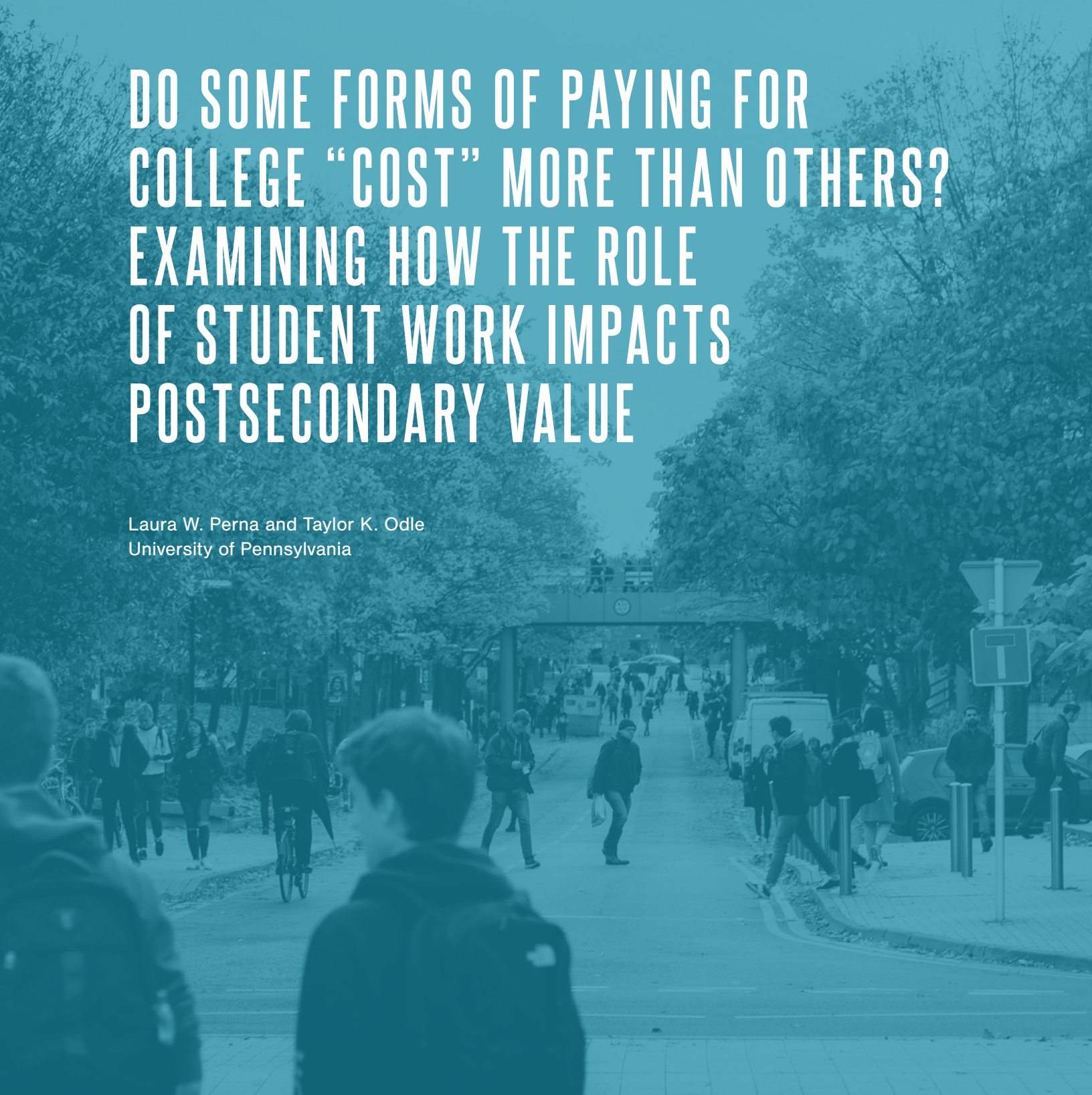
POSTSECONDARY

VALUE COMMISSION

DO SOME FORMS OF PAYING FOR COLLEGE "COST" MORE THAN OTHERS? EXAMINING HOW THE ROLE OF STUDENT WORK IMPACTS POSTSECONDARY VALUE

Laura W. Perna and Taylor K. Odle
University of Pennsylvania



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This paper is one in a foundational research series for the Postsecondary Value Commission authored in summer 2019 by scholars with diverse backgrounds and expertise. The research presented in these papers applies an equity lens to the philosophical, measurement, and policy considerations and assumptions underlying key components of postsecondary value to students and society, including investment, economic and non-economic returns, mobility, and racial and socioeconomic justice.

The Postsecondary Value Commission consulted this foundational research as it developed a conceptual definition of postsecondary value, a framework for measuring how institutions and programs create value and ensure equitable outcomes, and an action agenda with recommendations for applying the definition and framework to change policies and practices. Through this breadth of scholarship, the commission was better able to define the value of postsecondary education and the role institutions can play in creating a more equitable and fair United States.

Following the May 2021 release of the commission's findings, these foundational papers were prepared for publication. The views and opinions expressed in these papers do not necessarily reflect the positions of individual members of the Postsecondary Value Commission or the organizations they represent.

