Migration and the Schooling of Left-Behind Children in China

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Abstract

The rise of internal migration in China has drawing concerns about the well-being of their children who are left behind in their hometowns. This article, using three most recent waves of CHNS data, tries to investigate the schooling situation of migrants' left-behind children and compare them with children who are living with both parents at home. Results show that the school enrollment situation of left-behind children age 6-14 is as high as other children, but this rate drops fast for children age 15 or older. On the other hand, cross-sectional analysis reveals that in 2004, left-behind children are more likely to be delayed in their school progress, others equal. Both the longitudinal analysis and the cross-sectional analysis show that familial socioeconomic status is closely related to the schooling of children. In addition, children's schooling also varies by provinces.

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BACKGROUND

The "floating population" (internal migrants in China) refers to the large and increasing number of migrants without local household registration status (*hukou*) (Goldstein, Goldstein and Guo 1991; Liang and Ma 2004). The estimated temporary internal migrant population in China has increased from about 11 million in 1982 to 79 million in 2000, if that category is defined as migrants who moved between provinces or counties and have resided at their destinations for 6 months or more. Simultaneously, intra-county floating migration contributes another 66 million to the size of the Chinese floating population (Liang 2001; Liang and Ma 2004). The largest interregional flows of migration are from the peripheries to the growth-pole regions (Ma 1999). Studies have shown that the floating populations are much less educated than permanent migrants, and the motivation of the younger floating population is mostly for "manual labor or business" (Liang and Ma 2004).

The massive rural to urban migration in China began in accordance with the reform policies in the late 1970s. The reform of household farming (also known as the household production responsibility system) in 1978 has greatly increased agricultural productivities and thus decreased the need for rural manual laborers. At the same time, the transition toward a market-oriented economy makes many non-state sectors (such as joint-venture enterprises and other privately owned businesses) in great need of workers at a lower price. Hence, migrant laborers (mostly from rural areas) have started to fill in those enterprises with hopes of higher income and improved living situations (Liang 2001; Poston and Duan 2001). In the mean time, the household registration (*hukou*) system has also begun to loosen its previous tight restrictions, so

that migrants can live in cities as long as they can support themselves.

Migration usually involves with issues such as separation and relocation of families. Recent estimates suggest that as many as 22.9 million children (age 14 or below) have been left-behind in migrant-sending regions while their parents are away working (Duan and Zhou 2006). Other estimations even indicate there are 58 million of them in rural China (age 0-18) (ChinaDevelopmentGateway 2008). Children with one or more parent absence are rarely disregarded by societies, and left-behind children are also drawing more and more concerns from the public. The issue of left-behind children in China is a particular case among similar studies in that most migrant families are from rural areas, where the modernization progresses are not as fast as cities, and the overall welfare situation is not as good either. The historical division of household registration (*hukou*) system has driven a significant proportion of population in China into a huge dilemma: to improve the living situation for their families, particularly for their children, young parents often feel obliged to leave them behind in hometowns. As a report from the Los Angeles Times describes, "the left-behind children have become orphans of a transitional economy, abandoned by parents making the difficult decision to break up the family in order to better provide for it" (Ni 2006).

This study is making an attempt in describing the well-being of migrants' children by studying the schooling status between those who are left-behind and those who have two parents at home. School enrollment is analyzed for children at compulsory education age (0-14) and those who are at high-school age (15-17) separately; and school progresses of children are also included to reflect the school performances between the two groups of children.

PREVIOUS STUDIES

Education is one of the most important indicators of children's well-being, since it is the foundation of human capital and determines their future occupations and life qualities. Ye and Pan (2008) indicate that children's education is the most popularly mentioned motivation among migrant parents. From their sample of left-behind children from various provinces in China, they find that the majority of migrant parents are in hopes of saving more money for the investment on further education of their children. In addition, school performance is also among the first concerns of migrant parents when they are making a phone call to their children (Ye and Pan 2008: P190). The following studies have investigated school attendances of left-behind children as well as their study interests and school performances.

Report from the 2005 China Bi-Census 1% sample data shows most rural left-behind school age children are currently in school, only about 1.75% of boys and 1.82% of girls age 6-17 are not receiving any education at all. But in Midwest China, left-behind children are found to have relatively higher school dropout rates (ChinaDevelopmentGateway 2008). About 1/3 of older children who are left at home have already joined the labor force (ChinaDevelopmentGateway 2008). No significant differences in study interests between left-behind and other children are shown yet (Lv 2007).

Since many guardians have received little education, supervision on studies at home for left-behind children is limited. Plus the scarcity of educational resources in rural areas, school performances of left-behind children are questionable (ChinaDevelopmentGateway 2008). Upon the study on a sample of 306 left-behind children from 6 counties in Hubei province, Cao (2006) notes that only 9.9% of them report that their school performance is "very good", and 40.8% of them think they are

just doing “fair” at school, and more than 10% say that their performance is “poor”. Similarly, through a questionnaire survey of 23 classes in an elementary school (at Rugao city of Jiangsu province), Zhuang (2006) finds that only 12.6% of left-behind children have good school performances, 63.6% of them are only fairly performed, and about 22.7% of them are rated as “poor”. A questionnaire survey on left-behind children (as well their guardians and school teachers) from 3 cities in Fujian province reveals that only 60% of left-behind children can pass exams at school, but for other children, 87% can do so (Lin 2003).

