



Budget Model

College Employment and Student Performance

***Series on community colleges:** The Biden-Harris Administration has advocated for providing free community college. This series of briefs takes a deeper dive into the world of community colleges: who attends, who transfers, who graduates, who achieves high marks, and what factors seem to matter for each. In doing so, we hope to shed light on how some students may benefit from this policy, others may not, and what factors form this partition. More briefs can be found [here](#).*

Summary: Working part-time or full-time while enrolled in college is not uncommon, but students who do so tend to fall behind their peers in terms of grades or spending more time in undergraduate study, even after controlling for other characteristics such as household resources.

Key Points

- For students who first enroll in a two-year college program, almost two-thirds spend more than half of their time in college working twenty or more hours per week in outside employment. For students who first enroll in a four-year program, that number falls to about two-fifths.
- For students attending two-year colleges, students who work every month receive on average 0.24 standard deviations lower GPAs. Students working every month are also 16 percentage points less likely than the 45 percent average among non-working students to transfer to four-year university and therefore, 7 percentage points less likely than the 25 percent average among non-working students to earn a four-year bachelor's degree.
- Among those who first attend a four-year college, students who work at least part-time achieve lower marks and spend more time in college. Students who work every month receive on average 0.41 standard deviations lower GPAs, are 8 percentage points more likely than the 7 percent average among non-working students to earn an associate degree, and in turn, spend on average an additional two years as an undergraduate.

Introduction

According to the U.S. Department of Education, 27 percent of full-time students and 71 percent of part-time students in 2018 worked at least twenty hours per week while in college.¹ But does working in college negatively affects student performance?

Recent research has found this to generally be the case. Stinebrickner and Stinebrickner (2003) and Desimone (2008) find a strong negative relationship between grade point average (GPA) and each additional weekly work hour in college for four-year students. Pike et al. (2008) also find a negative relation between employment and GPA for students who work more than twenty hours per week, but interestingly, a positive relation for students who work fewer than twenty hours per week on campus. Beffy et al. (2013) estimate for university students in France a large and significant drag from working in college on the probability of graduating.

We contribute to this body of literature on college employment and college performance by analyzing outcomes for community college students, and documenting correlations related to not only grades, but to transferring and degree completion as well for a representative cohort of high school students in the United States. We do so by using the National Longitudinal Survey of Youth 1997 (NLSY97), which allows us to follow students over time and pinpoint for each calendar month, whether the student is enrolled in college and/or working twenty or more hours per week.

Importantly though, as Stinebrickner and Stinebrickner (2003) emphasize, the estimates and findings presented herein should not be interpreted causally. Whether and for how many hours to work each week is an endogenous decision that each student makes with accordance to their own objective functions and budgetary constraints. That said, understanding disparities that arise between students who appear similar in observable ways but differ in their college employment bears relevance for policymakers who may be concerned with academic success for students who may need to work to pay for their educations and/or support their families.

Students Often Work in College

For our measure of college employment, we use the share of non-summer months enrolled in college that the student works at least twenty hours per week. Given that our outcomes of interest are all terminal results (cumulative grade point average, degree attainment, transferring colleges, and time spent enrolled), utilizing an employment intensity that covers the full-time horizon the student is enrolled seems plausible. We consider twenty hours per week as our cutoff to reflect students who are working part- or full-time while in college. We partition our sample of students into two bins: ones who first enroll in a two-year college and those who first enroll in a four-year university. We consider only enrollment decisions made before age thirty.

For each group, we calculate the share of enrollees who: (i) never work throughout their college tenure, (ii) work some but not most of their tenure, (iii) work most of their tenure, (iv) work the entire time they are enrolled. The distributions are displayed in Table 1. First, most students work part- or full-time for at least some of their college tenure. Only about 15 percent of both two-year and four-year students in this cohort never work twenty or more hours during a semester. Second, community college students work more often than four-year students. Nearly two-thirds of community college students spend more than half of their time in college employed twenty or more hours, well-above the two-fifths share among four-year students. With

regards to working throughout one's entire college tenure, 30 percent of community college students do so compared with roughly 12 percent of four-year students.

Table 1: Incidence of Employment among Enrolled College Students

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	Share of months employed 20+ hours			
	0	[0.01, 0.50]	[0.51, 0.99]	1
First enroll two-year institution	15.0%	20.6%	34.4%	30.0%
First enroll four-year institution	14.9%	44.1%	29.4%	11.6%

Notes: Data are from the publicly available National Longitudinal Survey of Youth 1997. College months for which student employment considered excludes the summer months of June, July, and August. Analysis restricted to only the first college in which each student enrolls. Student enrollment decisions limited to before age 30. Distributions are weighted according to representative panel sampling weights.

Working While in Community College

Given the dispersion in students' rates of employment while matriculated in college, we investigate whether there are perceivable differences in academic performance between students who increasingly work in school. To do so, we regress our measure of college employment intensity for students working towards an associate degree at a community college on six different outcomes of student performance, reflected in the column headers in Table 2. Importantly, since academic performance and the decision to work are likely to be correlated with student ability, we control for two measures of student skill: their high school GPA and score on the Armed Services Qualification Test (AFQT). Although we do not control for family income—which also likely factors into the college employment decision—the results change little when it is incorporated in the model.

