

## Population Migration and Children's School Enrollments in China, 1990-2005

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## ABSTRACT

This paper examines the impact of migration on children's educational well-being by analyzing the micro-data from Chinese population censuses in 1990 and 2000 and mini-census in 2005. We match school-age children (6-15 years old) with their parents, and examine how migration status and parents' absence affect children's school enrollment. We also compare migrant children with their peers in both origin and destination counties. Results show that cross-county and cross-provincial migrant children are less likely to be enrolled in school than local children and within-county migrant children, and that children of rural *hukou* status are particularly disadvantaged in school enrollment over the whole examined period. Migrant children fare significantly worse than non-migrant children in both origins and destinations, although their disadvantages in school attendance tend to diminish as they spend more time in destinations.

## INTRODUCTION

Market reforms and ensuing economic growth have brought about a surge in internal migration in China. In the pre-reform period, by virtue of the household registration system (*hukou*), the Chinese government set up an “invisible wall” to demarcate different places of residence, and especially to set the urban and rural sectors apart, with the aim of controlling population migration (Chan 1994). Economic reform in the past three decades has relaxed this administrative control. Consequently geographic mobility has risen and changing jobs has become much easier than before. Most existing literature on internal migration in China focuses on the demographic patterns of migration and the socioeconomic consequences for migrants and community development (e.g. Liang 2001; Liang and White 1996; Ma 2001; Yang and Guo 1996; Zhao 2000). Few studies pay attention to the well-being of migrant children (for exceptions, see Lee and Park 2010; Liang and Chen 2002; Lu and Zhou 2013; Yang and Ni 2012).

The nature of internal migration in China has changed since the 1990s. In the 1980s, migrants were largely young adult males who most likely did not stay for long. Since the early 1990s, however, marketization has become irreversible after Deng Xiaoping made his political tour to southern China to push for further reforms (Fan 2008). The resulting increase in regional economic inequality has triggered a large scale internal migration from inland to coastal provinces (Hao 2012). The size of the “floating population”, which consists of migrants who have resided at the place of destination for at least six months without local household registration status, reached 144 million in 2000 (Liang and Ma 2004) and 147 million in 2006 (National Bureau of Statistics in China 2006). In other words, about 11 percent of China's national population—predominantly rural farmers from inland areas—are on the move across counties for better economic opportunities in cities and coastal areas (deBrauw and Giles 2008). In 2003, rural migrants were estimated to account for 21 percent of the rural work force, and 43 percent of rural population lived in a household with at least one migrant (World Bank 2009). Rural migrants tend not only to move further and stay longer, but also to bring their spouses and children once they have secured employment and settled down in cities. The younger ones may even choose to start a family in the destination cities. Therefore, the migrant population in China is becoming increasingly heterogeneous.

Although control over internal migration has been relaxed, the Chinese household registration (*hukou*) system remains to be adapted to these changes. A sizable migrant population continues to be denied local (urban) permanent residency (Fan 2008; Solinger 1999), which means that they have no access to government subsidies and welfare. They also miss out on employment opportunities that are reserved for local urban permanent residents. The only jobs they are eligible to apply for are the temporary, undesirable, and menial ones (Wang, Zuo and Ruan 2002; Yang and Guo 1996; Roberts 1997). They must pay extra to go to the hospital, to rent an apartment, or to have their children attend local schools (Cai 2002, p215). Moreover, many city governments require migrants to hold several documents (three certificates and one card) for their stay to be considered legal (Zhao 1999).

Such discriminative policies against rural migrants have created special hurdles to socioeconomic attainment not only for the adult migrants themselves (Wu 2009; Zhang and Wu 2012), but also for their offspring, particularly in regard to the latter's access to educational opportunities (Liang and Chen 2007). In the 1990s, the city-born children of early migrants were beginning to reach school age. The new tidal wave of migration is also bringing to cities more school-age children migrating with their parents. Without local permanent registration status, migrant parents have to fork out extra to get their children into local schools, posing a huge burden on many migrant parents (Lu 2007). The provision of educational opportunities for migrant children has become an important issue concerning education policy makers and the public at large (Duan and Zhou 2005; Liang, Guo and Duan 2008; Yang and Fan 2012).

The institutional barriers and social exclusions associated with the *hukou* system have created extra costs to those migrants who wish to bring their families and children with them. According to a research report (World Bank 2009), less than 10 percent of rural migrant workers migrate with their entire family. Indeed, the rural education reform in the 1990s has imposed an extra economic burden on families and has driven some parents to migrate in search for more economic resources to support their children's education at home (Du, Park and Wang 2005; Wu 2010; Zheng and Gu 2012). Many children were left to stay with their grandparents at home while their parents were away for months on end. These children, known as *liushou ertong* (left-behind children) in Chinese, have been found to exhibit many psychological and schooling problems (Liang et. al 2008; Lu and Zhou 2013; Xiang 2007). According to the China Youth

Research Center (2006), one in four individuals aged 18 or under is either a migrant or a descendent of a migrant and the proportion is set to rise. A research report recently released by the All-China Women's Federation, based on the data from the 2010 population census, estimates that there are about 61,025,500 left-behind children. That is nearly 22 percent of the national total in the same age group. The number of migrant children has reached 35,810,000, and over 80 percent of them still hold rural *hukou* status (ACWF Research Team 2013).

Hence, population migration in China in the 1990s is associated with the emergence of two groups of children. The first is migrant children, who moved with their parents; the second is left-behind children, who stayed home (village) while their parents migrated for work. To what extent does migrant parents' absence affect children's school enrollment? To what extent does the *hukou* exclusion affect migrant children's school enrollment in the destinations? Existing literature tends to highlight the positive impact of migration on socioeconomic development in sending communities, either through remittance or return migration (Ma 1999, 2001; Démurgery and Li 2012). This suggests that parents' migration could have a positive effect on children's schooling by providing the necessary economic resources. But their absence could have a negative impact as a result of the loss of social capital and parental attention (Chang, Dong and MacPhail 2011; Ren and Treiman 2013).

Despite the importance of understanding the consequences of migration on children's education and well-being in China, systematic and rigorous empirical analyses of the issues remain relatively limited. First, most studies focus either on left-behind children or migrant children, rather than placing them in a broad context for comparisons (with Liang and Chen 2007 being the exception). Second, previous studies mainly employ either the census data for a province or the survey data on migration for selected regions; a systematic analysis of the situation at the national level has yet to emerge.<sup>1</sup> Finally, the existing literature is limited to providing only a snapshot analysis of how migration affects children's well-being, and neglects the historical trend in migration since the 1990s.

In this paper, we examine the rising educational inequality in the context of a massive population migration in China from 1990 to 2005. Specifically, we investigate how migration

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<sup>1</sup> Notwithstanding the release of the research report by the All-China Women's Federation (ACWF Research Team 2013), a multivariate analysis based on the micro-data from a population census remains to be seen.

status affects children's school enrollment, an issue that has fundamental implications for the country's sustainable development in the future. We restrict the analysis to school-age children between 6 to 15 years old, an age group required to receive 9-year compulsory education. Based on a sample of the micro-data from population censuses/mini-census in 1990, 2000 and 2005, we first document the trend in children's school enrollment and the variations among different groups of children in the context of educational expansion and the surge in population migration since the 1990s. We then conduct a series of multivariate analyses to investigate how children's migration status, *hukou* status, and living arrangement, as well as other demographic variables, affect their likelihood of school enrollment. We focus on how migration distance and timing affect the enrollment status of migrant children, and in particular, we compare the enrollment of migration children to their counterparts in both origins and destinations with some specific information available in the 2000 census and 2005 mini-census data.

## DATA AND VARIABLES

### Data

The data sets analyzed here are samples of the micro-data from population censuses in both 1990 and 2000, and of the mini-census in 2005 in China. We first extracted those children aged between 6 and 15, and then matched them with household heads (typically fathers, hereafter referred to as parents), based on the variable indicating the relationship of the respondent with the household head. As a result, we were able to obtain child-parent records, as well as household records including geographic location, household registration status, and children's migration status and living arrangement.

