



The medium-term labor market returns to community college awards: Evidence from North Carolina



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ABSTRACT

This paper examines the relative labor market gains for first-time college students who entered the North Carolina Community College System in 2002–2003. We compare the returns to diplomas, certificates, and degrees to the returns to some college credits. The authors also investigate the returns to subject field, transfer, and the early trajectories of wages. The analysis is based on student-level administrative records from college transcripts, Unemployment Insurance wage data, and the National Student Clearinghouse data across 830,000 students between 2001 and 2010. Findings from this study confirm those from earlier work: The returns to certificates and diplomas were weak, but associate and bachelor's degrees yielded very strong returns; even small accumulations of credits had labor market value; and the health sector credentials had extremely high returns. Returns were higher for female than for male students. Despite the Great Recession, the returns to college remain strong over the late 2000s.

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1. Introduction

Extensive research has shown that a college education has substantial value in the labor market (see the general review by Altonji, Blom, & Meghir, 2012; and, on community colleges, Belfield & Bailey, 2011). Yet, most of the evidence is on the value of a bachelor's degree or on outcomes for an amorphous and heterogeneous category, those with “some college.” This category includes students who earn associate degrees or occupational credentials, as well as those who drop out of college or transfer from a community college to a four-year institution but fail to complete a degree. Little is known about the returns for students who do not follow a direct path

from high school to college to the labor market or who obtain sub-degree awards, such as certificates or diplomas. In the U.S. this is reflected in the numbers of postsecondary awards: in 2010–2011, 1.9 million associate degrees and certificates were awarded, compared to 1.7 million Bachelor's degrees (Snyder and Dillow, 2013, Table 219).

In addition, evidence on past returns may be of limited relevance for current student cohorts as a result of recent changes in the labor market and in the postsecondary education sector. Over the past two decades, there have been a number of changes in the skill composition and wage structure of the labor market, which have been amplified by the Great Recession. In conjunction with increases in college tuition and student debts, these changes are likely to have significant repercussions on the economic value of college—particularly for those students in the “some college” category. At the same time, students' options for pursuing a postsecondary education have expanded. An increasing number of

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students are receiving new short-term vocational credentials, which are often delivered in a hybrid modality, partly in class and partly online. These changes signal a need for more research on the returns to the various educational pathways that are currently available to students.

In this paper, we estimate the labor market returns across various college awards for recent cohorts of community college students in North Carolina. Using detailed administrative data merged with independent earnings data, we estimate the labor market returns to college in the 2000s for students who began their postsecondary studies at a community college. Thus, we are able to calculate labor market gains, controlling for covariates across a large sample of recent students who attended college but in most cases did not earn a bachelor's degree. Our work responds to the review of this literature by [Dickson and Harmon \(2011\)](#). Specifically, these authors argue for greater examination of the education/wage distribution and returns to specific qualifications. For the community college system, these qualifications include associate degrees, certificates, and diplomas each of which is offered across a range of subjects. As well, [Dickson and Harmon \(2011, p. 1122\)](#) propose we “progress further the linkages between administrative and survey sources” to better inform policy. Administrative data can advance research evidence: it allows for large samples (and so facilitate examination of specific qualifications across more student populations); and it draws on independent wage records over multiple time periods.

Our paper is structured as follows. First, we review the relevant literature and discuss the methodological challenges involved in estimating the returns to college; we also describe our method for analysis. Next, we describe the datasets used in our analysis. We then present our main results, followed by a series of subsample analyses and robustness checks. In the final section, we offer some conclusions and note areas for further investigation.

2. The labor market gains from community college

2.1. Evidence on labor market gains from community college

[Belfield and Bailey \(2011\)](#) summarized the published evidence on the labor market gains from community college. Most awards exhibit positive returns. Across 18 studies, the average earnings premium for an associate degree relative to a high school diploma is 13% for men and 21% for women. Vocational certificates are also associated with higher earnings ([Marcotte, Bailey, Borkoski, & Kienzl, 2005](#)). A few studies have found earnings gains from credits or years of study at community college that do not lead to a completed degree; gains are identifiable for as little as a semester's worth of credits ([Jacobson, Lalonde, & Sullivan, 2005](#)). Earnings gains vary significantly across different subjects of study (defined retroactively based on awards). The general consensus is that the returns are higher for quantitative or technical-vocational courses (for England, see also [Walker & Zhu, 2011](#)).

Overall, the rate of return to postsecondary education is high ([Carneiro, Heckman, & Vytlačil, 2011](#)), but returns may vary across college enrollees of different fields, transfer status, and cohorts. Until recently, most of the evidence on community college students came from small-scale surveys

that precluded controlling these important factors and relied on datasets collected in the 1970s and 1980s. [Henderson, Polachek, and Wang \(2011\)](#) also found that very recent graduates may have lower returns.

Due to data limitation, previous studies often do not control for employment during college and transfers or look at the returns to credits. Students enroll with varying intensity, combining part-time enrollment and hiatuses from college with employment.¹ One third of all students transfer, typically without obtaining a credential at their college of first enrollment ([Hossler et al., 2012](#)). Many students take credits that are not required, either because they are unsure of the program requirements or because they cannot access the necessary courses ([Romano, Losinger, & Millard, 2011](#)). It is therefore important for our study to control for earnings during college using fixed effect model, transfers and college credits taken. Finally, the composition of awards is changing. Increasingly, students are pursuing short-term certificates or diplomas rather than two-year associate degrees; certificate awards grew by 56% between 2000 and 2009, whereas degree awards increased by only 39% during the same period ([Bailey & Belfield, 2012](#)). Of course, the majority of students do not complete any program. Across all two-year institutions, only 30% of the cohort that entered college in 2007 completed an award within 150% of normal time ([Snyder & Dillow, 2012, Table 345](#)). With such wide variation in the returns to different credentials earned at community colleges, it is especially critical to estimate the returns to college for specific awards.

Many factors may have influenced the rate of return to college in recent years, both in general and for subgroups of workers. On the demand side, there has been a general increase in skill-biased technological change, as well as changes in the need for particular occupations and changes in industry structure ([Carnevale, Smith, & Strohl, 2009; Goldin & Katz, 2008](#)). The biggest changes have occurred as a result of the Great Recession. Between 2007 and 2009, employment of young workers declined by 12% (double the rate of employment decline for older workers). At the same time, significant industrial changes took place: Employment decreased in construction by 19% and in manufacturing by 13%, but it increased in health care by 3% ([Mulligan, 2012, Table 2.1](#)). For workers with “some college,” the job loss rate in 2007–2009 was 4%, although this loss was subsequently offset by a job gain rate of 4% in 2010–2012 ([Carnevale, Jayasundera, & Cheah, 2012, Table 3](#)). The job loss and subsequent gain were much sharper for men, who began entering female-dominated occupations at greater rates in the wake of the recession ([Carnevale et al., 2012](#)). The Great Recession may therefore have affected returns for cohorts entering the labor market in the latter half of the decade ([Davis & von Wachter, 2011; Kahn, 2009](#)). Later in this paper, we examine whether returns to community college awards have changed over these years, particularly over the time period associated with the Great Recession.

On the supply side, changes in the higher education sector may have altered the human capital students acquire. Even

¹ For the students in our sample, transcript data show that the most common enrollment pattern is part-time for one semester. Few students follow the convention of two years of uninterrupted full-time study with a break in the summer.

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