



Transfer Students, Financial Aid, and a New Perspective on Undermatching

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INTRODUCTION

In December 2012, the Texas Guaranteed Student Loan Corporation (TG) released a report outlining an unexpected set of conclusions. Citing data from the U.S. Department of Education’s Baccalaureate and Beyond (B&B) study, the report found that, among students who earned bachelor’s degrees during the 2007–2008 academic year (AY) and borrowed student loans, those who first enrolled at public two-year institutions (community colleges) and then transferred had unexpectedly high levels of cumulative student loan debt relative to students who had first enrolled at the same institution that later granted them a bachelor’s degree (“natives”).¹ At public universities, the median transfer student (“transfer”) had borrowed only \$100 less than the median native student since beginning postsecondary education, while at private, nonprofit universities, the median transfer student borrowed a full \$2,000 more.²

A key corollary accompanied this main finding: transfers tended to receive less grant aid (especially institutional aid) and more loan aid in AY 2007–2008 compared to their native student counterparts. This pattern was particularly significant at private universities; while transfers at public institutions received 12 percent less institutional aid and 4.7 percent less overall grant aid, transfers at private universities received 41 percent less aid of both types. Transfers at public universities tended to receive slightly lower grant awards and borrow slightly less, and transfers at private universities tended to receive significantly lower grant awards and borrow significantly more. These observations suggested that disparate financial aid allocations to transfers — particularly the relative lack of institutional aid — might be responsible for their unexpectedly high levels of student loan debt.

Though rudimentary, these initial findings generated substantial interest and raised important questions for further inquiry. Common knowledge and counseling practice suggest that pursuing a bachelor’s degree by first enrolling and completing at least some coursework at a less expensive community college reduces the need to borrow (U.S. Department of Education, 2011). Data show that, regardless of the rationale, students frequently utilize this strategy. About two-thirds of first-year community college students in AY 2003–2004 reported bachelor’s attainment or higher as their ultimate educational goal, with 28 percent using community college as a pre-planned “stepping stone” towards that goal; some studies suggest that the percentages may be even higher (U.S. Department of Education, 2008; Handel, 2013). The 30 percent of AY 2007–2008 bachelor’s graduates who began their postsecondary education at a community college further reflect the prevalence of transfer as a path to a bachelor’s degree (U.S. Department of Education [B&B], 2009).

Data also suggest that students frequently choose this strategy in response to financial concerns. Although college readiness is often a major concern for community college students, many well-qualified students enroll in community colleges after high school. Over 37 percent of community college enrollees just out of high school in fall 2004 had completed a math class more advanced than Algebra II, which is a key college readiness indicator (U.S. Department of Education, 2008; Jonas et al 2012). Among first-year postsecondary students in AY 2003–2004 who scored in the then-highest SAT quartile (1140-1600) and intended to pursue a bachelor’s degree or higher, over 25 percent enrolled in community colleges (U.S. Department of Education [BPS], 2009). While a student pursuing a bachelor’s degree may choose to enroll at a two-year institution for a variety of reasons besides readiness and finances, these numbers suggest that the savings presumed to accompany the transfer path are a common and powerful factor in the decision. Furthermore, the financially motivated transfer route is likely growing in popularity in light of rising tuition costs, financial aid that fails to keep pace with expenses, and diminished wealth and savings in the wake of the recession. For a large and growing contingency of students, the suggestion that transfer students may end up owing more for their bachelor’s degrees raises serious concerns.

Both the importance and the unexpectedness of TG’s findings necessitated a deeper look at the factors that may be influencing the transfer student debt burden. It is the case that, in the aggregate, transfer students tend to borrow similar if not higher amounts than native students and also the case that their financial aid packages tend to contain disproportionate amounts of loan aid; however, these

¹ Full descriptions of key terminology used in this report can be found in the Appendix.

² The initial TG report examined bachelor’s recipients whose family or independent income placed them at or below the median income for their dependency group. Further analysis confirmed that the findings held even after this income filter was removed, and the filter was not used in this study.

facts do not necessarily entail either that having transferred causes a student to receive a loan-heavy aid package or that a loan-heavy aid package alone causes a higher level of student debt. All else equal, a loan-heavy aid package certainly increases borrowing, but it does not necessarily act alone, and having transferred is not necessarily a significant factor in determining the proportion of grant aid to loan aid despite the correlation. With this in mind, the follow-up study asked whether and to what extent community college transfer has an independent impact on borrowing and/or grant aid and, conversely, what other factors could account for observed disparities in borrowing and grant aid between natives and transfers.

Further analysis suggested that, all else equal, having transferred from a community college is associated with both borrowing somewhat less and with receiving less institutional grant aid. However, the association between transfer and lower cumulative borrowing holds only while holding constant both institutional sector and grant aid amount, among several other important factors. When these controls are removed, data show that the native and transfer populations differ significantly in ways that both increase transfers' average borrowing and decrease their average grant awards. Transfers tend to have lower incomes and lower SAT scores, to take longer to complete their degrees, to be more likely to enroll part time, and to receive less grant aid (while controlling for tuition costs), all of which are associated with higher cumulative borrowing.

While having transferred is not in and of itself a direct factor for increased borrowing, it does appear to be both a direct and an indirect factor for lower grant aid, as it is strongly associated with lower institutional aid awards. In addition to their effects on borrowing, lower SAT scores, longer completion times, and part-time enrollment also account for a substantial portion of transfers' lower grant aid, but they cannot account for the entire disparity. Transfer seems to affect grant aid both through the enrollment patterns of transfers and through the differential treatment of transfer students. Multivariate analysis found an independent reduction in institutional grants associated with transfer (particularly at private institutions) while controlling for the background factors listed above, but this reduction cannot be entirely attributed to transfer students being treated differently. Transfers have a disproportionate tendency (again, particularly in the private sector) to earn bachelor's degrees from institutions that charge lower tuition, have smaller endowments per capita, award smaller institutional grants, and rely more on federal student loan dollars. Critically, these institutions also have smaller ratios of their average institutional grant to tuition cost, such that transfers disproportionately attend institutions that offer less support relative to expenses. This enrollment pattern combines with differential treatment of transfer students and the prevalence of negative background traits in the transfer population to lower institutional grant aid among transfer students — lowering their overall grant aid and increasing their need to borrow.

This follow-up report describes the research that was conducted to reach these conclusions. It provides a counterfactual descriptive analysis of demographic and behavioral variables that have a hypothetical connection to borrowing and/or grant awards, followed by a set of regression models. While this counterfactual analysis fails to provide an accurate assessment of relationships between background variables and borrowing, it is included in order to demonstrate the methodological pitfalls of purely descriptive research and the extent to which covariance and institutional factors complicate patterns and require regression analysis. Regression models control for the covariance that prevents deriving clear results from the descriptive analysis while also taking institutional factors into account. Institutional factors are examined further using Integrated Postsecondary Education Data System (IPEDS) data, which suggests that enrollment patterns account for only part of the independent reduction in grant aid associated with transfer. After presenting these analyses, the report summarizes key conclusions and briefly offers suggested implications for students, counselors, and policymakers.

DEMOGRAPHIC VARIABLES

Analysis of the B&B database shows that the population of community college transfer students differs significantly from the population of native four-year college students in numerous ways, many of them demographic. If students with these demographic traits also tend to borrow more for their education, then that disproportionate representation will explain at least some of the difference in medians between transfer student borrowing and native student borrowing.

Though this study focuses on characteristics of the transfer student population and their institutions that may be affecting student loan burden, some demographic variables discussed here were found to bear a weak connection, or no real connection at all, to a graduate's student loan borrowing. They are addressed briefly because they provide important context on the make-up of the transfer student population as a whole and because they are common sociological variables that both past and current research frequently explore.

For many variables, a counterfactual borrowing level calculation is employed in order to estimate the direction and size of the variable's effect on borrowing. This method maintains actual transfer graduate borrowing levels across identified trait groups while imposing the relative sizes of those groups as they exist in the native graduate population. The method is explained in greater detail when it is first utilized to explore the role of income.

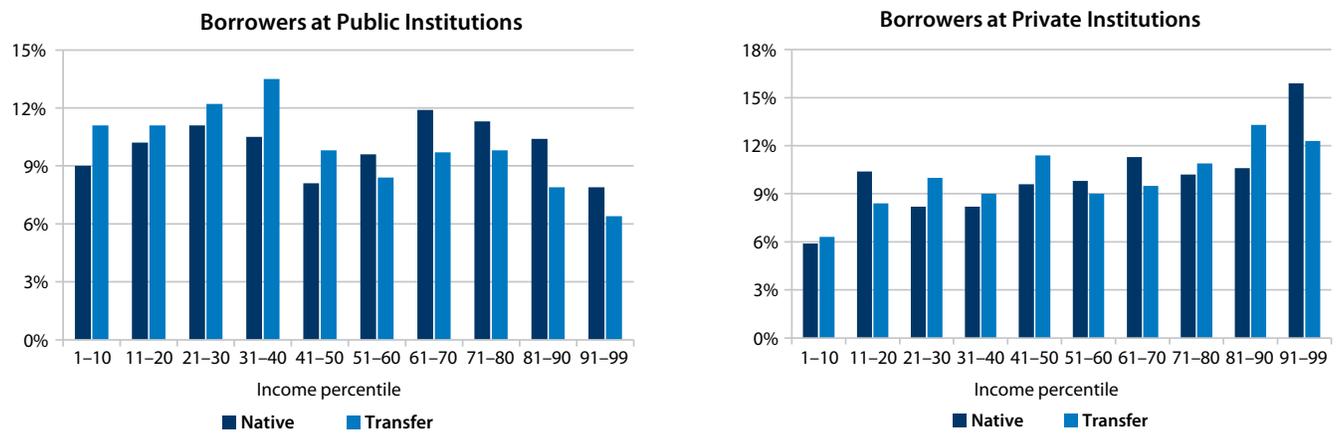
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The reader should keep in mind that these breakdowns describe the population of students who began their postsecondary education at a community college and graduated with a bachelor's degree in AY 2007–2008 in relation to bachelor's recipients who began at their bachelor's granting institution and graduate in the same year; they do not represent community college students or transfer students at large.

Income

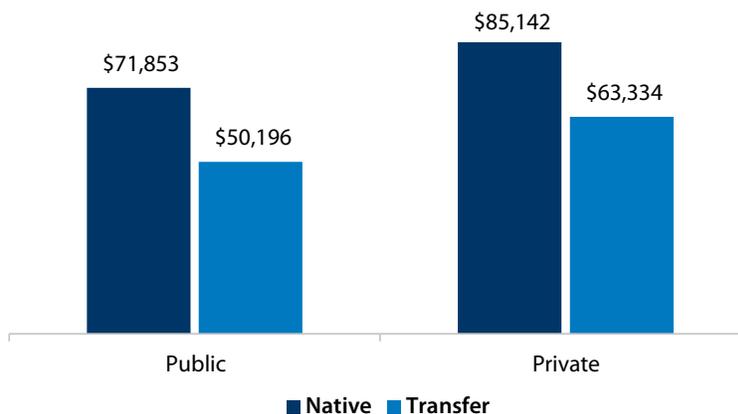
Community college transfers tend to be less well-off financially than their native student counterparts. The lower income deciles account for a larger portion of transfer students than native students, and the average income among transfers is significantly lower. This holds both for all graduates and for only those who borrowed student loans; however, since the goal is to examine how income and other variables might affect borrowing, only students who borrowed at least once to fund their bachelor's degrees are shown. While transfers are underrepresented among high-income earners in both sectors, the general contours of these disparate distributions differ somewhat between graduates of public and private institutions. At public universities, transfer students tend to be more concentrated among lower-income groups; at private universities, the tendency is less marked and more inconsistent.