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INTRODUCTION

Working for pay is the reality for many undergraduate students. In 2017, 43 percent of undergraduates who were enrolled full-time were employed as were 81 percent of part-time students (Table 1).[1] Many of these students worked long hours, with 27 percent of full-time and 71 percent of part-time undergraduate students working more than 20 hours per week in 2017 (Table 1).[2] Working students' educational outcomes tend to decline as their hours increase: descriptive and correlational studies of national datasets consistently show students who work 15 to 20 hours per week, especially on campus, generally have better outcomes than those who do not work and those who work more than 20 hours per week.[3] But, many students work more than this level. In 2016, students who worked while enrolled averaged 28 hours of work per week, with full-time students averaging 25 hours per week and part-time students averaging 33 hours.[4]

Table 1. Percentage of Undergraduate Students Who Were Employed by Enrollment Status and Hours Worked Per Week, 2005, 2010, and 2017

	Enrolled Full-Time			Enrolled Part-Time		
	2005	2010	2017	2005	2010	2017
Total Percent Employed	**50**	**41**	**43**	**86**	**75**	**81**
Less than 10 Hours	7	6	7	3	3	4
10-19 Hours	9	8	8	5	4	5
20-34 Hours	20	16	17	22	22	25
35+ Hours	12	10	10	55	43	46

Source: National Center for Education Statistics, The Condition of Education, 2019.

Notes: Full-time is defined as enrolled in 12 or more credit hours. Totals may not add to 100 percent due to rounding.

Higher rates and intensity of employment among students from underserved backgrounds and those attending under-resourced institutions suggest employment during college reinforces inequity in higher education opportunity and outcomes.[5] Among full-time students, working is more common among women (45 percent versus 41 percent of men), multi-racial students, students over age 24, and students at two-year institutions (50 percent versus 41 percent at four-year institutions; Table 2).[6] To improve equity in college outcomes and experiences, especially for working learners, we must consider the reasons different groups of students work, the characteristics of jobs that different groups hold, the

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characteristics of postsecondary institutions that different groups attend, the costs of working, and the ways in which each of these factors differentially impact different groups of students.

Table 2. Demographic Characteristics of Undergraduate Students Who Were Employed by Enrollment Status, 2017

Characteristic	Percent employed by enrollment status	
	Full-Time	Part-Time
Gender		
Male	41	84
Female	45	78
Race		
Asian	29	80
Black	39	81
Hispanic	46	80
Two or More Races	49	-
White	45	80
Age		
16-24	41	82
25-29	54	82
30-39	58	82
40-49	64	77
50-64	48	65
Institution Level		
Two-Year	50	78
Four-Year	41	83

Source: National Center for Education Statistics, Condition of Education, 2019.

Notes: Full-time is defined as enrolled in 12 or more credit hours. Part-time employment information for students with two or more races did not meet NCES reporting standards.

WHAT IS THE ROLE OF WORK AS A MECHANISM FOR FINANCING COLLEGE?

Although some may work for other reasons,[7] undergraduates, especially from low-income families, often work to pay the direct and indirect costs of enrollment. Growth in tuition relative to increases in family income helps explain changing student employment rates.[8] Between 2008-09 and 2017-18, average tuition and fees increased in constant dollars by 36 percent at public four-year institutions and 34 percent at public two-year institutions, while median family income increased by 7 percent.[9]

College affordability[a] has declined in all states since 2008, with especially high declines in states with greater concentrations of low-income, Black, and Hispanic families.[b, 10] Among dependent, full-time undergraduates, average unmet need is higher in absolute dollars and as a percentage of family income for students in the lowest family income quartile.[11] High costs and insufficient grant aid can lead students to need to work to cover unmet financial need.

Further, many students who are eligible for need-based aid do not apply for and receive the aid.[12] About 30 percent of all undergraduates enrolled in 2011-12,[13] and 16 percent of those with incomes below $30,000,[14] did not file a Free Application for Federal Student Aid (FAFSA) and thus could not receive a Pell Grant. Among those who did not apply, 13 percent reported receiving no information on how to apply, and 9 percent reported that forms were too onerous.[15] An exploratory study suggested that some students continue to lack clear, accurate information about aid and view working for pay as a better approach to paying college costs than loans.[16] FAFSA verification also limits aid receipt and enrollment,[17] especially for female and Black students, and students from low-income backgrounds.[18]

> **"College affordability has declined in all states since 2008, with especially high declines in states with greater concentrations of low-income, Black, and Hispanic families.**

The inclusion of "work-study" in the financial aid offer provides another reason to work.[19] In 2017-18, 601,000 students received $960 million from Federal Work-Study (FWS).[20] Some states (e.g., Pennsylvania, Washington) and institutions also have their own work-study programs. Work-study recipients worked an average of 10.4 hours per week during the 2016 academic year, receiving an average total of $2,411 in FWS earnings.[21] Classifying work-study as "aid" is problematic, as, unlike grants, strings are attached. Students only receive funds when they obtain an eligible job and meet employment responsibilities, and work-study funds are not available to cover tuition or housing payments due at the start of the term. Work-study funds may also reduce students' available grant aid,[22] and students who receive FWS average higher rates and amounts of borrowing.[23]

Some students also work to meet their Expected Family Contribution (EFC).[24] Because EFC is "based on the family's ability to pay, not willingness to pay,"[25] some dependent students must work because their parents are unable or unwilling to provide the contribution expected of them.[26] The extent to which this occurs is not known, but survey data suggest traditional-age undergraduates in low-income households more commonly have primary responsibility for college-cost decisions than those in high-income households.[27] In one survey, 43 percent of families reported using student savings to pay for college; only 27 percent reported using parental savings.[28]

Finally, while many students use debt to pay college costs or cover unmet financial need,[29] high risk, loan aversion, or incomplete or inaccurate information lead some students to not use loans.[30] Borrowing has a disproportionate impact on Black students, who borrow at higher rates, borrow

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a Affordability was measured as the percent of family income required to pay the net price of college, with net price defined as expenses remaining after grants and scholarships. Declines in affordability were particularly noteworthy in states with high concentrations of low-income, Black, and Hispanic families (e.g., South Carolina, Alabama, Mississippi, Georgia). In South Carolina (for example), average net price at public, non-doctoral, four-year universities represented 73 percent of annual income for families with annual incomes below $30,000 (Finney, 2016).

b The race/ethnicity categories used in this paper reflect the terms used in the data sources.

larger amounts of federal loans, and experience higher default rates.[31] Higher rates of loan aversion have been observed among males, Hispanics, and students enrolled in four-year institutions.[32] For students who do borrow, federal student loan limits may not provide access to enough funds to cover college costs, and students may work to cover these gaps.

