

MIGRANT CHILDREN OR LEFT-BEHIND CHILDREN: THE DILEMMA OF RURAL MIGRANT PARENTS IN CHINA*

Sophie Xuefei Wang[†]

China Center for Human Capital and Labor Market,
Central University of Finance and Economics, Beijing, China

ABSTRACT

Rural to urban migration has become a prominent phenomenon in China since the 1990s. It is estimated that more than 10 percent of China's population left their villages and migrated to cities for work. A majority of them are parents of young children. They face the decision on whether they should bring their children with them into cities. The aim of this review is to examine the factors that affect this decision and its consequences on the welfare of those children. It first introduces the related policies and institutional settings which place rural migrants in this dilemma. The article then analyzes the tradeoff between migration and leaving behind by reviewing the literature and examining the effects of parental migration on various aspects of left behind children and migrant children, including school enrollment, school continuation, academic performance, and educational aspiration. Finally, the review

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[†] Corresponding Author's E-mail: sophiewang2004@gmail.com

explores the factors determining whether rural migrants bring their children with them into cities. Implications of the research findings for theory, practice, policy and future research are discussed.

Keywords: migrant children, left-behind children, rural migrant; education, China

INTRODUCTION

The past two decades witnessed a massive influx of rural migrants as the *hukou* system was under relaxation in the mid-1990s. In 2000, the number of rural migrants was estimated to be 78 million, and it nearly doubled to 153 million in 2010, accounting for 12 percent of the total population in China. As a result of this migration, 61 million children under the age of 18 were left behind in rural China in 2010, accounting for 37.7 percent of all the rural children in China (Duan et al. 2013). Among them, 37.6 million were of school age (ages 6–17). And another 28.77 million rural children migrated with their parents into cities, approximately 75 percent of which were of school age (Duan et al. 2013).

In the literature, typically, a rural left-behind child in China is defined as a child with rural *hukou* and one or both of whose parents migrated to urban area for work, and a rural migrant child is defined as a child with rural *hukou* who has migrated with his/her parent(s) into urban area. These left-behind children are vulnerable without the care and protection of their migrant parents, and they are more susceptible to being victims of crimes, malnutrition, psychological problems, accidents, and injuries. They are also prone to have less schooling, develop unhealthy habits, commit suicide, and conduct asocial and criminal activities (Chen et al., 2017; de Brauw and Mu 2011; Fu et al., 2017; Gao et al. 2010; Hu, 2012; Hu, 2018; Hu et al., 2018; Lee, 2011; Lee and Park, 2010; Lei et al., 2018; Li et al., 2017; Liang et al., 2017; Liu et al., 2009; Meyerhoefer and Chen, 2011; Shi et al., 2016; Su et al., 2013; Wang, 2014; Wang, 2018; Wen and Lin, 2012; Wu et al., 2016; Xiang, 2007; Yang et al., 2010; Yang et al., 2016;

Zhan et al., 2014; Zhang et al., 2016; Zhao et al., 2018; Zhao and Yu, 2016). The situation is no better for migrant children. Evidence shows that they are less likely to have high educational aspiration and to go to high school and therefore college, and they are more likely to have poor academic performance, to have mental health problems, to feel lonely and discriminated against, to engage in child labor, to have poor health and motor impairment, and to receive less vaccination (Chen and Feng, 2013; Chen et al., 2013; Chen et al., 2014; Gao et al., 2015; Gong et al., 2015; Guo et al., 2015; Han et al., 2014; Hu et al., 2013; Huang et al., 2018; Jin et al., 2016; Koo, 2012; Lee, 2011; Liang and Chen, 2007; Liu et al., 2015; Lu et al., 2018; Lu and Zhou, 2013; Ma et al., 2018; Meng and Yamauchi, 2017; Meyerhoefer and Chen, 2011; Song et al., 2018; Wang et al., 2017; Wu and Zhang, 2015; Wu and Zhang, 2017; Xu et al., 2017; Zhang et al., 2014; Zhang et al., 2015; Zhao et al., 2014; Zhou et al., 2014).

Parents migrate for work often in the hope of being able to give their children better education, a better life and a better future. This paper tries to provide parents, social workers, school administration and policy makers a reality check by reviewing the relevant literature. I will focus on education as it is one of the most important measures of wellbeing of a child and it is the main form of human capital investment which will fundamentally affect the child's future. With regard to human capital accumulation, not only the quantity of schooling matters, but the quality of education also matters. Therefore, in addition to examining the gaps in enrollment and years of schooling between children of rural migrants and the other children, I will also investigate the difference in academic performance.

