grants	\$1,718	\$427	\$1,813	\$461
Merit-based grants	\$579	\$201	\$619	\$292
Student Loans	\$2,540	\$2,446	\$2,634	\$2,845
Full-time	0.82	0.76	0.83	0.81
Female	0.63	0.69	0.64	0.71
Underrepresented Minority	0.49	0.55	0.48	0.58
Dependent	0.67	0.49	0.68	0.54
Took entrance exam	0.79	0.56	0.8	0.52
SAT score	922	850	926	854
First Generation College Student	0.63	0.7	0.61	0.67
Total income	\$23,184	\$20,342	\$23,520	\$21,433
Cost of Attendance	\$13,580	\$12,466	\$13,804	\$13,135
Lives on campus	0.24	0.07	0.26	0.1
Lives with parents	0.37	0.37	0.37	0.38
Lives on own	0.38	0.55	0.37	0.53
Has dependent child(ren)	0.24	0.39	0.23	0.36
Spouse with income	0.06	0.09	0.06	0.07
Any outside job	0.59	0.64	0.59	0.6
Hours worked at outside job	26	30	26	27.6
Any work study	0.16	0.08	0.17	0.1

Hours of work study	12.7	13.7	12.3	14.5
Public institution	0.63	0.5	0.63	0.43
Private, not-for-profit institution	0.17	0.07	0.17	0.08
Private, for-profit institution	0.2	0.43	0.2	0.5
Four-year institution	0.47	0.17	0.49	0.18
Two-year institution	0.45	0.5	0.44	0.5
Less-than two-year institution	0.08	0.33	0.07	0.32
Admission Rate	0.86	0.91	0.85	0.9
ACT 25th Percentile	19.5	19.2	19.5	19.3
SAT Math 25th Percentile	475	466	477	470
Enrolled in 2004-05	0.91	0.51	1	1
Enrolled in 2005-06	0.7	0.27	0.74	0.4
Enrolled in 2006-07	0.58	0.28	0.61	0.3
Received AA by June 2009	0.06	0.02	0.06	0.02
Received BA by June 2009	0.27	0.05	0.29	0.08
N	4340	710	4020	350

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Notes: all entries in these tables are based on the authors' calculations from the Beginning Postsecondary Students Longitudinal Study (BPS:04/09). All samples sizes are rounded to the nearest ten to comply with the Institute of Education Sciences' reporting standards.

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**Table 4: Determinants of refiling for Pell recipients**

	Pell Recipients		Pell Recipients with 3.0+ GPA	
	All Students (1)	Re-enrolled second year (2)	All Students (3)	Re-enrolled second year (4)
3.00-4.00 GPA	0.294*** (0.030)	0.156*** (0.031)		
2.0-2.99 GPA	0.260*** (0.031)	0.146*** (0.032)		
1.00-1.99 GPA	0.181*** (0.032)	0.064 (0.033)		
Pell award \$2701-4050	0.022 (0.016)	0.015 (0.015)	0.016 (0.021)	-0.015 (0.019)
Pell award \$1351-2700	0.007 (0.014)	0.02 (0.013)	0.050** (0.019)	0.022 (0.017)
Other need-based grants (\$1000s)	0.006** (0.002)	0.005** (0.002)	0.007* (0.003)	0.005* (0.002)
Merit-based grants (\$1000s)	0.001 (0.003)	0 (0.003)	-0.002 (0.004)	-0.003 (0.003)
Student loans (\$1000s)	0.004 (0.002)	0.002 (0.002)	-0.001 (0.003)	-0.003 (0.002)
Full-time	0.033* (0.015)	0.006 (0.013)	0.040* (0.019)	0.017 (0.017)
Female	-0.013 (0.011)	-0.015 (0.009)	-0.049*** (0.014)	-0.034** (0.012)
Underrepresented Minority	0.022* (0.011)	0.004 (0.010)	0.009 (0.014)	0.009 (0.012)
Dependent	0.001 (0.021)	0.006 (0.019)	0.029 (0.027)	0.044 (0.024)

