Land acquisition and rural population displacement in China

Yutong Guo[1] Feb 25, 2025

There is widespread concern about land acquisition and rural population displacement in China and the developing world (Ding, 2007; Ghatak and Mookherjee, 2014; Kleemann and Thiele, 2015; Admasu *et al.*, 2019). To support rapid industrialization and urbanization, governments employ compulsory acquisition as a more efficient and "cost-effective" approach to obtain and convert rural agricultural land for urban non-agricultural uses. Throughout this process, the adequacy of compensation for displaced farmers and how it shapes their subsequent migration patterns and outcomes has been a key issue that significantly impacts social stability and attracts the attention of policymakers.

Although causal impacts of cash transfers or forced moves have been studied extensively, to date, little is known about whether these findings also apply to individuals experiencing land acquisition, or about the heterogeneous effects of the compensation amounts. Land acquisition and compensation may not only affect the extent to which people migrate but also how they migrate. Will higher compensation for land acquisition alleviate liquidity or risk constraints, enabling individuals to sort into larger cities with more opportunities despite higher living costs? Or, lacking financial pressures, will they be less motivated to pursue high-paid work, prioritizing resettlement with family in nearby areas with better amenities and familiar social networks?

This paper is the first to causally estimate how the generosity of land acquisition compensation shapes migration patterns and outcomes of displaced rural individuals. I collect data on land acquisition events in three central provinces of China (Hubei, Hunan, and Shanxi) from 2011 to 2015, and link it with a population mini-census in 2015 to identify affected migrants and observe their outcomes at their destinations. My study period coincides with a remarkable phase of urban expansion in China: over 8,000 km^2 of land—equivalent to about 8 times the urban built-up area of Shanghai, one of the biggest cities in China—was acquired and converted for urban use in only five years, affecting tens of millions of rural population. The three central provinces, contributing 10% of this transformation, serve as good case studies for studying migration outflows: these regions are characterized by their agricultural bases, with a significant portion of the rural population temporarily or permanently migrating to nearby cities or economically advanced coastal areas in search of better economic opportunities.

Studying the relationship between land acquisition compensation and migration outcomes is challenging. The first important empirical challenge is the lack of available data tracking individuals pre- and post-moves. I combine a population micro-census—which tracks individuals by their location of registration (where they come from), their location of residence (where they live at the survey time), and the timing of their move—with village-level data collected from government announcements. These announcements identify villages that have undergone land acquisition events and document detailed information on the date, the number of affected individuals, and the corresponding compensation amounts. The data I create complements previous studies focused on "stayers" rather than movers, which rely on specific cases of entire villages relocated to designated locations following reservoir construction (Li, Wang and Song, 2018; Wilmsen, 2018), or general longitudinal surveys involving questions about land acquisition (Ju *et al.*, 2016; Wang, Qian and Guo, 2019; Randolph, 2023).

[1] PhD student in Economics at University of Bristol, yutong.guo@bristol.ac.uk

These surveys often do not target or fail to track households who have moved away from designated survey sites.

The second challenge lies in the endogeneity of land acquisition compensation, which is influenced by local tangible and intangible "wealth". For instance, social networks may help affected villages gain stronger bargaining power during negotiations. I instrument land acquisition compensation using exogenous shocks to agricultural income in affected villages: the compensation in China is mainly determined by local governments based on the agricultural value of land. In practice, local governments estimate crop prices once to calculate unit compensation and use it for several consecutive years. The delay in updating crop prices causes deviation between compensation and the actual agricultural value of the land at the time of acquisition, the latter more reasonably reflected by more recent prices. Accordingly, I exploit these exogenous deviations—only arising from the timing of local government setting unit compensation—as the source of identification. More specifically, this paper constructs a shift-share instrument, combining variations in cropping patterns across villages (the “share”) with deviations in national crop price from when unit compensation was set to when the land acquisition happened (the “shift”). The resulting shift-share instrument strongly predicts land acquisition compensation and exhibits substantial variation across affected villages.