According to Ye and Pan (2008), school performances among left-behind children slightly decrease after their parents’ migration, and they are not receiving enough instructions or supervisions on their daily studies. Left-behind children who are currently being taken care of by their mothers are less likely to be late for school; but those who are living with other relatives are more likely to drop classes (P280). Similarly, Cao (2006) finds that when left-behind children’s parents were at home, 77.6% of them had never been late for school, when their parents are out, this rate drops to 43.4%, and accordingly, the percentage of being “often late for school” increases from 0.3% to 0.6%. However, most left-behind children are taking their study seriously and are trying their best at school.

School performances and study aspirations of children may as well be influenced by other factors such as their gender and age. It has been reported that left-behind girls show better school performances and attitudes than boys, in general. And left-behind girls express more desires of going to college, while boys are more likely to put seeking employment as their study purposes (Cao 2006: P249-250). Parental expectations may also differ by gender of their children. Although domestic research on Gansu children and their families shows egalitarian treatment for boys

and girls (from mothers' reports), however, it is still found that boys have higher educational aspirations and higher expectations on family responsibilities (Hannum and Kong 2003). Study in rural areas of Gansu Province also indicates that schooling of children is also affected by village resources, whereas higher village income increases school enrollment rates of children, particularly of girls (Hannum 2003). Study interests are found to decrease as left-behind children get older. It is indicated that left-behind children age 15-18 are less likely to show enthusiasms about school, and their purpose of receiving education diversifies more as they become older (Cao 2006: P262-263).

Findings on left-behind children's education indicate the prevalence of school enrollment and the high motivations from both children and their migrant parents. Meanwhile, left-behind children are also reported as being deprived of sufficient supervisions from their guardians and probably under-performance at school. In addition, different expectations and motivations in terms of education between boys and girls have also been mentioned.

THEORIES AND HYPOTHESES

Social Capital Theory

Social capital has been widely used to explain different outcomes from childhood experiences, and what has been frequently observed among childhood experiences is whether both parents are around. This concept has been introduced and discussed by several scholars. According to Coleman (1988), social capital in the family refers to important resources from the family and determines the environment for growth trajectory of children. For example, children whose families frequently move or children in single parent families are more likely to be relatively disadvantaged

because it is expected that there is less social capital available for them. Other than the presence of both parents, family's social structure, expectations, and press on children strongly relate to their school performances too. At the same time, local actors, norms and expectations from families to peer groups are also factors in shaping children's success in school (Coleman 1990; Schneider and Coleman 1993). Social capital theories address much on social networks, and the presence of two biological parents in the growth trajectories of children is among the most obvious aspects of various network resources.

Being more specific about social capital from the family structures, Nock (1988) introduces the concept of "hierarchy" within family (which refers to a structured authority pattern in which children are categorically inferior to adults), where only nuclear family can sufficiently provide for their children. He suggests that "children who live in nonhierarchical families may become handicapped in their ability to function within institutions that are fundamentally hierarchical, namely, education, the economy, and occupations" (P958). Astone et al. (1999) even argues that "family formation is among the most important types of investment in social capital make in all societies" (P5), and Portes (1998) also takes family supports as the irreplaceable benefits to children in that "Intact families and those where one parent has the primary task of rearing children possess more of this form of social capital than do single-parent families or those where both parents work" (P10). And the primary benefit lies in "children whose education and personality development are enriched accordingly" (P10). To put it straight, he also points out that families with two parents, with fewer children, and higher aspirations from parents to children are having greater social capital (P11).

According to social capital arguments, children who are not living with both

parents may receive less parental involvement in their lives and they may also be deprived of necessary resources from their families. Combined with other ascribed characteristics such as sibling size, gender and age of children, those who have less social capital in childhood are more likely to achieve less in their adulthood (Astone and McLanahan 1991). However, we can observe that the ways scholars discuss about parental absence are mostly in permanent rather than temporary situations, since they are mostly resulted from divorce or other likely scenarios. It is necessary to note here that migrant families are more likely to be on a temporary basis, in other words, migrant parents may come back home at a certain point of time or bring other family members to the destination area rather than leaving the family for ever. Nevertheless, social capital theory lends important support to analyses of children's well-being.

Arguments of Family Economics

Reasons of migration behaviors have been analyzed by scholars in various perspectives, but most of theories ignore the driving forces as well as obstacles from migrant families. The new economic model for migration posits that migration actually is a household (rather than an individual) decision-making process to reach the ideal allocation of household resources, where human capital can be maximized in profits and minimized in risks (Massey 1998). The decision may depend on current household situations, such as how many adults are available for housework and how many children are in need of attention. Hoddinott (1994), drawing on data collected in western Kenya, also addresses that migration can be modeled as the outcome of a joint utility maximization made by the prospective migrants and the other household members.

Becker (1981) views socioeconomic attainment by offspring as a commodity produced by a rational allocation of parental time and income. Similarly, this

argument is also applied by Buchmann (2000) in investigations on the education of children in 596 Kenyan households, since the inequality of education may due to the evaluation on costs and returns to household resources that children can payback via their future contributions. And this type of evaluation has been considered as a major source of gender inequality or discrimination among rural 9-12 year-olds children in Gansu, China (Hannum and Kong 2003). Similarly, the "family adaptive strategies" perspective suggests that family members work together and develop approaches to increase income through various flexible and active strategies, such as sending members to work and allocating other roles and resources to other family members (Moen and Wethington 1992). This framework has been used by studies of internal-migrant families in China where grandparents and other family members play roles as guardians of children so that children's parents can be easily adjusted to their work force participation (Chen, Short and Entwisle 2000; Entwisle and Chen 2002).