SAT score (100 points)	0.004 (0.004)	0.003 (0.004)	0.011* (0.005)	0.010* (0.005)
First generation	-0.001 (0.012)	0.003 (0.010)	-0.01 (0.015)	-0.01 (0.014)
Income (\$1000s)	0 0.000	-0.001 0.000	0 (0.001)	-0.001* (0.001)
Cost of attendance (\$1000s)	-0.001 (0.001)	0 (0.001)	-0.003 (0.002)	-0.001 (0.001)
Live on campus	0.005 (0.019)	0.007 (0.017)	-0.014 (0.027)	0.007 (0.023)
Live with parents	0.023 (0.015)	0.022 (0.013)	-0.001 (0.019)	0.026 (0.017)
Has dependent child(ren)	-0.013 (0.020)	0.007 (0.018)	0.008 (0.024)	0.027 (0.022)
Spouse has job	0.01 (0.022)	0.035 (0.020)	0.006 (0.026)	0.052* (0.024)
Any outside job	0.026 (0.017)	-0.007 (0.015)	0.02 (0.023)	-0.005 (0.020)
Hours worked at job	-0.002** (0.001)	0.001 0.000	0 (0.001)	0.002* (0.001)
Any work study	-0.033 (0.025)	-0.012 (0.021)	-0.014 (0.035)	0.013 (0.029)
Work study hours	0.001 (0.001)	0 (0.001)	0 (0.002)	-0.001 (0.002)
Four-year institution	0.355*** (0.021)	0.253*** (0.020)	0.363*** (0.027)	0.268*** (0.024)
Two-year institution	0.268*** (0.020)	0.173*** (0.018)	0.284*** (0.023)	0.193*** (0.021)
Public institution	0.056** (0.019)	0.083*** (0.017)	0.005 (0.024)	0.018 (0.021)
Private, non-profit institution	0.049* (0.021)	0.068*** (0.018)	0.025 (0.027)	0.017 (0.024)

Admission rate	0.014 (0.035)	0.039 (0.031)	0.034 (0.045)	0.080* (0.039)
SAT Math 25th Percentile (100s)	-0.01 (0.020)	-0.01 (0.017)	-0.016 (0.026)	0.002 (0.022)
ACT 25th Percentile	-0.003 (0.005)	-0.002 (0.004)	-0.001 (0.006)	-0.003 (0.005)
R-squared	0.145	0.109	0.165	0.121
N	5050	4370	2830	2500

Notes: all entries in these tables are based on the authors' calculations from the Beginning Postsecondary Students Longitudinal Study (BPS:04/09). All samples sizes are rounded to the nearest ten to comply with the Institute of Education Sciences' reporting standards.

**Table 5: Determinants of refiling for Pell recipients, by institution type**

	<i>All Pell Recipients</i>			<i>Pell Recipients who Re-enrolled</i>		
	Four-year	Two-year	Less-than Two-year	Four-year	Two-year	Less-than Two-year
	(1)	(2)	(3)	(4)	(5)	(6)
3.00-4.00 GPA	0.183*** (0.029)	0.401*** (0.048)	0.12 (0.082)	0.116*** (0.030)	0.179*** (0.050)	0.148 (0.097)
2.0-2.99 GPA	0.149*** (0.029)	0.371*** (0.049)	0.055 (0.092)	0.109*** (0.030)	0.173*** (0.051)	0.082 (0.109)
1.00-1.99 GPA	0.127*** (0.032)	0.232*** (0.051)		0.076* (0.031)	0.038 (0.053)	
Pell award \$2701-4050	-0.015 (0.017)	0.094*** (0.027)	-0.189* (0.074)	-0.017 (0.014)	0.082*** (0.024)	-0.197* (0.086)
Pell award \$1351-2700	-0.043** (0.016)	0.045* (0.023)	-0.103 (0.074)	-0.018 (0.013)	0.049* (0.021)	-0.086 (0.087)
Other need-based grants (\$1000s)	0.004* (0.002)	0.012* (0.006)		0.004** (0.001)	0.006 (0.005)	0.114* (0.048)
Merit-based grants (\$1000s)	0.005* (0.002)	-0.011 (0.012)		0.003 (0.002)	-0.02 (0.010)	-0.056 (0.043)
Student loans (\$1000s)	0.007*** (0.002)	0.006 (0.004)		0.005*** (0.002)	0.004 (0.004)	-0.014 (0.010)
Full-time	0.085*** (0.018)	0 (0.021)	0.039 (0.077)	0.050** (0.015)	-0.025 (0.019)	0 (0.084)
Female	-0.003 (0.011)	0.003 (0.018)	-0.142** (0.049)	-0.006 (0.009)	0.003 (0.016)	-0.137* (0.058)
Underrepresented Minority	0.022 (0.011)	-0.001 (0.017)	0.108* (0.049)	0.008 (0.009)	-0.024 (0.016)	0.103 (0.056)
Dependent	-0.036 (0.024)	-0.027 (0.034)	0.223** (0.082)	-0.022 (0.020)	-0.025 (0.031)	0.257** (0.093)

