Minnesota AGRICULTURAL ECONOMIST

Part-Time Employment of College Students

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During the past 20 years the proportion of U.S. college students who work part time to finance at least part of their education and living expense has nearly doubled. About one out of every two college students now holds a part-time job during the school year. The large and growing participation of college students in the labor force raises a number of important questions: Can we identify and predict which students are most likely to hold part-time jobs while attending college? What effect, if any, does part-time work have on grades, course load, and the likelihood of completing college? And, how important are part-time earnings in reducing the cost of a college education?

A college student foregoes the opportunity to hold a full-time job. These foregone earnings represent a component in the cost of attending college. By working part time, a student reduces his foregone earnings and the cost of his college education.

Three hundred students on the St. Paul Campus of the University of Minnesota were questioned about their work experience during the fall quarter of 1969. The students in the random sample came from a variety of backgrounds. About half came from the Twin Cities metropolitan area. About half of their parents' occupations were classified as unskilled, semi-skilled, and farm; the other half were classified as skilled, management, and professional.

Part-Time Work Participation

Student participation in part-time work is likely to be influenced by a number of factors, but two of them seem to be important for most students: the necessity to earn all or part of tuition and living expenses, and the ability to find a suitable part-time job. The importance of these two factors was measured with the aid of a statistical technique[1] that allowed us to determine the expected part-time work participation of homogenous groups of students. These groups, along with their expected part-time work participation rates, are presented in table 1.

The figures in table 1 denote the number of students out of a group of 100 that can be expected to hold part-time jobs. For example, we can expect about 13 out of each 100 nonmarried freshman males whose parents are engaged in skilled, management, or professional occupations and reside outside the Twin Cities metropolitan area to hold part-time jobs.

Considerable variation exists among different groups of students from the standpoint of participation in part-time work, particularly during the freshman and sophomore years. For example, the participation rate for freshman males in category 4 is over five times the rate for freshman males in category 1.

In general, students whose parents are in the skilled, management, or professional occupation category are not as likely to hold part-time jobs as students from families in the unskilled, semi-skilled, or farm categories. However, the difference between these two groups declines during the sophomore and junior years and vanishes completely during the senior year. Higher income parents apparently contribute substantially to the support of their sons and daughters during the first year or two of college but reduce financial assistance during the junior and senior years.

Students whose homes are in the Twin Cities metropolitan area are more likely to hold part-time jobs than students who come from outside the area. Again, the difference between the two groups diminishes from the freshman through the senior years, although the difference does not disappear entirely. This difference may exist because Twin Cities area students are more familiar with job opportunities in the area. For example, it is likely that some of these students continue working for the same employer they had during the summer months.

Female students are more likely to hold part-time jobs than their male counterparts. For a given set of characteristics, about 13 more females than males per 100 students will hold part-time jobs.

[1] Economists refer to this technique as multiple regression analysis.

Table 1. Expected part-time job participation rates for students of various characteristics

Students (single)	Fr.	Soph.	Jr.	Sr.
Males				
1. Parents skilled, management, professional; outside metro area	13	35	56	56
2. Parents unskilled, semi-skilled, farm; outside metro area	43	53	73	56
3. Parents skilled, management, professional; within metro area	36	79	69	65
4. Parents unskilled, semi-skilled, farm; within metro area	66	97	86	65
Females				
1. Parents skilled, management, professional; outside metro area	26	48	69	69
2. Parents unskilled, semi-skilled, farm; outside metro area	56	66	86	69
3. Parents skilled, management, professional; within metro area	49	92	82	78
4. Parents unskilled, semi-skilled, farm; within metro area	79	100	99	78

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Table 2. Expected hours of work per week for students of various characteristics

Males (single)	Fr.	Soph.	Jr.	Sr.
1. Parents skilled, management, professional; outside metro area	10.1	14.3	14.3	18.5
2. Parents unskilled, semi-skilled, farm; outside metro area	13.6	15.6	19.3	21.6
3. Parents skilled, management, professional; within metro area	15.7	15.3	17.3	13.2
4. Parents unskilled, semi-skilled, farm; within metro area	19.2	16.6	22.3	16.3

Although not shown in table 1, married students have a somewhat higher participation rate than single students. However, the difference is not great. For each 100 students of a given set of characteristics, only about 6 more students would be working part-time if all were married than if all were single.