Figure 1. Income percentile distribution by transfer/native status and bachelor's institution sector for AY 2007–2008 bachelor's recipients who borrowed student loans (B&B:09)



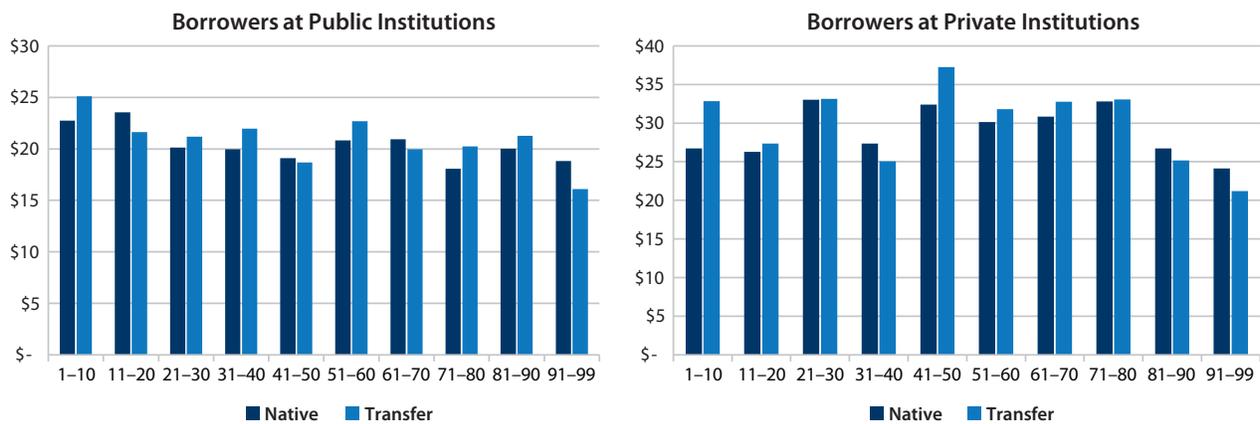
Though quite distinct for the public institutions on the left, the pattern of lower incomes among transfer students at private schools would be almost indistinguishable but for the prevalence of 91st percentile-plus earners among native students. The average incomes for the two groups illustrate the pattern more succinctly. Though quite distinct for the public institutions on the left, the pattern of lower incomes among transfer students at private schools would be almost indistinguishable but for the prevalence of 91st percentile-plus earners among native students. The average incomes for the two groups illustrate the pattern more succinctly.

Figure 2. Average income (independents and dependents' parents, where x>0) by transfer/native status and bachelor's institution sector for AY 2007–2008 bachelor's recipients who borrowed student loans (B&B:09)



Native students in both sectors tend to have far higher personal or parental (in the case of dependent students) incomes than transfers, which is representative of the significant financial gap between the two groups. Despite this obvious pattern, income disparities do not necessarily exercise a great deal of influence on disparities in student borrowing. Two students of different income levels who face the same tuition prices will tend to borrow differently according to that distinction; however, as the difference between the average incomes of private and public university students suggests, students select their institutions based at least in part on the cost of attendance relative to income, which mitigates what would otherwise be a clear pattern of higher debt among lower income students. The empirical question is the extent to which differences in income correlate to differences in student loan burden in the aggregate. If the contribution is significant, then patterns of income disparity between transfer and native students likely contribute to the borrowing patterns of the two groups.

Figure 3. Average cumulative borrowing (thousands) by income decile, transfer/native status, and institution sector for AY 2007–2008 bachelor’s recipients who borrowed student loans (B&B:09)



Among students who borrowed, transfers and natives at public institutions tend to borrow fairly similar amounts over the course of their postsecondary educations and show a clear pattern of borrowing somewhat less at higher income levels. This suggests that the income distribution of the transfer student population is playing some role in elevating their borrowing levels. For private institutions, on the other hand, the pattern is less clear. While both native and transfer student borrowers at the highest income levels borrow less than their lower income counterparts, borrowing levels across the lower and middle incomes are more constant. The only consistent pattern is that transfer students borrow more than native students at nearly all income levels, which implies that transfers’ lower-income distribution does not account for their elevated borrowing — other factors must be involved.

Using this data, it is possible to get a rough picture of the effects of disparate income distributions on borrowing by estimating what the average borrowing level for transfer students would be if their income distribution matched that of native students. This method recalculates average transfer borrowing as the weighted average of the average (not median, which is a biased estimator) borrowing of each income group using the native student income distribution data as weights. In other words, the calculation gives the hypothetical transfer borrowing level under the assumption that borrowing is a function of income. Any difference between the actual and counterfactual is the result of the difference between the income distributions in reality, along with the net effects of factors that correlate with the income level. Expressed algebraically:

$$\text{Public institutions } CBL_{pubt} = \sum i(W_{i_{pubn}})(B_{i_{pubt}}) \qquad \text{Private institutions } CBL_{prit} = \sum i(W_{i_{prin}})(B_{i_{prit}})$$

where:

- | | |
|--------------------------------------|--------------------------|
| CBL = counterfactual borrowing level | pubt = public transfer |
| pubn = public native | prit = private transfer |
| prin = private native | W = weight (% frequency) |
| I = the income group | B = borrowing level |

Expressed verbally (for public institutions), the counterfactual borrowing level for public transfer students equals the sum for all income groups of every weight (i.e., relative size) of an income group of public native students multiplied by the average borrowing level of public transfers at that income group.

This method yields the following counterfactual average borrowing levels:

$$CBL_{pubt} = \$20,959$$

$$CBL_{prit} = \$29,363$$

which can then be compared to the actual mean borrowing levels:

Actual public transfer average borrowing = \$21,121

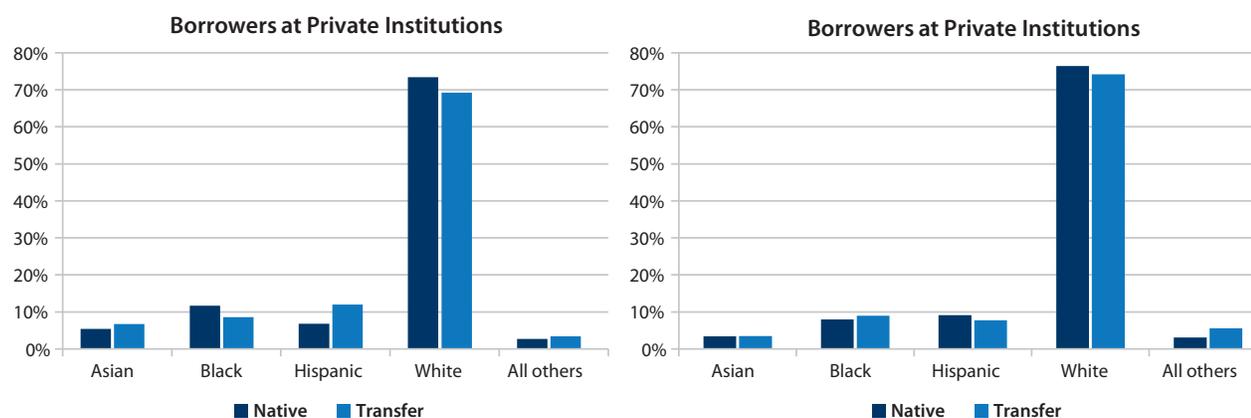
Actual private transfer average borrowing = \$29,961

For public transfer graduates, the counterfactual borrowing level is only \$162 lower than the actual borrowing level; that is, keeping all other factors as they are in reality, the estimated average student borrowing for transfer graduates from public institutions would be \$162 lower if their income distribution matched that of native public institution graduates. For private institutions, this figure increases to \$598, which is similarly low in proportion to the average. The best interpretation of these meager differences is that the correlation between lower incomes and higher borrowing is so slight that elevating the income distribution of transfer students causes little difference. This does not imply, however, that income and borrowing are unrelated; to the contrary, it is simply the case that lower-income students tend to enroll at lower-cost institutions (and vice versa), which limits the additional funds they might otherwise have to borrow relative to higher-income students. (The role of tuition cost is further explored in the section on institutional variables.)

Race/Ethnicity

Transfer graduates as a group tend to be slightly more ethnically diverse than their native graduate counterparts, but on the whole the two groups share similar demographic composition in both sectors. While this fact is somewhat troubling given what it implies about transfer and/or completion rates among minority students, it does suggest that disparate borrowing patterns among different racial/ethnic groups do not significantly affect aggregate transfer student borrowing.

Figure 4. Race/ethnicity distribution by transfer/native status and bachelor's institution sector for AY 2007–2008 bachelor's recipients who borrowed student loans (B&B:09)



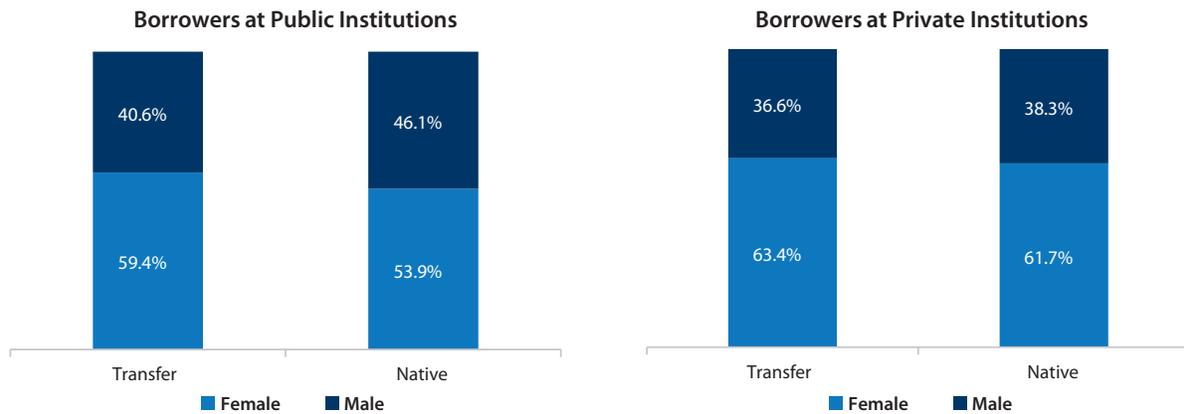
While racial/ethnic diversity varies little between transfer and native students, different racial/ethnic groups do tend to differ somewhat in their student loan borrowing. Hispanic transfer students in particular tend to borrow substantially more than Hispanic native students, although this disparity is not driving higher transfer borrowing in the aggregate.

Gender

Though the concept seems unintuitive, data suggest that gender may have some impact on borrowing. Recent research has found that women, who have comprised the majority of postsecondary students for some time now, are more likely to persist to degree completion despite high student borrowing. As borrowing levels climb over the course of higher education, men tend to drop out for borrowing-related reasons before women do, even when controlling for other significant contributors to college drop-out; since women are more likely to persist in school in spite of higher debt, it may be that they are less averse to borrowing in general.

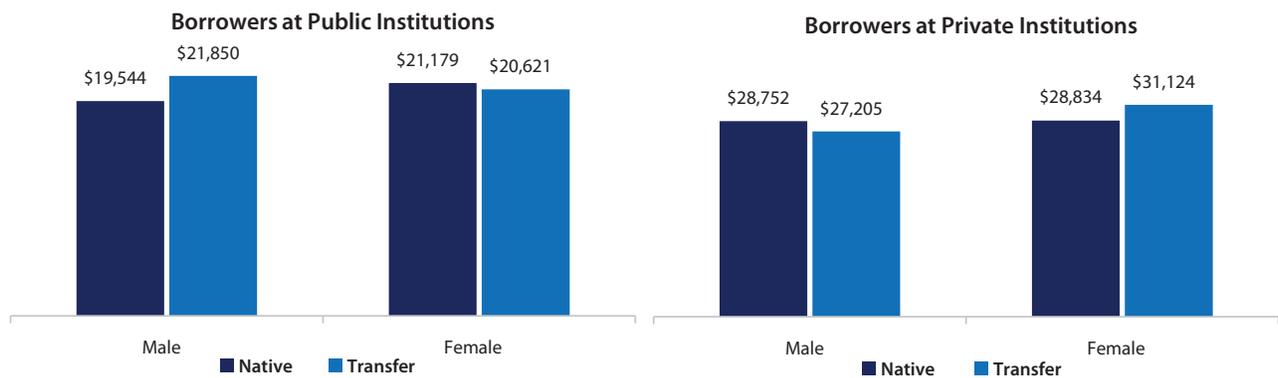
Although the study referenced above focused on persistence and the individuals here are all college graduates, these findings could suggest that female graduates are more willing to take on student borrowing while still enrolled, perhaps choosing to borrow more instead of work more hours. If this is the case, then a disproportionate percentage of females in the transfer graduate population might explain some of the higher borrowing levels seen among transfer graduates.

Figure 5. Gender distribution by transfer/native status and institution sector for AY 2007–2008 bachelor’s recipients who borrowed student loans (B&B:09)



For each sector, the transfer graduate population contains a higher percentage of female graduates than the native graduate population, though this skew is far more evident for public than private institutions. Analysis of the average amount of borrowing by sex/gender among transfer and native graduates turns up somewhat muddled results.

