The Labor Market Returns to College Grades*

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Abstract

How strong is the association between college grades and early-career labor market outcomes? We link course-level grades for graduates of Texas public universities to earnings data and estimate a set of descriptive relationships. Higher GPAs are strongly associated with higher first-year earnings, with a rich set of observable characteristics having little effect on this gradient. The relationship is strongest for men and engineering graduates.

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1 Introduction

Do grades in college matter? Nearly half of employers said they planned to use GPA as a screening tool when hiring college graduates from the class of 2025 (Gatta et al., 2024). Despite this, the literature on the labor market returns to college grades is surprisingly thin. We provide new, large-scale descriptive evidence on the labor market returns to college grades for U.S. undergraduate students by using administrative records from the Texas Education Research Center (ERC). Course-level grade data from the Texas Higher Education Coordinating Board (THECB) from years 2012-2022 allow us to construct a cumulative GPA measure at college graduation for students enrolled at public, 4-year institutions for which we have complete course-taking histories. We then link these student-level records to quarterly earnings data from the Texas Workforce Commission (TWC) unemployment insurance records, which serve as our primary outcome data.

We observe full course-taking histories and construct GPA measures for 534,452 students who entered (or transferred into) Texas public universities in fall 2012 or later and graduated before fall 2022. We estimate a series of regressions of labor market outcomes on a set of indicators for GPA bins, adding an increasingly rich set of controls. These estimates are descriptive rather than causal. We cannot rule out that our pattern of results is driven at least in part by unobservable heterogeneity that is correlated with GPA and independently affects labor market outcomes. We use the term "returns" throughout the paper for brevity; it should be read as shorthand for conditional differences in outcomes across the GPA distribution, not as a causal effect. Nevertheless, we document a number of facts about the relationship between college grades and early-career earnings.

First, and unsurprisingly, there is a strong relationship between labor market earnings and college GPA, with those whose GPAs are 3.9 and above having average unconditional earnings of over $4,000 more than those with GPAs of 2.9 to 2.99. However, very little of this relationship is explained by the extensive set of controls that we include, such as race, sex, field of study, SAT/ACT test scores, high school fixed effects, whether the student was in the top 10% of their high school class, and financial aid information, which proxies for family income. This is at least suggestive that these grades do have a direct impact on early-career

outcomes, even if we cannot distinguish between human capital and signaling mechanisms.

Second, that relationship persists for at least several years after graduation, suggesting that these grades convey at least some information about the students. A flattening of that gradient would be consistent with employers learning about worker productivity and placing less emphasis on grades as a measure. In and of itself, this does not distinguish between human capital and signaling, since grades may reflect differences in productivity or affect initial jobs in a way that shapes later earnings.

Third, those with higher GPAs are significantly more likely to be in a (Texas) graduate program immediately after graduation, and at very high rates; about a quarter of those with GPAs at 3.9 and above are enrolled in such programs. But they are also less likely to be observed in the Texas workforce data, perhaps because they leave the state for graduate studies or a job.

Fourth, the returns to grades are higher for men than for women, with the gradient for high GPAs being much steeper for male students. However, we do not find much evidence for differences by race.

Finally, the returns to grades are steepest for engineering students, with a difference of about $11,000 in unconditional first-year earnings between those with GPAs below 2.5 and those with GPAs above 3.9. The returns are much flatter for non-STEM and non-engineering STEM graduates, with little apparent penalty for GPAs below 3.0 and much flatter returns for higher grades.

We contribute to the literature on the labor market returns to college grades. A number of older papers document this relationship in the United States, often in conjunction with college selectivity or quality (Fitzgerald, 2000; Gemus, 2010; James et al., 1989; Jones & Jackson, 1990; Roth & Clarke, 1998; Rumberger & Thomas, 1993; Thomas, 2000; Weisbrod & Karpoff, 1968; Wise, 1975). These tend to find positive relationships between college performance and earnings or job performance, though their samples are often small and the data collected decades ago.[1] Other papers have documented differential labor market returns to college major (Andrews et al., 2017; Andrews et al., 2022), and a large body of work has

[1]Some of this early work focused on whether college performance served as an indication of human capital accumulation or was used for screening. We are agnostic on this question, as the difficulties in separating human capital and signaling models are well documented (Huntington-Klein, 2021; Lazear, 1977).

investigated the importance of skill signals in hiring decisions (Koedel and Tyhurst, 2012; Protsch and Solga, 2015; Piopiunik et al., 2020).

More recent work has focused on other countries, documenting a positive relationship between grades and earnings for undergraduates in China (Zou et al., 2022), Singapore (Tan, 2023), and Canada (Essilfie & Mueller, 2025), as well as master's students in Denmark (Hansen et al., 2024) and law students in Germany (Freier et al., 2015).

We provide what is, to our knowledge, the first large-scale evidence on the returns to undergraduate GPA for U.S. students, with substantially richer controls than prior work. In Section 2, we discuss the construction of our data. Section 3 describes our empirical approach and Section 4 presents the results. Section 5 concludes.

2 Data

We use administrative records from the Texas Education Research Center (ERC), which links data across several Texas state agencies. Our student-level records come from the Texas Higher Education Coordinating Board (THECB) and include application, admissions, enrollment, graduation, and course-level grade data. We link these records to quarterly earnings data from the Texas Workforce Commission (TWC) unemployment insurance records, which constitute our primary outcome data, and to financial aid records and high school records from the Texas Education Agency (TEA), which we use to construct additional control variables.

Student course grades become available in fall 2012 and are reported until 2022. The first cohort for which we observe complete course-taking histories is therefore the cohort entering in fall 2012, and we restrict attention to students who began college in or after this term and who graduated before fall 2022. For these students, we observe the full collegiate course-taking history. Our sample consists of students who graduated from Texas public four-year institutions, which are the institutions for which we observe complete records.

Our primary sample includes all students whom we observe from application through enrollment to graduation.[2] We retain transfer students throughout. In our primary specifi-

[2]Specifically, we require that each student have an application record corresponding to their subsequent

cation, we drop students who enroll in a graduate program in the year following bachelor's degree completion, which we identify from the enrollment files.

2.1 Grade Point Average

Our primary explanatory variable is each student's cumulative grade point average at graduation. We construct this measure from the THECB course-completion records, which report, for every student-course-term, the enrolling institution, the subject prefix and course number, the semester and reporting year, the number of semester credit hours, the course grade, and the grade-point value earned on a 4.0 scale.

For each student, we compute both the total grade points earned as the product of grade-point value and credit hours, summed across courses, and the total graded credit hours. The graduating GPA is the ratio of these two quantities, computed across the student's record at the graduating institution and restricted to courses taken prior to graduation.[3]

Institutions vary in their grading systems. For example, some institutions allow for grade replacement, a policy in which students can retake a course and replace their previous grade in their cumulative GPA. Similarly, some institutions do not offer plus or minus grades. In some cases, these policies varied within an institution throughout the sample period. We verified each institution's GPA policy using undergraduate course catalogs accessed through institutional registrars, and we account for these policies when constructing the GPA measure. We provide further details in Appendix B.

2.2 Outcome Variables

Our outcome variables come from the TWC unemployment insurance records, which report, for each employed individual in each quarter, quarterly wages, county of employment, and employer NAICS code. For students with multiple employers in a quarter, we sum wages

enrollment period. We also omit a small number of students (fewer than 0.1 percent of the sample) who complete a bachelor's degree within one year, as these records almost certainly reflect data-entry errors.

[3]For transfer students, this measure reflects only coursework completed at the graduating institution, consistent with the GPA policies of most institutions, which count only that institution's grades. Non-graded courses (e.g., pass/fail courses, withdrawals, and incompletes) are excluded, as they do not count toward the GPA; see Appendix B for details.

across employers.

We measure labor market outcomes in the first year following graduation. Because there is typically a lag between graduation and employment, we build a buffer into the definition of the first year rather than starting in the quarter of graduation.[4] Specifically:

- For **May** graduates, the first year comprises Q4 of the graduation year plus Q1–Q3 of the following year.
- For **December** graduates, the first year comprises Q2–Q4 of the following year plus Q1 of the subsequent year.
- For **August** graduates, the first year comprises Q1–Q4 of the following year.

Using these definitions, we construct three primary outcome measures. The first is a binary variable equal to one if the student appears in the TWC wage data in any of the four relevant quarters. Because the TWC records do not capture individuals who leave Texas, this measure reflects both employment and out-of-state attrition, and should not be interpreted as a pure employment indicator. The second is the sum of wages across the four quarters, converted from nominal to real 2024 dollars using the CPI-U, including zeroes for any quarters not observed in the wage data. This serves as one bound on labor market earnings. The third is the largest of the four quarterly earnings values, multiplied by four, in real 2024 dollars, excluding zero-earnings quarters. To the extent that high-GPA graduates are more likely to leave Texas or to pursue graduate education, our conditional estimates may not fully capture the returns to GPA at the top of the distribution.

We also analyze enrollment in graduate school in the first year following completion of a bachelor's degree. This variable is constructed using the THECB enrollment files. We observe whether each student enrolled in a graduate program at any Texas public, private, or health institution.

[4] We also define the first year without the lagged quarter. For example, we define the first year as Q3–Q4 of the graduation year plus Q1–Q2 of the following year for May graduates, with analogous adjustments for August and December graduates. The pattern of results is unchanged.

2.3 Control Variables

Demographics. We construct control variables for gender, race, and ethnicity from the application data. For students who report different values across applications, we take the most frequently reported non-missing value. We include indicators for female, white, and Hispanic. Approximately 100,000 students (nearly 20 percent of the sample) are missing either a race or ethnicity, though the majority of this missing data is due to Hispanic students not reporting a race. Students who did not answer the race and/or ethnicity questions on any application are coded as zero for the white and Hispanic indicators accordingly. As a robustness check, we drop students who reported neither a race nor an ethnicity across all applications.[5] There are no observations with a missing value for gender.

Cohort. We identify each student's entering cohort from the enrollment files, using the first-time-in-college indicator where available and, when it is missing, the earliest observed enrollment semester.

Major. We include fixed effects for both first major (major in the student's first semester) and graduating major, constructed from the enrollment and graduation files and defined at the two-digit CIP prefix (CIP-2) level.

Graduation timing. We identify the month and year of graduation from the graduation files. We group graduation into three months: May, December, and August.

Test scores. The application data contain SAT and ACT scores. We take the highest reported SAT or ACT score across a student's applications. Only about 70 percent of students submit a test score. To retain as much of the sample as possible, we compute the within-year percentile rank of each student's ACT (or SAT) score and construct indicators for scoring in the top 50 percent and bottom 50 percent of the distribution. For students who submit both an SAT and an ACT, we average the two percentile ranks.[6] We additionally

[5] Our white indicator includes white Hispanics, that is, students who indicated white on the race question regardless of ethnicity response.

[6] If a student did not have a test score on file, they are coded as 0s for both the top and bottom test score indicators.

include an indicator for whether the student submitted any test score at all. As a robustness check, we include the continuous percentile rank variable and exclude students that did not report a test score.

High school. We observe each student's high school in the application data, as applicants must list their high school when applying. We link high schools to THECB's Appendix M to identify in-state institutions. Where high school fixed effects are included, they take a separate value for each in-state high school and a single pooled category for all out-of-state high schools. Using the application data for this purpose allows us to retain as much of the sample as possible, since out-of-state students do not appear in the Texas public high school data.

Financial aid. From the Financial Aid Database (FADS) data, which contain information from the Free Application for Federal Student Aid, we include the number of years a student appears in the records and indicators for whether the student ever received subsidized loans, unsubsidized loans, or Pell grants.

High school course-taking. In a set of robustness checks, we add controls for high school course-taking: the number of AP courses taken, an indicator for any dual-credit coursework, and an indicator for any IB coursework. We omit these from the primary specification because they are available for a smaller subset of students.

2.4 Sample Description

Our primary analytic sample contains 464,483 students who graduated from a Texas public university with a Bachelor's degree between 2014 and 2022, and this sample is described in Table 1. Fifty-eight percent of students are female, 45 percent are white, and 35 percent are Hispanic. Just under a quarter (22 percent) of students graduated in the top 10% of their high school class. Approximately half of students received a Pell Grant at some point in their collegiate career, and 57 percent received a subsidized loan. Forty-two percent of students enrolled in college as a STEM major, and 40 percent ultimately graduated as STEM majors.

The average GPA at graduation is 3.24, and the distribution of graduating GPA is displayed in Figure 1.

Unsurprisingly, the GPA distribution exhibits heaping. Both grade replacement and course retake policies – which allow students to retake courses and maintain either the highest grade or most recent grade earned – as well as grading policies that offer only full letter grades and omit grades such as A- or B-, result in mechanical heaping of the GPA measure.

3 Empirical Approach

We estimate the labor market returns to college grades using the student-level Texas ERC data described in Section 2.

Our baseline specification is:

$$Y_i = \alpha + \sum_b \beta_b \, \mathbb{1}\{\text{GPA}_i \in b\} + X_i'\delta + \varepsilon_i, \tag{1}$$

where Y_i is the outcome for student i and $\mathbb{1}\{\text{GPA}_i \in b\}$ indicates that student i's GPA falls in bin b. Bins are half-open intervals of width 0.1 (e.g., $[2.9, 3.0)$).[7] We omit the $[2.9, 3.0)$ bin, so each β_b gives the outcome difference between bin b and this reference bin, conditional on X_i. We choose this bin as the reference because it sits just below the 3.0 threshold, a focal point in many grading and eligibility contexts. For the remainder of this paper, we refer to this reference category as 2.9-2.99 for simplicity. The vector X_i contains individual controls that vary across specifications, and ε_i is the error term. We drop students who enrolled in graduate school in the year after college graduation, and we cluster standard errors at the college level.

We estimate Equation (1) separately for each outcome using four specifications. The first specification controls only for entering cohort and for graduation in May and December, which pick up differences in when students enter the labor market. The second adds demographic controls and college fixed effects, so we compare students within the same insti-

[7] There are two exceptions. First, we pool all GPAs below 2.5 into one bin. Second, we pool all GPAs of 3.9 and above into another.

tution. The third adds fixed effects for major at enrollment and at graduation, an indicator for graduating in the top 10% of the high school class, SAT/ACT controls, and financial aid controls. The fourth adds high school fixed effects, restricting comparisons to students from the same high school; out-of-state students are grouped into a single category. Throughout, we refer to this fourth and most saturated specification as our *adjusted* specification. We refer to the first and least saturated specification, which includes controls only for entering cohort and month of graduation, as our *unadjusted* specification. For clarity, the figures we present show only the unadjusted and adjusted specifications; the full set of coefficients for all four specifications is reported in appendix tables where indicated.

4 Results

For simplicity, we present our results as figures that plot the unadjusted and adjusted specifications of Equation 1. The full progression and point estimates across all four specifications appear in appendix tables where indicated.

4.1 Presence in the Wage Data

86 percent of students with GPAs between 2.9-2.99 appear in the wage data. As shown in Figure 2, which plots the unadjusted and adjusted specifications, students with higher GPAs are progressively less likely to be observed, and our controls explain little of this decline.[8] The decline in observability in the wage data is modest in the middle of the distribution: students with GPAs of 3.2–3.29 are only 0.7 percentage points less likely to appear than the 2.9–2.99 group. However, this decline grows more steeply at the top of the GPA distribution, with students graduating with GPAs of 3.9 and above being 5.2 percentage points less likely to appear in the wage data. While we exclude students enrolled in Texas graduate programs the year after graduation, the decline at the top likely reflects high-achieving students leaving the state for graduate school or jobs.

[8] Appendix Table A1 reports the point estimates for all four control sets, including the two intermediate progressions.

4.2 Earnings

Higher grades are associated with higher earnings. Figure 3 plots the coefficients for each GPA bin for unconditional earnings in the first year after graduation, with point estimates in Appendix Table A2. When controlling only for entering cohort and month of graduation, students with GPAs below 2.5 earn about $3,100 less in their first year than the 2.9–2.99 group. This is equivalent to approximately 8.6 percent of the $36,080 average among the students in that reference group. This gap narrows to $1,683 after accounting for controls. At the top of the distribution, students with GPAs of 3.9 and above earn about $4,600 more than the 2.9–2.99 group, and this premium is stable across specifications (from $4,123 when controlling for only entering cohort and month of graduation to $4,608 in the adjusted specification).

These estimates are unconditional on employment or presence in the wage data. Thus, they likely represent a lower bound on the returns to college grades as they do not account for high-achieving, and likely high-earning, students who leave Texas upon graduation.

The returns to grades are more pronounced for a conditional earnings measure: highest quarterly earnings, annualized, computed for each student conditional on appearing in the wage data. Figure 4 plots the GPA–earnings relationship for this outcome, with point estimates in Appendix Table A3. Students with GPAs of 2.9–2.99 average $55,111 on this measure in their first year after graduation.

As before, controls attenuate much of the negative association at the low end of the distribution but explain little of the variation at higher GPAs. In the unadjusted specification, having a GPA below 2.5 is associated with $4,017 lower earnings in the first year, and this estimate shrinks in magnitude to only $1,790 after adjusting for controls. However, those with GPAs of 3.9 and above earn $10,124 more, or 18 percent above the 2.9-2.99 average, and this estimate is relatively stable across specifications ($9,412 under the unadjusted specification). This premium is not confined to the top bin. Earnings increase monotonically across the distribution, reaching approximately $600 above the 2.9-2.99 group for students with GPAs of 3.0–3.09, $3,700 for those with GPAs of 3.4–3.49, and $7,900 for those with GPAs of 3.8–3.89 (after adjusting for our strictest set of controls; Column 4 in Appendix

Table A3).

4.3 Enrollment in Graduate School

We also examine the relationship between GPA and enrollment in graduate school. We focus on enrollment in Texas graduate programs—including those at public, private, and health institutions—in the year immediately following completion of a Bachelor's degree.[9]

Figure 5 plots the relationship between GPA and graduate school enrollment, with point estimates in Appendix Table A4; both report only the least (i.e., the unadjusted) and most saturated (i.e., the adjusted) specifications. Among students with GPAs of 2.9–2.99, 8 percent enroll in a Texas graduate program within one year of graduating. Students with GPAs below 2.5 are 6.5 percentage points less likely to do so, and the gradient increases monotonically across the distribution. Students with GPAs of 3.9 and above are 17.9 percentage points more likely to enroll—more than 200 percent above the 2.9–2.99 mean.

4.4 Robustness Checks

We assess the robustness of our main results to a range of alternative specifications and sample restrictions, reported in Appendix Tables A5, A6, and A7 for presence in the wage data, unconditional earnings, and highest quarterly earnings annualized, respectively. Each column reports a separate specification. Unless otherwise noted, all specifications include our full set of controls. Beyond our main specification (Column 1), we (i) include students who enrolled in graduate school the year after graduation and add the corresponding control; (ii) add high school controls for enrollment in AP, dual-credit, and IB courses, restricting to students who attended public high school in Texas; (iii) replace the test-score indicators with a continuous ACT/SAT percentile, restricting to students who submitted a score; (iv) drop universities with unclear or compliance-dependent GPA policies; (v) drop students who never reported race and ethnicity on a college application; and (vi) redefine the first post-graduation year to exclude the lagged quarter, i.e., for May graduates we define year 1 as Q3-4 of the graduating year and Q1-2 of the subsequent year, with analogous adjustments

[9]For this outcome, we include students who enrolled in graduate school in the year after graduation, though these students are excluded from our other regressions.

made for December and August graduates. For the two earnings outcomes, we additionally winsorize the outcome at the 99th percentile.

The estimates are stable across these checks. Focusing on the top of the GPA distribution, students with GPAs of 3.9 and above are between 4.3 and 6.6 percentage points less likely to appear in the wage data across specifications, compared with 5.2 points in our main specification. For unconditional earnings, the top-bin premium ranges from about \$2,800 to \$4,800 (versus \$4,600 in the main specification), and for highest quarterly earnings, annualized, it ranges from about \$8,100 to \$9,600 (compared to \$10,100 in the primary specification). The sign, significance, and shape of the GPA gradient are largely preserved across these specifications.

4.5 Heterogeneity

Next, we examine heterogeneity in our three primary outcomes by gender, race, and field of study. In each case we split the sample and estimate Equation (1) separately within groups. We discuss only the most saturated specification here; the unadjusted estimates appear in the appendix tables where noted.

4.5.1 Gender

Figure 6 demonstrates that observability in the wage data is similar across genders and declines with GPA for both (point estimates are reported in Appendix Table A8). Among students with GPAs of 2.9–2.99, women are slightly more likely than men to appear (87 versus 85 percent). At the top of the distribution, men with GPAs of 3.9 and above are 7.0 percentage points less likely to be observed than men with GPAs of 2.9–2.99, compared to 4.3 points for women, though the confidence intervals overlap substantially.

Although men and women appear in the wage data at similar rates, the returns to college grades are considerably larger for men. Among students with GPAs between 2.9-2.99, men out-earn women by approximately \$6,000 in unconditional first year earnings (\$39,288 versus \$33,133), though these numbers reflect unconditional averages and do not account for differences in field of study or other observable differences.

The premium for a top GPA is also larger for men: men with GPAs of 3.9 and above earn $6,761 more in unconditional earnings than men with GPAs of 2.9–2.99 (17 percent more than the 2.9-2.99 mean), versus $3,215 (10 percent more than the 2.9-2.99 mean) for women (Panel A of Figure 7, Appendix Table A9). The gap is starker for highest quarterly earnings annualized, where the top-GPA premium is nearly $17,000 for men (28 percent above the male 2.9–2.99 mean of $61,112) but only $6,500 for women (13 percent above the female 2.9–2.99 mean of $49,751; Panel B of Figure 7, Appendix Table A10).