The purpose of this paper is three-folded. First, it explains the mechanism of the effect of parental migration on education of left-behind children and migrant children as it helps in understanding the consequences. Second, it tries to show the impacts on the children following parents' migration by reviewing the related empirical studies. Third, it explains the factors that affect parents' decision on whether to bring their children with them into cities. The findings contribute to understanding of the education and welfare of children of rural migrants in

China and the differential impacts of parental migration on left-behind children and migrant children, respectively. Also, the findings may provide informative comparison for school administration and government policy makers to make more suitable regulations and policies that can potentially benefit a large number of children of rural migrants in China.

The rest of this paper is organized as follows. Section 2 reviews the background related to rural-urban migration and the education system in China. Section 3 presents the theories and mechanism of how parental migration affect children's education. Section 4 review the relevant empirical findings. And section 5 concludes.

INSTITUTIONAL BACKGROUND

The *Hukou* System and Rural-Urban Migration

China's *hukou* system (household registration system) was formally set up in 1958. Its main function was to control internal migration, in order to promote heavy industry development in urban areas and to manage certain classes of "targeted people" to ensure social stability (Wang, 2005; Cai and Wang, 2008). The system classified people as rural or urban residents, keeping the rural labor force in agricultural sectors and limiting the number of people in cities who had access to low-priced food, guaranteed non-agricultural employment, basic social security and subsidized public services (Cai and Wang, 2008). The *hukou* system acted as a legal restriction on internal migration which was strictly enforced until the economic reform beginning in 1978. The reforms made distribution and control over migration more flexible but did not fundamentally change the *hukou* system, and various barriers remain. In addition, rural migrants without local *hukou* are not entitled to social benefits such as subsidized housing, public education and government welfare payments (Richburg, 2010).

Loosening of legal mobility constraints has dramatically increased rural-urban migration flows. The number of rural migrants doubled

between the late 1980s and the mid-1990s, and it tripled between 1995 and 2000 (Sicular and Zhao, 2004). In 2015, there were 277.5 million migrant workers in China, accounting for about 40 percent of the urban labor force.

Education System

China operates a 6–3–3 system of primary and secondary education with some variations; that is six years of primary school, three years of junior middle school and another three years of senior high school. According to the 1986 Compulsory Education Law, children should attend school when they reach the age of six, and they are entitled to nine years of free education; these nine years of education, from primary to junior middle school, are compulsory. Thus, children aged 6 to 12 should be enrolled in primary school, children aged 12 to 15 should be in junior middle school, and children aged 15 to 18 will be in senior high school or vocational school.

Basic education is mainly provided by public schools in China, and the central government has decentralized educational finance for basic education to local governments and communities since the 1980s (World Bank, 1988, 1989). As a result of the reform, the central government is only responsible for paying teachers on the government payroll, and other expenditures have to be covered by local government budget (Cheng, 1994). As the reform tightened the link between school resources and local economic conditions, urban public schools in big cities have much better resources and quality than rural schools in less developed areas. In addition, admitting migrant children to urban public schools will exert extra financial burden to the local government. Normally, public schools in cities admit students based on two criteria: (1) students must reside within the local school district; and (2) students must be registered in the school district. Accordingly, migrant students would be formally excluded from the public school system.

In the mid-1990s, as the number of migrant children increased, getting migrant children into schools became a pressing problem. The central

government issued regulations regarding admitting migrant students to public schools. They stipulated strict conditions on migrant children's enrollment in urban public schools and migrant children had to pay extra school fees. The amount of these fees varied considerably across cities and by time; it also depended on the quality of public schools. It is reported that migrant children were charged 1200 *yuan* (\$145) a year for public primary school and 2000 *yuan* (\$240) a year for junior high school in Beijing in 2004. Given that the wage of a typical migrant worker was no more than 500 *yuan* (\$60) a month, the extra school fees for migrant children were barely affordable for migrant families.

In the early 2000s, the central government revised the regulations and emphasized the responsibility of local municipal governments in providing equal education to migrant children without charging extra fees. The new Compulsory Education Law was announced in 2006 which also stipulated that compulsory education should be free of tuition and incidental fees and that migrant children are entitled to equal rights of education in the place of residence. However, the specific measures guaranteeing migrant children's equal rights to education are up to the local governments of provinces and municipalities, and various barriers remain. On the one hand, several official documents are required for migrant children to enter urban public schools. The key documents demanded for enrolling migrant children in public schools in large cities are documents of temporary residence, housing purchase or rental, and parents' employment. However, there is little chance for many migrant families to provide all the documents needed for their children to be accepted in urban public schools. For example, in many cities, migrants must present additional documents and meet certain requirements to obtain temporary residences. On the other hand, each urban public school can always deny the free admission of a migrant child on the basis of no available place, and paying an extra fees remains a golden key to open the door of public education for migrant children in cities. Therefore, even after the policies changed, urban public schools are, by no means, fully open to all migrant children.