Figure 6. Average cumulative borrowing by sex/gender, transfer/native status, and institution sector for AY 2007–2008 bachelor’s recipients who borrowed student loans (B&B:09)



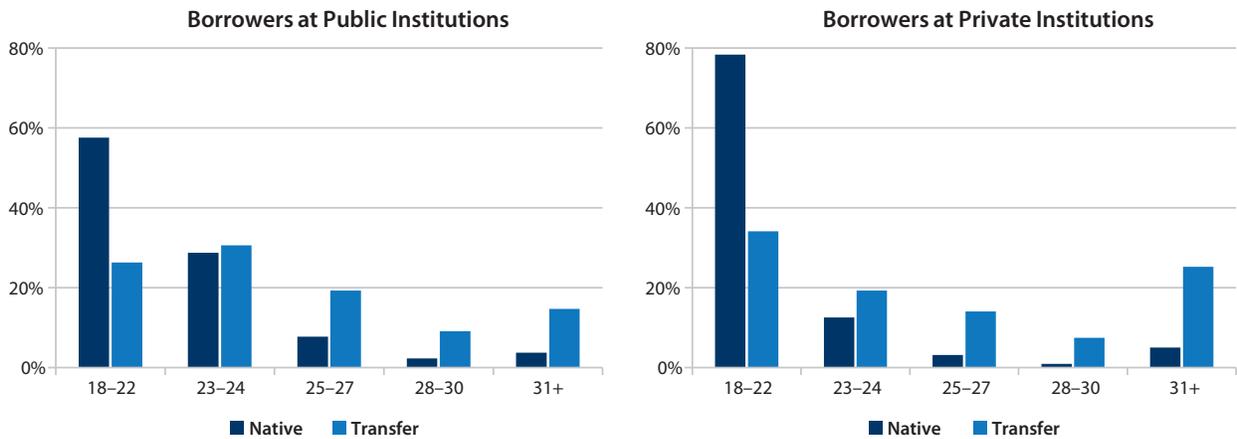
Contrary to the hypothesis suggested by prior research, higher representation of females among transfer students slightly lowers average transfer borrowing, since female transfer students borrow about \$1,500 less on average than female native students and male transfers out-borrow male natives. However, data for private institutions tell a far different story. Here, the borrowing level for female transfer graduates far exceeds the borrowing levels both for female native graduates and for male transfer graduates, such that the high percentage of females elevates the overall transfer borrowing level. Whereas gender-specific borrowing patterns at public institutions operate to slightly diminish the impact of transfer and its covariates on borrowing level, at private institutions they account for an increase in the overall transfer borrowing.

Counterfactual analysis reveals no significant difference in average transfer borrowing under the condition of native student gender composition. In other words, exceptionally high borrowing among female transfer graduates seems to be driving the elevated borrowing among transfers at private institutions overall, but not as a result of their proportion of the transfer population. This is an intriguing observation that should be explored further, but it is not an instance of demographic differences between the transfer and native populations having a significant effect on aggregate borrowing patterns.

Age

Age is not hypothesized to be an independent risk factor for high borrowing (though it may be strongly correlated with such factors, like longer completion times); nevertheless, the age distribution of these two groups provides important context for considering issues such as independence, full- and part-time enrollment, and earnings, as the age distributions between native and transfer students differ substantially.

Figure 7. Age at graduation distribution by transfer/native status and institution sector for AY 2007–2008 bachelor’s recipients who borrowed student loans (B&B:09)



Independence

Although students whom federal regulation defines as “independent” may still be receiving substantial family assistance, on the whole these students will tend to finance more of their educational and living expenses themselves. Despite high rates of employment, independent students may often find that time constraints and relatively low hourly earning power leave them with fewer financial resources, which may result in a greater need to borrow. For these reasons, borrowing behaviors may differ significantly between independent and dependent students.

As the charts below demonstrate, there are large differences in rates of independence between transfer and native students. Much of this disparity is driven by age differences between native and transfer students, as transfers are far more likely to be 25 or over upon graduation, at which point they are de facto independents.

Figure 8. Percentage of independent students by transfer/native status and institution sector for AY 2007–2008 bachelor’s recipients who borrowed student loans (B&B:09)

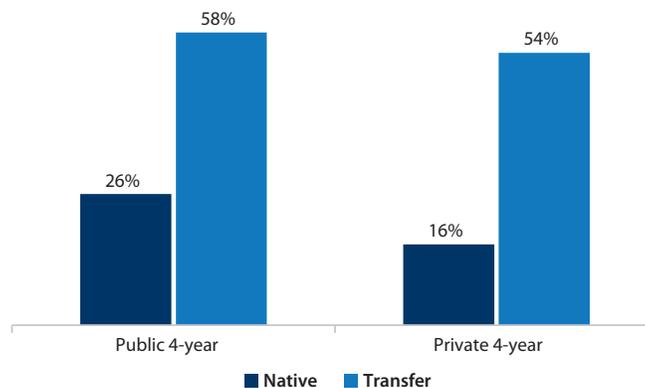
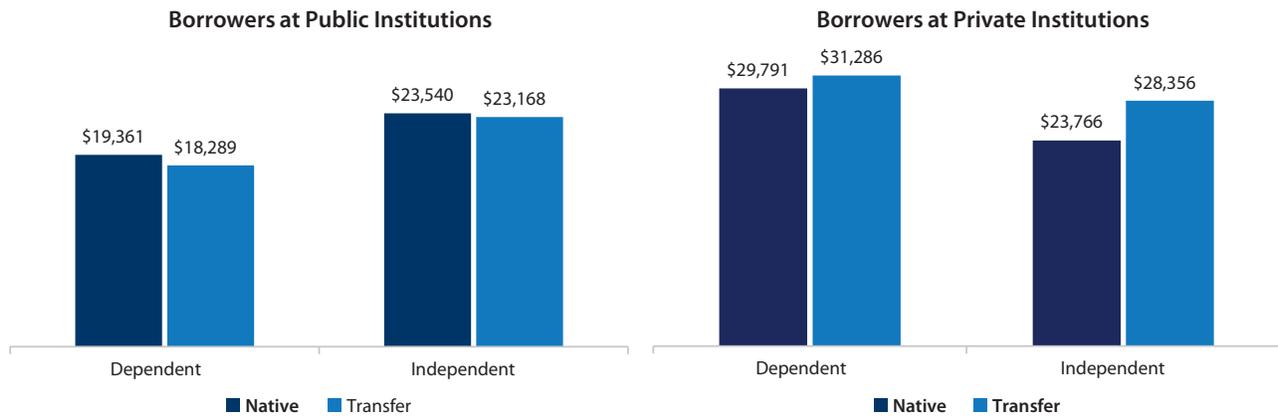


Figure 9. Average cumulative borrowing by dependent status at graduation, transfer/native status, and institution sector for AY 2007–2008 bachelor’s recipients who borrowed student loans (B&B:09)



These charts suggest the impact of the disproportionate number of independents in the transfer graduate population on the overall borrowing level disparity. The majority of transfer students in both sectors are independent, which is associated with higher borrowing levels. At public institutions, native students actually borrow somewhat more after controlling for dependence, which indicates that disparate rates of independence play some role in average borrowing. By contrast, transfer students at private institutions see little difference in borrowing between dependents and independents but borrow more than native graduates for each of the categories in question; the greater share of independents among transfer graduates exacerbates the borrowing gap but makes a relatively small contribution to it.

Utilizing the counterfactual method for each sector returns a public transfer borrowing average of \$19,741 (\$1,380 less than the \$21,121 actual) and a private transfer borrowing level of \$30,817 (\$856 more than the \$29,961 actual). This suggests that the increased rate of independence among transfer graduates at public institutions is at least partly responsible for the parity in student borrowing between transfer and native students at public institutions. At private institutions, on the other hand, dependent students actually tend to borrow more than independent students, perhaps because they are more likely than independent students to be traditional, full-time students at higher cost institutions.

Region of Residence

An analysis of geographic distribution showed that the concentrations of transfer students by region differ significantly from the regional concentrations of native students. At public institutions, transfer graduates have significantly greater representation in the Far West and Southwest. Among private institutions, transfers are significantly overrepresented in the Far West and underrepresented in the Mideast and New England.³ None of these differences was linked to patterns of borrowing between regions, where the only notable discrepancies were elevated transfer borrowing at Rocky Mountain public and New England private institutions and elevated native borrowing with low transfer borrowing in the Southwest. With the exception of the former, transfer graduates of private institutions had higher borrowing than native graduates of private institutions in every geographic region.

Residence

A student’s residential situation in his or her senior year is something of a corollary to the question of his or her dependence or independence. Like independence, living away from home — whether on or off campus — can place additional financial burden on a dependent student and/or the student’s family. Even at institutions that offer on-campus residences, many students live off campus, which is often more costly and may increase the need to borrow for cost of living expenses.

On the whole, transfer students differ somewhat from native students in their senior year housing arrangements. Besides transfer students’ increased tendency to be enrolled in more than one institution for their final years, the most notable observation here is the small percentage of transfer students living in on-campus housing. While the gap between transfer and native on-campus residents at public institutions is only 9 percentage points (8.9 percent vs. 17.9 percent), at private institutions, this gap is about 22 percentage points (22 percent vs. 44 percent).

Data showing median cumulative borrowing levels by residence type suggest that transfer students’ greater tendency to live off campus may be contributing to their elevated borrowing levels, particularly at private institutions. Transfers’ greater tendency to attend more than one institution in their final years also appears to be a contributing factor. The counterfactual model produces median borrowing amounts of

³ These regions are formally defined as follows: Far West (AK, CA, HI, NV, OR, WA); Southwest (AZ, NM, OK, TX); Mideast (DE, DC, MD, NJ, NY, PA); and New England (CT, ME, MA, NH, RI, VT).

\$20,963 for public institution transfer students (\$158 decrease) and \$30,176 for private institution transfer students (\$215 increase), which suggests that the effects of different housing patterns are fairly insignificant on the whole.

Family Type

In keeping with transfers’ increased tendency to be older, independent, and living off campus, we might expect more transfers to be married and/or have dependents, and the data bear this out. Single students with no dependents account for 87 percent of native students at public institutions and 90 percent of native students at private institutions, compared to 72 percent and 66 percent for transfer students, respectively. These differences appear to play some role in transfer borrowing at public institutions; the counterfactual average is \$20,818 (\$303 decrease) for public school transfers and \$30,629 (\$668 increase) for private school transfers. At public institutions, single transfer students with no dependents borrow less than any other group, such that increasing their weight to the level seen in the native student population lowers the average borrowing; however, at private institutions single transfer students with no dependents are the highest borrowers.

Counterfactual analysis of demographic variables suggests an important split based on the distinction between public and private sector institutions. For most variables hypothesized to bear a positive relationship with higher borrowing, the counterfactual calculation revealed a slightly lower average borrowing amount associated with the distribution of the variable for the transfer population for public institutions only. On the other hand, when the transfer population at private institutions was made to mirror the native student population, the average borrowing level tended to increase slightly. Transfer students in the underrepresented groups that were hypothesized to borrow less (e.g., because of higher income or having no dependents) actually borrowed more than either their native counterparts or other transfers. A tendency of students who possess these characteristics to enroll in higher-cost institutions may account for this pattern. It could also explain why the counterfactuals tend to produce slightly decreased averages for the public sector as opposed to the slight increases seen for the private sector; since there is less variability in selectivity and price in the public sector, the independent effects of demographic variables might result in the net decrease, where in the private sector better positioned students have more leeway to enroll in higher-cost institutions. It may still be the case that, all else equal, demographic differences between native and transfer students (which were often substantial) play some role in increased borrowing for both sectors but that these impacts are mitigated or overshadowed entirely by other covariates.

BEHAVIORAL/EDUCATIONAL VARIABLES

There are certain behaviors, including educational behaviors like test performance, that may influence students’ cumulative borrowing. Many of these behaviors relate directly to students’ interaction with the financial aid system. If transfer students engage in potentially important financial aid-related practices — like applying for scholarships or completing the Free Application for Federal Student Aid (FAFSA) — less frequently than native students, it would explain at least some amount of their high borrowing levels. Positive academic behaviors can also affect finances by increasing the likelihood that a student will receive a scholarship or maintain aid eligibility. Finally, some behaviors do not relate to financial aid at all but may nevertheless have a significant impact on a student’s general financial situation. These include employment and independent earnings, parental financial assistance, and a student’s overall living expenses.