In all three census years, "migration status" is broadly defined as whether the individual resides in the place of *hukou* registration. If the individual has resided at the current address for over a year but is registered elsewhere, or if he/she has resided at the current address for less than a year but has been absent from the place of registration for over a year, then he/she is considered a migrant. This definition, together with information on migration distance and place of origin, facilitates the construction of variables indicating the different migration statuses of children in subsequent multivariate analyses.

The process of internal migration in China has become increasingly heterogeneous since 1990. While migration is literally defined based on the discrepancy between place of *hukou* registration place and place of residence, researchers typically refer to migration as a one-way process from villages to cities among agricultural *hukou* holders. As a matter of fact, migration exists also within urban areas and within rural areas. Table 1 presents the cell percentages in tabulations between *hukou* status (non-agricultural vs. agricultural), residence type (city, town vs. village) and migrant status (no vs. yes) from 1990 to 2005 for children aged between 6 and 15.

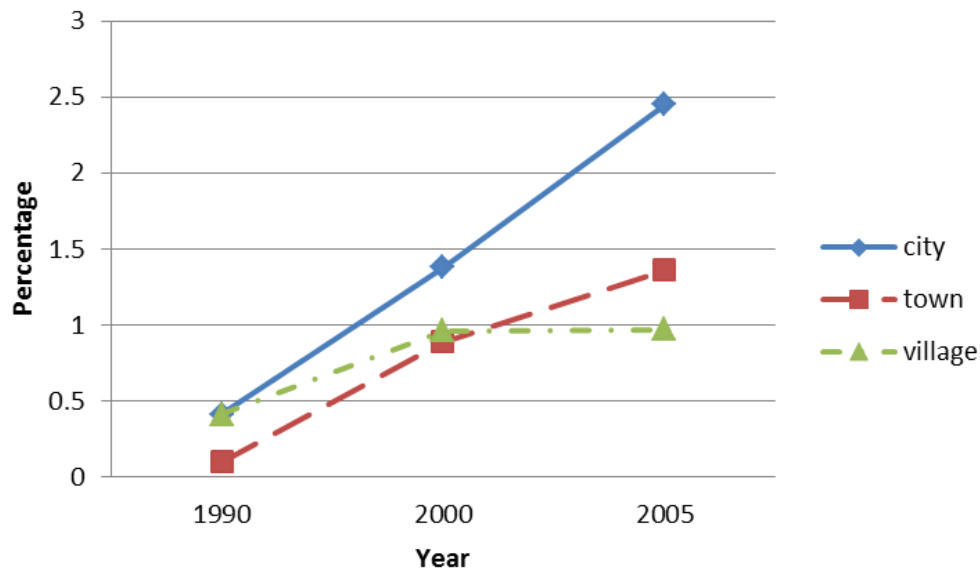
Results in Table 1 indicate the slow pace of *hukou* reform and the gradual relaxation of the *hukou* system in controlling population migration in China: children with non-agricultural *hukou* accounted for 14.58 percent of all children of the same age in 1990, 17.11 percent in 2000, and 20.85 percent in 2005. However, the percentage of children living in urban areas increased much faster: children living in urban areas accounted for 16.65 percent ( $9.99+0.50+5.99+0.17$ ) in 1990, 28.37 percent in 2000, and 39.64 in 2005. The increase was mainly driven by changes in the percentage of children living in towns from 1990 to 2000 and by changes in the percentage of children living in cities from 2000 to 2005.

Further examination of the migration status of the school-age children suggests that, as expected, migration is mainly an adults' game and most children aged 6-15 are non-migrants. In 1990 only 1.22 percent ( $0.50+0.17+0.55$ ) of children were migrants; the figure increased to 5.96 percent in 2000 and 7.68 percent in 2005. Not surprisingly, rural children accounted for the majority of migrant children: 75.4 percent ( $[(0.41+0.1+0.41)/1.22]$ ) in 1990, 54.2 percent in 2000, and 62.2 percent in 2005. More importantly, the percentage of rural children migrating to cities, though still small, multiplied from 0.41 percent in 1990 to 2.45 percent in 2005 from other cities and from 0.1 percent in 1990 to 1.36 percent in 2005 from towns. The temporal trend is plotted in Figure 1. Our key interest is in the educational consequence for both these migrant children and those left behind by their parents. Here, rural children refer to those with agricultural *hukou* status. Although some of them may come from urban areas, most are from rural areas given the fact that in most cases an agricultural *hukou* is registered in rural areas. In the following multivariate analyses, rural-urban migrant children refer to children from rural areas, and a dummy of *hukou* status is included in the analysis.

**Table 1. *Hukou*, Current Residence, and Migrant Status of Children Aged 6–15 in China, 1990-2005 (Cell Percentages)**

Current residence	Whether migrants	1990			2000			2005		
		<i>Hukou</i> status		Total	<i>Hukou</i> status		Total	<i>Hukou</i> status		Total
		Non-agricultural	Agricultural		Non-agricultural	Agricultural		Non-agricultural	Agricultural	
City	No	7.47	2.52	9.99	8.29	4.52	12.81	11.09	6.66	17.74
	Yes	0.09	0.41	0.50	1.96	1.38	3.34	2.29	2.45	4.74
Town	No	3.72	2.27	5.99	4.70	6.28	10.98	5.85	9.51	15.37
	Yes	0.06	0.10	0.17	0.35	0.89	1.24	0.43	1.36	1.79
Village	No	3.10	79.71	82.81	1.40	68.85	70.25	1.02	58.20	59.22
	Yes	0.14	0.41	0.55	0.42	0.96	1.38	0.17	0.97	1.15
Total		14.58	85.42	100.00	17.11	82.89	100.00	20.85	79.15	100
N		193,454			231,552			51,614		



**Figure 1. Trends in Rural Migrant Children to Different Destinations in China, 1990-2005**

## Variables

The dependent variable in this study is the school enrollment status of children aged between 6 and 15. It is coded as a dummy variable (1 if enrolled in school and 0 otherwise). Because children start schooling at slightly different ages, we remove from our sample the children aged 6 who are not enrolled in school and have had no education (in other words, they have not started school yet).

A main independent variable is children's migration status. We combine migration status with migration distance to come up with four types of children in urban areas: within-county migrants, cross-county (within-province) migrants, cross-province migrants, and urban non-migrants.<sup>2</sup> In multivariate analyses, they are coded as three dummy variables with urban non-migrant children as the reference group. In a further step, we adopt an origin-destination approach (Liang and Chen 2007) and restrict the sample to only those who migrate from rural to urban areas and compare them with non-migrant children in both their urban destinations and rural origins. Specifically, they include three groups: rural-urban migrant children, urban non-migrant children in the destinations where rural-urban migrant children are currently staying, and rural non-migrant children in the origins where migrant children came from. In multivariate analyses, they are coded as two dummy variables with rural-urban migrant children as the reference group. Since information on migration origin is available only from the 2000 census and the 2005 mini-census, this origin-destination comparison is made only in these two years.

<sup>2</sup>In this study, county refers to counties in rural areas and districts in urban areas.

In the 2000 census and the 2005 mini-census, the timing of migration was also sought by asking respondents a question on “arrival time at the current location” (Lavelly 2001; Liang and Ma 2004). This information enables us to analyze the impact of migration timing, another main independent variable, on children's school enrollments. Time-since-migration is coded as a categorical variable, and could be less than 1 year, 1-2 years, 2-3 years, 3-4 years, 4- 5 years, or more than 5 years. They are coded as five dummy variables with less than 1 year as reference. We do not use continuous values of time since migration because information on the exact year of migrants who had left their place of *hukou* registration for more than 5 years by 2000, and more than 6 years by 2005 is not available. *Hukou* type refers to whether one holds agricultural or non-agricultural *hukou*. It is also coded as a dummy variable (agricultural=1 and non-agricultural=0).