4.5.2 Race

To investigate differences in returns to grades by race, we split the sample into four mutually exclusive categories: white, non-Hispanic graduates; Hispanic graduates; Black (non-Hispanic) graduates; and Asian graduates. Graduates with missing values of both race and ethnicity, or who reported multiple or other race, were excluded from this analysis, a total of 1.6 percent of the sample.[10]

Among students with GPAs of 2.9–2.99, Asian students are least likely to appear in the wage data in the first year after graduation (82 percent), followed by white (85), Black (87), and Hispanic students (88). Estimates are noisier for Black and Asian students given the smaller sample sizes, but the overall pattern mirrors the full sample, with little evidence of meaningful differences across groups (Figure 8; Appendix Table A11).

There is also little evidence of racial heterogeneity in unconditional earnings. Among students with GPAs of 2.9–2.99, white graduates earn an average of $38,600 in the first year, versus $34,600 for Hispanic, $32,400 for Black, and $36,000 for Asian graduates. The top-GPA premium is broadly similar across groups, ranging from about $4,000 for Hispanic and Asian graduates to just over $5,000 for white and Black graduates, and the confidence intervals overlap across all four (Figure 9, Appendix Table A12).

The annualized highest quarterly earnings measure shows wider point estimates but similarly imprecise differences. For students with GPAs between 2.9-2.99, earnings are comparable for white and Asian graduates (about $59,000) and lower for Hispanic ($52,000) and

[10]For brevity, we report only the unadjusted and adjusted specifications of Equation 1 in the appendix tables and do not report the estimates from the intermediate sets of controls.

Black graduates ($50,000). The top-GPA premium is $11,300 for white graduates, $13,200 for Asian, $9,300 for Black, and $7,100 for Hispanic graduates. These point estimates suggest a somewhat steeper gradient for white and Asian graduates, though the estimates are imprecise and we do not read these differences as meaningful (Figure 9, Appendix Table A13).

4.5.3 Field of Study

Finally, we examine returns to grades by field of study, splitting the sample into non-STEM, non-engineering STEM, and engineering graduates.[11]

Among students with GPAs of 2.9–2.99, engineering graduates are least likely to appear in the wage data (82 percent), compared with 87 percent of non-engineering STEM and 86 percent of non-STEM graduates. The drop-off at higher GPAs is smallest for non-STEM graduates: those with GPAs of 3.9 and above are 3.6 percentage points less likely to be observed than non-STEM graduates with GPAs of 2.9–2.99, compared with 7.9 points for non-engineering STEM and 9.3 points for engineering graduates (Figure 10, Appendix Table A14).

Among students with GPAs of 2.9–2.99, non-STEM and non-engineering STEM graduates have about the same average unconditional first-year earnings ($34,000), while engineering graduates earn nearly $53,000. The top-GPA premium is about $5,400 for non-STEM graduates and $7,000 for engineering graduates, but small ($1,300) and statistically insignificant for non-engineering STEM graduates (Panel A of Figure 11, Appendix Table A15).

The gradient is far steeper for engineering graduates on highest quarterly earnings annualized. Among students with GPAs of 2.9–2.99, both non-STEM and non-engineering STEM graduates average about $52,000, versus just over $80,000 for engineering graduates. A top GPA is associated with almost $24,000 in additional earnings for engineering graduates—roughly 30 percent above their 2.9–2.99 mean—compared with $7,400 (14 percent) for non-engineering STEM and $9,200 (18 percent) for non-STEM graduates (Panel B of Figure 11, Appendix Table A16). Engineering graduates thus both earn more on average and see

[11] As with race, we report only the unadjusted and fully adjusted specifications of Equation (1) in the appendix tables, omitting the intermediate specifications for readability.

markedly larger returns to their grades.

The non-engineering STEM result is also notable: this group shows a clear return to a top GPA on highest quarterly earnings annualized despite the relatively flat, insignificant gradient in unconditional earnings. This likely reflects their lower observability in the wage data (Figure 10): high-achieving non-engineering STEM graduates who leave the sample depress the unconditional measure but not the conditional one, which is defined only over those observed with earnings.

4.6 Over Time

We also analyze our two of our primary outcomes across time. For this, we construct identical measures for observability in the wage data and unconditional real wages earnings annualized for both two and three years following graduation and repeat our analysis, focusing on the adjusted specification, i.e., the specification with the richest set of controls.[12] The results are presented in Figures 12 and 13.

The general patterns observed in year one persist for both years two and three for both outcomes. Graduates with higher GPAs are less likely to be observed in the data and see moderately higher unconditional earnings relative to those with lower GPAs.

5 Conclusion

Using linked administrative records for graduates of Texas public universities, we document a strong positive association between college GPA and earnings in the first year after graduation. This relationship persists after accounting for a rich set of student, high school, and college characteristics. The returns to grades are strongest for engineering majors and male students.

These findings are descriptive. They do not establish that raising a student's GPA would increase earnings or distinguish human capital from signaling. Moreover, higher-GPA graduates are less likely to appear in Texas wage records, limiting our ability to characterize their

[12]Note that we have a smaller sample size for Year 3; this is because we do not observe the most recent cohort of graduates three years after graduation.

labor market outcomes. Nevertheless, the results demonstrate that academic performance provides substantial information about early career outcomes beyond degree completion and field of study. In future work, we will examine whether grades are associated with these outcomes for dropouts, and whether relative performance within college-cohort-major has additional explanatory power beyond the grades themselves.

References

Andrews, R., Imberman, S., & Lovenheim, M. (2017). *Risky Business? The Effect of Majoring in Business on Earnings and Educational Attainment* (Working Paper No. 23575). National Bureau of Economic Research. https://doi.org/10.3386/w23575

Andrews, R., Imberman, S., Lovenheim, M., & Stange, K. (2022). *The Returns to College Major Choice: Average and Distributional Effects, Career Trajectories, and Earnings Variability* (Working Paper No. 30331). National Bureau of Economic Research. https://doi.org/10.3386/w30331

Essilfie, J., & Mueller, R. E. (2025). Grades and Labour Market Earnings in Canada: New Evidence from the 2018 National Graduates Survey. *Education Economics*, *33*(3), 372–398. https://doi.org/10.1080/09645292.2024.2323126

Fitzgerald, R. A. (2000). *College Quality and the Earnings of Recent College Graduates* (Research and Development Report No. NCES 2000-043). National Center for Education Statistics, U.S. Department of Education.

Freier, R., Schumann, M., & Siedler, T. (2015). The Earnings Returns to Graduating with Honors — Evidence from Law Graduates. *Labour Economics*, *34*, 39–50. https://doi.org/10.1016/j.labeco.2015.03.001

Gatta, M., Kahn, J., Koncz, A. J., Galbraith, A., Sabogal, M., & Longenberger, A. (2024). *2025 Job Outlook* (Report). National Association of Colleges and Employers.

Gemus, J. (2010). *College Achievement and Earnings* (Working Paper No. 2010:1). Department of Economics, Uppsala University.

Hansen, A. T., Hvidman, U., & Sievertsen, H. H. (2024). Grades and Employer Learning. *Journal of Labor Economics*, *42*(3), 659–682. https://doi.org/10.1086/724048

Huntington-Klein, N. (2021). Human Capital versus Signaling Is Empirically Unresolvable. *Empirical Economics*, *60*(5), 2499–2531. https://doi.org/10.1007/s00181-020-01837-z

James, E., Alsalam, N., Conaty, J. C., & To, D.-L. (1989). College Quality and Future Earnings: Where Should You Send Your Child to College? *American Economic Review*, *79*(2), 247–252.

Jones, E. B., & Jackson, J. D. (1990). College Grades and Labor Market Rewards. *The Journal of Human Resources*, *25*(2), 253–266. https://doi.org/10.2307/145756

Koedel, C., & Tyhurst, E. (2012). Math Skills and Labor-Market Outcomes: Evidence from a Resume-Based Field Experiment. *Economics of Education Review*, *31*(1), 131–140. https://doi.org/10.1016/j.econedurev.2011.09.006

Lazear, E. P. (1977). Academic Achievement and Job Performance: Note. *American Economic Review*, *67*(2), 252–254.

Piopiunik, M., Schwerdt, G., Simon, L., & Woessmann, L. (2020). Skills, Signals, and Employability: An Experimental Investigation. *European Economic Review*, *123*, 103374. https://doi.org/10.1016/j.euroecorev.2020.103374

Protsch, P., & Solga, H. (2015). How Employers Use Signals of Cognitive and Noncognitive Skills at Labour Market Entry: Insights from Field Experiments. *European Sociological Review*, *31*(5), 521–532.

Roth, P. L., & Clarke, R. L. (1998). Meta-Analyzing the Relation between Grades and Salary. *Journal of Vocational Behavior*, *53*(3), 386–400. https://doi.org/10.1006/jvbe.1997.1621

Rumberger, R. W., & Thomas, S. L. (1993). The Economic Returns to College Major, Quality and Performance: A Multilevel Analysis of Recent Graduates. *Economics of Education Review*, *12*(1), 1–19. https://doi.org/10.1016/0272-7757(93)90040-N

Tan, B. J. (2023). The Consequences of Letter Grades for Labor Market Outcomes and Student Behavior. *Journal of Labor Economics*, *41*(3), 565–588. https://doi.org/10.1086/719994

Thomas, S. L. (2000). Deferred Costs and Economic Returns to College Major, Quality, and Performance. *Research in Higher Education*, *41*(3), 281–313. https://doi.org/10.1023/A:1007003510102

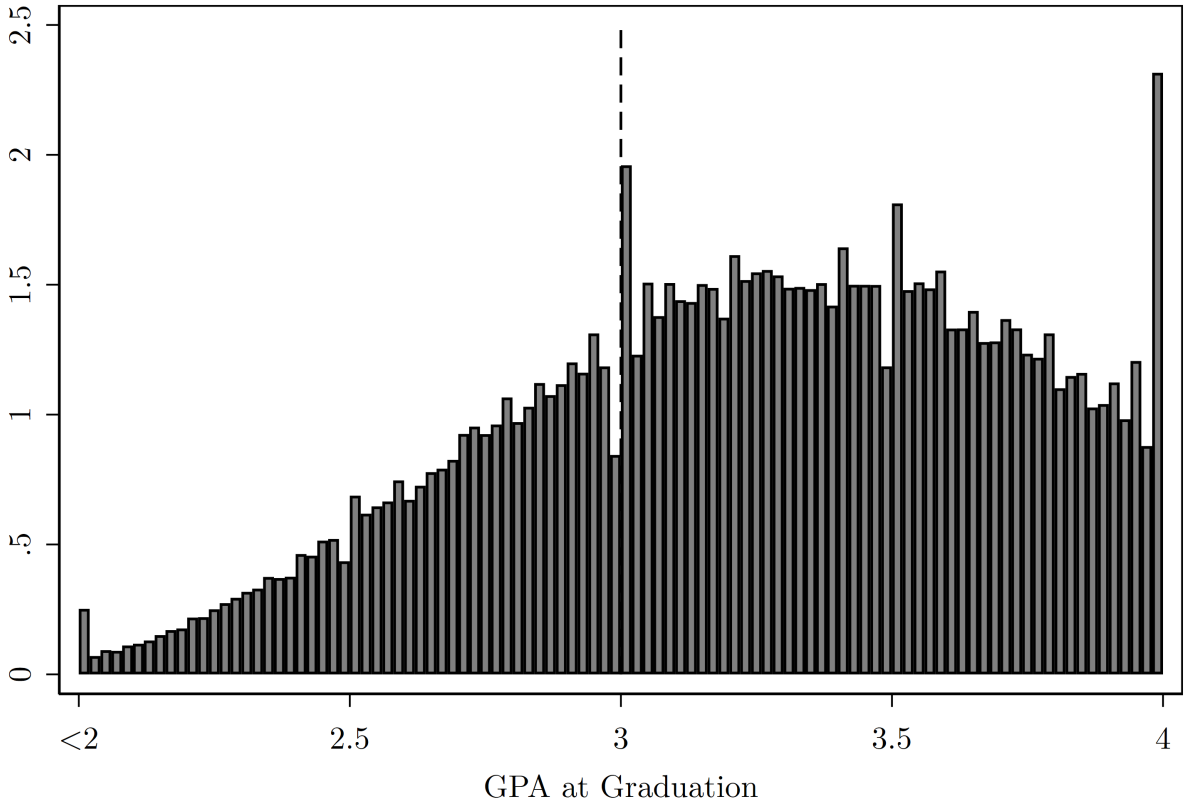
Weisbrod, B. A., & Karpoff, P. (1968). Monetary Returns to College Education, Student Ability, and College Quality. *The Review of Economics and Statistics*, *50*(4), 491–497. https://doi.org/10.2307/1926818

Wise, D. A. (1975). Academic Achievement and Job Performance. *American Economic Review*, *65*(3), 350–366.

Zou, T., Zhang, Y., & Zhou, B. (2022). Does GPA Matter for University Graduates' Wages? New Evidence Revisited. *PLOS ONE*, *17*(4), e0266981. https://doi.org/10.1371/journal.pone.0266981

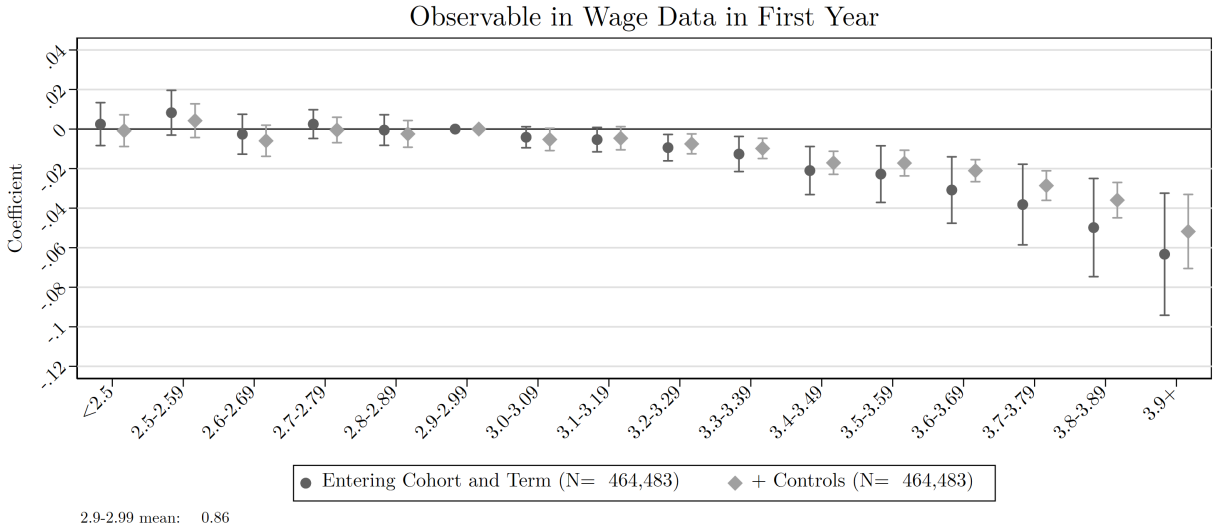
Figures

Figure 1: Distribution of Cumulative GPA at Graduation



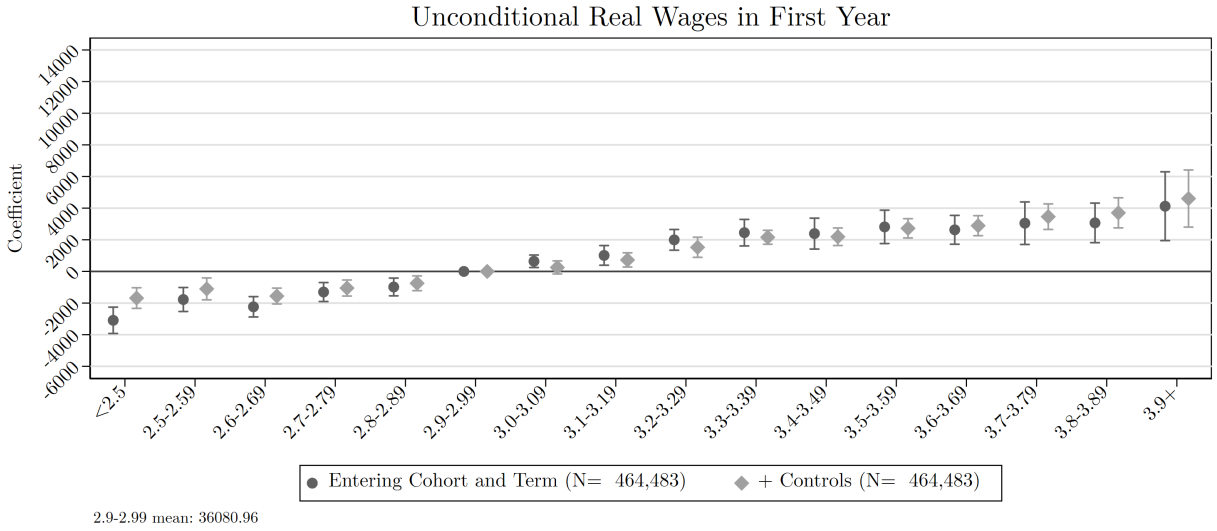
Notes: The figure displays the distribution of graduating cumulative GPA in the regression sample (464,483 graduates), using 100 bins. The y-axis displays the percent of graduates in each bin. GPAs below 2.0 are pooled. The dashed line marks a GPA of 3.0. Details of GPA construction appear in Appendix B.

Figure 2: Presence in TWC Wage Data in the First Year by GPA Bin



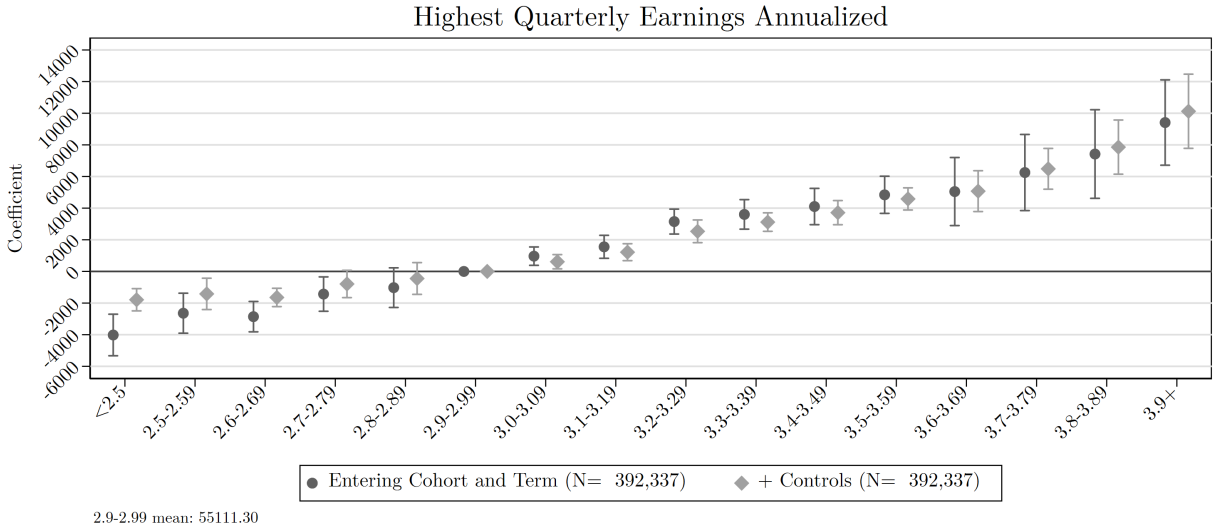
Notes: The figure plots estimated coefficients on GPA bin indicators from OLS regressions, corresponding to Columns 1 and 4 of Table A1. The outcome is an indicator for appearing in the TWC wage data in any of the four quarters of the first post-graduation year; it measures presence in these records rather than employment alone. The 2.9–2.99 GPA bin is the omitted category. GPA bins have width 0.1, with GPAs below 2.5 and GPAs of 3.9 and above pooled into the endpoint bins. Bars represent 95% confidence intervals. The first specification includes entering-cohort fixed effects and indicators for graduating in May and December. The second additionally includes indicators for female, white, and Hispanic; college fixed effects; fixed effects for major at enrollment and major at graduation (two-digit CIP categories); an indicator for graduating in the top 10% of the high school class; indicators for scoring in the top and bottom 50% of the within-cohort SAT/ACT distribution and for submitting a test score; the number of years observed in the financial aid data; indicators for ever receiving subsidized loans, unsubsidized loans, and Pell Grants; and high school fixed effects. Graduates observed enrolling in graduate school in Texas in the year immediately following graduation are excluded.