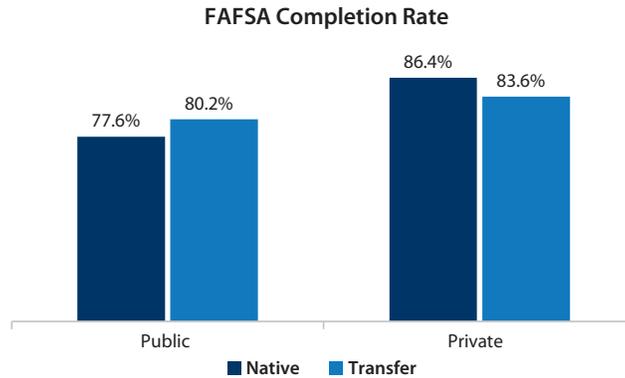
Federal Aid Participation

Whether or not a student completes the FAFSA has enormous bearing on the type and amount of financial aid that student will be eligible to receive. Students who do not complete the FAFSA may not participate in the Federal Pell Grant Program and federal lending, and may also experience difficulty if not outright rejection in attempting to secure aid from state governments and their own institutions, many of whom rely on the information collected via the FAFSA. Students who do not complete the FAFSA must either cover their expenses out of pocket (or out of their family’s pocket) or secure some other source of funding, like private borrowing.

Even after successfully completing the FAFSA, important aspects of participation in various federal aid programs may influence a student’s cumulative student borrowing. A key caveat applies to the interpretation of borrowing data based on whether a student participated in a certain financial aid program: students who apply for and/or receive aid of any kind tend to be financially worse off than those who do not. This income disparity causes participants to appear worse off (that is, to borrow more) than nonparticipants, despite the fact that any given participant who received grant funding would almost certainly have had to borrow more had he or she not completed the FAFSA.

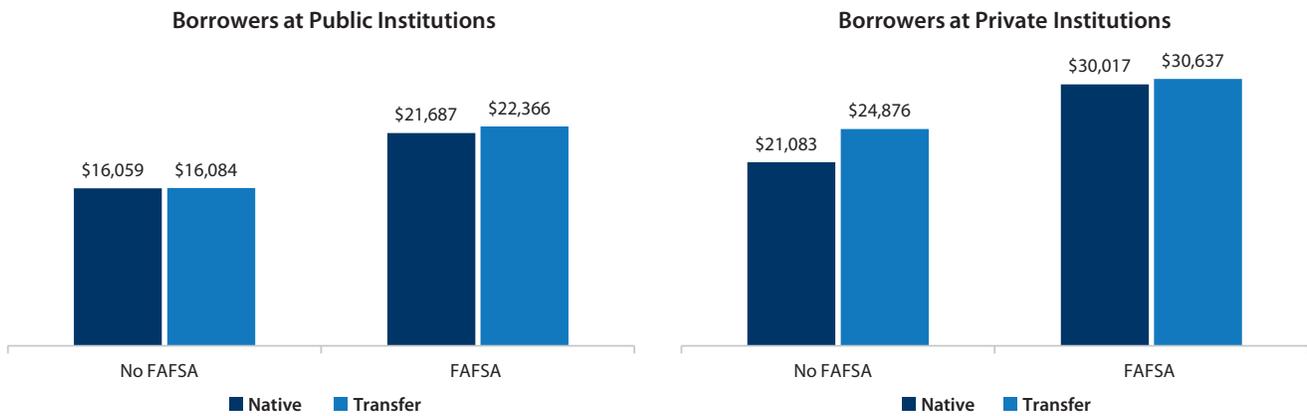


Figure 10. 2007 FAFSA completion rate by transfer/native status and institution sector for AY 2007–2008 bachelor’s recipients who borrowed student loans (B&B: 09)



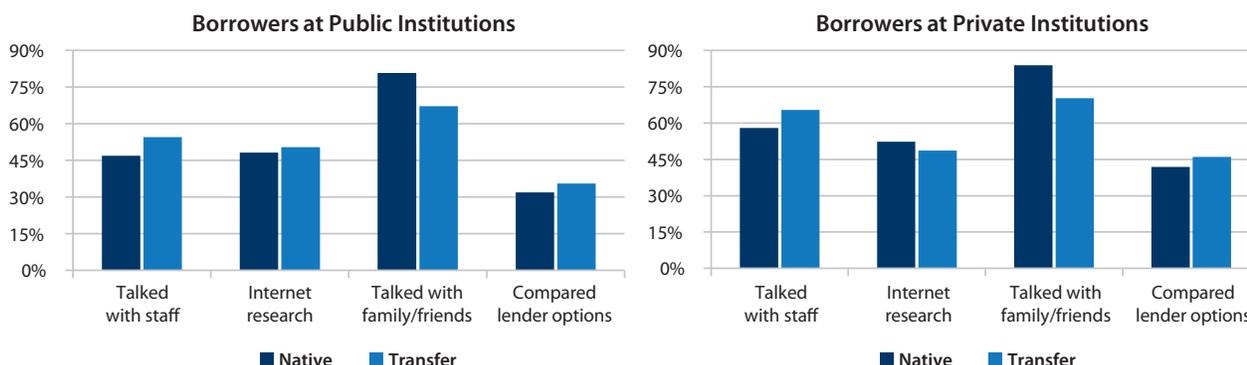
While transfer students tend to complete the FAFSA at roughly the same rate as native students, students who complete the FAFSA — whether transfer or native — tend to graduate with far higher cumulative borrowing levels than those who do not. This counterintuitive result is the product of self-selection. Though many students each year fail to complete the FAFSA despite having need for student aid, among the students surveyed (who are already in their final year of a bachelor’s degree program) those who do not complete the FAFSA are more likely to do so intentionally and, thus, are more financially secure on average.

Figure 11. Average cumulative borrowing by transfer/native status, institution sector and 2007 FAFSA completion for AY 2007–2008 bachelor’s recipients who borrowed student loans (B&B: 09)



Students interact with the financial aid system in many ways besides completing the FAFSA. Practically every institution of higher education has a financial aid office, generally staffed with student aid professionals and other resources designed to help students pay for college. All else equal, we might expect students who take advantage of these and other resources to borrow less; however, the situation likely mirrors that of FAFSA completion, where the population that engages in an otherwise beneficial activity self-selects for greater need. Nevertheless, given that the original report found wide disparities between transfer and native students in terms of financial aid, the frequency and type of interactions between transfer and native students and financial aid resources merit attention.

Figure 12. Financial aid interactions (percent “yes”) by transfer/native status and institution sector for AY 2007–2008 bachelor’s recipients who borrowed student loans and completed the 2007 FAFSA (B&B: 09)



Transfer students and native students appear to seek information on financial aid from key sources at roughly the same rates. The two largest gaps are in the rates with which they talk with financial aid staff, where transfer students lead by about 8 percentage points in both sectors, and the rates with which they talk to family or friends about financial aid, where native students lead by about 10 percentage points. As with FAFSA completion, the relationship of these behaviors to student borrowing seems to be dominated by the self-selection principle: those who talk with financial staff tend to already be worse off and so borrow more than those who do not. Ideally, this information could be broken down by other significant factors to create more equal comparison groups that would likely reveal a benefit to engagement with the financial aid system among students with similar circumstances; however, sampling deficiencies prevented a robust analysis of this sort.

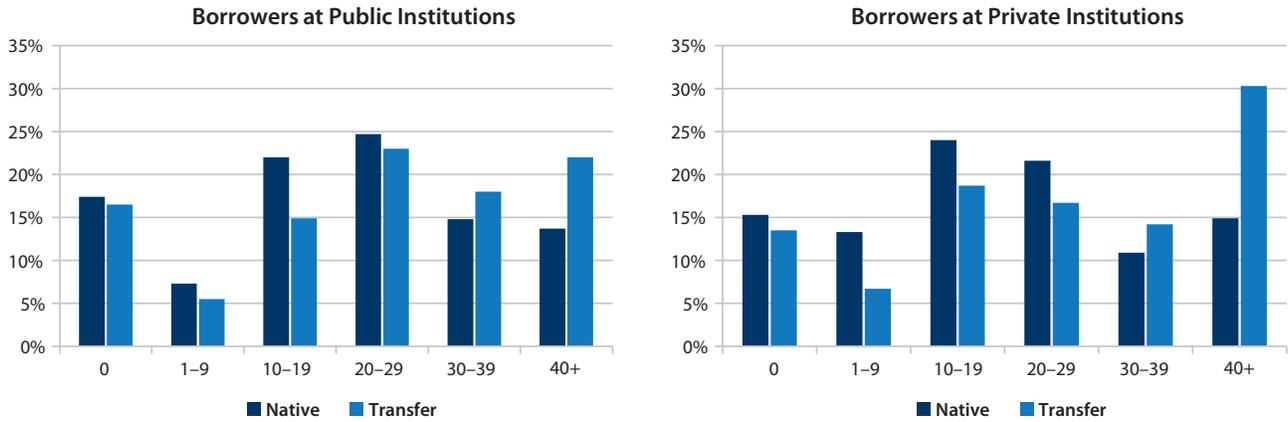
Though a full control for financial situation was not possible, these data do suggest that seeking help with financial aid from certain sources has more to do with students responding to their circumstances than creating them. Students who have talked with financial aid staff tend to come from less wealthy families; yet, at public institutions, students graduate with similar levels of borrowing regardless. Data for private institutions, on the other hand, show both higher borrowing and lower incomes among students who talk to financial aid staff.

In the case of having talked with one’s family or friends, the pattern is reversed. Students who engage in these conversations tend to be better off than others. At public institutions, this is also associated with lower borrowing; however, at private institutions, where students (often wealthier) can enroll in higher-cost institutions, borrowing remains similar, perhaps because the wealth effect is balanced by cost selection. Regardless, these data suggest no systematic link between higher transfer borrowing and a lack of awareness of or participation in the financial aid system. (Recall that these data represent students who successfully completed a bachelor’s degree only; they do not represent all transfer students or all community college students, many of whom might lack important financial information and resources.)

Employment and Earnings

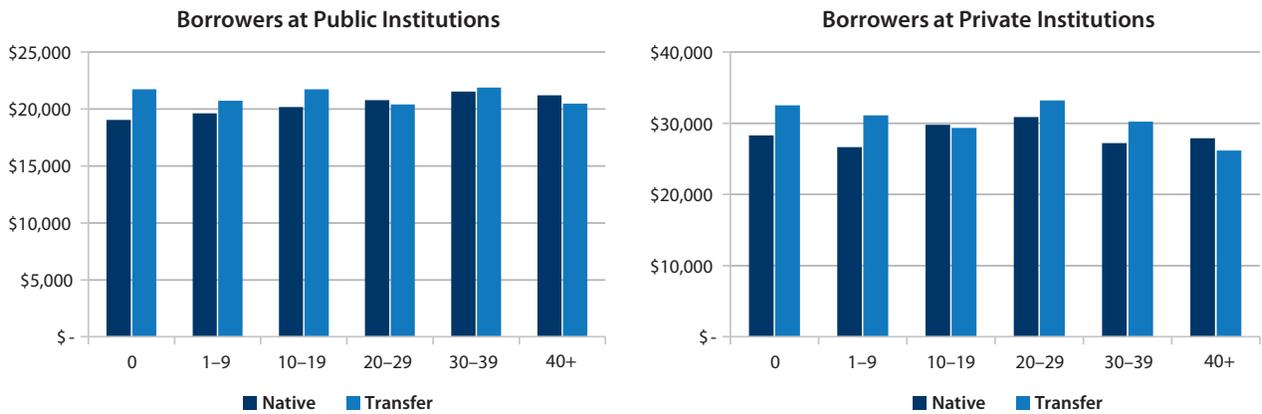
As a key contributor to an individual’s overall financial situation, employment and earnings stand to significantly affect student borrowing behaviors. All else equal, students who work more and earn more might be expected to pay a greater portion of their expenses out of pocket and thus borrow less, although it may be the case that students who work more hours tend do so in response to greater need, resulting in similar if not greater borrowing. In either event, transfer students — many of whom took the transfer route in response to financial circumstances or concerns, and more of whom are older and have dependents — often work and earn at far different rates than native students while enrolled.

Figure 13. Hours worked per week in AY 2007–2008 by transfer/native status and institutional sector for AY 2007–2008 bachelor’s recipients who borrowed student loans (B&B: 09)



The data show a clear tendency of transfer students to work more hours than native students. In particular, they are far more likely to work more or less full-time hours; at private institutions, nearly a third of transfer students reported working 40 or more hours every week, compared to only 15 percent of native students. Transfer students also tend to earn more money per year while enrolled. However, the data also show that the groups in question cover a very wide range of ages, which complicates meaningful direct comparisons. For instance, while the average age at graduation (in AY 2007-2008) of a transfer student who had attended a public institution full time was about 24.5, the average age at graduation of a transfer student who had attended a private institution part time was over 34. The average earnings while enrolled in 2007–2008 for the former group was about \$7,250; for the latter, it was over \$33,650. As might be expected given this wide range of ages and earnings, no clear correlations link more work while enrolled with cumulative borrowing.