Previous research shows that family structure and living arrangements have important effect on school dropouts (Astone and McLanahan 1994; Long 1975; Ginther and Pollak. 2003). We do not have information to differentiate children of migrants and thus inferred parents' absence from living arrangement, assuming that parents' absence is mostly due to migration because national divorce rates are low in China (Yang and Ni 2012; Zeng and Wu 2000). In this study, there are four types of living arrangement (with both parents; with one parent; with grandparents; and with others). They are coded as three dummy variables with the first category as reference. Family background is measured by both the household head's occupation and education.<sup>3</sup> Occupation is coded into six categories, including managers & professionals, clerks, commercial & service workers, farmers, production workers, plus a missing category, with farmers as the reference group. Education is coded into five categories, including primary school or below, junior high school, senior high school, college or above, plus a missing category, with the first category as reference.

Meanwhile, gender and ethnic inequalities in education have long been documented by scholars in China (e.g. Hannum and Xie 1994; Hannum 2002). We take into account these factors as controls in our multivariate analyses. Gender is coded as a dummy (female=1), and so is ethnicity (Han=1). Age is also a controlled variable and is a continuous variable ranging from 6-15. Because the enrollment rate is expected to be a non-linear function of age, we also include a squared term of age in the models.

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<sup>3</sup> In a few cases, where a child is the household head, we use his/her parents' information to approximate family background.

## DESCRIPTIVE STATISTICS

Table 2 presents descriptive statistics for the variables to be used in the analysis. Overall, the school enrollment ratios have increased from 85.34 percent in 1990 to 95.42 percent in 2000 and to 96.59 in 2005. This is largely attributed to the educational expansion, and specifically to the successful implementation of nine-year compulsory education. In 1980, the Chinese government set the goals of universalizing primary education by the end of the 1980s and implementing nine-year compulsory education in the 1990s (Tsui 1997). In 1985, *the Decision on the Reform of the Education Structure* was launched, followed by the *1986 Compulsory Education Law*. With the increase in educational resources, these goals were largely achieved by the mid-1990s (Wu 2010; Wu and Zhang 2010).

The surge in internal migration in the 1990s was dominated by cross-county and cross-provincial mobility (Fan 2008). Children's migration is also characterized by rapid increases in cross-county and cross-province movement. Cross-county migrant children accounted for 1.56 percent of all children in the same age bracket in 1990, 3.60 percent in 2000 and 5.04 percent in 2005. Cross-province migrant children accounted for 0.62 percent in 1990, 2.11 percent in 2000 and to 3.83 percent in 2005. The increase in internal migration led to an increase in the number of agricultural *hukou* holders in urban China. The proportion of children with agricultural *hukou* in urban areas increased from 31.84 percent in 1990 to 46.09 percent in 2000 and to 50.39 percent in 2005.

Long-distance migration also results in many children being left behind because migrant children are socially excluded on the basis of their *hukou* registration if they follow their parents to the destinations (typically cities). The percentage of children living with both parents (in urban areas) dropped from 79.89 in 1990 to 69.86 in 2005. On the other hand, the percentage of children living with grandparents increased from 9.32 percent in 1990 to 11.50 percent in 2000 and to 16.02 percent in 2005; the percentage of children living with other relatives increased from 2.10 percent in 1990 to 2.50 percent in 2000 and further to 6.42 percent in 2005. This change in living arrangement is unlikely due to the notable increase in divorce rates, as the percentage of children living with a single parent remained quite stable over the 15-year period.<sup>4</sup>

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<sup>4</sup> Despite the notable increase in the divorce rate in China in recent years, especially in coastal cities, the national divorce rate remains low by international standards. The United Nations Statistics Division reports that in 1985 merely 0.4 out of 1000 marriages in China ended in divorce, and the rate increased to 1.6 out of 1000 in 2007. In comparison, the rate is 2.0 per 1000 in Japan in 2007, 4.8 per 1000 in Russia in 2007, and 5.2 per 1000 in the US in 2008 (Weber 2012).

**Table 2. Descriptive Statistics for the Sample of Children Aged 6-15 in Urban China, 1990-2005**

	1990	2000	2005
Enrolled in school	85.34	95.42	96.59
Migrant status			
Non-migrants	96.00	83.87	83.53
Within-county migrants	1.82	10.42	7.60
Cross-county migrants	1.56	3.60	5.04
Cross-province migrants	0.62	2.11	3.83
Agricultural <i>hukou</i>	31.84	46.09	50.39
Age*	10.52 (2.90)	10.83 (2.71)	10.88 (2.83)
Female	48.02	47.39	46.65
Han ethnicity	93.68	93.21	92.34
Living arrangement			
With both parents	79.89	78.86	69.86
With one parent	8.69	7.14	7.70
With grandparents	9.32	11.50	16.02
With other relatives	2.10	2.50	6.42
Household head's occupation			
Managers & professionals	21.66	13.25	11.81
Clerks	6.43	6.75	5.72
Commercial & service workers	12.27	16.68	17.09
Farmers	15.58	23.31	20.85
Production workers	32.87	25.62	23.55
Missing	11.20	14.39	20.97
Household head's education			
Primary school or below	35.26	22.80	22.99
Junior high school	36.47	42.91	42.19
Senior high school	20.45	23.80	17.76
College or above	7.52	10.08	11.32
Missing	0.30	0.41	5.74
N	32,197	65,689	20,459

\* Standard deviation in the parentheses. Figures of other variables are percentages.

Studies show that there exists a huge regional variation in both the migration rate and the school attendance rate in China (Lu 2007; Wu 2010; Wu and Zhang 2010). This applies also to children aged between 6 and 15. Figures 2a -2c present the spatial variation in the ratio of the school enrollment rate of cross-county/province migrant children in a given county to the school enrollment rate of local children in that county in 1990, 2000, and 2005 respectively. County-level enrollment rates are computed by the authors with even larger sets of micro-data from the population censuses and mini-census.<sup>5</sup>

From the three maps, we can see that cross-county/province migrant children have dispersed rapidly in China since the 1990s, and there is a high regional variation in the ratio of school enrollment rates at county level. In 1990, the school enrollment rate of cross-county/province migrant children was less than that of local children in most counties, but there were some counties in which migrant children enjoyed higher enrollment rates than did local children. The ratio of enrollment rates was still below 1 for a large proportion of the counties in 2000 and 2005, and counties with a ratio above 1 were concentrated in the central north, southern west, and coastal areas. However, the overall pattern of these maps indicates a huge regional variation in the ratio of enrollment rates. To take the geographical heterogeneity into account, we include province as a set of dummy variables and also adjust for the clustering effect of counties and report the robust standard errors in the multivariate analyses.

In the following analyses, we first examine the effect of migration status, in combination with migration distance, on the school enrollment of children aged 6-15 from 1990 to 2005, and how the effect varies according to children's *hukou* status. We then examine how the effect of migration status on children's school enrollment changes over the past 15 years. After that, we compare migrant children with those staying in the origin counties and those in the destination cities in terms of the likelihood of school enrollment, using the 2000 census data and the 2005 mini-census data which contain the information needed to link the origins and destinations of migrant children. Finally, we investigate the effect of the timing of migration on children's school enrollment, using the same set of data.

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<sup>5</sup> Here local children in a county include within-county migrant children and non-migrant children, but in the following multivariate analyses, the two groups are separated.

