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Migration, displacement and education: Building bridges not walls

SHORT- AND LONG-TERM OUTCOMES OF THE LEFT BEHIND IN CHINA: EDUCATION, WELL-BEING AND LIFE OPPORTUNITIES

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CONTENTS

ABSTRACT

This report addresses the scope of China's left-behind phenomenon and its roots in migration and education policies. It reviews evidence about disadvantages associated with left-behind status and discusses recent policy responses to the left-behind phenomenon. Empirical evidence is drawn from a national study of middle school students and a 15-year longitudinal case-study of children from rural Gansu, China.

While a number of prior studies have shown mixed findings about the scale of educational disadvantage of left-behind children, compared to other groups, evidence presented here indicates that even after adjusting for school or community and household socioeconomic status, there are multiple domains in which homes of left-behind children are disadvantaged. They tend to live in households characterized by poorer health resources, cultural resources, and social resources. By definition, they lose access, at least temporarily, to the "human capital" of their absent parents. Children in the short term thus experience more physiological, psychological, and (in the national comparison) educational disadvantages than their non-left-behind counterparts. In the long-term, our case study from Gansu Province suggests that father absence is associated with reduced educational attainment and possibly greater propensity to migrate, but not employment or long-term family relations. Overall, disadvantages appear to be more consistent and more generalized for mother-absent and dual-parent-absent families than for father-absent families.

We discuss policy responses, and possible policy strategies, in the closing segment of the report. Policy reforms that obviate the need for children to be left behind are one evident solution to the problem, and some steps appear to be happening in this direction, but local resistance may be substantial. More immediately, boarding schools and community centers are commonly-proposed policy solutions to address the immediate needs of left-behind children, with promise but some clear pitfalls. Other possible supports are discussed.

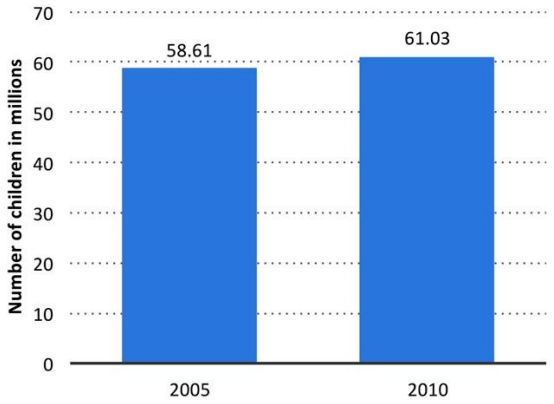
INTRODUCTION

In China, in 2010, the All-China Women's Federation estimated that 61 million children were left behind by one of their parents. This figure represents 21.9 percent of China's child population, and 37.7 percent of the child population in rural areas (See Figure 1; "Research Report on the Situation of Left-behind and Rural-urban Migrant Children in China" 2013; All China Women's Federation and National Bureau of Statistics of China 2016; All China Women's Federation, National Bureau of Statistics of China, and Renmin University of China 2016). Using a more restrictive definition by the State Council characterizing children under 16 years old with both parents away from home as left-behind children ("Opinions of the State Council on Strengthening the Care and Protection of the Left-behind Children in Rural Areas" 2016), there were 9 million left-behind children in China in 2016 ("The Bulletin on the Thorough Investigation of Left-behind Children in Rural Areas and the Special Action of 'Joint Guardians Accompanying Children'" 2016a). The immense scale of the left-behind phenomenon has prompted intense concern in the policy community, and from scholars, journalists, and the general public about implications for child welfare.

This report offers an overview of the roots, scale, and nature of the left-behind phenomenon. It provides a critical synthesis of the academic literature and an empirical description comparing left-behind children to other children in terms of short- and long-term welfare outcomes.

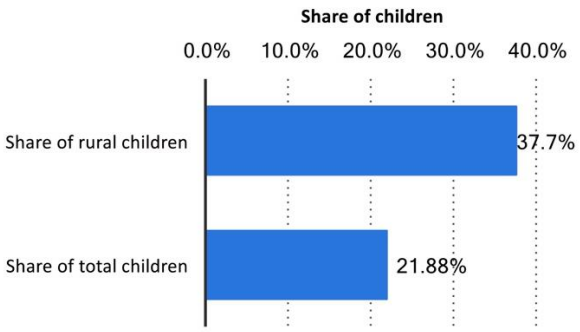
Figure 1. Census estimates of the left-behind phenomenon

Panel A. Number of migrant worker children growing up away from their parents in China in 2005 and 2010 (in millions)



Source: National Bureau of Statistics of China. 2016. "Number of Migrant Worker Children Growing up Away from Their Parents in China in 2005 and 2010 (in Millions)." Data. Statista. 2016. https://proxy.library.upenn.edu:3875/statistics/258434/number-of-rural-left-behind-children-in-china/.

Panel B. Share of migrant worker children growing up away from their parents in rural areas and total number of children in China in 2010



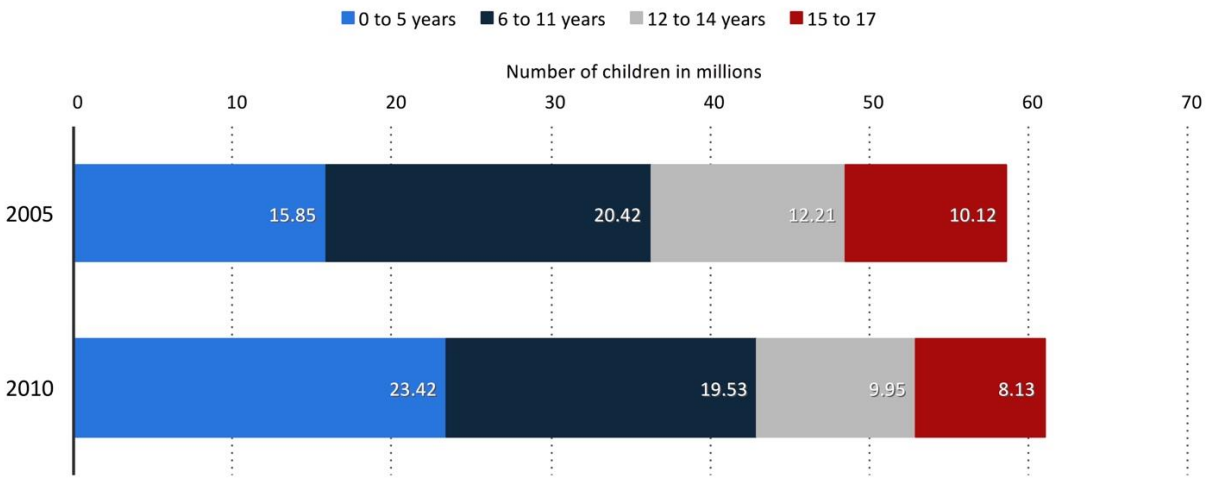
Source: All China Women's Federation, National Bureau of Statistics of China, and Renmin University of China. 2016. "Share of Migrant Worker Children Growing up Away from Their Parents in Rural Areas and Total Number of Children in China in 2010." Data. Statista. 2016. https://proxy.library.upenn.edu:3875/statistics/258445/share-of-left-behind-children-in-rural-and-total-number-of-children-of-china/.

This report consists of three parts. The first part of the report provides background about the left-behind phenomenon in China, with attention to relevant migration policies and education policies. The second part discusses the extent to which evidence suggests that left-behind children are more vulnerable than other children, in various domains of child welfare and in long-term outcomes. Short-term associations are addressed with a review of existing empirical studies using various large-scale surveys in China and via an analysis of cross-sectional data from the China Education Panel Survey (CEPS, 2013-2014). Long-term outcomes are investigated using a case study from Gansu Province: data from the Gansu Survey of Children and Families (GSCF, 2000, 2015). In the GSCF data, left-behind children and their welfare were first measured in 2000; measures of education, family, health, and psychosocial well-being in 2015 are analyzed to assess long-term risks associated with the being left-behind experience, after adjustments for multiple confounders. The third part of the report discusses policy developments aimed at improving the well-being of the left-behind.

PART 1: SCALE AND ROOTS OF THE LEFT-BEHIND PHENOMENON

As noted in the introduction, the 2010 census indicated that just under a quarter of China's child population, and well over a third of the child population in rural areas, had been left behind by at least one parent ("Research Report on the Situation of Left-behind and Rural-urban Migrant Children in China" 2013). A 2016 migrant population survey by the National Health and Family Planning Commission similarly reported that, nationwide, 35.6 percent of children were living without their mother or father (reported in Lau 2018). The figure was as high as 44 percent in three provinces that are key sources of migrant workers--Anhui, Henan and Sichuan provinces, where the problem of left-behind children is most severe (reported in Lau 2018). Increasing numbers of young children are represented in this group: in 2005, 15.85 million children ages 0 to 5 were living away from a parent, while in 2010, the corresponding figure was 23.42 million (see Figure 2).

Figure 2. Number of migrant worker children growing up away from their parents in China in 2005 and 2010, by age group (in millions)



Source: All China Women's Federation, and National Bureau of Statistics of China. 2016. "Number of Migrant Worker Children Growing up Away from Their Parents in China in 2005 and 2010, by Age Group (in Millions)." Data. Statista. 2016. https://proxy.library.upenn.edu:3875/statistics/258437/number-of-left-behind-children-in-china-by-age-group/.

Using a more restrictive definition of left-behind children that designates left-behind status when both parents are unavailable gives a total estimate of 9.02 million ("The Bulletin on the Thorough Investigation of Left-behind Children in Rural Areas and the Special Action of 'Joint Guardians Accompanying Children'" 2016b). Among these, 8.05 million (89.3 percent) were in custody of grandparents, 0.3 million (3.3 percent) were in custody of relatives and friends, 0.36 million (4 percent) were unattended, and 0.31 million (3.4 percent) had one parent away for work and the other parent without custodial capacity. In

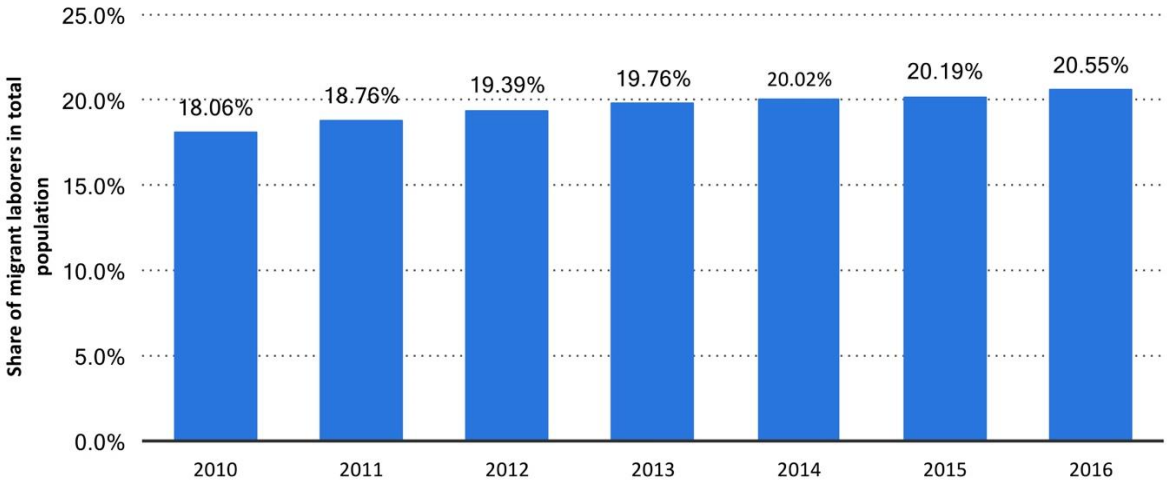
addition, 0.32 million left-behind children in custody of grandparents, relatives, and friends were reported to have questionable custodial quality. The numbers of left-behind children at ages 0-5, 6-13, and 14-16 were 2.50 (27.8 percent), 5.59 (62.0 percent), and 0.92 (10.2 percent) million, respectively. The geographic distribution of left-behind children in this set of estimates indicates a concentration in the middle and western regions of China. Provinces with over 0.7 million left-behind children include Jiangxi, Sichuan, Guizhou, Anhui, Henan, Hunan, and Hubei, which altogether accounted for 67.7 percent of left-behind children ("The Bulletin on the Thorough Investigation of Left-behind Children in Rural Areas and the Special Action of 'Joint Guardians Accompanying Children'" 2016b).

The massive numbers of left-behind children in China are a product of two phenomena: first, the decision of increasing numbers of rural residents to move into cities to work, and second, the decision of large numbers of migrants not to bring children with them. The rising stream of migration in recent decades can be credited to a shift from a collective, planned to a private, market economy, initiated in 1978, and in ensuing years to reduced state control over labor mobility (Chang, Dong, and MacPhail 2011, 2199). Market transition brought rapid economic growth and a growth in rural surplus labor associated with efficiency gains in agricultural production prompted by decollectivization. Coupled with large regional and urban-rural economic disparities and reduced policy barriers to population mobility, these changes set the stage for large numbers of rural residents to migrate to urban areas to seek employment in industrial and service sectors.

A key factor in understanding the increasing propensity to migrate in the Chinese context is the policy barrier to population movement entrenched in China's household registration or *hukou* system. The *hukou* system was first established in the late 1950s with population mobility control as one key aim (C. Fan 2008; S. Lu et al. 2016). This system was created in part to regulate migration from rural to urban areas. It officially identifies persons as legal residents of particular areas and divides the population into agricultural and nonagricultural sectors (Liang 2001). *Hukou* status has also determined rights to social welfare benefits, including education (S. Lu et al. 2016). As Fan (2008, 66) notes, "until the mid-1980s it was extremely difficult for rural Chinese to survive in cities, because without urban *hukou* they did not have access to the necessities of life such as food and housing, much of which was centrally controlled

and allocated." The barriers to movement imposed by this system have weakened in recent decades, with market transition, privatization, and the decline of publicly-provided goods and services tied to residency.[1]

Figure 3. Share of migrant workers in China's total population from 2010 to 2016



Source: National Bureau of Statistics of China. 2016. "Share of Migrant Workers in China's Total Population from 2010 to 2016." Data. Statista. 2016. https://proxy.library.upenn.edu:3875/statistics/259461/share-of-migrant-workers-in-chinas-total-population/.

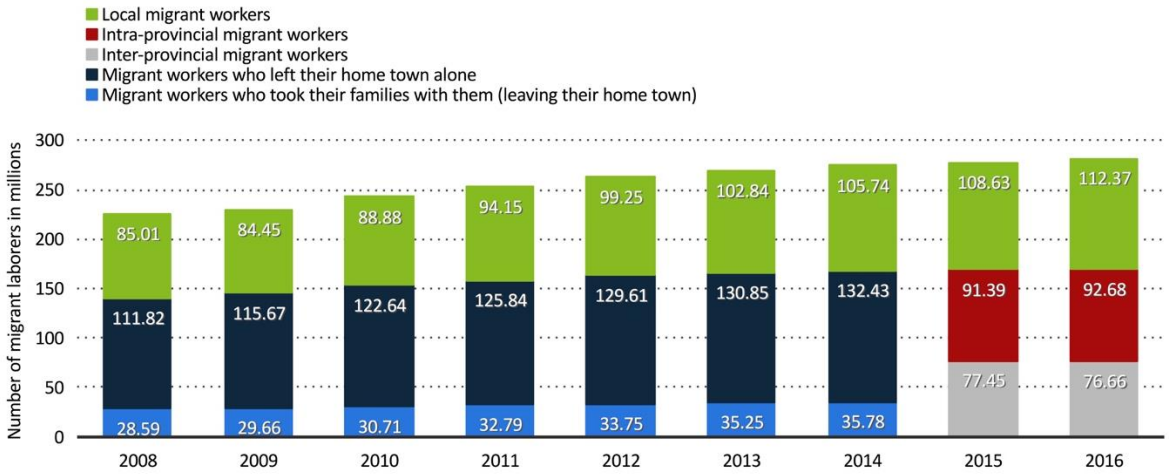
Notes: The study covered around 237,000 rural workers from 31 provinces, 1,527 districts and 8,906 villages.

Li (2010) indicates that the number of migrants grew from less than 2 million in the late 1970s (which he characterizes as a vague estimate), to 30 million with the abolition of food coupons in urban areas in the late 1980s, to about 140 million in 2008[2]. Recent estimates indicate that rural migrant workers constitute nearly 21 percent of China's population (see Figure 3). In 2016, about 76.7 million migrant workers in China had left their homes to find work in another province; another 92.68 million had done so in their own province, and 112.37 million were short distance migrant workers usually working in a city close to their home area (see Figure 4) (see definition in China Labour Bulletin 2018). Half of these workers were ages 21 to 40, in prime parenting ages (see Figure 5); about two-thirds were male; and about 58 percent were married (see Figure 6). Most, about 60 percent, were middle-school educated (Figure 7).

[1] In recent years, with the declining material value of urban *hukou*, the right to land (and the security implied by land access) enshrined in rural *hukou* may be changing the calculations.

[2] This number is consistent with the total estimate for non-local migrant workers in Figure 2.

