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Education on the cheap: The long-run effects of a free compulsory education reform in rural china

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ABSTRACT

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This paper evaluates the long-run effects of a free compulsory education reform in rural China on individuals' educational attainment, cognitive achievement and health. We exploit the cross-province variation in the roll-out of the reform and apply a difference-in-differences strategy to identify the causal effects of the reform on the outcomes. We find that the reform exposure, measured by the number of semesters that an individual is supposed to be exposed to the free compulsory education, is positively associated with individuals' educational attainment and cognitive achievement measured by math test scores in early adulthood. The reform effects on educational attainment become greater in the longer term. Moreover, the reform effect on educational attainment is stronger for individuals with less-educated fathers. *Journal of Comparative Economics* 000 (2017) 1–19. Lee Kuan Yew School of Public Policy, National University of Singapore, 259772, Singapore; The Institute of Water Policy, Lee Kuan Yew School of Public Policy, National University of Singapore, 259770, Singapore; School of Labor and Human Resources, Renmin University of China, 100872, China.

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1. Introduction

In recent decades, developing countries have made considerable progress in increasing the school enrollment and achievements of children and youth. School subsidy programs, in the form of conditional cash transfers, educational vouchers or subsidies for other educational costs, are widely recognized as effective in increasing enrollment and reducing dropout rates. A large number of studies have evaluated the effectiveness of these school subsidy programs, mostly assessing the effects on outcomes measured in the short run (see [Behrman, 2010](#); [Glewwe and Kremer, 2006](#) and [Orazem and King, 2008](#) for

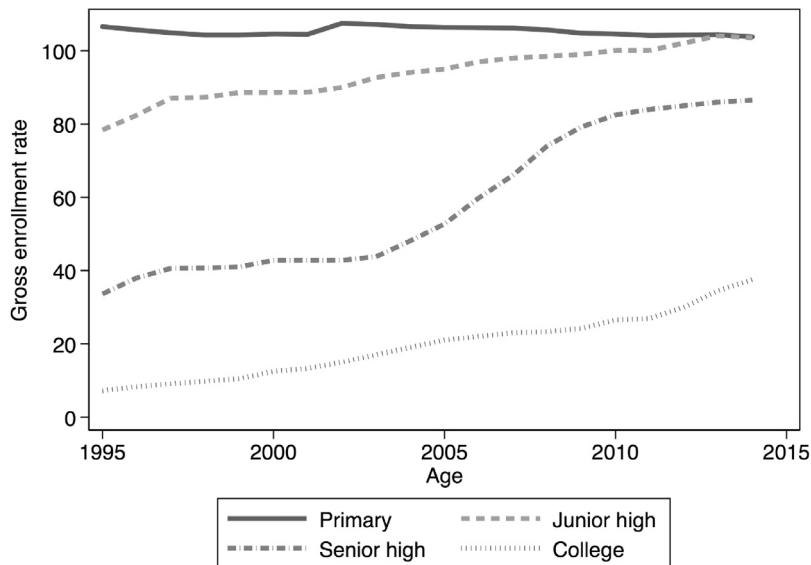
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Data source: China Statistical Abstract 2015.

Fig. 1. Gross enrollment rate in China.

extensive reviews of this literature). Evidence on long-term program effects, whose importance is emphasized in Behrman et al. (2011), remains rather limited.²

China, the largest developing country in the world with approximately half of the population living in less developed rural areas, launched a free compulsory education reform in rural areas in 2006. The aim of the reform is to reduce the costs of compulsory education and increase enrollment. Under the reform, all rural students that are enrolled in primary or junior high schools are exempted from paying tuition and miscellaneous fees. The free compulsory education reform is essentially a school subsidy program, where eligible students are provided with a subsidy that covers tuition and miscellaneous fees. Like other school subsidy programs, the reform has been found to raise short-run school enrollment rates, especially at the junior high school level (Chyi and Zhou, 2014; Shi, 2016). However, the magnitude of the effect is small, which may be attributable to the already high enrollment rates of compulsory education in rural China prior to the reform (see Fig. 1) (Shi, 2016). Some of the most important impacts of the reform, including the long-run impacts on completed years of schooling and labor market outcomes, have yet to be investigated.

This paper investigates the long-run impacts of the free compulsory education reform on various forms of individuals' human capital, including education, cognitive achievement and health measured in early adulthood. The schooling impacts of this reform and other similar school subsidy programs have already been addressed in previous studies. In addition to the effects on schooling outcomes, the cash transfers from the reform increase households' disposable income, which may induce other forms of human capital investment (Shi, 2012), and hence improve children's long-term cognitive achievement and health.³ Even in the most extreme case - where the reform only increases investment in education - the reform could have second-order effects on cognitive achievement and health, through the causal relation running from more education to better cognitive achievement (Carlsson et al., 2015) and health (Silles, 2009). Education, cognitive achievement and health are important determinants of lifetime well-being and earnings (Card, 1999; Case et al., 2002; Heckman et al., 2006). Therefore, the investigation of different types of human capital provides us with a better understanding of the impacts of the free compulsory education reform.

The reform was first launched in rural areas in 13 provinces and 3 direct-controlled municipalities (municipalities hereafter), and then gradually expanded to the rural areas across China. We exploit the cross-province variation in the phase-in of the reform and apply a difference-in-differences framework where the treatment varies by province of residence and birth date. Our treatment variable, namely the duration of reform exposure, is the number of semesters that an individual is supposed to be eligible for free compulsory education during ages 6–15.

Using a sample of rural individuals born between 1988 and 1993 from the China Family Panel Studies (CFPS), we find that longer reform exposure during ages 6–15 leads to better educational attainment and cognitive achievement in early

² Molina-Millan et al. (2016) review the evaluations of the long-term effects of conditional cash transfer programs in Latin American.

³ A number of studies in developed countries have examined how a policy-induced increase in family income affects children's cognitive achievement (Duncan et al., 2011; Milligan and Stabile, 2011; Dahl and Lochner, 2012). For example, Dahl and Lochner (2012) find that in the United States a \$1000 increase in income raises cognitive test scores by 0.06 standard deviations in the short run. Similar evidence in a developing country context is limited. Using a sample of 9 to 12 year-old rural students in Gansu province in China, Shi (2013) finds no significant short-term effects of household educational expenditures on the test scores of children. Ponce and Bedi (2010) show that Ecuador's cash transfer program does not improve students' cognitive achievement.

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