**Figure 2a. School Enrollment Rate: Cross-county/province Migrant Children vs. Local Children at County Level, 1990 (Aged 6-15)**

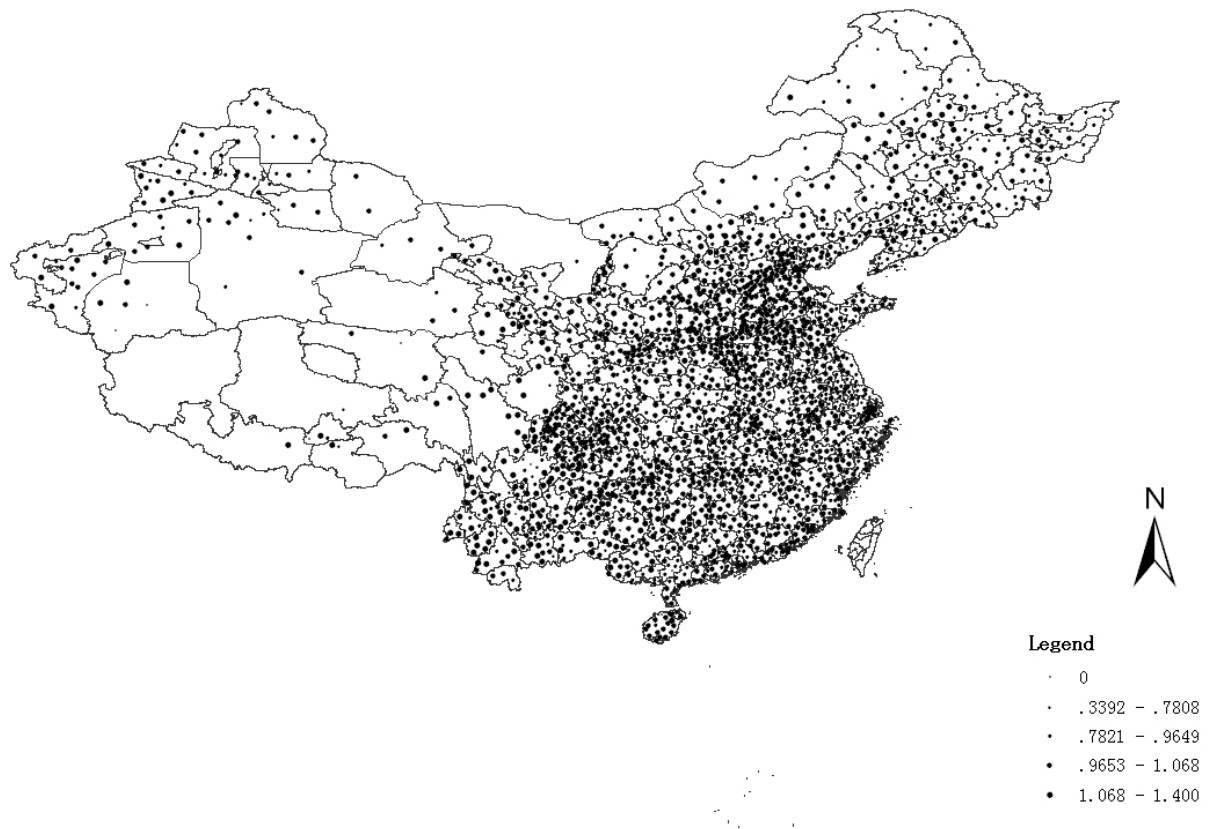


**Notes:**

All counties with less than 50 observations were deleted. Since there are only around 193,000 children aged 6-15 in our data set for 1990, 1069 counties have  $n < 50$  out of a total of 2535 counties. Among the 1466 counties with enough observations, only 313 have cross-county migrant children.

Dots in the figure indicate counties with cross-county/province migrant children. Classes in the legend are based on natural groupings of data values (the default classification method used in the ArcMap software). In this method, data values are arranged in order. The class breaks are determined statistically by finding adjacent feature pairs, between which there is a relatively large difference in data value.

**Figure 2b. School Enrollment Rate: Cross-county/province Migrant Children vs. Local Children at County Level, 2000 (Aged 6-15)**



**Notes:**

All counties with less than 50 observations were deleted. In 2000, 57 counties have  $n < 50$  out of a total of 2870 counties. Among the 2813 counties with enough observations, 2592 have cross-county migrant children.

Dots in the figure indicate counties with cross-county/province migrant children. Classes in the legend are based on natural groupings of data values (the default classification method used in the ArcMap software). In this method, data values are arranged in order. The class breaks are determined statistically by finding adjacent feature pairs, between which there is a relatively large difference in data value.

**Figure 2c. School Enrollment Rate: Cross-county/province Migrant Children vs. Local Children at County Level, 2005 (Aged 6-15)**



**Notes:**

All counties with less than 50 observations were deleted. In 2005, 340 counties have  $n < 50$  account out of a total of 2869 counties. Among the 2529 counties with enough cases, 1996 have cross-county migrant children.

Dots in the figure indicate counties with cross-county/province migrant children. Classes in the legend are based on natural groupings of data values (the default classification method used in the ArcMap software). In this method, data values are arranged in order. The class breaks are determined statistically by finding adjacent feature pairs, between which there is a relatively large difference in data value.

## EMPIRICAL FINDINGS IN MULTIVARIATE ANALYSES

Table 3 presents the results from logistic regression predicting the likelihood of being enrolled in school for all children aged 6-15 in 1990, 2000 and 2005. We include children's migration status, *hukou* status, age, age<sup>2</sup>, gender, ethnicity, living arrangement, and household head's occupation and education as independent variables in the models. Models 1, 3 and 5 are additive models for 1990, 2000, and 2005, respectively. To our surprise, within-county migrant children do not have significant disadvantages in school enrollment compared with non-migrant



children in all three years. This may be due to the fact that students are allowed to move to live in different places to attend school, typically within the same counties or districts, without changing their *hukou* registration. Only cross-county and cross-provincial migrant children are disadvantaged in school enrollment. In 1990, cross-county migrant children's odds of being enrolled in school are 39.8 percent ( $1-e^{-0.508}$ ) lower than the odds for non-migrant children, holding constant all other factors; cross-provincial migrant children's odds of being enrolled in school are 46.4 percent ( $1-e^{-0.624}$ ) lower than the odds for non-migrant children. Hence, the likelihood of school enrollment decreases as the migration distance increases. This pattern can also be observed in both 2000 and 2005. In 2000, the cross-county and cross-provincial migrant children's odds of being enrolled in school are 39.3 percent ( $1-e^{-0.499}$ ) and 58.4 percent ( $1-e^{-0.878}$ ), respectively, which are lower than the odds for non-migrant children. In 2005, the corresponding figures are 52.7 percent ( $1-e^{-0.749}$ ) and 65.6 percent ( $1-e^{-1.066}$ ).

*Hukou* status has a significant impact on school enrollment. Rural children are significantly less likely to be enrolled in school than urban children. The gap seems to have enlarged from 1990 to 2005, as Wu (2010) has also reported. For instance, the odds of being enrolled in school for children with agricultural (rural) *hukou* are 13.2 percent ( $1-e^{-0.142}$ ) lower than the odds for children with non-agricultural (urban) *hukou* in 1990, 32.6 percent ( $1-e^{-0.394}$ ) lower in 2000, and 39.5 percent ( $1-e^{-0.503}$ ) lower in 2005, holding constant all other factors. The differences are all statistically significant ( $p < .05$ ). These findings suggest that the rural-urban inequality in educational opportunities was not alleviated in the 1990s with the *hukou* system at work, despite the significant progress that China had made in economic development and relaxation of control over population migration during that period (Wu 2010).

In all three years, children living with grandparents and those living with their own parents do not differ significantly in the likelihood of attending school, but children living with others are significantly disadvantaged in this respect in both 1990 and 2000, although such disadvantages diminished and became insignificant in 2005. These results suggest that at least the left-behind children who stayed with their grandparents are not disadvantaged in terms of school enrollment during the examined period, perhaps because their migrant parents are able to provide the necessary economic resources. Indeed, some rural villagers migrate to cities for work so that they could make enough to send their children back home to school, leaving their children to be taken care of by their grandparents. Yet questions remain as to whether and how migrant parents' absence affects left-behind children's academic performance, psychological well-being, behaviors, etc. in China.

