Migration, Growth, and Poverty Reduction in Rural China

Retrospect and Prospects

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Abstract

Rural-to-urban migration in China has transformed the lives of millions of rural residents. This paper reviews empirical evidence on the impacts of migration on the welfare of individuals and households in rural communities. After first discussing the evolution of institutions that have shaped individual and household migration decisions, it next reviews data issues that arise when studying migration in China, documents long-term migration trends, and presents evidence on the impacts of migration on household earnings, consumption, and risk of falling into poverty within rural communities. The paper next reviews new research raising concerns associated with the impacts of migration on those left behind in rural villages, including school-age and younger children, women, and the elderly. For comparative purposes, relevant evidence and approaches used are drawn from analytical research from the international literature on the impacts of migration experience. The paper also highlights open questions, with suggestions for future research and a discussion of policy priorities.

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Migration, Growth, and Poverty Reduction in Rural China:

Retrospect and Prospects*

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1. Introduction

Rural-to-urban migration has been a prominent feature of economic growth in developing countries (Henderson and Turner, 2020), including China, where it has contributed significantly to aggregate income growth and productivity gains (Bosworth and Collins, 2008; Tombe and Zhu, 2019). Empirical evidence from China over the last three decades highlights the importance of the rural-urban productivity divide, institutional constraints, and local contexts in shaping migration decisions and impacts at the individual and household levels. China’s experience also demonstrates that the participation in and benefits from rural-to-urban migration are not inclusive, with varying migration rates and heterogeneous impacts across demographic groups. These lessons have broader implications for policymakers seeking to facilitate rural-to-urban migration while supporting vulnerable groups left behind.

In a mechanical sense, migration improves labor productivity by reducing the time farmers spend working in low-return agriculture.\(^1\) A question remains, however, as to whether increased agricultural productivity due to migration leads to poverty reduction, or if improved migration opportunities and remittances are responsible for increased consumption and reduced poverty among rural households. Identifying how increases in rural-to-urban migration influence household economic circumstances requires unpacking causality from two simultaneous and potentially mutually reinforcing changes: increased agricultural productivity and increased labor mobility. Relatedly, when estimating household-level migration impacts, it is essential to account for migration selection, as migrants are not a random sample of the origin population (Lee, 1966). Separating the effects of migration itself from the effects of migrant characteristics is a recurring empirical challenge discussed in this paper.

Section 2 highlights two important institutional features shaping rural-to-urban migration in China: the residential registration (Hukou) system and the land tenure system. Although these institutions have evolved considerably over the last 40 years, they continue to influence migration patterns, migrant duration, and the demographic composition of migrants. The patterns and the nature of participation in migrant work discussed in Section 3 are important for understanding the benefits of rural-urban migration as a means of poverty alleviation in China. Significant gender gaps exist in migrant participation across the age distribution, with men working as migrants at higher rates than women, though this gap has closed over time. Migrants are getting older, and their average number of working days has been increasing. While less affluent rural households tend to participate more in migrant labor markets than affluent

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\(^1\) Ravallion and Chen (2007) and Montalvo and Ravallion (2010) emphasize the role of increased agricultural productivity as the most important factor contributing to poverty alleviation in China, but do not explicitly consider the interactions between migration and agricultural productivity.
households, recent research suggests that poorer, credit-constrained households may not benefit as fully from migrant opportunities as middle-income households (de Brauw and Giles 2018; Du et al. 2005).

Section 4 reviews evidence on the effects of migration on household earnings, consumption, and poverty alleviation. One credible study based on data from China’s poor counties finds household income per capita increases from 8.5 to 13.1 percent after sending a migrant (Du et al. 2005). Research also suggests that increased migration from villages also contributed to average increases in household consumption within villages, including those without a migrant household member. One study attributes 65 percent of the consumption growth experienced by a panel of households from villages surveyed from 1988 to 2002 to increases in rural-to-urban migration (de Brauw and Giles, 2018).

The opportunity to diversify household earnings through migrant work lowers the risk of falling into poverty, even for households not currently engaged in migrant work. The option to find migrant work and diversify income sources after experiencing agricultural shocks affects precautionary savings behavior, poverty risk, and household investment decisions. As out-migration from a village increases, the risk of falling into poverty declines: a 1 percent increase in migration from the village is associated with a 3.2 percent decline in the risk of falling into poverty (Giles and Murtazashvili, 2013). Facing lower consumption-risk, households make higher return risky investments in tea, fruit trees, and animal husbandry when migration becomes easier, yielding earning increases of 12 to 22 percent for animal husbandry and 5 percent for fruit production (Kinnan et al. 2018).

As China enters its third decade of rural-urban migration, some areas of concern discussed in Section 5 warrant additional research and policy attention. In other countries, out-migration with urbanization has often led to a collapse in public goods provision, negatively impacting infrastructure maintenance and the provision of health and education services (Moretti, 2012). In rural China, a negative correlation exists between the scale of out-migration and village-level public goods investment, but this effect is less significant in multivariate models. While further investigation is warranted, increases in funding from upper levels of government likely prevented sharp declines in public goods provision in rural China. While migrant workers’ access to urban social insurance programs and their children’s enrollment in city schools has improved, significant obstacles remain. Children remaining in villages are often separated from parents for extended periods or educated in substandard arrangements in urban areas, potentially leading to negative consequences for the next generation. Although left-behind children benefit from higher incomes, those with absent migrant parents are more likely to suffer from depression, other mental health problems, and behavioral problems. Older family members often left behind to care for children are vulnerable to poverty and isolation in old age.
2. The Institutions Shaping Rural-to-Urban Migration in China

Institutions play a crucial role in shaping the patterns and dynamics of migration, both across and within countries. For example, international borders and visa requirements can greatly influence the flow of people between countries (Hatton, 2009), with some nations adopting more restrictive policies while others encourage migration. Similarly, internal boundaries, such as provincial borders in India and China, can also affect migration patterns, particularly when coupled with regional disparities in economic opportunities (Kone et al, 2018). In Ethiopia, a changing registration of one’s neighborhood, or Kebele, may also create obstacles to migration (de Brauw et al, 2017).

The dynamics of China’s rural-to-urban migration have been influenced by two long-standing institutions: the household registration (Hukou) system and the land tenure system. Both institutions increase the costs of moving from rural villages and settling in cities for extended periods of employment. This section briefly documents the history of these institutions, highlights the policy specifics related to migration, and summarizes the existing empirical evidence regarding how these institutions and their evolution have affected migration over China’s reform period.

2.1. The Household Registration (Hukou) System

China has a long history of registering individuals and households for tax collection and military conscription (Wang 2006). Established in 1958, the Hukou system was developed to control population movement and facilitate central planning. It registered each person as agricultural or nonagricultural within a specific city or county, and internal migration required official approval in the migration destination (Chan, 2009). Since the early 1960s, the agricultural-nonagricultural classification determined the level of state-provided benefits, with non-agricultural Hukou holders receiving more generous provisions such as housing, employment, grain rations, education, and medical care, than those with agricultural Hukou. While the major differences are between rural and urban areas, among the urban areas, larger cities tended to provide more generous benefits than smaller ones (Chan, 2019). Despite improvements in social protection for rural residents and increased access to education for migrants in urban areas since the early 2000s, significant gaps in benefits persist between these groups.

Even with the continued stringency of Hukou regulations in the early reform period, population movements between rural and urban areas began to increase in the 1980s with the emergence of the market economy. The government adopted more flexible Hukou policies to accommodate and regulate this movement, such as establishing a temporary residence permit system (with a temporary residence
permit, the *zan zhu zheng* in 1985 (Liu 2005) and making these permits widely available to migrants starting in 1988 (Mallee, 1995). These policies provided a legal status to migrants, whose presence in cities would otherwise be illegal under strict *Hukou* regulations.\(^2\) Since then, the stock of rural *Hukou* migrants has continuously risen, reaching over 295.62 million in 2023, with 171.90 million migrating outside their home townships (National Bureau of Statistics, 2023).

Due to their agricultural *Hukou* and relatively low educational attainment, migrants generally hold different jobs than local urban residents (Meng and Zhang 2001; Meng 2012), typically working in less-skilled, blue-collar jobs in manufacturing, construction, services, and textiles, which are unattractive to urban residents (Naughton, 2018). The *Hukou* system has not only segmented the urban labor market, but also denied migrants access to social security and medical benefits, education for children, and housing. Migrants also face discrimination from urban residents (Kuang and Liu, 2012) and the *Hukou* system has raised migration costs and sustained regional wage differentials (Whalley and Zhang, 2007).