Figure 3: Unconditional Real Earnings in the First Year by GPA Bin



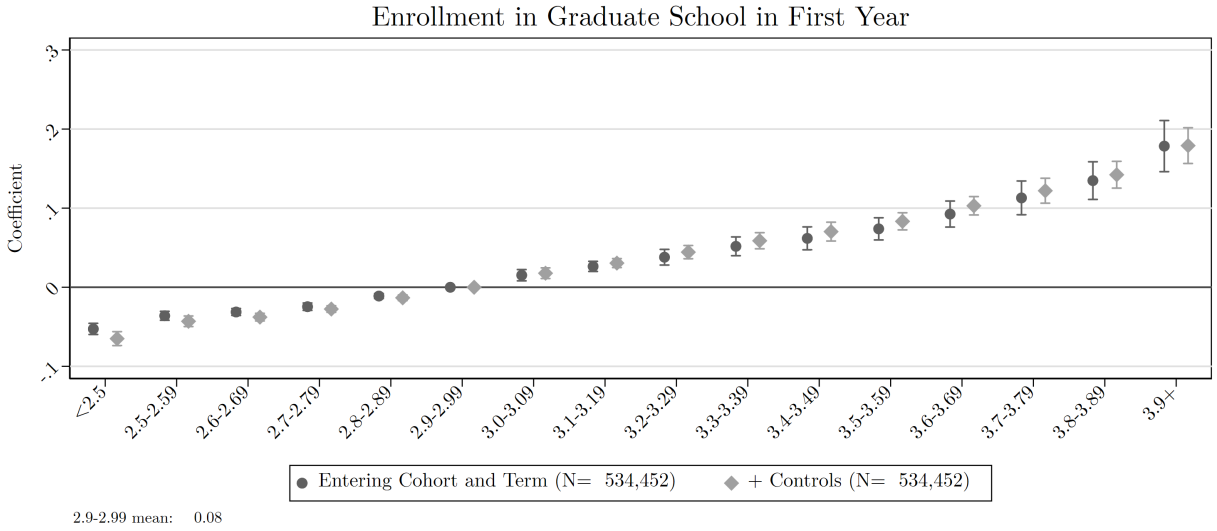
Notes: The figure plots estimated coefficients on GPA bin indicators from OLS regressions, corresponding to Columns 1 and 4 of Table A2. The outcome is the sum of recorded earnings over the four quarters of the first post-graduation year, in 2024 Q1 dollars. Earnings are set to zero for graduates not observed in the TWC wage data. The 2.9–2.99 GPA bin is the omitted category. GPA bins have width 0.1, with GPAs below 2.5 and GPAs of 3.9 and above pooled into the endpoint bins. Bars represent 95% confidence intervals. The first specification includes entering-cohort fixed effects and indicators for graduating in May and December. The second additionally includes indicators for female, white, and Hispanic; college fixed effects; fixed effects for major at enrollment and major at graduation (two-digit CIP categories); an indicator for graduating in the top 10% of the high school class; indicators for scoring in the top and bottom 50% of the within-cohort SAT/ACT distribution and for submitting a test score; the number of years observed in the financial aid data; indicators for ever receiving subsidized loans, unsubsidized loans, and Pell Grants; and high school fixed effects. Graduates observed enrolling in graduate school in Texas in the year immediately following graduation are excluded.

Figure 4: Highest Quarterly Earnings in the First Year, Annualized by GPA Bin



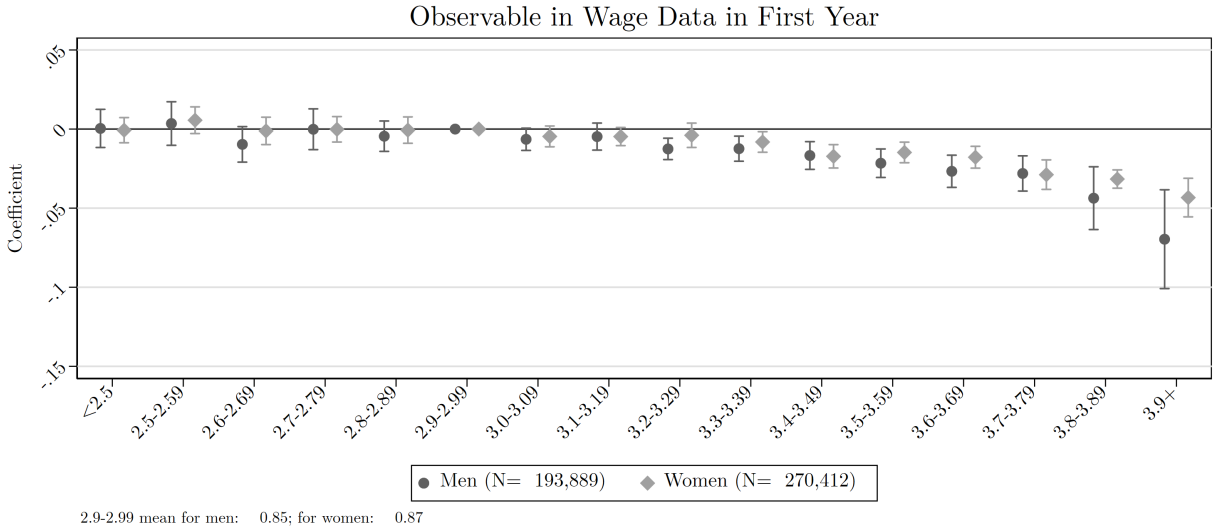
Notes: The figure plots estimated coefficients on GPA bin indicators from OLS regressions, corresponding to Columns 1 and 4 of Table A3. The outcome is the highest quarterly earnings in the first post-graduation year multiplied by four, in 2024 Q1 dollars. Graduates not observed in the TWC wage data are excluded. The 2.9–2.99 GPA bin is the omitted category. GPA bins have width 0.1, with GPAs below 2.5 and GPAs of 3.9 and above pooled into the endpoint bins. Bars represent 95% confidence intervals. The first specification includes entering-cohort fixed effects and indicators for graduating in May and December. The second additionally includes indicators for female, white, and Hispanic; college fixed effects; fixed effects for major at enrollment and major at graduation (two-digit CIP categories); an indicator for graduating in the top 10% of the high school class; indicators for scoring in the top and bottom 50% of the within-cohort SAT/ACT distribution and for submitting a test score; the number of years observed in the financial aid data; indicators for ever receiving subsidized loans, unsubsidized loans, and Pell Grants; and high school fixed effects. Graduates observed enrolling in graduate school in Texas in the year immediately following graduation are excluded.

Figure 5: Graduate School Enrollment in the First Year by GPA Bin



Notes: The figure plots estimated coefficients on GPA bin indicators from OLS regressions, corresponding to Columns 1 and 2 of Table A4. The outcome is an indicator for observed enrollment in a graduate program in Texas in the year immediately following bachelor's degree completion. The sample includes graduates who subsequently enroll in graduate school. The 2.9–2.99 GPA bin is the omitted category. GPA bins have width 0.1, with GPAs below 2.5 and GPAs of 3.9 and above pooled into the endpoint bins. Bars represent 95% confidence intervals. The first specification includes entering-cohort fixed effects and indicators for graduating in May and December. The second additionally includes indicators for female, white, and Hispanic; college fixed effects; fixed effects for major at enrollment and major at graduation (two-digit CIP categories); an indicator for graduating in the top 10% of the high school class; indicators for scoring in the top and bottom 50% of the within-cohort SAT/ACT distribution and for submitting a test score; the number of years observed in the financial aid data; indicators for ever receiving subsidized loans, unsubsidized loans, and Pell Grants; and high school fixed effects.

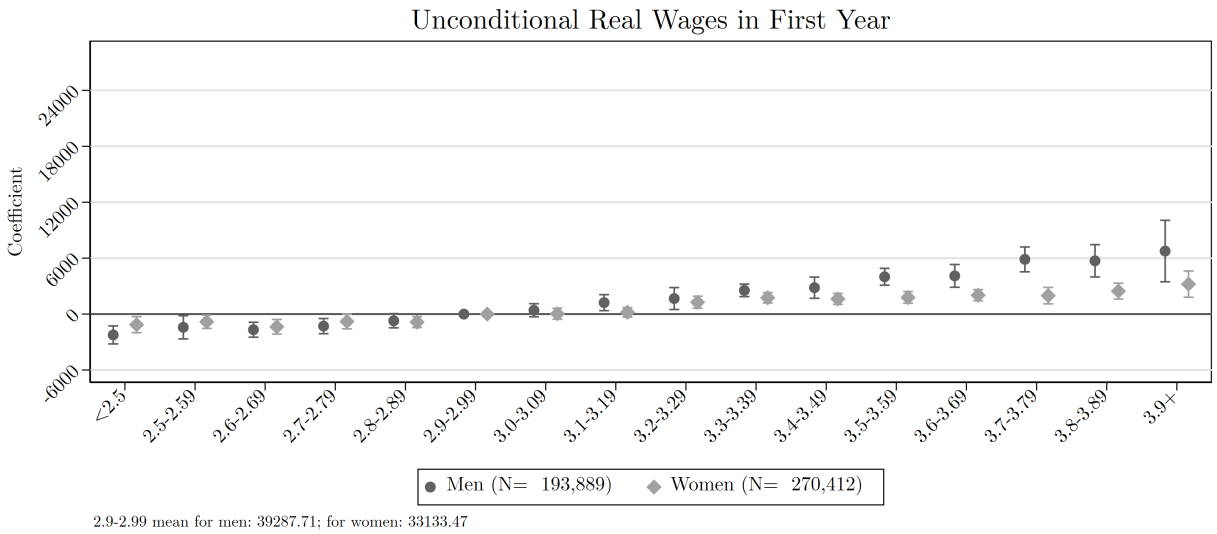
Figure 6: Presence in TWC Wage Data in the First Year, by Gender and GPA Bin



Notes: The figure plots estimated coefficients on GPA bin indicators from OLS regressions, corresponding to Columns 7 and 8 of Table A8. The outcome is an indicator for appearing in the TWC wage data in any of the four quarters of the first post-graduation year; it measures presence in these records rather than employment alone. The 2.9–2.99 GPA bin is the omitted category. GPA bins have width 0.1, with GPAs below 2.5 and GPAs of 3.9 and above pooled into the endpoint bins. Bars represent 95% confidence intervals. Separate regressions are estimated for men and women. All plotted specifications include entering-cohort fixed effects and indicators for graduating in May and December, indicators for female, white, and Hispanic; college fixed effects; fixed effects for major at enrollment and major at graduation (two-digit CIP categories); an indicator for graduating in the top 10% of the high school class; indicators for scoring in the top and bottom 50% of the within-cohort SAT/ACT distribution and for submitting a test score; the number of years observed in the financial aid data; indicators for ever receiving subsidized loans, unsubsidized loans, and Pell Grants; and high school fixed effects. The gender indicator is constant within each subsample. Graduates observed enrolling in graduate school in Texas in the year immediately following graduation are excluded.

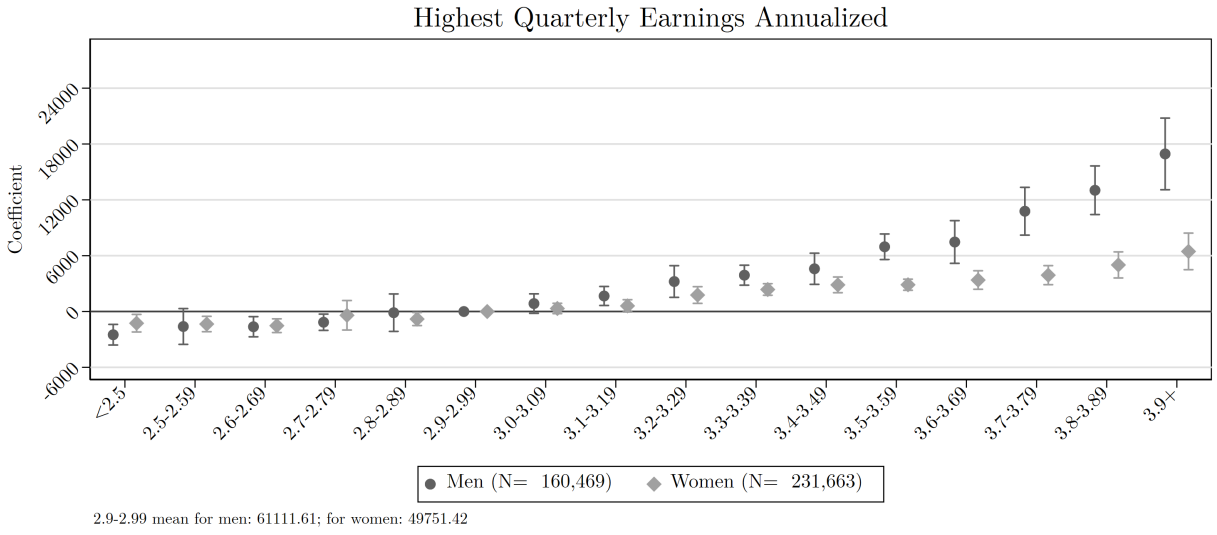
Figure 7: Real Earnings in the First Year, by Gender and GPA Bin

(a) Unconditional



2.9-2.99 mean for men: 39287.71; for women: 33133.47

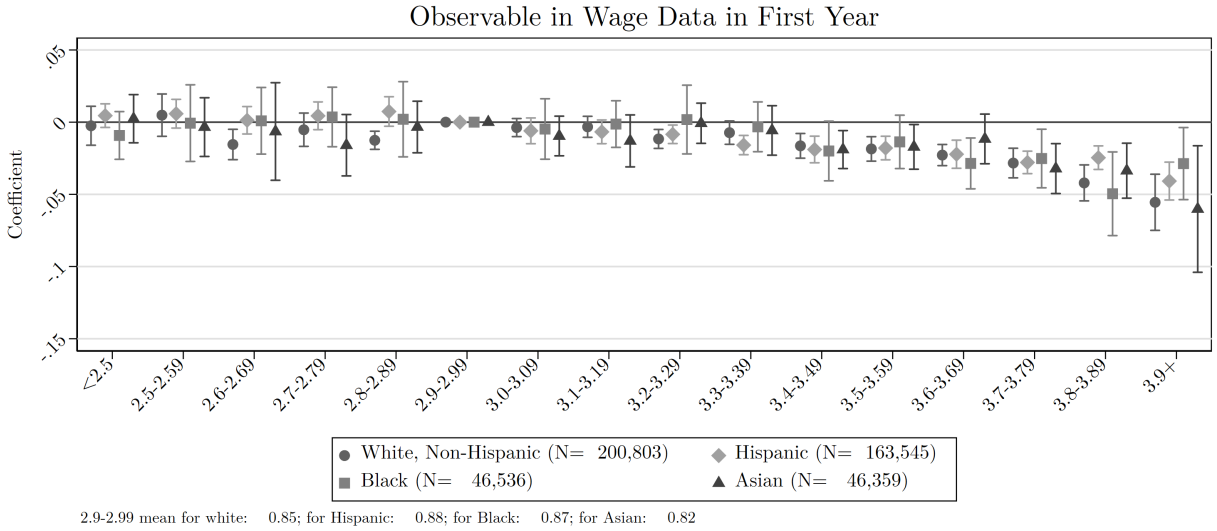
(b) Highest Quarterly Earnings Annualized



2.9-2.99 mean for men: 61111.61; for women: 49751.42

Notes: The figure plots estimated coefficients on GPA bin indicators from OLS regressions. In Panel (a), corresponding to Columns 7 and 8 of Table A9, the outcome is the sum of recorded earnings over the four quarters of the first post-graduation year, in 2024 Q1 dollars, with earnings set to zero for graduates not observed in the TWC wage data. In Panel (b), corresponding to Columns 7 and 8 of Table A10, the outcome is the highest quarterly earnings in the first post-graduation year multiplied by four, in 2024 Q1 dollars, and graduates not observed in the TWC wage data are excluded. The 2.9–2.99 GPA bin is the omitted category. GPA bins have width 0.1, with GPAs below 2.5 and GPAs of 3.9 and above pooled into the endpoint bins. Bars represent 95% confidence intervals. Separate regressions are estimated for men and women. All plotted specifications include entering-cohort fixed effects and indicators for graduating in May and December, indicators for female, white, and Hispanic; college fixed effects; fixed effects for major at enrollment and major at graduation (two-digit CIP categories); an indicator for graduating in the top 10% of the high school class; indicators for scoring in the top and bottom 50% of the within-cohort SAT/ACT distribution and for submitting a test score; the number of years observed in the financial aid data; indicators for ever receiving subsidized loans, unsubsidized loans, and Pell Grants; and high school fixed effects. Graduates observed enrolling in graduate school in Texas in the year immediately following graduation are excluded.

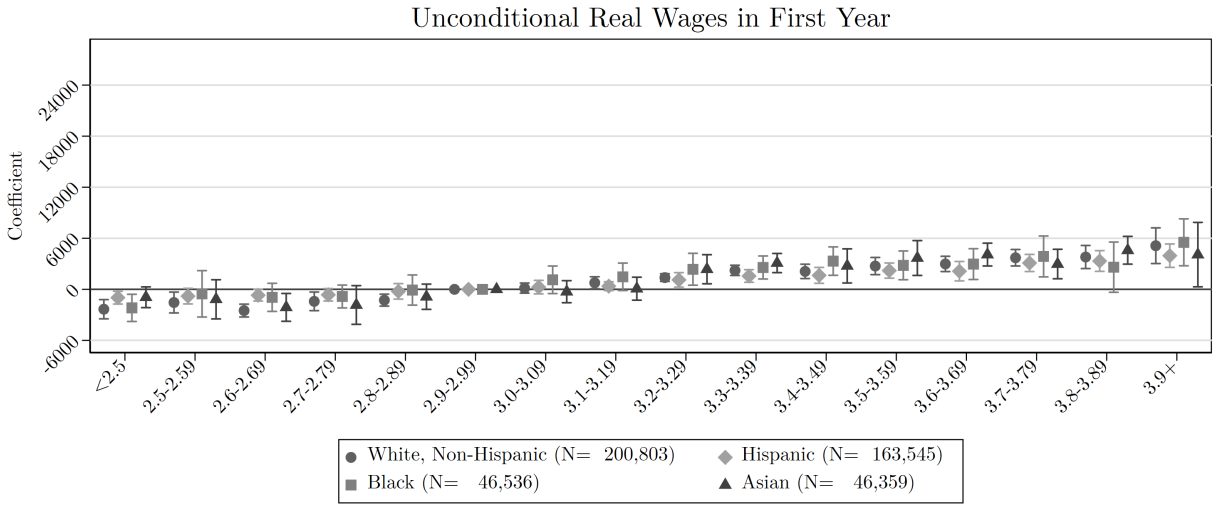
Figure 8: Presence in TWC Wage Data in the First Year, by Race/Ethnicity and GPA Bin



Notes: The figure plots estimated coefficients on GPA bin indicators from OLS regressions, corresponding to Columns 5–8 of Table A11. The outcome is an indicator for appearing in the TWC wage data in any of the four quarters of the first post-graduation year; it measures presence in these records rather than employment alone. The 2.9–2.99 GPA bin is the omitted category. GPA bins have width 0.1, with GPAs below 2.5 and GPAs of 3.9 and above pooled into the endpoint bins. Bars represent 95% confidence intervals. Separate regressions are estimated for white non-Hispanic, Hispanic, Black, and Asian graduates. Groups are mutually exclusive; Hispanic ethnicity takes precedence, followed by Black race, Asian race, and white race. Graduates reporting neither race nor ethnicity are excluded. All plotted specifications include entering-cohort fixed effects and indicators for graduating in May and December, indicators for female, white, and Hispanic; college fixed effects; fixed effects for major at enrollment and major at graduation (two-digit CIP categories); an indicator for graduating in the top 10% of the high school class; indicators for scoring in the top and bottom 50% of the within-cohort SAT/ACT distribution; the number of years observed in the financial aid data; indicators for ever receiving subsidized loans, unsubsidized loans, and Pell Grants; and high school fixed effects. Graduates observed enrolling in graduate school in Texas in the year immediately following graduation are excluded.