Using the shift-share design to estimate the impact of land acquisition compensation on displaced rural individuals, I find that per-capita compensations do affect their migration patterns but not their housing and working conditions in the short run. Migrants receiving higher compensations are more likely to move for resettlement instead of for employment—that is, they tend to reunite with relatives who emigrated earlier, bring their children or parents together, and settle in nearby urban areas with small populations but good amenities. A possible explanation for this finding is that when financial pressure on households is alleviated, factors such as family reunification and living amenities become more important relative to pursuing high incomes. This aligns with findings by Gröger and Zylberberg (2016) and Makridis and Ohlrogge (2022), who find that individuals experiencing adverse financial shocks move toward opportunities instead, moving alone to counties with higher incomes but also higher living costs, and searching for jobs for a shorter period. This pattern is more pronounced among older and less-educated individuals, which may reflect their higher reliance on compensation. Older and less-educated individuals typically have more limited income sources and earn lower wages both before and after land acquisition, so compensation tends to have a greater impact on their migration decisions and short-term outcomes.

In contrast to migration patterns, I find no evidence for land acquisition compensations to improve the housing or working conditions of displaced rural individuals in the short run. While some plausible trends emerge—for instance, migrants with higher compensations are slightly more likely to be unemployed within a 5-year period but get better paid and more prestigious jobs if employed; and they are also slightly more likely to rent rather than own housing and choose to live farther from their workplace with lower unit prices and more living space. These effects are minimal so they can be ruled out at the 95% confidence level, with no significant or economically meaningful subgroup heterogeneity across sex, age, or education. A possible explanation is that adequate compensations allow migrants to spend more time searching for suitable jobs and housing. The short-term effects of this transition period may cover up potential long-term benefits.

This paper contributes to three different strands of literature. First, this study relates to the growing literature estimating the micro or macro outcomes of forced migration.[2] My study complements this literature by focusing on forced migration driven by urban expansion in a developing country, a relatively underexplored but equally critical area: from 2000 to 2020, global urban areas nearly tripled, consuming an estimated 5−7% of total arable land and displacing those rural population, with the developing world contributing the highest growth rate (Angel, Sheppard and Civco, 2005; Shi *et al.*, 2023). Closely related to my paper, a small body of empirical research looks specifically at the effect of land acquisition on household welfare and finds greater off-farm labor employment and mixed impacts on household income (Ju *et al.*, 2016; Li, Wang and Song, 2018; Wilmsen, 2018; Wang, Qian and Guo, 2019; Randolph, 2023). However, their sample methods may miss "relocated households" and ignore the effect of compensation amounts. My contribution is to causally identify the effect of land acquisition compensation on migration patterns and outcomes of displaced rural individuals, based on a novel dataset of over 10,000 land acquisition events combined with a micro population census.

My empirical analysis also contributes to the literature on cash transfer, migration, and employment. Existing studies offer no clear consensus on how cash transfers influence rural migration and labor participation in developing countries (Adhikari and Gentilini, 2018; Bastagli *et al.*, 2019). While cash transfers may boost long-distance migration and off-farm employment by alleviating liquidity or risk constraints (Bryan, Chowdhury and Mobarak, 2014; Gazeaud, Mvukiyehe and Sterck, 2023), they can also deter such activities through the opportunity costs of losing local networks or resources, or by reducing incentives to seek external work due to improved financial situation (Baird, McKenzie and Özler, 2018; Bryan *et al.*, 2023). My research adds to this debate from another perspective, by looking at the migration and employment patterns of farmers forced to relocate due to land acquisition, with a focus on how compensation amounts shape their decisions. I find that migrants receiving higher compensation are more likely to resettle nearby with their families rather than move farther to more developed areas for employment, highlighting the latter impact.

The research finally relates to rural-urban migration literature. A large body of work has looked at voluntary migrants, typically young and skilled rural individuals attracted by increased labor productivity and sorting themselves into urban sector based on their comparative advantages (Lagakos and Waugh, 2013; Young, 2013; Alvarez, 2020; Lagakos, 2020). My study looks at the opposite, forced migrants who stay in rural sector before land acquisition due to lack of comparative advantage or labor market frictions. Labor market frictions prevent optimal allocations across rural and urban sectors, such as search frictions (Bryan and Morten, 2019; Bertoli, Moraga and Guichard, 2020; Cai, 2020), or land tenure insecurity (Bu and Liao, 2022; Liu et al., 2023; Adamopoulos et al., 2024). In this context, land acquisition may release rural labor and facilitate their transition to urban life by eliminating some pre-existing institutional frictions, or it may disproportionately affect individuals with weaker comparative advantages, posing unique challenges for their adaptation into urban settings. Compared to voluntary migrants, forced migrants from land acquisition are indeed more likely to be non-working-age.