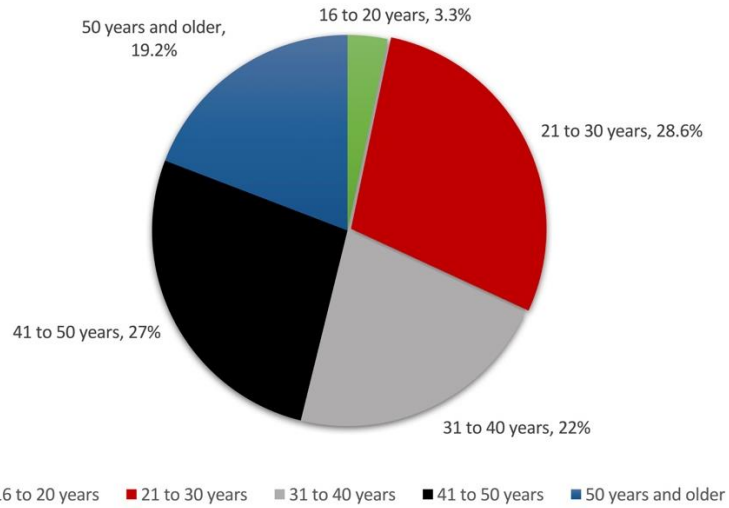
Figure 4. Number of migrant workers in China from 2008 to 2016 (in millions)



Source: National Bureau of Statistics of China. 2016. "Number of Migrant Workers in China from 2008 to 2016 (in Millions)." Data. Statista. 2016. https://proxy.library.upenn.edu:3875/statistics/234578/share-of-migrant-workers-in-china-by-age/.

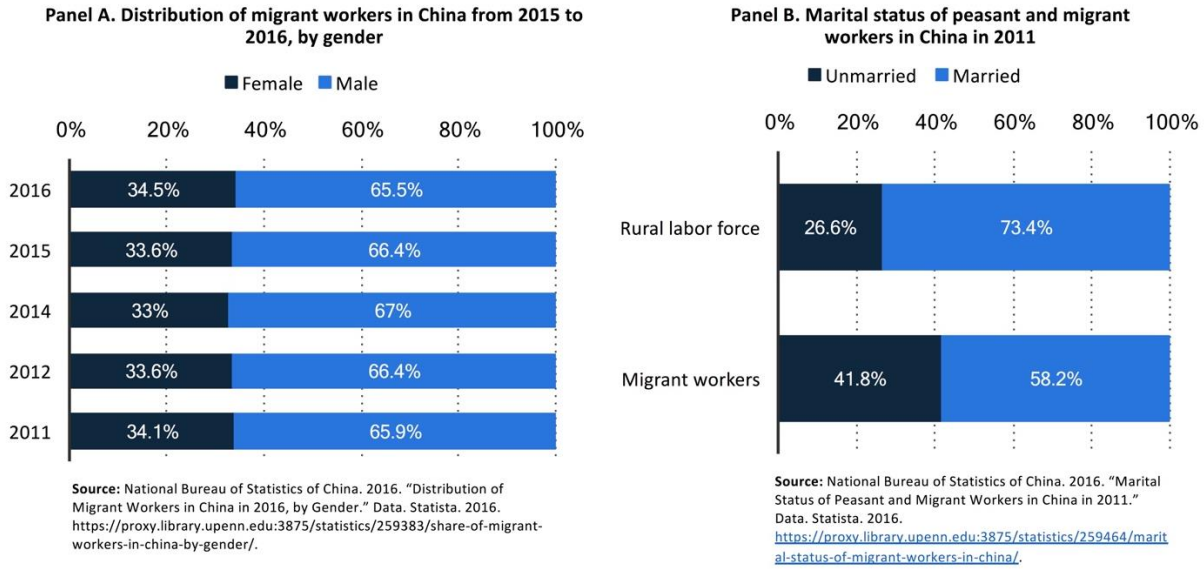
Notes: The study covered around 237,000 rural workers from 31 provinces, 1,527 districts and 8,906 villages. According to the source, the distinction between migrant workers who left their home alone and migrant workers who took their families with them was dropped in 2015, leaving a distinction between local migrant workers and migrant workers who left their home town.

Figure 5. Distribution of migrant workers in China in 2016, by age



Source: National Bureau of Statistics of China. 2016. "Distribution of Migrant Workers in China in 2016, by Age." Data. Statista. 2016. https://proxy.library.upenn.edu:3875/statistics/259356/share-of-migrant-workers-in-china-by-age.
Notes: The study covered around 237,000 rural workers from 31 provinces, 1.527 districts and 8,930 villages. A migrant laborer is defined as someone who leaves their place of origin for a period of more than six months in a bid to find work elsewhere. They either stay in their home province or move to another province in their search for employment.

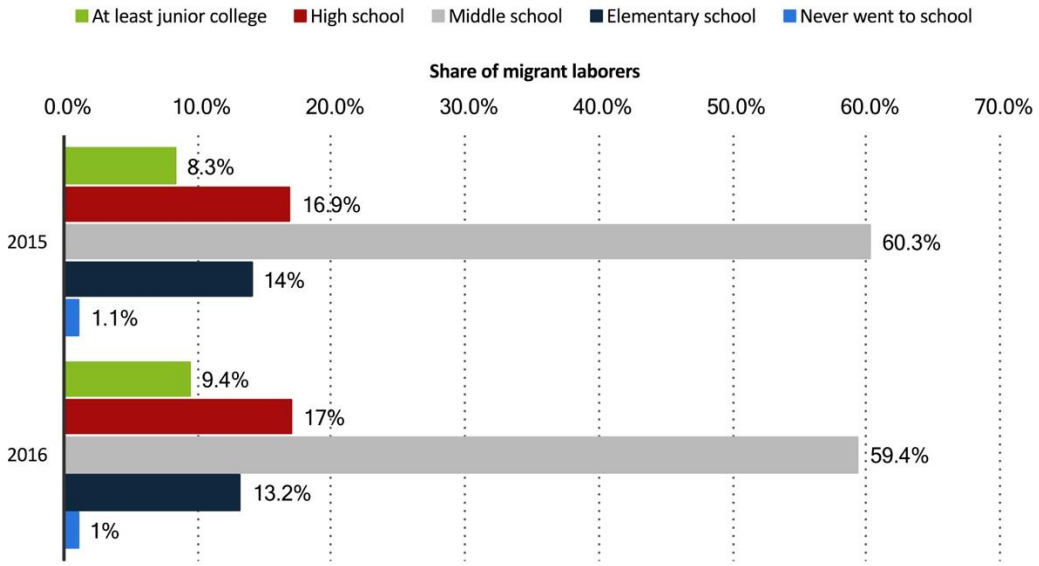
Figure 6. Migration, gender and marital status



Source: National Bureau of Statistics of China. 2016. "Distribution of Migrant Workers in China in 2016, by Gender." Data. Statista. 2016. https://proxy.library.upenn.edu:3875/statistics/259383/share-of-migrant-workers-in-china-by-gender/.

Source: National Bureau of Statistics of China. 2016. "Marital Status of Peasant and Migrant Workers in China in 2011." Data. Statista. 2016. https://proxy.library.upenn.edu:3875/statistics/259464/marital-status-of-migrant-workers-in-china/.

Figure 7. Distribution of migrant workers in China from 2015 to 2016, by level of education



Source: National Bureau of Statistics of China. 2016. "Distribution of Migrant Workers in China from 2015 to 2016, by Level of Education." Data. Statista. 2016. https://proxy.library.upenn.edu:3875/statistics/234589/migrant-laborers-in-china-by-level-of-education/.

Notes: The survey included around 237,000 rural workers from 31 provinces, 1,527 counties and 8,906 villages. Migrant laborers are defined as being people who leave their place of origin for a period longer than six months in order to find work elsewhere. They either stay in their home province or go to another in search of a job.

In 2014, the latest year for which data are available, 35.78 million migrant workers who left their home area brought families with them, compared to about 132.43 million who left their home area alone (Figure 4). Why do more migrants not bring families along? As is true in many contexts, the costs of urban life and education in China, and the difficulty of engaging in long hours of work while supervising children, especially for migrant women, contribute to families leaving children behind in rural communities. Also critical for thinking about household decision-making about bringing children along, however, is that under the *hukou* system, migrant children whose households are registered in rural areas have occupied an ambiguous position vis-à-vis China's urban schools. This position has been clarified over time and efforts to secure the educational rights of these children have increased, but barriers to full educational access persist.

Rural children are entitled, as are all children, to compulsory education (Ministry of Education 2006), but it has not always been clear the degree to which host communities are responsible for assuring this right for children registered in the countryside. In the 1990s and early 2000s, migrant children faced high barriers to enrollment in public schools. There was an emergence of non-public "migrant schools" as an affordable alternative, but some scholars have indicated that these institutions often offered a substandard education, sometimes with high fees, uncredentialed teachers, poor infrastructure, and high teacher turnover (Yiu, Lisa 2018; though for a brief discussion of mixed findings on quality, see Xiaobing Wang, Luo, et al. 2017). In the 1990s and 2000s, when families did bring children along, empirical research suggests that educational opportunities were curtailed. A study using census and mid-censal survey data from 1990, 2000 and 2005 investigated migration and school enrollment for school-age children ages 6 to 15 years old (Wu and Zhang 2015). This study found that cross-county and cross-provincial migrant children were significantly less likely to be enrolled in school than non-migrant children in both origins and destinations. And while the national school enrollment rate increased from 1990 to 2005, the negative association of migration with children's school enrollment persisted and migrant children continued to be disadvantaged. In particular, rural migrant children were the most disadvantaged group in school enrollment--even worse than left-behind children in rural areas. As migrant children spend more time in destinations, however, their disadvantages in school attendance tend to diminish but not disappear.

A series of policy changes and regulations in the 2000s improved the position of rural migrant children vis-à-vis urban schools (B. Hu and West 2015; Koo, Anita 2015; S. Zhou and Cheung 2017; Yiu, Lisa 2018). For example, in 2001, the State Council clarified that "migrant children should be educated in urban schools … [and] their right to education should be protected" (Article 12) (State Council 2001; cited in B.

Hu and West 2015, 251). In 2003, the State Council issued a document to strengthen the management and services for the employment of migrant workers, which required local schools to treat migrant and urban children equally in school admissions (Article 6) (State Council General Office 2013; cited in B. Hu and West 2015, 251). In the same year, another State Council directive required support for migrant children who were struggling and equal treatment in terms of fees charged (Articles 4 and 6) (State Council General Office 2003; cited in B. Hu and West 2015, 251–52). A third set of regulations issued the same year, "Regulations on Further Improving Compulsory Education for Children of Rural Peasant Workers in Cities," encouraged local governments to integrate rural migrant children in public schools (State Council General Office 2003; cited in Yiu, Lisa 2018 manuscript page 5). In 2006, a revision to the 1986 Compulsory Education Law stipulated that city authorities should provide equal access for migrant children to receive a quality compulsory education, although implementation of this mandate are determined by local governments (Han 2009); this commitment was reaffirmed in a 2010 planning document ("Outline of China's National Plan for Medium and Long-Term Education Reform and Development 2010-2020" 2010). And in 2008, the State Council mandated that all local governments abolish sponsorship and miscellaneous fees for migrant children to enroll in public schools (State Council, 2008) (State Council 2008; cited in Yiu, Lisa 2018 manuscript page 5).

Barriers still persist: public schools can require proof of residence, certifications from original places, or other documents, and fees may be charged; sometimes unregistered private schools for migrant children were the available option (China Labour Bulletin 2018). For example, Tsang (Tsang 2018 manuscript p. 21) describes the situation of migrant children in Beijing as follows,

> "In order for students to qualify for entrance to a primary or middle school in Beijing …, they needed to provide the "Five Certificates"…: Temporary Resident Permit, Beijing Actual Residence Proof, Beijing Employment Proof, all household members' Hukou Certificates, and the Certificate of Having No Qualified Child Guardian in Hometown Location Issued by County Government from where the Hukou is registered. The requirement of the last certificate is for curbing potential "education migration" in fear of those who migrate to the city for better schooling… Even if a migrant family has all these certificates, schools and education bureau can find ways to deny a child admission to a public school. For example, in the past two to three years, addition requirements were placed on how long the applicant has had those certificates; three years became the minimum. "

Research continues to suggest that children attending migrant private schools may be academically disadvantaged, even compared to children attending rural public schools (see Xiaobing Wang, Luo, et al. 2017; Xiaobing Wang, Bai, et al. 2017).

The central government has sought to incentivize local governments to incorporate migrant children: in 2014, 9.96 billion yuan (1.6 billion U.S. dollars) were earmarked to encourage city schools, especially those in the country's eastern and central regions, to enroll rural students ("Ministry Says Children of Migrant Workers Should Be Taught alongside Urban Peers" 2015). There is much variability across China, with Shanghai hailed as an early, progressive leader on reforms aimed at assuring the rights of migrant children to free, quality compulsory schooling education (reforms included shutting down poor quality migrant schools, incorporating higher quality migrant schools into government management, and providing government subsidies for sponsor fees) and Beijing subsequently following some of Shanghai's strategies (Yiu, Lisa 2018). Yet, even in progressive Shanghai, case studies indicate that schools, operating on an institutional logic that seeks to maintain academic reputation, tend to implement enrollment practices and informal rules that reject migrant children with weak academic foundations (Yiu, Lisa 2018 manuscript page 29).

Even when enrollment barriers are overcome, rural migrant children face problems. A recent study compared the educational achievement gap between migrant students and local middle school students in urban China, based on data from the China Educational Panel Survey, 2014 to 2015 (D. Xu and Wu 2016). This study finds that migrant children perform significantly worse than urban local children, and that the achievement gap is particularly wide in cities where school segregation based on *hukou* status is severe. Yiu's (2018) case studies in Shanghai suggested mechanisms of both between- and within-school inequalities. She found that schools utilized admission tests to not admit academically-weak migrant youth, and schools also restricted the number of migrant youth in high-status homerooms, which provided more opportunities to learn compared to the low-status homerooms.

Much of the migrant education discussion in the early 2000s focused on securing rights to compulsory education (6 years primary and 3 years of middle school), after which point exams are required for continuation (S. Zhou and Cheung 2017, 1335). Whether migrant children are entitled to post-compulsory education in cities has been a more recent issue of contention. Until very recently, all students have been required to take both the high school and college entrance examinations where their *hukou* is registered, which means that migrant children need to return to their place of origin to sit these exams, even if they have never lived or studied there (S. Zhou and Cheung 2017, 1335). Rural migrant children have thus been

ineligible to be admitted to academic high schools based in cities as they cannot sit the National College Entrance Examination (Koo, Anita 2015, 1). And since each region sets its own curriculum, migrant students are at a distinct disadvantage when they return home, if their compulsory education was taken elsewhere (China Labour Bulletin 2018). Parents for this reason might want their children to go through even compulsory education at home, where they would sit exams.

In September of 2012, the Ministry of Education issued a document asking local governments to allow migrant children to sit the National College Entrance Examination in host cities, but each local government was to have the final say in respect to how new policies arising from this document are implemented (Koo, Anita 2015, 1–2; Y. Cheng 2012; the directive to plan for accommodating rural students taking exams in host areas was also mentioned in "Outline of China's National Plan for Medium and Long-Term Education Reform and Development 2010-2020," 2010).

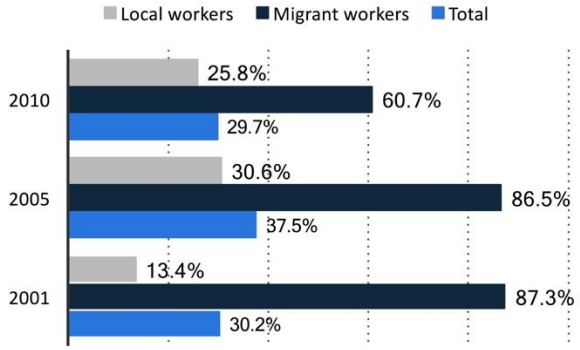
Reportedly, some students can now sit for the entrance exams in the city where they reside,[3] but the threshold for eligibility is extremely high (China Labour Bulletin 2018). Work, residence, and social security requirements are often in place. For instance, to be eligible, parents must have a stable job for at least three years, or they must have a stable local residence for at least three years, or they must pay the social security taxes for at least three years, or the children must finish all of junior middle or high school education in local cities. Often, families need to satisfy several of these requirements. Since most jobs migrant workers take are low-end jobs, it is difficult for them to have a stable job and pay social security taxes for over three years. For example, at least through 2010, most migrant workers were still employed illegally, without a contract or social security: this was true of 87.3 percent of migrant workers in 2001, 86.5 percent of migrant workers in 2005, and 60.7 percent of migrant workers in 2010 (see Figure 8). There may be resistance to additional expansion of rights from local students and their parents, concerned that competition for university places will intensify if more migrant students become eligible to compete in cities (China Labour Bulletin 2018). There has been an expansion of vocational training schools that has absorbed many migrant students ineligible for academic high schools; some few wealthy migrant youth may be enrolling in quasi-private international programs (Koo, Anita 2015; for a case study in a Beijing school, see Young 2017). Overall, barriers to migration and migration with children have fallen in recent

[3] One recent news report indicates that, "…30 provinces introduced policies to help migrant children take the gaokao in their adopted places of residence. This year, 150,000 migrant children sat the exams under these policies — more than 30 times the number who did so five years ago" (Fu 2017).

years. However, barriers to children's schooling in urban areas have deterred and continue to deter families from bringing children into the cities.

