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The socioeconomic consequences of dropping out of high school: Evidence from an analysis of siblings

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ABSTRACT

There is widespread belief that dropping out of high school leads to economic hardship. This belief rests on tenuous evidence. High school dropouts likely face an increased risk of economic hardship because of differences beyond a high school diploma. In particular, dropouts are more likely to come from disadvantaged backgrounds and thus face an elevated risk of economic hardship. Using data from the National Longitudinal Study of Youth 1979 Cohort, I estimate the consequences of dropping out by comparing dropouts to their siblings who completed high school. I also present OLS regression estimates using the same data. OLS regression estimates are consistently higher than sibling fixed effects estimates with the largest discrepancy occurring between estimates of the effect of dropping out on income-to-poverty ratio. However, the sibling fixed effect estimates reveal that dropping out has an effect on economic hardship net of unobserved background characteristics that are shared by siblings. I conclude with a discussion of how recent policy shifts affect the economic standing of low-ability students and suggest avenues for future research.

1. Introduction

The belief that dropping out of high school causes ubiquitous and persistent socioeconomic disadvantage is widespread. Viewed through the lens of cross-sectional associations, the relationship between dropping out and future disadvantage seems obvious—poverty rates, unemployment rates, and rates of welfare receipt for high school dropouts are significantly higher than the respective rates for high school graduates (Boisjoly et al., 1998; Caspi et al., 1998; Iceland, 2012; National Center for Education Statistics, 2012; U.S. Census Bureau, 2010). However, before concluding that dropping out is responsible for the increased risk of hardship, researchers must be careful to account for differences between the population of dropouts and the population of high school graduates beyond a high school diploma.

Put simply, high school dropouts likely face an elevated risk of socioeconomic disadvantage irrespective of their dropout status. The question, therefore, is not whether high school dropouts face an increased risk of disadvantage. They do. Instead, the question is whether dropping out of high school is responsible for the increased risk of disadvantage. If high school dropouts had completed high school, to what extent would the risk of disadvantage be reduced?

Research on the consequences of dropping out is surprisingly underdeveloped. Nearly three decades ago, Natriello et al. (1986) called for researchers to investigate the social and economic effects of dropping out, writing:

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> There is a clear need for research on the consequences of dropping out. We know rather little about either the economic or social consequences of dropping out . . . In order to do this, we need detailed information on the experiences and characteristics of dropouts before they left high school, as well as data on their labor market experiences . . . (p. 175).

This call for research on the consequences of dropping out has largely gone unanswered. Instead, discussions of the costs of dropping out often rely on cross-sectional associations. While cross-sectional associations reveal the level of disparity between high school graduates and high school dropouts, they do not speak to the extent that dropping out contributes to the observed disparity.

The absence of research is likely due to the difficulty of assessing the true costs of dropping out. Natriello, Pallas, and McDill point out the need for detailed data on dropouts before they leave school. Without such data, researchers run the risk of confounding dropout effects with the effects of early life social and economic contexts. This is particularly important because dropouts come disproportionately from already disadvantaged backgrounds (Alexander et al., 1997; Brooks-Gunn et al., 1993a,b; Duncan et al., 1998; Rumberger, 1987; Stearns and Glennie, 2006), a strong determinant of both high school completion and economic hardship. The early and adolescent disadvantage that leads an individual to drop out likely also creates an increased risk of adult economic hardship. By the time an individual drops out of school, the risk of economic hardship may already be firmly in place.

In this study, I examine the effect of dropping out on future economic hardship, earned income, and weeks worked. I base model estimation on within-family differences, comparing individuals who dropped out of high school to their siblings who completed high school. This method provides a straightforward control for unobserved background effects, leveraging the shared backgrounds of siblings to isolate a dropout effect that is independent of shared background characteristics. By basing model estimation on within-family differences, the research presented here is better able to account for heterogeneity in the population of dropouts.

Additionally, I present conventional ordinary least squares (OLS) regression estimates of the effect of dropping out on the same outcomes and using the same data. By comparing conventional and within-family estimates, I am able to discern the extent to which differences in the backgrounds of dropouts are responsible for cross-sectional associations between dropping out and future socioeconomic disadvantage. In particular, I am able to assess how unobserved characteristics may bias OLS estimates.

I first present arguments for why dropping out of high school can lead to economic hardship and worse labor market outcomes, highlighting the role of skill differentials, credentialism, social closure, and signaling theory. I next discuss reasons for why the increased risk of disadvantaged faced by dropouts is likely overstated, emphasizing the difficulty of isolating an independent dropout effect using conventional OLS methods. I then outline the data, measures, and analytic strategy used in this paper. Lastly, I present findings from OLS regression estimates and within-family estimates. I conclude with a discussion of how recent policy shifts have the potential to worsen the socioeconomic standing of low-ability students.

2. Background

Several social theories offer explanations for how dropping out of high school increases the risk of economic hardship net of background characteristics. First, it is possible that dropping out of high school produces an actual skill differential between dropouts and high school graduates. In effect, because dropouts do not complete all years of schooling, they do not develop the same level of skills and competencies. In this scenario, observed differences in hardship are indeed the result of dropping out. Had dropouts stayed in school, they would have acquired more skills and be able to demand more from the labor market.

The extent to which additional years of schooling leads to an increase in skills and an increase in future earnings is uncertain. The ambiguity is due to differences in who completes more years of education. Without experimental data, it is hard to assess whether differences in outcomes by educational attainment are the result of more years of education or the result of who completes more years of education. This is often referred to as "ability bias"—those with greater ability likely choose to complete more years of education. A large body of research has attempted to identify the true effect of education on a variety of outcomes and has produced mixed evidence (for a review of educational effects on earnings, see Card, 1999). While most of this research examines the effects of educational attainment in general, the few studies that do consider high school dropouts in particular have produced similarly equivocal results.

For example, Angrist and Krueger (1991) famously approximate the conditions of a natural experiment by leveraging compulsory schooling laws and season of birth, noting that individuals born in the first quarter of the calendar year become eligible to drop out of high school a school year earlier than individuals born later in the calendar year. Angrist and Krueger find that students who are forced to attend school longer because of where their birthday falls in the calendar year earn higher wages as a result of increased schooling. However, these findings are disputed. In particular, Bound et al. (1995), Staiger and Stock (1997) show that the instrumental variable used by Angrist and Krueger—season of birth—explains little of the variation in educational attainment, making it too weak of an instrument to be informative.

Similarly, there is debate over whether more years of schooling produces differences in skills and ability between dropouts and high school graduates. Alexander et al. (1985) compare cognitive development for dropouts and high school graduates. They find that individuals who stay in school see more of an increase in cognitive skills than those who drop out. However, the effect sizes are modest—the average difference in cognitive test performance between dropouts and high