Obstacles to switching one’s registration from rural to urban areas, compounded by lack of access to urban health, education, and social insurance, have prevented entire rural families from moving to cities (World Bank, 2009).\(^4\) Given prevailing gender norms, women are more likely than men to stay behind in rural areas with their families (Mu and van de Walle 2011). Recent policy changes in response to labor market segmentation and the growing number of migrants in cities have coincided with and likely encouraged changes in family migration patterns. Even before the 2014 *Hukou* reform, a growing number of young migrant workers were migrating with their children (Wang et al. 2019). This new pattern was supported by the emergence of private schools for migrant children in some large cities (Pong, 2014), the new generation’s adaptability to urban life and desire to settle in cities (He and Wang 2016) and migrant parents’ view of urban education as a path to social mobility for their children (Kwong, 2004).

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\(^2\)Many rural migrants continue to work in cities without temporary residence permits. Evidence from the 2001 China Urban Labor Survey (CULS) suggests that nearly half of the rural migrant population in 2000 were working without temporary residence permits (appendix materials for de Brauw and Giles 2017). Migrants with legal guest worker status have more secure employment and tend to be more established in cities.

\(^3\)Since 2016 based on *The Interim Regulations on Residence Permits* issued by the State Council, migrants with stable employment or residential place and residing in a city for more than 6 months are encouraged to apply for residence permits (*Ju Zhu Zheng*), which replaced temporary residence permits issued in earlier years. Like the previous regulatory measure of temporary residence permits, this regulation is not enforced.

\(^4\)Individuals with rural *Hukou* status can now purchase non-agricultural *Hukou* status from urban governments, yet in many cases the system continues to work against more permanent migration flows (Fan, 2008). Further, since implementation of the Labor Contract Law in 2008, it has been feasible for migrants to enroll in urban social insurance programs (including both health insurance and pensions), but confusion over enrollment procedures and lack of portability still contribute to low participation rates (Giles et al., 2021).
In 2014, the State Council promoted the permanent settlement of 100 million migrants in urban areas and unification of the agricultural and nonagricultural Hukou classifications (State Council, 2014a). A 2019 Urbanization Plan requires cities with fewer than 5 million residents to lift or relax urban residency restrictions, potentially granting migrants access to the same rights and services as existing urban Hukou holders (National Development and Reform Commission (NDRC), 2019). Because these reforms excluded most migrant workers in large cities, they are not viewed to be meaningful for most migrants (Chan, 2019). For instance, regulations for obtaining a local Beijing Hukou still favor the highly educated and those serving the capital’s political functions over less-skilled rural migrant workers (Liu and Shi 2020). A new dataset (1978-2016) on prefecture-level migration regulations reveals variations in migrant treatment across prefectures. In particular, prefectures with high export potential have the friendliest policies toward migrants (Tian, 2022).

In sum, the Hukou system has been modified to accommodate internal migration and urbanization, however in the large cities, the primary destination of rural-to-urban migrants, it continues to sustain labor market segmentation. Even after the 2008 Labor Contract Law and the 2011 Social Insurance Law aimed to bring migrants into urban social insurance programs, participation remained low (Giles et al., 2021). At the same time, local regulations toward migrants exhibit substantial variation across prefectures, with policy responding to labor market demands, particularly in regions with high export potential.

### 2.2. The Land Tenure System

China’s land tenure system creates disincentives for farmers to fully participate in the off-farm labor market. The state owns land in urban areas, while rural collectives own agricultural land and homestead land in suburban and rural areas. Individuals and for-profit organizations have land use rights for fixed periods, and rural households have 30-year land use rights under contractual arrangements with their village. These individual land use rights are distinct from and independent of land ownership by collectives and the state, this legal framework has been described as a “dual land tenure system” (Khantachavana et al., 2013; World Bank, 2014).

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6Under the original Household Responsibility System (HRS), rural households were granted 15-year land use rights in the early 1980s. When the original 15-year leases expired in the late 1990s, the national government extended the term of farmers’ use rights for an additional 30 years, and codified terms of 30-year land use rights under the 1998 Land Administration Law (Davis and Chen, 1998).
China’s laws protect individualistic land use rights, but enforcement is often lacking (Benjamin and Brandt 2002; Jacoby et al., 2002; Jin and Deininger 2009). Under the dual land tenure system, farmers’ land tenure security is threatened by two administrative measures: land reallocation by village cadres and land requisition by county or township governments. Farmers in rural China faced a substantial risk of losing land through reallocations until the early 2000s (Jin and Deininger 2009; Giles and Mu 2018). Village leaders reallocated land for equity, efficiency, or rent-seeking purposes (Brandt et al. 2004). Regardless of motives, empirical evidence suggests high costs associated with land reallocation, including reduced investment in land (Jacoby et al. 2002) and reduced off-farm labor force participation of rural residents (Adamopoulos et al., 2022).

China’s administrative allocation of land-use rights distorts labor, land, and capital allocations across sectors and villages. Using a structural model of farm-level production, Adamopoulos et al. (2022) conclude that China’s land institutions prevent efficient allocation of land to the most productive farmers, resulting in a 53% efficiency loss in agricultural output. This misallocation distorts farmers’ sectoral occupational choices and reduces high-ability farmers’ participation in agriculture. Eliminating these distortions could increase agricultural productivity by 1.67-fold and reduce the share of labor in agriculture from 46 percent to 16 percent.

Property rights reform after the late 1990s strengthened Chinese farmers’ land rights. The 1998 Land Management Law granted 30-year land contracts, and the 2003 the Rural Land Contracting Law (RLCL) provided stronger claims to contracted land, guaranteed leasing rights, and technically disallowed land reallocation. RLCR implementation corrected, in part, land misallocation among farmers (Chari et al., 2021), increased land rental activities, redistributing land toward more productive farmers, and consequently boosting agricultural output and productivity.

In recent years a newer type of land tenure insecurity has emerged, where local residents have little influence over the requisition (or takings) of land for construction purposes. The process involves the conversion of agricultural land to non-agricultural uses through a two-step legal mechanism. First, governments requisition land from rural collectives (tudi zhengyong), and second, a land lease transaction occurs between the government and land developers (tudi churang). Under these mechanisms, rural farmers have no voice or ability to influence the requisition of land taken in the name of public interest under a type of eminent domain.

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7 Land-use conversion is regulated through a quota system that allocates land, with assignment shared through the jurisdictional hierarchy from the provincial to the township level governments, the higher-level provincial government generally taking more of the quota (Hsing, 2010).
Unlike tenure insecurity due to village land reallocations, land requisition by higher levels of government for non-agricultural uses has a different impact on migration decisions. As it relies on the state’s eminent domain power and its timing and scope are beyond farmers’ control, the prospect of land requisition is a threat to land rights that farmers cannot guard against by focusing on agricultural production and staying in the village. As a result, the risk of losing land through requisition significantly increases individual farmers’ migration rates (Ma and Mu, 2020).

3. Migration Trends

Reduction in the barriers to population mobility created by the Hukou and land tenure systems, and the shift of labor out of agriculture and into higher productivity employment opportunities in urban and coastal areas, is recognized for its important contribution to China’s economic growth since 1990. From the village-level survey data of the Research Center for Rural Economy (RCRE) in China’s Ministry of Agriculture, it is evident that fewer than 10% of the registered rural population worked as migrants in 1993. The migrant share of the registered population increased steadily to 38% by 2017, with 22% working outside of their home counties and 11% outside of home provinces (Figure 1). Expanding the reach of telecommunications and investments in transportation infrastructure were enabling factors that facilitated increases in both rural-to-urban migration and the duration of migrant employment. China’s internal migrants, like economic migrants around the world, move to places with higher wages and more economic opportunity.

Below we discuss the strengths and weaknesses of using census versus individual and household survey data, respectively, for the study of internal migration in China. China-specific issues related to sampling and definition of household membership are highlighted. Long-term patterns in rural-to-urban migration trends are summarized using village, household and individual data from surveys conducted by the Research Center for Rural Economy (RCRE) at China’s Ministry of Agriculture. These data have the benefit of using a consistent standard for defining a migrant over three decades. The discussion on trends is then supplemented with data from a more recent survey, the China Family Panel Survey (CFPS). Attention also focusses on how the individual characteristics of migrants and their jobs have evolved over time.