Figure 14. Average cumulative borrowing by hours worked/week in AY 2007-2008, transfer/native status, and institution sector for AY 2007–2008 bachelor’s recipients who borrowed student loans (B&B: 09)



These data suggest that there is no clear relationship between work and borrowing. Among native students in both sectors, there is a slight trend towards more borrowing among those who work more, but borrowing patterns for transfer students seem to be far more random. Differences in work habits between transfer and native students actually result in less transfer borrowing, since transfer students are much more likely to work 40 hours or more per week and this group of full-time workers tends to borrow the least among transfer students.

Academic Achievement

Academic success can improve financial aid and decrease cumulative student borrowing through merit-based scholarships, maintenance of aid eligibility, and higher aid offers for recruitment purposes. Students who are academically successful also tend to graduate more quickly, which certainly reduces net cost and may reduce borrowing. Institutional selection likely complicates this relationship, since higher achieving students tend to seek enrollment in more expensive institutions, where increased aid may fail to cover the cost differential. Nevertheless, academic differences between transfer and native students could account for higher borrowing among transfers.

Data on grade point average (GPA) show that transfer and native students differ somewhat in their academic performance, particularly in high school. While native and transfer students' college GPAs are practically indistinguishable, native students at public institutions are about 12 percentage points more likely to place in the 3.5 to 4.0 interval for high school GPA; for private colleges this differential is over 16 percentage points. The gap in standardized test scores is far more notable.

Figure 15. SAT score/adjusted equivalent score by transfer/native status and institution sector for all AY 2007–2008 bachelor's recipients (B&B: 09)

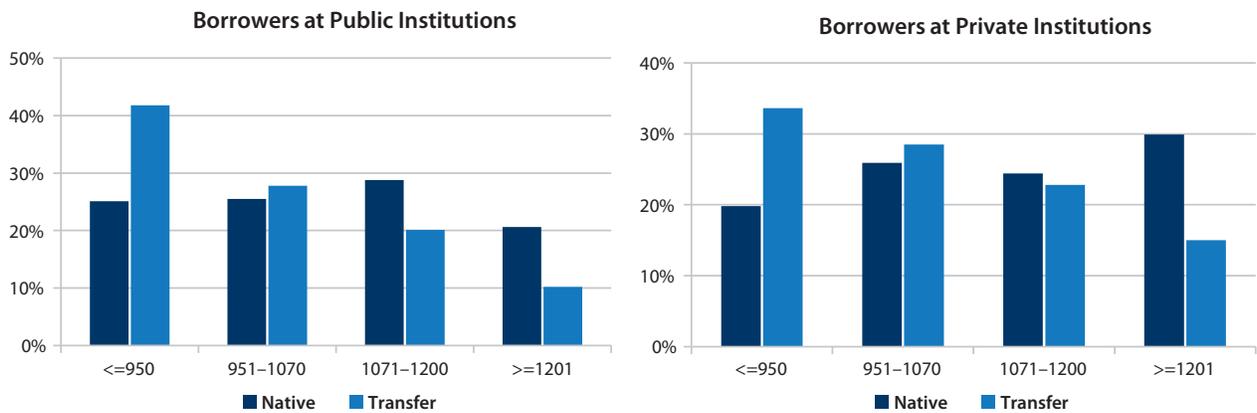
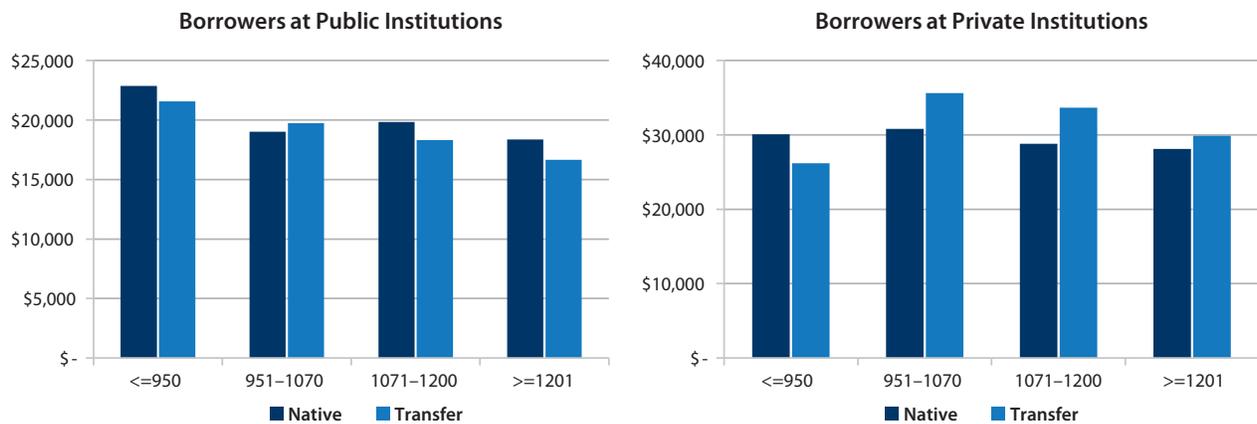


Figure 16. Average cumulative borrowing by SAT score/SAT adjusted equivalent score, transfer/native status, and institution sector for AY 2007–2008 bachelor's recipients who borrowed student loans (B&B: 09)



While higher SAT scores correlate strongly with cumulative borrowing for public sector students and for private sector natives, high school GPA has a somewhat odd relationship to borrowing, particularly for the private sector. Furthermore, while public sector transfer students tend to borrow slightly less than their native student counterparts with these academic controls in place, private sector transfers tend to have significantly higher borrowing, especially in middle achieving groups. As SAT score correlates more strongly with borrowing than GPA, it will be used as the overall proxy for academic performance.

The same counterfactual method used earlier can be employed here to provide an estimate of the effects of the disparate SAT score on overall borrowing levels. This method produces an estimated median borrowing level of \$18,974 (decrease of \$2,147) for public institutions and \$31,495 (increase of \$1,534) for private institutions. This result suggests that a significant amount of transfer students' high borrowing at public institutions is associated with their academic performance. At private institutions, on the other hand, the higher borrowing amounts associated with higher SAT scores, particularly for the middle range, suggest that the SAT scores of private sector transfer students have strong covariates that are associated with higher borrowing far in excess of any financial benefits.

Time to Completion

While it seems fairly straightforward to posit that students who finish their degrees in less time will incur less expense and therefore less borrowing, this is not necessarily the case. For instance, it may be the case that students who take longer to finish their degrees tend to work more and pay for a greater percentage of their education out of pocket, thus lowering their borrowing. Students who finish faster may also tend to be disproportionately enrolled at more prestigious and expensive institutions. The enormous differences in completion times between transfer and native students merit a closer examination of completion time's role in cumulative borrowing.

Figure 17. Distribution of months to degree completion by transfer/native status and institution sector for AY 2007–2008 bachelor's recipients who borrowed student loans (B&B: 09)

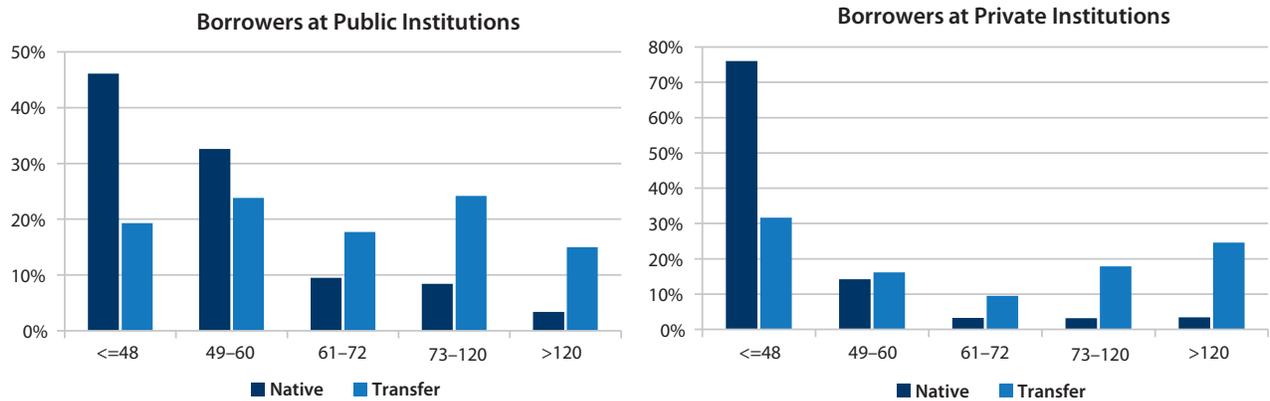
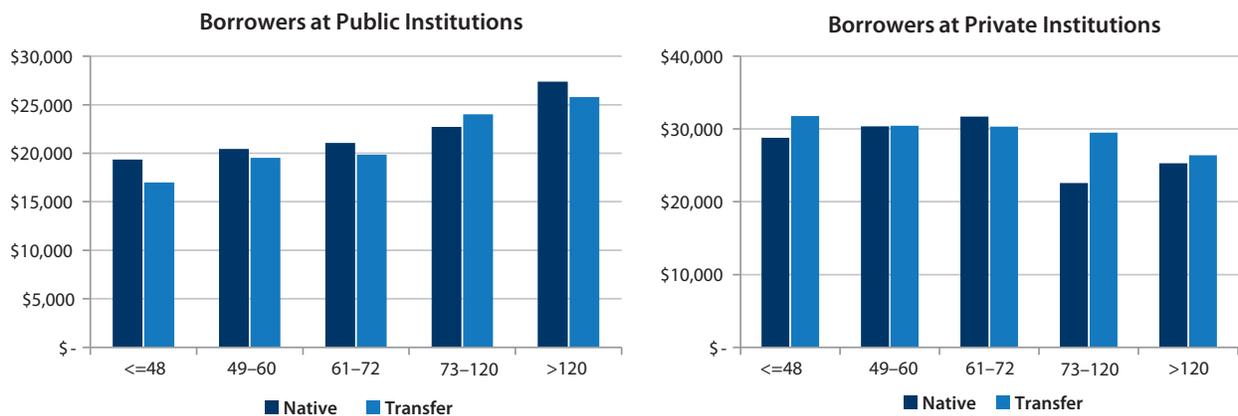


Figure 18. Median cumulative borrowing by months to degree completion, transfer/native status, and institution sector for AY 2007–2008 bachelor's recipients who borrowed student loans (B&B: 09)



These data clearly demonstrate that native students tend to graduate in far less time than transfer students. On the other hand, the relationship of completion time to cumulative borrowing is less straightforward — again, particularly at private institutions. While both natives and transfers at public sector institutions see a predictable upward trend linking longer times with higher borrowing, the data for private institutions show no clear patterns.

A counterfactual analysis of borrowing by completion time for transfer graduates of public institutions produces an estimate of \$18,978 (\$2,143 decrease), which is to be expected given the clear pattern in the data. In the case of private institutions, on the other hand, the counterfactual average is \$31,306 (\$1,615 increase), which reflects a negative correlation of average borrowing with completion time; i.e., transfers who finished in four years or less had the highest average borrowing (the chart above shows medians), and as time to degree increases, borrowing decreases.

These patterns point to important differences in the “narratives” behind transfer student borrowing at public and private sector institutions. For public institutions, the story has repeatedly been one of significant differences between transfer and native graduates with clear correlation of those differences and higher borrowing. Data suggest that key differences in demographics and academics between transfer and native students contribute significantly to the elevation of average transfer borrowing.

Figure 19. Results of counterfactual analysis for selected variables for AY 2007–2008 bachelor’s recipients who borrowed student loans (B&B: 09)

Variable	Public Counterfactual	Private Counterfactual
Income	(–)\$162	(–)\$598
Dependence	(–)\$1,380	\$857
SAT/ACT equivalent	(–)\$2,047	\$1,476
Time to degree	(–)\$2,142	\$1,346

By contrast, the same demographic and behavioral variables associated with lower borrowing at public institutions seem to have little effect at private institutions and are often associated with higher borrowing in the middle ranges. Only among the highest achievers do transfers and natives borrow in similar amounts; however, this high achievement group is the smallest among transfer students at private institutions, with the two middle groups accounting for the largest portion. These observations might suggest that mid-range institutions — that is, schools with a medium degree of selectivity in admissions and medium-to-high cost — make the largest contribution to the elevation of transfer borrowing in the private sector. This hypothesis will be examined further in the following section.

INSTITUTIONAL VARIABLES

Certain characteristics of postsecondary institutions and of the financial aid system may result in higher levels of borrowing for students who attend certain institutions or receive certain types or amounts of financial aid. The distinction between public and private institutions seems to be one such trait, although it does not account for transfer/native disparities where the sector is held constant, as it has been in the data above. However, transfer students may tend to enroll in institutions with other characteristics that contribute to higher borrowing among all graduates. Hypotheses of this sort can be grouped together as “differential enrollment” hypotheses.