Because the public education system failed to cover all migrant children in cities, privately run, tuition-funded, for-profit migrant schools

began to spring up in the 1990s (Ma et al., 2008). With tuition fees set at levels more reasonable than those charged by public schools for migrant students, migrant schools admit migrant children regardless of their *hukou* status, and a large proportion of migrant children who cannot be enrolled in urban public schools enter migrant schools. For example, it is estimated that 70 percent migrant children attend migrant schools in Beijing. However, private migrant schools are characterized as unlicensed and unregulated schools with poor facilities, low-quality teachers and broken curricula. Thus, the quality of education those schools provided is a major concern.

Lastly, the education system requires all students who apply for college admission to register for the college entrance exam in the province where their *hukou* is registered. And since schools in different provinces have different curricula and use different textbooks, in order to have a better chance of getting into college, children of migrant households have to stay or return to their home province for school.

THEORIES

The Effects of Parental Migration on the Education of Left-Behind Children

The effects of parental migration on the education of left-behind children work through several channels. First, parental absence as a result of migration results in the lack of parental care and supervision, and therefore, leads to lower school attainment and poor academic performance. Second, parental migration may increase household income which reduces child labor and also enables more resources to be invested in a child's human capital, which can increase school attendance and academic performance. Third, for older children, parental migration may increase the children's migration aspiration, and therefore, changes their educational aspirations.

Wang (2014) presents a simple model of optimal schooling decision of a child when parent migrates. The model explains how the three aforementioned channels work to affect the educational outcomes of left-behind children. Here, I present the model with minor revisions. In her model, a rural household consists of a parent/adult and a child. The parent is altruistic toward her child, and her utility is defined over the household's current consumption, C , and the child's future consumption measured by the child's future income, Y .

$$U^p = u^p(C) + \delta^p v^p(Y) \quad (1)$$

where terms with superscript p refer to variables of the parent, and δ^p is a preference parameter measuring the degree of parental altruism toward the child. Adult has two income sources: earnings, E , and transfers from her parent, X .

$$Y = E + X \quad (2)$$

Earnings, E , are a function of human capital (H) and job opportunity (O).

$$E = E(H, O) \quad (3)$$

where $E'_i(\cdot) > 0$, $E''_i(\cdot) \leq 0$, and $E''_{ij}(\cdot) > 0$, $\forall i, j = H, O$; $i \neq j$. Job opportunity, O , is better in the city than in the rural area, and thus, it is an increasing function of migration, $O = O(M)$. Assume M is a continuous variable between zero and one; it measures the degree (or length) of absence. Assume that adult will migrate if her income difference between the migrant origin and the migration destination is larger than her cost of migration.

Human capital is produced through a function of the effectiveness of parental involvement (PI), own ability (A), and schooling (S), and the function has the property of diminishing marginal returns.

$$H = H(PI, A, S) \quad (4)$$

where $H'_i(\cdot) > 0$, $H''_i(\cdot) < 0$, and $H''_{ij}(\cdot) > 0, \forall i, j = PI, A, S, i \neq j$. The effectiveness of parental involvement is a function of the parent's human capital, socioeconomic status (income), and migratory status.

$$PI = PI(H^p, E^p(H^p, O^p(M^p)) + X^p)(1 - M^p) \quad (5)$$

As suggested by the education literature, the most important form of parental involvement that has the strongest positive effect on children's educational achievement and behavior is parental interest in and aspirations for the child's education (See Desforges and Abouchaar (2003) for a review). It is mainly manifested in discussion of the child's school performance and schooling choices and encouraging the child to work hard; thus, effective parental involvement cannot be separated from parental physical presence (Catsambis, 2001; Feinstein and Symons, 1999; George and Kaplan, 1998; Gonzalez-Pienda et al., 2002; McNeal, 1999; McNeal, 2001; Sacker et al., 2002; Singh et al., 1995; Sui-Chu and Willms, 1996).