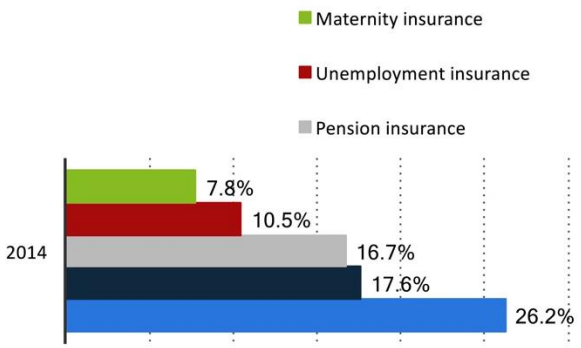
Figure 8. Legality of employment among migrant workers and social security payments among migrant worker employers.

Panel A. Share of illegally employed workers in Chinese cities in 2001, 2005 and 2010



Source: State Council Development Research Center, World Bank, Fang Cai, Yang Du, and Meiyan Wang. 2016. "Share of Illegally Employed Workers in Chinese Cities in 2001, 2005 and 2010." Data. Statista. 2016. https://proxy.library.upenn.edu:3875/statistics/232340/illegal-employment-in-chinese-cities/. **Notes:** Illegal employment means the workers do not have a contract or social security.

Panel B. Share of migrant worker employers contributing to social security insurance of migrant workers in China in 2014, by type of insurance



Source: National Bureau of Statistics of China. 2015. "Share of Migrant Worker Employers Paying Social Security Fees in China in 2014, by Type of Insurance." Data. Statista. 2015. https://proxy.library.upenn.edu:3875/statistics/235658/social-security-payments-by-employers-of-migrant-worker-in-china/.

PART 2: EMPIRICAL EVIDENCE ABOUT LEFT-BEHIND CHILDREN, COMPARED TO OTHER CHILDREN

The preceding section has discussed the scale of the left-behind phenomenon, and the barriers to bringing children with migrant parents that have contributed to this scale. Here, we turn to a discussion of how left-behind children are faring. Large numbers of studies have investigated the implications of being left behind for children, and the story is not a straightforward one (for a discussion, see Bai et al. 2017; Wen et al. 2015; Liang 2016). A study of educational attainment using the multi-province China Health and Nutrition Survey found that children in households with migrant parents (mother, father, or both) were not significantly different from those in non-migrant households (Y. Lu 2012). Other research using the same data has found that the migration of parents increases the time spent on farm work and domestic work for the left-behind children—especially girls (Chang, Dong, and MacPhail 2011). Studies using the China Family Panel Studies do not show consistent differences (after adjusting for confounders) between left-behind and other rural children for outcomes ranging from educational to health to psychosocial well-being to relationships with parents (Ren and Treiman 2016; H. Xu and Xie 2015). A study utilizing data from children in ten provinces, from twenty-seven surveys conducted between 2009 and 2013, found no differences between left behind and others on nine indicators of health, nutrition, and education (C. Zhou et al. 2015), but offered the view that this lack of difference calls for more generalized supports to promote the well-being of rural children, which is in jeopardy regardless of left-behind status.

Other more localized studies comparing left-behind children to others have found significant evidence of disadvantages in terms of depression, anxiety, self-concept, and mental health problems (He et al. 2012, Xiantao County, Hubei, 2009; Q. Zhao et al. 2014; for meta-analyses, see J. Cheng and Sun 2015 ; see also X. Wang et al. 2015). Another study of academic performance in 130 rural primary schools pre- and post-parental migration suggested positive effects of parental migration on English scores (Bai et al. 2017), while a study in Guangxi found no positive associations of parental migration and self-rated health, school grades, educational aspirations, and problem behavior (Wen et al. 2015).

A number of reasons could drive these inconsistent results, from changing effects over time, to differences in the age and geographic coverage of the samples, to different measurement and design strategies. One important reason that results could be inconsistent is because migration can bring positive as well as negative changes to household contexts of child development (for a discussion, see Liang 2016). Most obviously, migration may improve household economic status, which could be utilized to raise the economic resources available to children or to purchase other kinds of resources that support health or

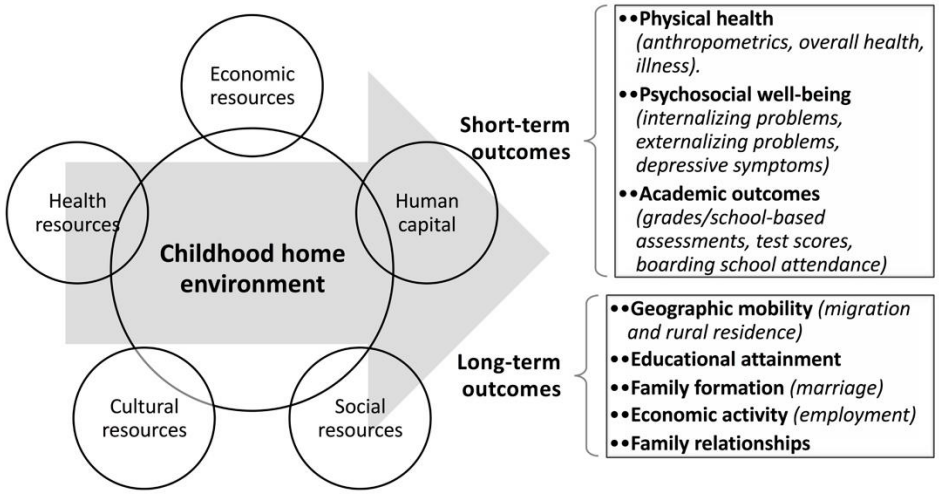
the cultural environment in the home. Remittances are significant in rural households—they are often estimated to constitute 20% or more of the total income of migrant households (C. Fan 2008). But parental absence necessarily reduces human capital, and likely detracts from many elements of social capital or social resources—in particular, parental supervision and interaction (for example, see Y. Lu 2012). And whether economic resources brought back by immigrant parents can be effectively transferred into various resources to help left-behind children thrive is contingent upon on local food, school and community environments (H. Xu and Xie 2015).[4]

In this paper, we report short- and long-term differences between left-behind and non-left-behind children, and explicitly investigate not only child outcomes, but also domains of home environments. Figure 9 depicts an organizing framework to compare children in parent-present and parent-absent homes. Using this framework enables us to distinguish among different domains of household resources, to allow for the possibility that migration could be related in different ways to different kinds of parental investments (for a discussion, see Liang 2016). The circle on the left, labeled "childhood home environment," shows key domains of resources in children's lives for which we will present indicators. These domains are human capital, social resources, cultural resources, economic resources, and health resources. As utilized here, the term human capital refers to the adults in the home and their educational attainment. Social resources include parental expectations and aspirations for children, closeness of the parent-child relationship, and supervision and regulation of children. Cultural resources, as utilized here, refer to the provision of a cultural environment that supports learning, as indicated by material goods such as books, a desk, and computers and as indicated by support of extracurricular activities. In our usage, economic resource indicators tap into the economic resources available to the household and the child[5]. Health resources refer to the access to services or materials for the protection and promotion of children's health, as indicated here by health insurance, food insecurity, and food variety.

[4] For instance, researchers show that anemia is an important risk factor for poor early childhood development in rural China, and its prevalence is substantially varies across schools and counties (Luo et al. 2011). Thus, extra economic resources brought back by migrant parents cannot be effectively transfer into appropriate nutrition to improve health wellbeing of left-behind children if nutrient-rich foods are not accessible in the local community.

[5] These domains are obviously interlinked, as economic resources can be used to purchase other kinds of resources.

Figure 9. Framework for considering differences associated with parental absence



The outcomes along which we compare parent-present and parent-absent children are shown in the righthand side of Figure 9, in the rectangle labeled "outcomes". Here, we distinguish short- and long-term outcomes. The short-term welfare indicators that we consider include key dimensions of welfare identified by other scholars of the left-behind phenomenon (C. Zhou et al. 2015; Bai et al. 2017; Huang et al. 2016; X. Wang et al. 2015; J. Cheng and Sun 2015; Ren and Treiman 2016; Wen and Lin 2012): physiological health (anthropometrics, overall health, serious illness and fever), psychosocial well-being (internalizing problems, externalizing problems), and academic outcomes (grades/school-based assessments, test scores, boarding school attendance). The long-term outcomes along which we compare parent-absent and parent-present children include geographic mobility (migration and rural residence), educational attainment, family formation (marriage), economic activity (employment), and family relationships.

Here, we conduct original analyses to provide a national description of left-behind middle school students' home environments and welfare outcomes, compared to children with their parents, using the China Education Panel Survey. In this analysis, we are able to contrast dual-parent-absence from mother-absence and father-absence. We then present a case study of father-absence from a 15-year longitudinal study of children from 100 rural villages in northwest China.[6] We focus on three kinds of outcomes that

[6] There are insufficient numbers of cases of mother-absent or dual-absence households in the first wave of the Gansu Survey to enable a separate analysis of these migrant family types.

might differ between parent-absent and parent-present households linked to parental absence: short-term home environment outcomes, short-term welfare outcomes, and, for the case study, long-term welfare outcomes.

The national description will utilize cross-sectional data from the baseline wave of the China Education Panel Survey (CEPS 2013-2014). The CEPS is a large-scale, nationally-representative longitudinal survey with multistage and stratified sampling design. CEPS collected information from approximately 20,000 7th and 9th graders in 438 classrooms of 112 schools in 28 counties across various provinces in academic year 2013-2014. The CEPS contains five different questionnaires and collects information from sample children, parents, homeroom teachers, main subject teachers (math, Chinese and English) and school administrators. All questionnaires are self-administered. According to CEPS, only about 71 percent of families are dual-parent-present homes, whereas 14 percent of families are dual-parent-absent. In addition, 11 and 4 percent of families are father-absent and mother-absent families, respectively, which reflects the pervasiveness of the left-behind children phenomenon in China. The main purpose of the analysis using CEPS is to provide national estimates of short-term differences in home environments and welfare outcomes between left-behind and non-left-behind children, taking into account contemporaneous school effects and geographic variation. While CEPS has an advantage in allowing for a nationwide description of the left-behind children phenomenon, the results for the linkages between parental absence and home environments and welfare outcomes should not be necessarily interpreted as causal.

For the longitudinal case study, data from the Gansu Survey of Children and Families (GSCF, 2000, 2015) are used. Gansu Province is located in China's arid northwest. The province is long and narrow, stretching across desert, mountainous and hilly areas, and vast grasslands. Much of Gansu is mountainous or highland plateau, with an elevation of more than 1,000 meters (United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) NA). In 2010, the most recent census year, Gansu's population was 25.6 million people (China National Bureau of Statistics 2018). Gansu remains a majority rural province: in 2010, the most recent census year, 64 percent of the population resided in rural areas (Gansu Bureau of Statistics 2011). Gansu is also one of China's poorest provinces: in 2010, it ranked last among provinces in per capita rural household income and third to last in per capita GDP (China National Bureau of Statistics 2011a, 2011b). We analyze data from the 2000 and 2015 waves of the Gansu Survey of Children and Families (GSCF), a longitudinal study of 2000 children in rural villages. The sampled children lived in 100 villages located in 20 different counties in Gansu Province. They were aged 9 to 12

when first interviewed in the year 2000 (GSCF-1) and in their mid-20s in 2015. Left-behind children and their welfare were first measured in 2000; cases are linked to the measures of education, family, health, and psychosocial well-being in 2015 to reveal the long-term differences between left-behind and other rural children. While certain caveats are needed about generalizing from the case of Gansu Province to less-poor parts of China, this data source remains the only data source that can enable a look at the long-term implications of parental absence in young adulthood.

Appendix 1 lists and describes the indicators used in each of the two surveys to operationalize these domains, and the outcomes utilized for the comparison. Here, we do not attempt a causal analysis, but rather show estimates of parental absence after adjusting for family background confounders and community fixed effects, following the general approach of Ren and Treiman (Ren and Treiman 2016), or schools as proxies for community effects (in the case of the CEPS). Except where otherwise specified, we present multivariate analyses that include parental absence with adjustments for child age (GSCF) or grade (CEPS), child gender, time of survey (CEPS), migration status (CEPS), parental education and family economic status, and school dummy variables (CEPS) or village dummy variables (GSCF) to adjust for local conditions. Findings from these specifications estimate the average difference between left-behind and non-left-behind children in the same villages (GSCF) or schools (CEPS), after adjusting for socioeconomic background characteristics.

National description of left-behind children, compared to others

In the CEPS data, parental absence is measured by a question about with whom children currently live. By definition, when a parent is absent, there is less access for the child to that parent's human capital. Given historical educational patterns, fathers, who are most likely to be absent, are also most likely to be the best-educated parent in the household. In the CEPS data, the father's education is higher than the mother's education in 36 percent of households, while only 14 percent of mothers are better-educated than fathers. If both parents are gone, this is an even more substantial loss of human capital, given that most children whose parents are gone reside with grandparents who were educated in a time of more limited access to schooling. There are many ways in which grandparent co-residence and support may be highly beneficial to children, but one way in which grandparents-as-primary-caregivers could be an issue for children is in terms of supervising or assisting with homework or addressing problems at school, given many grandparents' limited experience with the school system.

These human capital deprivations lead us to expect that social resources in families with parental absence may differ from those with present parents. In Table CEPS-A (see Table CEPS-A in *Model result tables*), we examine the relationship between parental absence and social resources in the family. Results from OLS regressions show that when both parents are absent, activities regulation decreases by 0.054 units, the frequency of doing things together decreases by 0.709 units, and the frequency of discussing things with mother or with father decreases by 0.088 and 0.039 units. Moreover, children in families with dual-parent or single-parent absenteeism also display higher levels of alienation from their parents. Dual parent absence is also associated with lower frequency of checking and providing guidance on homework by parents, and with exposing children to poorer peer environments. Although dual-parent or single-parent absenteeism is associated with disadvantages in almost every dimension of social resources, this disadvantage is not found for discussing things with mother or father if one of them is at home. If only the mother is at home, the frequency of discussing things with mother is similar to what occurs when both parents are at home and this pattern also applies when only the father is at home.

CEPS-B (see Table CEPS-B in *Model result tables*) presents multivariate analyses of cultural resource gaps associated with parental absence. Overall, indicators of cultural resources all show disadvantages in dual-parent or mother-absent households, compared to other households. Dual-parent absence is associated with an increase in the odds of no extracurricular activities participation by 12% ($e^{0.112}$-1), with 0.086 fewer extracurricular activities, with an increase in the odds of not owning personal desk by 33% ($e^{0.288}$-1), with a 0.119 reduction in numbers of books, with an increase in the odds of not having both computer and internet by 72% ($e^{0.543}$-1) and in the odds of having computers but no internet by 66% ($e^{0.508}$-1). All differences in cultural resources between dual-parent-presence and absence are statically significant at p<0.01 level, except for the indicator 'no extracurricular activities participation'. Notably, while dual-parent absence shows disadvantages in cultural resources compared to dual-parent present households, the pattern of disadvantage in cultural resources does not appear across the board in father-absent households. There are no notable differences between dual-parent-present households and father-absent households in extracurricular activities participation and number of books. Disadvantage does, however, appear in mother-absent households. Similar to dual-parent absence households, households with only the father present have lower cultural resources.

Table CEPS-C (see Table CEPS-C in *Model result tables*) contains analyses of health resources—whether the child has health insurance—and economic resources—allowance per week. All types of parent absence households show reduced odds of having health insurance among left-behind children. Finally,

compared with the presence of both parents, dual parent absenteeism is associated with 3.096 yuan greater allowance per week, implying that parents may compensate their children for their absence by giving them more allowance. In addition, only father at home is associated with higher allowance per week, but not only mother at home, which may reflect different parenting styles practiced by mothers and fathers, when only one of them is at home.

Overall, these findings show that, after adjusting for other measures of socioeconomic status, children who are left behind by both parents face reduced supervision and parental interaction and support and fewer cultural resources in the home to support learning, but have more allowance. Possibly because mother-absent households are non-normative and may reflect adverse selection,[7] children in these households, overall, show more consistently negative environments than father-absent households.

Table CEPS-D (see Table CEPS-D in *Model result tables*) presents OLS regression estimation of nutritional status and psychosocial health on parental absence, with adjustments for other control variables. The relationship between parental absence and nutritional status is less evident: there are no substantial differences in height, weight, and BMI between both parents at home and different types of parental absence. One exception is that mother-absence is marginally associated with 0.83 kilogram lower weight, relative to having both parents at home. These findings may reflect the fact that the prevalence of nutritional deprivation and poverty have substantially declined in China in the last several decades.