**Table 3. Logit Models Predicting School Enrollment of Children Aged 6-15 in Urban China, 1990-2005 (Migrants and Non-migrants)**

	1990		2000		2005	
	(1)	(2)	(3)	(4)	(5)	(6)
Migrant status (reference: non-migrants)						
Within-county migrants	0.220 (0.173)	0.675 (0.349)	-0.086 (0.072)	-0.073 (0.094)	-0.148 (0.163)	0.192 (0.288)
Cross-county migrants	-0.508** (0.172)	0.092 (0.318)	-0.499*** (0.098)	-0.185 (0.209)	-0.749*** (0.147)	-0.548 (0.300)
Cross-province migrants	-0.624* (0.247)	0.269 (0.438)	-0.878*** (0.110)	-0.391 (0.295)	-1.066*** (0.168)	-1.108* (0.508)
Agricultural <i>hukou</i>	-0.142* (0.069)	-0.100 (0.072)	-0.394*** (0.055)	-0.353*** (0.061)	-0.503*** (0.106)	-0.434*** (0.118)
Age	4.161*** (0.092)	4.167*** (0.093)	3.724*** (0.071)	3.726*** (0.071)	1.016*** (0.115)	1.016*** (0.115)
Age <sup>2</sup>	-0.190*** (0.004)	-0.190*** (0.004)	-0.175*** (0.003)	-0.175*** (0.003)	-0.057*** (0.005)	-0.057*** (0.005)
Female	-0.098** (0.038)	-0.097* (0.038)	-0.089* (0.041)	-0.088* (0.041)	0.081 (0.079)	0.082 (0.079)
Han ethnicity	0.162 (0.100)	0.165 (0.100)	0.352*** (0.084)	0.355*** (0.084)	0.361* (0.150)	0.355* (0.150)
Living arrangement (reference: with both parents)						
With single parent	0.024 (0.078)	0.023 (0.078)	-0.212** (0.081)	-0.216** (0.081)	0.090 (0.157)	0.096 (0.158)
With grandparents	-0.024 (0.090)	-0.024 (0.090)	0.083 (0.084)	0.082 (0.084)	0.313 (0.169)	0.308 (0.168)
With other relatives	-0.723*** (0.141)	-0.743*** (0.140)	-0.779*** (0.112)	-0.787*** (0.111)	-0.435 (0.234)	-0.424 (0.231)
Household head's occupation (reference: farmers)						
Managers & professionals	0.405*** (0.099)	0.430*** (0.099)	0.493*** (0.094)	0.513*** (0.094)	0.575** (0.199)	0.595** (0.202)
Clerks	0.465*** (0.120)	0.493*** (0.119)	0.291** (0.110)	0.315** (0.111)	0.255 (0.243)	0.285 (0.247)
Commercial/service workers	0.289** (0.089)	0.316*** (0.089)	0.255*** (0.068)	0.278*** (0.070)	0.126 (0.143)	0.162 (0.144)
Production workers	0.267** (0.081)	0.294*** (0.082)	0.260*** (0.063)	0.279*** (0.064)	0.176 (0.126)	0.202 (0.129)
Missing	0.213 (0.114)	0.235* (0.114)	0.231** (0.080)	0.247** (0.081)	0.063 (0.169)	0.093 (0.171)

**Table 3. Logit Models - *continued***

Household head's education (reference: primary or below)						
Junior high school	0.210***	0.210***	0.375***	0.375***	0.510***	0.508***
	(0.054)	(0.054)	(0.052)	(0.052)	(0.100)	(0.100)
Senior high school	0.140*	0.143*	0.586***	0.580***	0.584***	0.581***
	(0.066)	(0.066)	(0.069)	(0.069)	(0.148)	(0.147)
College or above	0.158	0.159	0.688***	0.687***	0.547**	0.534*
	(0.112)	(0.112)	(0.110)	(0.110)	(0.210)	(0.211)
Missing	0.294	0.330	0.512	0.516	0.461	0.444
	(0.413)	(0.413)	(0.265)	(0.265)	(0.280)	(0.279)
Interaction terms						
Within-county migrants*agricultural <i>hukou</i>		-0.616		-0.032		-0.524
		(0.406)		(0.144)		(0.361)
Cross-county migrants*agricultural <i>hukou</i>		-0.738		-0.413		-0.294
		(0.379)		(0.238)		(0.357)
Cross-province migrants*agricultural <i>hukou</i>		-1.270*		-0.583		0.020
		(0.510)		(0.321)		(0.547)
Province dummies	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-18.235***	-	-14.462***	-	1.061	0.992
		18.295***		14.506**		
				*		
	(0.486)	(0.489)	(0.383)	(0.383)	(0.806)	(0.810)
N	32,197	32,197	65,689	65,689	20,459	20,459

Robust standard errors in parentheses adjusted for clustering effects on counties; \*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$ .

After introducing control variables, gender inequality still exists in 1990 and 2000 but disappears in 2005 (also see Wu and Zhang 2010 and Ye and Wu 2012). Ethnic inequality also exists between Han Chinese and ethnic minorities in 2000 and 2005. All these effects are statistically significant ( $p < .05$ ,  $p < .01$ ,  $p < .001$ ).

As previously shown in Table 1, there are both rural and urban *hukou* holders among migrant children. In Models 2, 4 and 6, we include interaction terms between *hukou* status and migration status. While the other effects largely remain the same, the interaction coefficient is negative and statistically significant in 1990 for cross-provincial migrants, although it becomes statistically insignificant in both 2000 and 2005. The negative effects of migration apply to all children irrespective of their *hukou* status, but those from rural areas fare even worse (Chan and Zhang 1999).

To examine the temporal trend in migrant children's educational well-being, we pooled the samples from all three years and tested how migrant children's disadvantages change over time. Results are presented in Table 4. Model 1 shows that children are more likely to attend school in 2000 and 2005 than in 1990, as a result of educational expansion in the 1990s (Wu 2010). The interaction terms in Model 2 are not statistically significant except for the term between within-county migrants and year 2000. Hence, no evidence suggests that the plight of migrant children has worsened. The issues might have come under the spotlight in recent years simply because the rise in migration has made them more visible to the public than ever before.

An ensuing question is: why do migrants bring their children given that migrant children are significantly disadvantaged in school enrollment compared with non-migrant children? To address the question, we further split non-migrant children in China into two groups: those in the origin counties of migrant children, and those in destination counties/cities of migrant children (Liang and Chen 2007). One may argue that, although migration children face hurdles in attending schools in cities, they still enjoy more educational opportunities than their peers back in the villages. We test this claim by analyzing the data from the 2000 census and the 2005 mini-census, and locate the counties from which the migrant children came. The sample used here is divided into three groups: rural-urban migrant children, urban non-migrant children, and rural non-migrant children in origin counties.

Results are presented in Table 5. In both 2000 and 2005, non-migrant children in either destination cities or origin counties perform significantly better than migrant children, controlling for agricultural *hukou* status and other factors. In 2000, the net odds of being enrolled in school for urban non-migrant children in destination cities and rural non-migrant children in origin counties are 2.0 ( $e^{0.711}$ ) and 1.4 ( $e^{0.336}$ ) times, respectively, the odds for rural-urban migrant children, and the advantages are statistically significant ( $p < .001$ ). In 2005, the corresponding figures are 1.9 ( $e^{0.636}$ ) and 1.6 ( $e^{0.472}$ ) times the odds for rural-urban migrant children. Even after controlling for family socioeconomic status (household head's occupation and education), the pattern still holds. Therefore, the negative impact of migration on school enrollment is very likely due to the social exclusion in the destinations on the basis of place of *hukou* registration. Otherwise, these rural-urban migrant children do not differ from their peers back in the villages. As our results here reject the view that rural-urban migrant children enjoy more educational opportunities than their peers back in the villages, the question remains why their migrant parents bring them. Prospective data are needed for analyzing the family migration strategies to answer this question.

**Table 4. Logit Models Predicting School Enrollment of Children Aged 6-15 in Urban China, 1990-2005 Pooled Sample (Migrants and Non-migrants)**

	(1)	(2)
Migrant status (reference: non-migrants)		
Within-county migrants	0.030 (0.061)	0.372* (0.168)
Cross-county migrants	-0.485*** (0.075)	-0.374* (0.154)
Cross-province migrants	-0.819*** (0.091)	-0.504* (0.227)
Year (reference: 1995)		
2000	1.329*** (0.039)	1.351*** (0.040)
2005	1.848*** (0.058)	1.878*** (0.062)
Agricultural <i>hukou</i>	-0.299*** (0.040)	-0.307*** (0.040)
Age	3.666*** (0.052)	3.665*** (0.052)
Age <sup>2</sup>	-0.170*** (0.002)	-0.170*** (0.002)
Female	-0.075** (0.026)	-0.076** (0.026)
Han ethnicity	0.293*** (0.059)	0.292*** (0.059)
Living arrangement (reference: with both parents)		
With single parent	-0.054 (0.053)	-0.054 (0.053)
With grandparents	0.055 (0.056)	0.051 (0.056)
With other relatives	-0.693*** (0.084)	-0.695*** (0.083)
Household head's occupation (reference: farmers)		
Managers & professionals	0.461*** (0.060)	0.461*** (0.060)
Clerks	0.433*** (0.074)	0.432*** (0.074)
Commercial & service workers	0.276*** (0.049)	0.276*** (0.050)
Production workers	0.256*** (0.045)	0.252*** (0.045)
Missing	0.207*** (0.059)	0.205*** (0.059)