Social Remittances

Some of the immigration research also addresses the impacts from immigrants on people living in sending areas. Levitt (1998) defines social remittances as "the ideas, behaviors, identities, and social capital that flow from receiving to sending-country communities" (P926). For example, Kandel and Kao (2000) conclude that, upon the knowledge and information brought by migrants in the U.S., Mexican children are examined to have higher grades in middle school (as well as higher motivations for working abroad), but they also have lower aspirations to attend a local university (in expectation of pursuing higher trainings or education abroad or enter U.S. labor market as soon as possible). Thus, using studies from the same survey as well as the Mexican Migration Project data, Kandel and Massey (2002) develop a "culture of migration" theory that, as migrations to the U.S. become more prevalent, the odds that

young people migrate out to the U.S. increase and the odds they continue studying in school decrease accordingly.

This theory is closely related to the situation of internal migration in China, where migrants bring new ideas to their families and children. Experiences about migration and other information on various aspects of urban lives that migrants have learned are expected to be directly and indirectly transmitted to family members. It is highly possible that when under-educated parents realize the fact that mental labor jobs have higher paybacks, they may deliver this information to their children about how important it is to study hard and to be fully prepared for the urban job markets. On the contrary, if migrant parents are satisfied with what they get from manual labors, it is also possible that their children will not take school seriously anymore, since the payback of labor outweigh the cost of time and energy for further education. In addition, parental migration behaviors and performances are found to have influence on their children's aspirations of attainments in school (Haveman, Wolfe and Spaulding 1991; Kandel and Massey 2002; Woelfel and Haller 1971), whereas left-behind children are more likely to be aspired to migrate out in the near future, thus their motivations of continuing school tend to be lower.

Hypotheses

Based on theoretical framework as well as empirical studies, several hypotheses can be derived for this study. Generally speaking, parental-migration can be viewed as a double-edged sword: remittances from them are expected to enhance the economic well-being of their children, but at the same time children are also deprived of many social capitals that parents can offer by being around them. To be specific, first of all, as far as social capital theories are considered, left-behind children in China may be negatively affected by not having one or both parents by their sides, thus, their

well-being status is not as good as their peers with both parents at home. And this situation may affect several aspects of their daily lives.

Hypothesis 1: With limited supervisions and instructions from both parents, left-behind children's school progresses are more likely to be delayed than other children;

Hypothesis 2: With the migration experiences in the cities, migrant parents are more likely to invest in the human capital of their children; left-behind children are more likely to be in school;

Hypothesis 3: Learning from the benefits of migration from their families, left-behind children (age 15 or older) are more likely to be encouraged to join the migration tidal wave and discontinue school after finishing their 9-years-compulsory education.

Hypothesis 4: Children's school enrollment and school progress are also subject to other factors: rural children are more likely to drop-out schools, children with more siblings are less likely to stay in school; girls are inferior in schooling than boys; and schooling of children varies by region.

DATA AND METHODS

China Health and Nutrition Survey

Three most recent waves (2000, 2004 and 2006) of China Health and Nutrition Survey (CHNS) data (for children under age 18) are used for this project. The CHNS employs a multistage, random cluster process to draw the sample surveyed in 9 provinces of China: Guangxi, Guizhou, Heilongjiang, Henan, Hubei, Hunan, Jiangsu, Liaoning and Shandong. This dataset is by far the only longitudinal data in China with detailed measurement on children's education, health and other daily activities which

also provides household migration information (indicated by household data). Preliminary data analysis from the merged information of household roster and the children questionnaire shows about 16% (721) of all children (4507) participated in the most recent 3 waves of CHNS survey have ever been left-behind by one or both of their parents. Children under 18 years old have been surveyed using the same questionnaire until 2000 in CHNS. From wave 2004, children and adults were surveyed separately. Since this study only focuses on children's education, for wave 2000, only those who age 6-17 are selected into the sample. The age limitation of children also generates substantial attrition rate between previous and current waves. For children age 14 or above in wave 2000 have to participate in the adults survey in 2004, and those who reach 16 years old in 2004 are investigated as adults in 2006. Only 15.66% of all individuals in this sample completed 3 waves as children, and another 30% of them have participated 2 waves of the survey.

Measuring the Dependent Variables

There are two major aspects of children's education, school enrollment (scored 1 if currently enrolled in school, 0 if otherwise for children age 6 and above) and school progress (e.g. years in primary, middle and high school) at certain age (coded 1 if delayed, coded 0 if not). Each dependent variable has been separated into two aspects: for school enrollment, children age 6-14 and children 15-17 are analyzed separately. For school progress, 1 or more years of delay and 2 or more years of delay have been created. See Table 1 for details of the dependent variables.

Measuring the Key Independent Variable

The primary independent variable for this analysis is the left-behind status of children (not left-behind; left by father only, by mother only, or left by both parents) which can be generated from information provided by the household data. The longitudinal data

of household roster information prepared by CHNS provide parent-child relationships, and the question "(Is household member) still lives in your household?" (Question A5E) in household survey asks whether the household member is currently seeking employment elsewhere (option number 4). If one or more parents of a child are seeking employment elsewhere, this child is identified as a left-behind child.