The child has total time, T , and it is divided between working at a given wage of w and schooling S . w can also be interpreted as the opportunity cost of schooling. Assume that the household is credit constrained. Thus, the parent's maximization problem is

$$\max_{C, S, X} U^p = u^p(C) + \delta^p v^p(E + X) \quad (6)$$

subject to the household's budget constraint,

$$C + \gamma^p X = Y^p + w(T - S) \quad (7)$$

where Y^p is the income of the parent, w is the opportunity cost of the child's time spent on schooling (S), and γ^p is the parent's discount factor. The parent maximizes her utility by choosing the optimal C , S and X . The

optimal schooling of the child is determined by the equation below which is generated from three first order condition equations.

$$w = \gamma^p H'_S(PI, A, S) E'_H[H(PI, A, S), O(M)] \quad (8)$$

where $PI = PI(H^p, E^p(H^p, O^p(M^p)) + X^p)(1 - M^p)$, $H'_S(\cdot)$ is the first-order derivative of human capital with respect to schooling (S), and $E'_H(\cdot)$ is the first-order derivative of earnings with respect to human capital (H). The LHS of equation (8) can be interpreted as the marginal cost of schooling which is the constant opportunity cost, and the RHS of equation (8) can be interpreted as the marginal benefit of schooling which is decreasing in schooling because of diminishing marginal return of human capital production.

According to this model, the key factors which affect schooling S are parental human capital H^p , the child's ability A , parental migratory status M^p , family wealth X^p , the child's migratory aspiration M , the parent's discount factor γ^p , and the opportunity cost of schooling w .

$$S^* = S(H^p, A, M^p, X^p, M, \gamma^p, w) \quad (9)$$

Schooling increases in H^p , X^p , A , M and γ^p , and it decreases in the opportunity cost of schooling w . However, the total effect of parental migration M^p on schooling is ambiguous. First, an increase in M^p decreases parental involvement PI directly, which tends to decrease schooling. Second, an increase in M^p increases the parent's earnings E^p and parental involvement PI indirectly, which tends to increase schooling. Third, if a migrant parent can provide information and support in the migration destination and potentially lower the child's migration cost, parent's migration may increase the child's aspiration to migrate (M) and thus affect her schooling. Yet, the direction of this effect is unclear. If the returns to schooling are higher in the migration destination than the migration origin, this aspiration effect will be positive. Otherwise, it may decrease schooling.

The Effects of Parental Migration on the Education of Migrant Children

Parental migration may affect the education of migrant children through four channels. The first three channels have counterparts in the effects of parental migration on the left-behind children, and the fourth channel is due to the rural-urban inequality and the institutional barriers to rural migrants. First, though parental migration does not separate the parents from migrant children, the relocation brings the children into a new environment, which can exert an adverse effect on the children. According to psychological theories, migrants often lose their social networks and family support, and adapting to new customs and expectations in the absence of sufficient psychological, social and material resources imposes acculturation stress on both migrant parents and migrant children, which can harm their psychological wellbeing (Berry et al., 2006). The acculturation stress can affect children directly, and it can also indirectly affect children through its effect on the migrant parents as acculturation stress can lead to poor parenting. Both the direct and indirect effects are negative on the educational outcomes of the migrant children.

Second, parents' earnings are higher in cities than in the countryside, but given the high living costs in cities, the living condition and educational investment of migrant children may not be better than those of other rural children. Therefore, the income effect is ambiguous. In addition, in labor economics, rural migrants are commonly viewed as unskilled workers who do low skilled work and get paid at lower wages than skilled workers. Thus, migrant children are at disadvantage in terms of family socioeconomic status when comparing to urban children.

Third, the migration experience will increase the migrant children's migration aspiration which makes them want to settle down in the cities when they grow up. The sign of the aspiration effect depends on the returns to education. Because of the diminishing returns to education, this aspiration effect is probably negative.

Fourth, for migrant children, rural-urban migration means moving to new schools, or no school in some cases. Due to the difference in government expenditure on rural and urban education, the public schools in big cities are

much better than those in poor rural areas. However, there are institutional and administrative barriers for rural migrants to enroll their children in urban public schools, and the alternative is urban migrant schools. Migrant schools are low-quality private schools for children of rural migrants. The lack of regulation, poor facilities and less qualified teachers make the quality of migrant schools even worse than that of rural public schools. Together, the school quality effect is positive if the migrant child is enrolled in an urban public school, and it is negative if he/she is enrolled in a migrant school.

