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Labor Market Returns to Community College: Evidence From North Carolina

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In this brief, we summarize our research on the wage returns to community college pathways in North Carolina. We use detailed individual and college transcript information on approximately 830,000 students who attended community college during the 2000s. This transcript data is matched with earnings data from Unemployment Insurance records. We estimate earnings gains across different student groups who attended community college in North Carolina. To better identify the effect of college on earnings, we control for a set of individual background characteristics (such as age), indicators of prior achievement (such as college GPA), college attended, and student intentions. Full details on this research are available at *www.capseecenter.org* (see Belfield, Liu, & Trimble, 2014).

Here, we report on earnings in 2011 for a subset of these students—a cohort of approximately 80,000 students who first enrolled in community college in 2002–03. On average, nine years after initially enrolling, women earned $23,600 annually, and men earned $29,200. We only compare earnings within the population of community college students (and do not, for example, compare the earnings of community college students with those of high school graduates). But even within this population, earnings can vary substantially—for example, among students in different academic pathways.

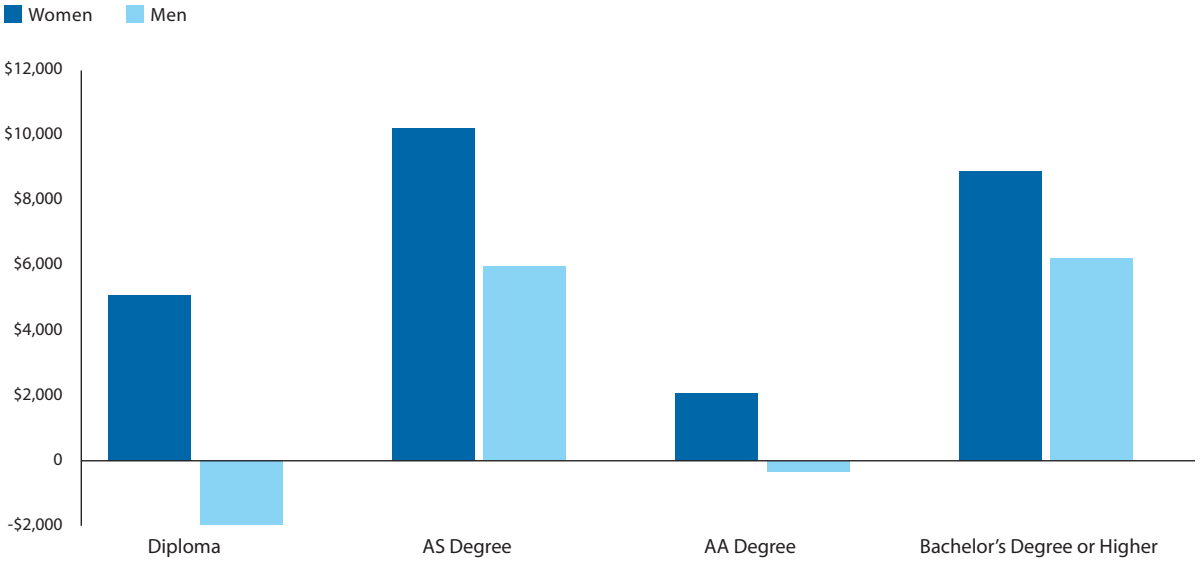
Returns to Awards

We compare students according to their highest award obtained. The baseline category is students who did not receive any award at any college within nine years. These students did accumulate credits but subsequently dropped out or transferred to a four-year college and failed to complete a bachelor's degree; within this group, on average, women earned 21 credits, and men earned 20 credits. Compared with non-awardees, community college students who received awards had higher earnings.

Annual earnings for associate degree holders, compared with non-awardees, were 61 percent higher for women and 25 percent higher for men.

Figure 1 shows students' earnings gains in 2011 by highest award status. The gains from obtaining an associate degree were substantial. Annual earnings for associate degree holders were 61 percent higher for women and 25 percent higher for men. Gains were primarily concentrated among students who received an Associate in Science (AS) degree. Women who had an AS degree earned $10,240 more annually than baseline students, and men who had an AS degree earned $5,960 more. For women who had an Associate in Arts (AA) degree, there was an earnings gain of $2,080; for men who had an AA, there was no statistically significant earnings gain over baseline.