Left-behind children are compared with children who are living with both parents in this study. In the sample, some non-left-behind children are having different living arrangements: for example, one of their parents may currently in the military or is abroad. Children who are not living with both parents are excluded from the comparison group and are classified as "other situations". See Figure 1 for the classification of left-behind children and the comparison group in CHNS 2000, 2004 and 2006.

Other Explanatory Variables

This study encompasses individual, household and regional characteristics into analysis. Individual characteristics of children include their age (in years), gender (scored 0 if male, 1 if female). Household information includes rural/urban household registration status (scored 1 if the household is registered as rural *hukou,* scored 0 if urban), household economic situation (household per capita income in RMB *yuan* during the past year), as well as number of siblings of children. Regional factor mainly refers to provincial differences (Guizhou is the reference province, where the percentage of left-behind children is ranked the highest among the 9 provinces covered in the survey). Table 1 shows the measurement and distribution of those independent variables.

Both descriptive analysis and the random-effect models are fitted for this study. For random-effect models, firstly the data is used as a panel dataset, since

CHNS follows same households over years, some children have participated more than one survey, and the changes within individuals can be incorporated into the analysis. However, CHNS children sample is an unbalanced panel data. This study only focus on children who are less than 18 years old, and CHNS separately investigates children and adults from wave 2004, which means children who are 14 years or older have to participate in the adult questionnaire; on the other hand, later-born children in 2004 and 2006 are not possible to be included in the year of 2000. Cross-sectional analysis using household as unit has also been applied for each survey wave in this study.

All of the 4 dependent variables are binomial. The model specification for random-effect regressions is:

$$\text{Logit} \quad Pr(Y_{ij} = 1 \mid X_{ij}, u_i) = a + X_{1ij}b_1 + X_{2ij}b_2 + \ldots + X_{pij}b_p + u_i$$

RESULTS

Descriptive Statistics

In this sample of 3 waves of CHNS data, when other children (who have parents not at home, but those parents are not migrants) are excluded, in 2000, there are 7.1% of children who are 6 years or older who have been left behind; in 2004, this rate is increased to 15.2%, and in 2006, 19% children are left-behind by one or more migrant parents (data not shown). This reflects the fact that more and more adults who have children are seeking employment at places other than their hometowns. Because of the compulsory education policies, 94.9% of all children age 6-14 are currently in school (See Table 1). But for older children who age 15-17, school enrollment rate is dropped to 72.6%. 28.1% of all children are 1-year delayed in school, and 8.1% of all children are identified as at least 2-years delayed in school.

Figure 2 shows the school enrollment rates by survey year for each age of children. For all children in general who age 6-14, the school enrollment rates in 2004 and 2006 are better than that in 2000. Left-behind children age 14 in 2000 have lower school enrollment rate than children in the comparison group. Since age 6-14 is the compulsory education stage (for elementary school and junior high school), school enrollment obviously drops for children age 15-17 (the age period of going to high school). And for older left-behind children, school enrollment rate drops even faster. From Figure 2 we can find there are only 40% of left-behind children who are still in school at age 17; but for children with both parents at home, 70% of them are still in school.

According to the Law of Compulsory Education, children who have reach 6 years old should be sent to school (Duan and Yang 2007), which indicates that children age 7 should be in the 1st grade of elementary school, and those who have not received any education yet are classified as "1 year delayed in school" in this study. School progress not only shows the age when children have been sent to school and when children have dropped of school, but also indicates their school performances. If they cannot catch up with the proper school cohorts, children may have to stay down with later cohorts. Figure 3 compares children who are at least 1 year delayed in school. Similar to school enrollment situations, children in the comparison group have higher 1-year-school-delay rates in 2000, and this situation has been improved in wave 2004 and 2006, especially for children who age 15-17. As for children who are left behind, this rate increases faster than their counterparts from age 14. Particularly in 2000, left-behind children at age 17 are almost 100% behind the ideal progress. This indicates that other than the high not-in-school rate for left-behind children at age 17, those who are staying in school are not doing as good. In 2006, this 1-year-delay

rate for left-behind children age 17 is still as high as 80%; but for the comparison group, this rate is only 40%.

Figure 4 goes further in measuring the 2-years-delay situation between children left-behind and the comparison group. If the 1-year-delay in school might be out of entering school at a later age, the 2-years-delay would mainly indicate poor performance of children. Of all the 3 survey waves, children age 8-14 have similarly low 2-years-delay rates, regardless of their left-behind status; but again this rate for left-behind children increases very fast from the age of 15. In 2004 and 2006, this rate is as high as 80% for left-behind children age 17; in 2006, only 20% of children who have two parents at home delay 2 or more years in school.

Longitudinal Regression Results

Others equal, left-behind children age 6-14 are more likely to be enrolled in school. They also do not show any difference from the comparison group in enrollment rate at age 15-17. Further more, left-behind children are no more likely to be delayed in schools, compared to children who have two parents at home. Table 2 shows the results from random-effect models.

Contrary to the expected gender differences in schooling, girls do not appear to be disadvantaged at age 6-14 either. Girls age 15-17 are even more likely to be in school, compared to boys. In addition, girls are less likely to be delayed in their school progresses. With other variables controlled, the compulsory school enrollment is higher for older children, but at the high school stage, children's school enrollment decreases as they get older. Older children are also more likely to be delayed in school.