Hours Worked

Employed male students of a given set of characteristics work only about .1 of an hour more per week than female students of the same characteristics. The same is true for married as opposed to single students. The hours worked by single males are shown in table 2. The number of hours worked per week varies considerably among the various groups of students, particularly in the freshman year. Freshmen in category 4, for example, can be expected to work about twice as many hours per week as those in category 1.

Employed students from unskilled, semi-skilled, and farm families work more hours per week than their counterparts from more highly skilled parental occupation categories. And, with the exception of the senior year, students from within the metropolitan area work more hours per week than students coming from outside the area. Unlike the participation rates show in table 1, however, the hours worked for the two categories of students (parental occupation and residence) do not converge from the freshman through the senior years.

It is not clear why the hours worked figures are substantially higher for seniors whose homes are outside the metro area than for those from within the area. Perhaps the latter group can afford to "buy" additional leisure during their senior year after working long hours in their freshman through junior years.

Grades

We might reasonably expect that the more time devoted to a part-time job, the less time would be available for attending classes and study. Hence we might expect students who work part time to earn lower grades than students who are not employed, other things being equal. The major difficulty is identifying and measuring those "other things". No doubt there are many factors other than part-time employment that influence a student's grades. Among them are ability and motivation, specific courses, and number of credits taken.

To separate the influence of these factors on grades from the effect of part-time employment, a statistical technique similar to that used to predict work participation and hours worked was utilized. Surprisingly, the data reveal that the effect of part-time work on grades is small and not statistically significant.

If part-time employment has an adverse effect on grades, it appears to occur mainly at the freshman level for students working 20 or more hours per week. In this case, part-time work can be expected to reduce a freshman's grade point average about .14 point on a 4.00 maximum scale. For example, a freshman who would otherwise earn a 3.00 grade point average (GPA) would instead earn a 2.86 GPA if he worked 20 hours or more. On the other hand, the results indicate that if this same student worked less than 20 hours per week, his GPA would be reduced from 3.00 to 2.97, not a very noticeable decline. In fact, in the upper grades, there is some indication that students who work less than 20 hours per week actually earn slightly higher grades than students who are not employed.

In spite of our inability to observe a significant adverse effect of part-time work on grades, it would not be valid to conclude that **all** college students can work 15-20 hours per week without lowering their grades, to say nothing of students who work a 20- to 30-hour week. But there does appear to be a sizable proportion of students who can hold down part-time jobs without lowering their grades significantly.

The apparent negligible effect of part-time work on grades might be the result of a sort of equilibrium situation. Students who find they can work a certain number of hours per week without lowering their grades probably do so, whereas those who find their grades slipping because of part-time work may cut back to the point where the effect is negligible. The ability to work part time without sacrificing grades is in large part a matter of a student's ability to manage his time, as well as his willingness to give up leisure.

Credit Load

It might be expected that students who hold part-time jobs have to reduce their credit loads somewhat and thus extend the time required to complete their programs. However, the analysis revealed that hours worked also has a negligible effect on credit loads. Indeed, the evidence is about as strong that part-time work is associated with heavier credit loads as it is with reduced loads.

If part-time work does not have a significant adverse effect on grades or credit loads, where does it have its effect?[2] After all, time is a scarce resource. One plausible explanation is that students who work part time simply have less leisure time. Part of this foregone leisure may take the form of a more concentrated manner of study. Students who are not employed may be able to enjoy the luxury of a more leisurely pace of study. For these students, study may be combined with daydreaming, talking to friends, listening to music, etc. To some degree, the ability to separate study from leisure seems to be an important component of a student's overall ability to manage his time.