SAT score (100 points)	-0.008*	0.007	0.078***	-0.004	0.005	0.047*
	(0.004)	(0.007)	(0.022)	(0.003)	(0.007)	(0.024)
First generation	-0.022	0.023	-0.007	-0.022*	0.049**	-0.135
	(0.012)	(0.020)	(0.062)	(0.010)	(0.018)	(0.072)
Income (\$1000s)	0	0	-0.004*	-0.001	0	-0.007**
	0.000	(0.001)	(0.002)	0.000	(0.001)	(0.002)
Cost of attendance (\$1000s)	-0.001	0.001	-0.016**	-0.002	0.003	-0.013*
	(0.001)	(0.003)	(0.005)	(0.001)	(0.002)	(0.006)
Live on campus	0.035*	-0.107*	0.209	0.016	-0.066	-0.381
	(0.017)	(0.049)	(1.196)	(0.014)	(0.042)	(1.125)
Live with parents	0.027	0.042	-0.094	0.003	0.052*	-0.026
	(0.017)	(0.023)	(0.057)	(0.014)	(0.021)	(0.065)
Has dependent child(ren)	0.011	-0.058	0.149*	0.024	-0.028	0.16
	(0.026)	(0.030)	(0.068)	(0.022)	(0.027)	(0.082)
Spouse with income	-0.021	0.055	-0.136	0.02	0.045	0.032
	(0.031)	(0.034)	(0.073)	(0.027)	(0.029)	(0.091)
Any outside job	0.02	0.04	0.045	0.007	-0.005	0.029
	(0.017)	(0.030)	(0.082)	(0.014)	(0.027)	(0.092)
Hours worked at job	-0.002**	-0.003***	0.001	-0.001	0	0.002
	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.003)
Any work study	-0.035	-0.069	0.38	-0.015	-0.066	0.49
	(0.021)	(0.055)	(0.234)	(0.017)	(0.046)	(0.251)
Work study hours	0.003*	0.003	-0.021*	0.001	0.002	-0.026*
	(0.001)	(0.003)	(0.009)	(0.001)	(0.002)	(0.010)
Public institution	0.007	0.098**	-0.06	0.014	0.136***	0.092
	(0.021)	(0.035)	(0.082)	(0.018)	(0.031)	(0.096)
Private, non-profit institution	-0.027	0.095	0.232*	0.012	0.109**	-0.11
	(0.020)	(0.050)	(0.099)	(0.017)	(0.042)	(0.122)
Admission rate	-0.075*	0.132	0.1	-0.053*	0.088	0.222
	(0.031)	(0.089)	(0.130)	(0.026)	(0.079)	(0.147)
SAT Math 25th Percentile (100s)	0.006	-0.065		-0.006	0.027	
	(0.014)	(0.260)		(0.012)	(0.214)	

ACT 25th Percentile	-0.001 (0.004)	-0.024 (0.043)		0.002 (0.003)	-0.051 (0.037)	
R-squared	0.079	0.095	0.12	0.044	0.089	0.163
N	2280	2160	610	2110	1830	430

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Notes: all entries in these tables are based on the authors' calculations from the Beginning Postsecondary Students Longitudinal Study (BPS:04/09). All samples sizes are rounded to the nearest ten to comply with the Institute of Education Sciences' reporting standards.

