**Title:** The Importance of Educational Credentials: Schooling Decisions and Returns in Modern China

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**Background / Context:** A crucial role of government is to provide and regulate schooling. Within this role, a key decision governments face is to determine the number of years of schooling needed to earn credentials at the primary, lower secondary, upper secondary, and tertiary level (e.g. high school and college diplomas). This choice of “credential length” also generates an important empirical regularity: across the majority of developing and developed countries, most individuals leave school and enter the labor market after completing a given level of school and earning a credential, such as a middle or high school diploma. This means that credential length policy ends up determining how most of the world’s people spend the early productive years of their lives.

Empirical work to date examines the effects of lengthening the final level of schooling (e.g., high school or university) on completion of that level of schooling and health and labor market outcomes (see Oreopoulos 2006). Far less is known about the effects of changing credential length for primary schooling in contexts where most students ascend to middle school or beyond.

**Purpose / Objective / Research Question:** In this paper, we study a lengthening of primary school by one year in a population where 80% of individuals go on to get some post-primary schooling affects. We aim to estimate the effect of the policy on schooling and labor supply, the overall policy returns to this policy and the costs associated with it, and its distributional effects on the more and less advantaged in the Chinese population.

**Setting:** Our research takes place in China, examining the period from 1980 to 2010.

**Population / Participants / Subjects:** We study all of China, using nationally representative survey, census, and archival data. In our main analyses, we restrict our attention to those who leave primary school within five years before or after this change took place in their locality of birth (which varies from the 1976 to the 2005 graduating cohort, depending on locality). We examine their schooling attainment, labor market performance, and condition these outcomes on demographic variables of interest such as age, gender, and ethnicity.

**Intervention / Program / Practice:** In 1980, as part of the transition to a market economy, the Chinese government announced that it would increase by one the number of years needed to complete primary school while leaving unchanged the national curriculum and length of all other levels of schooling. This policy was rolled out gradually across localities over 25 years and has induced over 400 million people to spend an additional year in primary school so far.

**Research Design:** We identify the causal effect of the policy on schooling and labor market outcomes using a regression discontinuity (RD) design with time as the running variable. This could also be called an event study - we use the RD label to highlight our use of the machinery for establishing causal inference in that literature (Imbens and Lemieux 2008; Lee and Card 2008). We compare outcomes of treated and untreated individuals within each locality, restricting our attention to those leaving primary school within a few years of when the policy took effect. This approach is similar to recent work studying the impact of a sudden change in compulsory education in the UK (Oreopoulos 2006; Clark and Royer 2013). We take advantage of the fact that the policy was rolled out gradually across China to flexibly capture differential regional trends, protecting against the risk of upward bias in our research design.
Data Collection and Analysis: We use the 2005 Chinese mini-census, which contains 2.5 million observations, and the China Family Panel Studies, an exciting new panel of survey data collected by Chinese social scientists, for our main analyses. We supplement these datasets with hand-collected data from hundreds of official government documents, known as “educational gazetteers,” which report implementation at the local level. These archival records allow us to determine if, when, and how the policy is implemented in each of China’s prefectures.

Findings / Results: Years of primary schooling increased by nearly one for affected individuals, and we find no evidence of individuals offsetting the extra year of primary school with a decrease in years of post-primary schooling or credential attainment. We also find no evidence that the policy changed the characteristics of who earns which credential. This means that the vast majority of affected individuals chose to forgo a year of wages in the labor market to earn their final credential.

We use this variation in schooling to estimate the labor market returns to the extra year of schooling induced by the policy while holding highest educational credential constant. We find the extra year increases monthly income by 2.03% and raises cognitive ability test scores, and these benefits are higher among China’s disadvantaged. We find no evidence that the additional year affected other labor market indicators such as entrepreneurial activity, employment status, and type of employer, i.e., private vs. government.

We perform a cost-benefit analysis to quantify the public finance implications of the reallocation of 850 billion person-hours from work to school resulting from this policy. We generate four estimates, and in all but the most favorable scenario the costs of the policy exceed its benefits by at least tens of billions of US dollars.

Conclusions: Our study shows that there is a high demand for educational credentials in China that is inelastic to a one-year increase in credential length. It also shows that credential length policies such as the one we study may be an important means of redistributing income, inducing all to forgo a year of earnings while substantially increasing earning potential among the least well off. The limitations of our study include the idiosyncrasies of the Chinese case and the fact that our census data only come from one year; labor market returns over time may vary. Nonetheless, our estimates are precise and robust, and are of general interest: we believe we are the first to empirically examine this policy choice that every country in the world must face.

References