It is notable that children with parental absence, on average, display lower overall self-rated health and more psychosocial health problems. Dual-parent-absent households are associated with decreases in overall health conditions by 0.072 units relative to dual-parent-present households. Father-absent or mother-absent households are associated with reductions in overall health by 0.109 and 0.141 units. The health gaps between one of parents at home and both parents at home seem even larger than the gap between dual-parent-absences and both parents at home, which could reflect choices about leaving may

[7] Compared to other households, mother-absent households have a higher proportion having one child and a son, implying a strong son preference. Mother-absent households also have a higher proportion of being poor/very poor in family financial situation than other types of households (see Appendix Table A-4). Recent research suggests that being left-behind alone has a detrimental effect on husband's happiness and this detrimental effect can be explained away if the left-behind husband is satisfied with the migrant wife's economic and household chore contributions (J. X. Li, Tong, and Shu 2018). Thus, how a husband copes with being left behind may serve an alternative mechanism in explaining why left-behind children in mother-absent households are worse off than those in other types of households.

be influenced by the need to care for a child in poor health. With regard to psychosocial health problems, dual-parent absence is associated with an increase in depressive symptoms of 0.140 units. Children with one parent at home also show more depressive symptoms relative to both parents at home.

Table CEPS-E (see Table CEPS-E in *Model result tables*) presents multivariate analysis of educational outcomes on parental absence with adjustments for child characteristics, family background, child migrant status and *hukou* type, and school-specific contexts. Table CEPS-E suggests that dual-parent-absence is associated with poorer educational outcomes. For instance, dual-parent-absence is associated with 0.067, 0.071 and 0.042 standardized deviations lower in math, Chinese and English grade than dual-parent-presence, respectively. Moreover, children left behind by both parents, on average, have lower test scores relative to those with both parents at home.

In addition, dual-parent-absence is associated with a 64% ($e^{0.492}$-1) increase in the odds of attending boarding schools, suggesting that migrant parents are inclined to send children to boarding schools for better education or for supervision and care. Results for single-parent-absence are not consistent across different measurements of educational outcomes. For father-absent homes, math grades and cognitive test scores are not notably different from dual-parent-presence homes. For mother-absent homes, grades for math, Chinese, and English and cognitive test scores, on average, are substantially lower than dual-parent-presence homes, but there is no difference in boarding school attendance. Finally, some argue that parental absence may increase parental educational expectations for children as parents may increasingly value human capital because of their migrant and working experiences. However, our results suggest otherwise. Table CEPS-E shows that dual-parent-absence and mother-absence are significantly associated with lower child-perceived parental educational expectation and educational expectation, but there are no differences between dual-parent-present and father-absent homes.

Gansu case study: short- and long-term differences between father-present and father-absent households

Table GSCF-A (see Table GSCF-A in *Model result tables*) shows how home environment differs between children with and without father-absence, after controlling for children's birth year (or age), gender, number of siblings, average level of both parents' education, family income per capita, and village context. Father absence is defined as father living away from home for at least 6 months a year.[8] After basic adjustments, in terms of economic resources, father absence is related to worse quality of life (measured by possession of 12 items like TVs, refrigerators, washing machines, electronic fans, and bicycles) and less educational expenditure (such as tuition and cost of school supplies). Father-absent families tend not to be able to borrow as much money (credit) as other families do, although father absence is not significantly associated with loans, mother's feeling of income sufficiency, and children's amount of allowance.

Further, there is no significant difference in mother's expectation of child's educational attainment between father-absent families and other families. For cultural resources, on average, father-absent children have 2.431 fewer books, 1.051 fewer magazines, and 21.3% (1- $e^{-0.239}$) lower odds of having a desk for reading and study. These results suggest that father-absent children have fewer cultural resources than other children.

Regarding health resources, food insecurity and food variety are examined. Food insecurity is measured by mother's feeling of whether food is insufficient, barely sufficient, or surplus. Food variety is a combined scale of whether a family consumed each of 13 different kinds of food (such as meat, aquatic food, grains, and fresh vegetable, among others) at least once a week. There is no evidence showing father absence makes a significant difference in food insecurity and food variety. However, father-absent families have less protein intake. On average, during the last year, each family member in a father-absent family had 2.329 kilogram less protein intake than in a non-father-absent family.

With regard to social resources at home, there are mixed findings. On the one hand, adults in father-absent families are less likely to do such things together with children as reading story books, helping with assignments, playing games, accompanying children to bookstores, and discussing things children are interested in. On the other hand, father-absent families tend to more frequently implement time

[8] In the baseline survey of GSCF in 2000, over 98% of mothers stayed at home and did not migrate, which makes the statistical analysis of mother absence meaningless. Thus, we only focus on father absence for GSCF.

regulation for children and show a higher level of parental warmth. Parental warmth represents parental support and care, including encouragement, positive reinforcement, active involvement in children's lives, and appropriate monitoring. It is a summative scale of 18 items: a higher score indicates more parental support, care, encouragement, and positive involvement. The more frequent time regulation and higher parental warmth may result from mothers in father-absent families intentionally compensating for the negative influence of father absence. With regard to closeness to each parent, father-absent children are not significantly higher or lower than other children. This result suggests that father absence does not estrange children from their father, at least in the short run.

Table GSCF-B (see Table GSCF-B in *Model result tables*) demonstrates the short-term welfare outcomes for children in father-absent families, after adjusting for children's birth year (or age), gender, number of siblings, average level of both parents' education, family income per capita, and village context. The first type of welfare outcome is physiological health. On average, father absence is significantly associated with children' worse physiological health: father-absent children have worse overall health, increased chance of having serious illnesses that preclude normal activities, and higher risk of getting a fever. In terms of psychological well-being, children's behavioral problems, which were measured by the widely-used Youth Self Report (YSR), are first examined. Results show that father absence has different associations with children's behavioral problems. Compared with children in other families, father-absent children have more externalizing behavioral problems but not internalizing behavioral problems. For children's educational outcomes, there is no significant difference in teacher-reported Chinese grade and math grade between father-absent children and other children, and there is also no significant difference in their self-expectation of education. To sum up, results from GSCF data indicate that father-absent children are disadvantaged in physiological health—on average they have worse overall health and are more likely to get fevers or other serious illnesses. With regard to psychological well-being, father-absent children tend to have more externalizing behavioral problems, but there is no difference in internalizing problems between them and other children. In terms of educational outcomes, no significant difference is found between father-absent children and other children in teacher-reported grades and children's expectation of education.

Table GSCF-C (see Table GSCF-C in *Model result tables*) presents the long-term welfare outcomes for father-absent children. The welfare outcomes are examined from five perspectives – migration, education, family formation, employment, and family relationships, controlling for children's birth year, gender, number of siblings, average level of both parents' education, family income per capita in 2000,

and village context, which aims at comprehensively illuminating the long-term impacts of father absence. There is evidence showing that compared with other children, father-absent children are more likely to have experiences of living away from home for over three months (not for schooling reasons) and less likely to keep rural *hukou*, although the statistical evidence is only suggestive (with p-value less than 0.1). Specifically, children whose father was absent in 2000 have 26.4% (1- $e^{-0.306}$) less odds of keeping rural *hukou* 15 years later. This suggests that father-absent children have a higher chance of becoming urban residents. In terms of education, however, father absence is negatively associated with children's educational attainment. On average, father-absent children experience 0.433 fewer years of education, in comparison with other children. For family formation, being ever-married is examined. Results indicate that the early experience of father absence has no significant relationship with children's later marriage status. With regard to work and employment, the now-adult children's employment status (whether being employed in 2015, including self-employment) is examined. Results suggest no significant association between father absence and children's later employment status.

Finally, the family relationships of the now-adult children are examined. Here, we explore the material exchange between the now-adult children and their parents. There are five categories of material exchange: co-residency (i.e., living together with parents; in the survey, those living together with parents did not report material exchange), separate and giving money to parents only, separate and receiving money from parents only, separate and both giving money to and receiving money from parents, and separate and no material exchange. Analysis indicates that father absence in childhood is not significantly associated with any of the five categories of material exchange between parents and now-adult children.[9]

In sum, father absence has mixed associations (positive, negative, or neither) with children's long-term life-outcomes. On the one hand, father-absent children tend to have lower educational attainment, which implies a negative impact of father absence on children. On the other hand, father absence could also benefit children. For instance, marginally-significant results suggest that father-absent children are more

[9] We use multiple imputations to check the robustness of the above findings about long-term welfare outcomes. A total number of 100 imputations were done and the analyses based on imputations have no substantive differences in the long-term impacts of father absence, although the associations between father absence and children's migration outcomes become more statistically significant (from $p<0.1$ level to $p<0.05$ level).

likely to have migration experience and become urban residents in later years. Finally, there is no evidence found that the early experience of father absence has significant direct impact on children's family formation, employment, and material exchange with parents.

Summary

Our analyses considered differences between parent-absent and parent-present households in terms of (1) Short-term home environments: economic, social, cultural, health resources and human capital; (2) Short-term welfare outcomes: physiological and psychosocial health and academic outcomes; and (3) Long-term welfare outcomes: geographic mobility, educational attainment, family formation, economic activity, and psychosocial adjustment. The national analysis of short-term home environments investigated the question, how are the home environments of left-behind children different from others, after adjustments for socioeconomic background? These analyses show that dual-parent or single-parent absenteeism was associated with disadvantages in almost every dimension of social resources, though this disadvantage is not found for discussing things with mother or father if one of them is at home. And in terms of cultural resources, analyses showed that dual-parent absence was associated with disadvantages in cultural resources (extracurricular activities participation, numbers of books, having a personal desk, computers, and internet accessibility) compared to dual-parent present households, but that there were no notable differences between dual-parent-present households and father-absent households in extracurricular activities participation and number of books.

Dual-parent absenteeism and mother absenteeism were associated with higher amounts of allowance. In terms of health resources, children left behind by both parents or one parent were less likely to have any types of health insurance. In the GSCF data for the year 2000, we found that (after adjusting for socioeconomic background) migrant households have worse quality of life, less educational expenditure, and lower credit for borrowing money. Considering social resources, father-absent families were less likely to do such things together with children as reading story books, helping with assignments, playing games, taking to bookstores, and discussing things children are interested in. On the other hand, father-absent families tend to more frequently implement time regulation for children and show a higher level of parental warmth. Father-absent families had fewer books and magazines and less likely to have a desk for reading and study. In terms of health environment, father-absent families report less protein intake, but no differences in food insecurity and variety, after adjustments for socioeconomic status. These analyses highlight two main points in terms of home environments: First, while there are some areas of exception,

parental absence is linked to a different, generally less favorable, set of home environments for children, particularly in terms of social and cultural resources and some health resources. Second, dual-parent absence and mother-absence tend to be associated with more extreme disparities than father absence.

Turning to the analyses of child welfare outcomes, in the CEPS data we find no substantial differences in height, weight and BMI between both parents at home and different types of parental absence, except mother-absence is marginally associated with lower weight. However, children with parental absence display lower overall self-rated health and more psychosocial health problems. Dual-parent-absence is associated with lower math, Chinese, English grade, and cognitive test scores and higher likelihood of attending boarding schools. However, in father-absent homes, math grades and cognitive test scores are not notably different from dual-parent-presence homes. For mother-absent homes, grades for math, Chinese, English, and test scores, on average, are substantially lower than dual-parent-presence homes, but there is no difference in boarding school attendance. Similarly, in the Gansu data, we found that father-absent children had worse overall health ratings; they had increased chance of having serious illnesses that preclude normal activities, and higher risk of getting a fever. Father-absent children also displayed more behavioral problems (externalizing behavioral problems, though not internalizing behavioral problems). However, we did not observe differences in teacher-reported grades and educational expectations.

Finally, turning to long-term outcome differences using the GSCF data, we find a mixed set of results: importantly, father-absent children from rural Gansu had attained less education than others 15 years after father-absence was measured. Yet, findings suggest the possibility that father-absence in childhood is associated with greater likelihood of migration experience and urban residency in later years, which might be viewed as positive.

PART 3: POLICY RESPONSES

Emerging policies addressing government monitoring and responsibilities for left-behind children

The plight of left-behind children has garnered national policy attention in recent years. Initiatives to address the problems of left-behind children include clarification of rights, improved monitoring, and improvements in care. On February 14, 2016, the State Council of China issued the document *Opinions of the State Council on Strengthening the Care and Protection of the Left-behind Children in Rural Areas,* which urged reinforced efforts to protect left-behind children in rural areas ("Opinions of the State Council on Strengthening the Care and Protection of the Left-behind Children in Rural Areas" 2016). The State Council called for the establishment of a system which rallies families, governments, schools, and social groups to provide care and protection to left-behind children. Furthermore, a rescue mechanism that includes interventions such as mandatory reporting, crisis management and assistance evaluation was suggested. It was expected that by 2020, the government will improve laws and regulations regarding child protection, and create a safer environment for children to grow up in. In principle, the government plans to provide more assistance such as granting families of migrant workers urban citizenship or subsidies in housing or education. Rural migrant workers are also encouraged to return to their hometowns and start their own businesses. In this way, the number of left-behind children will be reduced fundamentally. This State Council document emphasized the extreme importance of the protection of left-behind children and laid down the principles and guidelines of the care of left-behind children.

In March 2016, the State Council approved an initiative from the Ministry of Civil Affairs to establish the Joint Inter-Ministerial Meeting for the protection of left-behind children (State Council General Office 2016). There are 27 ministries and departments that take part in the joint meeting, such as the Ministry of Civil Affairs, the Ministry of Education, the Ministry of Public Security, the Ministry of Finance, and the Supreme Court, among others. The joint meeting in principle is held every year, but it can also take place as needed for special purposes. At the end of March 2016, the Ministry of Civil Affairs, the Ministry of Education, and the Ministry of Public Security jointly launched a thorough investigation of left-behind children in rural areas ("The Bulletin on the Thorough Investigation of Left-behind Children in Rural Areas and the Special Action of 'Joint Guardians Accompanying Children'" 2016a). The investigation was based at the county level, and targeted children under 16 years who could not live together with both parents in rural areas. It required the local government to collect and report accurate information about the following issues: the left-behind children's birthday, sex, ethnicity, school, *hukou*, ID number, health

status, residence, family, parents' workplace, contacts in the village, and the number of left-behind children in each administrative district.

By the end of October 2016, in accordance with the State Council document, 26 provinces had implemented new policies to promote the protection of left-behind children (Qiu 2016). For instance, the Yunnan Province determined that by 2017, 80% of left-behind primary school students should be enrolled in boarding schools and 100% of left-behind junior middle school students should be enrolled in boarding schools; in addition, all compulsory education schools should have at least one psychological counselor.

Research has indicated that psychological intervention can improve the psychological well-being of left-behind children (G. Zhang 2016). For example, a randomized control experiment study of 222 left-behind children explores how group psychological counselling may improve the mental health of left-behind children. After eight sessions of psychological counselling, children in the intervention group had lower levels of depression and higher levels of happiness, and researchers suggest that group psychological counselling can effectively reduce left-behind children's depressive mood and play a role in reshaping their personality (Lan et al. 2009). Although the *Opinions of the State Council on Strengthening the Care and Protection of the Left-behind Children in Rural Areas* issued by the State Council in 2016 has pointed out that the government, NGOs, and different social groups should provide psychological support to left-behind children, there is no concrete policy or initiative that specifies how such psychological support or service can be implemented, and current research reveals a lack of psychological services for left-behind children. For instance, one study in 2014 shows that in Guangdong Province, which is one of the most developed provinces in China, only 34.6% of schools have psychological counselling programs for left-behind children (J. Zhou 2014).

In November 2016, a special action in the name of care and protection of left-behind children was carried out ("The Bulletin on the Thorough Investigation of Left-behind Children in Rural Areas and the Special Action of 'Joint Guardians Accompanying Children'" 2016a). Eight ministries, including the Ministry of Civil Affairs, the Ministry of Education, the Ministry of Public Security, the Supreme Court, the Supreme People's Procuratorate, and the Health and Family Planning Commission, took part in this special action. The special action lasted from November 2016 to the end of 2017 and featured six tasks. First, local governments were to urge parents to fulfill the duties of guardianship. For those who work away from home, they must appoint another appropriate guardian and the entrusted guardian must sign a document accepting responsibility: "The Acknowledgement of the Responsibilities of the Entrusted Guardian of Left-behind Children in Rural Area". Second, the subject and agency responsible for monitoring the situation

of left-behind children should assume a mandatory reporting responsibility. They must report the situation of left-behind children in a timely manner and bear legal liability for delays or failures in reporting. Third, for left-behind children without appropriate guardians and whose parents cannot be contacted, the civil affairs departments at all levels are to instruct the aid administration agencies and welfare agencies to receive the left-behind children in a timely manner and provide them with temporary care services according to the principles that are most beneficial to children. Meanwhile, they were also to continue to adopt a variety of ways to contact the parents of left-behind children.

