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The Labor Market Consequences of an Inadequate Education

EXECUTIVE SUMMARY

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Introduction

Because of the strong relationship between years of completed education and annual earnings, education is the traditional route to upward mobility in the United States. While there is not much increase in earnings for each year of completed schooling before the 11th grade, there is a steep earnings gain with each year beginning with high school completion. This relationship has increased dramatically over the past 40 years. In 1964 a high school dropout earned 64 cents for every dollar earned by an individual with at least a high school degree. In 2004 the high school dropout earned only 37 cents for each dollar earned by an individual with more education. High school graduation has been a necessary (but not sufficient) pre-requisite for making it in America.

A key challenge in determining the income (and therefore tax revenue) losses from lack of high school completion, is to determine the causal effect of education on income. That is, to address: Do high school graduates earn more than dropouts because the education they received in high school is valuable in the labor market? Or are the individuals who complete high school different from high school dropouts and it is this difference (and not the schooling) that explains the higher income? To disentangle these two competing hypotheses, researchers have developed several methods to isolate the causal impact of education on income. Based on this literature one would conclude that much of the observed relationship between education and income is, indeed, causal. In fact Nobel Laureate James Heckman, with Pedro Carneiro, writes, "By now there is a firmly established consensus that the mean rate of return to a year of schooling, as of the 1990s, exceeds 10 percent and may be as high as 17 to 20 percent." (Carneiro and Heckman 2003, pp. 148-149). As such, I rely on the larger survey data to estimate the difference in earnings between individuals with and without a high school degree to get some idea of the earnings and tax revenue losses associated with not completing a high school degree.

Data

To calculate the earnings and tax revenue losses from dropping out of high school I use the 2003 and 2004 March *Current Population Survey* (CPS). I categorize individuals as having one of three levels of education: no high school degree, a high school diploma (including a GED), and at least a high school diploma (just over 60% of these individuals have completed at least some post-secondary education). The sample includes over 300,000 individuals aged 18 to 67. All figures are weighted using the sampling weights provided by the Bureau of Labor Statistics. And, all monetary figures are inflated to 2004 dollars using the Chained Consumer Price Index for Urban Consumers (the CPI-U). I estimate the tax revenue gains associated with high school graduation using a computer program administered by the National Bureau of Economic Research called the TAXSIM model.

Results

I find that only slightly more than one-half of high school dropouts are employed compared to 69% of those whose highest level of education is a high school diploma, and nearly three-quarters of those with at least a high school diploma. Similarly, high school dropouts are more likely to be unemployed, "discouraged workers," or out of the labor force. Further, high school dropouts work more than 2 fewer months per year than those whose highest level of education is a high school degree and nearly 3 fewer months per year than those with at least a high school diploma.

Not only do high school dropouts work less than those with higher levels of education, once working the quality of their jobs is lower as well. For example, high school dropouts are about one-half as likely to have a pension plan or health insurance through their job than those whose highest level of education is a high school diploma. And, importantly, their earnings are lower. The average high school dropout earns about $12,000 per year, nearly one-half that earned by those whose highest level of education is a high school diploma and one-third that earned by those with at least a high school education. These lower earnings are a function of dropouts earning lower wages, and working fewer hours and weeks per year.

The lower annual income also means that high school dropouts are less able to contribute to government revenues. On average high school dropouts pay approximately $1300 per year in federal income taxes, $300 per year in state income taxes, and $1800 per year in Social Security taxes for a total of about $3400. This is one-half the contributions made by those who have completed a high school degree, and nearly one-third the contributions of those with at least a high school degree. Aggregated over the approximately 23,000,000 high school dropouts aged 20-67, the annual losses in federal and state income taxes likely exceed $50 billion – enough to cover the annual discretionary expenditures of the U.S. Department of Education. While income taxes likely account for most of the tax revenue losses resulting from inadequate education, those without a high school degree also contribute less in terms of sales and property taxes as well.

Over a lifetime, an 18 year old who does not complete high school earns approximately $260,000 less than an individual with a high school diploma and contributes just under $60,000 less in lifetime federal and state income taxes (assuming a discount rate of 3.5% and annual income growth of 1.5%). The combined income and tax losses aggregated over one cohort of 18 year olds who have not completed high school is likely about $192 billion, or 1.6% of GDP. Further, if we were able to increase the educational attainment of that same cohort of high school dropouts by one year, we would recoup nearly one-half of those losses.