Hypotheses based on institutional variables can also be classified under “differential treatment,” where the institutional support received by transfer students differs systematically from that received by native students within the same institution. The TG report on which this study is based suggested such a hypothesis with its figures on the different types of aid packages awarded to transfer students, though this and other differential treatment hypotheses may have an element of differential enrollment as well — i.e., transfer students may disproportionately enroll at institutions that treat them differently.

While a number of institutional factors may affect borrowing, most of the attention here is paid to institutional grants and the factors surrounding their amounts. This is in response both to the exceptionally large disparities in institutional grant aid between transfer and native students found in the original report and to the fact that, unlike the far majority of state and especially federal grant programs, institutional grants tend to rely on administrative discretion rather than need-related formulas.

Institutional Grants and Differential Enrollment

In keeping with the differential enrollment hypothesis, institutions that enroll larger numbers of transfer students as a percentage of total enrollment tend to look far different than those that enroll fewer. The data table below shows data for a number of key institutional metrics based on the percentage of the full-time student body composed of transfer students.

Figure 20. Institutional metrics by percentage of transfer enrollment among full-time students for U.S. bachelor’s-granting institutions (IPEDS, 2011)

Public Sector (61.9% of Transfers)						
% Transfer Enrollment	Mean % Pell	Mean % Federal Borrowers	Median Federal Loan	Median Institutional Grant	Median Endowment per Full Time Student	Median Average Price for Full Time Students
0% to 5%	36.3	47.1	6,581	1,677	9,032	12,103
5% to 10%	38.3	55.0	6,704	1,036	3,975	11,684
10% to 15%	40.3	51.0	6,861	925	2,932	10,776
15% to 20%	42.7	51.7	7,109	978	2,503	9,652
>20%	31.6	51.1	8,272	3,248	8,167	9,162

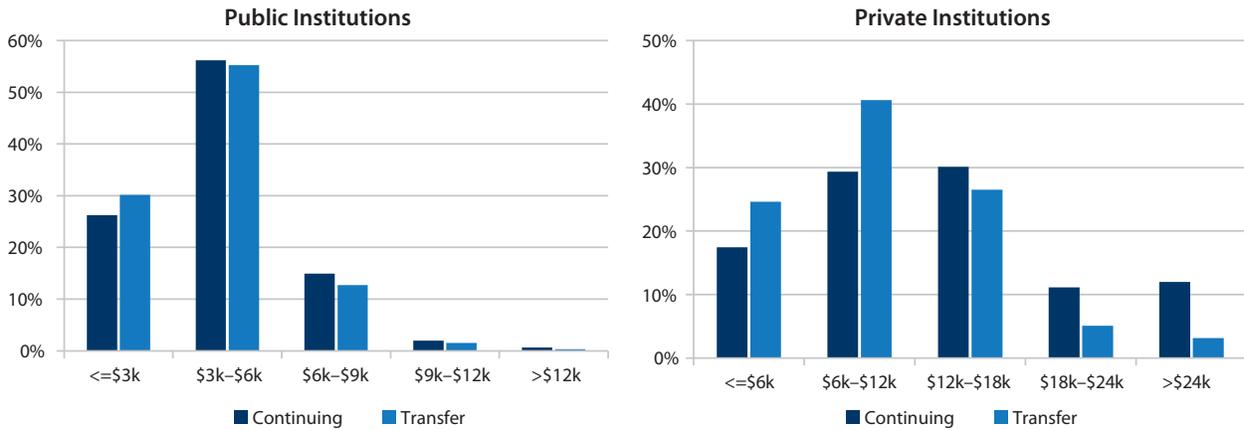
Private, Nonprofit (23.9% of Transfers)						
% Transfer Enrollment	Mean % Pell	Mean % Federal Borrowers	Median Federal Loan	Median Institutional Grant	Median Endowment per Full Time Student	Median Average Price for Full Time Students
0% to 5%	32.6	51.9	6,745	12,223	46,890	22,201
5% to 10%	42.4	63.8	7,302	6,834	13,807	18,983
10% to 15%	44.9	62.5	7,588	5,982	9,005	18,760
15% to 20%	48.1	68.7	8,015	4,213	7,581	17,601
>20%	45.9	55.4	8,019	2,112	6,055	16,187

These data show several fairly clear patterns linking higher enrollment of transfer students at an institution with traits that might contribute to higher borrowing among all students. Institutions that enroll more transfer students tend to have a higher percentage of Pell grant recipients, which indicates greater financial need in the student body. They also have more federal loan borrowers and a larger average federal loan amount, despite being significantly less expensive. Also notable is the clear pattern of lower median per capita endowments, which likely contributes to the inverse relationship of transfer enrollment with institutional grant amounts, particularly at private institutions. The small number of institutions serving more than 20 percent transfer students introduce the sole anomaly into this pattern.

Critically, the data also suggest several key differences between institutions with the smallest transfer populations and all others. For institutions with less than 5 percent transfer enrollment, the median endowment per student and median institutional grant per student are far higher compared to other institutions, even those in the 5 percent to 10 percent transfer enrollment category. Smaller institutional grants and greater student need, combined with only slightly lower average net prices, also correlate with larger median federal loans. These trends suggest a largely institutional explanation for higher borrowing among transfer students, though background factors of the transfer population may have an impact by shaping enrollment patterns and influencing grant awards within a given institution.

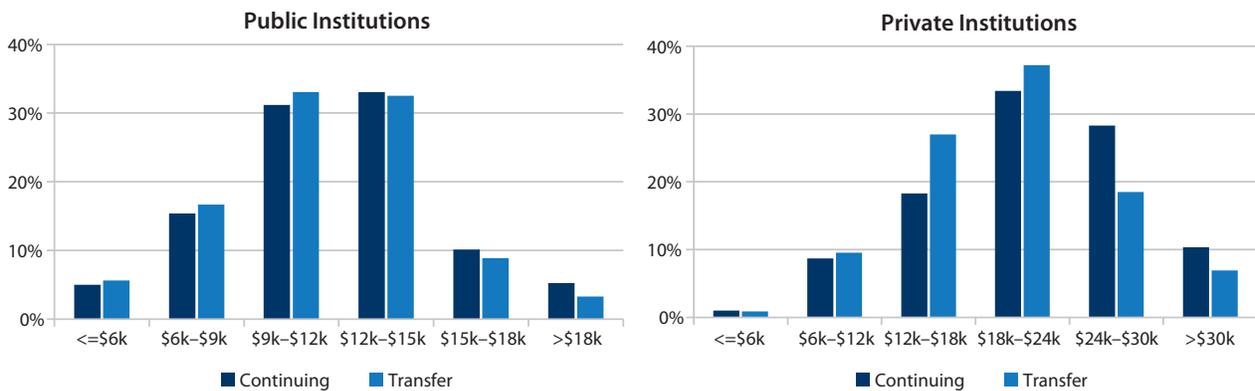
The data below show the percentages of the total transfer and continuing student populations (as defined by IPEDS — these are not identical to the “transfer” and “native” categories as defined for the analysis of B&B data) for each sector that are enrolled in institutions whose average institutional grant falls in the categories given on the x axis. It shows that, in addition to the institutions with more transfer students tending to award smaller institutional grants, most transfer students (especially in the private sector) enroll at institutions that award smaller institutional grants.

Figure 21. Distribution of transfer and continuing student enrollments by institution's average institutional grant to first-time, full-time undergraduates ($x > 0$) and institution sector for U.S. bachelor's-granting institutions (IPEDS, 2011)



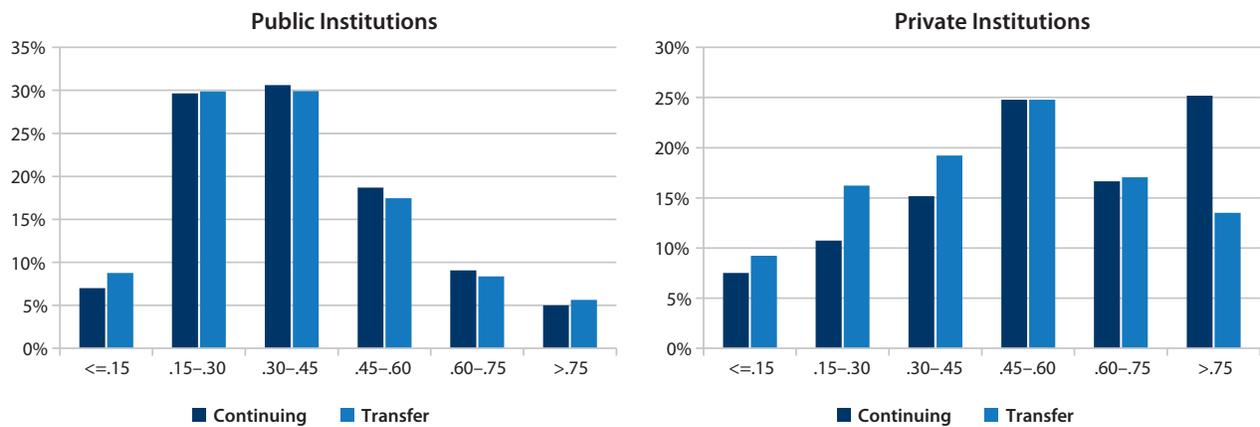
IPEDS data confirms that transfer students disproportionately enroll in institutions with smaller average institutional grant awards, particularly in the private sector. It is important to note that these categories are based on the average institutional grant among first-time, full-time undergraduates, such that it cannot be the case that a higher percentage of transfer enrollments pull the average grant down due to differential treatment. This data strongly suggest that transfer students have a significant tendency to enroll disproportionately at institutions that tend to award smaller institutional grants in general, regardless of native versus transfer status. On the other hand, institutional costs complicate this relationship, as institutional grants tend to correlate with the cost of attendance and transfer students have a strong tendency to enroll in significantly lower-cost institutions, especially in the private sector.

Figure 22. Distribution of transfer and continuing student enrollments by institution's average cost per first-time, full-time student receiving grant aid and institution sector for U.S. bachelor's-granting institutions (IPEDS, 2011)



These data clearly show that transfer students are more likely to enroll in and graduate from less expensive institutions. This enrollment pattern explains at least some portion of the disparity in institutional grants flagged in both the IPEDS data and the original report; however, it casts an even more disturbing light on high borrowing among transfer students. Given these disparities, assessing a meaningful tendency of transfer students to enroll at institutions that award lower institutional grants requires comparing enrollment distributions by an institution's ratio of average institutional grant to average cost.

Figure 23. Distribution of transfer and continuing student enrollments by ratio of average institutional grant to average cost (for first-time, full-time students receiving grant aid) and institution sector for U.S. bachelor’s-granting institutions (IPEDS, 2011)



IPEDS data show that transfer students tend to enroll at institutions that have lower ratios of institutional grants to cost, although the difference between continuing students and transfers in the private sector dwarves that of the public sector. About 30 percent of transfers in the private sector attend institutions where the average institutional grant for first-time, full-time undergraduates is at least 60 percent of the average cost, whereas these institutions account for about 42 percent of continuing students. Disparities in public sector enrollment patterns are negligible by comparison.

In the presence of complications introduced by varying patterns of cost and other background factors, regression modeling provides an efficient method of analyzing the relationship between transfer and institutional grants. These tables present the results of two regression models designed to narrow down this key association, not provide a comprehensive or predictive model of institutional grant size.