IS WORKING FOR PAY HELPFUL OR HARMFUL? HOW MUCH WORK IS "TOO MUCH"?

Paid employment may not only provide the funds needed to pay college costs, but also build human capital and improve students' labor market outcomes.[33] Using an instrumental variables approach, one study found that students who worked while enrolled had higher post-college salaries, even after controlling for time to bachelor's degree completion and other factors.[34]

But, especially if time is "zero sum," working also has costs, including time available for academic engagement.[35] Descriptive and correlational analyses show that working more than 20 hours per week is associated with lower grades,[36] lower first-year retention rates,[37] and, for community college students, lower retention and degree-completion rates.[38] The effects of employment on college outcomes may depend on how employment changes students' use of time. Using quasi-experimental methods, one study found that FWS was negatively related to first-year grades for women, but positively related to grades for men. These differences may reflect differences in whether students who work reduce time for study or leisure.[39] Working may also slow the rate of credit accumulation,[40] encourage part-time rather than full-time enrollment,[41] and reduce the likelihood of completing a bachelor's degree within six years.[42] These outcomes lengthen time-to-degree, which can increase opportunity and other costs of college enrollment, and may also hurt students' likelihood of completing a degree.[43] Enrolling less than half-time also reduces eligibility for Pell Grants and other aid.[44]

The benefits and costs of working are related to the number of hours worked, as well as the characteristics of employment, the postsecondary institution attended, and the working student.

Characteristics of Employment

Descriptive analyses suggest that academic outcomes are better for students who are employed on-campus rather than off-campus.[45] Using propensity-score matching, one study found students with work-study positions had higher rates of bachelor's degree completion than students with other employment, due in part to on-campus work locations and major- or career-related work assignments.[46] At four-year institutions, working on campus 20 or fewer hours per week has been found to be associated with more student-faculty interactions and active and collaborative learning.[47]

Other characteristics of employment may also influence student outcomes. While all jobs can improve conscientiousness, teamwork, and other employability skills, not all will advance career-related knowledge and skills.[48] A quarter (26 percent) of working learners age 16 to 29, and 12 percent of working learners age 30 to 54, work in food and personal services occupations, while only 6 percent of working learners age 16 to 29 and 17 percent of those age 30 to 54 held managerial positions.[49] The types of jobs students hold are correlated with family background. Compared to students from higher-income families, students from low-income families are less likely

to have paid internships and other positions related to their career goals and major field.[50] Having a major-related work-study job is less common for traditional-age undergraduates who are first in their family to attend college than for those whose families have prior college experience (31 percent versus 49 percent).[51]

Several organizations offer mechanisms for awarding credit for work and other prior experiences (e.g., the College Board's College-Level Examination Program and the American Council on Education's College Credit Recommendation Service).[52] Further inquiry is needed to understand whether and how different groups of students benefit from these and related efforts. Likewise, little is known about the effects of employer-sponsored approaches to education. While Amazon, Google, McDonald's, Starbucks, Walmart, and other companies offer education benefits, their approaches vary in level and timing of reimbursement, program and course restrictions, and other dimensions.[53]

Characteristics of Institutions

Full-time students at two-year institutions are more likely to be employed and to work more than 20 hours per week than full-time students at four-year institutions.[54] In 2017, 50 percent of full-time students at two-year institutions worked, and 72 percent of these working students worked more than 20 hours per week. By comparison, 41 percent of full-time students at four-year institutions worked; 60 percent of these students worked 20 or more hours per week (Table 3).[55]

Table 3. Percentage of 16- to 64-Year-Old Undergraduate Students Who Were Employed and Percentage of Employed Working Undergraduates Who Worked 20 or More Hours Per Week, by Institutional Level and Enrollment Status: 2005, 2010, and 2017

		2005		2010		2017	
		Working	20+ Hours	Working	20+ Hours	Working	20+ Hours
4-Year	Full-Time	49	62	42	62	41	60
	Part-Time	88	90	76	89	83	91
2-Year	Full-Time	54	70	39	68	50	72
	Part-Time	84	90	73	86	78	84

Source: National Center for Education Statistics, Digest of Education Statistics, 2018.

Notes: Full-time is defined as enrolled in 12 or more credit hours.