3.1 Measurement Issues and Data

One important challenge for the study of migration in China involves fundamental problems of measurement. Although there is a general understanding in China that a “rural migrant” has a
rural Hukou and lives and works in an urban location, there is no consistent definition of “migrant” in the China literature. For example, when using the Population Census data to study migration trends, scholars often define a migrant as an individual who has crossed county boundaries and has stayed at a destination for no less than six months without a local Hukou (Liang, 2016; Liang et al., 2014). The census data have clear definitions and offer a clean approach to estimating changes in the migrant population over long periods of time, but do not contain sufficient information, especially longitudinal data, that may be used to examine migrant impacts.

A number of household surveys offer promise for study of the impacts of migration. When using these surveys, interpretations may turn on how they define household membership, definition of a migrant, and approach to sampling. In contrast to common standards for household membership followed internationally, as in the World Bank’s Living Standards Measurement Survey (LSMS) and LSMS-type surveys, definition of household membership and migrant status are less clear in China’s household surveys. Categorization as a household member often follows the National Bureau of Statistics (NBS) standards for the NBS Rural and Urban Household Surveys that were implemented annually from the late 1980s through the early 2010s. Under longstanding NBS practice, household membership was based on whether a family member was co-resident for more than 6 months in a year or was a family member with prior residence and who continued to have an interdependent economic relationship with the household. Most important for migration studies, non-resident children who still have a rural Hukou and pool earnings with the household are counted as household members. Some surveys, like the China Health and Retirement Longitudinal Survey (CHARLS), and the NBS surveys starting in 2013, use residence in the household for six months of the year as the criterion for household membership.

When different criteria are applied to identify migrants, one finds different estimates related to migration. Even different waves of the same dataset cannot be used to establish migration trends if survey questions about migration, or available approaches to establishing migrant status or household membership, are not the same across survey waves (e.g., China Health and Nutrition Surveys and China Income Project Surveys). Using consistent definitions of migrant status is particularly important if the research objectives focus on estimating if and how the impacts of migration are changing over time.

Apart from residence in the household, sampling approaches for household surveys in China are also likely to have missed migrants in China’s cities until very recently. Most household surveys have used the sample frames developed by the rural and urban survey teams of the National Bureau of Statistics. A problem arises, particularly in urban areas, as sampling frames are constructed by residential structure
and are not frequently updated. Migrants in urban areas who are living in worksites, in dormitories, or even less formal housing, are less likely to be enumerated. The Rural Urban Migration in China, developed and headed by Xin Meng from Australian National University from 2008 through 2016, addressed this weakness by using geography-based survey techniques and sampling through workplaces judged to employ migrants (Akguc et al. 2014; Kong 2010).

3.2 Long-Term Migration Trends

With the abolition of the production team system and the establishment of the household responsibility system in agricultural production in the late 1970s, China’s farmers not only increased agricultural production and earned higher incomes (Lin, 1992), they also gained freedom to allocate their labor to higher-earning non-agricultural activities locally -- first in local township and village enterprises, and later enterprises in urban areas within their prefectures or provinces (Bao et al., 2009). The establishment of the Special Economic Zones, starting in the mid-1980s, spurred foreign investment flows into eastern and southern coastal regions, creating an increase in demand for workers in new factories. Millions of migrants responded and moved for employment, most noticeably to the Pearl River Delta region in the south and the Yangtze River Delta in the east (Liang, 1999; Shen and Chiang, 2011).

After the mid-1990s private businesses also offered employment to migrants in closer cities (Chen and Coulson, 2002). Since the mid-1990s, rural-urban migration patterns have been dominated by intra-provincial movement (Kanbur and Zhang, 1999; Song and Liang, 2016), but inter-provincial migration increased steadily over time (Liang and Song, 2016) before stagnating since 2006, as shown in Figure 1. Recent studies on migration trends have not noted this slowdown. Most studies using 2000 and 2010 census data (Liang et al., 2014; Liang and Ma, 2004) fail to pick up the rate of change over these years. Longer distance migration is likely driven by differences in growth rates, and consequent increases in regional inequality and wage differences, between the coastal and the inland regions (Kanbur and Zhang, 1999; Liu and Xu, 2017), though internal migration spells to large cities within home provinces are less costly and easier to arrange. Recent studies also provide evidence that China’s access to WTO in 2001 and the resulting reduction in trade policy uncertainty faced by Chinese exporters to the U.S. facilitated economic structural transformation in China (Erten and Leight, 2021; Facchini et al., 2019). Increases in trade after 2001 are associated with more migration of skilled urban labor, not unskilled rural labor (Facchini et al., 2019). Based on the RCRE household data from 2009-2017 in which migration destination information was collected in a consistent manner, Guangdong, Zhejiang, Shanghai, Jiangsu, and Beijing
remain the top five destination provinces for migrants who moved across province boundaries during this period. All these destinations, except Beijing, are located in coastal and eastern regions.

A policy response to regional inequality, the Western Development Project, which started in 2000, directed substantial public investment to western and inland regions (Naughton 2004). With more investment and more employment opportunities, China’s western and interior regions also experienced a rise in the migrant population during the first decade of the 21st century (Liang, et al. 2014). For more recent trends, the RCRE data show that Guangdong, Hubei, Shannxi, Liaoning, and Jiangxi have experienced the largest intra-provincial migration movements over the period 2009-2017. In sum, the coastal and eastern regions remain the major destinations for inter-provincial migrants, while the increase in the migrant population in the central and western regions seems to be driven predominantly by intra-provincial migrants.

With increases in rural-to-urban migration, we also observe important demographic features of the migrant population, some of which have undergone notable changes over time. First, migration trends differ by gender and age. As shown in Figure 2, the likelihood of working as a migrant increase with age, peaks for cohorts aged 25 to 30, and then decreases with age. Below age 70, a larger share of rural men migrate than women. The gender gap in the migrant share of the local population remains stable with no sign of converging over time. Even though this broad gender and age pattern has been consistent for years, a couple of important changes are notable in the RCRE data. First, migration at younger ages (16-20) has declined for both men and women, and the decline is more pronounced for women. One possible explanation is that a higher proportion of people in this age group are in school in later years, rather than in the labor market (Figure 3). In 2003, about one-third of young women and 35% of young men in this age group were in school, compared to 64.5% of young women and 59% of young men in 2013. Based on data from the micro-census, the share of 15-17 year olds in rural areas with some upper secondary attainment increased from 43% in 2005 to 70% in 2015 (Wang et al. 2019). This school attendance expansion may be partly attributed to a supply factor: the consistent government policy priority over a decade to promote vocational education and training (VET) in upper secondary education.

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8 Similar gender and age patterns in migration trends, as shown in Figure 2, have been observed in an early time period (1995-2003) (Giles and Mu, 2018) and with an alternative data source (Mu and van de Walle 2011).
9 When we use a 10% sample of the 2017 RCRE household data and the rural sample of the 2018 CFPS data to examine the age and gender specific migration rate (Appendix Figure A1), we see a similar pattern overall, but the migration rate of the younger age group in the RCRE sample is distinctly lower than that in the CFPS sample.
10 According to CFPS 2018, the school enrollment rate for the 16-20 age group is 74.8% for women and 68.5% for men in the rural areas. The respective numbers seen in the 10% sample from 2017 RCRE data are 76.8%, and 70.7%.
VET development is not rural-specific, the lower fees made possible by financial aid and tuition reductions is particularly attractive to rural students. One study, based on a survey of 132 VET schools in Henan, a designated pilot province for VET expansion, finds that 87% of the students came from rural areas (Yi et al. 2018). Despite the improvement in education attendance of rural youths, as reflected in their decreased migration rate, it is important to note that the rural-urban education divide in both quantity and quality remains a key feature in China’s education sector, posing a challenge for China’s future growth (Chen et al. 2019; Rozelle and Hell 2022).

Another evident change in long-term migration trends is that the median age of migrants has been increasing over time (Figure 4), and the share of migrants over 45 has increased sharply. The migrant shares of men and women over 45 were 16.8% and 4.5%, respectively, in 2003, and increased to 19% and 7% by 2013. As the migrant share declines among younger cohorts and increases for older cohorts, the share of the registered population working as migrants is getting older: the median age has increased from 26 to 32 for women during the 2003 and 2013 period, and from 31 to 35 for men. This is consistent with the prediction by Li et al. (2012) that as fewer young rural laborers are available, the marginal migrant worker will become older.