---

[2] Prior research has examined the labor outcomes of migration induced by slum clearance (Takeuchi, Cropper and Bento, 2008; Collins and Shester, 2013), foreclose crisis or job loss (Huttunen, Møen and Salvanes, 2018; Makridis and Ohlrogge, 2022), political conflict (Kondylis, 2010; Monsutti and Balci, 2014; Ruiz and Vargas-Silva, 2015), natural disaster (McIntosh, 2008; Cattaneo and Peri, 2016; Gröger and Zylberberg, 2016; Mahajan and Yang, 2020), and economic development (Robertson and Pinstrup-Andersen, 2010; Kleemann and Thiele, 2015; Dastgir, Kawata and Yoshida, 2018).

Reference

Adamopoulos, T., Brandt, L., Chen, C., Restuccia, D. and Wei, X. (2024) 'Land Security and Mobility Frictions', *The Quarterly Journal of Economics*, 139(3), pp. 1941-1987.

Adhikari, S. and Gentilini, U. (2018) 'Should I Stay or Should I Go: Do Cash Transfers Affect Migration?', *World Bank Policy Research Working Paper*.

Admasu, W. F., Van Passel, S., Minale, A. S., Tsegaye, E. A., Azadi, H. and Nyssen, J. (2019) 'Take out the farmer: An economic assessment of land expropriation for urban expansion in Bahir Dar, Northwest Ethiopia', *Land Use Policy*, 87, pp. 1-11.

Alvarez, J. A. (2020) 'The Agricultural Wage Gap: Evidence from Brazilian Micro-data', *American Economic Journal: Macroeconomics*, 12(1), pp. 153-173.

Angel, S., Sheppard, S. C. and Civco, D. L. (2005) *The Dynamics of Global Urban Expansion*. The World Bank Transport and Urban Development Department. [Online]. Available at: https://documents1.worldbank.org/curated/fr/138671468161635731/pdf/355630Global0urban0sept200501PUBLIC1.pdf (Accessed: 12 Dec 2024).

Baird, S., McKenzie, D. and Özler, B. (2018) 'The effects of cash transfers on adult labor market outcomes', *IZA Journal of Development and Migration*, 8(1), p. 22.

Bastagli, F., Hagen-Zanker, J., Harman, L., Barca, V., Sturge, G. and Schmidt, T. (2019) 'The Impact of Cash Transfers: A Review of the Evidence from Low- and Middle-income Countries', *Journal of Social Policy*, 48(3), pp. 569-594.

Bertoli, S., Moraga, J. F.-H. and Guichard, L. (2020) 'Rational inattention and migration decisions', *Journal of International Economics*, 126, p. 103364.

Bryan, G., Chowdhury, S. and Mobarak, A. M. (2014) 'Underinvestment in a Profitable Technology: The Case of Seasonal Migration in Bangladesh', *Econometrica*, 82(5), pp. 1671-1748.

Bryan, G., Chowdhury, S., Mobarak, A. M., Morten, M. and Smits, J. (2023) 'Encouragement and distortionary effects of conditional cash transfers', *Journal of Public Economics*, 228, p. 105004.

Bryan, G. and Morten, M. (2019) 'The aggregate productivity effects of internal migration: Evidence from Indonesia', *Journal of Political Economy*, 127(5), pp. 2229-2268.

Bu, D. and Liao, Y. (2022) 'Land property rights and rural enterprise growth: Evidence from land titling reform in China', *Journal of Development Economics*, 157, p. 102853.

Cai, S. (2020) 'Migration under liquidity constraints: Evidence from randomized credit access in China', *Journal of Development Economics*, 142.

Cattaneo, C. and Peri, G. (2016) 'The migration response to increasing temperatures', *Journal of Development Economics*, 122, pp. 127-146.

Collins, W. J. and Shester, K. L. (2013) 'Slum Clearance and Urban Renewal in the United States', *American Economic Journal: Applied Economics*, 5(1), pp. 239-273.

Dastgir, G., Kawata, K. and Yoshida, Y. (2018) 'Effect of Forced Relocation on Household Income and Consumption Patterns: Evidence from the Aynak Copper Mine Project in Afghanistan', *The Journal of Development Studies*, 54(11), pp. 2061-2077.

Ding, C. (2007) 'Policy and praxis of land acquisition in China', *Land Use Policy*, 24(1), pp. 1-13.

Gazeaud, J., Mvukiyehe, E. and Sterck, O. (2023) 'Cash Transfers and Migration: Theory and Evidence from a Randomized Controlled Trial', *The Review of Economics and Statistics*, 105(1), pp. 143-157.