Figure 1. Annual Earnings Gains in 2011 for Award Holders



For students who transferred from a community college to a four-year institution and completed a bachelor's degree, the earnings gains were substantial: $8,880 per year for women and $6,240 for men.

Women gained from earning a diploma; diploma holders' annual earnings were $5,080 higher than earnings for persons with credits but no award. Men did not gain from earning a diploma (despite accumulating 36 more credits, on average, than non-awardees). However, many diploma holders go on to earn associate degrees, so these awards may serve as a stepping-stone to higher earnings. Also, when we look at shorter term outcomes, men do appear to gain from having a diploma.

For shorter, vocational certificates, the evidence is mixed, although in general the returns are not high. Certificates appear to give a short-term boost to earnings. We find evidence of temporary gains from certificates for both women and men. However, nine years after initial enrollment, certificate holders earned less than did the baseline group (despite the fact that, on average, female certificate holders obtained 16 more credits and male certificate holders 9 more credits than non-awardees).

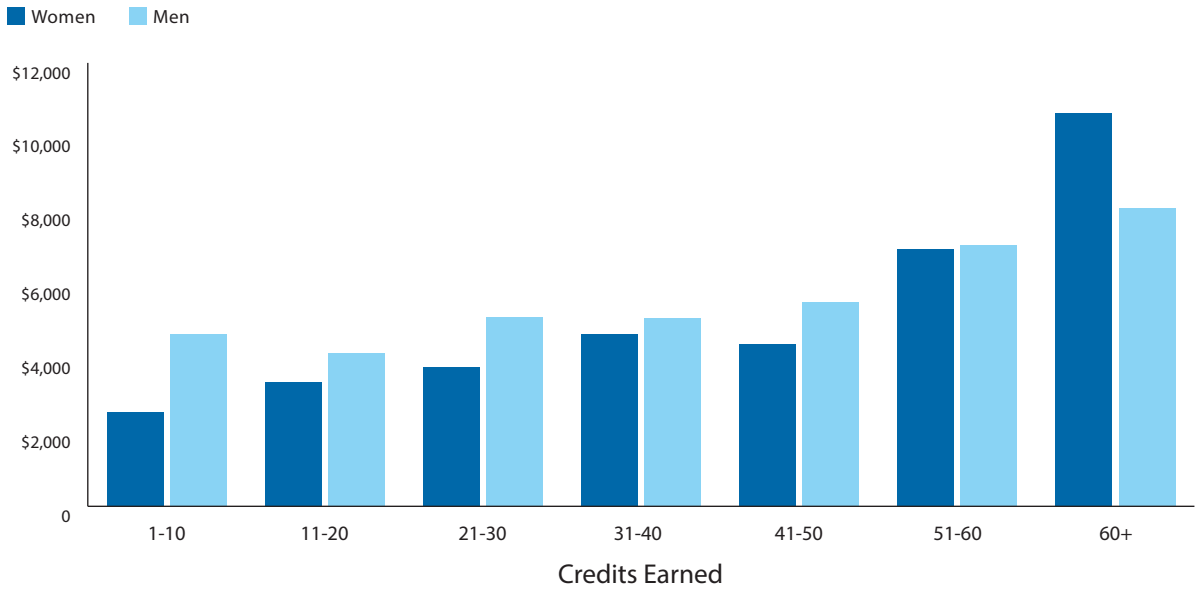
Overall, these results accord with research in other states. Returns to awards for female students tend to be significantly higher than those for male students. The strong returns to associate degrees, mixed returns for diplomas, and lower returns for certificates in North Carolina correspond with results for Kentucky and Washington State.

Returns to Credits

We examine the association between earnings and credits accumulated. The baseline category is students who did not accumulate any college-level credits at the community college (either because they dropped out or because they never completed their developmental education sequence).

Figure 2 shows earnings gains in 2011 by number of credits accumulated. Those who had more credits had higher earnings. On average, each credit was associated with an annual earnings gain of $50 to $90. But the gain was especially large for students who obtained 60 or more credits, suggesting that there is an independent reward from completing an associate degree beyond the reward associated with completing the necessary credits.

Figure 2. Annual Earnings Gains in 2011 for Enrollees Who Earned College Credits



Returns to Younger and Older Students

We examine the association between age on entry and earnings gains. Such gains may exist if students gain more from college by entering immediately after high school or conversely if it is better to get some work experience first.