Two-year institutions, as well as for-profit and less selective four-year institutions, enroll higher shares of student from low-income families.[56] While students whose parents have completed college are more likely to enroll in a four-year institution, those with college-educated parents who do enroll in a two-year institution are less likely to work more than 20 hours per week.[57]

Creating an institutional environment that promotes success of working students likely requires a campus-wide effort.[58] Observers have recommended that institutions support working students by offering courses in the evenings, on weekends, and using online formats; making available future course schedules; offering access to academic advising, office hours, and other support services at night and on weekends; offering online course registration and virtual academic advising;

providing child-care options; and designating space for working students to study. Institutions may also connect employment and educational experiences through career counseling and occupational placement.[59] Others suggest that postsecondary institutions coordinate with employers to provide "convenient learning options; child care; affordable transportation options; employment partnership agreements; access to healthcare insurance; paid sick, maternity, and paternity leave; financial literacy and wealth building information and retirement and investment options; and tuition assistance" for working learners.[60]

Characteristics of Working Students

The negative effects of employment accrue disproportionately to students from historically-underserved groups, who tend to work more. Students from low-income families, first-generation college students, and those with lower academic readiness more frequently work for pay while enrolled and, among those who are employed, work more hours.[61] In contrast, higher-income students tend to work fewer hours and hold major-related jobs.[62] Higher shares of students from low-income (52 percent versus 45 percent from high-income) and Black (51 percent versus 46 percent of White) families, and those attending public two-year institutions (57 percent versus 44 percent of public four-year institutions) report working additional hours to make college more affordable.[63] Compared with dependent students, students who are independent more commonly work while enrolled (69 percent versus 59 percent in 2016).[64] Working independent students average about 34 hours of work per week, compared with 22 hours per week for dependent students (Table 4).[65]

Table 4. Percentage of Students Working and Average Number of Hours Worked Per Academic Week by Students' Enrollment Status, Dependency Status, Marital Status, and Presence of Dependents

Enrollment Status	Dependency Status	Marital Status	Presence of Dependents	Percentage Working	Average Hours per Week Among Working Students
Total	Dependent			59	22
	Independent			69	34
Full-Time	Dependent			55	20
	Independent	Single	Dependents	64	34
			No Dependents	58	30
		Married	Dependents	64	34
			No Dependents	63	32
Part-Time	Dependent			66	27
	Independent	Single	Dependents	75	34
			No Dependents	72	35
		Married	Dependents	75	37
			No Dependents	74	36

Source: National Postsecondary Student Aid Study, 2016.

Notes: Full-time is defined as enrolled in 12 or more credit hours. Dependency, marital status, and dependents are defined according to 2015-16 federal financial aid criteria.

Moreover, working may have psychological benefits for some students, but costs for others. An exploratory study found that working, first-generation Latinx students at a highly-selective public university (most of whom held work-study positions) developed new relationships, skills, and knowledge, and experienced satisfaction and enjoyment from working.[66] Other qualitative research describes stress and anxiety, particularly among working students who are also parents or other caregivers.[67] Psychological costs may be especially high for independent students who are single parents (a disproportionate share of whom are Black and American Indian women) and students who are living at or below the poverty line (42 percent of independent students in 2012).[68] Research likely understates the prevalence and magnitude of stress, as typically only the views of students who are still enrolled at time of data collection are included.[69]

Working for pay may be particularly harmful for students with lower readiness for college-level work and those who attend institutions with fewer academic supports.[70] Data from BPS:12 show that half of all undergraduates had taken at least one remedial course, with higher rates of remedial course enrollment for non-native English speakers and Pell recipients.[71] Future research should consider the prevalence and impact of working among students who enter college with lower academic readiness and the implications of work for their academic progression.

HOW MUCH CAN A STUDENT REASONABLY EXPECT TO EARN TO CONTRIBUTE TO COLLEGE COSTS?

Students who work full-time at minimum wage jobs "can't work [their] way through college anymore."[72] One study found that there are only 12 states where students working 20 or fewer hours per week earn enough to pay the average net price to attend a public two-year institution.[73] On average, students attending public four-year, non-doctoral universities across the nation would need to work 35 hours per week to cover the net price of attendance without other sources of support.[74] As an example of the inadequacy of working to fully cover college costs, in 2018-19, a student who worked 20 hours per week during the academic year and 30 hours per week during the other 20 weeks of a calendar year at the federal minimum wage ($7.25/hour) would earn $8,990—less than the average net price for full-time students at the nation's public four-year institutions ($14,880) and about the average net price for full-time students at public two-year institutions ($8,270).[75] State-specific estimations show that students would need to work more than 20 hours per academic week to pay the average net price of a public two-year institution in three of the 20 most populous states, and work more than 20 hours per week during the school year to pay the average net price of a public four-year institution in 17 of the 20 most populous states (Table A1).[76]

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WHAT COSTS SHOULD STUDENT EARNINGS BE USED TO COVER?

Many students are struggling to make ends meet. Most seniors at four-year institutions (63 percent) reported in 2015 being "worried about having enough money" and half (48 percent) reported that they "did not participate in [unspecified] activities due to lack of money."[77] Reports of financial stress were more common among first-generation, Black, and Hispanic students, and students over age 24.[78] More than a third (38 percent) of Pell recipients at community colleges who worked more than 20 hours per week reported "running out of money" at least six times in a year, even though 46 percent worked more than 20 hours per week, and only 22 percent reported access to cash, credit, or other sources of funds for an "unexpected need."[79]

Determining the costs that student earnings should cover is challenging due to the absence of a shared definition and measurement of necessary expenses for postsecondary students, which the Postsecondary Value Commission is seeking to remedy.[80] The U.S. Department of Education (n.d.) gives discretion to institutions in specifying costs, stating that cost of attendance may "also include other expenses like . . . the rental or purchase of a personal computer, costs related to a disability, or costs for eligible study-abroad programs." Some institutions prominently feature only "direct costs" (i.e., tuition, fees, room, and board) in communications to students about college prices, implying that other costs, like books and supplies, are optional.[81] While all people must have food and shelter, some students experience food and housing insecurity, as well as homelessness.[82] Institutions in the same metro area calculate living costs differently.[83] Whether institutional budgets adequately account for childcare, transportation, and other costs (like paying rent to parents if they live at home) is not known. A survey of families with an undergraduate student age 18 to 24 suggested that students from low-income families are less likely than students from high-income families to live on campus (26 percent versus 41 percent), and more likely to live with parents rent-free (36 percent versus 24 percent) or live with parents and pay rent (15 percent versus 1 percent).[84]

HOW ADEQUATE ARE THE INCOME PROTECTION ALLOWANCES FOR STUDENTS IN THE EFC FORMULA?