The third feature observable in long-term migration trends is that conditional on out-migration, the average labor supply of migrants has increased over time. As shown in Figure 5, the average days per year that an individual from a rural area spends working as a migrant increased during the period from 2003 to 2013. Interestingly, rural women, once engaging in rural-to-urban migration, spend more days working as migrants than men. The gender difference seems to exist at all ages before 2010 (Figure 6) but has shown signs of closing in more recent years. One explanation may be that men are more likely to work on construction and infrastructure projects, which tend to have greater seasonality in north China, and lead to fewer days employed over the year.

Fourth, the distributions of migrant occupation types and the industries of employment have undergone little change in the more recent period from 2009 to 2013, even though both migration rates and the migrant labor supply have increased over this period. As seen in Figures 7 and 8, about 10% of

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11 This is not simply a panel data effect driven by the relatively long RCRE panel. From the CFPS panel, which is of relatively short duration, the 2018 CFPS data suggest the median ages of migrant men and women are 38 and 35, respectively.
12 The RCRE data suggest that the migrant population has also become more educated. The average years of schooling has increased from 7.68 to 8.42 for women and from 7.82 to 8.48 for men during the 2003 to 2013 period. However, according to the 2018 CFPS data, the average years of schooling in the migrant population are 7.38 for women and 7.97 for men.
13 Because the migrant share is low for the old age cohort, we focus on people ages 16-60 when examining migrant labor supply.
migrants are self-employed, 50% are employed full-time by others, and 22% work as day laborers. Industry (including manufacturing), low-skilled services (domestic workers and hospitality service employees), and construction, in that order, are the three main sectors of migrant employment: these sectors employ close to 70% of migrant laborers.

In sum, the share of rural residents working as migrants in urban areas has increased sharply since the mid-1990s for both men and women but a gender gap in migration persists. Migrants are getting older, most likely due to the combined effects of longer stays in the city and reductions in out-migration among younger cohorts who remain in high school or vocational technical programs until later ages. The distributions of both the major sectors that migrants work in and the types of jobs they hold are similar over time in recent years. Once in the urban labor market, migrant labor supply, as measured in days worked while migrants, has increased.

3.3 Who Migrates?
China’s rural-urban migrants, as with migrants in other settings, are not a random sample of the population at origin. In China’s context, migrant selection based on observables, such as migrant individual characteristics, household characteristics, and the characteristics of their home villages, has been well documented in a range of studies examining the correlates of individual migration decisions. At the individual level, migrants tend to be relatively young and are more likely to be male. These age and gender patterns, still apparent today, were observed in the mid-1990s when migration just emerged as a new alternative to rural non-farm employment (Zhao 1999b). Migrants are also found to be healthier compared to non-migrants (Hesketh et al., 2008; Lu and Qin, 2014; Tong and Piotrowski, 2012), both physically and mentally (Ma et al. 2020). Furthermore, the health status of other family members also affects one’s migration propensity, as Giles and Mu (2007) show that adult sons have a lower migration propensity when they have an ill parent.

Evidence on the role of education is mixed. Some research shows individuals with the highest level of education from a coastal province have a greater propensity to migrate because people from the region tend to be engaged in business activities in which there is a high return to education (Liang and Miao, 2013). Other studies conclude education has zero or negative effects on migration propensity if migrants from the region work in low skill occupations and more educated residents work in local non-farm enterprises or local government, as in inland Sichuan province where more educated laborers were engaged in local non-farm work (Zhao 1999a).
Aside from the observed factors that affect migration, individual and household migration decisions are also shaped by forces often unobservable to researchers. For example, it has long been assumed that individuals more willing to take risks are more likely to migrate. Indeed, studies of rural-urban migrants in China show that less risk-averse individuals, as revealed by self-reported risk preferences, are more likely to engage in migration (Akgüç et al., 2016), and the distribution of other household members’ risk attitudes also shapes individual migration decisions (Dustmann et al., 2023). Hao et al. (2016) posit that out-migration involves risk-taking, just like launching a new business, and that migrants are behaviorally like entrepreneurs. The study uses a field experiment to confirm that migrants are less risk-averse and more willing to engage in risky competition. While risk preferences have been considered in studies of migration in China, other unobserved preferences, including time preference, or the extent to which people value current over future consumption, have not been analyzed. From evidence collected in other developing countries, e.g. Ghana and Indonesia, migrants are not only more risk-tolerant, they are also more patient (Goldbach and Schlüter, 2018). Given that both higher levels of risk tolerance and patience are associated with higher cognitive ability (Dohmen et al., 2010), migration is selected on both unobserved cognitive abilities and unobserved characteristics of such personality traits.

Given the presence of unobservable individual characteristics and community-level characteristics, including both features of villages and unobserved shocks affecting both well-being and migration decisions, estimation of the impacts of migration in sending communities present challenges when using observational data. Use of randomization for identification, such as lotteries into a visa program (Gibson et al, 2011) are a gold standard in the international migration literature, but not available in China. Researchers have thus appealed to difference-in-difference and instrumental variable strategies to identify impacts of migration. In the sections below, we will highlight identification strategies employed and point out those studies for which outcomes are simply correlated with migration.

4. The Impacts of Migration on Earnings, Consumption, Investment and Risk-Coping

Migration presents both challenges and opportunities for the economic well-being of migrant-sending households. On the one hand, the departure of a family member can lead to a loss of labor, which may result in a decrease in household income. This is particularly significant when the migrant was a key contributor to the household’s earnings or engaged in essential tasks that are difficult to replace. On the other hand, remittances sent by migrants to their families can provide a vital source of income, potentially offsetting the reduction caused by the loss of labor. Ultimately, the net effect of migration on a migrant-sending household’s income depends on whether the remittances received can adequately compensate
for the income reduction arising from the departure of a working family member. These are dubbed as “negative lost-labor” and “positive remittance” effects of migration on migrant-sending households (Rozelle et al. 1999; Taylor and Lopez-Feldman 2010). Empirical evidence from China shows that on average the positive remittance effect consistently dominates the negative lost-labor effect, resulting in a positive net effect of migration on rural household earnings.

4.1 Remittances and Earnings

In the context of developing countries, remittances are not just voluntary and altruistic private transfers, but also means for investment and service exchanges (Rapoport and Docquier, 2006). The standard empirical approach to identify altruistic vs. exchange motive in transfers is to examine how remittance responds to the pre-transfer income of remittance-recipient households -- increasing remittance in response to a decrease in pre-transfer income indicates an altruistic motive, whereas remitting to households with higher income likely reflects exchange motives (Cox et al. 2004). Studies on domestic remittances in China confirm that various motivations are in play when migrants send back remittances. The overall negative correlation between net transfers to rural elderly and their pre-transfer income highlighted in Giles et al. (2011) suggests that remittances (to elderly parents) are largely altruistically motivated, yet a large variance in the net transfer from migrant children indicates that remittances are unlikely to fully insure the poor elderly against falling into poverty.\(^{14}\) Akay et al. (2014) also detects altruistic motivation in the finding that migrants’ marginal utility of remitting, measured by subjective well-being, is higher when they have a sick parent at home; and it also shows that migrants who have ever received financial or psychosocial assistance experience a stronger marginal utility of remittances, indicating an exchange motive. The latter result is consistent with the conclusion in an early descriptive study postulating that care for grandchildren is likely to be an important service that parents provide to adult children in exchange for remittances (Secondi, 1997).

Regardless of the motivations for sending remittances, the net effect of migration on the earnings of rural households is largely positive. The estimated returns to a rural household from migration vary by the methods used and the time studied. One early and highly cited paper finds a dramatic impact of migrant employment on the earnings of households with migrants. Per capita incomes of households with migrant family members were 22, 26, and 29 percent higher at the 25th, 50th, and 75th percentiles of the earnings

\(^{14}\) A similar pattern is observed in urban China where private transfers from adult children respond to low household income of retired parents when income falls below poverty, but such response is not sufficient to fully insure parents against low income (Cai et al. 2006).
distribution within the sample (Taylor et al. 2003). The authors used a retrospective report of the village migration network size from seven years earlier to control for migrant selection at the household, but do not control for village fixed effects, such as proximity to cities (and markets) and other factors affecting the local economy, which will lead to biased estimates of the effect of migration on earnings. In another study examining earnings across the earnings distribution, the authors estimate models in first-differences and identify migration through the one-year lag in size of the village migrant network, finding that households with migrants have per capita incomes 8.5 to 13.1 percent higher than those without migrants (Du et al. 2005). First-differences control for many unobserved factors that might be introducing bias through migrant selection, though even lags in size of the village migrant network may be correlated with past shocks to the local economy. If there are persistent effects of shocks, or mean reversion after a negative shock driving earlier migration, there could yet be bias in these estimates. That said, these estimates are considerably more credible than those found by Taylor et al. (2003). 15

4.2 Consumption and Investment

Given the earning gains from migration, studying the consumption and investment patterns affected by migration would allow us to comprehend the specific budget constraints households can overcome with migration. de Brauw and Giles (2018) highlight the positive effect of migration on annual changes in consumption in a panel of households and villages between 1988 and 2002: out-migration contributes to a 2% to 2.9% annual increase in consumption per capita, or between 65% and 93% of the annual consumption growth recorded in the RCRE sample villages between 1988 and 2002.16 During the period with rapid expansion in migration, from 1995 to 2002, a one-percentage point increase in out-migration from the villages is associated with consumption per capita increases of 10% and 7% percent for households in the low and middle terciles of initial consumption distributions, respectively. More affluent households in the village also experienced consumption growth of 4% though this increase appears attributable to the accumulation of durable goods and housing.17

15 Recent debates on the returns of rural-to-urban migration on income and consumption in developing countries focus on the income and consumption of migrants themselves and their households in the cities (Hamory et al., 2021; Lagakos et al., 2020). The estimated impact of migration on household consumption for migrants in urban China is 23%.