Children's schooling subject to their household characters too. Although rural children are not inferior in their enrollment at age 6-14, they are less likely to attend

high school, compared to children who have urban *hukou*. That partially explains why rural children are 2-3 times as likely as urban children to be delayed in their school progresses. Household economic status is another factor that contributes to children's education. With higher per capita income of the household, children age 6-14 are more likely to be enrolled in school, and are less likely to be delayed in school progress. However, children who have more siblings in the household are less likely to receive compulsory education. One more sibling reduces the probability of being in school at about 32% for children age 6-14; but number of siblings does not have significant effect on the odds of being in school for older children. Also, children with more siblings are more likely to be delayed in school.

Schooling of children also varies by regions. Compared to Guizhou, where more children are left-behind, children in Heilongjiang province are less likely to attend school at age 6-14, and children in Hubei have higher school enrollment rates. At age group 15-17, children in Henan are less likely to stay in school, while Hunan has higher enrollment rates. Children in Hubei and Hunan province appear to have lower probability of being delayed in their education, and children in Guangxi are more likely to be 1-year-delayed in their progress, compared to Guizhou.

Cross-sectional Regression Results

Table 3 lists the cross-sectional random-effect models for each survey year on children's school enrollment at age 6-14 as well as at age 15-17. Left-behind status does not make any difference in children's school enrollment, others equal. Age is the only significant individual characteristics that have effect on children age 6-14 across the 3 waves, where older children are more likely to be in school for compulsory education. Rural children age 15-17 in 2006 are significantly less likely to stay in school, but for other years, rural *hukou* status does not show any difference in any

stage of school enrollment. Similarly, household per capita income only shows positive effect in 2004 for children age 6-14. Children with more siblings are less likely to be enrolled for compulsory education in the year 2000 and 2006, but not in 2004. In 2000, children in Jiangsu province and Hubei province have higher compulsory school enrollment rates than children in Guizhou; and in 2006, children in Heilongjiang are less likely to be in school at age 6-14, compared to children in Guizhou. However, no regional variations are shown for children age 15-17.

Results for school progress are displayed in Table 4 by survey years. In 2004, left-behind children are more likely to be delayed in school, compared children who have both parents around. They are 67% more likely to be delayed 1 or more years and are 177% more likely to be delayed 2 or more years in 2004. But for 2000 and 2006, this difference is not statistically significant. Again, as results shown in the longitudinal analysis, older children are more likely to be delayed for 2 or more years in school at age 8-16, and this is consistent across survey waves. Others equal, rural children are twice as likely be delayed in school, compared to children with urban *hukou*. Children living in households with higher per capita income are less likely to be delayed in the year of 2000; and number of siblings also only negatively affects children's school progress in 2000. Regional variations exist for each survey year, too. See Table 4.

SUMMARIES AND CONCLUSIONS

This study investigates the education of left-behind children of internal migrants in China, and compares them to the children who have both parents at home. Both school enrollment and school progress of children in the most recent waves of CHNS sample are examined using longitudinal and cross-sectional methods. Hypotheses

generated from the social capital theories, family economic arguments, and the social remittance theories are tested. Results indicates that school enrollment of left-behind children are comparable to children who are with both parents around, and in age 6-14, left-behind children are even more likely to be enrolled in school. This testifies the social remittance theories that, migrant parents, with their experiences from the labor market outside of their hometowns, put emphasis on their children's studies. However, cross-sectional analysis shows that left-behind children in 2004 appear more likely to be delayed in their school progress, which indicates that left-behind children may face less social capital in terms of supervisions and involvements in their studies from their parents. At the same time, from the multivariate analysis with other factors taken into consideration, children with rural *hukou*, with more siblings, or with less income in the household are inferior in their education. But the inspiring finding is, girls are not found to be discriminated at least in schooling. In addition, regional variations in both school enrollment and school progress have been detected at the provincial level.

Nevertheless, this study faces limitations in several aspects:

First of all, there is no further information about the details of migrant parents—about where they went for employment, how faraway did they go and how frequently they go back home and visit their children. The time intervals of the data (4 years from 2000 to 2004 and 2 years between 2004 and 2006) are rather large to reflect the above information and cannot fully describe what happened in between of the two points of time.

Furthermore, the comparison group of left-behind children consists of many other possible situations: there might be children who have ever been left-behind but not detected at the three survey points; children who have been left-behind and were taken by their parents to destination areas; children who have never been left-behind

but migrate with their parents at later survey times; children who were with their parents in destination areas but came back…etc. In other words, left-behind children in this study only consist of those who have been identified as left-behind according to available information in the survey questionnaires at the 3 points of survey time. Each of the above possible situations are in need of attention in studies on children's well-being, but current study cannot provide more details due to the sample size as well as the questions available in the survey.

Despite the possible limitations of the study, it still contributes to the literatures on left-behind children in China by using a national-representative sample as well as by comparing left-behind children with children with two parents at home. It turns out that left-behind children are not living miserably just because their parents are not around taking care of them. The national compulsory education policy has guaranteed school enrollment in elementary and junior high schools among rural children and it also helps in eliminating the traditional gender discrimination against girls. However, the prevalence of high school education still needs to be improved for children in China. Although the school progress among left-behind children is not significantly worse than children in the comparison group of this study, this does not reflect the full picture of their school performance. More information yet needed for their grades in school. Considering the trend that more and more children are being left-behind in their hometowns, more studies and services are needed on their well-being status.