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TABLE 6: Association between FAFSA refiling and future college outcomes

	Enrolled in 2004- 05 (1)	Enrolled in 2005- 06 (2)	Enrolled in 2006- 07 (3)	Received AA Degree (4)	Received BA Degree (5)
<b>Pell recipients</b>	-0.376***	-0.223***	-0.121***	-0.018	-0.049***
SE	(0.024)	(0.030)	(0.030)	(0.013)	(0.018)
<i>Comparison Mean</i>	0.864	0.565	0.423	0.045	0.116
<i>Non-refilers/comparison refilers</i>	710/540	710/540	710/540	710/540	710/540
<b>Pell recipients, 3.0+ GPA</b>	-0.350***	-0.220***	-0.124***	-0.034*	-0.065**
SE	(0.034)	(0.043)	(0.043)	(0.020)	(0.030)
<i>Comparison Mean</i>	0.901	0.483	0.360	0.055	0.111
<i>Non-refilers/comparison refilers</i>	390/280	390/280	390/280	390/280	390/280
<b>Pell recipients, enrolled in 2004-05</b>		-0.107***	-0.133***	-0.045**	-0.006
SE		(0.040)	(0.039)	(0.019)	(0.025)
<i>Comparison Mean</i>		0.534	0.420	0.057	0.082
<i>Non-refilers/comparison refilers</i>		350/310	350/310	350/310	350/310
<b>Pell recipients, 3.0+ GPA, enrolled in 2004-05</b>		-0.073	-0.063	-0.024	0.015
SE		(0.062)	(0.060)	(0.027)	(0.042)
<i>Comparison Mean</i>		0.466	0.392	0.064	0.130
<i>Non-refilers/comparison refilers</i>		210/170	210/170	210/170	210/170

Notes: each column grouping of four cells represent the results from one propensity score matching (PSM) model. The first cell is the point estimate of the association between not refiling a FAFSA and the dependent variable; the second cell is the standard error; the third cell is the mean of the dependent variable for the group of comparison matches; the fourth cell displays the number of non-refilers and the number of corresponding refilers matched in the PSM analysis. The description next to the top cell of each grouping, i.e. "Pell recipients", denotes the sample restriction on which the PSM model was performed. The PSM model was performed using the STATA command `psmatch2`, with the nearest neighbor matching with replacement method. Data sources: Beginning Postsecondary Students Longitudinal Study (BPS:04/09) and Integrated Postsecondary Education Data System.

**TABLE 7: Association between FAFSA refiling and future college outcomes for freshmen Pell recipients, by institution type**

	Enrolled in 2004-05 (1)	Enrolled in 2005-06 (2)	Enrolled in 2006-07 (3)	Received AA Degree (4)	Received BA Degree (5)
<b>Four-year Institutions</b>	-0.368***	-0.271***	-0.218***	-0.038	-0.135**
SE	(0.052)	(0.058)	(0.062)	(0.028)	(0.058)
<i>Comparison mean</i>	<i>0.876</i>	<i>0.700</i>	<i>0.607</i>	<i>0.025</i>	<i>0.276</i>
<i>Non-refilers/comparison refilers</i>	<i>130/120</i>	<i>130/120</i>	<i>130/120</i>	<i>130/120</i>	<i>130/120</i>
<b>Two-year Institutions</b>	-0.406***	-0.316***	-0.153***	-0.053**	-0.053***
SE	(0.034)	(0.040)	(0.042)	(0.022)	(0.020)
<i>Comparison mean</i>	<i>0.910</i>	<i>0.610</i>	<i>0.459</i>	<i>0.095</i>	<i>0.072</i>
<i>Non-refilers/comparison refilers</i>	<i>320/280</i>	<i>320/280</i>	<i>320/280</i>	<i>320/280</i>	<i>320/280</i>
<b>Less-than Two-year Institutions</b>	-0.350***	-0.115**	-0.088*	-0.069***	-0.004
SE	(0.046)	(0.051)	(0.051)	(0.026)	(0.009)
<i>Comparison mean</i>	<i>0.860</i>	<i>0.239</i>	<i>0.269</i>	<i>0.027</i>	<i>0.007</i>
<i>Non-refilers/comparison refilers</i>	<i>260/150</i>	<i>260/150</i>	<i>260/150</i>	<i>260/150</i>	<i>260/150</i>