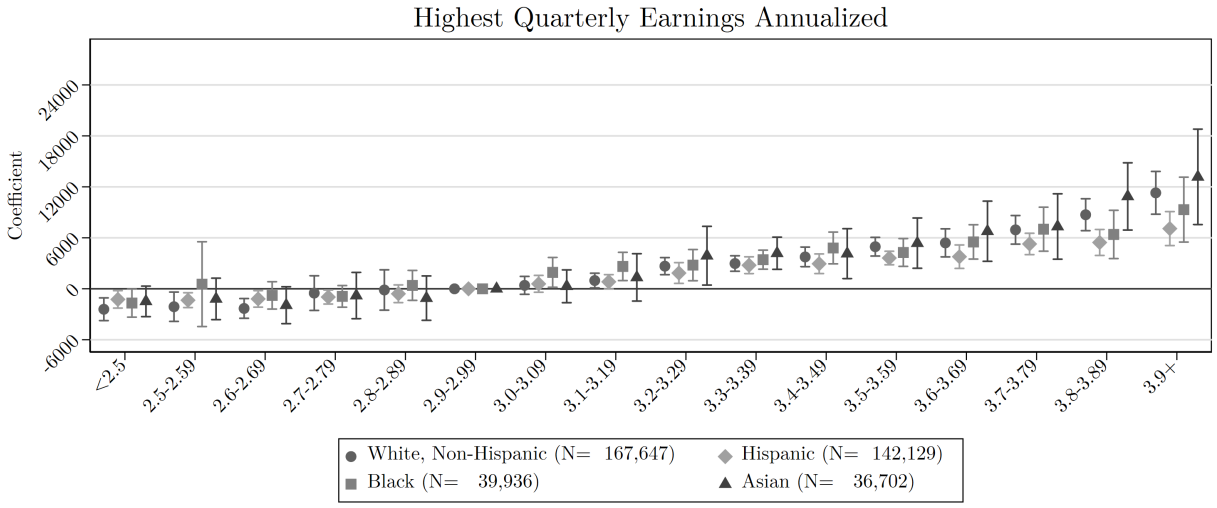
Figure 9: Real Earnings in the First Year, by Race/Ethnicity and GPA Bin

(a) Unconditional



2.9-2.99 mean for white: 38654.45; for Hispanic: 34637.01; for Black: 32412.45; for Asian: 36044.93

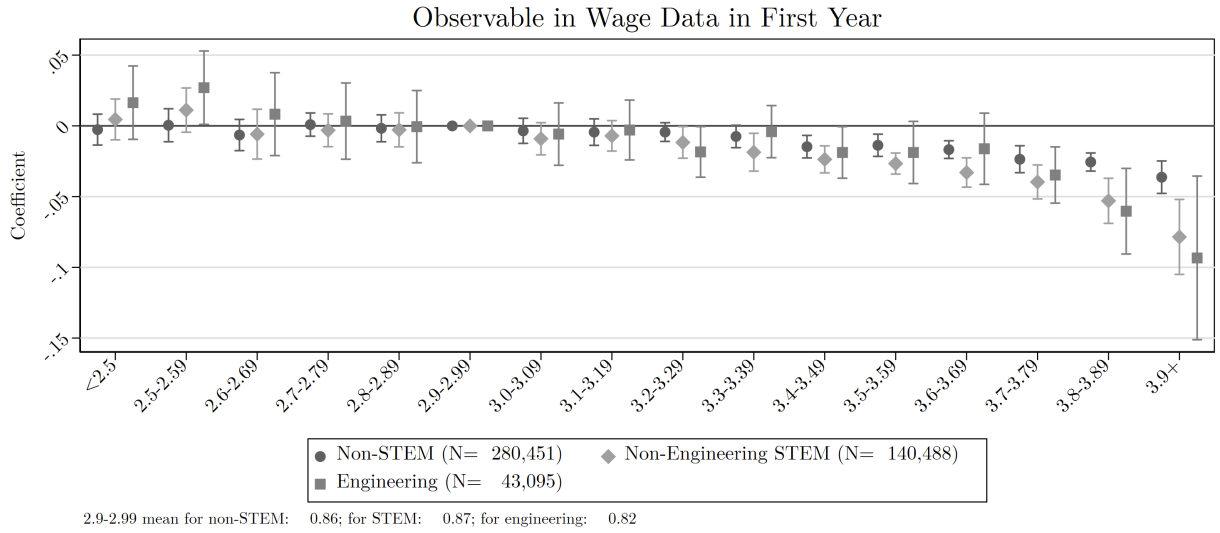
(b) Highest Quarterly Earnings Annualized



2.9-2.99 mean for white: 58908.03; for Hispanic: 51972.00; for Black: 50044.49; for Asian: 58958.71

Notes: The figure plots estimated coefficients on GPA bin indicators from OLS regressions. In Panel (a), Columns 5–8 of Table A12, the outcome is recorded earnings in the four quarters of the first post-graduation year, in 2024 Q1 dollars, with earnings set to zero for graduates not observed in the TWC wage data. In Panel (b), Columns 5–8 of Table A13, the outcome is the highest quarterly earnings in the first post-graduation year multiplied by four, in 2024 Q1 dollars, and graduates not observed in the TWC wage data are excluded. The 2.9–2.99 GPA bin is the omitted category. GPA bins have width 0.1, with GPAs below 2.5 and GPAs of 3.9 and above pooled into the endpoint bins. Bars represent 95% confidence intervals. Separate regressions are estimated for white non-Hispanic, Hispanic, Black, and Asian graduates. Groups are mutually exclusive; Hispanic ethnicity takes precedence, followed by Black race, Asian race, and white race. Graduates reporting neither race nor ethnicity are excluded. All plotted specifications include entering-cohort fixed effects and indicators for graduating in May and December, indicators for female, white, and Hispanic; college fixed effects; fixed effects for major at enrollment and major at graduation (two-digit CIP categories); an indicator for graduating in the top 10% of the high school class; indicators for scoring in the top and bottom 50% of the within-cohort SAT/ACT distribution; financial aid controls; and high school fixed effects. Graduates observed enrolling in graduate school in Texas in the year immediately following graduation are excluded.

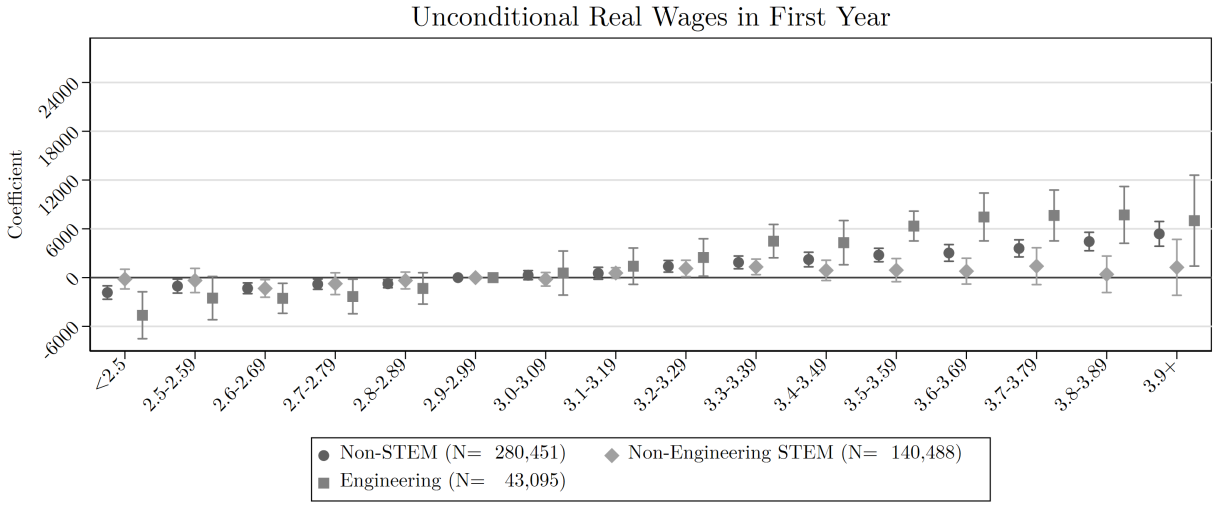
Figure 10: Presence in TWC Wage Data in the First Year, by Course of Study and GPA Bin



Notes: The figure plots estimated coefficients on GPA bin indicators from OLS regressions, corresponding to Columns 4–6 of Table A14. The outcome is an indicator for appearing in the TWC wage data in any of the four quarters of the first post-graduation year; it measures presence in these records rather than employment alone. The 2.9–2.99 GPA bin is the omitted category. GPA bins have width 0.1, with GPAs below 2.5 and GPAs of 3.9 and above pooled into the endpoint bins. Bars represent 95% confidence intervals. Separate regressions are estimated for non-STEM, non-engineering STEM, and engineering graduates. All plotted specifications include entering-cohort fixed effects and indicators for graduating in May and December, indicators for female, white, and Hispanic; college fixed effects; fixed effects for major at enrollment and major at graduation (two-digit CIP categories); an indicator for graduating in the top 10% of the high school class; indicators for scoring in the top and bottom 50% of the within-cohort SAT/ACT distribution and for submitting a test score; the number of years observed in the financial aid data; indicators for ever receiving subsidized loans, unsubsidized loans, and Pell Grants; and high school fixed effects. Graduates observed enrolling in graduate school in Texas in the year immediately following graduation are excluded.

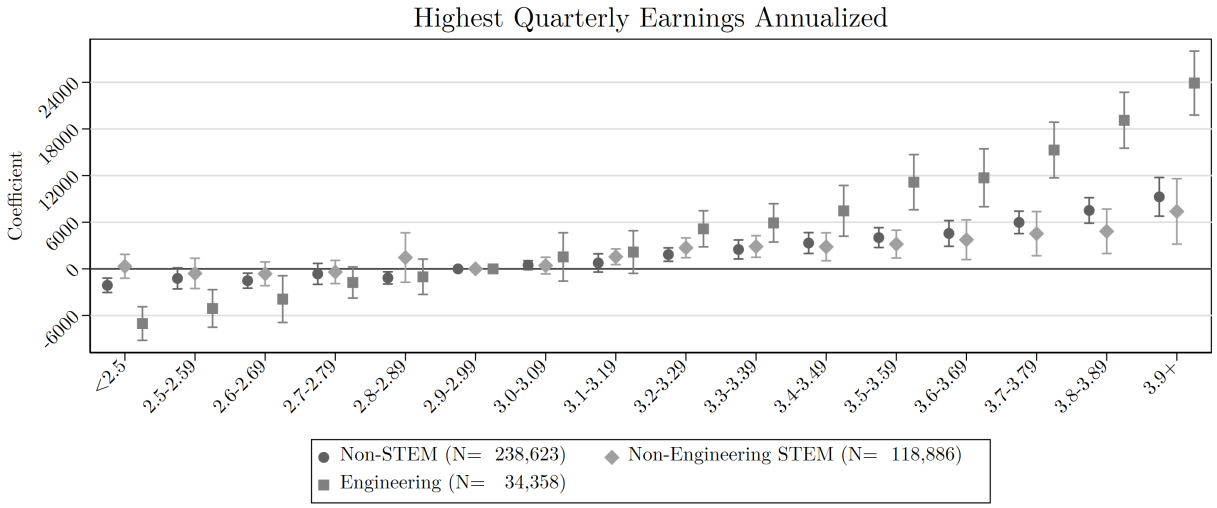
Figure 11: Real Earnings in the First Year, by Course of Study and GPA Bin

(a) Unconditional



2.9-2.99 mean for non-STEM: 34035.89; for STEM: 34089.46; for engineering: 52922.74

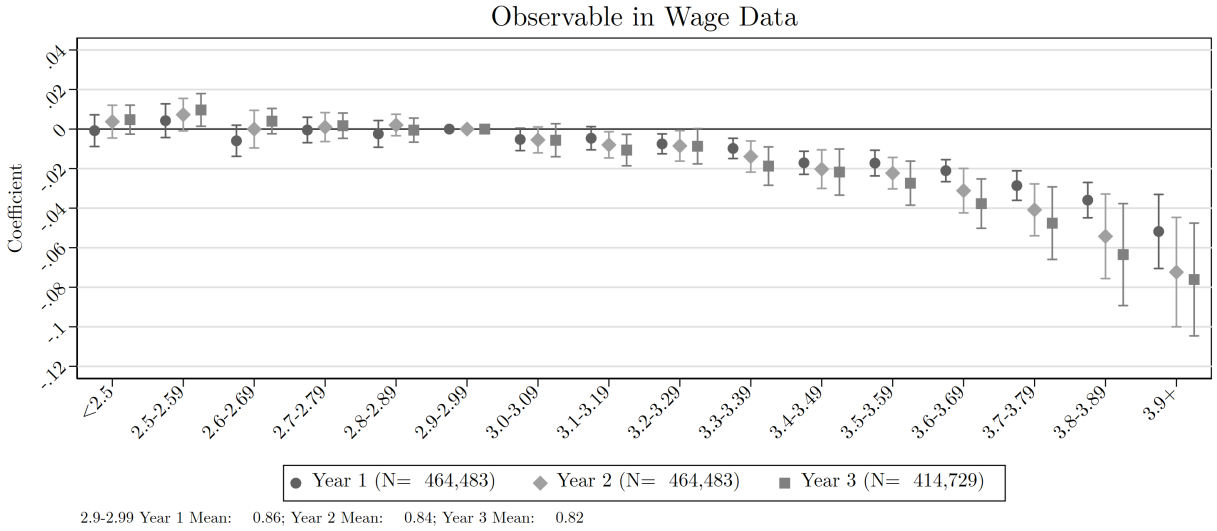
(b) Highest Quarterly Earnings Annualized



2.9-2.99 mean for non-STEM: 52192.60; for STEM: 51771.50; for engineering: 81863.65

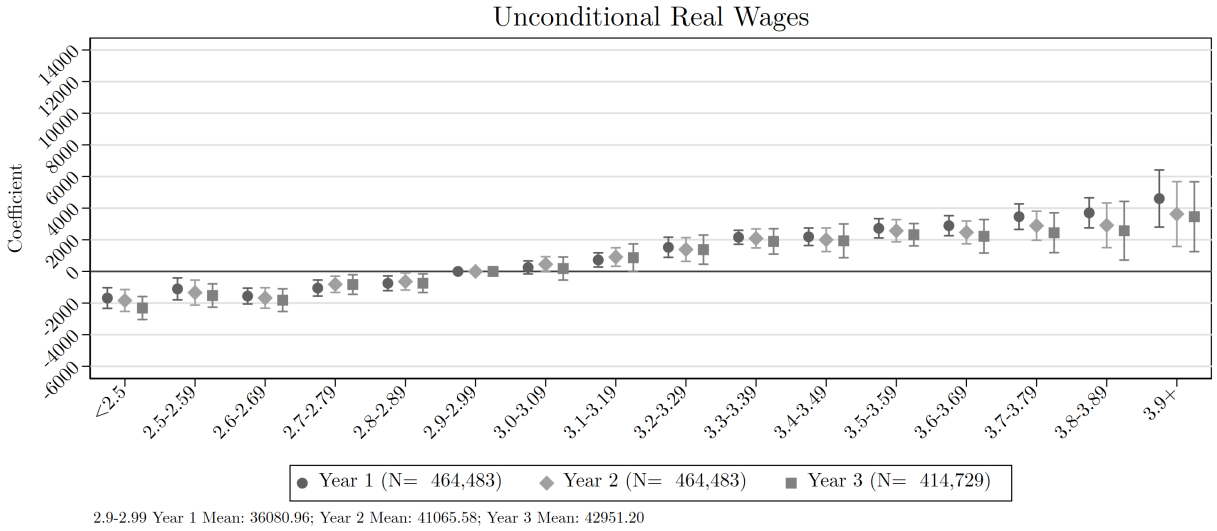
Notes: The figure plots estimated coefficients on GPA bin indicators from OLS regressions. In Panel (a), the outcome is the sum of recorded earnings over the four quarters of the first post-graduation year, in 2024 Q1 dollars, with earnings set to zero for graduates not observed in the TWC wage data (Columns 4–6 of Table A15). In Panel (b), the outcome is the highest quarterly earnings in the first post-graduation year multiplied by four, in 2024 Q1 dollars (Columns 4–6 of Table A16), and graduates not observed in the TWC wage data are excluded. The 2.9–2.99 GPA bin is the omitted category. GPA bins have width 0.1, with GPAs below 2.5 and GPAs of 3.9 and above pooled into the endpoint bins. Bars represent 95% confidence intervals. Separate regressions are estimated for non-STEM, non-engineering STEM, and engineering graduates. All plotted specifications include entering-cohort fixed effects and indicators for graduating in May and December, indicators for female, white, and Hispanic; college fixed effects; fixed effects for major at enrollment and major at graduation (two-digit CIP categories); an indicator for graduating in the top 10% of the high school class; indicators for scoring in the top and bottom 50% of the within-cohort SAT/ACT distribution and for submitting a test score; financial aid controls; and high school fixed effects. Graduates observed enrolling in graduate school in Texas in the year immediately following graduation are excluded.

Figure 12: Observability in Wage Data Over Time



Notes: The figure plots estimated coefficients on GPA bin indicators from OLS regressions. The outcome is observability in the TWC wage data in the first, second, and third post-graduation years, respectively. The 2.9–2.99 GPA bin is the omitted category. GPA bins have width 0.1, with GPAs below 2.5 and GPAs of 3.9 and above pooled into the endpoint bins. Bars represent 95% confidence intervals. All specifications includes entering-cohort fixed effects; indicators for graduating in May and December; indicators for female, white, and Hispanic; college fixed effects; fixed effects for major at enrollment and major at graduation (two-digit CIP categories); an indicator for graduating in the top 10% of the high school class; indicators for scoring in the top and bottom 50% of the within-cohort SAT/ACT distribution and for submitting a test score; the number of years observed in the financial aid data; indicators for ever receiving subsidized loans, unsubsidized loans, and Pell Grants; and high school fixed effects. Graduates observed enrolling in graduate school in Texas in the year immediately following graduation are excluded.

Figure 13: Unconditional Real Wages Over Time



Notes: The figure plots estimated coefficients on GPA bin indicators from OLS regressions. The outcome is unconditional real earnings in the first, second, and third post-graduation year multiplied by four, in 2024 Q1 dollars, respectively. Graduates not observed in the TWC wage data are excluded. The 2.9–2.99 GPA bin is the omitted category. GPA bins have width 0.1, with GPAs below 2.5 and GPAs of 3.9 and above pooled into the endpoint bins. Bars represent 95% confidence intervals. All specifications includes entering-cohort fixed effects; indicators for graduating in May and December; indicators for female, white, and Hispanic; college fixed effects; fixed effects for major at enrollment and major at graduation (two-digit CIP categories); an indicator for graduating in the top 10% of the high school class; indicators for scoring in the top and bottom 50% of the within-cohort SAT/ACT distribution and for submitting a test score; the number of years observed in the financial aid data; indicators for ever receiving subsidized loans, unsubsidized loans, and Pell Grants; and high school fixed effects. Graduates observed enrolling in graduate school in Texas in the year immediately following graduation are excluded.

Tables

Table 1: Descriptive Statistics

	Mean	SD	N
Female	0.58	(0.49)	464,483
White (Non-Hispanic)	0.45	(0.50)	464,483
Hispanic	0.35	(0.48)	464,483
Top 10% of HS Graduating Class	0.22	(0.42)	464,483
ACT Score (if submitted)	23.45	(4.96)	192,702
SAT Score (if submitted)	1093.22	(179.13)	266,236
% Submitting ACT or SAT	0.73	(0.44)	464,483
Number of AP Classes Taken	5.81	(6.04)	368,693
Any Dual Credit Courses	0.42	(0.49)	368,693
Number of Years in FADS Data	4.18	(2.09)	464,483
Received Any Subsidized Loans	0.57	(0.50)	464,483
Received Any Unsubsidized Loans	0.53	(0.50)	464,483
Received Any Pell Grants	0.51	(0.50)	464,483
Enrolled in College as STEM Major	0.42	(0.49)	464,483
Graduated College as STEM Major	0.40	(0.49)	464,483
Graduating GPA	3.24	(0.46)	464,483
Graduated in May	0.54	(0.50)	464,483
Enrolled in Graduate School Within 1 Year	0.00	(0.00)	464,483

Notes: Table displays descriptive statistics for the sample of college students who graduated between 2014 and 2022 who did not enroll in graduate school in Texas in the year immediately following award of their Bachelor's degree. The "mean" column reports the mean of each variable across all observations with non-missing values of that variable, "Std. dev." reports the standard deviation, and "N" reports the number of observations with a non-missing value of that variable.

A Appendix Tables and Figures

Table A1: Presence in TWC Wage Data in the First Year by GPA Bin

	(1)	(2)	(3)	(4)
<2.5	0.002	-0.000	-0.001	-0.001
	(0.005)	(0.005)	(0.004)	(0.004)
2.5-2.59	0.008	0.004	0.004	0.004
	(0.006)	(0.005)	(0.004)	(0.004)
2.6-2.69	-0.003	-0.006	-0.006	-0.006
	(0.005)	(0.004)	(0.004)	(0.004)
2.7-2.79	0.003	0.000	-0.000	-0.000
	(0.004)	(0.003)	(0.003)	(0.003)
2.8-2.89	-0.001	-0.002	-0.003	-0.002
	(0.004)	(0.004)	(0.003)	(0.003)
3.0-3.09	-0.004	-0.005*	-0.005*	-0.005*
	(0.003)	(0.003)	(0.003)	(0.003)
3.1-3.19	-0.005*	-0.005*	-0.005*	-0.005
	(0.003)	(0.003)	(0.003)	(0.003)
3.2-3.29	-0.009***	-0.009***	-0.008***	-0.007***
	(0.003)	(0.002)	(0.002)	(0.002)
3.3-3.39	-0.013***	-0.011***	-0.011***	-0.010***
	(0.004)	(0.002)	(0.002)	(0.003)
3.4-3.49	-0.021***	-0.019***	-0.019***	-0.017***
	(0.006)	(0.003)	(0.003)	(0.003)
3.5-3.59	-0.023***	-0.021***	-0.019***	-0.017***
	(0.007)	(0.004)	(0.004)	(0.003)
3.6-3.69	-0.031***	-0.026***	-0.024***	-0.021***
	(0.008)	(0.004)	(0.003)	(0.003)
3.7-3.79	-0.038***	-0.034***	-0.032***	-0.029***
	(0.010)	(0.005)	(0.004)	(0.004)
3.8-3.89	-0.050***	-0.044***	-0.041***	-0.036***
	(0.012)	(0.006)	(0.006)	(0.004)
3.9+	-0.063***	-0.063***	-0.058***	-0.052***
	(0.015)	(0.011)	(0.010)	(0.009)
Observations	464,483	464,483	464,483	464,483
2.9-2.99 Average	0.86	0.86	0.86	0.86
College FE	No	Yes	Yes	Yes
Demographic Controls	No	Yes	Yes	Yes
College Controls	No	No	Yes	Yes
FAFSA Controls	No	No	Yes	Yes
HS FE	No	No	No	Yes
Clusters	39	39	39	39

Notes: The table reports OLS coefficients on GPA bin indicators. The outcome is an indicator for appearing in the TWC wage data in any of the four quarters of the first post-graduation year; it measures presence in these records rather than employment alone. The 2.9–2.99 GPA bin is the omitted category. GPA bins have width 0.1, with GPAs below 2.5 and GPAs of 3.9 and above pooled into the endpoint bins. Standard errors are in parentheses. All columns include entering-cohort fixed effects and indicators for graduating in May and December. Column 2 adds indicators for female, white, and Hispanic and college fixed effects. Column 3 adds major-at-enrollment and major-at-graduation fixed effects (two-digit CIP), the high school top-10% indicator, SAT/ACT controls (top half, bottom half, and score submission), years observed in the financial aid data, and indicators for ever receiving subsidized loans, unsubsidized loans, and Pell Grants. Column 4 adds high school fixed effects. Graduates observed enrolling in graduate school in Texas in the year immediately following graduation are excluded. Columns 1 and 4 are plotted in Figure 2.