Income protection allowances (IPAs) are intended to protect a baseline level of earnings to ensure basic needs are met by specifying an amount of earnings that is excluded from calculations of students' EFC.[85] For 2019-20, the IPA was $6,660 for dependent students, $10,360 for single independent students with no dependents, and $16,620 for independent students who are married with no dependents.[86] Independent students with earnings below their IPA threshold have a zero EFC.[87] For dependent students, if student earnings are below the IPA threshold, they are not included in aid calculations. Their parents' wages are treated separately, with different IPA levels.[88] Student earnings above the IPA threshold are "taxed" at a rate of 50 percent for dependent students and lower rates for independent students, meaning that earnings above these thresholds reduce the student's eligibility for financial aid.[89]

Using FAFSA4caster to explore the adequacy of IPA levels, Table A2 shows that independent, single students with no dependents who have an AGI above $25,000 will receive no Pell Grant. Among independent single students with one dependent, those with a $35,000 AGI are expected to receive the maximum Pell Grant whereas those with a $70,000 AGI will receive no Pell Grant.[90]

Per the College Cost Reduction and Access Act of 2007 (CCRAA, Pub. L. 110–84), the U.S. Department of Education annually adjusts IPA levels to account for inflation. Existing research suggests the "work penalty in the aid system likely adds extra financial burden to resource-constrained students and puts students' ability to persist in college at risk."[91] Additional analyses are required to understand the implications of IPA cut points for different groups of students at different institutions, in light of actual annual changes in costs and aid, and variations in affordability across states. Especially important is considering how IPAs influence eligibility for financial aid for working single independent students, with and without children.[92]

CONCLUSIONS AND RECOMMENDATIONS

Compared with higher-income students, students from lower-income families work more hours and are more likely to experience negative consequences from working. More must be done to minimize the costs and maximize the benefits of working, especially for students from low-income families, Black, Hispanic, American Indian/Native American, and first-generation students, and independent single parents, as well as students attending community colleges and institutions with high shares of low-income and underserved groups of students.

The following recommendations emerge from this review:

- Ideally, full-time students would work no more than 20 hours per week while enrolled. While more research is required to demonstrate the causal effects of working, as well as the emotional, psychological, and other qualitative implications of working, available evidence identifies poor outcomes for students who work more than 20 hours per week. Although more research is also needed on variations in the effects of working for different groups of students attending different types of institutions, some may have better educational outcomes if they work fewer than 20 hours per week, like those who enroll with lower academic readiness for college-level work, who have more non-academic demands, and who have a lower likelihood of degree completion.
- Students who work should have jobs that are on campus, related to their major field, and provide meaningful opportunities to build career-related knowledge and skills.
- Students should work to cover their own contribution to EFC, as well as unanticipated costs that arise while enrolled. Student employment should not be viewed as a mechanism for paying costs that are required for enrollment but that an institution fails to include in its cost of attendance. While all students are vulnerable to financial emergencies (e.g., car repairs and medical emergencies), these events may be particularly problematic for students from low-income families and other underserved groups,[93] as low-income Americans are less likely to have savings or other resources to cover these costs.[94] Working should provide a mechanism for paying unanticipated costs without influencing the availability of resources to pay the costs needed to stay enrolled.
- For students to work no more than 20 hours per week and still have the financial resources needed to enroll and persist, the financial need to work must be reduced. Colleges and universities should reduce unmet financial need and ensure that students apply for and receive the need-based aid for which they are eligible. Institutions should also help students make individually-appropriate decisions about use of federal loans and avoid the use of other, riskier sources of credit. Public policymakers should maximize the availability of state and

local appropriations (to keep tuition at public institutions low) and increase the availability of need-based grant aid, including aid for students who are enrolled part-time and in non-degree programs.[95] Offering additional need-based grant aid to students from low-income backgrounds has been shown to reduce employment rates and number of hours worked,[96] and increase the likelihood of on-time degree completion.[97]

- Working students need access to high-quality academic and other supports to persist to degree completion. Future research should consider how different types of institutions (especially community colleges and institutions with high shares of students from underserved groups) can best support the needs of working students who are from low-income, Black, Hispanic, and American Indian/Native American families, first in their family to attend college, and independent single parents.
- The ideal use of Federal Work-Study dollars should be further examined. Benefits from on-campus employment could potentially be achieved through employment funded by other sources.[98] While FWS funds reduce the cost to institutions of employing students, these benefits accrue disproportionately to private four-year institutions.[99] In 2013-14, community colleges enrolled about 40 percent of all students but received just 20 percent of all FWS funds.[100] While some studies have considered changes in the allocation of FWS dollars across institutions,[101] future research should consider whether shifting this funding to other uses (e.g., increasing Pell Grants) may be preferable.
- The adequacy of IPAs for different groups of students attending different institutions also warrants further consideration. Of particular interest is whether different groups of students (including students who may be eligible for other social welfare benefits) are working their way out of eligibility for need-based grant aid.
- More research, using varied methodological approaches, is needed to better understand the short- and long-term outcomes of work for different groups of students. Little is known about students who enroll part-time and work full-time.[102] Research should consider the implications of employer-created approaches to encouraging employees to acquire additional education, as well as the ways institutions may work with employers to maximize the educational benefits of employment. Future research should also consider the intersection of work and other mechanisms for paying college costs (e.g., federal loans and public benefits).