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Table 1 Description of Dependent and Independent Variables

	Description	# Obs.	Mean/P	SE
Dependent Variables				
Enrollment	Age 6-14 1=yes, 0=no	3947	0.949	0.220
	Age 15+ 1=yes, 0=no	1306	0.726	0.446
1-year school delay	Age 7-15 1=yes, 0=no	4420	0.281	0.449
2-years school delay	Age 8-16 1=yes, 0=no	4480	0.081	0.274
Independent Variables				
Level 1 Variables	Age 6+			
Left-behind status	1=yes, 0=no	4834	0.127	0.333
Individual Level				
Gender	1=girl, 0=boy	4834	0.463	0.499
Age	In years	4834	11.863	3.205
Household Level				
HH registration status	1= rural, 0= urban	4834	0.765	0.424
Per Capita income	RMB yuan	4771	4771.696	5220.327
Number of siblings		4834	1.845	0.867
Regional Level	Ref: Guizhou			
Liaoning		4834	0.106	0.307
Heilongjiang		4834	0.118	0.323
Jiangsu		4834	0.093	0.291
Shandong		4834	0.074	0.262
Henan		4834	0.131	0.337
Hubei		4834	0.115	0.320
Hunan		4834	0.092	0.289
Guangxi		4834	0.134	0.341
Level 2 Variables				
Survey Waves	2000, 2004 and 2006			
Households	Household ID			

Sources: CHNS 2000, 2004, 2006

Table 2 Random-Effect Regression Results on Dependent Variables (Longitudinal Analysis)

	Enrollment				1Yr Delay		2 Yrs Delay	
	6-14		15-17		7-15		8-16	
	OR		OR		OR		OR	
Left-behind	1.588	*	1.400		0.967		0.853	
Individual								
Girl	1.048		1.859	*	0.842	*	0.757	*
Age	1.183	***	0.338	***	1.059	***	1.526	***
HH								
Rural	1.025		0.078	***	2.161	***	3.830	***
Income*	1.165	*	1.157		0.906	*	0.679	***
Siblings	0.683	***	0.735		1.383	***	1.745	***
Regional								
Liaoning	0.871		0.706		1.024		0.563	
Heilongjiang	0.498	**	0.666		2.621	***	2.753	**
Jiangsu	1.851		1.028		0.750		1.808	*
Shandong	0.908		0.798		1.075		2.337	**
Henan	1.299		0.366	*	0.856		1.227	
Hubei	2.367	**	0.795		0.559	***	0.756	
Hunan	1.601		3.184	*	0.580	**	0.372	**
Guangxi	1.206		1.319		1.772	***	0.787	
/lnsig2u	-11.907		1.685		0.511		0.517	
sigma_u	0.003		2.322		1.291		1.295	
rho	0.000		0.621		0.336		0.338	
Log LL	-636.239		-567.510		-2082.039		-866.403	
Obs	3347		1122		3740		3799	
Groups	2431		1054		2669		2714	

Sources: CHNS 2000, 2004, 2006

Note: *p<0.1, **p<0.05, ***p<0.01; income refers to the log format of household per capita net income.

Table 3 Random-Effect Models for School Enrollment by Survey Year

	Age 6-14						Age 15-17					
	2000		**2004**		**2006**		**2000**		**2004**		**2006**	
	OR		OR		OR		OR		OR		OR	
Left-behind	1.246		2.457		0.841		1.048		1.988		0.996	
Individual												
Girl	0.926		0.955		1.228		2.227		1.854		2.041	
Age	1.182	***	1.146	*	1.586	***	0.200		0.106		0.576	
HH												
Rural	1.355		0.417		0.625		0.052		0.002		0.199	**
Income*	1.126		1.388	**	0.978		1.269		1.570		1.151	
Siblings	0.721	*	0.744		0.615	**	0.534		0.803		0.824	
Regional												
Liaoning	1.027		1.693		2.344		0.553		0.524		0.615	
Heilongjiang	0.764		0.328		0.229	**	0.910		0.183		0.640	
Jiangsu	4.304	**	0.439		2.581		3.522		0.073		0.834	
Shandong	1.421		0.530		0.756		3.685		0.105		0.394	
Henan	1.898		0.609		1.409		0.600		0.030		0.580	
Hubei	3.691	**	2.574		2.606		0.795		0.626		0.601	
Hunan	2.194		1.286		1.941		3.054		4.511		2.154	
Guangxi	1.840		0.753		0.854		2.074		0.215		1.243	
/lnsig2u	0.755		-12.274		-1.539		2.670		3.060		-0.197	
sigma_u	1.458		0.002		0.463		3.800		4.619		0.906	
rho	0.393		0.000		0.061		0.814		0.866		0.200	
Log LL	-348.915		-128.475		-125.878		-217.569		-195.292		-139.919	
Obs	1405		1029		913		405		432		285	
Groups	1126		886		773		382		399		273	

Sources: CHNS 2000, 2004, 2006

Note: *p<0.1, **p<0.05, ***p<0.01; income refers to the log format of household per capita net income.

