



The health effects of leaving school in a bad economy



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ABSTRACT

This study investigates the lasting health effects of leaving school in a bad economy. Three empirical patterns motivate this study: Leaving school in a bad economy has persistent and negative career effects, career and health outcomes are correlated, and fluctuations in contemporaneous economic conditions affect health in the short-run. I draw data from the National Longitudinal Survey of Youth 1979 Age 40 Health Supplement. Members of my sample left school between 1976 and 1992. I find that men who left school when the school-leaving state unemployment rate was high have worse health at age 40 than otherwise similar men, while leaving school in a bad economy lowers depressive symptoms at age 40 among women. A 1 percentage point increase in the school-leaving state unemployment rate leads to a 0.5% to 18% reduction in the measured health outcomes among men and a 6% improvement in depressive symptoms among women.

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1. Introduction

This study investigates the persistent health effects of leaving school, defined as either graduating with a degree in hand or dropping out before degree completion, in a bad economy. Specifically, I compare the health of individuals at age 40 who left school when the state unemployment rate was high with the health of individuals at age 40 who left school when the state unemployment rate was low. Previous economic work has investigated the short run health effects of fluctuations in the contemporaneous state unemployment rate (Huff Stevens et al., 2011; McInerney and Mellor, 2012; Miller et al., 2009; Ruhm, 2000, 2003), but in this study I examine the lasting impact of experiencing a bad economy during the transition from school to the labor market. My focus on the lasting health effects for school-leavers is guided by recent labor economics research that shows workers who leave school in a bad economy have persistently worse career outcomes as measured by wages, occupational prestige, productivity, and promotions than their counterparts who leave school in a stronger economy (Genda et al., 2010; Kahn, 2010; Kondo, 2007; Kwon et al., 2010; Oreopoulos et al., 2012; Oyer, 2006, 2008; Schoar and Zuo, 2011). Social scientists document strong associations between career outcomes and health (Deaton, 2002; Deaton and Paxson,

1998; Dooley et al., 1996), suggesting that these persistent differences in career outcomes may lead to lasting health disparities between cohorts of school-leavers.

I draw data from the National Longitudinal Survey of Youth 1979 Cohort (NLSY79) Age 40 Health supplement. I model four health outcomes – physical functioning, self-reported health, mental functioning, depressive symptoms – as a function of the state unemployment rate at school-leaving, and use economic fluctuations between 1976 and 1992 to identify the persistent health effects. Thus, I compare health outcomes at age 40 between cohorts that left school before, during, and after the severe early 1980s recession (July 1982 to November 1983). My results suggest that men who left school in a bad economy have worse health at age 40 than their counterparts who left school in a strong economy. A 1 percentage point increase in the school-leaving state unemployment rate leads to a 0.5% to 18% reduction in health, as measured by the selected outcomes, at age 40. I find that women who left school when the unemployment rate was high have fewer depressive symptoms at age 40 than otherwise similar women. My results are robust to the use of instrumental variables. These findings are timely and may shed light on the persistent effects of the 2007 to 2009 recession.

That men experience larger health penalties than women from leaving school in a bad economy is consistent with labor studies documenting the largest career effects among men (Hershbein, 2012; Kondo, 2007). However, it is somewhat surprising that leaving school in a bad economy may be protective among women.

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Although purely speculative, it may be that failure to advance in the labor market may allow women to better balance work and family, or may protect them against work stress. These hypotheses are discussed in more detail in Section 6 of this manuscript.

Section 2 reviews channels from leaving school in a bad economy to health at age 40. The data and methods are described in Section 3, and Section 4 reports the results. Robustness checks are reported in Section 5, and Section 6 concludes.

2. Conceptual framework

This study takes a standard health production function as a starting point (Grossman, 1972). Health is produced using market (e.g., medical care) and non-market (e.g., time) inputs. Consumers are endowed with a health stock and value both health and other goods. They make consumption decisions to maximize utility given preferences, prices, the budget set, and the health production function. Individuals do not demand health per se, rather they gain utility from non-illness. Good health allows more time to work in the labor market and earn income, and utility is increasing in income. Leaving school in a bad economy may persistently impact health by changing the relative prices of inputs. This section reviews potential mechanisms based on employment, education, and marriage research.

Workers who leave school when the unemployment rate is high are more likely to enter unemployment or obtain an undesirable job in the short run as there are few open jobs from which to choose and the quality of open jobs declines when the unemployment rate increases (McLaughlin and Bils, 2001; Okun, 1973; Reder, 1955). Labor studies show that labor market frictions (deviations from perfect worker mobility between jobs) limit the ability of workers to shift into better jobs as the economy rebounds, leaving workers persistently stuck in low-wage and otherwise less desirable jobs (Baker et al., 1994; Brunner and Kuhn, 2009; Genda et al., 2010; Hershbein, 2012; Kahn, 2010; Kondo, 2007; Kwon et al., 2010; Oreopoulos et al., 2012; Oyer, 2006, 2008; Schoar and Zuo, 2011). For example, Kahn (2010), using the data set that I analyze, finds that a 1 percentage point increase in the state unemployment rate at school-leaving leads to an annual wage loss of 2.5% to 9% 15 years later among white male college graduates. Though less studied, women's labor market outcomes may be insulated from leaving school in a bad economy (Hershbein, 2012; Kondo, 2007). An exception is highly skilled women (e.g., MBAs) who experience career effects similar to men (Oyer, 2008).

