



Human capital externalities and rural–urban migration: Evidence from rural China[☆]

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ABSTRACT

This study examines the determinants of rural–urban migration paying special attention to the role of human capital externalities in the rural sector. Using data from a well-known household survey in China, we find that in rural areas human capital externalities have a discouraging effect on rural–urban migration—everything else being the same, a rural resident from a county rich in human capital is less likely to migrate to the city than his counterpart from another county poor in human capital endowment. We also find some evidence that human capital exerts positive external effects on the likelihood for a rural resident to choose off-farm employment and on labor income in the rural sector. These results are robust to alternative model specifications and estimation methods. One important policy implication from this study is that expanding education opportunities in rural areas can help curtail rural–urban migration and therefore alleviate urban unemployment pressure.

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1. Introduction

Rural–urban migration is an essential part of economic development, through which human resources move from the agricultural sector where the marginal product of labor is low or zero to the urban industrial sector where the marginal product of labor is high. While rural–urban migration helps improve the efficiency of sectoral allocation of resources, it also exacerbates, to a large extent, the widespread problem of urban unemployment in developing countries. This is especially true in China, as reforms of state-owned enterprises have resulted in massive layoffs of redundant workers in the city. According to the basic Harris–Todaro model,¹ urban job creation programs are ineffective in solving the unemployment problem because they raise the expected payoffs to rural migrants and, as a result, lead to a higher, rather than lower, level of urban unemployment.² One solution is to control rural–urban migration through administrative means. A policy tool that China relied upon is the *hukou* or household registration system coupled with a ration system on staple food in urban areas. Although that policy has successfully warded off unplanned migrations, it has been criticized as an unfair development policy that promotes industrial growth at the expense of the agricultural sector and urban development at the expense of the rural sector. It also is contrary to the principle of economic efficiency that requires the free movement of human resources across different regions and sectors. From a rural development

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¹ See, Todaro (1969) and Harris and Todaro (1970). Lucas (2004) offers an alternative explanation on why rural–urban migration persists despite of poor employment prospects in the urban sector. He emphasizes the role of cities as places in which new migrants can accumulate the skills required by modern production technologies, which raise the life-time earnings of migrants.

² Rural migrants are also blamed for being a strain on urban infrastructures, such as transportation, healthcare and education systems, and for rising crimes and other social problems in urban areas.

perspective, rural–urban migration may be harmful because it depletes the rural sector of valuable human capital as the young and better-educated rural residents are among the first to migrate to the city.³ There is a need to identify rural–urban migration policies that can strike a balance among three objectives: efficiency, urban unemployment, and rural development.

A substantial amount of research has been devoted to the understanding of the determinants of the migration decision.⁴ Lall, Selod, and Shalizi (2006) contains a comprehensive survey of the empirical literature, which finds that rural–urban income gaps, education, gender, family composition are among the factors that affect the migration decision in the way predicted by various theories of migration. Numerous studies examining the Chinese experience also offer corroborating evidence. Notable studies include, among others, Zhao (1999a,b), Hare (1999), De Brauw, Huang, Rozelle, Zhang, and Zhang (2002), and Giles and Mu (2005).

The present study makes a contribution to the vast literature on rural–urban migration. Our approach differs from the existing literature by focusing on human capital externalities in the rural sector. This allows us to gain new insights into the general role of human capital in influencing the migration decision and to derive policy recommendations that help curtail rural–urban migration and hence alleviate urban unemployment pressure.

We argue that human capital at the aggregate level can act as an inhibitor to migration. The economic intuition is straightforward. The migration decision of an individual is made by weighing the expected income or utility of migration against that of no migration. Migration occurs when the net gain is positive, and any factor that reduces this net gain would have a dissuading effect on migration on the margin. Our argument is that if human capital can raise, through its external effect, the payoffs from rural activities, an increase in the overall level of educational attainment of the rural population would make staying in the rural sector a more attractive choice (at least for some potential migrants) relative to migrating to the city. This would be particularly true if there are plenty of local off-farm employment opportunities, in which human capital externalities are more important than in on-farm productions. Thus, higher local human capital endowment would make migration a less attractive option relative to staying in the rural sector, and on-farm activities less attractive than local off-farm employment.

The main finding of the paper, based on an econometric analysis of a well-known household survey in China, is that in rural areas human capital externalities have a discouraging effect on rural–urban migration. That is, everything else being the same, a rural resident from a county rich in human capital is less likely to migrate to the city than his counterpart from another county poor in human capital endowment. This result is obtained from both binomial and multinomial logit regression analyses. While in the former rural residents are assumed to choose between migrating to the city and staying in the rural sector, in the multinomial logit model they are faced with three employment choices: migrate to and work in the city, work in the rural off-farm sector, and work in the rural on-farm sector. The multinomial logit regressions also suggest that human capital exerts a positive external effect on the likelihood for a rural resident to choose local off-farm employment. Corroborating with this result, we find a positive relationship between labor income in the rural sector and local human capital endowment. All of these results are robust to alternative model specifications and estimation methods. One important policy implication of our findings is that expanding education opportunities in rural areas can be a viable strategy to curtail rural–urban migration and hence help alleviate urban unemployment pressure—quite contrary to the inference drawn by some previous studies that improving education of the rural population would hasten rural–urban migration. This policy recommendation accords well with China's official policy as reflected in the motto “leaving the farmland without leaving the village.”

The rest of the paper is organized as follows. We briefly discuss the data in Section 2 and econometric methodology in Section 3. Section 4 presents the estimation results. We offer some concluding remarks in the last section.

2. Data

The data used in this study come from the Chinese Household Income Project 1995, also known as CHIP95. The survey contains two distinct samples of the urban and rural populations of China selected from substantially larger samples drawn by the National Bureau of Statistics of China and cover cities and towns of various sizes from different regions. In the rural sample, which we use in this study, eighteen provinces and one municipality were chosen to represent the whole country. These are Liaoning, Hebei, Jilin, and Shanxi in the north, Shandong, Jiangsu, Zhejiang, and Guangdong as eastern coastal provinces, Anhui, Henan, Hubei, and Hunan from the interior, Gansu, Shanxi, Sichuan, Guizhou, Jiangxi, and Yunnan in the west, and Beijing as a representative of then three large province-level municipalities. The rural sample consists of two parts. The first contains information on the respondent's age, gender, education, employment status, ownership sector of employment, economic sector of employment, and annual labor income. It also contains information on whether an individual went to work or look for work in the city. The second part of the rural sample contains information on household characteristics, such as landholdings, household composition, incomes, expenditures, and assets. It also contains some information about the village that the household resides, such as whether the village is located in the suburb of a large- or medium-size city, the type of terrain and availability of telephone services. In this study, we focus on rural individuals who were between 16 and 60 years of age and reported complete information on schooling, age, gender, and employment. Full-time students, pre-school children, and individuals who were retired or disabled are excluded from the sample. This results in a sample of 21,451 individuals.

³ It is conceivable that rural–urban migration may benefit rural development if migration becomes a source of remittances to rural areas, especially if the remittance is used in education and productive investments.

⁴ There are several comprehensive reviews of the theoretical literature. See, e.g., Hare (1999) and Lall et al. (2006). To avoid unnecessary repetition, we do not attempt to provide one of our own in this paper.

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