Research Statement

Christopher Erwin, Auckland University of Technology
http://www.christophererwin.com
November 2021

Background:

My research focuses on higher education and transitions to the labor market. Specifically, I focus on intended and unintended consequences of financial aid and whether the time it takes to complete a baccalaureate degree is used by prospective employers as a signal of labor productivity. It is this intersection of labor economics and the economics of education that constitutes the primary focus of my research. Two of my dissertation chapters analyze potential market distortions caused by broad, "low-bar" state merit scholarships, while a third chapter—my job market paper—examines whether deviating from the traditional four-year path to a bachelor's degree has a negative effect on early career earnings.

Dissertation:

In my job market paper, I test whether delaying graduation results in an early career earnings penalty. If so, then recent proposals to reward progression towards finishing in four years and/or punishing slower progression to degree completion may be misplaced. To motivate the discussion, I develop a discrete, multi-stage human capital investment problem weighing the expected utility from working 10 hours during college and completing in four years to the expected utility of working 30 hours per week and graduating in six years. This simplified model shows that students are more likely to rationally prefer a non-traditional path to degree completion when discount rates are higher, the returns to college are lower, and direct schooling costs are lower. I next derive a modified Mincer (1974) earnings function to test the signalling hypothesis. Previous research finds large, statistically significant penalties associated with delaying graduation. However, these studies do not adequately control for student ability, institution quality, or both, which likely causes the student's time to degree to be endogenous in the wage equation. To address endogeneity, I include a set of controls for institution and student ability, and instrument for the student's own time to degree using the institutional average. I argue that the institution's average is plausibly unrelated to early-career wages except through its relationship with the student's own time to degree, after controlling for institution- and individual-level characteristics. First stage results provide evidence against weak instruments. 2SLS wage models find no evidence of an early career earnings penalty associated with delayed college graduation. To push on results, I relax the assumption of strict instrument exogeneity and results are qualitatively similar. Together, these results suggest that taking longer to complete college is not necessarily a problem that needs fixing. Thus, the disadvantages associated with delayed graduation must rest on other arguments, such as the crowding out of resources for other students, for example.

In the other two chapters of my dissertation, I focus on the intended and unintended consequences of state merit scholarships on student outcomes. My path to this research is made possible by access to administrative data on the New Mexico Legislative Lottery Scholarship (NMLLS), at the time arguably one of the most generous, low-bar state merit scholarships in the country. Focusing on years just before and just after the launch of the scholarship program, I estimate difference-in-differences models comparing the graduation rates of qualified resident students and unqualified non-resident students. Results reveal no

overall effect of the NMLLS on college completion but do reveal an interesting divergent effect: highly academically prepared students graduated at higher rates as a result of the scholarship, while the opposite was true of less academically prepared students. I argue the mechanism behind this result may stem from the nature of state merit aid. Such scholarships remove price signals in the market for public in-state higher education. This results in some students attending the most expensive in-state public institution available since they may see it as carrying the most value, leading to overmatching in the market. Also, it is likely that the additional aid resulted in some students attending college that would not have without the additional aid. These marginal students may be less likely to succeed in college compared to other enrollees.

In a follow-up to the preceding paper, my third dissertation chapter tests whether state merit scholarships affect the prevalence of 1) first choosing a STEM major, and 2) ultimately earning a STEM degree. Programs such as the NMLLS may distort students' choice of major away from more difficult degrees, such as those in STEM fields, to increase the expected likelihood of scholarship retention. Findings suggest that less academically prepared students choose STEM majors at higher rates due to the scholarship, but do not end up ultimately earning any more STEM degrees. In fact, results show that less academically prepared students are more likely to change their major from STEM to non-STEM later. No program effects are detected for more academically prepared students.

Other papers and works in progress:

As an applied microeconomist, some of my publications and works in progress are outside of my primary research focus. For brevity, I will only discuss research in labor economics and the economics of education.