Table A2: Unconditional Real Earnings in the First Year by GPA Bin

	(1)	(2)	(3)	(4)
<2.5	-3,089.077***	-3,405.360***	-1,725.971***	-1,683.549***
	(411.186)	(335.177)	(317.465)	(322.313)
2.5-2.59	-1,774.766***	-2,151.910***	-1,148.814***	-1,103.973***
	(374.912)	(335.241)	(322.697)	(341.415)
2.6-2.69	-2,235.764***	-2,446.196***	-1,629.315***	-1,557.006***
	(317.241)	(277.650)	(242.996)	(247.265)
2.7-2.79	-1,301.470***	-1,524.817***	-1,079.102***	-1,049.461***
	(296.058)	(284.908)	(255.345)	(250.461)
2.8-2.89	-981.955***	-1,062.504***	-809.728***	-749.649***
	(277.248)	(255.009)	(229.281)	(230.118)
3.0-3.09	641.748***	616.760***	218.402	253.846
	(195.003)	(185.476)	(202.780)	(203.363)
3.1-3.19	1,013.165***	1,246.060***	683.632***	727.387***
	(306.884)	(294.710)	(215.338)	(221.931)
3.2-3.29	1,997.473***	2,251.863***	1,478.564***	1,525.895***
	(323.543)	(285.837)	(313.006)	(314.428)
3.3-3.39	2,449.635***	2,842.426***	2,098.716***	2,159.119***
	(414.046)	(383.779)	(207.295)	(218.086)
3.4-3.49	2,390.668***	2,903.803***	2,111.974***	2,191.547***
	(482.539)	(432.198)	(263.543)	(274.011)
3.5-3.59	2,814.733***	3,332.721***	2,666.273***	2,725.764***
	(520.938)	(430.506)	(291.003)	(301.074)
3.6-3.69	2,629.881***	3,332.802***	2,829.065***	2,891.906***
	(450.224)	(445.732)	(305.201)	(312.706)
3.7-3.79	3,049.202***	3,686.631***	3,330.840***	3,461.399***
	(664.039)	(563.613)	(385.873)	(398.617)
3.8-3.89	3,069.037***	3,761.103***	3,587.436***	3,703.337***
	(617.515)	(553.307)	(447.751)	(469.560)
3.9+	4,123.170***	4,577.961***	4,398.166***	4,607.673***
	(1,073.836)	(934.759)	(865.304)	(891.741)
Observations	464,483	464,483	464,483	464,483
2.9-2.99 Average	36,080.96	36,080.96	36,080.96	36,080.96
College FE	No	Yes	Yes	Yes
Demographic Controls	No	Yes	Yes	Yes
College Controls	No	No	Yes	Yes
FAFSA Controls	No	No	Yes	Yes
HS FE	No	No	No	Yes
Clusters	39	39	39	39

Notes: The table reports OLS coefficients on GPA bin indicators. The outcome is the sum of recorded earnings over the four quarters of the first post-graduation year, in 2024 Q1 dollars. Earnings are set to zero for graduates not observed in the TWC wage data. The 2.9–2.99 GPA bin is the omitted category. GPA bins have width 0.1, with GPAs below 2.5 and GPAs of 3.9 and above pooled into the endpoint bins. Standard errors are in parentheses. All columns include entering-cohort fixed effects and indicators for graduating in May and December. Column 2 adds indicators for female, white, and Hispanic and college fixed effects. Column 3 adds major-at-enrollment and major-at-graduation fixed effects (two-digit CIP), the high school top-10% indicator, SAT/ACT controls (top half, bottom half, and score submission), years observed in the financial aid data, and indicators for ever receiving subsidized loans, unsubsidized loans, and Pell Grants. Column 4 adds high school fixed effects. Graduates observed enrolling in graduate school in Texas in the year immediately following graduation are excluded. Columns 1 and 4 are plotted in Figure 3.

Table A3: Highest Quarterly Earnings in the First Year, Annualized by GPA Bin

	(1)	(2)	(3)	(4)
<2.5	-4,017.421***	-4,288.736***	-1,881.678***	-1,790.840***
	(648.622)	(590.613)	(354.894)	(347.141)
2.5-2.59	-2,640.580***	-2,892.989***	-1,449.400***	-1,419.539***
	(624.905)	(572.675)	(458.249)	(488.776)
2.6-2.69	-2,858.651***	-2,954.690***	-1,742.242***	-1,644.625***
	(474.218)	(394.472)	(282.486)	(286.194)
2.7-2.79	-1,432.810**	-1,584.317***	-896.932**	-792.717*
	(536.797)	(516.230)	(435.372)	(426.240)
2.8-2.89	-1,026.038	-982.420	-549.549	-447.356
	(619.275)	(593.482)	(496.474)	(495.826)
3.0-3.09	965.413***	1,064.831***	571.341**	612.956***
	(286.590)	(288.080)	(216.113)	(222.602)
3.1-3.19	1,555.377***	1,886.805***	1,157.708***	1,216.869***
	(359.390)	(423.933)	(258.461)	(264.303)
3.2-3.29	3,150.840***	3,599.032***	2,533.879***	2,535.615***
	(389.420)	(403.046)	(373.336)	(354.798)
3.3-3.39	3,605.492***	4,154.372***	3,150.302***	3,119.234***
	(461.079)	(506.801)	(281.668)	(289.561)
3.4-3.49	4,102.948***	4,812.021***	3,704.430***	3,715.604***
	(566.600)	(576.047)	(380.441)	(377.085)
3.5-3.59	4,842.969***	5,571.486***	4,648.419***	4,583.509***
	(580.710)	(532.920)	(400.797)	(346.507)
3.6-3.69	5,049.481***	5,856.515***	5,219.900***	5,075.210***
	(1,062.424)	(836.349)	(711.032)	(637.835)
3.7-3.79	6,252.666***	7,015.022***	6,623.115***	6,486.288***
	(1,188.731)	(909.112)	(726.454)	(637.226)
3.8-3.89	7,421.034***	8,224.985***	8,082.503***	7,858.724***
	(1,383.286)	(1,143.075)	(986.084)	(845.919)
3.9+	9,412.670***	10,523.161***	10,333.600***	10,124.449***
	(1,332.400)	(1,328.198)	(1,248.080)	(1,158.500)
Observations	392,337	392,337	392,337	392,337
2.9-2.99 Average	55,111.30	55,111.30	55,111.30	55,111.30
College FE	No	Yes	Yes	Yes
Demographic Controls	No	Yes	Yes	Yes
College Controls	No	No	Yes	Yes
FAFSA Controls	No	No	Yes	Yes
HS FE	No	No	No	Yes
Clusters	39	39	39	39

Notes: The table reports OLS coefficients on GPA bin indicators. The outcome is the highest quarterly earnings in the first post-graduation year multiplied by four, in 2024 Q1 dollars. Graduates not observed in the TWC wage data are excluded. The 2.9–2.99 GPA bin is the omitted category. GPA bins have width 0.1, with GPAs below 2.5 and GPAs of 3.9 and above pooled into the endpoint bins. Standard errors are in parentheses. All columns include entering-cohort fixed effects and indicators for graduating in May and December. Column 2 adds indicators for female, white, and Hispanic and college fixed effects. Column 3 adds major-at-enrollment and major-at-graduation fixed effects (two-digit CIP), the high school top-10% indicator, SAT/ACT controls (top half, bottom half, and score submission), years observed in the financial aid data, and indicators for ever receiving subsidized loans, unsubsidized loans, and Pell Grants. Column 4 adds high school fixed effects. Graduates observed enrolling in graduate school in Texas in the year immediately following graduation are excluded. Columns 1 and 4 are plotted in Figure 4.

Table A4: Graduate School Enrollment in the First Year by GPA Bin

	(1)	(2)
<2.5	-0.053***	-0.065***
	(0.003)	(0.004)
2.5-2.59	-0.036***	-0.043***
	(0.003)	(0.003)
2.6-2.69	-0.031***	-0.038***
	(0.002)	(0.002)
2.7-2.79	-0.025***	-0.028***
	(0.002)	(0.002)
2.8-2.89	-0.011***	-0.013***
	(0.002)	(0.002)
3.0-3.09	0.015***	0.018***
	(0.004)	(0.003)
3.1-3.19	0.026***	0.031***
	(0.003)	(0.003)
3.2-3.29	0.038***	0.044***
	(0.005)	(0.004)
3.3-3.39	0.052***	0.059***
	(0.006)	(0.005)
3.4-3.49	0.062***	0.070***
	(0.007)	(0.006)
3.5-3.59	0.074***	0.083***
	(0.007)	(0.005)
3.6-3.69	0.093***	0.103***
	(0.008)	(0.006)
3.7-3.79	0.113***	0.122***
	(0.011)	(0.008)
3.8-3.89	0.135***	0.142***
	(0.012)	(0.008)
3.9+	0.178***	0.179***
	(0.016)	(0.011)
Observations	534,452	534,452
2.9-2.99 Average	0.08	0.08
College FE	No	Yes
Demographic Controls	No	Yes
College Controls	No	Yes
FAFSA Controls	No	Yes
HS FE	No	Yes
Clusters	39	39

Notes: The table reports OLS coefficients on GPA bin indicators. The outcome is an indicator for observed enrollment in a graduate program in Texas in the year immediately following bachelor's degree completion. The sample includes graduates who subsequently enroll in graduate school. The 2.9–2.99 GPA bin is the omitted category. GPA bins have width 0.1, with GPAs below 2.5 and GPAs of 3.9 and above pooled into the endpoint bins. Standard errors are in parentheses. Column 1 includes entering-cohort fixed effects and indicators for graduating in May and December. Column 2 additionally includes indicators for female, white, and Hispanic; college fixed effects; fixed effects for major at enrollment and major at graduation (two-digit CIP categories); an indicator for graduating in the top 10% of the high school class; indicators for scoring in the top and bottom 50% of the within-cohort SAT/ACT distribution and for submitting a test score; the number of years observed in the financial aid data; indicators for ever receiving subsidized loans, unsubsidized loans, and Pell Grants; and high school fixed effects. Columns 1 and 2 are plotted in Figure 5.

Table A5: Robustness: First-Year Presence in TWC Data

	(1) Main	(2) Grad Students	(3) HS Controls	(4) ACT/SAT Pct	(5) Clear GPA Policies	(6) Drop Missing Race/Ethnicity	(7) Year Definition
<2.5	-0.001	-0.003	0.003	0.006	-0.000	-0.000	-0.001
	(0.004)	(0.004)	(0.004)	(0.004)	(0.005)	(0.005)	(0.003)
2.5-2.59	0.004	0.002	0.007	0.012**	0.004	0.004	-0.000
	(0.004)	(0.004)	(0.005)	(0.005)	(0.005)	(0.006)	(0.004)
2.6-2.69	-0.006	-0.006	-0.006	-0.003	-0.008	-0.007	-0.006
	(0.004)	(0.004)	(0.005)	(0.005)	(0.005)	(0.004)	(0.004)
2.7-2.79	-0.000	-0.002	-0.002	0.002	-0.002	-0.003	-0.001
	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)	(0.004)	(0.003)
2.8-2.89	-0.002	-0.003	-0.002	-0.001	-0.003	-0.005	-0.004
	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)	(0.003)
3.0-3.09	-0.005*	-0.005	-0.005*	-0.003	-0.006*	-0.005	-0.006**
	(0.003)	(0.003)	(0.003)	(0.002)	(0.003)	(0.003)	(0.003)
3.1-3.19	-0.005	-0.005*	-0.004	-0.003	-0.004	-0.005	-0.004
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)	(0.003)
3.2-3.29	-0.007***	-0.008***	-0.006**	-0.006***	-0.007**	-0.007**	-0.008***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)
3.3-3.39	-0.010***	-0.010***	-0.010***	-0.009***	-0.010***	-0.010***	-0.009***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
3.4-3.49	-0.017***	-0.016***	-0.016***	-0.014***	-0.016***	-0.016***	-0.015***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)	(0.003)
3.5-3.59	-0.017***	-0.019***	-0.017***	-0.018***	-0.018***	-0.018***	-0.016***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)
3.6-3.69	-0.021***	-0.024***	-0.021***	-0.020***	-0.021***	-0.022***	-0.017***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
3.7-3.79	-0.029***	-0.034***	-0.031***	-0.031***	-0.030***	-0.030***	-0.025***
	(0.004)	(0.004)	(0.003)	(0.004)	(0.004)	(0.004)	(0.004)
3.8-3.89	-0.036***	-0.046***	-0.037***	-0.038***	-0.036***	-0.038***	-0.032***
	(0.004)	(0.005)	(0.003)	(0.003)	(0.005)	(0.005)	(0.004)
3.9+	-0.052***	-0.066***	-0.051***	-0.060***	-0.055***	-0.057***	-0.043***
	(0.009)	(0.008)	(0.008)	(0.010)	(0.010)	(0.011)	(0.008)
Observations	464,483	534,452	368,626	338,787	387,790	352,593	464,483
2.9-2.99 Average	0.86	0.86	0.87	0.86	0.86	0.86	0.87
College FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Demographic Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
College Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FAFSA Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HS FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Clusters	39	39	39	39	28	28	39

Notes: Table reports coefficients on the GPA bin indicators from a series of robustness checks. The outcome is an 0/1 indicator for being observed in the TWC wage data in the first year. Each column is a separate specification, and unless otherwise stated all specifications include the largest set of controls: entering cohort; indicators for month of graduation, gender, and race; college-level fixed effects; fixed effects for major at enrollment and major at graduation; an indicator for graduating in the top 10% of their high school class; SAT/ACT performance; financial aid controls; and high school fixed effects. Column 1 reports the main adjusted specification. Column 2 additionally includes students who enrolled in graduate school in the year immediately following their Bachelor's degree and adds an indicator for subsequent graduate enrollment. Column 3 adds additional high school controls: indicators for enrollment in AP courses, dual credit courses, and IB courses. Column 4 replaces the test-score indicators with the continuous ACT/SAT percentile and drops individuals who did not submit either an SAT or ACT score. Column 5 drops universities with unclear GPA policies or GPA policies that relied on student compliance. Column 6 drops all students who did not report a race and ethnicity on any college application. Column 7 re-defines the first year following graduation as Q3–4 of the graduating year and Q1–2 of the following year for May graduates, rather than Q4 of the graduating year and Q1–3 of the following year.

Table A6: Robustness: First-Year Wages

	(1) Main	(2) Grad Students	(3) HS Controls	(4) ACT/SAT Pct	(5) Clear GPA Policies	(6) Drop Missing Race/Ethnicity	(7) Year Definition	(8) Winsorized (99)
<2.5	-1,683.549***	-2,103.922***	-1,309.584***	-989.150**	-1,762.410***	-1,751.692***	-1,377.233***	-1,655.165***
	(322.313)	(318.480)	(336.667)	(395.161)	(410.233)	(447.469)	(324.357)	(310.702)
2.5-2.59	-1,103.973***	-1,343.646***	-1,133.134***	-579.628	-1,052.937**	-953.608*	-1,072.687***	-1,238.904***
	(341.415)	(327.508)	(320.399)	(357.826)	(441.215)	(483.109)	(303.460)	(281.873)
2.6-2.69	-1,557.006***	-1,714.880***	-1,372.338***	-1,285.962***	-1,712.222***	-1,735.962***	-1,408.695***	-1,536.853***
	(247.265)	(232.435)	(287.701)	(301.998)	(290.627)	(278.477)	(260.538)	(243.441)
2.7-2.79	-1,049.461***	-1,177.841***	-999.562***	-929.437***	-1,091.327***	-1,154.251***	-977.554***	-1,207.472***
	(250.461)	(232.704)	(281.559)	(274.146)	(305.982)	(359.459)	(242.249)	(221.097)
2.8-2.89	-749.649***	-796.637***	-711.155**	-618.332*	-796.774***	-807.986***	-907.686***	-873.198***
	(230.118)	(231.016)	(266.214)	(312.345)	(270.856)	(252.736)	(228.444)	(205.339)
3.0-3.09	253.846	307.821*	337.847	415.764	270.251	257.236	156.097	190.648
	(203.363)	(182.135)	(216.948)	(273.931)	(220.284)	(227.511)	(216.877)	(213.972)
3.1-3.19	727.387***	733.985***	629.155**	804.432**	792.319***	701.852**	685.768***	681.337***
	(221.931)	(197.044)	(265.739)	(299.925)	(243.386)	(267.544)	(210.441)	(224.758)
3.2-3.29	1,525.895***	1,382.738***	1,584.038***	1,671.178***	1,656.660***	1,717.004***	1,414.237***	1,376.367***
	(314.428)	(281.583)	(337.124)	(419.946)	(328.366)	(323.500)	(324.250)	(327.068)
3.3-3.39	2,159.119***	2,065.333***	2,078.072***	2,355.708***	2,206.488***	2,281.518***	2,069.632***	2,030.006***
	(218.086)	(188.184)	(300.267)	(280.810)	(217.159)	(238.506)	(226.283)	(210.489)
3.4-3.49	2,191.547***	2,005.000***	2,130.703***	2,246.353***	2,275.928***	2,300.532***	2,095.738***	2,041.959***
	(274.011)	(238.107)	(298.438)	(357.995)	(308.235)	(338.530)	(264.669)	(265.589)
3.5-3.59	2,725.764***	2,215.556***	2,521.669***	2,452.790***	2,603.531***	2,619.529***	2,723.519***	2,465.772***
	(301.074)	(273.164)	(295.954)	(305.007)	(319.405)	(345.519)	(307.452)	(292.415)
3.6-3.69	2,891.906***	2,409.004***	2,510.216***	2,748.523***	2,954.911***	2,989.748***	2,935.364***	2,679.338***
	(312.706)	(279.746)	(362.382)	(448.085)	(330.702)	(340.954)	(332.632)	(302.047)
3.7-3.79	3,461.399***	2,684.266***	2,751.042***	2,763.839***	3,280.272***	3,283.031***	3,492.676***	3,045.784***
	(398.617)	(358.266)	(386.764)	(374.495)	(402.607)	(431.928)	(399.587)	(382.748)
3.8-3.89	3,703.337***	2,748.840***	3,026.760***	2,999.066***	3,368.735***	3,333.956***	3,766.876***	3,169.354***
	(469.560)	(418.037)	(432.870)	(525.648)	(502.491)	(518.795)	(445.781)	(481.079)
3.9+	4,607.673***	3,096.756***	3,559.072***	2,782.526***	3,813.258***	3,788.635***	4,780.312***	3,826.829***
	(891.741)	(699.974)	(799.339)	(923.247)	(847.606)	(875.732)	(849.810)	(832.647)
Observations	464,483	534,452	368,626	338,787	387,790	352,593	464,483	464,483
2.9-2.99 Average	36,080.42	34,938.91	36,025.05	35,504.41	36,325.04	36,413.91	32,645.33	35,888.98
College FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Demographic Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
College Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FAFSA Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HS FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Clusters	39	39	39	39	28	28	39	39

Notes: Table reports coefficients on the GPA bin indicators from a series of robustness checks. The outcome is unconditional wages in the first year. Each column is a separate specification, and unless otherwise stated all specifications include the fully saturated set of controls: entering cohort; indicators for month of graduation, gender, and race; college-level fixed effects; fixed effects for major at enrollment and major at graduation; an indicator for graduating in the top 10% of their high school class; SAT/ACT performance; financial aid controls; and high school fixed effects. Column 1 reports the fully saturated specification. Column 2 additionally includes students who enrolled in graduate school in the year immediately following their Bachelor's degree and adds the subsequent control. Column 3 adds additional high school controls: indicators for enrollment in AP courses, dual credit courses, and IB courses. Column 4 replaces the test-score indicators with the continuous ACT/SAT percentile and drops individuals who did not submit either an SAT or ACT score. Column 5 drops universities with unclear GPA policies or GPA policies that relied on student compliance. Column 6 drops all students who did not report a race and ethnicity on any college application. Column 7 re-defines the first year following graduation as Q3–4 of the graduating year and Q1–2 of the following year for May graduates, rather than Q4 of the graduating year and Q1–3 of the following year. Column 8 winsorizes the outcome variable at the 99th percentile.