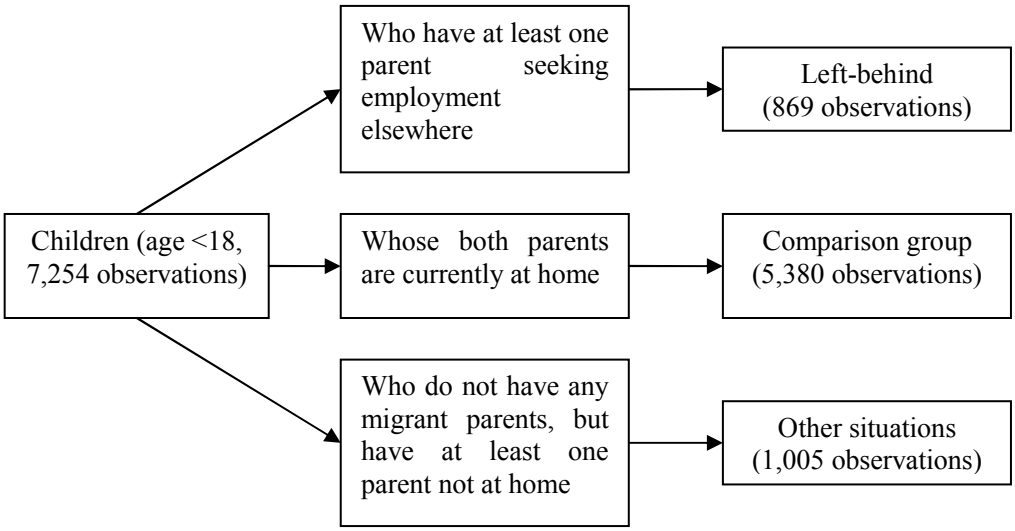
Table 4 Random-Effect Models for School Delay by Survey Year

	1 Year Delay (Age 7-15)						2 Years Delay (Age 8-16)					
	2000		**2004**		**2006**		**2000**		**2004**		**2006**	
	OR		OR		OR		OR		OR		OR	
Left-behind	1.121		1.666	*	1.048		0.673		2.773	**	1.187	
Individual												
Girl	0.827		0.856		0.910		0.902		0.657		0.328	*
Age	1.143	***	1.045		1.065		1.589	***	1.497	***	1.920	***
HH												
Rural	2.255	***	2.319	***	2.084	**	3.067	***	7.504	***	7.102	*
Income*	0.811	*	0.900		0.945		0.618	***	0.783		0.746	
Siblings	1.749	***	1.071		1.172		1.781	***	1.411		1.922	
Regional												
Liaoning	1.370		0.744		0.272	**	0.339	**	4.039		0.000	
Heilongjiang	3.678	***	2.190	**	2.660	**	1.401		13.324	***	15.200	*
Jiangsu	0.837		0.817		0.144	***	0.927		7.816	**	1.393	
Shandong	0.759		1.167		1.485		1.080		15.422	***	11.791	
Henan	0.770		1.120		0.741		0.286	***	16.014	***	9.324	*
Hubei	0.452	**	0.599		0.287	**	0.528		2.249		0.682	
Hunan	0.401	**	0.560		0.651		0.237	***	1.278		0.434	
Guangxi	2.102	*	1.888	**	1.577		0.484	*	1.893		3.437	
/lnsig2u	1.354		0.558		1.070		0.288		0.733		2.166	
sigma_u	1.968		1.322		1.707		1.155		1.442		2.953	
rho	0.541		0.347		0.470		0.288		0.387		0.726	
Log LL	-983.569		-588.007		-467.525		-465.833		-212.431		-146.577	
Obs	1702		1112		926		1734		1150		915	
Groups	1323		961		790		1330		982		793	

Sources: CHNS 2000, 2004, 2006

Note: *p<0.1, **p<0.05, ***p<0.01; income refers to the log format of household per capita net income.

Figure 1 Identification of Left-behind Children



Sources: CHNS 2000, 2004 and 2006.

Question 12 (A5E) Still lives in your household?

1 Yes
2 No, gone to school
3 No, military service
4 No, sought employment elsewhere
5 No, gone abroad
6 No, other
9 Unknown

Figure 2 School Enrollment Rate between Left-behind Children and Comparison Group, by Age and by Survey Year