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APPENDIX

Table A1. Estimated Number of Hours of Work Required Per Academic Week to Meet Average Net Price at Public Two-Year and Four-Year Institutions in the 20 Most Populous States

State	Minimum Wage	Annual Earnings (Pre-Tax) *Academic Year Hours Worked per Week*				Average Net Price		Hours of Work per Academic Week to Pay Net Price	
	Average	10	20	30	40	Two-Year	Four-Year	Two-Year	Four-Year
Arizona	$10.00	$8,000	$11,200	$14,400	$17,600	$7,323	$12,225	7.9	23.2
California	$10.00	$8,000	$11,200	$14,400	$17,600	$7,784	$10,576	9.3	18.1
Florida	$8.10	$6,480	$9,072	$11,664	$14,256	$4,845	$8,656	3.7	18.4
Georgia	$7.25	$5,800	$8,120	$10,440	$12,760	$4,885	$11,126	6.1	33.0
Illinois	$8.25	$6,600	$9,240	$11,880	$14,520	$5,852	$15,335	7.2	43.1
Indiana	$7.25	$5,800	$8,120	$10,440	$12,760	$6,423	$10,241	12.7	29.1
Maryland	$8.75	$7,000	$9,800	$12,600	$15,400	$7,799	$15,858	12.9	41.6
Massachusetts	$11.00	$8,800	$12,320	$15,840	$19,360	$8,539	$16,805	9.3	32.7
Michigan	$7.25	$5,800	$8,120	$10,440	$12,760	$5,741	$11,875	9.7	36.2
Missouri	$7.70	$6,160	$8,624	$11,088	$13,552	$6,793	$12,110	12.6	34.1
New Jersey	$8.44	$6,752	$9,453	$12,154	$14,854	$7,917	$15,876	14.3	43.8
New York	$9.70	$7,760	$10,864	$13,968	$17,072	$6,954	$11,773	7.4	22.9
North Carolina	$7.25	$5,800	$8,120	$10,440	$12,760	$8,205	$11,577	20.4	34.9
Ohio	$8.15	$6,520	$9,128	$11,736	$14,344	$7,298	$12,614	13.0	33.4
Pennsylvania	$7.25	$5,800	$8,120	$10,440	$12,760	$8,195	$17,952	20.3	62.4
Tennessee	$7.25	$5,800	$8,120	$10,440	$12,760	$6,507	$13,812	13.0	44.5
Texas	$7.25	$5,800	$8,120	$10,440	$12,760	$6,802	$11,003	14.3	32.4
Virginia	$7.25	$5,800	$8,120	$10,440	$12,760	$6,979	$17,092	15.1	58.7
Washington	$11.00	$8,800	$12,320	$15,840	$19,360	$6,872	$8,037	4.5	7.8
Wisconsin	$7.25	$5,800	$8,120	$10,440	$12,760	$9,508	$12,729	26.0	39.9
National Average	**$8.24**	**$6,595**	**$9,233**	**$11,871**	**$14,509**	**$7,555**	**$12,579**	**13.6**	**32.7**

Sources: U.S. Department of Education, U.S. Department of Labor, Authors' calculations.

Notes: Minimum wage is state-specific for 2017 (https://www.dol.gov/agencies/whd/state/minimum-wage/history). The national average minimum wage is the average minimum wage across all 50 U.S. states, not only those shown here. Annual earnings are estimated by multiplying given hours per week by state minimum wage across a 32-week academic year and adding expected earnings from working 30 hours per week work at the state minimum wage during the remaining 20 calendar weeks. Average net price is the average cost of attendance less grant and scholarship aid for public institutions of the same level within a state for the 2016-17 academic year, as reported by IPEDS. The national average net price is the average net price across all public 2- and 4-year institutions in the 50 U.S. states as reported by IPEDS. Work per academic week to pay net price is the number of hours per each 32-week academic year required to cover average net price, assuming summer and holiday earnings (as calculated for annual earnings). Scenarios where students must work more than 20 hours per week in an academic year to earn the average net price are indicated in dark grey.

Table A2. Estimated Changes in EFC and Pell Award Based on Changes in Student AGI, Assuming Current Income Protection Allowances (IPAs) by Dependency Status, Marital Status, and Presence of Dependents

Dependent Students Student AGI	**$0**	**$2,500**	**$5,000**	**$7,500**	**$10,000**	**$12,500**	**$15,000**	**$17,500**
Parent AGI	**$50,000**	**$50,000**	**$50,000**	**$50,000**	**$50,000**	**$50,000**	**$50,000**	**$50,000**
IPA	6,660	6,660	6,660	6,660	6,660	6,660	6,660	6,660
Total EFC	4,728	4,886	5,013	5,073	6,249	7,297	8,335	9,355
Pell Grant	1,445	1,345	1,145	1,145	0	0	0	0
Independent Students Student AGI	**$20,000**	**$25,000**	**$30,000**	**$35,000**	**$40,000**	**$55,000**	**$70,000**	**$80,000**
Single, No Dependents								
IPA	10,360	10,360	10,360	10,360	10,360	10,360	10,360	10,360
EFC	3,438	5,334	7,227	9,117	11,005	16,328	21,223	24,482
Pell Grant	2,745	845	0	0	0	0	0	0
Single, One Dependent								
IPA	26,250	26,250	26,250	26,250	26,250	26,250	26,250	26,250
EFC	0	0	0	0	544	2,955	5,693	7,909
Pell Grant	6,195	6,195	6,195	6,195	5,645	3,245	0	0
Married, No Dependents								
IPA	16,620	16,620	16,620	16,620	16,620	16,620	16,620	16,620
EFC	0	589	2,556	4,569	6,568	12,223	17,869	21,628
Pell Grant	6,195	5,645	3,645	1,645	0	0	0	0
Married, One Dependent								
IPA	32,680	32,680	32,680	32,680	32,680	32,680	32,680	32,680
EFC	0	0	0	0	0	1,827	4,309	6,436
Pell Grant	6,195	6,195	6,195	6,195	6,195	4,345	1,845	0

Source: FAFSA4caster.