16 To identify the migrant impact, the authors use differences in the timing of availability of new ID cards (which were important for legal temporary migration) across counties of rural China. The authors show that timing is exogenous to local shocks and preferences for migration (de Brauw and Giles, 2018, 2017).

17 These findings are consistent with an earlier study suggesting that income from work outside the village (by both migrants and commuters) contributes to reducing inequality (Benjamin et al. 2005).
In terms of possible mechanisms through which migration influenced labor supply, de Brauw and Giles (2018) finds that out-migration from the village leads to labor reallocation across activities, and labor allocation changes differ by initial wealth tercile. Agricultural labor days decline among poorer households, who are also more likely to become migrants and provide a relatively larger increase in days spent working outside the home township. More affluent households, by contrast, increase labor supply to local non-agricultural activities, potentially reflecting general equilibrium effects of increased local opportunities as migrants remit earnings.

Multiple studies also show evidence that migration increases rural migrant households’ investment in productive assets. de Brauw and Giles (2018) concludes that poorer households invest more in housing and durable goods, while more affluent households invest more in non-agricultural productive assets. The findings showing a positive impact of migration on consumption suggest that migration may be a long-term livelihood strategy for rural residents, as income gains associated with migration are treated as one source of permanent income and used to support current consumption. This conclusion contrasts with the findings in some countries where remittances are used primarily for to support investment. For example, in Philippines increases in remittances from abroad, often the product of large and exogenous exchange rate shocks, have negligible effects on household consumption but large effects on household investments in the form of education expenditures and entrepreneurial activities (Yang 2008). And households in Guatemala receiving internal or international remittances also invest more on education, in addition to increasing housing expenditures (Adams and Cuecuecha, 2010).

4.3 Coping with Risks

Apart from its positive impact on income, consumption and/or investment, migration also plays an important role in mitigating risks, serving as an ex-post response to a realized shock and an ex-ante strategy for income diversification. A long literature in development economics has recognized that the ability to diversify income sources provides a means for poorer households to reduce exposure to consumption risk (Dercon, 2002; Morduch, 1995; Morten, 2019). Matching the RCRE village and household surveys to local rainfall data, Giles (2006) finds that increased access to migrant employment

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18 This finding is not inconsistent with the idea that poorer households may limit migration due to credit constraints.
19 In contrast, two studies examining the direct impact of remittances, without adequately addressing migration selection based on unobservables, argue that rural households use remittances largely for consumption, not investment, purposes (Démurger and Wang, 2016; Zhu et al., 2014).
20 These findings are somewhat consistent with an early study showing that during 1995-2000, households with migrant members in non-poor villages spent more on housing and durable goods but not productive investments, while migration does not affect either type of investment for households in poor areas (de Brauw and Rozelle 2008).
improves households’ ability to smooth the idiosyncratic effects of rainfall shocks on household income and consumption. In a follow-up study focused explicitly on coping with agricultural risks associated with adverse weather shocks, Giles and Yoo (2007) finds that the ability to migrate leads to reduced precautionary saving and increased consumption. Precautionary saving as a share of total savings is cut in half (from 30.5% to 16.6%) as the share of a village working as migrants increased from 2 to 22 percent of registered working-age laborers.

Due to the existence of informal risk sharing arrangements against idiosyncratic shocks, the risk coping role of migration can be true even for households without a family member currently working as a migrant. Indeed, with a RCRE sample, Giles and Murtazashvili (2013) again using the timing of ID card distribution for identification, and show that a one percentage point increase in the share of a village workforce employed as a migrant is associated with a 3.2 percentage point decline in the probability of falling into poverty, and among the poor, the same increase in migration is associated with a 3.5 percentage point reduction in the probability of remaining poor.

A more recent paper using the RCRE panel dataset confirms the role of migration in reducing the possibility that households face consumption variability, and specifically, periods with a large drop in consumption (Kinnan et al. 2018). This reduced consumption risk allows farm households to invest in higher-risk productive activities. The paper uses a novel identification strategy to control for migrant selection: an interaction between intensity of contact with a destination province during the historical sent-down youth program and specifics of Hukou reform of the destination provinces. Finally, the authors use a simple model to show that the quantitative changes in consumption and risky investments are consistent with accepted relative risk aversion parameters.

4.4 Recent Trends in Migrant Earnings

Average household annual migrant earnings increased from less than 8,000 yuan in 2004 to more than 30,000 yuan in 2014 (Figure 9). Both increases in migrant labor supply (Figure 5 above) and increased wages of low-skilled workers (Li et al. 2012) contribute to increased migrant earnings observed at the household level. Moreover, the share of migrant earnings in total household income has also increased, from about 41% in 2003 to 54% in 2014. It is important to note that “migrant earnings” (da gong shou ru), as estimated in the RCRE surveys, are gross estimates of migrant earnings in the city and are considerably

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21 Unproductive forms of precautionary savings, in the form of grain stocks and other liquid assets, were identified as an important distortion in rural household consumption in the early 1990s (Park, 2006).
22 The earnings are in real terms, adjusted for inflation by a provincial consumer price index with year 2000 as the base year and Henan as the base province.
greater than remittances received by migrant households (which are net of expenditures in the city). According to the China Family Panel Surveys (CFPS) for 2014, 2016, and 2018 survey, remittances received by rural households decreased over the five years, with about 16,000 yuan on average in 2014, and 15,000 in 2018 and the remittance share of household income also declined from 38% in 2014 to 33% in 2018 (Figure 10). This difference reflects the rising costs of living in cities, and a reduction in earnings available for family members in rural areas.

Finally, the share of migrants who return to the village is stable over time. Table 1 presents the share of return migrants in the village population and among total migrants, respectively. Return migrants as a share of the village population were 7.73% during the 1991-2000 period and 7.41% during 2013-2018. About one in five migrants (20%) return to the village and this share decreased slightly from 20.3% during the 1991-2000 period to 19.3% during the 2013-2018 period. Overall, Table 1 shows that the share of return migrants is stable over time, indicating urban off-farm work is a robust and stable source of employment for rural labor. This is consistent with what we know about the very limited impact of the global financial crisis on off-farm employment in China: many of the long-term laid-off migrant workers were rehired within a year after the crisis, even though two-thirds returned to family farms in the immediate wake of the 2008-2009 crisis (Huang et al., 2011). As return migrants are thought to be more entrepreneurial than non-migrants (Zhao 2002; Démurger and Xu 2011) and also more politically active (Lu et al. 2017), some have posited that return migrants may revitalize economies and contribute to social change in rural China. Given that there is no sign of a significant share of migrants returning, such expectations may not be fulfilled in the short and medium term.

5. Potential Concerns for the Future: Vulnerabilities Associated with Out-Migration

Migration has proven to be beneficial for growth in household incomes and appears to benefit poorer households through indirect effects associated with improved risk-coping and shifts in activities within villages. However, significant outflows of migrants may contribute to future problems in two ways. The first is the erosion of local capacity to raise funds for investing in public goods. The second is the long-term consequences of family separation, which may affect children’s human capital formation and the well-being of China’s elderly, particularly if they become infirm. Evidence presented below highlighting these concerns points to policy areas that warrant attention.