**Table 4. Logit Models - continued**

Household head's education (reference: primary or below)		
Junior high school	0.219*** (0.036)	0.220*** (0.036)
Senior high school	0.227*** (0.044)	0.226*** (0.044)
College or above	0.352*** (0.072)	0.351*** (0.071)
Missing	0.359* (0.154)	0.360* (0.154)
Interaction terms		
Within-county migrants*2000		-0.413* (0.187)
Within-county migrants*2005		-0.404 (0.242)
Cross-county migrants*2000		-0.136 (0.179)
Cross-county migrants*2005		-0.211 (0.222)
Cross-province migrants*2000		-0.376 (0.252)
Cross-province migrants*2005		-0.401 (0.297)
Province dummies	Yes	Yes
Constant	-15.606*** (0.298)	-15.592*** (0.298)
N	118,345	118,345

Robust standard errors in parentheses adjusted for clustering effects on counties; \*\*\* p<0.001, \*\* p<0.01, \* p<0.05

**Table 5. Logit Models Predicting School Enrollment of Children Aged 6-15 in Urban China, 2000 and 2005 (Rural-Urban Migrant Origin-Destination Sample)**

	2000		2005	
	(1)	(2)	(3)	(4)
Migrant status (reference: rural-urban migrants)				
Urban non-migrants (destination)	0.711*** (0.088)	0.880*** (0.089)	0.636*** (0.136)	0.632*** (0.138)
Rural non-migrants (origin)	0.336*** (0.079)	0.650*** (0.084)	0.472*** (0.119)	0.507*** (0.136)
Agricultural <i>hukou</i>	-0.730*** (0.060)	-0.343*** (0.066)	-0.630*** (0.137)	-0.446** (0.150)
Han ethnicity	0.572*** (0.114)	0.539*** (0.110)	0.284* (0.127)	0.240 (0.132)
Age	3.174*** (0.051)	3.195*** (0.051)	1.089*** (0.106)	1.110*** (0.106)
Age <sup>2</sup>	-0.154*** (0.002)	-0.155*** (0.002)	-0.061*** (0.005)	-0.062*** (0.005)
Female	-0.346*** (0.028)	-0.343*** (0.028)	0.008 (0.071)	0.014 (0.071)
Living arrangement (reference: with both parents)				
With single parent	-0.141** (0.048)	-0.023 (0.050)	0.097 (0.122)	0.202 (0.127)
With grandparents	0.035 (0.049)	0.276*** (0.056)	0.087 (0.134)	0.254 (0.168)
With other relatives	-0.222** (0.073)	-0.443*** (0.090)	-0.278* (0.116)	-0.647** (0.212)
Household head's occupation (reference: farmers)				
Managers & professionals		0.530*** (0.091)		0.468* (0.220)
Clerks		0.483*** (0.138)		0.202 (0.289)
Commercial & service workers		0.410*** (0.068)		-0.033 (0.146)
Production workers		0.356*** (0.052)		0.058 (0.125)
Missing		0.222** (0.067)		0.064 (0.176)
Household head's education (reference: primary or below)				
Junior high school		0.494*** (0.034)		0.501*** (0.090)
Senior high school		0.700*** (0.054)		0.761*** (0.161)
College or above		0.779*** (0.139)		0.400 (0.265)
Missing		0.819*** (0.151)		0.807** (0.275)
Province	Yes	Yes	Yes	Yes
Constant	-10.926*** (0.423)	-12.249*** (0.408)	0.499 (0.753)	-0.215 (0.767)
N	122816	122816	21562	21562

Robust standard errors in parentheses adjusted for clustering effects on counties; \*\*\* p&lt;0.001, \*\* p&lt;0.01, \* p&lt;0.05.

In order to make direct comparisons between migrant children and left-behind children, we conduct further analysis using the origin-destination sample by combining information on migrant status and living arrangement. Specifically, we divide our target subjects in this sample into six groups: rural-urban migrants living with both parents, rural-urban migrants living with neither parent, urban non-migrants living with both parents, urban non-migrants living with neither parent, rural non-migrants living with both parents, and rural non-migrants living with neither parent. The last group can be seen as the left-behind children (*liushou ertong*) we have been talking about in previous sessions.

Results are shown in Table 6. Compared with rural-urban migrants, non-migrants are significantly more likely to be enrolled in school, regardless of whether they live with both parents or not. In particular, even left-behind children in rural areas enjoy more educational opportunities than rural-urban migrants. This evidence further suggests that rural-urban migrants are the most disadvantaged group because of the social exclusion they are subjected to in the destinations on the basis of their *hukou* registration. Among rural-urban migrants, those living with neither parent are significantly less likely to be enrolled in school than those living with both parents, which suggests that parents' presence is indeed very important for school enrollment.

Finally, we examine in Table 7 the effect of migration timing on the school enrollment of migrant children. Confirming the previous observations, results show that newer migrant children are much less likely to be enrolled in school, but as they spend more time in the destinations, their disadvantage in school attendance tends to diminish. The results remain largely the same even after controlling for the family's socioeconomic background.



**Table 6. Logit Models Predicting School Enrollment of Children Aged 6-15 in Urban China, 2000 and 2005 (Rural-Urban Migrant Origin-Destination Sample)**

	2000		2005	
	(1)	(2)	(3)	(4)
<b>Migrant status (reference: rural-urban migrants with both parents)</b>				
rural-urban migrants with neither parent	-0.738*** (0.169)	-0.685*** (0.172)	-0.498* (0.210)	-0.457* (0.231)
Urban non-migrants with both parents	0.616*** (0.108)	0.780*** (0.109)	0.488** (0.157)	0.479** (0.156)
Urban non-migrants with neither parent	0.204 (0.125)	0.546*** (0.132)	0.564** (0.195)	0.724*** (0.216)
Rural non-migrants with both parents	0.148 (0.099)	0.461*** (0.103)	0.325* (0.140)	0.360* (0.154)
Rural non-migrants with neither parent (left-behind children)	0.161 (0.103)	0.582*** (0.109)	0.350* (0.157)	0.511** (0.183)
Agricultural <i>hukou</i>	-0.754*** (0.060)	-0.377*** (0.066)	-0.637*** (0.137)	-0.454** (0.150)
Han ethnicity	0.569*** (0.114)	0.537*** (0.110)	0.278* (0.127)	0.235 (0.133)
Age	3.172*** (0.051)	3.185*** (0.051)	1.084*** (0.105)	1.102*** (0.105)
Age <sup>2</sup>	-0.154*** (0.002)	-0.155*** (0.002)	-0.061*** (0.005)	-0.061*** (0.005)
Female	-0.346*** (0.028)	-0.345*** (0.028)	0.007 (0.071)	0.008 (0.071)
Household head's occupation (reference: farmers)				
Managers & professionals		0.511*** (0.090)		0.438* (0.221)
Clerks		0.443** (0.137)		0.167 (0.289)
Commercial & service workers		0.370*** (0.068)		-0.089 (0.147)
Production workers		0.317*** (0.052)		0.006 (0.124)
Missing		0.313*** (0.067)		0.126 (0.169)
Household head's education (reference: primary or below)				
Junior high school		0.474*** (0.034)		0.492*** (0.090)
Senior high school		0.679*** (0.054)		0.748*** (0.163)
College or above		0.733*** (0.137)		0.376 (0.267)
Missing		0.217 (0.138)		0.069 (0.187)
Province				
Constant	-10.673*** (0.422)	-11.912*** (0.409)	0.670 (0.748)	0.011 (0.768)
N	122816	122816	21562	21562

**Table 7. Logit Models Predicting Time Effects on School Enrollment of Migrant Children Aged 6-15 in Urban China, 2000 and 2005**