EMPIRICAL EVIDENCE

The Effects of Parental Migration on the Education of Left-Behind Children

School Enrollment and School Continuation

There is empirical evidence that parental migration negatively affect children's school enrollment and school continuation (Hu, 2012; Lee, 2011; Meyerhoefer and Chen, 2011; Wang, 2014; Wang, 2018). And it seems that parental migration affects teenagers more than younger children in terms of school enrollment and school continuation. Studies also find heterogeneous effect by gender of the children and heterogeneous effects among mother migration, father migration and both parent migration. Utilizing instrumental variables method on survey data, Wang (2014) finds that parental migration has a negative effect on the school enrollment of children aged between 6 and 17. The negative effect is robustly significant in the cases of father migration and both parent migration, and the effect is larger on the school enrollment of boys than on girls'. In addition, for boys, the negative effect of parental migration starts at the very beginning of compulsory educational stage, and the disruptive effect persists throughout all primary and secondary educational stages. But for girls, parental migration only has a significant effect at the secondary school stage. Using the same data, Wang (2018) confirms that paternal migration has a

negative effect on the school enrollment of their left-behind children. And, she also finds that paternal migration has sizable cumulative effects: the longer the father had migrated, the less likely the children were enrolled in school. Using data from the 2006 China Health and Nutrition Survey (CHNS), Lee (2011) finds that left-behind children have lower school enrollment, comparing to other rural children. And this difference is mainly due to the lower years of schooling of left-behind teenagers aged between 15 and 18 and in the case of both parent migration. Using data from the 2006 Chinese General Social Survey (CGSS), Hu (2012) finds that parental migration has a negative effect on high school attendance for left-behind teenagers aged between 17 and 19, and this effect is especially prominent for girls and for children from poor households. He also finds positive income effect from remittances which is significant for girls, but it is dominated by the negative family disruptive effect. Using data from the 1995 China Living Standards Survey (CLSS), Meyerhoefer and Chen (2011) find that parental migration has a negative effect on the educational progress of the left-behind children in terms of lagged grade level, and the effect is significant on girls, but not on boys.

There are also a few studies which fail to find significant effect of parental migration on children's school enrollment (Lu, 2012; Lu et al., 2016). But interpreting those results needs caution, as both Lu (2012) and Lu et al. (2016) use data from the CHNS, and samples from the CHNS is not national representative in studying left-behind children. Using panel data from the 2000-2006 CHNS, Lu (2012) finds that parental migration has no significant effect on the years of schooling of left-behind children. And the effect is insignificant in the cases of mother migration, father migration and both parent migration. Similarly, using data from the 2006 and 2009 CHNS, Lu et al. (2016) find that there is no significant difference in school enrollment and years of schooling between left-behind children and other rural children aged between 6 and 18. But one needs to be aware of that the definition of left-behind children in Lu et al. (2016) is different from that in Lee (2011) and Lu (2012), though all three studies use data from the CHNS. Lu et al. (2016) define rural left-behind children as rural children both of whose parents had migrated, and rural children refers to

those who were living in rural areas with one or both of their parents. Therefore, those rural children who were living with one parent because the other parent had migrated were defined as rural children, not left-behind children, in Lu et al. (2016), but were defined as left-behind children in Lee (2011) and Lu (2012). The discrepancy in the definition of left-behind children may affect the results, to some extent.

Academic Performance

There is no consensus on how parental migration affects left-behind children's academic performance in rural China. A great majority of related studies find that parental migration had significantly negative effects on the academic performance of left-behind children (Li et al., 2017; Meng and Yamauchi, 2017; Song et al., 2018; Wu and Zhang, 2017; Zhang et al., 2014; Zhao et al., 2014; Zhou et al., 2014). For example, utilizing instrumental variable method on data from the Rural-Urban Migration Survey in China (RUMiC), Meng and Yamauchi (2017) find a sizable negative effect of parental migration on the Chinese and mathematics test scores of children, especially boys. They measure parental migration/absence using the share of children's lifetime during which parents were away from home, and they find that parental migration has sizable cumulative effects. Zhao et al. (2014) find that parental migration has a significantly negative effect on the academic performance of left-behind children measured by mathematics test scores. The negative effect is significant in both cases of father migration and mother migration, and the effect of maternal migration has larger magnitude than that of paternal migration. Zhou et al. (2014) find that parental migration has a significantly negative effect on the academic performance of left-behind children measured by Chinese and mathematics test scores and that the negative effect is only significant for boys and only in the case of both parent migration. Similar to Meng and Yamauchi (2017), Zhou et al. (2014) also find that longer migratory durations of the migrant parents are associated with poorer academic performance of their left-behind children. Applying difference-in-differences approach on panel data collected by the authors, Li et al. (2017) find that parental migration has a significantly

negative effect on the academic performance of left-behind children measured by mathematics test scores. The effect is significant in the cases of mother migration and both parent migration, but it is insignificant in the case of father migration.

