

Thesis Description

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I am researching the links between poverty, inequality and education in rural China during the marketization period. Despite China's impressive growth record, millions remain trapped in poverty, particularly in rural areas. Education is a key determinant of levels of poverty, through enabling access to high return occupations, and also of inter-generational mobility. How marketization has affected investment in and outcomes of education will determine whether disadvantaged and marginalised groups gain from China's 'economic miracle', or whether already rising inequality is perpetuated and deepened. I focus on how poverty and minority ethnicity affect investment in and the outcomes of education. I consider three outcomes: student achievement, occupational and intergenerational mobility and individual happiness, or 'subjective well-being' (SWB). I ask whether disadvantaged groups benefit less from education and whether marketization of the economy has affected their opportunities to find sustainable routes out of poverty.

I use data from household surveys carried out in 1988, 1995 and 2002, with data on around 10,000 rural households. I analyse both enrolment and expenditure on education. The 2002 survey contains particularly detailed information, including expenditure on individual children and by the government, and data on SWB and attitudes. As data linking student achievement and education quality was unavailable, I designed and carried out my own two wave survey of students in the final year of compulsory education and their teachers in a poor, multiethnic rural Prefecture of North West China during 2006-2007. To my knowledge this is the first data set of its kind. Two waves of the survey were administered to over 1000 students in Junior 3, the final year of compulsory education, in all 13 schools in the Prefecture. The first wave involved an English test, a Chinese test, a cognitive reasoning test and a socioeconomic survey, as well as detailed questionnaires to the school Principals, English, Chinese and class teachers. The second wave included another English test. I address endogeneity problems using novel instrumental variables, by linking the 2002 and 1995 surveys at the County level, and by exploiting the panel aspect of my own data set.

Questions and hypotheses

China has made impressive and rapid progress in increasing access to and uptake of education, outperforming most other developing countries. Although in 1949 over 80% of the population was illiterate¹, by 2003, 93% of the relevant age group was enrolled in junior secondary school². Government policies promoted basic education. Increased off-farm employment opportunities rewarded education and provided motivation to invest. However, since reforms, responsibility for funding schools has been increasingly devolved to local governments. Especially in poor areas, funding is insufficient to cover running costs. Most schools are therefore forced to charge admissions fees, despite nine-year education being compulsory³. Increased off-farm and migration employment options increase the opportunity cost. Rising costs restrict access to education for some

¹ Hannum and Park (2002)

² China Education Yearbook, 2004

³ The nine year compulsory education law was passed in 1986 and parents can be fined if their children do not attend. However, the law is not strictly enforced in many poor areas

poor, credit-constrained households, particularly at post-compulsory levels. Even where poor households do not face credit constraints, they reduce investment in response to lower rates of return to education (ROREs). ROREs are low because of the economic structure of poor areas: few off-farm employment opportunities, combined with segmentation of the labour market. Further, the quality of education available in poor areas is often low, due to devolution of educational funding. These factors are shown to play an important role in explaining lower enrolment and expenditure by poor households. I examine whether some of the poor are stuck in a low education, low income equilibrium or 'poverty trap'. Several studies have addressed the links between poverty and education for rural China, but to my knowledge this is the first study to examine how marketization has affected incentives to invest over such a lengthy period.

Minority groups, particularly those residing in poor rural areas, generally perform worse than the majority in educational enrolment and attainment⁴. Poor educational achievement is both a cause and consequence of minority economic disadvantage: the income gap between the majority Han and minority ethnicities is well documented⁵ despite favourable central and local government policies. Minority students may also be disengaged and excluded from the Chinese education system by linguistic, cultural and political factors⁶. Much of the minority educational disadvantage can be explained by household and, most importantly, community poverty, but part of the disadvantage remains unexplained by observable economic barriers. The links between ethnicity and education have been explored in the sociological and anthropological literature but this will be the first detailed quantitative analysis using a household data set and dealing with endogeneity issues.