Table A7: Robustness: Highest Quarterly Earnings (Annualized)

	(1) Main	(2) Grad Students	(3) HS Controls	(4) ACT/SAT Pct	(5) Clear GPA Policies	(6) Drop Missing Race/Ethnicity	(7) Year Definition	(8) Winsorized (99)
<2.5	-1,790.840***	-2,159.921***	-1,448.806***	-1,091.400**	-1,954.749***	-1,973.375***	-1,701.977***	-1,666.943***
	(347.141)	(363.953)	(377.907)	(423.704)	(437.584)	(488.461)	(368.612)	(323.586)
2.5-2.59	-1,419.539***	-1,542.307***	-1,801.872***	-1,152.046***	-1,361.911**	-1,259.911*	-1,187.332**	-1,687.875***
	(488.776)	(489.316)	(359.654)	(376.963)	(624.233)	(731.031)	(445.970)	(282.106)
2.6-2.69	-1,644.625***	-1,808.423***	-1,360.066***	-1,293.672***	-1,829.800***	-1,877.067***	-1,541.614***	-1,574.454***
	(286.194)	(319.297)	(324.556)	(341.611)	(348.769)	(376.320)	(300.803)	(248.303)
2.7-2.79	-792.717*	-882.140**	-498.686	-688.508*	-683.787	-677.958	-1,023.655***	-1,202.481***
	(426.240)	(401.345)	(486.362)	(391.846)	(526.196)	(601.547)	(364.795)	(226.019)
2.8-2.89	-447.356	-548.595	-347.234	-133.210	-516.180	-422.531	-977.058***	-906.148***
	(495.826)	(496.086)	(587.597)	(636.688)	(556.573)	(615.722)	(275.511)	(225.547)
3.0-3.09	612.956***	671.352***	664.595**	870.405***	640.161**	653.791**	511.767**	543.242**
	(222.602)	(192.138)	(272.920)	(303.154)	(261.758)	(281.869)	(251.764)	(206.054)
3.1-3.19	1,216.869***	1,285.054***	995.025***	1,211.134***	1,198.198***	1,145.458***	1,099.672***	1,153.181***
	(264.303)	(254.836)	(328.179)	(300.219)	(302.499)	(355.208)	(226.199)	(207.529)
3.2-3.29	2,535.615***	2,412.397***	2,234.368***	2,670.035***	2,597.945***	2,705.507***	2,499.094***	2,041.055***
	(354.798)	(330.377)	(414.121)	(573.687)	(389.424)	(361.002)	(382.848)	(349.283)
3.3-3.39	3,119.234***	3,153.543***	2,919.534***	3,381.104***	3,146.422***	3,251.377***	3,178.455***	3,004.649***
	(289.561)	(248.562)	(335.566)	(366.762)	(322.523)	(347.860)	(305.533)	(254.029)
3.4-3.49	3,715.604***	3,508.195***	3,225.360***	3,728.774***	3,676.621***	3,725.281***	3,555.765***	3,378.932***
	(377.085)	(372.489)	(362.055)	(523.510)	(407.344)	(383.631)	(423.040)	(328.014)
3.5-3.59	4,583.509***	4,038.392***	4,086.501***	4,390.121***	4,507.829***	4,483.836***	4,787.502***	4,177.393***
	(346.507)	(329.482)	(412.341)	(530.019)	(372.268)	(360.513)	(497.194)	(329.127)
3.6-3.69	5,075.210***	4,674.132***	4,382.898***	5,066.612***	5,181.759***	5,287.676***	4,974.709***	4,660.607***
	(637.835)	(581.420)	(542.589)	(928.770)	(661.517)	(634.192)	(588.589)	(538.334)
3.7-3.79	6,486.288***	5,744.188***	5,367.227***	5,955.064***	6,298.140***	6,365.083***	6,256.901***	5,580.116***
	(637.226)	(626.359)	(550.914)	(988.383)	(697.897)	(693.668)	(561.703)	(500.715)
3.8-3.89	7,858.724***	6,800.748***	6,468.575***	7,447.824***	7,562.535***	7,665.027***	7,399.324***	6,605.687***
	(845.919)	(780.773)	(864.924)	(1,308.821)	(949.942)	(926.853)	(705.924)	(603.049)
3.9+	10,124.449***	8,290.436***	8,141.487***	8,336.088***	9,367.966***	9,539.788***	9,602.629***	8,398.229***
	(1,158.500)	(1,015.537)	(1,241.856)	(1,678.415)	(1,212.552)	(1,213.587)	(988.028)	(917.270)
Observations	392,337	445,822	316,705	285,022	326,463	296,168	395,663	392,337
2.9-2.99 Average	55,110.97	53,770.65	54,094.24	54,340.57	55,616.28	55,796.32	51,890.18	54,635.92
College FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Demographic Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
College Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FAFSA Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
HS FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Clusters	39	39	39	39	28	28	39	39

Notes: Table reports coefficients on the GPA bin indicators from a series of robustness checks. The outcome is the highest quarterly earnings, annualized. Each column is a separate specification, and unless otherwise stated all specifications include the fully saturated set of controls: entering cohort; indicators for month of graduation, gender, and race; college-level fixed effects; fixed effects for major at enrollment and major at graduation; an indicator for graduating in the top 10% of their high school class; SAT/ACT performance; financial aid controls; and high school fixed effects. Column 1 reports the fully saturated specification. Column 2 additionally includes students who enrolled in graduate school in the year immediately following their Bachelor's degree and adds the subsequent control. Column 3 adds additional high school controls: indicators for enrollment in AP courses, dual credit courses, and IB courses. Column 4 replaces the test-score indicators with the continuous ACT/SAT percentile and drops individuals who did not submit either an SAT or ACT score. Column 5 drops universities with unclear GPA policies or GPA policies that relied on student compliance. Column 6 drops all students who did not report a race and ethnicity on any college application. Column 7 re-defines the first year following graduation as Q3–4 of the graduating year and Q1–2 of the following year for May graduates, rather than Q4 of the graduating year and Q1–3 of the following year. Column 8 winsorizes the outcome variable at the 99th percentile.

Table A8: Presence in TWC Wage Data in the First Year, by Gender and GPA Bin

	(1) Men	(2) Women	(3) Men	(4) Women	(5) Men	(6) Women	(7) Men	(8) Women
<2.5	0.005	0.002	0.002	-0.002	0.001	-0.001	0.000	-0.001
	(0.007)	(0.005)	(0.006)	(0.005)	(0.006)	(0.004)	(0.006)	(0.004)
2.5-2.59	0.009	0.009*	0.005	0.004	0.003	0.006	0.003	0.006
	(0.008)	(0.005)	(0.007)	(0.004)	(0.007)	(0.004)	(0.007)	(0.004)
2.6-2.69	-0.005	0.001	-0.009	-0.002	-0.009	-0.002	-0.010*	-0.001
	(0.006)	(0.005)	(0.005)	(0.004)	(0.006)	(0.004)	(0.006)	(0.004)
2.7-2.79	0.004	0.002	0.001	-0.001	0.000	-0.001	-0.000	-0.000
	(0.006)	(0.004)	(0.006)	(0.004)	(0.007)	(0.004)	(0.006)	(0.004)
2.8-2.89	-0.001	0.000	-0.003	-0.001	-0.004	-0.001	-0.005	-0.001
	(0.005)	(0.004)	(0.005)	(0.004)	(0.005)	(0.004)	(0.005)	(0.004)
3.0-3.09	-0.006*	-0.003	-0.006*	-0.004	-0.006	-0.005	-0.006*	-0.005
	(0.004)	(0.003)	(0.004)	(0.003)	(0.004)	(0.003)	(0.003)	(0.003)
3.1-3.19	-0.007*	-0.006*	-0.005	-0.004	-0.005	-0.005*	-0.005	-0.005
	(0.004)	(0.003)	(0.004)	(0.003)	(0.004)	(0.003)	(0.004)	(0.003)
3.2-3.29	-0.019***	-0.005	-0.016***	-0.003	-0.013***	-0.005	-0.013***	-0.004
	(0.005)	(0.004)	(0.003)	(0.004)	(0.003)	(0.004)	(0.003)	(0.004)
3.3-3.39	-0.020***	-0.011*	-0.016***	-0.007*	-0.013***	-0.010***	-0.012***	-0.008**
	(0.004)	(0.006)	(0.004)	(0.003)	(0.004)	(0.003)	(0.004)	(0.003)
3.4-3.49	-0.028***	-0.020***	-0.022***	-0.016***	-0.018***	-0.019***	-0.017***	-0.017***
	(0.007)	(0.007)	(0.004)	(0.004)	(0.005)	(0.004)	(0.004)	(0.004)
3.5-3.59	-0.034***	-0.021***	-0.028***	-0.015***	-0.023***	-0.017***	-0.022***	-0.015***
	(0.007)	(0.007)	(0.005)	(0.004)	(0.005)	(0.004)	(0.004)	(0.003)
3.6-3.69	-0.047***	-0.027***	-0.037***	-0.019***	-0.030***	-0.021***	-0.027***	-0.018***
	(0.011)	(0.008)	(0.005)	(0.004)	(0.006)	(0.003)	(0.005)	(0.003)
3.7-3.79	-0.050***	-0.038***	-0.039***	-0.030***	-0.032***	-0.032***	-0.028***	-0.029***
	(0.011)	(0.010)	(0.005)	(0.006)	(0.006)	(0.005)	(0.006)	(0.005)
3.8-3.89	-0.071***	-0.045***	-0.058***	-0.036***	-0.048***	-0.036***	-0.044***	-0.032***
	(0.017)	(0.010)	(0.010)	(0.005)	(0.011)	(0.004)	(0.010)	(0.003)
3.9+	-0.098***	-0.053***	-0.087***	-0.049***	-0.076***	-0.050***	-0.070***	-0.043***
	(0.022)	(0.011)	(0.016)	(0.008)	(0.017)	(0.007)	(0.015)	(0.006)
Observations	194,005	270,478	194,005	270,478	194,005	270,478	193,889	270,412
2.9-2.99 Average	0.85	0.87	0.85	0.87	0.85	0.87	0.85	0.87
College FE	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Demographic Controls	No	No	Yes	Yes	Yes	Yes	Yes	Yes
College Controls	No	No	No	No	Yes	Yes	Yes	Yes
FAFSA Controls	No	No	No	No	Yes	Yes	Yes	Yes
HS FE	No	No	No	No	No	No	Yes	Yes
Clusters	39	39	39	39	39	39	39	39

Notes: The table reports OLS coefficients on GPA bin indicators. The outcome is an indicator for appearing in the TWC wage data in any of the four quarters of the first post-graduation year; it measures presence in these records rather than employment alone. The 2.9–2.99 GPA bin is the omitted category. GPA bins have width 0.1, with GPAs below 2.5 and GPAs of 3.9 and above pooled into the endpoint bins. Standard errors are in parentheses. Separate regressions are estimated for men and women. Odd-numbered columns report men and even-numbered columns report women. All columns include entering-cohort fixed effects and indicators for graduating in May and December. Columns 3–4 add demographic controls and college fixed effects. Columns 5–6 additionally include major-at-enrollment and major-at-graduation fixed effects (two-digit CIP), the high school top-10% indicator, SAT/ACT controls (top half, bottom half, and score submission), years observed in the financial aid data, and indicators for ever receiving subsidized loans, unsubsidized loans, and Pell Grants. Columns 7–8 add high school fixed effects. The gender indicator is constant within each subsample. Sample sizes can change across specifications when singleton observations are dropped. Graduates observed enrolling in graduate school in Texas in the year immediately following graduation are excluded. Columns 7 and 8 are plotted in Figure 6.

Table A9: Unconditional Real Earnings in the First Year, by Gender and GPA Bin

	(1) Men	(2) Women	(3) Men	(4) Women	(5) Men	(6) Women	(7) Men	(8) Women
<2.5	-4,299.854***	-2,283.653***	-3,899.303***	-2,560.966***	-2,198.829***	-1,177.465***	-2,235.989***	-1,138.066**
	(413.705)	(505.651)	(357.425)	(483.548)	(490.269)	(416.168)	(477.560)	(426.880)
2.5-2.59	-2,654.179***	-1,209.016***	-2,570.734***	-1,542.387***	-1,477.410**	-789.840**	-1,419.381**	-824.618**
	(431.534)	(417.182)	(392.343)	(426.447)	(580.986)	(343.149)	(614.193)	(356.249)
2.6-2.69	-2,782.028***	-2,007.804***	-2,574.931***	-2,110.545***	-1,701.778***	-1,448.446***	-1,678.724***	-1,363.335***
	(333.328)	(431.798)	(266.535)	(412.174)	(395.827)	(375.667)	(395.560)	(386.230)
2.7-2.79	-1,835.420***	-1,036.459**	-1,766.527***	-1,211.038***	-1,303.320***	-846.075**	-1,289.514***	-789.442*
	(387.196)	(401.818)	(370.776)	(399.670)	(428.236)	(396.794)	(401.875)	(392.656)
2.8-2.89	-938.671**	-1,098.032***	-915.993**	-1,180.311***	-690.199*	-932.786***	-713.323*	-856.009***
	(382.937)	(340.974)	(364.769)	(323.209)	(381.776)	(286.627)	(375.236)	(291.005)
3.0-3.09	695.937	825.561***	619.413	583.932**	401.312	-3.443	412.108	37.938
	(416.663)	(263.131)	(391.999)	(260.170)	(368.455)	(278.880)	(345.835)	(289.208)
3.1-3.19	1,511.159**	1,117.426***	1,490.357**	1,018.380***	1,179.494***	189.997	1,228.656***	192.960
	(612.034)	(381.992)	(592.570)	(333.466)	(426.207)	(239.412)	(423.703)	(248.453)
3.2-3.29	1,992.100***	2,629.951***	1,854.999***	2,500.374***	1,659.063***	1,247.309***	1,668.396***	1,269.229***
	(593.235)	(436.503)	(599.950)	(403.112)	(582.999)	(313.081)	(581.740)	(317.969)
3.3-3.39	2,598.162***	3,147.129***	2,470.352***	3,061.843***	2,488.680***	1,715.233***	2,547.163***	1,747.343***
	(499.649)	(571.631)	(524.298)	(536.693)	(324.701)	(266.983)	(330.379)	(276.902)
3.4-3.49	2,648.577***	3,230.095***	2,598.370***	3,077.613***	2,716.921***	1,600.645***	2,832.934***	1,627.945***
	(538.317)	(678.413)	(624.971)	(614.520)	(520.772)	(290.243)	(561.005)	(290.205)
3.5-3.59	3,876.122***	3,325.910***	3,691.310***	3,132.881***	3,922.632***	1,760.414***	4,001.899***	1,788.412***
	(493.569)	(599.142)	(522.919)	(545.068)	(447.123)	(290.455)	(445.272)	(308.437)
3.6-3.69	3,624.456***	3,319.482***	3,502.152***	3,269.443***	4,016.001***	1,990.701***	4,098.306***	2,029.061***
	(604.595)	(654.044)	(714.274)	(625.685)	(593.158)	(286.977)	(603.879)	(293.982)
3.7-3.79	5,079.633***	3,335.177***	4,869.075***	3,088.488***	5,654.901***	1,923.017***	5,869.562***	1,981.276***
	(660.963)	(819.733)	(774.036)	(704.821)	(650.636)	(424.705)	(658.606)	(435.676)
3.8-3.89	4,680.199***	3,619.107***	4,538.394***	3,426.149***	5,536.346***	2,373.535***	5,716.173***	2,462.588***
	(645.652)	(704.780)	(698.849)	(622.989)	(799.283)	(411.992)	(857.162)	(421.964)
3.9+	5,722.442***	4,899.277***	5,313.177***	4,178.942***	6,472.471***	3,048.476***	6,761.288***	3,215.008***
	(1,416.446)	(1,080.859)	(1,399.392)	(907.455)	(1,614.874)	(692.996)	(1,628.492)	(695.761)
Observations	194,005	270,478	194,005	270,478	194,005	270,478	193,889	270,412
2.9-2.99 Average	39,287.71	33,133.47	39,287.71	33,133.47	39,287.71	33,133.47	39,287.71	33,133.47
College FE	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Demographic Controls	No	No	Yes	Yes	Yes	Yes	Yes	Yes
College Controls	No	No	No	No	Yes	Yes	Yes	Yes
FAFSA Controls	No	No	No	No	Yes	Yes	Yes	Yes
HS FE	No	No	No	No	No	No	Yes	Yes
Clusters	39	39	39	39	39	39	39	39

Notes: The table reports OLS coefficients on GPA bin indicators. The outcome is the sum of recorded earnings over the four quarters of the first post-graduation year, in 2024 Q1 dollars. Earnings are set to zero for graduates not observed in the TWC wage data. The 2.9–2.99 GPA bin is the omitted category. GPA bins have width 0.1, with GPAs below 2.5 and GPAs of 3.9 and above pooled into the endpoint bins. Standard errors are in parentheses. Separate regressions are estimated for men and women. Odd-numbered columns report men and even-numbered columns report women. All columns include entering-cohort fixed effects and indicators for graduating in May and December. Columns 3–4 add demographic controls and college fixed effects. Columns 5–6 additionally include major-at-enrollment and major-at-graduation fixed effects (two-digit CIP), the high school top-10% indicator, SAT/ACT controls (top half, bottom half, and score submission), years observed in the financial aid data, and indicators for ever receiving subsidized loans, unsubsidized loans, and Pell Grants. Columns 7–8 add high school fixed effects. The gender indicator is constant within each subsample. Sample sizes can change across specifications when singleton observations are dropped. Graduates observed enrolling in graduate school in Texas in the year immediately following graduation are excluded. Columns 7 and 8 are plotted in Panel A of Figure 7.

Table A10: Highest Quarterly Earnings in the First Year, Annualized, by Gender and GPA Bin

	(1) Men	(2) Women	(3) Men	(4) Women	(5) Men	(6) Women	(7) Men	(8) Women
<2.5	-5,781.770***	-3,089.913***	-4,933.318***	-3,123.945***	-2,474.825***	-1,341.807***	-2,493.210***	-1,257.353**
	(810.898)	(663.095)	(750.319)	(632.279)	(566.752)	(463.685)	(547.055)	(466.228)
2.5-2.59	-3,856.439***	-2,056.422***	-3,380.729***	-2,110.054***	-1,593.691*	-1,316.617***	-1,608.497*	-1,344.674***
	(978.632)	(481.309)	(906.382)	(468.549)	(841.191)	(389.180)	(949.962)	(408.535)
2.6-2.69	-3,593.352***	-2,699.275***	-2,980.540***	-2,615.004***	-1,706.973***	-1,634.122***	-1,636.519***	-1,523.918***
	(763.848)	(453.910)	(644.094)	(424.700)	(524.276)	(354.751)	(535.144)	(364.366)
2.7-2.79	-2,461.778***	-928.168	-2,111.134***	-906.872	-1,259.693***	-516.303	-1,153.392**	-405.166
	(712.331)	(785.370)	(635.739)	(770.367)	(451.924)	(776.393)	(431.804)	(783.761)
2.8-2.89	-865.086	-1,295.200***	-620.124	-1,247.245***	-150.599	-902.569**	-127.512	-810.606**
	(1,241.284)	(412.257)	(1,188.474)	(384.604)	(1,087.374)	(339.018)	(993.756)	(347.401)
3.0-3.09	1,254.254*	1,173.386***	1,131.117*	924.214***	802.419	269.976	851.137	327.523
	(670.146)	(346.850)	(605.806)	(327.483)	(514.865)	(280.854)	(516.912)	(274.430)
3.1-3.19	2,301.278***	1,899.385***	2,025.505**	1,624.661***	1,557.298***	611.890**	1,669.316***	607.332*
	(794.062)	(409.553)	(805.163)	(413.010)	(545.238)	(294.732)	(505.182)	(326.117)
3.2-3.29	4,205.236***	3,629.447***	3,688.802***	3,328.607***	3,217.398***	1,809.018***	3,221.226***	1,771.559***
	(831.659)	(558.630)	(927.381)	(508.373)	(833.913)	(459.803)	(841.026)	(443.165)
3.3-3.39	4,697.128***	4,394.895***	4,023.206***	4,008.349***	3,893.810***	2,401.929***	3,902.156***	2,365.200***
	(697.840)	(614.644)	(792.339)	(616.349)	(541.399)	(296.182)	(529.511)	(307.410)
3.4-3.49	5,559.216***	5,096.508***	4,790.385***	4,591.154***	4,529.994***	2,885.571***	4,591.936***	2,863.894***
	(912.353)	(719.630)	(963.330)	(707.457)	(770.493)	(405.314)	(826.578)	(417.287)
3.5-3.59	8,089.185***	5,161.999***	7,114.906***	4,503.506***	6,963.318***	2,965.991***	6,957.138***	2,877.590***
	(997.301)	(586.479)	(886.684)	(567.289)	(704.330)	(311.200)	(679.367)	(294.133)
3.6-3.69	8,726.433***	5,477.611***	7,448.138***	4,806.036***	7,731.247***	3,485.316***	7,470.607***	3,384.779***
	(2,089.962)	(833.398)	(1,622.771)	(770.426)	(1,268.088)	(509.772)	(1,132.759)	(491.845)
3.7-3.79	11,772.786***	6,008.343***	10,337.313***	5,115.849***	10,894.530***	4,072.201***	10,775.665***	3,907.310***
	(2,354.815)	(887.779)	(1,806.073)	(765.095)	(1,410.243)	(509.037)	(1,267.884)	(505.595)
3.8-3.89	13,737.605***	7,009.024***	12,218.971***	6,118.198***	13,228.723***	5,161.346***	13,029.921***	5,005.741***
	(2,552.510)	(958.135)	(2,004.163)	(813.569)	(1,510.244)	(746.773)	(1,290.466)	(691.517)
3.9+	17,790.617***	8,791.665***	16,369.331***	7,652.318***	17,236.249***	6,648.417***	16,936.148***	6,459.627***
	(2,314.401)	(1,243.466)	(2,237.374)	(1,078.726)	(1,900.333)	(1,015.843)	(1,901.782)	(971.985)
Observations	160,594	231,743	160,594	231,743	160,594	231,743	160,469	231,663
2.9-2.99 Average	61,111.61	49,751.42	61,111.61	49,751.42	61,111.61	49,751.42	61,111.61	49,751.42
College FE	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Demographic Controls	No	No	Yes	Yes	Yes	Yes	Yes	Yes
College Controls	No	No	No	No	Yes	Yes	Yes	Yes
FAFSA Controls	No	No	No	No	Yes	Yes	Yes	Yes
HS FE	No	No	No	No	No	No	Yes	Yes
Clusters	39	39	39	39	39	39	39	39

Notes: The table reports OLS coefficients on GPA bin indicators. The outcome is the highest quarterly earnings in the first post-graduation year multiplied by four, in 2024 Q1 dollars. Graduates not observed in the TWC wage data are excluded. The 2.9–2.99 GPA bin is the omitted category. GPA bins have width 0.1, with GPAs below 2.5 and GPAs of 3.9 and above pooled into the endpoint bins. Standard errors are in parentheses. Separate regressions are estimated for men and women. Odd-numbered columns report men and even-numbered columns report women. All columns include entering-cohort fixed effects and indicators for graduating in May and December. Columns 3–4 add demographic controls and college fixed effects. Columns 5–6 additionally include major-at-enrollment and major-at-graduation fixed effects (two-digit CIP), the high school top-10% indicator, SAT/ACT controls (top half, bottom half, and score submission), years observed in the financial aid data, and indicators for ever receiving subsidized loans, unsubsidized loans, and Pell Grants. Columns 7–8 add high school fixed effects. The gender indicator is constant within each subsample. Sample sizes can change across specifications when singleton observations are dropped. Graduates observed enrolling in graduate school in Texas in the year immediately following graduation are excluded. Columns 7 and 8 are plotted in Panel B of Figure 7.