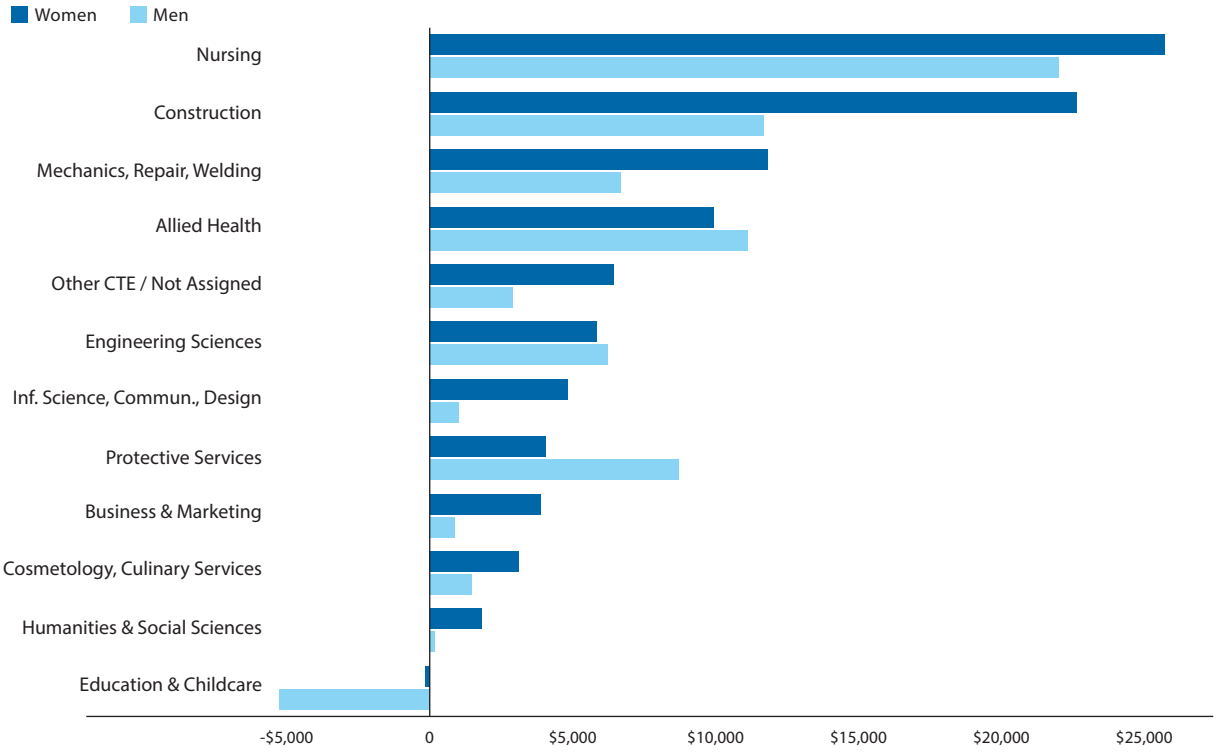
We find no strong or consistent differences in the returns to students by age of first enrollment. For some awards, the earnings gains were larger for younger students (e.g., certificates for men under 20). For other awards, the earnings gains were larger for older students (e.g., diplomas for women over 20). Overall, the earnings gains for awards were not restricted to one age group but were general across younger and older students. This finding is not sensitive to the age cutoff used.

Returns to Awards by Major Fields

We look at how earnings gains vary for awards according to the major field of study. Certain awards may confer gains because there is more demand for graduates with those qualifications or because they generate more human capital.

Figure 3 shows the earnings gains in 2011 by major field for students who obtained an associate degree. These gains are relative to the earnings of students who enrolled in the same year (2002–03) but did not obtain an award.

Figure 3. Annual Earnings Gains in 2011 for Associate Degree Holders by Major Field



Among associate degree holders, there were very large gaps in earnings by major field. Graduates in health fields had the largest gains. For women, an associate degree in nursing was associated with an earnings gain of $25,720 per year over the baseline group; those with an associate degree in allied health had gains of $9,920. Nursing and allied health are also high-earning majors for men, with earnings gains of $21,990 and $11,130, respectively. Vocational-technical majors such as career-technical education (CTE), engineering, and information sciences were also associated with significant earnings gains. The patterns for associate degrees were similar for men and women—although, except for students in the field of protective services, the gains were consistently larger for women.