Fourth, the county governments are to protect left-behind children from dropout. The county-level educational administration and the township government are to instruct all primary and secondary schools and village (community) committees to check all left-behind children's status with regard to receiving compulsory education. All primary and secondary schools are to keep abreast of reasons for children not attending school. For those who leave school for more than one week, schools are to take measures to advise them to return to school. Fifth, for left-behind children who do not have *hukou*, the local public security agencies are required to help them finish *hukou* registration in accordance with laws and make sure the information is complete and effective. The township government is required to assist the public security agencies in publicizing the relevant policies and promoting registration for *hukou* for left-behind children. Finally, the public security agencies must provide prompt dispositions regarding wrongdoing of parents or other guardians abandoning left-behind children. Guardians who leave left-behind children in high-risk circumstances or refuse to perform the duties of guardianship for more than six months and leave left-behind children unattended shall have their guardianship qualification revoked. If parents or entrusted guardians carry out acts of violence such as domestic violence and abuse, the relevant departments shall handle the case according to laws.

On October 10, 2017, the Ministry of Civil Affairs announced that the National Left-behind Children Information Management System had officially launched (Ministry of Civil Affairs 2017). The system consists of data entry, information verification, summary and analysis, and other functional modules, and enables data sharing with the Subsistence Security System, Impoverished Household Information System, and Disabled People Information Management System. It provides a reliable platform to report, update, verify, compare, inquire, and combine information about left-behind children, and facilitates the effective and accurate delivery of social resources for the protection of left-behind children.

Initiatives to address left-behind children's problems

Boarding schools have been an essential element of the strategy for addressing problems of left-behind children. Boarding schools are mentioned in the supportive policies noted above. Boarding schools have also been promoted in the press, most recently in widely-reported remarks of Jack Ma, head of Alibaba, one of China's wealthiest people, and media celebrity (e.g., A. Yan 2018). Boarding schools are not a new solution to problems of migration and are not a panacea. Dramatic expansions in boarding schools were associated with massive school consolidation initiatives that closed village primary schools and sent children to more centralized schools (A. Wang et al. 2016). The consolidation initiatives addressed the emptying out of villages and school-age population decline in rural communities that were emerging since the early 2000s, and even earlier (Hannum, Liu, and Wang 2016). Sources cited in Yue et al. (2014, 525) indicate that in 2006, about 30 million primary school and junior high school students were boarding across China; that boarding students accounted for more than 10 percent of all primary students in Western China; and that in many poor rural areas, up to 50 percent or more of primary students were boarding (Yue et al. 2014, 525; cited sources are: Z. Zhang 2005; D. Zhang 2008).

Boarding schools, if equipped and managed well, could help buffer the negative effects of parental absence on left-behind children. For example, a study of three boarding schools (two junior high schools and one high school) in a mountainous area of Anhui Province compared educational achievement and psychological well-being between left-behind children and other children, and found that good management of these boarding schools was able to reduce the negative effects of parental absence on children's outcomes (H. Yan and Zhu 2006). Another study surveyed 465 students in junior high and high schools in Chongqing and suggested that boarding schools can improve left-behind children's mental health and emotion management, to some degree (Xiao, Ge, and Cao 2010). However, in practice, many boarding schools have been reported to be understaffed and underequipped to house impoverished students with poorer health, more behavior problems, and reduced academic achievement, compared to non-boarding schools (Yue et al. 2014). A recent study compared nutrition, health, and educational outcomes of boarding students to non-boarding students using a large, aggregate dataset that includes 59 rural counties across 5 provinces in China (A. Wang et al. 2016). Results showed that for all outcomes, boarding students were worse off than non-boarding students. One study that focused on providing boarding school management training to administrative staff showed potential for improved child welfare (Yue et al. 2014). Thus, while boarding schools carry the potential to address some of the direst problems of left-behind children, they will not necessarily do so without careful attention to design, resources, and

monitoring. Vulnerable children housed in rudimentary conditions, with inadequate nutrition and supervision, will not thrive.

An alternative initiative has been to establish community centers to supervise and/or provide enrichment for rural children. We have found few estimates of the number of community centers. A household and community survey implemented in 2011 in over 700 villages across minority areas in western China found that very few villages—about 2 percent of those sampled—reported providing temporary supervision. About another 2 percent reported that it was not provided, but then responded to a follow-up question (intended only for those that provided services) that services were provided by other entities (our calculations, Chinese Household Ethnic Survey, for a description, see Hannum, Liu, and Wang 2016). While ambiguous, these data clearly suggest that as of 2011, community centers were not a widespread phenomenon in these settings. However, it is unclear if and how numbers may have changed in the more recent period. A study in one county in western Zhejiang Province set up a demonstration project creating children's centers (C. Zhao et al. 2017). Centers were based on an earlier model created by a government agency in 2006 but then largely discontinued by 2013. The intervention created and implemented enhanced children's centers and then to qualitatively evaluated the experience of these clubs by left-behind children. 21 centers were established, were open to all children in the community, and were created with the intent of improving the psychosocial well-being of left-behind children. The interventions consisted of the following elements (C. Zhao et al. 2017, 240):

> (1) provision of a physical space and other necessary resources for out-of-school activities, (2) selection of club volunteers to manage club activities, (3) workshop training of these volunteers to recognize and support the needs of children, (4) setting-up of the club where children participate in a range of age-appropriate activities: play, reading, and other learning and entertainment activities under the guidance or supervision of volunteers, and (5) development of a local community support network that provides the Clubs with sustainable funding and other resources.

The study demonstrated that, in different contexts, local communities managed to develop operative implementation strategies, with clubs in even resource-poor communities able to run with the support of highly dedicated volunteers. Effective funding schemes and connections to the local school helped the interventions in some contexts. Qualitative work indicated that left-behind children enjoyed the experience and appreciated the clubs as a complement to the loneliness many left-behind children experienced at home. This study did not collect baseline data or implement an RCT design, but rather

demonstrates a model that has the potential to address the home environment deprivations that are experienced by many left-behind children. But little evidence is available about how widespread such initiatives are, or about how these initiatives can run effectively. In practice, due to ongoing demographic pressures and the lack of viable alternative strategies, centralized boarding schools remain a key policy lever for addressing the needs of left-behind children.

PART 4: SUMMARY AND CONCLUSIONS

This report has discussed the policy underpinnings, scale, and potential implications for children of the left-behind phenomenon. We considered the short- and long-term associations of parental absence with home environments and welfare outcomes with national data on contemporaneous implications (the CEPS, 2013-2014) and provincial data on longitudinal implications of being left behind (the GSCF, 2000 and 2015). Evidence indicates that even after adjusting for school or community and household socioeconomic status, there are multiple domains in which homes of left-behind children are disadvantaged: left-behind children tend to live in households characterized by poorer health resources, cultural resources, and social resources. By definition, they lose access, at least temporarily, to the "human capital" of their absent parents. Children in the short term thus experience more physiological, psychological, and (in the national comparison) educational disadvantages than their non-left-behind counterparts. In the long-term, our case study from Gansu Province suggests that father absence is associated with reduced educational attainment and possibly greater propensity to migrate, but not with employment outcomes or long-term family relations. Overall, disadvantages appear to be more consistent and more generalized for mother-absent and dual-parent-absent families than for father-absent families.

How might vulnerabilities of left-behind children be addressed, in the future? In some sense, policy shifts that are gradually moving toward families being able to bring children with them will solve the left-behind problem, but, as noted early on, migrant children at present face their own problems and research is mixed about whether they are better off in certain dimensions of welfare than left-behind children. Research has also indicated that there was a rising trend of return-migration between 1995 and 2010 (Liang, Li, and Ma 2014) and substantial numbers of migrant workers consider their place of origin as their final destination (Zhu and Chen 2010). If a rising trend in return-migration, observed in recent years, continues, and if rural workers with urban experience can facilitate rural development, these changes would also contribute to solving the problem in the long run.

In the absence of such macro trends, the main initiatives mentioned above—community centers and boarding schools—could address some of the disparities in children's lives associated with being left behind. Overall, given that most left-behind children are currently cared for by relatives, the additional supports offered by community centers are a potentially promising mechanism for augmenting the care and resources available at home, by addressing some of the limitations in health, social and cultural resources at home to which left-behind children may be particularly vulnerable. Community centers could offer respite childcare for aged caregivers, and for children, access to cultural enrichment, academic

support, social connection, and, possibly, to counseling and assistance with securing services related to health such as insurance. For children unable to reside with families, boarding schools could provide subsidized services of the same nature.

Beyond these strategies, another possibility would be to provide visiting "family coaches" who could provide parenting supports, resources, and advocacy in securing services for caregivers and children left behind. Much recent scholarship has focused critical attention on the lack of a stimulating environment for young children in rural China, and this attention has sometimes spotlighted "traditional" parenting practices (versus "modern" or "scientific" parenting practices) that do not provide sufficient stimulation for young children (F. Fan et al. 2010; R. Luo et al. 2017). This phenomenon may be particularly widespread when an older generation takes over primary caregiving when a mother is gone. For instance, Yue et al. (2017) demonstrate that compared to grandparents as primary caregivers, better-educated mothers are more likely to engage in parenting practices such as reading to and engaging in stimulating play with children.

However, what is referred to in the literature as "traditional parenting" might instead (or in part) have structural roots. Older caregivers who take over when mothers are gone often had limited access to schooling and thus literacy. Poverty limits the cultural resources in the home--stimulating materials such as books and toys. At a more basic level, poverty can mean a lack of good heating and lighting, which can limit possibilities for educational interaction and play. Periodic severe time constraints can also prevail if left-behind elders are also trying to run an agricultural household. These factors, as much as tradition, may render difficult the kind of intensive reading together and other stimulating activities that have been called for in recent critical studies of rural parenting. To enrich the lives of rural children, family coaches could provide parenting supports that are informational, but also material: sharing information about how to promote child development, but also sharing resources such as books (including audiobooks) and toys, and acting as advocates to identify other forms of support for children and caregivers—such as tutoring supports or counseling—when needed.

Counseling could be an important element of supporting left-behind children. Our findings suggest that parental absence is related to poor psychosocial wellbeing among left-behind children. However, there is of course variability among left-behind children. A child's resilience in the face of parental absence is linked to left-behind experiences and how children interpret those experiences (Y. Luo et al. 2016; Jordan and Graham 2012; Masten 2001). For example, Hu (2017) shows that resilience or vulnerability of left-behind children can be linked with the meaning they make of being left behind—if children view being

left-behind as parental sacrifice for their own education or future, children show more resilience than others, who view it as abandonment.[10] Proactive initiatives to build resilience in children—whether based with family coaches, in community centers, or at schools—could be valuable in buffering adverse effects of parental absence (Mu 2018; Masten 2001). Incorporating counseling and resilience-building into broad plans to support children may buffer psychosocial distress and reduce the escalation of slight psychosocial problems to severe ones.

As we have shown in this report, left-behind children experience substantial disadvantages in cultural enrichment and social resources at home, in health resources, and in self-rated health outcomes, educational outcomes, and psychosocial wellbeing. At a fundamental level, initiatives, whether boarding schools, community centers, proactive or reactive counseling, family coaches, or some combination of these, need to address the broad-based disadvantages experienced by left-behind children and take into account underlying structural factors creating these disadvantages. Improving the cultural, social or health resources available to left-behind children, and the welfare outcomes experienced by left-behind children, may require sustained material and social supports, as well as informational supports.

[10] Although the benefits of resilience for coping with psychosocial distress are evident, children's resilience in facing family separation seems to decline gradually and is eroded if left-behind for a longer period (F. Fan et al. 2010; Y. Luo et al. 2016).

PART 5: APPENDIX

CEPS variable definitions

Table A-1: Descriptive Statistics of CEPS Data (Weighted)

	Mean/ proportion	SD	Min	Max	N
Key independent variable					
Parental absence					
Neither absent	71.45				13,923
Father absent	10.73				2,091
Mother absent	3.75				731
Both absent	14.07				2,742
Home environment					
Social resources					
Regulations	2.336	0.396	1	3	19,434
Doing things together	3.404	1.117	1	6	19,349
Discuss things with mother	2.079	0.566	1	3	19,246
Discuss things with father	1.893	0.573	1	3	18,336
Closeness to mother	2.721	0.497	1	3	19,392
Not close	2.29				445
Normal	23.32				4,522

Very close	74.39				14,425
Closeness to father					
Not close	3.86				748
Normal	32.06				6206
Very close	64.08				12403
Peer environments	0.087	0.322	-3	2.429	19,189
Economic resources					
Allowance per week	30.503	44.992	0.01	999	18,347
Cultural resources					
No extracurricular activities participation	0.619	0.486	0	1	19,375
Number of Extracurricular activities participation	0.796	1.290	0	11	19,375
No personal desk	0.291	0.454	0	1	19,098
Books	2.867	1.216	1	5	19,432
IT accessibility					
None	46.7				8,990
Have computers, but no internet	8.42				1,621
Have both computers and internet	44.88				8,641
Health resources					
No health insurance	0.148	0.355	0	1	17,947

Short-term welfare outcomes

Physiological health

Height (cm)	160.849	8.799	130	200	18,881
Weight (kg)	49.011	10.813	25	110	17,853
BMI	18.814	3.229	7.384	55.144	17,676
Self-rated health	3.996	0.907	1	5	19,325

Psychological wellbeing

Depressive symptoms	2.11	0.78	1.00	5	19,091

Education

Math	-0.094	1.042	-3.559	2.944	18,989
Chinese	-0.183	1.091	-4.676	2.656	18,988
English	-0.115	1.021	-4.044	2.884	18,996
Cognitive test scores	-0.152	0.849	-2.029	2.710	19,487
Boarding schools attendance	0.454	0.498	0	1	19,487
Perceived parental education expectation	15.465	3.151	6	22	18,645
Child educational expectation	16.455	3.394	6	22	18,778

Control variables

Girl	0.471	0.499	0	1	19,487
Only child	0.329	0.470	0	1	19,482
Child age	13.720	1.294	11	17	19,025

Child migrant status					
Local non-immigrant	89.840				17398
Intra-provincial	6.300				1221
Inter-provincial	3.860				747
Rural *hukou*	0.642	0.479	0	1	19,487
Fall	0.693	0.461	0	1	19,487
9th grade (versus 7th grade)	0.501	0.500	0	1	19,487
Mother's schooling years	8.661	3.602	0	20	19,441
Father's schooling years	9.626	3.006	0	20	19,441
Family financial situation					
Very poor	5.740				1064
Poor	23.080				4280
Average	67.330				12483
Well-off	3.650				677
Very well-off	0.200				38

GSCF variable definitions

Table A-2 Descriptive Statistics of GSCF Data

	Mean /Proportion	SD	Min	Max	N
Key independent variable					
Father absence	0.196		0	1	2000
Control variables					
Birth year	1988.907	1.159	1984	1992	2000
Male	0.536		0	1	2000
Number of sibling	2.247	0.749	0	5	2000
Parents' education	5.196	3.406	0	13.5	1974
Family income (1,000 *yuan*)	1.645	2.948	0	81.32	2000
Home environment					
Economic resources					
Income sufficiency					1997
Insufficient	0.405				808
Barely sufficient	0.503				1004
Surplus	0.093				185
Credit (1,000 *yuan*)	3.064	6.653	0	110	1889
Loans (1,000 *yuan*)	3.096	14.751	0	570	1991

Life quality	3.997	1.972	0	11	2000
Allowance (*yuan*)	4.219	5.513	0	70	1994
Educational expenditure (*yuan*)	157.869	120.603	0	2027	2000
Cultural resources					
Books	24.693	18.029	0	130	1813
Magazines	3.155	6.420	0	70	1913
Desk	0.587		0	1	1992
Health resources					
Food insecurity					1999
Enough	0.742				1483
Sometimes not enough	0.212				438
Not enough	0.004				78
Food variety	6.205	2.258	0	13	2000
Protein intake	22.372	25.247	0	227	1995
Social resources					
Time regulation					1996
Never	0.257				513
Sometimes	0.425				848
Often	0.318				635
Parental warmth	38.748	5.364	18	54	1949

Doing things together	9.277	2.038	5	15	1981
Expectation of children's education					1952
Primary school	0.013				26
Secondary school	0.084				164
High school	0.223				435
College	0.680				1327
Closeness to mother					1942
Not close	0.045				88
Moderate	0.229				444
Close	0.726				1410
Closeness to father					1934
Not close	0.076				146
Moderate	0.210				407
Close	0.714				1381
Human capital					
Adults' highest years of education	4.226	4.085			2000
Short-term welfare outcomes					
Physiological health					
Overall health	4.244	0.950	1	5	1999
Serious illness	0.043		0	1	1997

Fever	0.220		0	1	1930
Psychological well-being					
Internalizing problem	39.975	8.140	18	72	1970
Externalizing problem	35.295	8.877	18	72	1976
Education					
Chinese grade (teacher-reported)	72.504	13.194	0	100	1951
Math grade (teacher-reported)	73.963	14.597	0	100	1957
Educational expectation					1983
Primary school	0.047				94
Secondary school	0.097				193
High school	0.267				529
College	0.589				1167
Long-term welfare outcomes					
Migration					
Nonlocal residence over 3 month	0.690	0.462	0	1	1561
Keeping rural *hukou*	0.792	0.406	0	1	1577
Education					
Total years of education	11.387	3.537	0	19	1613
Family formation					
Being married ever	0.853	0.354	0	1	1511

Employment					
Current employment status	0.867	0.340	0	1	1518
Family relationship					
Material exchange					1591
Co-resident	0.045				716
Separate and giving money only	0.245				389
Separate and receiving money only	0.059				93
Separate and both giving and receiving money	0.074				118
Separate and no material exchange	0.173				275

Table A-3 Items for Psychological Well-being Measures in GSCF

Internalizing problems	Externalizing problems	Depression	Self-esteem
I don't want others to meddle in my own business.	I quarrel with others.	I am bothered by things that usually don't bother me.	On the whole, I am satisfied with myself.
I can't concentrate on what I am doing.	I lose my temper.	I have trouble keeping my mind on what I'm doing.	At times I think I am no good at all.
I have many strange/weird ideas (often daydream)	I like to brag.	I feel everything I do is an effort.	I feel that I have a number of good qualities.