Notes: Estimates are for a 30-year old, independent student with one dependent and an 18-year old, dependent student, U.S. citizen, living in Pennsylvania. For independent student simulations, it is assumed no other members of the household are enrolled in higher education. For the dependent student simulation, assumptions include: two 50-year old, married parents; no other dependents in the household; and parental AGI of $50,000. Cells shaded in dark grey identify the income level at which individuals are no longer eligible for a Federal Pell Grant. Estimates were generated during the 2019-20 academic year.

ENDNOTES

1 National Center for Education Statistics, 2018, 2019. Full-time enrollment is defined as 12 credits or more.

2 National Center for Education Statistics, 2018.

3 Carnevale, Smith, Melton, & Price, 2015; Perna, 2010.

4 Data from NPSAS:16 (Authors' calculations). The median number of hours worked per week among working students was about 30 in 2016, as 49.8 percent of all working students worked 1-29 hours per week while enrolled and 50.2 percent of all working students worked 30 or more hours per week.

5 Levin, Hernandez, & Cerven, 2010; Perna, 2010; Titus, 2010; Ziskin, Fischer, Hossler, & Gross, 2010.

6 National Center for Education Statistics, 2019.

7 Some undergraduate students may work to finance lifestyle choices (King, 2002) or because they worked in high school (Roksa & Velez, 2010). Scott-Clayton (2012) suggests that students who cannot access all courses they need in a given semester (due to institutional crowding or other factors) may have greater incentive to work.

8 Scott-Clayton, 2012. The percentage of full-time undergraduate students who worked declined from 50 percent in 2005 to 41 percent in 2010 and rose to 43 percent in 2017. Among full-time undergraduates who worked, 27 percent worked 20 or more hours per week in 2017, compared with 32 percent in 2005 and 28 percent in 2010 (Table 1; National Center for Education Statistics, 2019).

9 College Board, 2018a.

10 Finney, 2016.

11 Cahalan, Perna, Yamashita, Wright-Kim, & Jiang 2019. Full-time, dependent undergraduates from the lowest-income families averaged $9,143 in unmet financial need in 2016, up (in constant dollars) from $3,665 in 1990.

12 Advisory Committee on Student Financial Assistance, 2012.

13 Ifill, 2016.

14 Delisle, 2017.

15 Ifill, 2016.

16 Ziskin, Fischer, Torres, Pellicciotti, & Player-Sanders, 2014. Only 35 percent of low-income households that received a financial aid offer for a traditional-age undergraduate student were completely confident they understood the offer (Sallie Mae, 2019).

17 Davidson, 2014.

18 Asher, 2007; Lee, Dell, González Canché, Monday, & Klafehn, 2021.

19 The expansion of Federal Work-Study has contributed to growth in student employment over time, especially between 1970 and 1982 (Scott-Clayton, 2012). Some states, including Washington, also sponsor work-study programs.

20 College Board, 2018b.

21 Federal Student Aid (n.d.a) does not limit hours or earnings for FWS students per se, but does mandate that students may not earn more than their financial need. According to data from NPSAS:16, average earnings among FWS students were $2,411 in 2016 (Authors' calculations). At the federal minimum wage ($7.25 per hour), $2,411 equates to 333 total hours or an average of 10.4 hours per week during a 32-week academic year (Authors' calculations). The Urban Institute (n.d.) reports that total average work-study earnings for FWS students were $1,788 in 2017-18, and notes that this average is less than the $4,013 average Pell Grant for that year.

22 Baum, 2010.

23 Scott-Clayton & Minaya, 2016.

24 According to NPSAS:16, 58.7 percent of dependent undergraduate students and 68.6 percent of independent undergraduate students worked at least one hour in 2016. Single independent parents who worked averaged 33.8 hours of work per week while enrolled, and married independent parents worked an average of 35.8 hours per week (Authors' calculations).

25 National Association of Student Financial Aid Administrators, 2019, p. 8.

26 Stern & Nakata, 1991; Stringer, Cunningham, O'Brien, & Merisotis, 1998. Financial need is defined as Cost of Attendance less Expected Family Contribution. For dependent students, the Expected Family Contribution is provided by the student (from income and assets) and from a student's parent(s).

27 Sallie Mae, 2019. A 2018-19 survey of 1,000 parents of a child age 18 to 24 who was enrolled as undergraduate and 1,000 undergraduates age 18 to 24 showed that the student had primary responsibility for decisions about paying for college in 28 percent of low-income households, compared with 10 percent of high-income households.

28 Sallie Mae, 2019. About half (55 percent) of families reported using parents' income as a source of funding college; 45 percent reported using student income.

29 In 2017-18, 29 percent of undergraduates received federal subsidized and unsubsidized loans, compared with 37 percent in 2012-13 and 30 percent in 2007-08 (College Board, 2018b). The average amount borrowed by undergraduates in federal subsidized and unsubsidized loans was $6,570 in 2017-18, less than in 2012-13 ($6,790 in 2017 dollars) but more than in 2007-08 ($6,360 in 2017 dollars; College Board, 2018b).