Labor market outcomes are empirically and conceptually linked with health outcomes. Income is broadly associated with good health (Currie, 2009; Deaton, 2002; Deaton and Paxson, 1998; Duleep, 1986; Gardner and Oswald, 2007; Grossman, 1972). Job loss is consistently associated with reduced income, and generally linked with morbidity, unhealthy behaviors, mortality, and loss of health insurance (Deb et al., 2011; Eliason and Storrie, 2009; Gallo et al., 2000; Jacobson et al., 1993; Kuhn et al., 2009; Lindo, 2011; Simon, 2001; Strully, 2009; Sullivan and von Wachter, 2009). Job churning is correlated with poor health, workers with past unemployment spells have worse mental health than continuously employed workers, and the unemployed are less healthy than the employed (Clark et al., 2001; Dooley et al., 1996; Gerdttham and Johannesson, 2003; Mullahy and Sindelar, 1996; Quinn et al., 2009; Strully, 2009; Theodossiou, 1998). Other dimensions of employment such as job satisfaction, job stress, work hours, prestige, work expectations, and harmful working conditions have been shown to affect health (Courtemanche, 2009; Falba et al., 2009; Fischer and Sousa-Poza, 2009; Fletcher et al., 2011; Knudsen et al., 2007; Morefield et al., 2011; Rablen and Oswald, 2008; Rashad Kelly et al.,

2011). If individuals who leave school in a bad economy are more likely to obtain jobs with unfavorable working conditions, they may experience persistent reductions in health.

Leaving school in a bad economy may also affect health through marriage and education patterns. These outcomes are associated with good health (Culter and Lleras-Muney, 2008; Fuchs, 2004; Gardner and Oswald, 2004, 2007; Grossman, 1972). For example, a man who leaves school in a bad economy and obtains a low paying job may have poor marriage market opportunities (Becker, 1981) and he may decide to delay or forego marriage. Workers who leave school in a bad economy may seek out education as lower wages reduce opportunity costs of obtaining additional schooling. Betts and McFarland (1995) show that community college enrollments increase with the unemployment rate. Alternatively, such workers may be unable to finance additional education with their lowered labor market earnings.

Some studies call to question whether leaving school in a bad economy will hurt health. Work by Ruhm (1995, 2000, 2003, 2005) and others (Dave and Rashad, 2010; Dehejia and Lleras-Muney, 2004) shows that physical health and health behaviors improve as the unemployment rate rises. Studies that use the Social Security Notch, Earned Income Tax Credit, or inheritances as exogenous sources of variation in income show no, or a negative, relationship between income and health (Cawley et al., 2010; Kim and Ruhm, 2012; Schmeiser, 2009; Snyder and Evans, 2006). Moreover, a set of studies suggests utilizing European data suggest that job loss does not substantially impact health (Browning et al., 2006; Salm, 2009). However, given differences between the U.S. and Europe in terms of labor market structure and social security generosity it is not clear how well findings from European data generalize to the U.S. context. Thus, whether leaving school in a bad economy hurts or helps health is an open empirical question.

3. Data and methods

3.1. Data

I draw data from the National Longitudinal Survey of Youth 1979 Cohort Age 40 Health Supplement (henceforth the supplement). The NLSY79 was administered annually between 1979 and 1994, and biennially thereafter. Respondents were administered the supplement once between 1998 and 2006 at or about age 40.¹ Comprehensive health information is not regularly collected in the NLSY79 as the study is designed to understand labor market experiences and the supplement contains the most detailed health outcome information in the NLSY79 to date. The original sample consists of 12,686 youth 14 to 22 in 1979. Excluding subsamples dropped by the NLSY79 for financial reasons (military sample in 1984 and low income white sample in 1991) leaves 9964 respondents. 8465 respondents (85% of the eligible sample) completed the supplement. I delete respondents who left school before 1976 as state-level unemployment rates from the BLS are available from 1976 onwards. I exclude respondents who do not provide valid school-leaving information. I focus on the persistent health effects of leaving school in a bad economy and retain only respondents who left school 15 years or more prior to the supplement. The maximum number of years of schooling a member of the youngest

¹ Not all respondents completed the supplement at age 40 because of attrition patterns (if a respondent did not complete the round administered at age 40 he was administered the supplement in the next round to which he responded, through to the 2006 round) and aging patterns (the supplement was administered after the NLSY79 became biennial, if a respondent turned 40 in a non-survey year he was administered the supplement in the following round).

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