There are two main takeaways. First, community college students who are increasingly employed throughout their college tenure on average receive lower marks. Compared with students who never work part- or full-time in college, students who work every month while in community college receive on average 0.24 standard deviations lower GPAs (Column 1). Second, college employment is strongly inversely related to transferring from community colleges to four-year universities. Compared with students who never work part- or full-time, community college enrollees who work every month while in school are 16 percentage points less likely than the 45 percent average for non-working students to transfer to a four-year program (Column 3), in turn resulting in fewer bachelor's degrees (Column 4) and thus fewer degrees overall (Column 5). This could reflect a real drag that college employment puts on student transferring, just as well as it could reflect a strategic decision to work made by students who have no intention of working towards a bachelor's degree. Interestingly though, working while in community college does not seem to translate into a reduced likelihood of graduating with an associate degree.

Table 2: Correlation between Working in College and Outcomes for Two-Year Enrollees

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	First enroll two-year institution					
	Z-score of college GPA	Earns associate degree	Enrolls in four-year institution	Earns bachelor's degree	Earns neither degree	Total months in undergrad
Share of college months employed 20+ hours	-0.239**	0.048	-0.158***	-0.069*	0.079*	1.992
	(0.116)	(0.040)	(0.041)	(0.036)	(0.041)	(4.359)
Sample mean at zero share	0.14	0.27	0.45	0.25	0.54	38.69
Mean share months	0.66	0.63	0.63	0.63	0.63	0.63
Respondents	679	1259	1259	1259	1259	1254
Sampling weight (millions)	1.83	3.30	3.30	3.30	3.30	3.28
Adjusted R-squared	0.20	0.07	0.08	0.09	0.10	0.05

Notes: Data are from the publicly available National Longitudinal Survey of Youth 1997. Dependent variables in columns 2--5 reflect indicator variables. Each regression includes high school GPA, AFQT test score, and fixed effects for gender-ethnicity, gender-birthyear, ethnicity-birthyear, and census region interacted with relative location with a metropolitan statistical area. College months for which student employment considered excludes the summer months of June, July, and August. Share of college months employed reflects only the first college of enrollment. Student enrollment decisions limited to before age 30. Regressions are weighted according to representative panel sampling weights. Coefficients are presented with robust Huber-White standard errors in parentheses immediately below.

Working While in Four-Year University

We repeat the exercise above for students who first work towards a bachelor's degree at a four-year university. We now regress our measure of college employment intensity for four-year students on six different outcomes related to attending a four-year institution, reflected in the header of each column in Table 3. Again, we control for each students' high school GPA and score on the AFQT, and though we do not control for family income, the results change little when incorporated. The patterns we observe among four-year students who work are even more stark.

Four-year students who are increasingly employed throughout their college tenure receive on average significantly lower marks in their coursework. Compared with students who never work part- or full-time in college, students who work every month in university receive on average 0.41 standard deviations lower GPAs (Column 1), a sharp and significant negative relation. While we observe a slightly negative relation on bachelor's degree completion (Column 2), the result is not statistically different from zero.

We also observe that students who work while in university are increasingly likely to matriculate in community college. Compared with students who never work twenty or more hours in college, students who work every

month are 11 percentage points more likely than the 14 percent average among non-working students to take courses at a community college (Column 3) and ultimately 8 percentage points more likely than the 7 percent average among non-working students to earn an associate degree (Column 4). While part of this effect may be driven by substitution away from a bachelor’s degree towards an associate degree, the effect is mostly driven by employed students being more likely to earn both degrees (Column 5), resulting in students who work at least part-time every month in college spending on average 24 additional months as an undergraduate student (Column 6). If there is no additional earnings premium to having an associate degree beyond that commanded by a bachelor’s degree, then this additional time spent as an undergraduate student associated with working when first enrolled in university represents an inefficiency policy may be able to address.

Table 3: Correlation between Working in College and Outcomes for Four-Year Enrollees

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	First enroll four-year institution					
	Z-score of college GPA	Earns bachelor's degree	Enrolls in two-year institution	Earns associate degree	Earns both degrees	Total months in undergrad
Share of college months employed 20+ hours	-0.409*** (0.088)	-0.045 (0.035)	0.109*** (0.028)	0.077*** (0.022)	0.062*** (0.016)	23.701*** (6.548)
Sample mean at zero share	0.01	0.70	0.14	0.07	0.03	68.30
Mean share months	0.45	0.44	0.44	0.44	0.44	0.44
Respondents	1077	1750	1750	1750	1750	1746
Sampling weight (millions)	3.34	5.25	5.25	5.25	5.25	5.24
Adjusted R-squared	0.28	0.08	0.04	0.02	0.02	0.01

Notes: Data are from the publicly available National Longitudinal Survey of Youth 1997. Dependent variables in columns 2--5 reflect indicator variables. Each regression includes high school GPA, AFQT test score, and fixed effects for gender–ethnicity, gender–birthyear, ethnicity–birthyear, and census region interacted with relative location with a metropolitan statistical area. College months for which student employment considered excludes the summer months of June, July, and August. Share of college months employed reflects only the first college of enrollment. Student enrollment decisions limited to before age 30. Regressions are weighted according to representative panel sampling weights. Coefficients are presented with robust Huber–White standard errors in parentheses immediately below.

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This analysis was produced by [Jason Sockin](#).

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1. See Figure 1 of the “College Student Employment” report released by the National Center for Educational Statistics, available at https://nces.ed.gov/programs/coe/pdf/coe_ssa.pdf ↩