	2000		2005	
	(1)	(2)	(3)	(4)
Time since migration (reference: less than 1 year)				
1-2 years	0.481*** (0.131)	0.473*** (0.133)	0.861** (0.306)	0.834** (0.307)
2-3 years	0.533** (0.176)	0.522** (0.177)	0.250 (0.282)	0.222 (0.284)
3-4 years	0.905*** (0.227)	0.872*** (0.225)	0.949* (0.391)	0.944* (0.400)
4-5 years	0.676** (0.216)	0.674** (0.220)	1.183* (0.568)	1.149* (0.571)
More than 5 years	0.880*** (0.146)	0.877*** (0.148)	0.764** (0.234)	0.733** (0.235)
Agricultural <i>hukou</i>	-0.954*** (0.107)	-0.750*** (0.117)	-1.133*** (0.233)	-1.046*** (0.253)
Han ethnicity	0.394* (0.181)	0.370* (0.178)	0.192 (0.314)	0.179 (0.309)
Age	3.596*** (0.160)	3.621*** (0.161)	1.069*** (0.277)	1.089*** (0.279)
Age <sup>2</sup>	-0.170*** (0.007)	-0.171*** (0.007)	-0.063*** (0.012)	-0.064*** (0.013)
Female	-0.136 (0.090)	-0.137 (0.091)	0.212 (0.187)	0.221 (0.188)
Living arrangement (reference: with both parents)				
With single parent	-0.310 (0.179)	-0.268 (0.187)	-0.182 (0.308)	-0.257 (0.354)
With grandparents	-0.281 (0.179)	-0.174 (0.215)	0.461 (0.484)	0.360 (0.555)
With others	-1.238*** (0.158)	-1.320*** (0.170)	-0.733** (0.254)	-0.824** (0.312)
Household head's occupation (reference: farmers)				
Managers & professionals		0.361 (0.229)		0.601 (0.502)
Clerks		0.238 (0.282)		0.357 (0.600)
Commercial & service workers		-0.031 (0.185)		0.069 (0.425)
Production workers		0.186 (0.184)		0.162 (0.411)
Missing		0.280 (0.217)		0.480 (0.528)

**Table 7. Logit Models - *continued***

Household head's education (reference: primary or below)

Junior high school		0.380**		0.324
		(0.120)		(0.239)
Senior high school		0.545***		0.138
		(0.150)		(0.325)
College or above		0.438		0.095
		(0.226)		(0.430)
Missing		0.346		0.014
		(0.506)		(0.558)
Province dummies	Yes	Yes	Yes	Yes
Constant	-13.651***	-14.403***	18.064	17.030
	(0.824)	(0.857)	(0.000)	(0.000)
N	10529	10529	3367	3367

Robust standard errors in parentheses adjusted for clustering effects on counties;

\*\*\* p&lt;0.001, \*\* p&lt;0.01, \* p&lt;0.05.

## CONCLUSIONS AND DISCUSSIONS

Migration—particularly cross-county and cross-provincial migration—has been on the rise in China since the mid-1990s and continues to be extremely popular to this day. How migrant children fare in this large-scale social transformation has become an important issue receiving much attention from scholars and social commentators. The question bears a lot of policy implications for the government.

We have examined the school enrollment of children aged between 6 and 15 in China, using the micro-data from population censuses in 1990 and 2000 and the mini-census in 2005. Our results confirm earlier studies that migrant children are less likely to be enrolled in school than non-migrant children from 1990 to 2005, and the likelihood of school enrollment decreases with the increase of migration distance across counties and provinces. While children of rural *hukou* are particularly disadvantaged in school enrollment, the effect of migration status applies to all children regardless of their *hukou* status in both 2000 and 2005. The absence of parents or grandparents also negatively affects the likelihood of school enrollment in both 1990 and 2000. Children living with relatives other than parents and grandparents are much less likely to be enrolled in school. The effects become statistically insignificant in 2005, probably because of the near saturation of compulsory

education in China in the 1990s. We also found significant differences in school enrollment among children of different genders, ages, ethnicities, and family socioeconomic backgrounds.

Analyses with pooled sample data also suggest that, while children's school enrollment increases from 1990 to 2005, the effect of migration status on their school enrollment does not change over time and migrant children continue to be disadvantaged. Further analyses using 2000 and 2005 data show that rural migrant children perform significantly worse than non-migrant children in both origin counties and destination cities, and in particular, they are significantly less likely to be enrolled in school than even the left-behind children in rural areas. As migrant children spend more time in destinations, their disadvantages in school attendance tend to diminish, but the gaps persist.

Hence, the study reveals a broad picture of migration and children's schooling and delineates the changing trend over the decades in contemporary China. The patterns we have identified, nevertheless, are descriptive at best and suffer from several limitations. First, the population census/mini-census data we have analyzed do not allow us to effectively address the endogenous nature of the migration decision, which could depend on unobserved shocks experienced by households as well as the abilities and preferences of parents. These concerns likely affect whether migrant parents bring their children with them or not (Xu and Xie 2013). Second, while we have only been able to examine one important aspect of child development, i.e., school enrollment, migration and separation from parents may have profound implications for other aspects such as children's academic performance, psychological well-being, behaviors and their development of non-cognitive skills (Lu and Zhou 2013; Ren and Treiman 2013), all of which are as important as schooling in determining their future labor productivity and status attainment in destination cities. Finally, sociologists argue that the negative consequences of migration on children's schooling are due to the loss of social capital in school, the neighborhood, and the community of origin (Astone and McLanahan 1994; Buchmann and Hannum 2001; Loyd and Blanc 1996; Pribesh and Downey 1999). Our analysis in the context of China largely confirms the negative consequences but is unable to provide a sociological explanation. To what extent, the cause of negative consequences for education is attributable to the fact of not having a local *hukou* rather than the loss of social capital in the community of origin and migrant families' lower socioeconomic status? We look forward to further data collection and analyses in the future to examine how social capital interacts with family economic resources, institutional constraints, and social exclusions in urban China.

## References

- All-China Women's Federation (ACWF) Research Team 2013. *Woguo Nongcun Liushou Ertong, Chengxiang Liudong Ertong Zhuangkuang Yanjiu Baogao*. (Research Report on the Situation of Rural Left-Behind China, Rural-urban Migration Children in China).  
<http://acwf.people.com.cn/n/2013/0510/c99013-21437965.html#> access on June 10, 2013
- Astone, Nan. Marie and Sara S. McLanahan. 1994 "Family Structure, Residential Mobility, and School Dropout: A Research Notes" *Demography* 31:575-84.
- Buchmann, Claudia and Emily Hannum. 2001. "Education and Stratification in Developing Country: A Review of Theories and Research" *Annual Review of Sociology* 27:77-102
- Cai, Fang et. al. (eds) 2002. *Employment in Rural and Urban China: Issues and Options*. Beijing, China: Social Science Academic Press.[in Chinese]
- Chan, Kam Wing.1994. *Cities with Invisible Walls*. Hong Kong: Oxford University Press.
- Chan, Kam Wing and Li. Zhang. 1999. "The Hukou System and Rural-urban Migration: Processes and Changes." *The China Quarterly* 160: 818-855.
- Coleman, James S. 1988. "Social Capital in the Creation Human Capital" *American Journal of Sociology* 94 (suppl.) S 95-S120.
- Chang, Hongqin, Xiao-yuan Dong and Fiona MacPhail. 2011. "Labor Migration and Time Use Patterns of the Left-behind Children and Elderly in Rural China." *World Development*, 39(12), 2199-2210.
- de Brauw, Alan. and John Giles. 2008. "Migrant Opportunity and the Educational Attainment of Youth in Rural China." World Bank Working Paper No. 4526.
- Démurger, Sylvie and Li Shi. 2012 "Migration, Remittances and Rural Employment Patterns: Evidence from China" <http://halshs.archives-ouvertes.fr/docs/00/74/44/38/PDF/1230.pdf>
- Du, Yang, Albert Park, and Sangui Wang. 2005. "Migration and Rural Poverty in China," *Journal of Comparative Economics* 33(4): 688-709.
- Duan, Chengrong and Fulin Zhou. 2005. "Woguo Liushou Ertong Zhuangkuang Yanjiu" (A Study on Left-behind Children" *Population Research* 29(1): 29-36 [in Chinese]
- Fan, Cindy 2008. *China on the Move: Migration, the State, and the Household*. Routledge
- Ginther, D. and Pollak, R. 2003. "Does Family Structure Affect Children's Educational Outcome?" NBER Working Paper No. 9628.
- Hannum, Emily and Yu Xie. 1994. "Trends in Educational Gender Inequality in China: 1949- 1985." *Research in Social Stratification and Mobility* 13:73-98.
- Hannum, Emily 1999. "Political Change and the Urban-Rural Gap in Basic Education in China, 1949-1990." *Comparative Education Review* 43(2) 193-208.
- Hannum, Emily. 2002. "Educational Stratification by Ethnicity in China: Enrollment and Attainment in the Early Reform Years." *Demography* 39:95-117
- Hao, Lingxin. 2012. "Cumulative Causation of Rural Migration and Initial Peri-Urbanization in China." *Chinese Sociological Review* 44(3):6-33.
- Kandel, William and Grace Kao. 2001. "The Impact of temporary Labor Migration on Mexican Children's Educational Aspirations and Performance." *International Migration Review* 35(4): 1205-1231.
- Lavelly, William. 2001 "First Impressions from the 2000 Census of China." *Population and Development Review*. 27:755-769.
- Lee, Leng and Albert Park 2010. "Parental Migration and Child Development in China." Working Paper. [http://ihome.ust.hk/~albertpark/papers/migration\\_children\\_China.pdf](http://ihome.ust.hk/~albertpark/papers/migration_children_China.pdf)