Public Goods Provision. Apart from positive effects on private investment as migration eases credit constraints, migration may also affect public goods investment, which in turn may also have influence long-term growth and accumulation of human capital. Studies of migration in other settings note various
potential positive and negative effects on local collective action and governance. On one hand, emigration may provide an “exit valve”, allowing people to leave underperforming communities rather than staying to improve local institutions (Goodman and Hiskey, 2008; Hirschman, 1970; Sellars, 2019). On the other hand, remittances may enable more local investment (Escribà-Folch et al. 2015; O’Mahony 2013), and knowledge transfers may positively influence local governance and public goods provision (Pérez-Armendáriz and Crow, 2010; Pfutze, 2012). The net impact of out-migration on rural governance and public goods in China remains an important empirical question and an understudied topic.

A growing literature on public goods provision in rural China has focused on various formal institutions, such as village elections and fiscal policies, and informal ones like lineage groups, as determining factors, but lack attention to the impacts of out-migration. To explore the relation between migration and public goods provision, we use the 2003-2017 RCRE village survey data. The survey covers investment in eight public goods categories: agricultural land improvement, electricity, roads, irrigation and drinking water, ecological forest, elementary schools, immunization, and New Rural Cooperative Medical Insurance spending. A locally weighed regression (Figure 1) shows a negative correlation between per capita public goods investments (excluding New Rural Cooperative Medical Insurance) and the share of village labor force that has migrated out of the county. However, preliminary multivariate regression models do not yield a strong causal association. Further research is needed to understand this negative relationship and whether out-migration may play a causal role.23

**Split Families and the Left-Behind.** The movement of labor from low productivity agriculture to urban employment has been a key to China’s growth, contributing to poverty alleviation and consumption growth for poor rural households and communities. However, the impacts of migration extend far beyond these economic benefits. Nearly two-thirds of China’s roughly 150 million rural migrants are not joined by their families, with spouses, children, or parents staying behind in their home villages (National Bureau of Statistics, 2019). Despite a growing number of young migrant workers migrating with their children (Wang et al. 2019), 69 million rural children under 17 still grow up without one or both of their parents (UNICEF, 2018).

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23 The shift in financing rural public goods to upper levels of government in the 2000s, further expanded under the 2008-2009 national economic stimulus plan, dramatically increased investment in rural infrastructure and social welfare (Michelson, 2012). The top-down pro-rural policies since 2004 seem to have boosted rural public goods investment.
Why do families choose to split, with some members working in cities and others left behind? One might be tempted to dismiss the question altogether and conclude that, as rational and voluntary decisions made by the migrants and their families, living apart must be beneficial to them. While family splitting is indeed a choice, it is made under constraints imposed by institutions and government policies. No single institution in China is purposefully designed to split families, but the *hukou* system and the land tenure system have the unintended consequence of doing so by increasing the costs of urban living for migrant families and the opportunity costs for entire families to leave villages.

Taking these two institutions as given, scholars in economics, sociology, and public health have started focusing on the impact of migration on left-behind family members. A simple framework suggests that when a family is split by out-migration, left-behind members may be influenced in four ways: increased family income through migrant remittances, benefits from information transmission about technology from urban family members, decreased family time together, and behavioral changes when no longer living together and interacting daily (Chen 2013). The income and information effects may be positive for family and individual welfare, while the time effect is generally non-positive. The impact of behavioral changes is context specific. Within this framework, how individuals fare in split families is an empirical question that cannot be determined theoretically.

Below we examine empirical studies of the welfare of left-behind children, women, and older adults. Many of these studies do not account for migration selection, and so the accumulated evidence often reflect correlations. Nevertheless, these studies raise topics for future study by identifying key variables and hypotheses to be tested under more designs. In addition, the consistent findings across multiple studies and contexts, for example on the negative impacts of parental migration on child school enrollment and mental health status, on the negative impacts of spousal migration on the mental health of left-behind wives, suggest that the observed associations are not merely spurious but warrant further investigation. These correlational studies also highlight areas of concern for policymakers and can inform the design of support programs for left-behind populations, even as more definitive causal evidence is being developed.

**Left-Behind Children.** According to the data from the Child Questionnaire of CFPS (2016), rural children under 16 spend less time, 1.6 to 2.6 months on average, with their parents than urban children, except for infants and toddlers under 2 (Table 2). Media attention on split families has focused on “the left-behind children,” with anecdotal reports of abuse, mental health issues, and behavioral problems due to insufficient care and protection (e.g. Zhang 2018). These stories raise concerns about the well-being of rural children and challenge a view of migration solely as an income-enhancing option for rural families.
Compared to media reports, academic studies provide a much more nuanced picture of how parental migration on left-behind children. The impacts on child outcomes are quite heterogenous, depending on the specific measures examined, child age (de Brauw and Mu, 2011) and gender (Zhang et al. 2015).

Studies of child health, nutrition, and education outcomes yield mixed results. Some studies find parental migration may benefit child nutrition, with lower risk of stunting, underweight, and wasting for young children of migrants (Shi et al., 2020). The timing of parental migration matters; children left behind during early childhood have slower growth rates in height and weight, especially boys (Zhang et al. 2015). Parental migration may also have positive impact on child academic performance, measured by standardized Chinese, Math, and English test scores (Bai et al., 2018; Chen et al., 2014). These studies argue that even though the positive findings might reflect selection if parents do not migrate when they expect their children’s education to suffer, the findings still suggest fewer costs attributable to parental migration. In addition, (Zhou et al., 2015) show left-behind children perform as well as or better than children living with both parents on nine health, nutrition, and education indicators, arguing that all children in rural China are vulnerable and the extra resources accessed by left-behind children should be expanded to all.

Contrary to these positive findings, some studies have found negative impacts on other health and education measures. For example, boys’ academic performance may suffer when both parents migrate (Zhou et al., 2014). Moreover, studies relying on school survey data do not consider school enrollment as an outcome, but evidence suggests that fathers’ migration timing and duration affect children’s probability of enrollment, with rural children of migrant fathers having lower enrollment rate (Wang, 2019). Considering both the positive remittance effect and the negative time effect, parental migration has an overall negative impact on children’s timely enrollment (Yang and Bansak, 2020). For high school enrollment specifically, (Hu, 2012) finds that remittances only partially compensate for the negative impact of an absent parent, with a particularly salient net negative effect for girls and children from poor households. One reason for this may be that middle school graduates with migrant parents have lower migration costs and better migration opportunities, making them more likely to forfeit high school education (de Brauw and Giles, 2017).

Most studies estimate the effect of contemporaneous parental migration. However, (Meng and Yamauchi, 2017) examine the impact of cumulative exposure to parental migration over a child’s lifetime, revealing adverse effects on test scores and weight-for-age z-scores after accounting for migration selection. Studies measuring parental absence by contemporaneous migration may underestimate the total impact of lifetime exposure to parental migration.
Existing research consistently finds that parental out-migration has an unambiguously negative impact on children's mental health, behavioral issues, and delinquency. Children raised by grandparents have a higher prevalence of low self-esteem, mental health problems, school bullying, and specific psychological symptoms compared to those living with at least one parent (Tang et al., 2018). Left-behind children are at greater risk for developing depression, especially when experiencing negative events or when left behind by both parents (Guang et al., 2017; He et al., 2012; Liang, 2016). A meta-analysis of 39 academic articles confirms the prevalence of depressive symptoms in left-behind children (Y.-Y. Wang et al., 2019). Left behind children are also more likely to engage in unhealthy behaviors like smoking and drinking (Wen and Lin, 2012; Yang et al., 2016) and are at higher risk for psychotic experiences and traumatic events (Sun et al., 2017). These negative associations suggest that the detrimental effects of reduced time with parents may outweigh the potential benefits of increased income when measuring children’s welfare by their mental health status. Parental migration leads to reduced supervision, protection, bonding and communication, which cannot be compensated for by increased economic resources. Moreover, grandparents and other extended family members serving as primary caretakers are imperfect substitutes for parents.

In sum, parental migration enables rural households to invest more in children’s education and nutrition, but it also reduces parental care and supervision, which cannot be perfectly substituted by nonparent family members. Consequently, while the literature documents some improvement in early child nutrition and school performance among left-behind children, it also reveals a concerning prevalence of mental health and behavior issues.

Although many health studies do not establish causality, the consistently reported negative associations between parental migration and children’s mental health and behavioral problems are of great policy concern. In 2014, the central government issued policy guidance urging local governments to provide and improve and improve various services (e.g. counselling, supervision, extracurricular activities) designed for left-behind children (State Council, 2014b). However, the implementation and effectiveness of these government programs have not been evaluated.