Ghatak, M. and Mookherjee, D. (2014) 'Land acquisition for industrialization and compensation of displaced farmers', *Journal of Development Economics*, 110, pp. 303-312.

Gröger, A. and Zylberberg, Y. (2016) 'Internal Labor Migration as a Shock Coping Strategy: Evidence from a Typhoon', *American Economic Journal: Applied Economics*, 8(2), pp. 123–53.

Huttunen, K., Møen, J. and Salvanes, K. G. (2018) 'Job Loss and Regional Mobility', *Journal of Labor Economics*, 36(2), pp. 479-509.

Ju, Q., Ni, J., Ni, D. and Wu, Y. (2016) 'Land Acquisition, Labor Allocation, and Income Growth of Farm Households', *Emerging Markets Finance and Trade*, 52(8), pp. 1744-1761.

Kleemann, L. and Thiele, R. (2015) 'Rural welfare implications of large-scale land acquisitions in Africa: A theoretical framework', *Economic Modelling*, 51, pp. 269-279.

Kondylis, F. (2010) 'Conflict displacement and labor market outcomes in post-war Bosnia and Herzegovina', *Journal of Development Economics*, 93(2), pp. 235-248.

Lagakos, D. (2020) 'Urban-Rural Gaps in the Developing World: Does Internal Migration Offer Opportunities?', *Journal of Economic Perspectives*, 34(3), pp. 174–92.

Lagakos, D. and Waugh, M. E. (2013) 'Selection, Agriculture, and Cross-Country Productivity Differences', *American Economic Review*, 103(2), pp. 948–80.

Li, C., Wang, M. and Song, Y. (2018) 'Vulnerability and livelihood restoration of landless households after land acquisition: Evidence from peri-urban China', *Habitat International*, 79, pp. 109-115.

Liu, S., Ma, S., Yin, L. and Zhu, J. (2023) 'Land titling, human capital misallocation, and agricultural productivity in China', *Journal of Development Economics*, 165, p. 103165.

Mahajan, P. and Yang, D. (2020) 'Taken by Storm: Hurricanes, Migrant Networks, and US Immigration', *American Economic Journal: Applied Economics*, 12(2), pp. 250–77.

Makridis, C. A. and Ohlrogge, M. (2022) 'Moving to opportunity? The geography of the foreclosure crisis and the importance of location', *Journal of Economic Geography*, 22(1), pp. 159-180.

McIntosh, M. F. (2008) 'Measuring the Labor Market Impacts of Hurricane Katrina Migration: Evidence from Houston, Texas', *American Economic Review*, 98(2), pp. 54–57.

Monsutti, A. and Balci, B. (2014) 'Forced Migration in Broader Central Asia', in *The Oxford Handbook of Refugee and Forced Migration Studies*. Oxford University Press, pp. 599-612.

Randolph, H. (2023) 'Household-level welfare effects of land expropriation: Evidence from China', *Working paper*.

Robertson, B. and Pinstrup-Andersen, P. (2010) 'Global land acquisition: neo-colonialism or development opportunity?', *Food Security*, 2(3), pp. 271-283.

Ruiz, I. and Vargas-Silva, C. (2015) 'The Labor Market Impacts of Forced Migration', *American Economic Review*, 105(5), pp. 581–86.

Shi, K., Wu, Y., Liu, S., Chen, Z., Huang, C. and Cui, Y. (2023) 'Mapping and evaluating global urban entities (2000–2020): A novel perspective to delineate urban entities based on consistent nighttime light data', *GIScience & Remote Sensing*, 60(1), p. 2161199.

Takeuchi, A., Cropper, M. and Bento, A. (2008) 'Measuring the welfare effects of slum improvement programs: The case of Mumbai', *Journal of Urban Economics*, 64(1), pp. 65-84.

Wang, D., Qian, W. and Guo, X. (2019) 'Gains and losses: Does farmland acquisition harm farmers' welfare?', *Land Use Policy*, 86, pp. 78-90.

Wilmsen, B. (2018) 'Damming China's rivers to expand its cities: the urban livelihoods of rural people displaced by the Three Gorges Dam', *Urban Geography*, 39(3), pp. 345-366.

Young, A. (2013) 'Inequality, the Urban-Rural Gap, and Migration', *The Quarterly Journal of Economics*, 128(4), pp. 1727-1785.