30 Advisory Committee on Student Financial Assistance, 2012; Cochrane, 2021; Gladieux & Perna, 2005; Perna, 2008.

31 In 2016, 85 percent of Black bachelor's-degree recipients had borrowed, compared with 70 percent of all bachelor's-degree recipients. Black bachelor's-degree recipients who borrowed averaged $34,000 in loans compared with $30,000 for all bachelor's degree recipients (Cahalan et al., 2019). Default rates are higher for Black borrowers than for other borrowers when measured within four years (Scott-Clayton & Li, 2016) and 12 years (38 percent for Black students in 2015 compared to 12 percent for White students; Scott-Clayton, 2019).

32 Boatman, Evans, & Soliz, 2017.

33 Carnevale et al., 2015; Perna, 2010; Titus, 2010.

34 Titus, 2010. Post-college earnings were higher for men, Asians, and math majors, but lower for humanities and social/behavioral science majors, after controlling for hours worked, parental education and income, job characteristics, and academic performance in college (Titus, 2010).

35 Bozick, 2007; Stinebrickner & Stinebrickner, 2003.

36 Carnevale & Smith, 2018; Pike, Kuh, & Massa-McKinley, 2008.

37 Bozick, 2007; Choi, 2018.

38 Levin et al., 2010.

39 Scott-Clayton, 2011.

40 Darolia, 2014.

41 Attewell & Monaghan, 2016; Titus, 2010.

42 Titus, 2010.

43 Institute for Women's Policy Research, 2018; Rawlston-Wilson, Saavedra, & Chauhan, 2014.

44 Many aid programs have minimum enrollment requirements. Students who enroll less than half-time (that is, fewer than six credit hours) are generally not eligible for federal aid (grants or loans), though they may receive partial Pell grants (Federal Student Aid, n.d.b).

45 Perna, 2010.

46 Scott-Clayton and Minaya (2016) concluded that a Federal Work-Study award encouraged some students who would have worked regardless of the FWS award to work on campus and to have a job related to their major field. The positive effects of FWS employment on six-year bachelor's-degree attainment were larger for students attending public rather than private institutions.

47 Pike et al., 2008.

48 Carnevale & Smith, 2018.

49 Carnevale et al., 2015.

50 Carnevale & Smith, 2018.

51 Sallie Mae, 2019.

52 Perna, 2010.

53 Carnevale et al., 2015; Washington, 2018.

54 Roksa & Velez, 2010. Using NLSY:97, the authors observed 58 percent of students enrolled at two-year institutions worked 20 or more hours per week compared to 37 percent of students enrolled at four-year institutions.

55 National Center for Education Statistics, 2019.

56 Cahalan et al., 2019.

57 Roksa & Velez, 2010.

58 Institute for Women's Policy Research, 2018; Perna, 2010.

59 Perna, 2010.

60 Carnevale et al., 2015, p. 19.

61 Bozick, 2007; Carnevale & Smith, 2018; Choi, 2018.

62 Carnvale et al., 2015; Carnevale & Smith, 2018.

63 Sallie Mae, 2019.

64 NPSAS:16 (Authors' calculations).

65 NPSAS:16 (Authors' calculations).

66 Nuñez & Sansone, 2016.

67 Levin et al., 2010; Rowan-Kenyon, Swan, Deutsch, & Gansneder, 2010; Ziskin et al., 2010.

68 Institute for Women's Policy Research, 2018.

69 Perna, 2010.

70 Umbach & Wawrzynski, 2005.

71 Scott-Clayton & Rodriguez, 2014.

72 Carnevale et al., 2015, p. 11.

73 Finney, 2016.

74 Finney, 2016.

75 College Board, 2018a; Author's calculations.

76 Authors' simulations.

77 National Survey of Student Engagement, 2015, p. 5.

78 National Survey of Student Engagement, 2015.

79 Center for Community College Student Engagement, 2017, p. 2. These data are from the Community College Survey of Student Engagement.

80 Cheng, 2021.

81 Perna, Wright-Kim, & Jiang, 2019.

82 Broton & Goldrick-Rab, 2018; Hallett & Freas, 2018.

83 Kelchen, Goldrick-Rab, & Hosch, 2017.

84 Sallie Mae, 2019.

85 Baum, 2010.

86 Federal Student Aid, 2019. The IPA in 2019-20 is $26,250 for independent students who are single with one dependent and $32,680 for independent students who are married with one dependent. Both increase by $6,290 for each additional household member (Federal Student Aid, 2019).

87 Earnings from Federal Work-Study employment are not included in the income calculation (U.S. Department of Education, 2015).

88 Federal Student Aid, 2019.

89 Baum, 2010.

90 See Table A2.

91 Darolia, 2017, p. 351.

92 Darolia, 2017; Goldrick-Rab & Sorensen, 2010.

93 Coalition of Urban Serving Universities & Association for Public and Land-grant Universities, 2016.

94 Pew, 2015.

95 Carnevale et al., 2015. The maximum Pell Grant covered 25 percent of average college costs in 2018, compared with 28 percent in 1995-96 and 67 percent in 1980 (Cahalan et al., 2019). The benefits of additional grant aid may vary across groups, with one study finding larger effects for students whose parents have not completed college (Broton et al., 2016) and another finding larger effects for African Americans and Asians than for Hispanics (DesJardins et al., 2010).

96 Broton, Goldrick-Rab, & Benson, 2016; DesJardins, McCall, Ott, & Kim 2010.

97 Goldrick-Rab, Kelchen, Harris, & Benson, 2016.

98 Baum, 2010; Perna, 2010.

99 Kelchen, 2017

100 Kelchen, 2017.

101 Kelchen, 2017.

102 Carnevale et al., 2015.