I easily get flushed. (I am easily frustrated or anxious.)	I like to show off my strengths in front of others.	I feel depressed.	I am able to do things as well as most other people.
I can't do things well when my parents are not present. (I usually need help from adults to do something well.)	I steal things from others or my home.	I feel hopeful about the future.	I feel I do not have much to be proud of.
I am very indifferent to others.	I break things on purpose.	I feel fearful.	I certainly feel useless at times.
I am very shy.	I do not observe school discipline.	My sleep is restless.	I feel that I'm a person of worth, at least on an equal plane with others.
I am often teased by classmates.	It bothers me if others do things better than I do.	I am happy.	I wish I could have more respect for myself.
I do not feel guilty, even if I have done something wrong.	Even if I know I am wrong, I am reluctant to listen to others.	I feel lonely.	All in all, I am inclined to feel that I am a failure.
I always want to be the center of attention.	I always want to be the center of attention.	I cannot “get going”.	I take a positive attitude toward myself.

I often am suspicious of others.	I often am suspicious of others.
My temper changes quickly and easily.	I act impulsively
I feel inferior to others.	I often say obscenities.
I prefer to be alone.	I often make fun of others.
I often feel nervous.	I sometimes tell lies.
I stay quiet when I am with my classmates or friends.	I am easily angered.
There is always something to worry about.	I often disregard other people's ideas.
I often feel tired.	I sometimes menace and even hurt others.

Child and family characteristics by parental absence status in CEPS

Table A-4: Proportion or Mean of Selected Independent Variables by Parental Absence Status in CEPS (Weighted)

	Neither absent	Father absent	Mother absent	Both absent	Total
Only child	35.71	30.28	41.92	18.78	32.98
Girl	49.02	45.59	36.4	48.16	48.08
Child migrant status					

Local non-immigrant	89.06	92.94	90.9	92.5	90.02
Intra-provincial	6.57	4.99	5.99	5.11	6.18
Inter-provincial	4.37	2.07	3.11	2.39	3.8
Rural *hukou*	62.45	65.9	66.59	74.74	64.69
Mother years of education	8.95	8.36	8.17	7.54	
Father years of education	9.84	9.40	9.10	8.81	
Family financial situation					
Very poor	5.22	6.28	9.52	6.94	5.73
Poor	21.12	27.56	30.99	26.91	22.98
Average	69.45	63.8	56.02	62.7	67.42
Well-off	4	2.29	3.23	3.14	3.67
Very well-off	0.2	0.07	0.25	0.31	0.2

Model result tables

Table CEPS-A: Ordinary Least Squares Regression Estimation of Social Resources on Parental Absence with Controlling for Child Characteristics, Child Migrant Status, *Hukou* Types, Family Socioeconomic Status and School Dummies

	Regulation	Doing things together	Discuss things with mother	Discuss things with father	Closeness to mother	Closeness to father	Check homework	Help homework	Peer environment
Model	OLS	OLS	OLS	OLS	Ordered logit	Ordered logit	OLS	OLS	OLS
Parental absence (neither absent as reference)									
Father absent	-0.029**	-0.116***	-0.005	-0.165***	-0.135*	-0.897***	-0.091**	-0.167***	0.015*
	(0.010)	(0.025)	(0.014)	(0.016)	(0.062)	(0.055)	(0.029)	(0.028)	(0.007)
Mother absent	-0.108***	-0.333***	-0.234***	0.004	-1.239***	-0.396***	-0.295***	-0.240***	0.032**
	(0.016)	(0.040)	(0.023)	(0.024)	(0.090)	(0.086)	(0.046)	(0.044)	(0.012)
Both absent	-0.054***	-0.709***	-0.088***	-0.039*	-0.618***	-0.440***	-0.379***	-0.245***	0.018*
	(0.010)	(0.026)	(0.014)	(0.016)	(0.059)	(0.055)	(0.030)	(0.028)	(0.007)

Girl	0.037***	-0.008	0.140***	-0.011	0.155***	-0.087**	-0.129***	-0.080***	-0.118***
	(0.006)	(0.014)	(0.008)	(0.009)	(0.036)	(0.032)	(0.017)	(0.016)	(0.004)
Only child	-0.014+	0.052**	0.040***	0.029**	0.069	0.096*	0.036+	0.039+	-0.001
	(0.007)	(0.018)	(0.010)	(0.011)	(0.045)	(0.041)	(0.021)	(0.020)	(0.005)
Child age	-0.014**	-0.045***	-0.020***	-0.003	-0.054*	-0.007	-0.025*	-0.022+	0.020***
	(0.004)	(0.011)	(0.006)	(0.007)	(0.026)	(0.024)	(0.013)	(0.012)	(0.003)
Child migrant status (local non-immigrant as reference)									
Intra-provincial	0.013	-0.009	-0.011	0.025	-0.006	0.007	-0.020	-0.050	-0.012
	(0.012)	(0.029)	(0.016)	(0.018)	(0.070)	(0.063)	(0.034)	(0.032)	(0.008)
Inter-provincial	0.035**	0.069*	-0.001	0.032+	-0.042	-0.046	-0.012	0.035	-0.011
	(0.012)	(0.030)	(0.017)	(0.018)	(0.071)	(0.064)	(0.034)	(0.032)	(0.009)
Rural *hukou*	0.002	-0.006	0.009	0.014	0.024	0.040	0.003	0.019	0.007
	(0.007)	(0.018)	(0.010)	(0.011)	(0.044)	(0.040)	(0.021)	(0.020)	(0.005)
Fall	0.065	-0.054	0.167**	0.095	0.739**	0.229	0.681***	0.429***	0.001

	(0.044)	(0.108)	(0.061)	(0.065)	(0.272)	(0.245)	(0.125)	(0.118)	(0.031)
9th grade (versus 7th grade)	-0.041***	-0.177***	-0.006	-0.077***	-0.269***	-0.354***	-0.275***	-0.346***	0.015*
	(0.011)	(0.026)	(0.015)	(0.016)	(0.063)	(0.057)	(0.030)	(0.028)	(0.008)
Mother's schooling years	0.003*	0.036***	0.015***	0.003	0.040***	0.014*	0.015***	0.031***	-0.003**
	(0.001)	(0.003)	(0.002)	(0.002)	(0.007)	(0.006)	(0.003)	(0.003)	(0.001)
Father's schooling years	0.003*	0.026***	0.009***	0.019***	0.018*	0.031***	0.008*	0.034***	-0.004***
	(0.001)	(0.003)	(0.002)	(0.002)	(0.008)	(0.007)	(0.004)	(0.003)	(0.001)
Family financial situation (very poor as reference)									
Relatively poor	-0.008	-0.008	-0.001	-0.011	-0.006	0.006	-0.031	-0.074+	-0.009
	(0.016)	(0.041)	(0.023)	(0.025)	(0.096)	(0.088)	(0.047)	(0.044)	(0.012)
Average	-0.012	0.143***	0.033	0.008	0.226*	0.136	-0.013	-0.025	-0.018
	(0.016)	(0.039)	(0.022)	(0.024)	(0.092)	(0.085)	(0.045)	(0.042)	(0.011)
Relatively well-off	-0.041*	0.267***	0.046	0.009	0.268*	0.228*	-0.056	-0.041	0.009

	(0.020)	(0.050)	(0.028)	(0.030)	(0.122)	(0.110)	(0.057)	(0.054)	(0.014)
Very well-off	-0.009	0.517***	-0.043	0.082	0.159	0.519	0.039	-0.099	0.056
	(0.057)	(0.142)	(0.080)	(0.087)	(0.367)	(0.349)	(0.163)	(0.157)	(0.041)
Constant	2.486***	3.933***	2.023***	1.676***			2.754***	1.916***	-0.138**
	(0.072)	(0.178)	(0.100)	(0.109)			(0.205)	(0.194)	(0.051)
School dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	17,971	17,901	17,808	16,988	17,936	17,901	17,828	17,670	17,764
R-squared	0.063	0.283	0.139	0.072			0.147	0.152	0.130

Note: Standard errors in parentheses

*** p<0.001, ** p<0.01, * p<0.05, + p<0.1

Table CEPS-B: Multivariate Analysis of Cultural Resources on Parental Absence with Controlling for Child Characteristics, Child Migrant Status, *Hukou* Types, Family Socioeconomic Status and School Dummies

	No extracurricular participation	Number of extracurricular activities participation	No personal desk	Number of books	None (vs. have both)	Have computers, but no internet (vs. have both)
Model	Logit	OLS	Logit	OLS	Multinomial Logit	
Parental absence (neither absent as reference)						
Father absent	0.039	-0.033	0.147*	-0.031	0.332***	0.445***
	(0.062)	(0.032)	(0.073)	(0.026)	(0.076)	(0.095)
Mother absent	0.305**	-0.145**	0.225+	-0.135**	0.209+	0.504***
	(0.099)	(0.051)	(0.116)	(0.042)	(0.122)	(0.146)
Both absent	0.112+	-0.086**	0.288***	-0.119***	0.543***	0.508***
	(0.062)	(0.033)	(0.067)	(0.027)	(0.075)	(0.102)
Girl	-0.235***	0.138***	-0.094*	0.089***	0.015	-0.066
	(0.035)	(0.018)	(0.045)	(0.015)	(0.046)	(0.058)

Only child	-0.117**	0.054*	-0.276***	0.039*	-0.175**	-0.128+
	(0.043)	(0.023)	(0.061)	(0.019)	(0.058)	(0.071)
Child age	-0.045+	0.015	-0.002	-0.062***	0.180***	0.054
	(0.026)	(0.014)	(0.031)	(0.011)	(0.032)	(0.043)
Child migrant status (local non-immigrant as reference)						
Intra-provincial	0.094	-0.039	-0.018	0.047	0.079	0.188+
	(0.068)	(0.037)	(0.098)	(0.030)	(0.094)	(0.107)
Inter-provincial	0.161*	-0.092*	0.160	0.064*	0.154	-0.148
	(0.069)	(0.038)	(0.104)	(0.031)	(0.095)	(0.121)
Rural *hukou*	0.124**	-0.084***	0.134*	-0.078***	0.466***	0.192**
	(0.042)	(0.023)	(0.056)	(0.019)	(0.055)	(0.071)
Fall	-1.784***	0.772***	-1.084	0.036	1.123	2.451*
	(0.344)	(0.139)	(0.930)	(0.113)	(0.816)	(1.027)
9^{th} grade (versus 7^{th} grade)	0.368***	-0.137***	-0.200**	0.022	-0.299***	-0.160

	(0.063)	(0.033)	(0.076)	(0.027)	(0.080)	(0.105)
Mother's schooling years	-0.055***	0.034***	-0.089***	0.040***	-0.094***	-0.051***
	(0.007)	(0.004)	(0.009)	(0.003)	(0.010)	(0.012)
Father's schooling years	-0.046***	0.035***	-0.097***	0.049***	-0.120***	-0.022+
	(0.008)	(0.004)	(0.011)	(0.003)	(0.011)	(0.013)
Family financial situation (very poor as reference)						
Poor	-0.022	-0.039	0.059	0.018	-0.352**	-0.006
	(0.101)	(0.052)	(0.098)	(0.042)	(0.122)	(0.184)
Average	-0.197*	0.027	-0.549***	0.246***	-1.061***	-0.281
	(0.096)	(0.050)	(0.095)	(0.041)	(0.116)	(0.176)
Well-off	-0.704***	0.275***	-1.049***	0.408***	-1.775***	-0.594**
	(0.123)	(0.063)	(0.177)	(0.052)	(0.178)	(0.220)
Very well-off	-0.807*	0.893***	-0.045	0.535***	-1.899**	-1.887+
	(0.349)	(0.180)	(0.501)	(0.147)	(0.608)	(1.043)

Constant	1.113**	0.638**	-0.538	3.384***	-2.820**	-3.977***
	(0.432)	(0.228)	(0.737)	(0.186)	(0.863)	(1.174)
School dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	17,920	17,920	17,403	17,957	17,801	17,801
R-squared		0.237		0.329		

Note: Standard errors in parentheses

*** p<0.001, ** p<0.01, * p<0.05, + p<0.1

Table CEPS-C: Multivariate Analysis of Health Insurance and Economic Resources on Parental Absence with Controlling for Child Characteristics, Child Migrant Status, *Hukou* Types, Family Socioeconomic Status and School Dummies

	No health insurance	Allowance per week
Model	Logit	OLS
Parental absence (neither absent as reference)		
Father absent	0.274***	1.251
	(0.078)	(1.263)
Mother absent	0.326**	3.971*
	(0.124)	(2.015)
Both absent	0.283***	3.096*
	(0.075)	(1.282)
Girl	0.103*	-0.351
	(0.049)	(0.722)
Only child	-0.037	-0.294
	(0.064)	(0.917)
Child age	0.084*	1.561**
	(0.034)	(0.546)
Child migrant status (local non-immigrant as reference)		
Intra-provincial	0.416***	-1.808
	(0.098)	(1.457)

Inter-provincial	1.358***	-0.357
	(0.092)	(1.491)
Rural *hukou*	-0.433***	-0.063
	(0.058)	(0.913)
Fall	0.109	-18.942***
	(0.362)	(5.356)
9th grade (versus 7th grade)	-0.282***	8.961***
	(0.084)	(1.307)
Mother's schooling years	-0.024*	0.142
	(0.009)	(0.145)
Father's schooling years	-0.031**	-0.200
	(0.011)	(0.156)
Family financial situation (very poor as reference)		
Poor	-0.009	-0.849
	(0.012)	(2.030)
Average	-0.018	5.104**
	(0.011)	(1.946)
Well-off	0.009	27.366***
	(0.014)	(2.484)
Very well-off	0.056	73.914***
	(0.041)	(7.072)

Constant	-0.138**	13.113
	(0.051)	(8.875)
School dummies	Yes	Yes
Observations	17,764	17,505
R-squared		0.093

Note: Standard errors in parentheses

*** p<0.001, ** p<0.01, * p<0.05, + p<0.1

Table CEPS-D: Multivariate Analysis of Nutritional Status, Physiological and Psychological Health on Parental Absence with Controlling for Child Characteristics, Child Migrant Status, *Hukou* Types, Family Socioeconomic Status and School Dummies

	Height	Weight	BMI	Overall health	Depressive symptoms
Model	OLS	OLS	OLS	OLS	OLS
Parental absence (neither absent as reference)					
Father absent	0.087	0.144	0.004	-0.109***	0.077***
	(0.183)	(0.272)	(0.090)	(0.023)	(0.021)
Mother absent	-0.342	-0.830+	-0.202	-0.141***	0.095**
	(0.293)	(0.439)	(0.145)	(0.037)	(0.034)
Both absent	-0.058	0.125	0.060	-0.072**	0.140***
	(0.187)	(0.278)	(0.092)	(0.023)	(0.021)
Girl	-5.630***	-5.143***	-0.533***	-0.099***	0.058***
	(0.105)	(0.156)	(0.051)	(0.013)	(0.012)
Only child	0.176	0.555**	0.173**	-0.033*	-0.009
	(0.132)	(0.197)	(0.065)	(0.017)	(0.015)
Child age	1.672***	1.280***	0.123**	-0.020*	0.036***
	(0.079)	(0.118)	(0.039)	(0.010)	(0.009)
Child migrant status (local as reference)					
Intra-provincial	-0.075	-0.432	-0.122	0.056*	0.036

	(0.211)	(0.315)	(0.104)	(0.027)	(0.024)
Inter-provincial	-0.635**	-0.890**	-0.198+	0.037	0.041+
	(0.216)	(0.323)	(0.106)	(0.027)	(0.025)
Rural *hukou*	-0.579***	-0.684***	-0.093	0.004	-0.044**
	(0.133)	(0.199)	(0.066)	(0.017)	(0.015)
Fall	-2.190**	-3.658**	-0.859*	0.080	-0.077
	(0.777)	(1.144)	(0.375)	(0.099)	(0.090)
9^{th} grade (versus 7^{th} grade)	3.351***	4.333***	0.834***	-0.052*	0.079***
	(0.190)	(0.283)	(0.093)	(0.024)	(0.022)
Mother's schooling years	0.125***	0.111***	0.011	0.005+	-0.010***
	(0.021)	(0.031)	(0.010)	(0.003)	(0.002)
Father's schooling years	0.088***	0.020	-0.013	0.002	-0.004
	(0.023)	(0.034)	(0.011)	(0.003)	(0.003)
Family financial situation (very poor as reference)					
Poor	0.686*	0.535	0.071	0.066+	-0.078*
	(0.296)	(0.447)	(0.148)	(0.037)	(0.034)
Average	1.310***	0.761+	0.002	0.216***	-0.180***
	(0.284)	(0.429)	(0.141)	(0.035)	(0.033)