Dropouts

In recent years, about 45 percent of all U.S. students who begin college drop out before completing a bachelor's degree. The dropout rate in the sample of students in this study was about 40 percent. Does part-time employment affect the dropout rate? We might expect college to be a greater struggle for employed students, and hence there might be a greater propensity for these students to drop out. However, the data revealed that part-time

[2] There also appeared to be no relationship between part-time work and hours devoted to extra-curricular activities.

Table 3. Average hourly wage rates earned on part-time jobs by students in sample, fall 1969

Students	Fr.	Soph.	Jr.	Sr.
Males	$2.20	$2.16	$2.42	$2.34
Females	1.62	1.85	1.87	1.98

Table 4. Annual part-time employment earnings of employed students in the sample assuming 36 weeks of part-time employment

Students	Fr.	Soph.	Jr.	Sr.
Males	$1,160	$1,201	$1,594	$1,465
Females	848	1,022	1,225	1,232

work has an insignificant effect on the dropout rate. We found that out of each 100 students there would be about 6 or 7 more dropouts if all worked 19 hours per week or less compared to the situation where none worked part time. Or, if all students worked 20 or more hours per week, the predicted dropout rate would increase by about 8 students per 100 from what it would be if no students worked part time.

Part-Time Earnings

The amount of part-time employment earnings depends on wage rates and number of hours worked. Data on wage rates were collected from students in the sample and are presented in table 3. As expected, males earn more than females, and wage rates increase from the freshman through the senior years.

We can obtain an idea of the magnitude of weekly part-time employment earnings of employed students by multiplying the wage rates shown in table 3 by the figures on hours worked per week shown in table 2. The estimated part-time earnings for the school year can be obtained by assuming a like amount of earnings over a 36-week period. The overall average annual part-time earnings of the four categories of students defined in tables 1 and 2 are presented in table 4.

Although no data were gathered on summer employment from students in the sample, it is reasonable to believe that many if not most college students are able to find full-time employment during the summer. To obtain some idea of the magnitude of these earnings, let us assume 400 hours per year of summer and other vacation-time employment (10 weeks at 40 hours per week). Applying the wage rates presented in table 3 to summer jobs, we obtain the annual summer employment earnings shown in table 5.

Table 5. Annual summer employment earnings, assuming 10 weeks of work at 40 hours per week

Students	Fr.	Soph.	Jr.	Sr.
Males	$880	$864	$968	$936
Females	648	740	740	792

Earnings Foregone and College Costs

The fact that a college student must forego the opportunity to earn a full-time salary while attending school means that these foregone earnings represent a component in the total cost of attending college. The amount of foregone earnings does, of course, vary among students, depending on job opportunities and location.

To obtain a rough idea of the magnitude of foregone earnings in total college costs, let us assume that males could earn $5,500 per year the first 2 years of college and $6,000 annually the latter 2 years were they not in college. Assume that the corresponding figures for females are $5,00 and $5,500.

To obtain an estimate of total annual college costs, a charge for tuition and expenditures on books and supplies must be added to foregone earnings.[3] For students attending large, publicly supported universities, resident tuition generally amounts to about $500 per year. Another $250 per year would cover the expenditure on books and supplies for most students. Total college costs (foregone earnings, tuition, and books and supplies) are presented in table 6.

Of course, earnings from part-time and summer employment reduce the cost of a college education because they reduce earnings foregone.[4] The percentage reduction in total college costs because of part-time and summer employment earnings is shown in table 6. Here we see that students attending large public universities who work part time during the school year and full time during summer vacations can reduce their total college expenses by up to a third.

Implications

Because part-time employment earnings reduce the cost of a college education, we would expect schools located within large metropolitan labor markets to offer students a lower cost education than schools in smaller communities where opportunities for part-time work are limited and wage rates are lower. Moreover, with continued economic growth and rising real wages, we would expect the cost of education in colleges and universities located within large metropolitan labor markets to decline even more relative to the cost in schools where students do not have as many opportunities for part-time employment.