Table A11: Presence in TWC Wage Data in the First Year, by Race/Ethnicity and GPA Bin

	(1) White	(2) Hispanic	(3) Black	(4) Asian	(5) White	(6) Hispanic	(7) Black	(8) Asian
<2.5	0.002	0.003	-0.005	-0.004	-0.002	0.005	-0.009	0.002
	(0.007)	(0.005)	(0.010)	(0.011)	(0.007)	(0.004)	(0.008)	(0.008)
2.5-2.59	0.009	0.007	0.005	0.002	0.005	0.006	-0.001	-0.003
	(0.008)	(0.006)	(0.013)	(0.010)	(0.007)	(0.005)	(0.013)	(0.010)
2.6-2.69	-0.012*	0.002	0.006	-0.008	-0.015***	0.001	0.001	-0.006
	(0.006)	(0.005)	(0.010)	(0.018)	(0.005)	(0.005)	(0.011)	(0.017)
2.7-2.79	-0.002	0.006	0.007	-0.014	-0.005	0.004	0.004	-0.016
	(0.006)	(0.005)	(0.011)	(0.011)	(0.006)	(0.005)	(0.010)	(0.010)
2.8-2.89	-0.010***	0.008	0.004	-0.005	-0.013***	0.007	0.002	-0.003
	(0.003)	(0.005)	(0.013)	(0.009)	(0.003)	(0.005)	(0.013)	(0.009)
3.0-3.09	-0.001	-0.004	-0.004	-0.008	-0.004	-0.006	-0.005	-0.010
	(0.003)	(0.004)	(0.010)	(0.007)	(0.003)	(0.004)	(0.010)	(0.007)
3.1-3.19	-0.003	-0.004	-0.001	-0.017*	-0.003	-0.007	-0.001	-0.013
	(0.004)	(0.004)	(0.007)	(0.010)	(0.004)	(0.004)	(0.008)	(0.009)
3.2-3.29	-0.012**	-0.007*	0.001	-0.006	-0.012***	-0.008**	0.002	-0.001
	(0.005)	(0.004)	(0.012)	(0.009)	(0.003)	(0.003)	(0.012)	(0.007)
3.3-3.39	-0.009**	-0.013***	-0.005	-0.015	-0.007*	-0.016***	-0.003	-0.006
	(0.004)	(0.004)	(0.010)	(0.010)	(0.004)	(0.003)	(0.009)	(0.008)
3.4-3.49	-0.018**	-0.017***	-0.021*	-0.027***	-0.016***	-0.019***	-0.020*	-0.019***
	(0.008)	(0.005)	(0.011)	(0.009)	(0.004)	(0.005)	(0.010)	(0.006)
3.5-3.59	-0.022**	-0.016***	-0.014	-0.029***	-0.019***	-0.018***	-0.014	-0.017**
	(0.009)	(0.004)	(0.010)	(0.009)	(0.004)	(0.004)	(0.009)	(0.008)
3.6-3.69	-0.031***	-0.020***	-0.038***	-0.028**	-0.023***	-0.022***	-0.029***	-0.012
	(0.009)	(0.007)	(0.010)	(0.012)	(0.004)	(0.005)	(0.009)	(0.008)
3.7-3.79	-0.036***	-0.025***	-0.036***	-0.053***	-0.028***	-0.028***	-0.025**	-0.032***
	(0.010)	(0.006)	(0.011)	(0.016)	(0.005)	(0.004)	(0.010)	(0.009)
3.8-3.89	-0.052***	-0.022***	-0.057***	-0.064***	-0.042***	-0.025***	-0.050***	-0.034***
	(0.013)	(0.006)	(0.015)	(0.017)	(0.006)	(0.004)	(0.014)	(0.009)
3.9+	-0.062***	-0.035***	-0.041***	-0.091***	-0.056***	-0.041***	-0.029**	-0.060***
	(0.014)	(0.008)	(0.013)	(0.028)	(0.010)	(0.006)	(0.012)	(0.022)
Observations	200,913	163,722	46,806	46,651	200,803	163,545	46,536	46,359
2.9-2.99 Average	0.85	0.88	0.87	0.82	0.85	0.88	0.87	0.82
College FE	No	No	No	No	Yes	Yes	Yes	Yes
Demographic Controls	No	No	No	No	Yes	Yes	Yes	Yes
College Controls	No	No	No	No	Yes	Yes	Yes	Yes
FAFSA Controls	No	No	No	No	Yes	Yes	Yes	Yes
HS FE	No	No	No	No	Yes	Yes	Yes	Yes
Clusters	39	39	39	39	39	39	38	38

Notes: The table reports OLS coefficients on GPA bin indicators. The outcome is an indicator for appearing in the TWC wage data in any of the four quarters of the first post-graduation year; it measures presence in these records rather than employment alone. The 2.9–2.99 GPA bin is the omitted category. GPA bins have width 0.1, with GPAs below 2.5 and GPAs of 3.9 and above pooled into the endpoint bins. Standard errors are in parentheses. Separate regressions are estimated for white non-Hispanic, Hispanic, Black, and Asian graduates. Groups are mutually exclusive; Hispanic ethnicity takes precedence, followed by Black race, Asian race, and white race. Graduates reporting neither race nor ethnicity are excluded. Columns 1–4 include entering-cohort fixed effects and indicators for graduating in May and December. Columns 5–8 additionally include indicators for female, white, and Hispanic; college fixed effects; fixed effects for major at enrollment and major at graduation (two-digit CIP categories); an indicator for graduating in the top 10% of the high school class; indicators for scoring in the top and bottom 50% of the within-cohort SAT/ACT distribution and for submitting a test score; the number of years observed in the financial aid data; indicators for ever receiving subsidized loans, unsubsidized loans, and Pell Grants; and high school fixed effects. Sample sizes can change across specifications when singleton observations are dropped. Graduates observed enrolling in graduate school in Texas in the year immediately following graduation are excluded. Columns 5–8 are plotted in Figure 8.

Table A12: Unconditional Real Earnings in the First Year, by Race/Ethnicity and GPA Bin

	(1) White	(2) Hispanic	(3) Black	(4) Asian	(5) White	(6) Hispanic	(7) Black	(8) Asian
<2.5	-3,846.980***	-1,873.919***	-1,943.406*	-4,347.141***	-2,336.260***	-981.954**	-2,180.227***	-931.687
	(496.644)	(507.481)	(968.872)	(813.717)	(557.707)	(370.627)	(789.683)	(600.419)
2.5-2.59	-2,496.247***	-1,109.788*	121.067	-2,874.467**	-1,547.822**	-801.803*	-530.139	-1,173.973
	(542.425)	(574.888)	(1,330.961)	(1,393.420)	(604.876)	(452.959)	(1,344.985)	(1,135.998)
2.6-2.69	-3,309.280***	-1,040.006**	-792.349	-3,613.605***	-2,499.278***	-693.923**	-943.011	-2,119.576**
	(464.629)	(420.786)	(872.509)	(845.541)	(372.405)	(337.781)	(815.338)	(807.079)
2.7-2.79	-1,715.929***	-723.712*	-588.764	-2,389.194*	-1,414.859**	-641.431*	-842.425	-1,839.699
	(592.943)	(391.918)	(693.749)	(1,244.352)	(539.942)	(361.028)	(663.891)	(1,122.266)
2.8-2.89	-1,609.428***	-317.309	-35.239	-1,769.277**	-1,272.064***	-240.112	-84.921	-871.999
	(412.419)	(468.024)	(903.849)	(805.025)	(347.431)	(449.353)	(875.426)	(732.048)
3.0-3.09	446.987	487.428	1,831.795**	-113.557	147.245	257.051	1,119.706	-278.031
	(395.912)	(390.572)	(695.083)	(808.699)	(293.512)	(392.546)	(798.622)	(639.849)
3.1-3.19	963.851**	567.560	2,117.862***	49.322	771.900**	369.635	1,471.007*	75.621
	(467.902)	(386.715)	(658.243)	(965.554)	(346.929)	(257.657)	(795.521)	(666.699)
3.2-3.29	1,560.804***	1,351.847***	3,760.102***	2,284.362***	1,380.424***	1,112.657**	2,357.194**	2,361.730***
	(456.674)	(461.494)	(902.941)	(676.782)	(223.374)	(421.069)	(925.812)	(844.736)
3.3-3.39	1,985.383***	1,730.210***	3,502.299***	3,308.612***	2,228.501***	1,567.402***	2,565.745***	3,088.188***
	(612.464)	(522.996)	(732.582)	(805.973)	(297.606)	(365.530)	(667.665)	(554.685)
3.4-3.49	1,830.151**	1,587.634**	4,349.460***	2,743.383***	2,108.791***	1,641.301***	3,315.430***	2,751.595***
	(745.903)	(593.921)	(1,037.979)	(753.777)	(416.752)	(460.801)	(824.644)	(989.808)
3.5-3.59	2,076.625**	2,245.758***	3,801.781***	3,285.068***	2,734.943***	2,201.140***	2,816.854***	3,678.064***
	(917.324)	(575.947)	(827.532)	(891.333)	(499.788)	(440.432)	(833.556)	(1,009.829)
3.6-3.69	1,697.529**	1,904.146***	3,226.156***	3,564.223***	2,986.460***	2,130.921***	2,966.125***	4,084.626***
	(675.012)	(623.232)	(1,114.366)	(748.276)	(444.106)	(563.531)	(893.496)	(661.984)
3.7-3.79	2,193.710**	2,777.033***	4,207.729***	1,898.447***	3,712.807***	3,097.428***	3,865.287***	2,972.330***
	(938.526)	(664.824)	(1,248.391)	(610.450)	(478.177)	(496.316)	(1,185.314)	(855.263)
3.8-3.89	1,920.302*	2,806.549***	3,108.268*	2,758.505***	3,797.401***	3,328.628***	2,603.609*	4,590.656***
	(977.812)	(768.304)	(1,592.517)	(912.673)	(670.694)	(600.329)	(1,455.870)	(805.097)
3.9+	3,039.521**	3,928.387***	6,085.589***	1,713.870	5,124.101***	3,952.957***	5,523.046***	4,078.748**
	(1,331.857)	(887.510)	(1,786.779)	(1,387.110)	(1,036.154)	(679.489)	(1,360.782)	(1,867.512)
Observations	200,913	163,722	46,806	46,651	200,803	163,545	46,536	46,359
2.9-2.99 Average	38,654.45	34,637.01	32,412.45	36,044.93	38,654.45	34,637.01	32,412.45	36,044.93
College FE	No	No	No	No	Yes	Yes	Yes	Yes
Demographic Controls	No	No	No	No	Yes	Yes	Yes	Yes
College Controls	No	No	No	No	Yes	Yes	Yes	Yes
FAFSA Controls	No	No	No	No	Yes	Yes	Yes	Yes
HS FE	No	No	No	No	Yes	Yes	Yes	Yes
Clusters	39	39	39	39	39	39	38	38

Notes: The table reports OLS coefficients on GPA bin indicators. The outcome is the sum of recorded earnings over the four quarters of the first post-graduation year, in 2024 Q1 dollars. Earnings are set to zero for graduates not observed in the TWC wage data. The 2.9–2.99 GPA bin is the omitted category. GPA bins have width 0.1, with GPAs below 2.5 and GPAs of 3.9 and above pooled into the endpoint bins. Standard errors are in parentheses. Separate regressions are estimated for white non-Hispanic, Hispanic, Black, and Asian graduates. Groups are mutually exclusive; Hispanic ethnicity takes precedence, followed by Black race, Asian race, and white race. Graduates reporting neither race nor ethnicity are excluded. Columns 1–4 include entering-cohort fixed effects and indicators for graduating in May and December. Columns 5–8 additionally include indicators for female, white, and Hispanic; college fixed effects; fixed effects for major at enrollment and major at graduation (two-digit CIP categories); an indicator for graduating in the top 10% of the high school class; indicators for scoring in the top and bottom 50% of the within-cohort SAT/ACT distribution and for submitting a test score; the number of years observed in the financial aid data; indicators for ever receiving subsidized loans, unsubsidized loans, and Pell Grants; and high school fixed effects. Sample sizes can change across specifications when singleton observations are dropped. Graduates observed enrolling in graduate school in Texas in the year immediately following graduation are excluded. Columns 5–8 are plotted in Panel A of Figure 9.

Table A13: Highest Quarterly Earnings in the First Year, Annualized, by Race/Ethnicity and GPA Bin

	(1) White	(2) Hispanic	(3) Black	(4) Asian	(5) White	(6) Hispanic	(7) Black	(8) Asian
<2.5	-4,832.426***	-2,501.931***	-1,856.874	-5,823.088***	-2,410.037***	-1,246.686**	-1,678.912**	-1,482.821
	(726.290)	(750.394)	(1,149.289)	(851.991)	(661.571)	(507.912)	(818.889)	(886.025)
2.5-2.59	-3,823.753***	-1,852.419***	1,161.623	-4,191.611**	-2,111.977**	-1,341.822***	544.208	-1,190.856
	(680.709)	(679.684)	(2,500.689)	(1,638.134)	(852.619)	(430.885)	(2,463.184)	(1,204.884)
2.6-2.69	-3,745.249***	-1,702.895**	-886.766	-4,234.277***	-2,310.708***	-1,192.771**	-778.052	-1,931.903*
	(562.888)	(665.911)	(887.206)	(1,295.392)	(574.247)	(478.800)	(794.531)	(1,072.425)
2.7-2.79	-1,175.794	-1,238.205**	-771.234	-2,202.646	-508.670	-971.956**	-891.834	-800.009
	(1,120.385)	(483.383)	(793.680)	(1,618.738)	(1,006.975)	(406.993)	(629.905)	(1,344.298)
2.8-2.89	-910.640	-775.457	-82.047	-2,132.700	-141.063	-585.347	398.950	-1,098.977
	(1,279.345)	(538.151)	(1,023.527)	(1,439.571)	(1,173.770)	(515.208)	(870.221)	(1,289.734)
3.0-3.09	514.020	662.723	2,681.691***	592.843	404.180	582.628	1,930.792**	292.539
	(687.819)	(496.131)	(808.046)	(1,208.959)	(520.568)	(490.292)	(864.990)	(954.288)
3.1-3.19	1,068.117*	762.171	3,363.682***	1,953.299	971.415**	823.511*	2,629.199***	1,341.655
	(546.308)	(532.692)	(778.521)	(1,393.286)	(426.895)	(414.597)	(821.831)	(1,376.531)
3.2-3.29	2,758.825***	1,848.839**	4,499.671***	4,581.578***	2,665.219***	1,856.616***	2,786.725***	3,894.355**
	(615.782)	(708.184)	(942.762)	(1,663.728)	(497.290)	(603.688)	(906.766)	(1,705.595)
3.3-3.39	2,632.166***	2,593.600***	4,783.300***	5,517.357***	2,976.531***	2,771.871***	3,428.144***	4,185.275***
	(624.687)	(634.398)	(695.149)	(1,534.821)	(450.983)	(488.965)	(553.870)	(935.508)
3.4-3.49	3,185.852***	2,566.795***	6,283.454***	5,315.811***	3,753.922***	2,947.841***	4,806.382***	4,136.598***
	(640.362)	(754.859)	(1,231.127)	(1,464.577)	(570.362)	(571.496)	(923.031)	(1,450.820)
3.5-3.59	3,904.748***	3,445.041***	5,341.058***	6,092.248***	4,955.731***	3,625.697***	4,275.040***	5,374.958***
	(698.907)	(578.087)	(1,124.212)	(1,762.259)	(543.721)	(393.838)	(807.644)	(1,459.859)
3.6-3.69	3,683.374***	3,008.180***	6,254.139***	7,505.072***	5,407.303***	3,780.177***	5,517.431***	6,777.396***
	(1,027.845)	(618.554)	(1,601.256)	(2,579.757)	(815.435)	(681.355)	(997.689)	(1,748.153)
3.7-3.79	4,851.371***	4,250.984***	8,250.712***	7,668.899**	6,940.198***	5,280.667***	7,016.938***	7,331.582***
	(1,303.074)	(737.444)	(1,395.276)	(2,921.189)	(831.052)	(622.089)	(1,278.155)	(1,900.069)
3.8-3.89	6,166.253***	4,189.386***	7,358.482***	10,059.266***	8,720.959***	5,452.898***	6,397.860***	10,872.447***
	(1,195.323)	(882.327)	(1,814.077)	(3,478.040)	(929.052)	(754.374)	(1,403.017)	(1,954.029)
3.9+	7,835.875***	6,150.534***	10,594.081***	11,042.197***	11,298.026***	7,087.906***	9,320.528***	13,176.589***
	(1,288.860)	(1,064.906)	(2,619.394)	(2,984.132)	(1,243.191)	(987.961)	(1,885.918)	(2,771.756)
Observations	167,766	142,310	40,208	37,001	167,647	142,129	39,936	36,702
2.9-2.99 Average	58,908.03	51,972.00	50,044.49	58,958.71	58,908.03	51,972.00	50,044.49	58,958.71
College FE	No	No	No	No	Yes	Yes	Yes	Yes
Demographic Controls	No	No	No	No	Yes	Yes	Yes	Yes
College Controls	No	No	No	No	Yes	Yes	Yes	Yes
FAFSA Controls	No	No	No	No	Yes	Yes	Yes	Yes
HS FE	No	No	No	No	Yes	Yes	Yes	Yes
Clusters	39	39	39	39	39	39	38	38

Notes: The table reports OLS coefficients on GPA bin indicators. The outcome is the highest quarterly earnings in the first post-graduation year multiplied by four, in 2024 Q1 dollars. Graduates not observed in the TWC wage data are excluded. The 2.9–2.99 GPA bin is the omitted category. GPA bins have width 0.1, with GPAs below 2.5 and GPAs of 3.9 and above pooled into the endpoint bins. Standard errors are in parentheses. Separate regressions are estimated for white non-Hispanic, Hispanic, Black, and Asian graduates. Groups are mutually exclusive; Hispanic ethnicity takes precedence, followed by Black race, Asian race, and white race. Graduates reporting neither race nor ethnicity are excluded. Columns 1–4 include entering-cohort fixed effects and indicators for graduating in May and December. Columns 5–8 additionally include indicators for female, white, and Hispanic; college fixed effects; fixed effects for major at enrollment and major at graduation (two-digit CIP categories); an indicator for graduating in the top 10% of the high school class; indicators for scoring in the top and bottom 50% of the within-cohort SAT/ACT distribution and for submitting a test score; the number of years observed in the financial aid data; indicators for ever receiving subsidized loans, unsubsidized loans, and Pell Grants; and high school fixed effects. Sample sizes can change across specifications when singleton observations are dropped. Graduates observed enrolling in graduate school in Texas in the year immediately following graduation are excluded. Columns 5–8 are plotted in Panel B of Figure 9.