Figure 24. Linear regression analysis of institutional grants by transfer status and other factors for all AY 2007–2008 bachelor’s recipients (B&B: 09)

Private Sector	b	S.E.	t	p-value	Lower 95%	Upper 95%
Intercept	342.3942	1138.11	0.3008	0.7638	-1901.9661	2586.7545
Tuition/fees	0.2483	0.02	11.8211	0.0000	0.2069	0.2897
SAT I score	2.7233	0.92	2.9478	0.0036	0.9015	4.5452
Income	-0.0209	0	-9.1942	0.0000	-0.0254	-0.0164
Transfer	-1499.4940	405.45	-3.6983	0.0003	-2299.0417	-699.9464
Some/all part-time enrollment	-1556.2830	337.09	-4.6168	0.0000	-2221.0337	-891.5323
Measures of fit						
n = 3357 (coarsened) R ² = .2082 df = 200 t = 1.9720 WaldF = 69.8464						
Public Sector	b	S.E.	t	p-value	Lower 95%	Upper 95%
Intercept	-926.2066	379.2	-2.4425	0.0155	-1673.9968	-178.4165
Tuition/fees	0.1444	0.03	4.5405	0.0000	0.0817	0.2071
SAT I score	1.6189	0.33	4.9333	0.0000	0.9717	2.2660
Income	-0.0053	0	-5.3335	0.0000	-0.0072	-0.0033
Transfer	-179.8288	91.07	-1.9747	0.0497	-359.4123	-0.2454
Some/all part-time enrollment	-507.0701	108.37	-4.6790	0.0000	-720.7770	-293.3631
Measures of fit						
n = 5860 (coarsened) R ² = .0742 df = 200 t = 1.9720 WaldF = 16.2684						

These analyses show a significant association between having transferred from a community college and receiving a smaller institutional grant, even while controlling for costs and partially controlling for merit-related factors by including SAT score as an independent variable. This association (which, as expected, is sizeable in the private sector and very slight in the public sector) suggests that transfer students will tend to receive smaller institutional grants regardless of their tendency to enroll in less expensive institutions or to have less impressive academic credentials. On the other hand, it is unclear to what extent the association between transferring and lower institutional grants is simply a product of the correlation (particularly strong in the private sector) between being a transfer student and attending an institution with a lower average grant-to-cost ratio. In other words, while the regression data strongly imply an association between transfer and lower institutional grants, the distribution data on enrollments by grant-to-cost ratio suggest a differential enrollment effect, and though both of these analyses are compatible with a differential treatment hypothesis, neither of them supports it specifically.

A more sophisticated variation on the counterfactual method employed in earlier sections can fill this void to some extent by testing a hypothetical assumption of equal treatment. IPEDS data from 2011 provide the numbers of transfer students and continuing (beyond first year, non-transfer; not identical to “native,” but close) students at an institution, in addition to the institution’s average institutional grant for first-time, full-time undergraduates. Under conditions of *ceteris paribus* and equal treatment, transfer and continuing students at a given institution would both receive that institution’s average grant. At the very least, these conditions imply that the distributions of institutional grants for transfer and continuing students at a given institution would be identical, such that the average grant for first-time, full-time students is an equally accurate proxy for both groups. Therefore, one can calculate a counterfactual average grant for the entire transfer population by calculating a weighted average of the average institutional grants, where the weight variable is the number of transfers enrolled at each institution. Conversely, the counterfactual average grant for continuing students is the weighted average of average grants where enrollments of continuing students function as the weights.

As expected, the counterfactual averages for transfer and continuing students will not be equal, despite the assumptions of *ceteris paribus* and equal treatment. However, since the assumption of equal treatment was built into the calculation, the difference between them is entirely the result of the differential enrollment patterns reflected in the enrollment-based weights. The magnitude of this difference can then be compared to the magnitude of the difference between the average institutional grants for transfer and native students based on the amounts reported by both sets of students in the B&B survey, which, being the actual amounts, capture any differential treatment effect as well.

Figure 25. Average institutional grant for transfers as percentage of average institutional grant for continuing/native students, by sector (IPEDS, 2011; B&B: 09)

	IPEDS 2011 Counterfactual	B&B: 09 Avg.
Public	94.5%	62.9%
Private	75.5%	50.2%

While the difference in years and measurement methods prevents the exact quantification of the relative magnitude of the enrollment versus treatment effects, these data do suggest that both are at work. Since this comparison precluded any controls for background factors, significant covariates of both having transferred and lower institutional grants (e.g., SAT scores and part-time enrollment) do impact the B&B average and exacerbate the disparity somewhat. Still, the large differences between the counterfactual and sampling averages certainly imply that the differential enrollment effect — while substantial, particularly in the private sector — does not fully account for the disparity between transfer and native students.

Although background covariates could not be controlled, other trends suggest that their effect on this analysis differs by sector. Previous data for the private sector implied that transfer students with certain adverse factors for higher borrowing and lower institutional grants tended to enroll in similar, lower-cost institutions, such that the counterfactual’s institution-level analysis would capture much of the effect of those factors. This is further corroborated by the far larger proportional size of the empirical average relative to the counterfactual average in the public sector as compared to the private sector. Demographic and behavioral data for public institutions suggested that background variables had a strong independent association with higher borrowing that was largely unmitigated by differential enrollment patterns, so the empirical average would capture most of their effect. On the whole, the data imply that differential treatment is a factor in the allocation of institutional grants in both sectors; the only question is the degree to which this is premised on transfer students being transfer students as opposed to having other characteristics that transfer students disproportionately tend to have.

At this point then, the data suggest that demographic and behavioral/academic factors largely drive high borrowing for public sector transfer students and that the slight enrollment differences between transfers and natives — slightly lower cost, slightly lower grant-to-cost ratio — have relatively little effect. In the private sector, however, it appears that transfers’ tendency to enroll in significantly lower-cost institutions balances or disguises much of the effect these same substantial demographic and academic differences might have on borrowing. Lower institutional costs, paired with lower average institutional grant-to-cost ratios, help explain why transfer students were found to be receiving far lower institutional grants than native students on average, but data also support a differential treatment theory.

Bringing It All Together — Regressing Borrowing on Key Factors

The more detailed understanding of the interplay of demographic, behavioral, and institutional variables on borrowing and institutional grant trends developed above can now be used to better interpret regression models that incorporate and control for key background factors to provide a more high level, comprehensive look at the relationship between community college transfer and higher borrowing.

Figure 26. Linear regression analysis of cumulative borrowing on key factors — all students (B&B: 09)

	b	S.E.	t	p-value	Lower 95%	Upper 95%
Intercept	21430.81	2303	9.305	0.000	16889.16	25972.46
CC Transfer	-1437.48	726.6	-1.979	0.049	-2870.27	-4.69
Income	-0.03	0.01	-4.082	0.000	-0.05	-0.02
SAT	-4.94	1.93	-2.560	0.011	-8.74	-1.13
Time to degree	67.67	18.78	3.604	0.000	30.64	104.70
Private sector	5053.58	1636	3.089	0.002	1827.46	8279.70
Tuition/fees	0.62	0.09	6.603	0.000	0.43	0.80
Grants	-0.37	0.08	-4.410	0.000	-0.54	-0.21
Measures of fit						
n = 4939 (coarsened) R ² = .1029 df = 200 t = 1.9720 WaldF = 23.0938						

This model shows over \$1,000 less borrowing associated with having transferred from a community college; however, the association is fairly weak, as it fails to pass even the 90 percent confidence threshold. Overall, there is simply too much variation across the entire student population to pin down a strong effect size. On the other hand, the fact that the coefficient is well into the negatives does suggest that, with a great deal held equal, starting at a community college can decrease the need to borrow.

Throughout the analysis, the distinction between the public and private sectors has proved productive. The same holds in this case, as regression models for each individual sector demonstrate.

Figure 27. Linear regression analysis of cumulative borrowing on key factors — public sector (B&B: 09)

	b	S.E.	t	p-value	Lower 95%	Upper 95%
Intercept	13432.64	3078.56	4.363	0.000	7361.71	19503.57
CC Transfer	-2624.26	778.83	-3.370	0.001	-4160.12	-1088.40
Income	-0.04	0.01	-4.758	0.000	-0.06	-0.02
SAT	-8.42	2.11	-3.984	0.000	-12.59	-4.25
Time to degree	160.58	23.72	6.770	0.000	113.81	207.36
Tuition/fees	0.92	0.13	6.821	0.000	0.65	1.18
Grants	-0.38	0.08	-4.930	0.000	-0.53	-0.23
Measures of fit						
n = 3800 (coarsened) R ² = .1200 df = 200 t = 1.9720 WaldF = 28.9264						

While this model accounts for even less of the overall variation in borrowing than the previous, it does produce a far stronger and larger association between community college transfer and reduced borrowing. With only the public sector under consideration, the reduced borrowing associated with transfer is nearly 70 percent larger than it was for students as a whole, despite a lower intercept for borrowing.

Figure 28. Linear regression analysis of cumulative borrowing on key factors — private sector (B&B:09)

	b	S.E.	t	p-value	Lower 95%	Upper 95%
Intercept	13432.64	3078.56	4.363	0.000	7361.71	19503.57
CC Transfer	-2624.26	778.83	-3.370	0.001	-4160.12	-1088.40
Income	-0.04	0.01	-4.758	0.000	-0.06	-0.02
SAT	-8.42	2.11	-3.984	0.000	-12.59	-4.25
Time to degree	160.58	23.72	6.770	0.000	113.81	207.36
Tuition/fees	0.92	0.13	6.821	0.000	0.65	1.18
Grants	-0.38	0.08	-4.930	0.000	-0.53	-0.23
Measures of fit						
n = 3800 (coarsened) R ² = .1200 df = 200 t = 1.9720 WaldF = 28.9264						

Parsing out only private sector students severely limits the sample and destabilizes several of the estimates; there simply are not enough transfer students in the private sector for such a detailed statistical analysis. The p-value for CC Transfer is so high as to render the actual coefficient essentially meaningless as an exact figure. Still, it can be said that, especially compared to the large negative coefficient seen in the case of transfer to the public sector, these data suggest that transferring to the private sector may often be associated with higher borrowing.

One additional regression model lends further credence to the important distinction between the public and private sectors where transfer students are concerned. The chart below compares the coefficients (with some accompanying statistics) from a model based on all students to the coefficients for a model testing the same variables for transfer students only.

Figure 29. Comparison of linear regression analyses of cumulative borrowing for transfers and all students (B&B: 09)

	Transfer only				All students			
	p-value	t	S.E.	b	b	S.E.	t	p-value
Intercept	0.000	4.544	4138.4	18805.24	22354.51	2083.5	10.730	0.000
Income	0.000	-5.035	0.01	-0.06	-0.03	0.01	-4.723	0.000
SAT	0.924	-0.096	3.57	-0.34	-6.15	1.78	-3.461	0.001
Time to degree	0.192	1.310	31.46	41.20	74.27	15.91	4.668	0.000
Private sector	0.037	2.099	2801.2	5880.21	4772.45	1036.8	4.603	0.000
Tuition/fees	0.000	4.262	0.18	0.75	0.54	0.06	8.909	0.000
Grants	0.000	-4.086	0.17	-0.71	-0.35	0.07	-4.934	0.000

A number of interesting and coherent observations can be made from this comparison. In the first place, the intercept for borrowing is significantly lower in the transfer model, supporting the theory that, all else equal, transfer can be associated with lower borrowing. As indicated by the high p-value and low coefficient, SAT scores have basically no effect on transfer student borrowing despite their fairly large and powerful association with borrowing among all students. Since academic measurements often impact aid through institutional grants, the irrelevance of SAT scores to transfer borrowing might suggest the irrelevance of institutional grant dollars to transfer financial aid;

in other words, the negative impact of lower SAT scores on borrowing is limited because a small institutional grant (or, often, none at all) simply does not have room to drop significantly in response to the lower scores, particularly when the lowest scorers are already least likely to have any institutional grant aid.

The three bottom variables are perhaps the most telling on the list. With both tuition cost and overall grants held constant, graduating from a private sector institution is associated with over \$1,000 more in increased borrowing for transfer students than it is for native students. A portion of this effect derives from transfer students' tendency to enroll at private institutions with lower average grant-to-cost ratios, but differential enrollment does not fully account for the disparity, particularly since both grants and costs are controlled in the model. Additionally, transfer students' borrowing appears to be far more sensitive to both tuition/fees and total grants in the last year of enrollment. While tuition cost is associated with an additional 75 cents borrowed per dollar, an additional dollar of grant funding is associated with 71 cents less borrowing. Compared to native students, higher prices at the bachelor's-granting institution tend to increase borrowing by a larger amount, but higher grants tend to decrease borrowing by a larger amount, implying that grant funding might be more effective at containing borrowing when allocated to transfer students.

CONCLUSIONS AND IMPLICATIONS

As with all studies based on data and statistics, there is an unavoidable measure of ambiguity and uncertainty in attempting to draw firm conclusions from the analysis. That said, these data do offer a number of strong suggestions that create a coherent explanation of borrowing and grant patterns among community college transfer students. As hypothesized, the transfer population differs from the native student population in numerous ways, several of which impact the borrowing and grants of the population as a whole. In the public sector, certain demographic and behavioral differences correlate directly with borrowing, due to the fact that most students in the public sector enroll at largely similar institutions. In the private sector, however, students with risk factors for higher borrowing, like lower incomes or longer completion times, tend to enroll in substantially less expensive institutions, which obscures the impact of the risk factor on borrowing. Perhaps due to their lower test scores or other adverse characteristics, transfer students disproportionately enroll at four-year institutions that offer lower grant awards relative to their costs, but the data also suggest that individual institutions, particularly in the private sector, tend to allocate smaller institutional grants to transfer students than to native students, with at least some portion of the disparity likely based on transfer status itself.