- Liang, Zai. 2001. "The Age of Migration in China." *Population and Development Review* 27:499-524.
- Liang, Zai, Lin Guo and Chengrong Duan. 2008. "Migration and Well-being of Children in China." *Yale-China Health Journal* 5: 25-46.
- Liang, Zai. and Yiu Por Chen. 2007. "Educational Consequences of Migration for Children in China." *Social Science Research* 36:28-47.
- Liang, Zai. and Zhongdong Ma. 2004. "The Floating Population of China: New Evidence From the 2000 Population Census." *Population and Development Review* 30(3): 467-488.
- Liang, Zai. and M. White. 1996. "Internal Migration in China 1950-1988." *Demography* 33:375-84.
- Lloyd, C. B. and A. K Blanc. 1996. "Children's Schooling in Sub-Saharan Africa: The Role of Fathers, Mothers, and Others." *Population and Development Review* 22:265-98.
- Long, Larry H. 1975. "Does Migration Interfere with Children's Progress in School." *Sociology of Education*. 48:369-381.
- Lu, Yao. 2007. "Educational Status of Temporary Migration Children in China: Determinants and Regional Variations." *Asian and Pacific Migration Journal* 16(1): 29-55.
- Lu, Yao and Hao Zhou. 2013. "Academic Achievement and Loneliness of Migrant Children in China: School Segregation and Segmented Assimilation." *Comparative Education Review* 57(1):85-116
- Ma, Zhongdong. 1999. "Temporary Migration and Regional Development in China", *Environment and Planning A* 31:783-802.
- Ma, Zhongdong. 2001. "Urban Labor Force Experience as a Determinant of Rural Occupation Change: Evidence from Recent Urban-rural Return Migration in China", *Environment and Planning A*, 33: 237-255.
- Pribesh, Shana and Douglas. B. Downey. 1999. "Why are Residential and School Moves Associated with Poor School Performance?" *Demography* 36: 521-534.
- Ren, Qiang, and Donald J. Treiman. 2013. "The Consequences of Parental Labor Migration in China for Children's Emotional Well-being." Poster presented at the annual meeting of the Population Association of America, 11-13 April.
- Roberts, Kenneth D. 1997. "China's 'Tidal Wave' of Migrant Labor: What Can We Learn from Mexican Undocumented Migration to the United States?" *International Migration Review* 31:249-93.
- Solinger, Dorothy J. 1999. "China's Floating Population: Implications for State and Society." Pages 220-40 in Roderick MacFarquhar and Merle Goldman, eds., *The Paradox of China's Post-Mao Reforms*. Cambridge: Harvard University Press
- Tsui, Kai Yuen. 1997. "Economic Reform and the Attainment in Basic Education in China". *The China Quarterly* 149:104-27.
- Wang, Feng, Xuejin Zuo and Danching Ruan. 2002. "Rural Migrants in Shanghai: Living under the Shadow of Socialism." *International Migration Review* 36: 520-545.
- Weber, Claire 2012. " Chinese Divorce Rate: China's Divorce Rate is Rapidly Increasing." <http://geography.about.com/od/chinamaps/a/Chinese-Divorce-Rate.htm>
- World Bank. 2009. *World Development Report: Reshaping Economic Geography*. <http://go.worldbank.org/FAV9CBBG80>
- Wu, Xiaogang. 2009. "Household Registration, Social Exclusion, and Rural Migrants in Chinese Cities." Pp 29-54 in *Socialist China, Capitalist China: Social-Political Conflicts under Globalization*, edited by Guoguang Wu and Helen Lansdowne, Routledge.
- Wu, Xiaogang 2010. "Economic Transition, School Expansion and Educational Inequality in China, 1990-2000." *Research in Social Stratification and Mobility* 28 (2010): 91-108

- Wu, Xiaogang. 2012. "The Household Registration System and Rural-Urban Educational Inequality in China." *Chinese Sociological Review* 44:31-51.
- Wu, Xiaogang and Donald J. Treiman. 2004. "The Household Registration and Social Stratification in China 1955-1996." *Demography* 363-382.
- Wu, Xiaogang and Zhuoni Zhang. 2010. "Changes in Educational Inequality in China, 1990-2005: Evidence from the Population Census Data" *Research in Sociology of Education*.
- Xiang, Biao. 2007. "How Far are the Left-behind Left Behind? A Preliminary Study in Rural China." *Population, Space and Place* 13: 179-191.
- Xu, Hongwei, and Yu Xie 2013 "The Causal Effects of Rural-to-Urban Migration on Children's Wellbeing in China." Paper presented in the Population Association of America Annual meeting, New Orleans, LA. April 11-13, 2013
- Yang, Dean. 2008 "International Migration, Remittances, and Household Investment: Evidence from Philippine Migrants' Exchange Rate Shocks." *Economic Journal* 118 (528): 591-630.
- Yang, Quanhe. and Fei Guo. 1996. "Occupational Attainments of Rural to Urban Temporary Economic Migrants in China, 1985-1990." *International Migration Review* 30: 771-87.
- Yang, Juhua and Ni Fan 2012. "Migration, Family Structure and High School Enrollment: An Analysis of China's 2000 Census." *Chinese Sociological Review* 44(4): 27-57
- Zeng, Yi and Deqing Wu 2000. "A Regional Analysis of Divorce in China since 1980." *Demography* 37(2): 215-219
- Zhang, Zhuoni and Donald Treiman.2013 "Social Origins, Hukou Conversion, and the Wellbeing of Urban Residents in Contemporary China." *Social Science Research* 42(1):71-89
- Zhang, Zhuoni and Xiaogang Wu. 2010. "Changes in Educational Inequality in China, 1990-2005: Evidence from the Population Census Data." *Research in Sociology of Education* 17:123-152.
- Zhang, Zhuoni and Xiaogang Wu. 2012. "Occupational Segregation and Earnings Attainment of Rural Migrants in Urban China." Working Paper.
- Zhao, Yaohui. 1999. "Labor Migration and Earnings Differences: The Case of Rural China." *Economic Development and Cultural Change* 47:767-782.
- Zhao, Yaohui. 2000. "Rural to Urban Labor Migration in China: The Past and the Present." Pp. 15-33 in Loraine A. West and Yaohui Zhao, eds., *Rural Labor Flow in China*. Berkeley, CA: University of California Press.
- Zheng, Bingdao and Yanfeng Gu. 2012. "Tax-for-fee Reform as Exogenous Shocks: The Slowdown of Rural Migration in Chinese Villages, 1998-2002." Working Paper, Division of Social Science, Hong Kong University of Science and Technology.



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