Well-off	2.033***	1.286*	0.033	0.366***	-0.186***
	(0.361)	(0.539)	(0.178)	(0.045)	(0.041)
Very well-off	1.968+	-0.180	-0.672	0.462***	-0.181
	(1.026)	(1.504)	(0.499)	(0.128)	(0.120)
Constant	141.328***	36.368***	18.163***	4.258***	1.984***
	(1.287)	(1.916)	(0.631)	(0.163)	(0.149)
School dummies	Yes	Yes	Yes	Yes	Yes
Observations	17,495	16,596	16,440	17,858	17,684
R-squared	0.389	0.249	0.087	0.059	0.058

Note: Standard errors in parentheses

*** p<0.001, ** p<0.01, * p<0.05, + p<0.1

Table CEPS-E: Multivariate Analysis of Educational Outcomes on Parental Absence with Controlling for Child Characteristics, Child Migrant Status, *Hukou* Types, Family Socioeconomic Status and School Dummies

	Math	Chinese	English	Cognitive test scores	Boarding school attendance	Perceived parental educational expectation	Child educational expectation
Model	OLS	OLS	OLS	OLS	Logit	OLS	OLS
Parental absence (neither absent as reference)							
Father absent	-0.030	-0.045*	-0.061**	0.000	0.179+	-0.011	-0.065
	(0.023)	(0.021)	(0.022)	(0.020)	(0.095)	(0.077)	(0.081)
Mother absent	-0.228***	-0.132***	-0.201***	-0.085**	0.165	-0.373**	-0.505***
	(0.037)	(0.034)	(0.035)	(0.031)	(0.152)	(0.125)	(0.129)
Both absent	-0.069**	-0.071***	-0.042+	-0.035+	0.492***	-0.225**	-0.290***
	(0.024)	(0.022)	(0.023)	(0.020)	(0.089)	(0.079)	(0.082)
Girl	0.100***	0.451***	0.474***	-0.018	0.287***	0.327***	0.163***
	(0.013)	(0.012)	(0.013)	(0.011)	(0.059)	(0.044)	(0.047)

Only child	0.042*	0.027+	0.055***	-0.001	-0.214**	0.032	0.060
	(0.017)	(0.015)	(0.016)	(0.014)	(0.075)	(0.056)	(0.059)
Child age	-0.137***	-0.088***	-0.118***	-0.131***	0.097*	-0.347***	-0.366***
	(0.010)	(0.009)	(0.010)	(0.009)	(0.040)	(0.033)	(0.035)
Child migrant status (local as reference)							
Intra-provincial	0.037	0.038	0.013	-0.027	0.058	0.135	0.166+
	(0.027)	(0.024)	(0.026)	(0.023)	(0.130)	(0.089)	(0.094)
Inter-provincial	0.104***	0.112***	0.026	0.015	-0.466**	0.451***	0.491***
	(0.028)	(0.025)	(0.026)	(0.023)	(0.155)	(0.091)	(0.096)
Rural *hukou*	0.032+	0.027+	-0.008	-0.006	0.401***	0.017	0.108+
	(0.017)	(0.015)	(0.016)	(0.014)	(0.070)	(0.056)	(0.059)
Fall	-0.689***	-0.576***	-0.664***	-0.409***	0.137	0.105	0.414
	(0.100)	(0.092)	(0.096)	(0.085)	(1.162)	(0.333)	(0.349)
9th grade	0.285***	0.185***	0.227***	0.284***	-0.153	-0.034	0.057

	(0.024)	(0.022)	(0.023)	(0.020)	(0.099)	(0.080)	(0.084)
Mother's schooling years	0.012***	0.008**	0.013***	0.010***	-0.030**	0.071***	0.062***
	(0.003)	(0.002)	(0.003)	(0.002)	(0.012)	(0.009)	(0.009)
Father's schooling years	0.027***	0.026***	0.032***	0.019***	-0.048***	0.132***	0.093***
	(0.003)	(0.003)	(0.003)	(0.002)	(0.013)	(0.010)	(0.010)
Family financial situation (very poor as reference)							
Poor	0.133***	0.109**	0.063+	0.048	0.034	0.204	-0.138
	(0.038)	(0.034)	(0.036)	(0.032)	(0.136)	(0.125)	(0.131)
Average	0.153***	0.122***	0.101**	0.074*	-0.050	0.126	-0.327**
	(0.036)	(0.033)	(0.034)	(0.030)	(0.132)	(0.120)	(0.125)
Well-off	0.080+	0.094*	0.042	0.068+	-0.215	0.305*	-0.278+
	(0.046)	(0.042)	(0.044)	(0.039)	(0.197)	(0.152)	(0.160)
Very well-off	-0.248+	-0.187	-0.100	-0.038	-0.227	0.375	-0.555
	(0.132)	(0.122)	(0.127)	(0.110)	(0.616)	(0.437)	(0.456)

Constant	1.638***	0.865***	1.028***	1.801***	-4.828***	19.175***	20.994***
	(0.165)	(0.151)	(0.157)	(0.139)	(1.154)	(0.545)	(0.572)
School dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	17,569	17,569	17,570	18,001	16,624	17,269	17,902
R-squared	0.228	0.351	0.300	0.246		0.148	0.106

Note: Standard errors in parentheses

*** p<0.001, ** p<0.01, * p<0.05, + p<0.1

Table GSCF–A Coefficients from Full Models on Short-term Home Environment (Part I)

	Economic resources						Cultural resources		
	Income sufficiency	Credit	Loans	Life quality	Allowance	Educational expenditure	Books	Magazines	Desk
Model	Ordered Logit	OLS	OLS	OLS	OLS	OLS	OLS	OLS	Logit
Father's absence	0.027	-0.623+	-1.118	-0.250*	-0.396	-0.022***	-2.431*	-1.051**	-0.239*
	(0.113)	(0.376)	(0.852)	(0.103)	(0.311)	(0.007)	(1.044)	(0.361)	(0.120)
Birth year	-0.039	-0.041	-0.362	-0.058	-0.054	-0.008***	-1.051**	-0.160	-0.010
	(0.038)	(0.128)	(0.291)	(0.035)	(0.107)	(0.002)	(0.354)	(0.124)	(0.042)
Male	0.071	0.095	-0.623	0.048	-0.022	0.002	0.861	-0.195	0.138
	(0.090)	(0.299)	(0.681)	(0.082)	(0.249)	(0.005)	(0.824)	(0.289)	(0.097)
Number of sibling	-0.181**	-0.206	0.436	-0.120*	-0.526**	-0.008*	0.681	-0.549**	-0.059
	(0.061)	(0.202)	(0.460)	(0.055)	(0.168)	(0.004)	(0.561)	(0.195)	(0.066)

Parents' education	0.071***	0.210***	0.289**	0.184***	0.066+	0.005***	0.969***	0.401***	0.102***
	(0.013)	(0.044)	(0.100)	(0.012)	(0.036)	(0.001)	(0.121)	(0.042)	(0.014)
Family income	0.167***	0.689***	0.298**	0.144***	0.277***	0.004***	0.936***	0.231***	0.188***
	(0.025)	(0.054)	(0.114)	(0.014)	(0.042)	(0.001)	(0.148)	(0.048)	(0.039)
Village dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,971	1,865	1,965	1,974	1968	1974	1,789	1,888	1966
R-squared		0.112	0.013	0.179	0.039	0.059	0.111	0.093	

Note: Standard errors in parentheses. Unit for credit, loans, and educational expenditure is 1,000 *yuan*. Unit for allowance and is *yuan*.

*** p<0.001, ** p<0.01, * p<0.05, + p<0.1

Table GSCF–A Coefficients from Full Models on Short-term Home Environment (Part II)

	Health resources				Social resources			Human capital
	Food insecurity	Food variety	Protein intake	Time regulation	Parental warmth	Doing things together	Expectation of child's education	Adults' highest years of education
Model	Ordered Logit	OLS	OLS	Ordered Logit	OLS	Ordered Logit	Ordered Logit	OLS
Father's absence	0.212	0.064	-4.658***	0.241*	0.582+	-0.305**	0.083	-0.268
	(0.129)	(0.124)	(1.357)	(0.107)	(0.307)	(0.102)	(0.126)	(0.163)
Birth year	-0.002	-0.066	-0.410	-0.043	-0.609***	0.047	0.038	-0.051
	(0.045)	(0.043)	(0.464)	(0.036)	(0.105)	(0.035)	(0.043)	(0.056)
Male	0.345**	0.126	0.182	0.169*	0.718**	-0.007	0.418***	0.077
	(0.108)	(0.099)	(1.085)	(0.086)	(0.245)	(0.081)	(0.100)	(0.130)
Number of sibling	0.321***	-0.188**	-5.857***	0.054	0.047	-0.265***	-0.028	0.104

	(0.071)	(0.067)	(0.735)	(0.058)	(0.165)	(0.056)	(0.068)	(0.088)
Parents' education	-0.013	0.092***	0.705***	-0.017	0.129***	0.154***	0.096***	0.857***
	(0.016)	(0.015)	(0.159)	(0.012)	(0.036)	(0.012)	(0.015)	(0.019)
Family income	-0.307***	0.123***	2.085***	-0.012	-0.014	0.049**	0.113**	0.058**
	(0.057)	(0.017)	(0.182)	(0.014)	(0.041)	(0.016)	(0.037)	(0.022)
Village dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,973	1,974	1,969	1,971	1,924	1,955	1,929	1974
R-squared		0.082	0.137		0.038			0.5221

Note: Standard errors in parentheses. Unit for protein intake is half kilogram (500g).

*** p<0.001, ** p<0.01, * p<0.05, + p<0.1

Table GSCF–B Coefficients from Full Models on Short-term Welfare Outcomes (Part I)

	Physiological health			Psychological well-being			
	Overall health	Serious illness	Fever	Internalizing problem	Externalizing problem	Closeness to mother	Closeness to father
Model	OLS	Logit	Logit	OLS	OLS	Ordered Logit	Ordered Logit
Father's absence	-0.125*	0.444+	0.450***	0.537	1.017*	0.125	-0.100
	(0.054)	(0.258)	(0.134)	(0.461)	(0.501)	(0.132)	(0.128)
Birth year	-0.049**	0.307**	0.091+	1.047***	1.473***	-0.180***	-0.229***
	(0.018)	(0.100)	(0.049)	(0.159)	(0.172)	(0.045)	(0.045)
Male	0.014	0.136	-0.112	0.422	0.869*	-0.134	0.074
	(0.043)	(0.229)	(0.114)	(0.370)	(0.401)	(0.105)	(0.103)
Number of sibling	0.021	-0.017	-0.195*	0.678**	0.753**	-0.046	-0.077
	(0.029)	(0.155)	(0.079)	(0.250)	(0.271)	(0.071)	(0.069)

Parents' education	0.022***	-0.023	-0.022	-0.184***	-0.166**	0.013	0.022
	(0.006)	(0.034)	(0.017)	(0.054)	(0.059)	(0.015)	(0.015)
Family income	0.013+	-0.541***	-0.046	-0.100	-0.074	-0.010	0.026
	(0.007)	(0.161)	(0.031)	(0.062)	(0.067)	(0.024)	(0.024)
Village dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,973	1,912	1,886	1,947	1,951	1,923	1,912
R-squared	0.033			0.044	0.054		

Note: Standard errors in parentheses

*** p<0.001, ** p<0.01, * p<0.05, + p<0.1

Table GSCF–B Coefficients from Full Models on Short-term Welfare Outcomes (Part II)

	Education		
	Chinese grade	Math grade	Educational expectation
Model	OLS	OLS	OLS
Father's absence	-0.629	-0.728	0.071
	(0.747)	(0.832)	(0.048)
Birth year	0.648*	0.754**	0.018
	(0.257)	(0.286)	(0.016)
Male	-2.860***	-0.850	0.103**
	(0.599)	(0.667)	(0.038)
Number of sibling	-0.576	-0.747+	-0.053*

	(0.406)	(0.453)	(0.026)
Parents' education	0.593***	0.601***	0.029***
	(0.088)	(0.098)	(0.006)
Family income	0.261**	0.249*	0.015*
	(0.100)	(0.111)	(0.006)
Village dummies	Yes	Yes	Yes
Observations	1,926	1,932	1,958
R-squared	0.053	0.036	0.033

Note: Standard errors in parentheses

*** p<0.001, ** p<0.01, * p<0.05, + p<0.1

Table GSCF–C Coefficients from Full Models on Long-term Welfare Outcomes (Part I)

	Migration		Education	Marriage	Employment
	Nonlocal residence over 3 Months	Keeping rural *hukou*	Total years of education	Being married ever	Current employment status
Model	Logit	Logit	OLS	Logit	Logit
Father's absence	0.265+	-0.306+	-0.433*	-0.165	0.082
	(0.149)	(0.158)	(0.215)	(0.185)	(0.210)
Birth year	-0.037	0.086	0.141+	-0.263***	0.065
	(0.049)	(0.056)	(0.074)	(0.067)	(0.071)
Male	0.394***	0.012	0.303+	-0.175	1.801***
	(0.113)	(0.131)	(0.170)	(0.152)	(0.191)
Number of sibling	0.013	-0.172*	-0.085	-0.114	0.106
	(0.077)	(0.086)	(0.113)	(0.099)	(0.108)

Parents' education	-0.035*	-0.075***	0.307***	-0.052*	0.023
	(0.017)	(0.020)	(0.025)	(0.022)	(0.024)
Family income	-0.049*	-0.004	0.134***	0.025	0.076
	(0.025)	(0.020)	(0.030)	(0.038)	(0.057)
Village dummies	Yes	Yes	Yes	Yes	Yes
Observations	1546	1562	1597	1438	1477
R-squared			0.120		

Note: Standard errors in parentheses

*** p<0.001, ** p<0.01, * p<0.05, + p<0.1

Table GSCF–C Coefficients from Full Models on Long-term Welfare Outcomes (Part II)

	Family relationship			
	Material exchange (so-resident as reference)			
	Separate and giving money only	Separate and receiving money only	Separate and both giving and receiving money	Separate and no material exchange
Model	Multinomial Logit			
Father's absence	-0.112	0.102	-0.160	0.066
	(0.168)	(0.275)	(0.269)	(0.182)
Birth year	-0.124*	-0.067	-0.010	-0.101
	(0.057)	(0.098)	(0.090)	(0.064)
Male	-0.803***	-0.644**	-1.210***	-0.987***
	(0.133)	(0.228)	(0.210)	(0.149)
Number of sibling	-0.012	-0.095	0.027	0.100

	(0.090)	(0.159)	(0.138)	(0.099)
Parents' education	0.003	0.031	0.035	-0.024
	(0.019)	(0.034)	(0.030)	(0.022)
Family income	-0.023	-0.058	0.020	-0.022
	(0.030)	(0.069)	(0.023)	(0.032)
Village dummies	Yes	Yes	Yes	Yes
Observations	1575			

Note: Standard errors in parentheses

*** p<0.001, ** p<0.01, * p<0.05, + p<0.1

BIBLIOGRAPHY

All China Women's Federation, and National Bureau of Statistics of China. 2016. "Number of Migrant Worker Children Growing up Away from Their Parents in China in 2005 and 2010, by Age Group (in Millions)." Data. Statista. 2016. https://proxy.library.upenn.edu:3875/statistics/258437/number-of-left-behind-children-in-china-by-age-group/.

All China Women's Federation, National Bureau of Statistics of China, and Renmin University of China. 2016. "Share of Migrant Worker Children Growing up Away from Their Parents in Rural Areas and Total Number of Children in China in 2010." Data. Statista. 2016. https://proxy.library.upenn.edu:3875/statistics/258445/share-of-left-behind-children-in-rural-and-total-number-of-children-of-china/.

Bai, Yu, Linxiu Zhang, Chengfang Liu, Yaojiang Shi, Di Mo, and Scott Rozelle. 2017. "Effect of Parental Migration on the Academic Performance of Left Behind Children in North Western China." *The Journal of Development Studies*, June, 1–17. https://doi.org/10.1080/00220388.2017.1333108.

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. https://doi.org/10.1016/j.worlddev.2011.05.021.

Cheng, J., and Y.-H. Sun. 2015. "Depression and Anxiety among Left-behind Children in China: A Systematic Review: Depression and Anxiety among Left-behind Children in China." *Child: Care, Health and Development* 41 (4): 515–23. https://doi.org/10.1111/cch.12221.

Cheng, Yingqi. 2012. "Migrant Children to Sit Gaokao in Cities." News. China Daily USA. September 7, 2012. http://usa.chinadaily.com.cn/china/2012-09/07/content_15741738.htm.

China Labour Bulletin. 2018. "Migrant Workers and Their Children." Newsletter. China Labour Bulletin. 2018. http://www.clb.org.hk/content/migrant-workers-and-their-children.