Table A14: Presence in TWC Wage Data in the First Year, by Course of Study and GPA Bin

	(1)	(2)	(3)	(4)	(5)	(6)
		Non-Engineering			Non-Engineering	
	Non-STEM	STEM	Engineering	Non-STEM	STEM	Engineering
<2.5	0.000	-0.002	0.025**	-0.003	0.005	0.016
	(0.007)	(0.008)	(0.010)	(0.005)	(0.007)	(0.013)
2.5-2.59	0.005	0.006	0.033**	0.000	0.011	0.027**
	(0.007)	(0.009)	(0.012)	(0.006)	(0.008)	(0.013)
2.6-2.69	-0.003	-0.009	0.014	-0.006	-0.006	0.008
	(0.007)	(0.010)	(0.013)	(0.005)	(0.009)	(0.014)
2.7-2.79	0.004	-0.004	0.009	0.001	-0.003	0.003
	(0.005)	(0.006)	(0.012)	(0.004)	(0.006)	(0.013)
2.8-2.89	0.000	-0.003	0.002	-0.002	-0.003	-0.001
	(0.005)	(0.006)	(0.012)	(0.005)	(0.006)	(0.013)
3.0-3.09	-0.002	-0.007	-0.007	-0.004	-0.009	-0.006
	(0.004)	(0.006)	(0.011)	(0.004)	(0.006)	(0.011)
3.1-3.19	-0.006	-0.002	-0.008	-0.004	-0.007	-0.003
	(0.004)	(0.005)	(0.010)	(0.005)	(0.005)	(0.010)
3.2-3.29	-0.008**	-0.008	-0.025***	-0.004	-0.012**	-0.018**
	(0.003)	(0.006)	(0.009)	(0.003)	(0.006)	(0.009)
3.3-3.39	-0.012**	-0.013*	-0.016*	-0.007*	-0.019***	-0.004
	(0.005)	(0.007)	(0.009)	(0.004)	(0.007)	(0.009)
3.4-3.49	-0.020***	-0.020***	-0.036***	-0.015***	-0.024***	-0.019**
	(0.007)	(0.006)	(0.012)	(0.004)	(0.005)	(0.009)
3.5-3.59	-0.020***	-0.027***	-0.037***	-0.014***	-0.027***	-0.019*
	(0.007)	(0.007)	(0.012)	(0.004)	(0.004)	(0.011)
3.6-3.69	-0.026***	-0.039***	-0.042***	-0.017***	-0.033***	-0.016
	(0.008)	(0.009)	(0.012)	(0.003)	(0.005)	(0.012)
3.7-3.79	-0.031***	-0.049***	-0.062***	-0.024***	-0.040***	-0.035***
	(0.010)	(0.011)	(0.014)	(0.005)	(0.006)	(0.010)
3.8-3.89	-0.036***	-0.070***	-0.094***	-0.026***	-0.053***	-0.060***
	(0.010)	(0.015)	(0.022)	(0.003)	(0.008)	(0.015)
3.9+	-0.043***	-0.097***	-0.125***	-0.036***	-0.079***	-0.093***
	(0.010)	(0.021)	(0.034)	(0.006)	(0.013)	(0.028)
Observations	280,514	140,622	43,347	280,451	140,488	43,095
2.9-2.99 Average	0.86	0.87	0.82	0.86	0.87	0.82
College FE	No	No	No	Yes	Yes	Yes
Demographic Controls	No	No	No	Yes	Yes	Yes
College Controls	No	No	No	Yes	Yes	Yes
FAFSA Controls	No	No	No	Yes	Yes	Yes
HS FE	No	No	No	Yes	Yes	Yes
Clusters	39	39	33	39	39	33

Notes: The table reports OLS coefficients on GPA bin indicators. The outcome is an indicator for appearing in the TWC wage data in any of the four quarters of the first post-graduation year; it measures presence in these records rather than employment alone. The 2.9–2.99 GPA bin is the omitted category. GPA bins have width 0.1, with GPAs below 2.5 and GPAs of 3.9 and above pooled into the endpoint bins. Standard errors are in parentheses. Separate regressions are estimated for non-STEM, non-engineering STEM, and engineering graduates. Columns 1–3 include entering-cohort fixed effects and indicators for graduating in May and December. Columns 4–6 additionally include indicators for female, white, and Hispanic; college fixed effects; fixed effects for major at enrollment and major at graduation (two-digit CIP categories); an indicator for graduating in the top 10% of the high school class; indicators for scoring in the top and bottom 50% of the within-cohort SAT/ACT distribution and for submitting a test score; the number of years observed in the financial aid data; indicators for ever receiving subsidized loans, unsubsidized loans, and Pell Grants; and high school fixed effects. Sample sizes can change across specifications when singleton observations are dropped. Graduates observed enrolling in graduate school in Texas in the year immediately following graduation are excluded. Columns 4–6 are plotted in Figure 10.

Table A15: Unconditional Real Earnings in the First Year, by Course of Study and GPA Bin

	(1)	(2)	(3)	(4)	(5)	(6)
		Non-Engineering			Non-Engineering	
	Non-STEM	STEM	Engineering	Non-STEM	STEM	Engineering
<2.5	-1,824.342***	-2,357.669**	-5,886.236***	-1,836.486***	-182.659	-4,633.051***
	(456.505)	(1,021.163)	(1,339.511)	(408.170)	(598.064)	(1,417.971)
2.5-2.59	-655.602	-2,077.629*	-3,491.372**	-1,043.899**	-352.425	-2,522.793*
	(495.648)	(1,037.167)	(1,408.169)	(424.231)	(734.966)	(1,305.382)
2.6-2.69	-1,177.328***	-2,874.925***	-3,268.703***	-1,314.902***	-1,332.901**	-2,551.061***
	(393.531)	(842.114)	(884.645)	(327.509)	(533.409)	(905.777)
2.7-2.79	-570.389	-1,611.662**	-2,854.959***	-808.700**	-747.214	-2,322.192**
	(403.260)	(733.691)	(917.396)	(313.577)	(661.764)	(1,044.876)
2.8-2.89	-680.191**	-1,165.885**	-1,708.890*	-757.384***	-356.981	-1,330.024
	(277.277)	(547.301)	(988.643)	(242.715)	(510.858)	(947.035)
3.0-3.09	457.570*	1,013.081	721.345	298.200	-204.562	559.710
	(252.249)	(604.798)	(1,192.561)	(276.573)	(413.235)	(1,329.843)
3.1-3.19	254.166	2,201.457***	1,306.473	532.017	566.028*	1,402.111
	(410.983)	(652.835)	(942.217)	(364.092)	(323.535)	(1,097.993)
3.2-3.29	1,093.095**	3,651.329***	2,038.037**	1,390.613***	1,126.658**	2,473.793**
	(441.727)	(896.720)	(996.917)	(355.434)	(496.629)	(1,129.829)
3.3-3.39	1,413.238***	4,041.433***	4,149.363***	1,870.965***	1,317.725***	4,485.358***
	(389.595)	(1,177.265)	(906.078)	(386.721)	(474.333)	(1,007.050)
3.4-3.49	1,812.479***	3,778.936**	3,529.059***	2,224.497***	889.825	4,297.991***
	(547.380)	(1,439.808)	(1,149.267)	(443.789)	(615.942)	(1,335.049)
3.5-3.59	2,408.302***	3,618.112**	5,715.340***	2,775.929***	918.660	6,340.925***
	(556.676)	(1,575.252)	(887.615)	(409.911)	(703.770)	(900.676)
3.6-3.69	2,308.389***	3,215.498**	6,437.984***	3,032.860***	792.890	7,456.594***
	(514.682)	(1,527.787)	(1,107.132)	(507.360)	(785.604)	(1,445.460)
3.7-3.79	2,942.515***	3,896.689*	6,570.026***	3,592.652***	1,406.861	7,642.575***
	(539.874)	(2,027.371)	(1,261.227)	(519.859)	(1,120.346)	(1,536.208)
3.8-3.89	3,624.864***	2,472.100	6,193.676***	4,437.658***	407.660	7,713.013***
	(646.623)	(1,865.394)	(1,335.137)	(560.453)	(1,108.431)	(1,713.834)
3.9+	4,738.404***	4,257.321	5,675.543**	5,383.609***	1,258.837	7,008.295**
	(799.359)	(3,017.263)	(2,267.508)	(751.486)	(1,698.772)	(2,745.893)
Observations	280,514	140,622	43,347	280,451	140,488	43,095
2.9-2.99 Average	34,035.89	34,089.46	52,922.74	34,035.89	34,089.46	52,922.74
College FE	No	No	No	Yes	Yes	Yes
Demographic Controls	No	No	No	Yes	Yes	Yes
College Controls	No	No	No	Yes	Yes	Yes
FAFSA Controls	No	No	No	Yes	Yes	Yes
HS FE	No	No	No	Yes	Yes	Yes
Clusters	39	39	33	39	39	33

Notes: The table reports OLS coefficients on GPA bin indicators. The outcome is the sum of recorded earnings over the four quarters of the first post-graduation year, in 2024 Q1 dollars. Earnings are set to zero for graduates not observed in the TWC wage data. The 2.9–2.99 GPA bin is the omitted category. GPA bins have width 0.1, with GPAs below 2.5 and GPAs of 3.9 and above pooled into the endpoint bins. Standard errors are in parentheses. Separate regressions are estimated for non-STEM, non-engineering STEM, and engineering graduates. Columns 1–3 include entering-cohort fixed effects and indicators for graduating in May and December. Columns 4–6 additionally include indicators for female, white, and Hispanic; college fixed effects; fixed effects for major at enrollment and major at graduation (two-digit CIP categories); an indicator for graduating in the top 10% of the high school class; indicators for scoring in the top and bottom 50% of the within-cohort SAT/ACT distribution and for submitting a test score; the number of years observed in the financial aid data; indicators for ever receiving subsidized loans, unsubsidized loans, and Pell Grants; and high school fixed effects. Sample sizes can change across specifications when singleton observations are dropped. Graduates observed enrolling in graduate school in Texas in the year immediately following graduation are excluded. Columns 4–6 are plotted in Panel A of Figure 11.

Table A16: Highest Quarterly Earnings in the First Year, Annualized, by Course of Study and GPA Bin

	(1)	(2)	(3)	(4)	(5)	(6)
		Non-Engineering			Non-Engineering	
	Non-STEM	STEM	Engineering	Non-STEM	STEM	Engineering
<2.5	-2,355.753***	-2,353.899**	-9,677.072***	-2,116.413***	329.310	-7,034.111***
	(628.963)	(1,159.646)	(1,411.486)	(456.356)	(759.286)	(1,060.217)
2.5-2.59	-1,045.615	-2,796.344**	-6,829.108***	-1,226.137*	-586.019	-5,093.924***
	(855.478)	(1,077.543)	(1,677.647)	(668.130)	(961.081)	(1,182.732)
2.6-2.69	-1,540.484**	-3,120.456***	-5,780.998***	-1,519.512***	-635.216	-3,891.791**
	(620.362)	(908.836)	(1,468.126)	(478.051)	(754.055)	(1,473.785)
2.7-2.79	-531.170	-1,817.409**	-3,306.698***	-646.245	-402.354	-1,752.721*
	(812.246)	(763.854)	(1,066.422)	(665.197)	(735.259)	(982.686)
2.8-2.89	-1,249.639**	36.916	-2,187.051**	-1,166.903***	1,459.876	-1,018.563
	(500.714)	(1,619.009)	(988.249)	(387.225)	(1,571.403)	(1,113.011)
3.0-3.09	499.878*	1,666.759**	1,891.136	472.152*	422.025	1,539.339
	(290.005)	(813.560)	(1,341.494)	(279.894)	(528.524)	(1,521.921)
3.1-3.19	457.809	3,011.556***	2,848.917**	764.511	1,555.458***	2,163.832
	(536.538)	(820.452)	(1,152.936)	(581.556)	(498.826)	(1,343.197)
3.2-3.29	1,550.445***	5,540.467***	5,637.272***	1,839.601***	2,712.828***	5,149.140***
	(560.986)	(1,067.998)	(1,015.900)	(427.761)	(627.184)	(1,136.490)
3.3-3.39	2,031.296***	5,864.204***	7,081.309***	2,495.951***	2,876.800***	5,914.036***
	(552.352)	(1,432.799)	(1,058.817)	(605.231)	(687.066)	(1,207.717)
3.4-3.49	2,952.735***	6,176.305***	8,585.710***	3,322.886***	2,838.266***	7,464.315***
	(755.322)	(1,648.852)	(1,168.750)	(663.746)	(887.070)	(1,598.135)
3.5-3.59	3,628.732***	6,495.960***	12,709.178***	4,021.584***	3,182.087***	11,149.683***
	(698.615)	(1,723.458)	(1,740.328)	(631.385)	(884.883)	(1,736.980)
3.6-3.69	3,766.217***	6,900.524***	13,728.494***	4,555.509***	3,749.929***	11,713.317***
	(1,054.442)	(2,041.002)	(1,415.656)	(817.180)	(1,260.728)	(1,820.297)
3.7-3.79	5,167.704***	8,277.285***	17,417.114***	5,979.490***	4,531.133***	15,287.153***
	(994.021)	(2,543.671)	(1,637.229)	(713.286)	(1,403.403)	(1,754.101)
3.8-3.89	6,534.253***	8,379.510***	21,113.686***	7,516.583***	4,833.710***	19,115.075***
	(1,201.012)	(2,281.921)	(2,139.691)	(810.629)	(1,411.074)	(1,760.527)
3.9+	8,021.670***	12,372.431***	25,749.861***	9,264.867***	7,389.349***	23,900.644***
	(1,115.618)	(3,502.349)	(2,938.470)	(1,228.218)	(2,077.116)	(2,014.350)
Observations	238,686	119,024	34,627	238,623	118,886	34,358
2.9-2.99 Average	52,192.60	51,771.50	81,863.65	52,192.60	51,771.50	81,863.65
College FE	No	No	No	Yes	Yes	Yes
Demographic Controls	No	No	No	Yes	Yes	Yes
College Controls	No	No	No	Yes	Yes	Yes
FAFSA Controls	No	No	No	Yes	Yes	Yes
HS FE	No	No	No	Yes	Yes	Yes
Clusters	39	39	33	39	39	31

Notes: The table reports OLS coefficients on GPA bin indicators. The outcome is the highest quarterly earnings in the first post-graduation year multiplied by four, in 2024 Q1 dollars. Graduates not observed in the TWC wage data are excluded. The 2.9–2.99 GPA bin is the omitted category. GPA bins have width 0.1, with GPAs below 2.5 and GPAs of 3.9 and above pooled into the endpoint bins. Standard errors are in parentheses. Separate regressions are estimated for non-STEM, non-engineering STEM, and engineering graduates. Columns 1–3 include entering-cohort fixed effects and indicators for graduating in May and December. Columns 4–6 additionally include indicators for female, white, and Hispanic; college fixed effects; fixed effects for major at enrollment and major at graduation (two-digit CIP categories); an indicator for graduating in the top 10% of the high school class; indicators for scoring in the top and bottom 50% of the within-cohort SAT/ACT distribution and for submitting a test score; the number of years observed in the financial aid data; indicators for ever receiving subsidized loans, unsubsidized loans, and Pell Grants; and high school fixed effects. Sample sizes can change across specifications when singleton observations are dropped. Graduates observed enrolling in graduate school in Texas in the year immediately following graduation are excluded. Columns 4–6 are plotted in Panel B of Figure 11.

B Construction of the Grade Point Average (GPA) Variable

We construct each student's grade point average from the Texas Higher Education Coordinating Board (THECB) course-completion records, which report, for every student-course-term, the enrolling institution (FICE code), the subject prefix and course number, the semester and reporting year, the number of semester credit hours, the course grade, and the grade-point value earned on a 4.0 scale.[13] Grades are available in the course records from 2012 to 2022, so our students of interest are those who began college no earlier than fall 2012 and graduated prior to fall 2022. For these students, we observe the full collegiate course-taking history. The resulting file is then merged to a student-level crosswalk that identifies each student's graduating institution and the year and month of degree conferral; we retain only students who match to this crosswalk, so the GPA variable is defined *only for degree completers*.

The grade-point value used throughout is the value reported by the institution itself; we do not independently map letter grades to points. Consequently, our measure reflects each institution's own grade-point scale as submitted to THECB. Note that institutions have different policies regarding grade granularity. For example, the University of Texas at Austin allows plus/minus grades (e.g., an A- is 3.67, and an A is 4.0); Texas A&M University does not, allowing only for whole number grade points (i.e., the university does not offer A-, and an A receives 4.0 grade points). We assume each institution correctly reports the number of grade points associated with each letter grade in the course records.

Before aggregating to the student level, we drop course observations that are not likely to count towards cumulative GPA. This includes the following restrictions to the course records:

- Dual-credit high-school coursework (courses reported as taken for college credit only while the student was not yet a high-school graduate), as these do not enter the college GPA.

- Non-graded courses, as they do not factor into GPA. We drop any course lacking

[13] Throughout this section we refer to institutions by their current official names, even where an institution operated under a different name during the sample period.

a reported grade-point value, which removes courses graded pass/fail or credit/no-credit, incompletes, withdrawals and drops (including Q-drops), in-progress courses, and courses for which the institution did not supply a grade.

- Zero-credit-hour courses, as they contribute nothing to either the numerator or denominator of the GPA.

- Transfer coursework. For every institution we retain only courses taken at the graduating institution. Public Texas institutions generally compute the institutional/graduation GPA from home-institution coursework only.[14]

- Courses taken after graduation are excluded. We identified a course as being taken after graduation if it was in a year post-graduation or a course following a within-year graduation (e.g., for a May graduate, courses in that fall and summer; for a summer graduate, courses in that fall).

For each student we compute total grade points earned (grade-point value $\times$ credit hours, summed across retained courses) and total graded credit hours. We construct the graduation GPA as the total grade points earned divided by total graded hours across the student's full retained record at the graduating institution.[15]

B.1 Treatment of repeated courses

Institutions differ in how repeated courses enter the GPA, and several revised their policies during the sample period. We determined each institution's grade-replacement and course-repeat rule from its undergraduate course catalog, obtained through the institution's registrar or catalog website and, where available, verified across time using archived catalog versions. Below we group institutions by the rule we implement.[16]

[14] While we did not confirm this convention at every institution, we verified it at the two largest institutions in the sample and treat it as a maintained assumption elsewhere.

[15] We drop the small number of graduates whose entire retained home-institution graded record falls within their final term.

[16] To the best of our knowledge, these rules are correct and represent each university's grading system. For some institutions, we make simplifying assumptions; these assumptions are noted below.

B.1.1 Policies dependent on student compliance

At four institutions (Prairie View A&M University, the University of Texas at Tyler, the University of Texas at Arlington, and the University of North Texas) the grade-replacement or grade-exclusion policy explicitly requires student compliance. These policies require a student to file a form or petition to replace the course grades.

We do not observe whether an eligible student actually filed the required petition. For these policies, we treat every student as having exercised every grade replacement or exclusion for which they were eligible, up to any applicable cap, for the first courses for which they could. Other institutions may also condition grade replacement on a student request, but we restrict this discussion to the four institutions for which the requirement is unambiguously stated. The institution-specific mechanisms to which this assumption applies are described in the subsections that follow.

B.1.2 Grading System Policies

All attempts count. For these institutions, every course attempt contributes to the GPA. We make no repeat-related adjustment beyond the restrictions described above. The University of Texas at Austin (FICE 003658) explicitly states that all attempts count in the calculation of cumulative GPA. For a small set of institutions, we were unable to verify the grading system, and we code the GPA calculation under this policy:

- The University of Texas at El Paso (003661), for which a course-repeat policy could not be clearly determined from the catalog.
- Some FICE codes (approximately 1.35% of graduates) did not correspond to identifiable institutions in the available THECB crosswalk—likely merged, discontinued, or miscoded entities—for which no policy could be determined.

First attempt dropped (grade replacement). For these institutions, when a course is repeated the earliest attempt is removed and the later attempt(s) count: the University of North Texas (003594), Texas State University (003615), and the University of Texas at Dallas (009741).

Two institutions have similar policies but courses are only removed if the student initially earned a low grade, subject to a cap on the number of eligible courses. Prairie View A&M University (003630) permits replacement of up to twelve semester credit hours of coursework in which a grade of C or lower was earned; we implement this by dropping the earliest such repeated attempts, up to approximately four courses (assuming an average of three credit hours per course). The University of Texas at Tyler (011163) applies a similar rule, which we implement by dropping the earliest eligible repeated attempts up to three courses.[17]

Most recent grade counts. For these institutions, only the most recent attempt at a repeated course contributes to the GPA; earlier attempts are removed: Texas Tech University (003644), the University of Texas Rio Grande Valley (003599), Angelo State University (003541), Texas A&M International University (009651), Texas A&M University–Commerce (003565), Texas Southern University (003642), the University of Texas Permian Basin (009930), Sul Ross State University (003625), the University of Houston–Clear Lake (011711), Texas A&M University–Texarkana (029269), the University of Houston–Victoria (013231), West Texas A&M University (003665), and The University of Texas San Antonio (010115).

Institution catalogs occasionally restrict grade replacement to courses in which the original grade fell below a threshold (e.g., C or lower). Where our implementation does not encode such a restriction, it can diverge from the stated policy only for students who repeated a course they had already passed with a satisfactory grade. For example, Texas Tech restricts replacement to grades of D or F, and UT San Antonio implements this same policy with conditions on both the number of forgivable courses and eligible original grades. The policy permits grade replacement only when the original grade was a D or lower and, after two such replacements, counts all subsequent attempts. For simplicity, we assume students only retake courses for which grade replacement is eligible and make no further adjustments to the calculation of the GPA.

[17]UT Tyler's policy formally applies only to repeated courses in which the original grade was a D or F, whereas our implementation (shared with Prairie View A&M) treats repeated courses with an original grade of C or lower as eligible. This affects only the uncommon case of a student who repeated a course originally passed with a C.

Highest grade counts. For these institutions, only the highest grade earned in a repeated course contributes to the GPA: Sam Houston State University (003606), Tarleton State University (003631), Texas A&M University–Corpus Christi (011161), Texas Woman's University (003646), Lamar University (003581), Midwestern State University (003592), Texas A&M University at Galveston (010298), and the University of Houston–Downtown (012826).

B.2 Institutions with policy changes or additional rules

Several institutions warrant separate treatment because their policies changed during the sample period or included special provisions.

Texas A&M University (003632). All attempts at a repeated course count, *except* that a repeated course does not count toward the GPA if the original attempt earned a grade of B or better. In addition, failing grades earned in Spring 2020 are excluded, consistent with the university's COVID-19 grading accommodation.

University of Houston (003652). Students who first enrolled before Fall 2018 have all attempts counted. For students first enrolling in Fall 2018 or later, a grade of D+ or lower earned in a course during the first year may be excluded if the course is repeated within twelve months; we implement this by dropping the first attempt for first-year courses meeting these conditions.

The University of Texas at Arlington (003656). Students who first enrolled before Fall 2013 were eligible for *grade exclusion*, under which up to three courses with a grade of D or F could be removed from the GPA upon request; we implement this by dropping the three earliest eligible D/F courses. Students first enrolling in Fall 2013 or later were subject to *grade forgiveness* via substitution, under which the first attempt at a repeated course is replaced by the retake; we implement this as a first-attempt drop.

Texas A&M University–Kingsville (003639). Students who first enrolled before Fall 2015 have the most recent grade counted for repeated courses. Students first enrolling in Fall 2015 or later are treated under a first-attempt-drop (grade-replacement) rule.