Contrarily, Bai et al. (2018) and Chen et al. (2009) find that parental migration had significant and positive effects on the academic performance of left-behind children. Bai et al. (2018) find that parental migration has significant and positive impacts on the academic performance of left-behind children measured by standardized English test scores. The effect is prominent in the cases of father migration and both parent migration. In addition, the effect is significant for both girls and boys, and it is greater for poorer performing students. Chen et al. (2009) find that parental migration (a dummy variable for any parent migrated) has no significant effect on the academic performance of left-behind children measured by Chinese and mathematics test scores. But when examining the heterogeneous effect, the effect of paternal migration is significantly positive, and the effect of maternal migration and both parent migration are not significant. Notice that the main investigators in both studies have overlap, and the unorthodox results may express the school of thought of these authors. In addition, one caveat with these two studies is that since both studies use the same identification strategies on the data collected in a province in western China by the authors, the results may have limitations in terms of external validity.

Identification is an important issue in the field, because of possible endogeneity problem caused by omitted variables, selection problems and reverse causality. Instrumental variables method and propensity score matching are the most popular identification techniques used on cross-sectional data, and difference-in-differences model is a popular choice on panel data in the field. For example, Meng and Yamauchi (2017) and Zhao et al. (2014) both adopt instrumental variable method, propensity score matching approach is used in Bai et al. (2018), Chen et al. (2009) and Zhou et al. (2014), and Bai et al. (2018), Chen et al. (2009) and Li et al. (2017) utilize difference-in-differences technique on panel data.

The Effects of Migration on the Education of Migrant Children

School Enrollment and School Continuation

Studies commonly examine the effect of migration on the school enrollment of migrant children by comparing them with other children from their original rural areas and children in their destination urban areas. There is consensus that rural children including rural migrant children fare worse than urban native children in terms of school enrollment and years of schooling. However, whether there is significant difference between rural migrant children and other rural children is debatable. Liang and Chen (2007) and Wu and Zhang (2015) both use census data and find similar worrisome results regarding school enrollment of migrant children. And both studies find that longer duration of residing in the migration destination helps to offset the disadvantage. However, Zhang (2017) and Lu et al. (2016) using other data sets fail to find significant difference in educational attainment between migrant children from rural origin and other rural children in terms of school enrollment and years of schooling.

Using data from the 1995 China 1 percent Population Sample Survey, Liang and Chen (2007) find that temporary migrant children in Guangdong province have lower school enrollment rate than both the local urban children and the non-migrant children at the place of origin and that temporary migrant children with less than one year of residence in cities suffer the most. For temporary migrant children from rural origin who had migrated within Guangdong province, the enrollment disadvantage comparing to the non-migrant rural children at the place of origin diminished after 1-5 years of residency in the migration destination, but the enrollment disparity comparing to the urban natives did not disappear even after years of residency in cities. Using data from the Chinese population censuses in 1990 and 2000 and mini-census in 2005, Wu and Zhang (2015) find that migrant children from rural origin fare significantly worse than non-migrant children in both origins and destinations and that they are even less likely than left-behind children to be enrolled in school. The likelihood of being enrolled in school increased for rural migrant children as they spent more time in the migration destinations.

Using data from the 2008 RUMiC, Zhang (2017) finds that there is no significant difference in educational attainment between migrant children from rural origin and other rural children in terms of school enrollment and years of schooling, but both groups fare worse than their urban counterpart. When separating temporary migrants from permanent migrants, he finds that permanent rural migrant children have higher enrollment rate and more years of schooling than the temporary ones, and that the former has similar performance as the urban native children, while the latter has similar performance as other rural children.

Using data from the 2006 and 2009 CHNS, Lu et al. (2016) find that there is no significant difference in school enrollment between migrant children and other rural children including left-behind children and rural children from non-migrant households and that the total years of schooling is even higher for migrant children than other rural children. Therefore, migrant children are not at disadvantage comparing to other children from their original rural areas, in terms of school enrollment and total years of schooling. But all rural children including migrant children, left-behind children and rural children from non-migrant households are at disadvantage comparing to urban children. One caveat with studies using the CHNS is that the sample is not national representative: the proportions of left-behind and migrant children are both significantly lower than the national averages, and there is also under-sampling of migrant children in private migrant schools. These disparities may compromise the external validity of their results. In addition, as aforementioned, Lu et al. (2016) define rural left-behind children differently from other studies. In their study, rural left-behind children only refer to rural children both of whose parents had migrated. And therefore, those rural children who were living with one parent because the other parent had migrated were defined as rural children, not left-behind children, in Lu et al. (2016), but were defined as left-behind children in other studies.