Notes: each column grouping of three cells represent the results from one propensity score matching (PSM) model. The first cell is the point estimate of the association between not refiling a FAFSA and the dependent variable; the second cell is the standard error; the third cell is the mean of the dependent variable for the group of comparison matches; the fourth cell displays the number of non-refilers and the number of corresponding refilers matched in the PSM analysis. The PSM model was performed using the STATA command `psmatch2`, with the nearest neighbor matching with replacement method. Data sources: Beginning Postsecondary Students Longitudinal Study (BPS:04/09) and Integrated Postsecondary Education Data System.



**Table A1: FAFSA refiling rates, by institution level**

	Pell recipients		Pell with 3.0+ GPA	
	All (1)	Re-enrolled (2)	All (3)	Re-enrolled (4)
Four-year	93.4%	96.0%	95.6%	96.8%
Two-year	81.6%	88.7%	85.6%	90.9%
Less-than two-year	53.8%	66.7%	54.4%	67.8%

Notes: all entries in these tables are based on the authors' calculations from the Beginning Postsecondary Students Longitudinal Study (BPS:04/09). All samples sizes are rounded to the nearest ten to comply with the Institute of Education Sciences' reporting standards.

**Table A2: Differences in student characteristics by refiling behavior, students with 3.0+ GPA**

	All Pell Recipients		Re-enrolled	
	Refilers (1)	Non-refilers (2)	Refilers (3)	Non-refilers (4)
First year GPA	3.49	3.54	3.49	3.52
Pell award amount	\$2,528	\$2,586	\$2,552	\$2,656
Other need-based grants	\$1,663	\$352	\$1,745	\$423
Merit-based grants	\$658	\$276	\$689	\$416
Student Loans	\$2,476	\$2,907	\$2,580	\$3,279
Full-time	0.81	0.78	0.82	0.82
Female	0.68	0.8	0.67	0.8
Underrepresented Minority	0.44	0.56	0.43	0.55
Dependent	0.61	0.4	0.62	0.44
Took entrance exam	0.8	0.51	0.8	0.55
SAT score	960	840	965	851
First Generation College Student	0.63	0.74	0.62	0.73
Total income	\$23,454	\$19,394	\$23,819	\$20,867
Cost of Attendance	\$13,600	\$13,389	\$13,845	\$13,834
Lives on campus	0.21	0.05	0.23	0.08
Lives with parents	0.35	0.35	0.35	0.32
Lives on own	0.43	0.60	0.43	0.60
Has dependent child(ren)	0.28	0.45	0.28	0.41
Spouse with income	0.08	0.12	0.08	0.09
Any outside job	0.59	0.56	0.59	0.51
Hours worked at outside job	27.2	30.4	27.3	27.7
Any work study	0.15	0.07	0.16	0.08

Hours of work study	12.6	16.2	12.6	16.8
Public institution	0.60	0.42	0.59	0.39
Private, not-for-profit institution	0.16	0.06	0.17	0.08
Private, for-profit institution	0.24	0.53	0.24	0.54
Four-year institution	0.43	0.11	0.46	0.14
Two-year institution	0.46	0.43	0.45	0.43
Less-than two-year institution	0.10	0.46	0.10	0.43
Admission Rate	86.2%	91.9%	85.7%	89.6%
ACT 25th Percentile	19.6	19	19.7	19.2
SAT Math 25th Percentile	475	466	479	458
Enrolled in 2004-05	0.92	0.53	1.00	1.00
Enrolled in 2005-06	0.70	0.27	0.74	0.38
Enrolled in 2006-07	0.59	0.27	0.61	0.24
Received AA by June 2009	0.06	0.02	0.06	0.02
Received BA by June 2009	0.32	0.06	0.34	0.11
N	2440	390	2290	210

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Notes: all entries in these tables are based on the authors' calculations from the Beginning Postsecondary Students Longitudinal Study (BPS:04/09). All samples sizes are rounded to the nearest ten to comply with the Institute of Education Sciences' reporting standards.