**Left-Behind Women.** Migration rates in rural China differ by gender and age, with men and younger individuals migrating at higher rates (Figure 2). Although the literatures on left-behind women and elderly are less extensive relative to those on left-behind children, some consistent themes have emerged.

Migrant women are more likely to return to their village, either temporarily or permanently, due to their role in providing child and elder care (Connelly et al., 2012; Ye et al., 2016). When husbands migrate
to cities for work, left-behind women engage in more farm work (de Brauw et al., 2013; Mu and van de Walle, 2011a). The phrase “feminization of agriculture” summarizes this labor reallocation among split family members in rural China. Although women are not thought to have a comparative advantage in farming, the farms they run are just as productive as those managed by men (de Brauw et al., 2013). The shift in left-behind women’s labor toward farming is achieved by reducing their participation in local off-farm jobs, without evidence of an overall increase in their total labor supply (Mu and van de Walle, 2011a).

While there is little debate that left-behind women are doing more farm work, the implications for their agency and empowerment are contested. Some argue that the women’s welfare has increased due to greater autonomy and decision-making power as household heads (Davin, 1999), with improvements in farm efficiency seen as enhancing their welfare (Brauw et al., 2008; Zhang et al., 2004). However, there is no evidence that left-behind women are actually becoming decision makers within the household or in agricultural activities (Mu and van de Walle, 2011b), even if they are nominally household heads and farm managers. Some even suggest that participating in low-status and low-value farm and household work reinforce gender segregation and women’s low status (Fan, 2003).

One frequently examined measure of left-behind women’s welfare is health status, particularly mental health. Left-behind wives are believed to be at a higher risk of health problems due to the double burden of intensive farm work and daily family care without spousal support. There is no evidence that the increased economic resources from migration are used to hire labor to reduce these burdens. Left-behind women are likely to show depressive symptoms (Jin et al., 2016; Yi et al., 2014) and suffer from stress, marital insecurity, and passive coping styles, likely reflecting limited social support (Yi et al., 2014). Some studies reviewed in (Ye et al., 2016) reveal increased risks of divorce and mental distress among separated spouses. However, (Mu and van de Walle, 2011a) find no impact of a husband’s migration on nutrition and physical health measures like BMI, self-reported health, and blood pressure.

Many questions remain unanswered regarding how rural women fare when their family members migrate to cities. For example, how is time allocation across labor supply, household chores, family care, and self-care influenced? How do impacts vary by the age and education of left-behind women? What coping strategies do they deploy when facing negative health or income shocks? Does the welfare of left-behind women differ based on the quality and quantity of public goods and services in their villages? Answering these questions will help identify ways to mitigate the disadvantages faced by left-behind women.

**Left-Behind Elderly.** Adult children in China are obligated to care for their elderly parents, a norm endorsed by law granting parents the right to sue children for support. Despite progress in providing
medical insurance and pension coverage to rural residents, these measures do not replace the family’s role as a crucial source of support for the rural elderly (Giles et al., 2011). When an elderly parent is ill, an adult child is likely to forgo migration and remain in the village (Giles and Mu, 2007). However, this does not guarantee adequate financial and instrumental support for the elderly. Those with migrant children face a higher risk of falling into poverty due to larger variance in financial transfers from migrant children compared to non-migrants (Giles et al., 2011).

Most studies on the left-behind elderly focus on health status as a measure of well-being. Conclusions from studies on physical health are inconsistent, with the majority finding that the migration of adult children has a negative impact on the physical health of the elderly (Li et al., 2020; Song, 2017), while a few find positive impacts (Yi et al., 2019). There is evidence suggesting that the left-behind elderly tend to overwork as adult children’s out-migration shifts the burden of farm and household work to them (Chang et al., 2011). Simultaneously, availability of both emotional and instrumental support from adult children is sharply constrained when they migrate. Whether an elderly person’s health conditions are positively or negatively affected depends on whether the positive effect of economic support from migrant children is sufficiently large to counteract these adverse effects.

Studies on the mental health of the left-behind elderly generally conclude that having migrant children is detrimental, reduces happiness, increases the probability of loneliness, and increases depressive symptoms (Li et al., 2020; Scheffel and Zhang, 2019). A recent well-identified study, using the “experienced utility” approach and accounting for migration selection, finds that left-behind parents experience lower utility during work activities, suggesting that the negative effects associated with migration dominate the possible benefits of remittances (Cai et al., 2022). However, this study aggregates utility from daily activities, rather than using an aggregate measure of well-being or life-satisfaction. Elderly choosing to work longer may be seeking to maximize family earnings, while making an “altruistic net-transfer” facilitated by their labor earnings, allowing their children in the city to retain more of their earnings to establish themselves and their families. It is unclear that they would want their children to forfeit opportunities to return to the village.

It is important to note that some aspects of deteriorating mental health conditions are not limited to the rural left-behind elderly but are a common challenge faced by many empty-nest elderly who do not live with their children. A meta-analysis of 46 studies by Zhang et al. (2020) concludes that the prevalence of depression among empty-nest elderly, in both rural and the urban areas, is significantly higher than among non-empty-nest elderly.
The extent to which targeted development programs should focus on left-behind individuals, including children, women, and the elderly, is a matter of some debate. Some argue that the challenges and problems these individual face cannot be attributed solely to being left-behind; instead, many rural communities where they live have been left behind economically and socially (Biao, 2007; Zhou et al., 2015). Thus policy should narrow the urban-rural divide and increase investments in rural communities through public goods and better governance. While finding ways to narrow the divide and to allocate more resources to rural areas has widespread support, the review of studies on left-behind individuals in this section suggests that these groups face specific hardships that are often exacerbated by the migration of a family member. There may be room for special attention to problems of the left-behind in relevant development programs aimed at rural communities.

6. Conclusion

Migration has significantly improved living standards in rural China, with empirical evidence showing that migrants contribute to their home villages through higher household earnings, increased consumption of durable goods, and more investment in productive assets. Migration also serves as a form of insurance, smoothing income shocks, reducing unproductive saving, and decreasing poverty risk.

However, the split-family phenomenon has emerged, with children, women and the elderly disproportionately left behind in rural villages while parents, spouses, and adult children work as migrant laborers in cities. Of particular concern are left-behind children who may suffer negative impacts, such as mental health issues and youth delinquency problems.

Migration decisions in China are shaped by both microeconomic forces at the individual and household levels and institutions, notably the land tenure and household registration systems. These institutions effectively “manage” urbanization and migration in China, preventing the emergence of a landless rural population and uncontrolled growth of urban slums. However, they also impose economic and social costs (The World Bank, 2022), such as causing the rural split-family phenomenon and impeding labor market integration. From a policy perspective, fostering continued evolution in these institutions may serve to better integrate migrant laborers and their families into urban life.

The “rural vitalization strategy,” launched in 2018, offers an alternative approach to changing the rural development and migration patterns. This initiative aims to boost rural industrial investment, advance agricultural technologies, and enhance rural living conditions, with an explicit goal of reducing rural-to-urban migration and promoting return migration (Xinhua, 2021). Understanding the changes in migration patterns driven by this policy and family needs, as well as the potential for return migrants to
contribute to increased skill and economic activity in rural areas, will be important additional questions for the near-term research agenda.

References


Hirschman, A.O., 1970. Exit, voice, and loyalty ; responses to decline in firms, organizations, and states. Harvard University Press,


Figure 1. Long-Term Migration Trends in Migration for Work (1993-2017)

Data source: Village level data from the annual surveys conducted by the Research Center of Rural Economy (RCRE) at China’s Ministry of Agriculture.

Figure 2. Share of Village Migrating for Work by Gender and Age

Data source: Individual level data from the annual surveys conducted by the Research Center of Rural Economy (RCRE).
Figure 3. Share of Respondents (Age 16-20) Currently in School

Data source: Individual level data from the annual surveys conducted by the Research Center of Rural Economy (RCRE).

Figure 4. Median Age of Migrants

Data source: Individual level data from the annual survey conducted by the Research Center of Rural Economy (RCRE).
Figure 5. Average Working Days of Migrants by Gender and Year

Data source: Individual level data from the annual surveys conducted by the Research Center of Rural Economy (RCRE)

Figure 6. Days Worked as a Migrant by Gender and Age

Data source: Individual level data from the annual survey by the Research Center of Rural Economy (RCRE)
Figure 7. Distribution of Migrant Job Types

Data source: Individual data from the annual household surveys conducted by the Research Center of Rural Economy (RCRE).

Figure 8. Distribution of Migrant Industries of Employment

Data source: Individual level data from the annual household surveys conducted by the Research Center of Rural Economy (RCRE)
Figure 9
Migrant Earnings

Source: Individual migrant earnings from RCRE Household Surveys.