It also seems reasonable to believe that students will turn to part-time employment in even larger numbers in the future in an effort to hold down the increased costs of education. The rising cost of tuition and a larger proportion of students from middle and low income families attending college should accentuate this trend. ■

[3] Living expenses are not included because they do not represent an extra cost of attending college. These expenses are incurred regardless of whether a young person is working or attending college.

[4] Money obtained from scholarships and other gifts that would not be forthcoming without attending college also reduce earnings foregone.

Table 6. Percentage reduction in total college costs because of part-time and summer employment earnings

Students	Fr.	Soph.	Jr.	Sr.
Male				
Part-time and summer earnings	$2,040	$2,065	$2,562	$2,401
Annual college costs	6,250	6,250	6,750	6,750
Percentage reduction in costs	33	33	38	36
Female				
Part-time and summer earnings	$1,496	$1,762	$1,973	$2,024
Annual college costs	5,750	5,750	6,250	6,250
Percentage reduction in costs	26	31	32	32

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IN PERSPECTIVE

Does It Pay To Attend College?

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This question is being asked often today by both parents and young people because of the increased difficulty that college graduates are experiencing in finding jobs and the rising cost of attending college. The question is important because the decision of whether to attend college or seek other post-high school training largely determines what a person does and how much he earns during his entire lifetime. Parents and young people must consider both the costs of and the returns from a college education in making a decision.

Costs

There are three major costs in obtaining a college education: foregone earnings, tuition, and books and supplies.

Since a college student usually must forego the opportunity of holding a full-time job while attending college, the amount that he could have earned represents a cost of attending college. Students can reduce foregone earnings with part-time and summer employment.

The inclusion of the cost of tuition, books, and supplies is self-explanatory. Board and room are not considered educational costs because these costs are incurred whether or not the person attends school.

Foregone earnings are by far the largest item in the cost of attending school. Even a fairly modest salary of $4,000-$5,000 per year looms large when viewed as a cost. Tuition varies greatly, from zero or close to it in some community colleges to around $500 per year in large public universities and up to several thousand dollars annually at the more exclusive private colleges. A figure of about $250 per year for books and supplies should take in most students.

The total of these three cost components varies among students, depending on full-time and part-time job opportunities (foregone earnings) and tuition. Taking conservative estimates of these three cost items yields an annual total cost of about $5,000. For many students costs would be higher. A reasonable cost estimate for a 4-year college education would be in the neighborhood of $20,000. Is a bachelor's degree worth $20,000? To answer this question, we need to consider the returns from a college education.

Returns

There are two components in the returns to a college education: a consumption component and an investment component. The consumption component includes both the immediate and long-term satisfaction of attending college. Although few students think fondly of exams or assignments, most derive some satisfaction from being in an educational environment. The friends they make, the good books they read, etc. provide immediate satisfaction.

But the satisfaction derived from an educational environment is not limited to the immediate time spent in school. Many pleasant memories of college remain over a lifetime. Education enhances the quality of life by fostering an awareness and a greater understanding of the world. Because of education, our lives are less ruled by superstition and fear and more by rational thought and deliberate choice.

The investment component of the returns from a college education involves the increased earning power of college-educated people. The magnitude of the annual increased earnings of college-trained men over male high school graduates is shown in the table.

Assuming a 43-year working life, the total lifetime earnings differential between male high school and college graduates amounts to about $150,000. At first glance, it appears that $20,000 invested in a bachelor's degree is a tremendously good investment — $20,000 is spent and $150,000 is obtained in return. But much of this added income is forthcoming far into the future and thus each dollar is not worth a full dollar at present.

Converting the total monetary returns into an annual rate of return, we obtain a figure of about a 10 percent annual return to the $20,000 invested in a bachelor's degree. This is not spectacular, but it is substantially better than the 4-5 percent return that would be earned by placing the money in a savings account. ■

Average annual income differences between male high school graduates and men with college training, by age group

	Age group			
	25-34	35-44	45-54	55-64
One to three years college over high school	$ 647	$1,250	$1,323	$1,206
Four years college over high school	2,370	3,770	4,224	4,869

Source: U.S. Department of Commerce, *Current Population Reports*, Series P-60, December 1969, table 41.

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