I am currently assessing migrant assimilation in the labor market across 36 OECD countries using the Survey of Adult Skills (PIAAC) from the OECD. A special focus is placed on how estimates of labor market assimilation change when direct measures of skill (i.e., literacy and numeracy) are accounted for. I examine this issue by augmenting a Mincer (1974) earnings function according to Chiswick (1978) and adding direct skill measures. Preliminary results suggest faster assimilation conditional on numeracy proficiency. For example, in the U.S., the time it takes for the average foreign-born worker wages to catch up to average native-born worker wages is over 15 years. Conditional on numeracy proficiency, this break-even point is reduced to just over 12 years. Early results suggest that the trajectories of migrant earnings over the life cycle in the host country depend significantly on the size of migrant flows as well as literacy and numeracy skill endowments.

Recently, I examined results from a randomized controlled trial that provided some low-income (i.e., Pell Grant eligible) undergraduate students with additional aid tied to "enhanced" academic advising during the first two years of college. Advising was enhanced in the sense that students were provided with a dedicated academic advisor over the two-year period of the trial. Advisors were specially trained to help the student access resources off campus such as income support and mental health services, for example. Students earned separate cash bonuses for meeting with their advisor before the semester, completing a satisfactory mid-semester progress report, and earning a certain number of credits and GPA points at the conclusion of the semester. The program was shown to increase the number of credits students earned in the first two years of college, ultimately reducing the time it took

students to complete their studies. This effectively reduced the income gap in college graduation. Students also showed a high level of satisfaction with the model of enhanced academic advising that was tested.

In another evaluation of the NMLLS, I use regression discontinuity design to estimate local average treatment effects for low-performing students in the neighborhood of a 2.5 GPA eligibility requirement in the first semester. The novelty of this paper comes from the fact that the unique "low-bar" structure of the NMLLS allows me to test how state merit scholarships affect college completion for "C+" students, rather than "B" or "B+" students as in other studies of state merit aid. I find evidence that state merit aid decreases the time it takes to earn a degree for students near the GPA threshold of 2.5, although the program does not result in a meaningful increase in six-year completion rates. Reductions in time to degree are beneficial to students since delaying entry into the labor market can be quite costly.

Future research:

In my job market paper, I test whether there is a labor market penalty associated with delayed college graduation. A valid criticism of this work is that the analysis rests on the assumption that the employer observes time to degree on the application materials. Although I believe this to be true, as it is easily deduced from (expected) graduation dates on a resume or C.V., or may be directly asked during an interview, it is worth investigating further. To do this, I will be conducting an audit study. In this study, I will use an algorithm to randomly assign time to degree on batches of "pseudo-resumes." Results of this research are expected to not only augment the findings in my job market paper, but also broadly contribute to the literature on time to degree in the U.S.

Related to my research on state merit scholarships, I am interested in whether such programs affect high school graduation in the U.S. One would expect this to be true, since the one eligibility requirement these programs share is a high school diploma (or equivalent). The promise of a shot at "free" college tied to completing high school should be expected to raise graduation rates in participating states. I plan on using the timing of program launches and Current Population Survey estimates to examine whether states that implement such programs experienced an increase in the proportion of residents whose highest schooling was at least a high school education. Closely related, but focusing on a different outcome, I am also interested in whether state merit scholarships affect the STEM workforce. The Bureau of Labor Statistics collects such information at the state-level. This would follow-up on research from my third dissertation chapter focusing on whether state merit aid discourages STEM degree production.

Also at the intersection of labor economics and the economics of education, I am planning to examine the returns to community college over time using the National Education Longitudinal Survey of 1988 (NELS:88) and the Education Longitudinal Survey of 2002 (ELS:2002). These two nationally representative surveys are similar in structure, following community college students 10 years after their expected graduation dates (i.e., assuming community college takes two years). This intercohort analysis will be informative as to whether returns to community college degrees have been increasing or decreasing over time. This is particularly relevant given recent proposals for free community college in the U.S., as well as the major expansion of this type of higher education over the previous two decades.