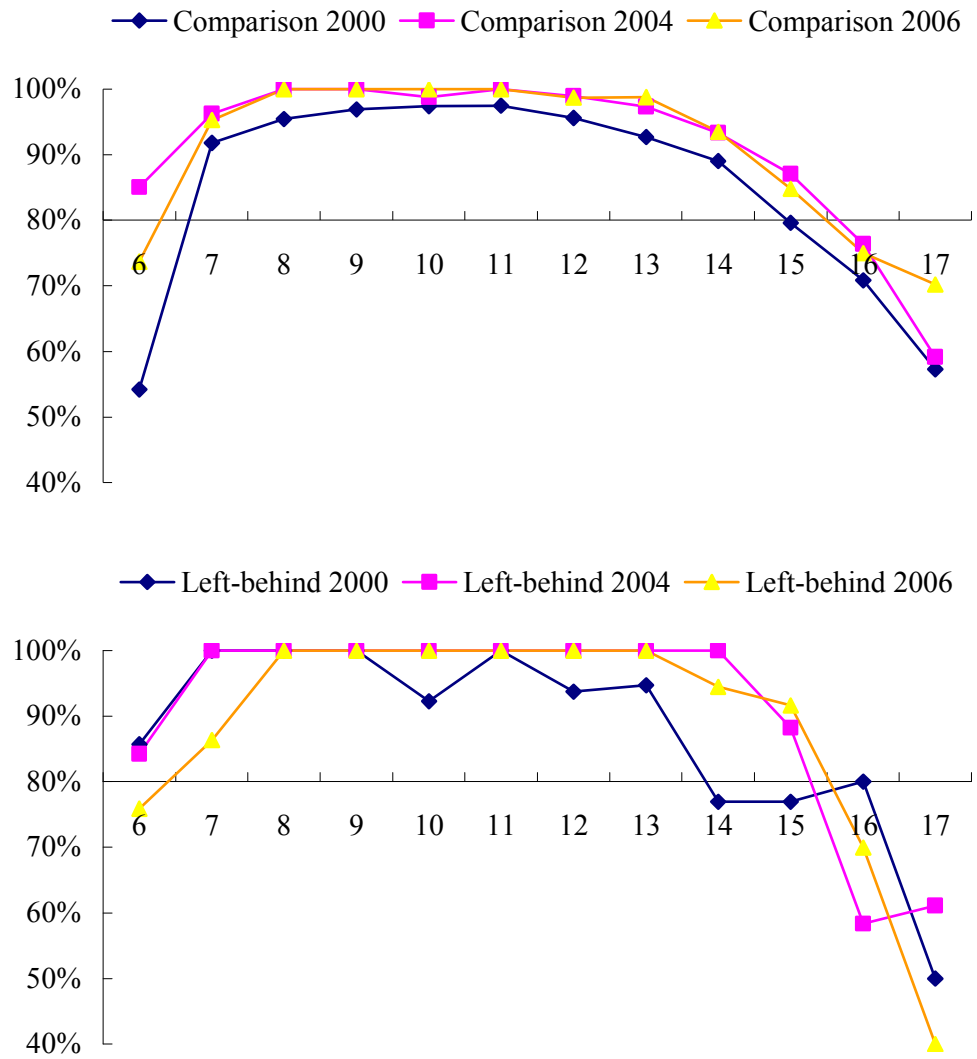
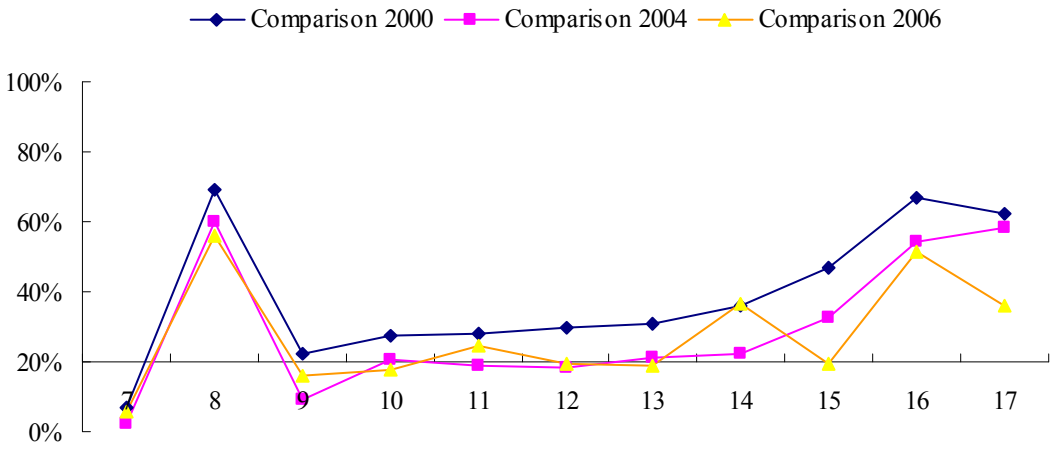


Figure 3 1-Year-Delay in School Progress Rate between Left-behind Children and Comparison Group, by Age and by Survey Year



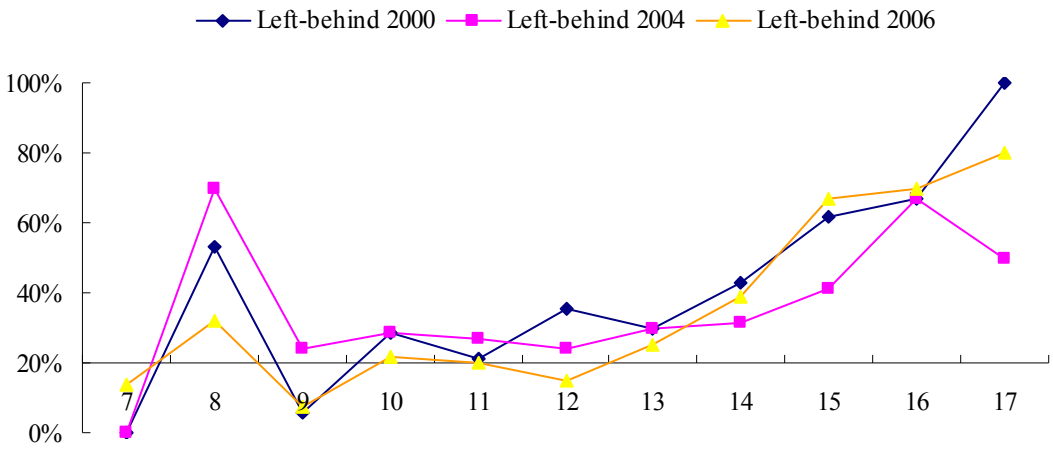


Figure 4 2-Years-Delay in School Progress Rate between Left-behind Children and Comparison Group, by Age and by Survey Year