Figure 10
Migrant Remittances

Source: Household level data from the China Family Panel Survey (CFPS).
<table>
<thead>
<tr>
<th>Year Period</th>
<th>Return Migrants as Share of Village Population</th>
<th>Return Migrants as Share of Migrants</th>
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<td>1991-2000</td>
<td>7.73%</td>
<td>20.28%</td>
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<td>2001-2007</td>
<td>7.94%</td>
<td>20.09%</td>
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<td>2008-2012</td>
<td>7.82%</td>
<td>20.86%</td>
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<td>2013-2018</td>
<td>7.41%</td>
<td>19.28%</td>
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<td>2019 (January-June)</td>
<td>5.42%</td>
<td>12.85%</td>
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</tbody>
</table>

Data Source: Village level data from the Thousands of People and Hundreds of Villages Survey (TPHV), conducted by Remin University, Beijing, China. The survey covers 125 villages in 30 provinces.
Figure 11. Village Public Goods Investment and Migrant Share of the Village Labor Force

Source: Supplemental survey conducted with RCRE in survey villages and matched to the RCRE Village Survey.

Table 2 Time Living with Parents Last Year

<table>
<thead>
<tr>
<th></th>
<th>0-2 Years Old</th>
<th>3-5 Years Old</th>
<th>6-12 Years Old</th>
<th>13-15 Years Old</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Months lived with father last year</td>
<td>6.66</td>
<td>7.1</td>
<td>7.16</td>
<td>6.31</td>
</tr>
<tr>
<td>Months lived with mother last year</td>
<td>9.14</td>
<td>8.85</td>
<td>8.55</td>
<td>7.07</td>
</tr>
<tr>
<td>Number of obs.</td>
<td>873</td>
<td>1107</td>
<td>2094</td>
<td>705</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Panel A: Rural Areas</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Months lived with father last year</td>
<td>7.51</td>
<td>9.03</td>
<td>8.9</td>
<td>8.42</td>
</tr>
<tr>
<td>Months lived with mother last year</td>
<td>9.16</td>
<td>10.67</td>
<td>10.2</td>
<td>9.66</td>
</tr>
<tr>
<td>Number of obs.</td>
<td>713</td>
<td>858</td>
<td>1472</td>
<td>446</td>
</tr>
</tbody>
</table>

Panel B: Urban Areas

Data source: CFPS 2016 Children Questionnaire
## Table A.1. Reasons for Converting Agricultural Hukou to Non-Agricultural Hukou since 1990

<table>
<thead>
<tr>
<th>Reason</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reallocation due to land requisition</td>
<td>2,214</td>
<td>25.93</td>
</tr>
<tr>
<td>Housing purchase in a city or county</td>
<td>589</td>
<td>6.9</td>
</tr>
<tr>
<td>Working in a city or county</td>
<td>803</td>
<td>9.41</td>
</tr>
<tr>
<td>Attending colleges</td>
<td>1,447</td>
<td>16.95</td>
</tr>
<tr>
<td>Joining military</td>
<td>109</td>
<td>1.28</td>
</tr>
<tr>
<td>Joining family</td>
<td>1,272</td>
<td>14.9</td>
</tr>
<tr>
<td>Village being converted to a county district</td>
<td>1,097</td>
<td>12.85</td>
</tr>
<tr>
<td>Others</td>
<td>1,006</td>
<td>11.78</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>8,537</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Data source: China Household Finance Survey (CHFS) 2017
### Table A.2. Publicly Available Datasets for Study of Rural-to-urban Migration in China

<table>
<thead>
<tr>
<th>Data Sources &amp; Access Link</th>
<th>Notes</th>
<th>Selected Studies</th>
</tr>
</thead>
</table>
| **1. The Longitudinal Survey on Rural-Urban Migration in China (RUMiC)** (中国乡城人流动调查) | a) RUMiC is designed for migration studies, with three separate surveys: Rural Household Survey (RHS); Urban Migrant Survey (UHS), and Migrant Household Survey (MHS).  
   b) The three samples, covered by RHS, UHS, and MHS, allow studies of migrants in the cities as well as households with migrant members in the rural areas.  
   c) Migrants and households with migrants can be directly identified from MHS and RHS, respectively  
   d) Panel analysis is feasible.  
Giles, et al, 2021  
Meng & Yamauchi, 2017 |
| **2. China Family Panel Studies (CFPS) (中国家庭追踪调查)** | a) The survey covers a wide range of socioeconomic topics.  
   b) For all the survey years, individual migration status can be identified through their residential or work location and hukou type. In addition, data on why a household member has left home (2010, 2012, and 2018) or migration and remittance (2018) allow direct identification of migrant individuals and rural households with migrant members.  
   c) Panel analysis is feasible.  
   d) The data are publicly available. | de Bruin and Liu, 2020  
Xie et al., 2022  
Ren & Treiman, 2016 |
| 3. China Migrants Dynamic Survey (CMDS) (中国流动人口动态蓝测调查) | a) The regular survey in each wave covers exclusively the migratory population of China.  
b) Different special topics (such as migrant assimilation and mental health, migrant-sending community, urban local residents, etc.) were additionally covered in some years.  
c) Panel analysis may not be feasible.  
d) The data website is only in Chinese. The data are publicly available and requires an application for use.  
Yan & Nie, 2023  
Cheng & Smyth, 2021  
Gu & Liu et. al, 2020 |
| --- | --- | --- |
| The survey was conducted by China Population and Development Research Center, National Health Commission of China. It began in 2009 and is carried out annually. The geographic coverage expanded from five cities in 2009 and to 100 cities in 2010; and it became nationwide in 2011.  
[https://chinaldrk.org.cn/wjw/#/home](https://chinaldrk.org.cn/wjw/#/home) |  |
| **4. China Household Income Project (CHIP) (中国家庭收入调查)** | a) It contains detailed information on household income and expenditure.  
b) CHIP has two separate surveys in all waves: rural household survey and urban household survey. CHIP in 2002, 2008, and 2009 also included a rural-to-urban migrant survey.  
c) In the years when migrant survey was conducted, migrants can be directly identified. In other years, individual migration status can be identified through their residential location and *hukou* type.  
d) Panel analysis is feasible.  
e) The data are publicly available and requires an application for use.  
Gao et al., 2019  
Jiang et al., 2012  
Knight & Gunatilaka 2010 |  |
5. China Health and Nutrition Survey (CHNS)
(中国健康与营养调查)


https://www.cpc.unc.edu/projects/china

- a) The survey contains rich information on individual health and nutrition outcomes.
- b) Individual migration status can be identified through their residential location and hukou type.
- c) Panel analysis is feasible.
- d) The data are publicly available.

Giles & Mu, 2007
Chen, 2013
Mu & DeBrauw, 2015

6. China Health and Retirement Longitudinal Study (CHARLS)
(中国健康与养老追踪调查)


- a) CHARLS data is a nationally representative sample of people ages 45 and older. It is comparable to the Health and Retirement Study in the U.S. and Europe.
- b) The data contains rich information about elderly individuals, their spouse, and their cohabiting and non-cohabiting children.
- c) Individual migration status can be identified through their residential location and hukou type. Past migration experience can be identified through the life history data (2014) which contains residence history.
- d) All data are publicly available after registration at the CHARLS website at PKU.

Song & Smith, 2021
Sun & Yang, 2021
Scheffel & Zhang, 2019
7. China Household Finance Survey (CHFS)  
中国家庭金融调查

The survey was conducted by the Survey and Research Center for China Household Finance at Southwestern University of Finance and Economics in 2011, 2013, 2015, 2017, 2019. Starting from 2013 the survey covers 29 provinces and the sample is nationally representative.

[https://chfs.swufe.edu.cn/](https://chfs.swufe.edu.cn/) (Chinese only)

| a) CHFS data contains detailed information on household financial and non-financial assets, debts, income, expenditure, social security and insurance coverages.  
| b) Individual migration status can be identified through their residential location and *hukou* type.  
| c) Panel analysis is feasible.  
| d) The data are publicly available and require an application for use. |
|---|---|---|
| Zhang et al., 2020  
| Hao & He, 2020  
| Ma and Mu, 2020 |
Figure A1. Migration Rate by Sex and Age: RCRE2017 versus CFPS 2018

Data source: A 10% sample from the household level data of the 2017 Research Center of Rural Economy (RCRE) survey; and the rural sample from the 2018 China Family Panel Study survey.