With regard to borrowing, the regression analyses (and the descriptive analysis, though with less confidence) suggest that, all else equal, community college transfer students would tend to borrow less relative to native students. However, this effect does not appear nearly as large as the high discounts of community college tuition might suggest; the largest reduction in borrowing associated with having transferred was only about \$1,700, and that was in the regression model for public sector graduates only. Given the well-documented hazards to completion associated with community college as a route to a bachelor's degree, a benefit of this size might not merit the risk (Doyle, 2009; Bailey et al, 2008; Reynolds, 2012).

This line of argument has important implications for the discussion surrounding "undermatching," which describes the case in which undergraduates enroll in an institution that is less selective (and presumably less challenging or of a lesser quality) than those for which their academic credentials would seem to qualify them. It is particularly concerning for students who could gain admission to a four-year institution yet enroll at a community college, which harms a student's odds of graduating far more than enrolling at a four-year school that is less selective than those for which the student is likely qualified (Bastedo & Flaster, 2014). The traditional argument against this practice contends that these students risk their eventual success, but, if successful, may realize financial savings as a result; these data suggest that the financial savings themselves may be inconsequential in the long run, thereby adding an argument against undermatched enrollment. For students who transfer from community colleges to private four-year schools, there may even be financial costs, in addition to the various losses and risks associated with forgoing the various resources and benefits of first-time, full-time enrollment at a four-year institution.

Although this argument should caution students who are considering enrolling at a community college for the sake of savings (as well as the parents and counselors who would advise them to do so), it should by no means dissuade students from community college enrollment across the board. Recent research on the effects of community college on student outcomes has done well to stress, both theoretically and methodologically, that the impact of community college on a student must be assessed relative to the student's likely "path" had the student not enrolled at the community college (Brand, Pfeffer, & Goldrick-Rab, 2012). Students who otherwise would have likely attended a four-year institution after high school tend to be harmed by enrolling at a community college; however, this may apply to relatively few community college students. In terms of academics and background traits, many community college students more closely

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resemble students who never enrolled in any postsecondary education than students who enrolled in four-year institutions, and relative to the nonenrolled comparison group, community college students have better odds of earning a postsecondary credential, slim though those odds still are. This dynamic may vary considerably, as the characteristics of high school students who enroll in community colleges can differ widely between regions and school districts.

For current aspiring transfer students or high schoolers for whom initial enrollment in a four-year program is not a good match or viable option, the new implications of this study relate mainly to institutional selection. Many community college students who intend to transfer and attain a bachelor’s degree apply only to one, usually fairly local and often public, institution. Data on the large impacts of sector, tuition cost, and grant size on borrowing suggest that transfer students would reap large benefits by broadening their search to seek out institutions that can offer them more support. In the application process, aspiring transfer students should apply to multiple schools that they have selected based on key data like average cost of attendance (not sticker price), graduation rates, average student indebtedness, loan default rates, and labor market outcomes. They should also obtain information regarding the transferability of their prior credits and incorporate that consideration in their enrollment decision. In addition, choosing a public institution as a transfer destination not only tends to produce better financial outcomes, but may also increase the odds of degree completion for transfer students (National Student Clearinghouse, 2013). Research has also found that students make worse enrollment decisions when they limit themselves geographically and lack information about schools or the process in general, suggesting that students should think outside their communities and research prospective institutions before choosing a school (Dillon & Smith, 2013). Following these last two suggestions may also help qualified students avoid undermatching.

For high school students, this research applies mainly to the initial postsecondary enrollment decision, but it should also encourage all high schoolers to make a serious effort to be successful on the SAT and/or ACT, regardless of where they plan to enroll. Nearly one in four community college students in AY 2011–2012 had never taken the SAT or ACT, compared to less than 6 percent of students at four-year institutions (U.S. Department of Education [NPSAS], 2012). While this number is likely lower for students who know in high school that they intend to transfer, it still raises a serious issue in light of the importance of standardized test scores in securing institutional aid. Even high schoolers who intend to transfer and do take the SAT or ACT might devote less time and effort to preparing and/or retaking the exams for higher scores, which can have eventual implications on both their grant awards and their ability to transfer to a school with the resources to offer more support.

Finally, students should also be advised to stay enrolled full time to the greatest extent possible. Besides simply earning a credential and entering the full workforce (with enhanced earning power) more quickly, students who finish faster are more likely to maintain eligibility for financial aid. Many aid programs—including the federal Pell grant and Direct Loan programs—are available only to students enrolled at least half-time and/or come with cumulative time limitations. For instance, a student who takes three years to complete an associate degree and accepts the scheduled, full-time Pell grant award all three years has already used half of his or her lifetime Pell eligibility, even if he or she then enrolls in a bachelor’s program. Full-time enrollment is also a key element of general integration in campus life, which research shows is critical in promoting academic success and preventing drop-out.

Counselors at both the high school and community college levels can play a crucial role in helping students to take advantage of this information and follow-through on its implications. Students may need encouragement to consider the possibility of enrolling directly in a four-year institution and may also benefit from guidance as they research a range of prospective schools. Identifying good four-year institutions can be a challenge for both high schoolers and aspiring transfer students, and our research suggests that transfer students in particular tend to enroll at institutions that are unable to provide high levels of support to their students. In support of this goal, counselors could assist students at finding and interpreting institutional data. Research has shown that alarmingly few students understand the basic concepts behind student loans, including the differences between loan programs and the option not to borrow. Counseling could certainly help to fill this information gap. Other issues that frequently confront transfer students, including long completion times and difficulties transferring credits, might also be amenable to counseling, if only through counselors stressing the importance of those considerations, recommending strategies that enable full-time enrollment, and encouraging students to reach out to their prospective institutions to get solid information on credit transfer before matriculating.

The study also has important implications for higher education policy and policymakers in both government and educational institutions. Particularly at the state level, policymakers concerned about rising college costs and student debt have turned to the “2+2” plan or some variation of a more formalized transfer strategy as a less expensive route to a bachelor’s degree. Policies designed to encourage this path generally focus on smoothing the transfer process through such mechanisms as articulation agreements, which establish clear protocols

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for credit transfers between institutions. Our research suggests that, insofar as this sort of initiative can reduce the need to repeat credits and lower completion times, it may be an effective approach to containing borrowing among transfer students. Further efforts in this vein might include capping credit requirements for associate degrees (which now often take more than four semesters to complete even with full-time enrollment and successful completion of all requirements) and implementing competency-based learning systems that award credit based on standardized subject tests. Assessment-based systems could greatly reduce uncertainty in the credit transfer process, as institutions would not have to perform ad hoc assessments of each other’s instructional rigor. They have the added benefit of awarding credit for the prior learning and skills students already possess, which is especially significant for transfers and other “nontraditional” students, who tend to have more workforce experience or prior coursework for which they might otherwise have trouble receiving recognition.

Policies or agreements related to transfer students’ financial aid at their post-transfer institutions should complement policies aimed at the transfer process itself. Aid eligibility restrictions based on enrollment intensity and elapsed time may encourage some students to finish more quickly, but they also increase the burden on students who, for various reasons that are often beyond control, are truly unable to remain enrolled full time and/or finish their degrees within the specified time period. Even when grant aid covers a large portion of tuition expenses, many students are compelled to work long hours and/or take out student loans in order to pay for basic living expenses like food and housing. These expenses constitute a large portion of many student budgets, establishing a large baseline cost that leaves little room for students to work fewer hours. This is especially applicable to transfers, where lower tuitions and even lower grants constitute less of the student budget and, therefore, have a smaller impact on their economic calculus.

In addition, some grant aid programs, utilizing the federal definition of full-time enrollment, consider the cost of only 12 credits in determining need and aid, despite the fact that on-time graduation at 12 credits a semester is generally not possible without receiving additional credits from some other source besides regular coursework. Both the students who must enroll part time due to inadequate support and those who take on the necessary courseload for on-time completion are, in effect, penalized by current grant aid policies and experience a greater need to borrow as a result. The inflexibility of these policies has a disproportionate impact on transfer students, who are less likely to be able to sustain full-time enrollment and less likely to have the resources to compensate for the resulting loss of grant aid without borrowing. Acknowledging that many students face tight budgets and that this can be a substantial barrier to completion, some institutions have begun offering students assistance in applying for public benefits (Goldrick-Rab, Broton, & Gates, 2013). Others have invested in programs that provide a suite of resources and support services to students who maintain a more rigid, full-time course structure, which has increased completion rates, though at a cost (Mangan, 2014).

Policymakers could also work toward better outcomes for transfer students by improving tracking and oversight capacity. Since transfer students who borrow are included in the Department of Education’s cohort default rate calculation (a primary tool of oversight and accountability at the federal level), current policies provide institutions with some encouragement to work toward better financial outcomes for transfer students who borrow. On the other hand, transfer students generally make up a relatively small segment of a student cohort, and they are conspicuously absent from federal graduation rate calculations. Research has shown that transfer students, particularly those who earn a credential prior to transferring, tend to earn their bachelor’s degrees at higher rates than the national average for native students; however, research also suggests that institutional grants can substantially increase the odds of retention and completion, which may help explain why transfer students at private institutions complete their programs less often than those at public schools (Dillon & Smith, 2013; Gansemer-Topf & Schuh, 2005). Adding the data collection and tracking capacities to either include transfer students in the official graduation rate or calculate separate graduation rates for transfer students would provide incentives for institutions to improve transfer aid and outcomes as well as helping prospective transfers select the best institutions for their needs.

In terms of both percentages and absolute numbers, more students are enrolling at community colleges than ever before. If increases in college costs continue to outpace stagnant average income growth, this trend is likely to accelerate as more students are compelled or convinced to seek less expensive options for their education. Furthermore, for many aspiring students who leave our nation’s public high schools ill-equipped to perform college-level work, a community college is the only viable option for pursuing a bachelor’s degree, which in recent years has become the ticket to security and mobility to an extent never before seen. Due to background and institutional factors, students who opt for this more hazardous route tend to face long odds from the outset. Further study and well designed policy can promote success by assuring that those with the tenacity to transition to a bachelor’s-granting institution do not face penalties and obstacles in addition to those already in their paths.

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Appendix

Note on Terminology

The label “transfer student” applies here only to students who reported a public two-year college (community college) as their first postsecondary institution. The label “native student” applies to students who reported having attended only one postsecondary institution prior to earning their bachelor’s degrees. The issue here comes down to whether and to what extent these reported statuses might be influenced by relatively minor amounts of coursework completed at a community college or other nonprimary institution. For instance, some students may take courses at a community college the summer after high school but then enroll at a four-year school where they study full time until graduation, never taking another course elsewhere again. Would those students respond that their first postsecondary institution was a community college, or that they only attended one institution prior to graduation? Some might even respond in the negative to both, interpreting “my first institution” to imply the larger commitment of full-time enrollment — such that their “first institution” was not the community college — but “institutions attended” in the stricter, technical sense, such that they would not say they attended only one institution prior to graduation. Conversely, they might answer both in the affirmative, having interpreted the questions in the opposite way.

This uncertainty introduces an unfortunate ambiguity into the interpretation of the data; however, it is actually a fairly superficial flaw. It is practically certain that students who never so much as attended a single community college course would not call a community college their first postsecondary institution, which lends a known lower bound to the category. An associate degree, the highest level of attainment for a bachelor’s track student at almost all community colleges, lends its upper bound. Since these bounds can be known with some confidence, the transfer student category must be considered as a spectrum ranging from those who took a single course prior to enrolling in a bachelor’s program to those who attained an associate degree before transferring.

As for the native student category, students who identify as having ever attended only one institution despite taking courses at a community college will tend to be those with fewer credit hours from that source. The overlap therefore will occur primarily among those students with the most marginal involvement with community colleges, and probably those who, in the eyes of the administrators of their respective bachelor’s granting institutions, are “native students”, with all the theoretical benefits that entails. Furthermore, the ambiguity introduces a conservative bias; because the hypothesis is based on a significant difference between two groups, any overlap between their members will cause the groups to appear more similar and the apparent size of the disparity to shrink. The bias is also conservative insofar as the native student category could be excluding students who started at a four-year institution and appear as natives to administrators but reduced their borrowing by taking summer courses at a community college, resulting in a slightly inflated average borrowing estimate for the native students as a group.

“Public” refers to public institutions that offer four-year bachelor’s degrees, and “private” refers to private, nonprofit institutions that offer four-year bachelor’s degrees. Whether the institution offers graduate programs is not considered, and proprietary (or “for-profit”) institutions are not included in the analysis.

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