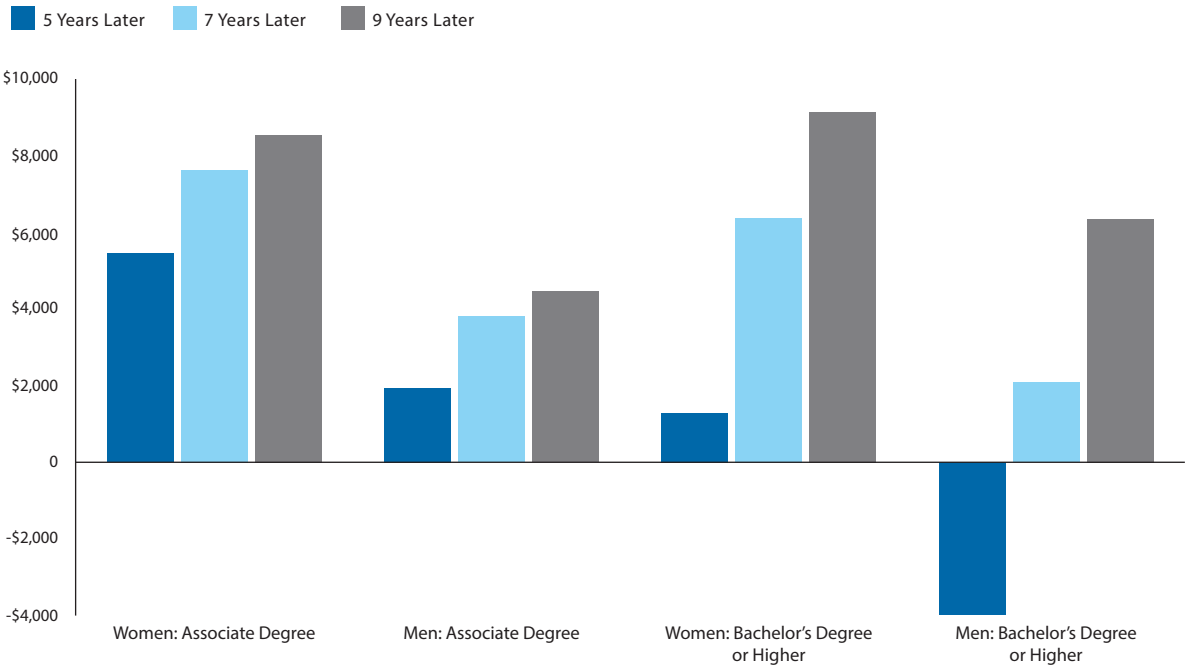
For other sub-baccalaureate awards, there were fewer distinctions by field of major. For women, diplomas in nursing, allied health, and vocational-technical fields led to large earnings gains. For men, diplomas and certificates yielded few earnings gains across the different majors.

Returns to Awards Over Time

We consider how earnings gains changed in the years after students first enrolled at community college. Earnings gains may increase if college generates human capital that complements on-the-job experience, or they may decrease if the skills acquired in college become less valuable over time.

Figure 4 shows the earnings gains for associate and bachelor's degrees for those who first enrolled in 2002–03. The gains are reported five, seven, and nine years after first enrollment. The baseline group consists of those enrollees who did not receive an award within the nine-year period.

Figure 4. Annual Earnings Gains 5, 7, and 9 Years After Enrollment for Degree Holders



For associate degrees, the earnings gains increased over time. Five years after enrollment, the earnings gain for women with associate degrees was $5,450; at seven years, the earnings gain was $7,620; and by nine years after enrollment, the gain was $8,540. For men, the gains were $1,940, $3,810, and $4,460, respectively.