Academic Performance

When studying the academic performance of migrant children, it is important to identify the type of schools the children attend because of the

importance of the school quality effect. Using data from the 2010 China Family Panel Survey (CFPS) and the 2009 RUMiC, Zhang et al. (2015) cannot tell migrant children in urban public schools from those in migrant schools. Though they find that there is no significant difference in the academic performance measured by mathematics and word test scores between rural migrant children and other rural children, their findings will be sensitive to the composition of migrant students who are enrolled in urban public schools or in migrant schools in the sample. More importantly, the external validity of these findings depends critically on whether the sample they used are national representative in terms of migrant children and its composition.

In general, empirical studies, using self-collected survey data, find that migrant children in urban public schools outperform those in migrant schools (Chen and Feng, 2013; Gong et al., 2015; Liu et al., 2015; Lu and Zhou, 2013; Ma et al., 2018; Zhang et al., 2015). The former can catch up with the urban natives in class, while the latter is even lagging behind those rural children from their original rural areas (Wang et al., 2017a; Wang et al., 2017b). Applying multivariate regression on the same survey data, Wang et al. (2017a) and Wang et al. (2017b) find that fifth grade migrant children in private migrant schools in Shanghai and Suzhou were outperformed by their counterparts in public rural schools in Anhui in standardized mathematics test, even though both groups of children originated from the same prefectures in Anhui province. In addition to the poorer academic performance, migrant children also exhibit higher levels of learning anxiety than both rural children from non-migrant households and left-behind children in rural Anhui.

In addition, in contrast to the findings of positive correlation between the length of residence in urban areas and school enrollment in the previous subsection, evidence shows a negative correlation between the length of residence in urban areas and academic performance for migrant children enrolled in migrant schools (Lai et al., 2014; Liu et al., 2015). Lai et al. (2014) find that there is positive selection in deciding whether bring children to cities, and therefore migrant children in fourth grade in migrant schools in Beijing outperformed their rural counterparts in Shaanxi in

standardized mathematics test. But because of the poor quality of migrant schools, migrant students who have lived in Beijing for longer periods of time are lagging behind those who have lived in Beijing for shorter periods, and the gap in test scores diminished between migrant students and their rural counterparts over time. Liu et al. (2015) compare migrant children in grade 2 – 5 in urban public schools and those in private migrant schools in Shanghai and find that school type is a strong predictor for academic performance measured by standardized mathematics test scores. Liu et al. (2015) also find that there is a negative correlation between the length of residence in urban areas and academic performance for migrant children in migrant schools, but this is not true for those enrolled in urban public schools.

The striking divergence in the academic performance after being enrolled in different types of schools in cities not only reflect the inequality in school quality in those schools, but it is also a result of self-selection. Parents with higher aspiration for their children and better socioeconomic background choose to send their children to better urban public schools. Thus, if we do not control for the selection effect, we will tend to overestimate the school quality effect and over or under-estimate the effect of migration on the academic performance of migrant children.¹ But empirically, it is hard to separate the selection effect from the true effect of migration on migrant children. Literature in this area mostly try to do so by controlling for individual and family characteristics in multivariate regressions, with the only exception of Chen and Feng (2013). Chen and Feng (2013) use the parents' place of living as the instrumental variables for whether the migrant children were enrolled in urban public schools or migrant schools in Shanghai. They find that school type is the most important determinant of fourth graders' Chinese and mathematics test scores and that migrant children fare worse than the urban natives, especially those in private migrant schools.

¹ Whether the effect of migration on the academic performance of migrant children is overestimated or underestimated depends on whether the children are enrolled in urban public school or private migrant school.

Because of the high concentration of migrant children and migrant schools in metropolis in China, the data in these studies were mostly collected in Beijing and Shanghai. And the findings in these two cities are consistently alarming for migrant children, especially those in migrant schools (Chen and Feng, 2013; Gong et al., 2015; Lai et al., 2014; Liu et al., 2015; Lu and Zhou; 2013; Ma et al., 2018; Wang et al., 2017a; Wang et al., 2017b). Both using survey data from Shanghai, Chen and Feng (2013) and Liu et al. (2015) find that migrant children lag behind the urban natives in academic performance, especially those in private migrant schools. Both using survey data from Beijing, Lu and Zhou (2013) and Ma et al. (2018) find that migrant children enrolled in migrant schools have poorer academic performance than migrant children enrolled in urban public schools, while the latter do not perform significantly worse than the urban natives.

Educational Aspiration

Educational aspiration is an important determinant for educational attainment and academic performance. Several studies investigate the effect of migration on educational aspiration of migrant children directly. The general finding is that migrant children, especially those in migrant schools, have lower educational aspiration comparing to rural children from non-migrant households (Chen et al., 2013; Koo, 2012). Koo (2012) further shows that even migrant children who aspire to attain higher education are nonetheless deterred by discriminatory examination laws and limited resources. Their subjective outlook is derived from objective conditions and concrete experiences, and realistic assessments of their chances of achieving their aspirations leads them to have lower expectations.