China National Bureau of Statistics. 2011a. "China Statistics Yearbook 2011, Table 2-15: Gross Regional Product by Three Strata of Industry (2010)" in 2011 Statistical Yearbook." 2011. http://www.stats.gov.cn/tjsj/ndsj/2011/html/C0215E.xls.

———. 2011b. "China Statistics Yearbook 2011, Table 10-21: Per Capita Net Income of Rural Households by Region." 2011. http://www.stats.gov.cn/tjsj/ndsj/2011/html/J1021e.xls.

———. 2018. “2-5 Population at Year-End by Region (EN0205.Htm).” Statistics Yearbook. 2018. http://proxy.library.upenn.edu:6623/member/yearbooknew/yearbook/ybcdata.aspx?yc=5159C7F477B876B82900032D4F32BCFD&cc=P0205&ft=60E96FC2F750F00C.

Fan, Cindy. 2008. “Migration, Hukou, and the City.” In *China Urbanizes: Consequences, Strategies, and Policies*, edited by Shahid Yusuf and Anthony Saich, 65–89. Directions in Development. Countries and Regions. Washington, D.C: World Bank. https://books.google.com/books/about/China_Urbanizes.html?id=TBw9t4ebOB0C.

Fan, Fang, Linyan Su, Mary Kay Gill, and Boris Birmaher. 2010. “Emotional and Behavioral Problems of Chinese Left-behind Children: A Preliminary Study.” *Social Psychiatry and Psychiatric Epidemiology* 45 (6): 655–664.

Fu, Danni. 2017. “China Announces Radical Overhaul of College Entrance Exam.” *Sixth Tone*, October 20, 2017. http://www.sixthtone.com/news/1001031/china-announces-radical-overhaul-of-college-entrance-exam.

Gansu Bureau of Statistics. 2011. *Gansu Statistical Yearbook 2011 (甘肃统计年鉴2011)*. Lanzhou: China Statistics Press. http://chinadataonline.org/member/yearbooknew/yearbook/Aayearbook.aspx?ybcode=F88F0ED0C6279E705201326F77418C66&key=en.

Hannum, Emily, Xiaoying Liu, and Fan Wang. 2016. “Estimating the Effects of Educational System Contraction: The Case of China’s Rural School Merger Initiative.”

He, Bingyan, Jingyi Fan, Ni Liu, Huijuan Li, Yanjun Wang, Joshua Williams, and Kaishing Wong. 2012. “Depression Risk of ‘Left-behind Children’ in Rural China.” *Psychiatry Research* 200 (2–3): 306–12. https://doi.org/10.1016/j.psychres.2012.04.001.

Hu, Bo, and Anne West. 2015. “Exam-Oriented Education and Implementation of Education Policy for Migrant Children in Urban China.” *Educational Studies* 41 (3): 249–67. https://doi.org/10.1080/03055698.2014.977780.

Hu, Shu. 2017. "'It's for Our Education': Perception of Parental Migration and Resilience Among Left-behind Children in Rural China." *Social Indicators Research*, 1–21.

Huang, Youqin, Qian Song, Ran Tao, and Zai Liang. 2016. "Migration, Family Arrangement, and Children's Health in China." *Child Development*, December. https://doi.org/10.1111/cdev.12699.

Jordan, Lucy P., and Elspeth Graham. 2012. "Resilience and Well-Being Among Children of Migrant Parents in South-East Asia." *Child Development* 83 (5): 1672–1688.

Koo, Anita. 2015. "Migrant Children's Education." Online journal of the China Policy Institute. *China Policy Institute: Analysis* (blog). July 9, 2015. https://cpianalysis.org/2015/07/09/migrant-childrens-education/.

Lan, Yanling, Huixiang You, Jingzhi Cai, Yan Li, Xiujuan Tang, Yun Zhou, Yiening Qin, and Yanyan Zhang. 2009. "Effects of Group Psychological Service on Mental Health of Children Left behind in Rural Areas." *Chinese Mental Health Journal* 23 (11): 819–23.

Lau, Mimi. 2018. "China Has 61 Million Left-behind Children ... That's Almost Britain's Total Population." News. South China Morning Post. February 1, 2018. http://www.scmp.com/print/news/china/society/article/2038731/china-has-61-million-left-behind-children-thats-almost-britains.

Li, Jenny Xi, Yuying Tong, and Binbin Shu. 2018. "Migration Arrangements of Couples, Satisfaction with Spousal Contributions, and Perception of Happiness of Rural Chinese." In . Singapore.

Li, Shi. 2010. "The Economic Situation of Rural Migrant Workers in China." *China Perspectives*, no. 4: China Perspectives.

Liang, Zai. 2001. "The Age of Migration in China." *Population and Development Review* 27 (3): 499–524.

———. 2016. "China's Great Migration and the Prospects of a More Integrated Society." *Annual Review of Sociology* 42 (1): 451–71. https://doi.org/10.1146/annurev-soc-081715-074435.

Liang, Zai, Zhen Li, and Zhongdong Ma. 2014. "Changing Patterns of the Floating Population in China, 2000–2010." *Population and Development Review* 40 (4): 695–716.

Lu, Shuang, Yi-Ting Lin, Juliann H. Vikse, and Chien-Chung Huang. 2016. “Well-Being of Migrant and Left-behind Children in China: Education, Health, Parenting, and Personal Values: Left-behind Children in China.” *International Journal of Social Welfare* 25 (1): 58–68. https://doi.org/10.1111/ijsw.12162.

Lu, Yao. 2012. “Education of Children Left Behind in Rural China.” *Journal of Marriage and Family* 74 (2): 328–41. https://doi.org/10.1111/j.1741-3737.2011.00951.x.

Luo, Renfu, Fang Jia, Ai Yue, Linxiu Zhang, Qijia Lyu, Yaojiang Shi, Meredith Yang, Alexis Medina, Sarah Kotb, and Scott Rozelle. 2017. “Passive Parenting and Its Association with Early Child Development.” *Early Child Development and Care*, 1–15.

Luo, Yan, Hong Wang, Xun Lei, Xue Guo, Ke Huang, and Qin Liu. 2016. “Resilience in Rural Left-behind Middle School Students in Yunyang County of the Three Gorges Area in China: A Prospective Cohort Study.” *BMC Psychiatry* 16 (1): 77.

Masten, Ann S. 2001. “Ordinary Magic: Resilience Processes in Development.” *American Psychologist* 56 (3): 227.

Ministry of Civil Affairs. 2017. “National Left-behind Chinldren Information Management System Launched Officially.” Ministry of Civil Affairs of the People’s Republic of China. October 10, 2017. http://www.mca.gov.cn/article/zwgk/mzyw/201710/20171000006198.shtml.

Ministry of Education. 2006. *People’s Republic of China Law on Compulsory Education*. *President of the People’s Republic of China*. Vol. Order No.38. http://old.moe.gov.cn/publicfiles/business/htmlfiles/moe/moe_2803/200907/49979.html.

“Ministry Says Children of Migrant Workers Should Be Taught alongside Urban Peers.” 2015. News. Xinhuanet. February 28, 2015. http://www.xinhuanet.com/english/2015-02/28/c_134027013.htm.

Mu, Guanglun Michael. 2018. *Building Resilience of Floating Children and Left-Behind Children in China: Power, Politics, Participation, and Education*. Routledge.

“Opinions of the State Council on Strengthening the Care and Protection of the Left-behind Children in Rural Areas.” 2016. The State Council of the People’s Republic of China. http://www.gov.cn/zhengce/content/2016-02/14/content_5041066.htm.

"Outline of China's National Plan for Medium and Long-Term Education Reform and Development 2010-2020." 2010. 17th National Party Congress. National Educational Plan. Beijing: China National Party Congress. http://planipolis.iiep.unesco.org/en/2010/outline-chinas-national-plan-medium-and-long-term-education-reform-and-development-2010-2020.

Qiu, Yu. 2016. "Twenty-Six Provinces Introduced Policies for the Care of Left-behind Children2." *China News*, October 29, 2016. http://www.chinanews.com/sh/2016/10-29/8046985.shtml.

Ren, Qiang, and Donald J. Treiman. 2016. "The Consequences of Parental Labor Migration in China for Children's Emotional Wellbeing." *Social Science Research* 58 (July): 46–67. https://doi.org/10.1016/j.ssresearch.2016.03.003.

"Research Report on the Situation of Left-behind and Rural-urban Migrant Children in China." 2013. All-China Women's Federation. http://www.hubei.gov.cn/mzgjc/gjcgk/201305/t20130517_449285.shtml.

State Council. 2001. "Decision of the State Council on the Reform and Development of Basic Education." May 29, 2001. http://old.moe.gov.cn/publicfiles/business/htmlfiles/moe/moe_406/200412/4730.html.

———. 2008. "Notice of the State Council on Waiving Tuition and Miscellaneous Fees for Compulsory School-Aged Children in Cities." August 12, 2008. http://www.gov.cn/zwgk/2008-08/15/content_1072915.htm.

State Council General Office. 2003. "Notice of the General Office of the State Council on Forwarding the Opinions of the Ministry of Education and Other Departments on Further Strengthening the Compulsory Education of Children of Migrant Workers." September 13, 2003. http://www.mof.gov.cn/gp/xxgkml/kjs/200806/t20080624_2499117.html.

———. 2013. "Notice of the General Office of the State Council on Strengthening the Management and Services for the Employment of Migrant Workers." January 5, 2013. http://www.gov.cn/gongbao/content/2003/content_62570.htm.

———. 2016. "The General Office of the State Council Approved the Joint Inter-Ministerial Meeting for the Care and Protection of Left-behind Children." March 25, 2016. http://www.gov.cn/zhengce/content/2016-04/05/content_5061324.htm.

"The Bulletin on the Thorough Investigation of Left-behind Children in Rural Areas and the Special Action of 'Joint Guardians Accompanying Children.'" 2016a. Ministry of Civil Affairs of the People's Republic of China. http://www.mca.gov.cn/article/zwgk/ldjh/201612/20161200002665.shtml.

———. "The Bulletin on the Thorough Investigation of Left-behind Children in Rural Areas and the Special Action of 'Joint Guardians Accompanying Children.'" 2016b. Ministry of Civil Affairs of the People's Republic of China. http://www.mca.gov.cn/article/zwgk/ldjh/201612/20161200002665.shtml.

Tsang, Bill. 2018. "Migrant Education: Family Strategies and Public Policies." In *China's Rural Education in Transition*, edited by P Kong, GA Postiglione, and E Hannum. Abingdon, United Kingdom: Routledge. http://hdl.handle.net/10722/244305.

Wang, Aiqin, Alexis Medina, Renfu Luo, Yaojiang Shi, and Ai Yue. 2016. "To Board or Not to Board: Evidence from Nutrition, Health and Education Outcomes of Students in Rural China." *China & World Economy* 24 (3): 52–66. https://doi.org/10.1111/cwe.12158.

Wang, X., L. Ling, H. Su, J. Cheng, L. Jin, and Y-H. Sun. 2015. "Self-Concept of Left-behind Children in China: A Systematic Review of the Literature: Self-Concept of LBC." *Child: Care, Health and Development* 41 (3): 346–55. https://doi.org/10.1111/cch.12172.

Wang, Xiaobing, Yu Bai, Linxiu Zhang, and Scott Rozelle. 2017. "Migration, Schooling Choice, and Student Outcomes in China: Migration, Schooling Choice, and Student Outcomes in China." *Population and Development Review* 43 (4): 625–43. https://doi.org/10.1111/padr.12101.

Wang, Xiaobing, Renfu Luo, Linxiu Zhang, and Scott Rozelle. 2017. "The Education Gap of China's Migrant Children and Rural Counterparts." *The Journal of Development Studies* 53 (11): 1865–81. https://doi.org/10.1080/00220388.2016.1274395.

Wen, Ming, and Danhua Lin. 2012. "Child Development in Rural China: Children Left behind by Their Migrant Parents and Children of Nonmigrant Families." *Child Development* 83 (1): 120–36.

Wen, Ming, Shaobing Su, Xiaoming Li, and Danhua Lin. 2015. "Positive Youth Development in Rural China: The Role of Parental Migration." *Social Science & Medicine* 132 (May): 261–69. https://doi.org/10.1016/j.socscimed.2014.07.051.

Wu, Xiaogang, and Zhuoni Zhang. 2015. “Population Migration and Children’s School Enrollments in China, 1990–2005.” *Social Science Research* 53: 177–190.

Xiao, Min, Ying Ge, and Chenggang Cao. 2010. “Rural Boarding Schools and Their Relationship with Left-behind Children’s Emotion Management and Mental Health.” *Chinese Journal of School Health*, no. 11: 1294–96.

Xu, Duoduo, and Xiaogang Wu. 2016. “Separate and Unequal: Hukou, School Segregation, and Migrant Children’s Education in Urban China.” Research Reports 16–856. Population Studies Center. Ann Arbor, Michigan: University of Michigan. https://www.psc.isr.umich.edu/pubs/pdf/rr16-856.pdf.

Xu, Hongwei, and Yu Xie. 2015. “The Causal Effects of Rural-to-Urban Migration on Children’s Well-Being in China.” *European Sociological Review* 31 (4): 502–19. https://doi.org/10.1093/esr/jcv009.

Yan, Alice. 2018. “Jack Ma Has a Solution for China’s ‘Left-behind Kids’: Boarding School.” News. South China Morning Post. February 1, 2018. http://www.scmp.com/print/news/china/policies-politics/article/2129910/jack-ma-has-solution-chinas-left-behind-kids-boarding.

Yan, Honghe, and Xiatao Zhu. 2006. “The Effect of Boarding Schools on Left-behind Children’s Education.” *Modern Primary and Secondary Education*, no. 1: 4–6.

Yiu, Lisa. 2018. “Access and Equity for Rural Migrants in Shanghai.” In *China’s Rural Education in Transition*, edited by P Kong, GA Postiglione, and E Hannum. Abingdon, United Kingdom: Routledge. http://hdl.handle.net/10722/244305.

Young, Natalie A. E. 2017. “Departing from the Beaten Path: International Schools in China as a Response to Discrimination and Academic Failure in the Chinese Educational System.” *Comparative Education*, August, 1–22. https://doi.org/10.1080/03050068.2017.1360566.

Yue, Ai, Yaojiang Shi, Fang Chang, Chu Yang, Huan Wang, Hongmei YI, Renfu Luo, et al. 2014. “Dormitory Management and Boarding Students in China’s Rural Primary Schools.” *China Agricultural Economic Review* 6 (3): 523–50. https://doi.org/10.1108/CAER-05-2012-0048.

Yue, Ai, Yaojiang Shi, Renfu Luo, Jamie Chen, James Garth, Jimmy Zhang, Alexis Medina, Sarah Kotb, and Scott Rozelle. 2017. “China’s Invisible Crisis: Cognitive Delays among Rural Toddlers and the Absence of Modern Parenting.” *The China Journal* 78 (1): 50–80.

Zhang, Dongjiao. 2008. “Social Capital Guarantee for Balanced Development of Compulsory Education and It Governmental Administration (in Chinese).” *Journal of Beijing Normal University (Social Science)* 2008 (2): 24–32.

Zhang, Gaohua. 2016. “Reseach Review on Psychological Problems of Rural Left-behind Children.” *Journal of Shandong Normal University* 61 (5): 119–29.

Zhang, Zongtang. 2005. “Official from Ministry of Education of PRC Responds to Journalist on Rural Boarding School Construction Project (Chinese).” News. Xinhua (SINA.COM). August 12, 2005. http://news.sina.com.cn/c/2005-08-12/19186678197s.shtml.

Zhao, Chenyue, Xudong Zhou, Feng Wang, Minmin Jiang, and Therese Hesketh. 2017. “Care for Left-behind Children in Rural China: A Realist Evaluation of a Community-Based Intervention.” *Children and Youth Services Review* 82 (November): 239–45. https://doi.org/10.1016/j.childyouth.2017.09.034.

Zhao, Qiran, Xiaohua Yu, Xiaobing Wang, and Thomas Glauben. 2014. “The Impact of Parental Migration on Children’s School Performance in Rural China.” *China Economic Review* 31 (December): 43–54. https://doi.org/10.1016/j.chieco.2014.07.013.

Zhou, C., S. Sylvia, L. Zhang, R. Luo, H. Yi, C. Liu, Y. Shi, et al. 2015. “China’s Left-Behind Children: Impact Of Parental Migration On Health, Nutrition, And Educational Outcomes.” *Health Affairs* 34 (11): 1964–71. https://doi.org/10.1377/hlthaff.2015.0150.

Zhou, Jianyu. 2014. “Family Reading Program： An Effective Way to Promote the Psychological Health of Left-behind Children in Rural Areas.” *Library & Information* 158 (3): 121–26.

Zhou, Shu, and Monit Cheung. 2017. “Hukou System Effects on Migrant Children’s Education in China: Learning from Past Disparities.” *International Social Work* 60 (6): 1327–42. https://doi.org/10.1177/0020872817725134.

Zhu, Yu, and Wenzhe Chen. 2010. “The Settlement Intention of China’s Floating Population in the Cities: Recent Changes and Multifaceted Individual-Level Determinants.” *Population, Space and Place* 16 (4): 253–267.