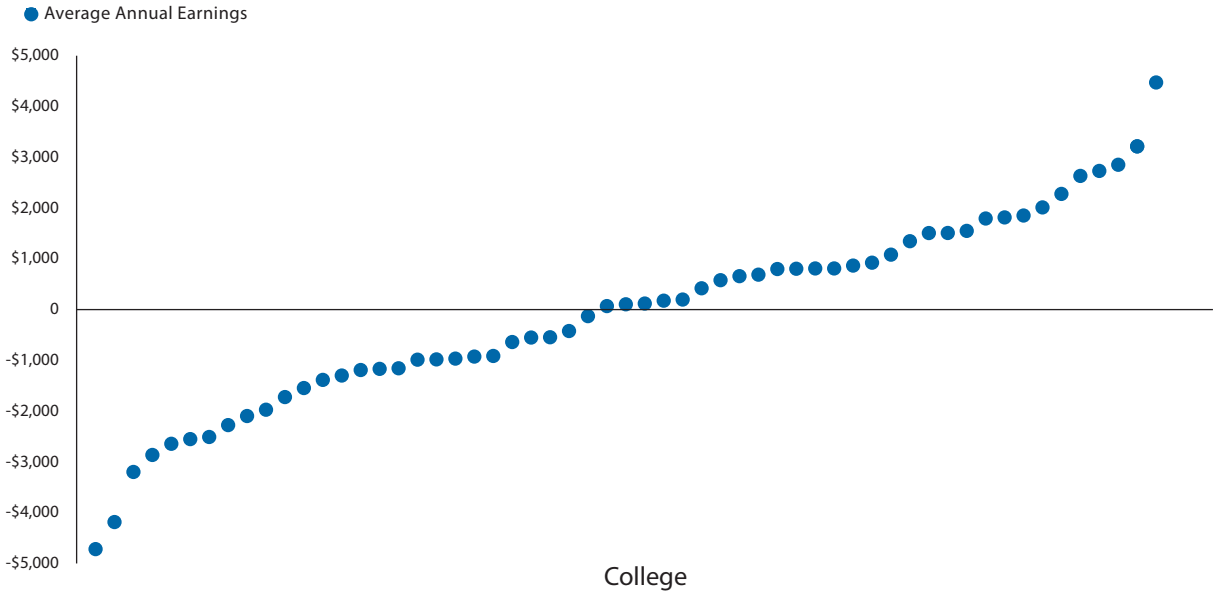
For bachelor's degrees, the growth in earnings gains was even larger by 2012. Seven years after first enrollment, female bachelor's degree holders earned $6,380 more than non-awardees; two years later, the gain increased to $9,140. For male bachelor's degree holders, at seven years the gain was $2,080; two years later, the gain was $6,350. This evidence indicates that the skills acquired in college complement early work experience.

Returns Across Community Colleges

We compare earnings gains across community colleges. Earnings gains may vary across colleges for many reasons, such as the mix of courses offered, the quality of instruction, student demographics, and local labor market conditions.

Figure 5 shows earnings gains in 2012 by college for students who first enrolled in college in 2002–03. The baseline is a college where students had average earnings. We consider the earnings for all students, not only those who received awards. The gains are ordered by value, from lowest to highest.

Figure 5. Annual Earnings Gains in 2012 by College



There were very few colleges where students had earnings that were significantly above or below the average. At one college, students earned $4,470 more than those at the average college. At the other extreme, students at another college earned $4,720 less than average. However, students at most of the colleges had earnings that were close to the average. Students at 33 of the 58 colleges in North Carolina had earnings that were within $1,200 of the average; given the confidence intervals of our estimates, the differences between the earnings at these colleges and those at the baseline college are not statistically significant.

Conclusions and Further Research

Greater participation in community college is clearly associated with higher earnings. The gains are very large, particularly compared with tuition and fees in the community college system. For example, the *annual* gain per credit in 2012—$48 to $88—was almost the same as the *total* tuition per credit in North Carolina. Further, the gains increased over time. For awards that take longer to complete, the gains may still be growing a decade after the student first enrolls. However, some awards and fields yield higher earnings than others, so it does matter which pathways students choose.

Our future research on the returns to community college will focus on several important issues. These issues include a more detailed investigation of certificates and diplomas; the returns for students who initially place into developmental education; and the returns to transferring to a four-year institution.

References

Belfield, C., Liu, Y., & Trimble, M. J. (2014). *The medium-term labor-market returns to community college awards: Evidence from North Carolina* (A CAPSEE Working Paper). New York, NY: Center for Analysis of Postsecondary Education and Employment.

Full details of this analysis are available at *www.capseecenter.org*.

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