The quality of education is also a concern. Funding is highly dependent on local government revenue⁷ and funds raised by schools. Park and Wang⁸ find significant disparities in funding across villages and counties, a significant proportion of which comes from extra-budgetary sources. They find that these disparities are strongly related to inequality in school infrastructure. Schools in poor rural areas may have few resources, poor infrastructure, and problems attracting and retaining qualified teachers, due both to low wages and poor living conditions. My data allow me to take a relatively innovative empirical approach to the question and to examine attainment in a poor minority area where low educational quality is a particular problem. I find that low school quality affects student achievement and provides part of an explanation for poor achievement. This in turn helps to explain early drop-outs and widespread failure to proceed to post-compulsory schooling amongst poor and minority groups.

In recent years economists have become increasingly interested in SWB. Research in both the economic⁹ and psychological literature¹⁰ suggests that, although they should be used with caution, these measures are meaningful. There are strong arguments for viewing SWB as one indicator of poverty. Kingdon and Knight (2006) argue that 'SWB poverty' is an encompassing concept into which income poverty and capabilities poverty can be incorporated. However, the issue of SWB is also relevant for developing economies. Education is one particular public service that has been reported

⁴ Hannum (2002).

⁵ Gustafsson and Li (2003)

⁶ See for example, Postiglione (1999)

⁷ See Knight, Li (1996)

⁸ Park and Wang (2003)

⁹ See for example Easterlin (1995)

¹⁰ See for example Diener et al (1993)

in many studies to affect SWB independently of its effect on income¹¹. I hypothesise that education affects happiness directly as well as indirectly, via its effects on income and social status. It may also have an indirect effect via attitudes and social networks acquired during education. This will be the first study to use this particularly rich data set to examine subjective well being as an outcome of education and one of few studies to focus on a developing country¹².

Methodology

The principal methodological problem for the study is establishing causal relationships when some of the independent variables can be considered endogenous. An independent variable is considered endogenous if it is correlated with the error term in a regression. For example, if we wish to establish a causal link between income and education, and income is positively correlated to some unobserved determinant of education, such as unobserved innate ability, the coefficient on income would be biased upwards relative to its true causal effect. If we wish to demonstrate a causal link between teacher education and pupil achievement, but pupils with higher (unobserved) ability relocate towards higher quality schools, the estimated effect of the observed quality variables will be biased upwards. If attitudes that encourage people to get more education also make them happier people, the coefficient on happiness will be biased upwards relative to its true causal effect on happiness.

The first response is to include variables that act as proxies for the unobserved factors. We will experiment with this approach: including a measure of cognitive reasoning ability in our achievement regressions, and information about attitudes in our happiness equations. However, if these proxies do not fully capture the unobserved variable, the bias may still remain. Further, it is possible, for example, that education plays a role in determining attitudes and therefore, indirectly, in determining happiness. This relationship would be missed if we included the attitudinal information.

We will therefore use instrumental variable techniques. A suitable instrumental variable must be strongly correlated with the potentially endogenous variable but uncorrelated with the residual. The household data set is unique in that it provides us with several innovative instrumental variables which will help us to identify causality. In the case of income we should be able to instrument using information on the education and social background of the parents of the household head and their spouse. These should be well correlated with income, but not with unobserved determinants of education for the children of the household. Similar variables could be used to instrument education if we are attempting to estimate its causal effect on income. We instrument fertility decisions using multiple births and the gender of the first born child. In the context of strong son preferences and restrictions on the number of births, these should strongly predict sibship size, but should not be connected to parental preferences regarding child 'quality'. We are able to match observations between 1995 and 2002 at the county level, although not at the individual or household level. We use these variables as instruments for the RORE and other county level variables that may be endogenous to investment in education.

However, although we can control for observable variables such as home village, parental occupation and education, it will be difficult to instrument school choice in the achievement

¹¹ For example Blanchflower and Oswald, 2000, Ravllion and Lokshin (2000)

¹¹ China Education Yearbook, 2004

¹² With the exception of Ravallion and Lokshin (2000) or Graham and Pettinato (2002)

equations. Therefore we will exploit the panel dimension of the data. By analysing the difference in the level of English between the two survey waves, we aim to estimate the impact of the teaching received, controlling for initial ability.

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