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**Table A3: Differences in student characteristics by refiling behavior, by institution level**

	Four-year (1)	Two-year (2)	Less-than Two-year (3)
First year GPA	2.80	2.87	3.18
Pell award amount	\$2,735	\$2,326	\$2,968
Other need-based grants	\$2,846	\$598	\$189
Merit-based grants	\$1,025	\$153	\$90
Student Loans	\$3,442	\$1,461	\$3,350
Full-time	0.89	0.71	0.92
Female	0.59	0.66	0.75
Underrepresented Minority	0.45	0.49	0.72
Dependent	0.81	0.54	0.41
Took entrance exam	0.92	0.67	0.32
SAT score	970	832	830
First Generation College Student	0.55	0.68	0.81
Total income	\$26,073	\$21,086	\$16,910
Cost of Attendance	\$17,050	\$9,348	\$15,735
Lives on campus	0.46	0.04	0.00
Lives with parents	0.28	0.46	0.42
Lives on own	0.26	0.50	0.58
Has dependent child(ren)	0.12	0.34	0.46
Spouse with income	0.04	0.09	0.10
Any outside job	0.53	0.69	0.50
Hours worked at outside job	23.6	28.6	29.3
Any work study	0.26	0.07	0.03
Hours of work study	12.1	14.1	21.7
Public institution	0.55	0.80	0.10
Private, not-for-profit institution	0.31	0.04	0.04
Private, for-profit institution	0.15	0.16	0.86
Admission Rate	75.9%	96.8%	90.6%
ACT 25th Percentile	19.7	15.3	N/A
SAT Math 25th Percentile	476	389	N/A
Enrolled in 2004-05	0.91	0.81	0.68
Enrolled in 2005-06	0.82	0.55	0.23
Enrolled in 2006-07	0.71	0.45	0.21
Received AA by June 2009	0.03	0.08	0.02
Received BA by June 2009	0.45	0.08	0.01
N	2270	2160	620

Notes: all entries in these tables are based on the authors' calculations from the Beginning Postsecondary Students Longitudinal Study (BPS:04/09). All samples sizes are rounded to the nearest ten to comply with the Institute of Education Sciences' reporting standards.

**TABLE A4: Institution Characteristics, by Level**

	Four-year (1)	Two-year (2)	Less-than two-year (3)
Open admission policy?	17.8%	73.8%	72.4%
Accredited by recognized agency?	72.4%	79.0%	87.0%
<i>Calendar System</i>			
Semester	74.4%	55.2%	7.5%
Quarter	13.3%	19.8%	4.4%
Trimester	2.7%	2.6%	1.3%
Four-one-four plan	5.1%	13.0%	0.1%
Other academic year	3.0%	1.0%	4.0%
Differs by program	0.6%	8.4%	23.1%
Continuous	1.1%	13.0%	59.7%
<i>Top 10 Certificate/Degree programs</i>			
1	Business, Management, and Marketing	Health Professions	Health Professions
2	Social Sciences	Liberal Arts and Sciences	Personal and Culinary Services
3	Education	Business, Management, and Marketing	Business, Management, and Marketing
4	Health Professions	Computer and Information Sciences	Computer and Information Sciences
5	Visual and Performing Arts	Mechanic and Repair Technologies	Mechanic and Repair Technologies
6	Psychology	Engineering Technologies	Engineering Technologies
7	Computer and Information Sciences	Protective Services	Transportation and Materials Moving
8	Communication and Journalism	Personal and Culinary Services	Construction Trades

9	Liberal Arts and Sciences	Family and Consumer Sciences	Precision Production
10	Engineering	Visual and Performing Arts	Visual and Performing Arts

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Source: Integrated Postsecondary Education Data System.

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