Chen et al. (2013), Fang (2016) and Fang et al. (2016) find that the social support migrant children receive from family and school have direct and positive effects on migrant children's educational aspirations, and therefore can help to mitigate the adverse effect of migration on their educational aspiration. In addition, the correlation between family support and educational aspirations are stronger among elementary school students

than among middle school students (Fang, 2016). However, the bad news is that parents of rural migrant children provide less family educational support in nearly every aspect compared with parents of urban local children, and those enrolled in private migrant schools receive the least support from their parents (Jin et al., 2017; Li et al., 2010).

Factors Affecting the Decision of Bringing Children into Cities

Whether to bring a child with him/her into city is an important decision that every migrant parent has to make, as this decision may have profound consequences on the future of the child. But there are not many studies on this subject. Literature reports that there are financial barriers and institutional barriers in bringing a child, especially a school-age child, into cities. And family background and child's characteristics can partly affect the family's ability to overcome those barriers. Among them, parents' education, household income, migratory duration in the destination city, intra-province migration, being the only child, and the child's educational level are significant predictors for a child being brought into city (Fang and Shi, 2018; Xu et al., 2013). It is worth noticing that though parents' intra-province migration increase the chance of a child's being brought into cities and family union, but it is at the cost of lower household income comparing to others who migrated to the coastal regions (Xing and Wei, 2017). The fact that child's educational level is an important predictor for this migration decision reveals that the migrant parents take the child's education seriously and that they are aware of the barriers in accessing good education in cities and the fact that the enrollment rate of migrant children are lower as the educational level is higher starting from primary education. There is also possible gender bias in determining whom to bring into cities. Xu et al. (2013) find that in household with multiple children, boys are more likely to be brought into cities and a large number of girls are left behind.

CONCLUSION

Rural to urban migration has become a prominent phenomenon in China. In this process, whether bringing a child into city will have consequential implications for the child's wellbeing and his/her future. Because of the financial and institutional barriers, a considerable proportion of migrant children are enrolled in private migrant schools. Migrant children may benefit from parents' higher income in cities comparing to rural children from non-migrant households and enjoy parents' daily care unlike left-behind children. However, the poor quality migrant schools may do more harm to their educational attainment and human capital accumulation, which outweighs the benefits. Even though left-behind children still live in the familiar environment, they are deprived of parental daily care and supervision, which will have an adverse effect on them. But, support from grandparents and other family members may compensate at least partly for the negative effect of parental migration and absence, and if the remittance can be used on educational inputs, the total effect of parental migration may be trivial. Literature shows that parents' education, household income, migratory duration in the destination city, intra-province migration, being the only child, and the child's educational level all seem to be important predictors for the decision of whether to bring a child into city. Nevertheless, given the current institutional setup in China, only those who can be enrolled in urban public schools actually benefit from migration, and those who are enrolled in private migrant schools will even lag behind the rural children from non-migrant households and left-behind children over time.

There are certain limitations in the existing studies in this field which leave space for future research. First, the sample size are usually small, which may affect the statistical power of the estimations. Almost all of them have observations less than 5000, and a considerable number of studies have observations less than 1000. Second, it is hard to find national representative data. Census data are representative, but key variables measuring students' academic performance are missing in these data. Most existing large scale national representative survey data do not provide

matching information on migrants' origin and destination. And therefore, most studies on migrant children use self-collected data which are collected in a certain city or region. Thus, the findings derived from those data may lack external validity. Third, the most common identification strategies used in the field are instrumental variables method, propensity score matching and difference-in-differences approach. The instrumental variables method can be used to deal with omitted variable bias, selection problem and even measurement errors in the variables of interest, but the validity of some instrumental variables used in the literature are debatable. The propensity score matching approach can be used to solve selection problem, but it only accounts for observable characteristics. Because unobservable factors that affect assignment to treatment cannot be accounted for in the matching procedure, bias due to latent variables may remain after matching. Another issue with propensity score matching is that it requires large samples, with substantial overlap between treatment and control groups, but as aforementioned, studies in the field often have relatively small sample sizes. The difference-in-differences approach is a statistical technique that attempts to mimic an experimental design using observational data, and it can mitigate some endogeneity problem, but the method may still be subject to certain bias caused by reverse causality and omitted variable bias. In addition, the key assumption for the difference-in-differences strategy is that the outcome in treatment and control group would follow the same time trend in the absence of the treatment. The common trend assumption is difficult to verify, and studies in this field often take its validity for granted.

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