

The Effects of Farmland Expropriation

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Abstract

The expropriation of agricultural land to provide new land for industrial and urban expansion, referred to as compulsory acquisition, is prevalent in developing countries. Using Vietnam as a laboratory, this study evaluates the impacts of losing farmland through compulsory acquisition on household welfare and reaches the following findings. A 10 percentage point increase in the proportion of land expropriated results in a 2.2% decrease in household welfare proxied by food expenditure. Besides, politically unconnected and ethnic minority households are disproportionately vulnerable. The adverse welfare effect could take up to 10 years to evaporate. The reduction in household welfare is attributable to the decline in agricultural income and the inability to participate in the non-agricultural labor market. Other aspects of household behavior following compulsory acquisition are also explored, such as saving, social capital, labor, and capital allocation.

Keywords: Land expropriation, rural households, Vietnam

Introduction

Conversion of agricultural land into land designated for industrial and urbanized projects is an essential feature of industrialization in developing countries. The process has been facilitated by the power of government in which farmland is acquired without the consent of its owner or occupant, also referred to as compulsory acquisition (Keith et al., 2008). From a bird's eye view, compulsory acquisition is considered necessary when land must be devoted to growth-enhancing investments such as transportation networks and public facilities. However, for those whose farmland is expropriated, their traditional livelihoods are entirely uprooted, thus entailing significant costs of adjustment and resettlement. In spite of that, the compensations paid to them have been criticized as inadequate. Consequently, compulsory acquisition often fuels widespread social and political tensions, raising concerns among scholars, policymakers, and politicians.¹ Despite the spate of media reports, there is still very little empirical evidence investigating the direct impacts of compulsory acquisition on rural households. Much of focus has been placed on the relationship between compulsory acquisition and urbanization at the aggregate level (see, for example, Narain (2009), Lin and Yi (2011), Xu et al. (2011), among others). Focusing on this under-explored area of research, this paper causally estimates the effects of compulsory acquisition on households' living standards and behaviors. By using household-level data within a regression framework, our work can be related to several studies such as Tran et al. (2014a, 2014b), Jiao et al. (2015) and Harris (2015).² Since compulsory acquisition is often followed with social unrest and violence (Banerjee et al., 2007; Cao et al., 2008; Tang et al., 2008), carefully quantifying its impacts on affected households is crucial to facilitate a smoother and healthier structural transformation. In this paper, we investigate the impacts of compulsory acquisition on rural households by considering the case of Vietnam. We aim to address how compulsory acquisition

affects household welfare (proxied by food expenditure) and household resource allocation on 1

For example, China reported a total of 17,900 cases of "massive rural incidents", in which a total of 385,000 farmers protested against the government during the first 9 months of 2006 (Cao et al., 2008). 2 Tran et al. (2014a, 2014b) find that compulsory acquisition has no effect on household income but leads to a declining share of agricultural income in Hoai Duc district (a peri-urban district of Vietnam). In the context of Cambodia, Jiao et al. (2015) report a reduction in household income if the household experiences land expropriation. Focusing on Ethiopia, Harris (2015) documents that expropriated households are no more likely to move into non-farm activities and experience falling share of income from crops. 1 revenue-generating activities such as agricultural work, salaried employment, exploitation of common property resources, and self-employment. We also examine how households use their compensations from the government through their saving decisions. We are interested in Vietnam because it is a country where the government relies heavily on compulsory land acquisition for industrial and urban expansion. For example, Anderson and Davidsen (2011) document that 10% of all agricultural land nationwide was expropriated between 2001 and 2010. More recently, a national priority on industrialization and modernization calls for the conversion of a large quantity agricultural land into industrial, export-processing, and hi-tech zones (World Bank, 2011; Adams, 2012; World Bank, 2012). With approximately 70% of the population living in rural area and 50% of the labor force working in agriculture, changing land use structure from agricultural to non-agricultural purposes carelessly by the Vietnamese government is reported to engender severe social consequences (Wells-Dang, 2013; Nguyen et al., 2014). Our main contributions are as follows. First, we present empirical evidence on the causal effects of compulsory acquisition on rural household welfare. Second, we conduct heterogeneity analyses along the line of acquisition time, household political connection, and household

ethnicity. Third, we provide rigorous analysis of household behaviors following compulsory acquisition, including resource allocation on various revenue-generating activities, social capital, and saving behaviors associated with cash compensations. Moreover, we differ from previous studies by further accounting for the intensive margin of the impacts of land acquisition (the fraction of the household's farmland being expropriated), instead of focusing only on the extensive margin of the effect (whether households are subject to compulsory acquisition). Our identification strategy comes from within-household variations over time. By exploiting the panel nature of the Vietnam Access to Resources Household Survey, our paper reaches the following findings. First, compulsory acquisition depresses household welfare measured by food expenditure. Specifically, a 10 percentage point increase in the proportion of land expropriated leads to a decrease in household food expenditure by 2.2%. Our analyses further suggest that the adverse consequences of compulsory acquisition may take up to 10 years to dissipate. Besides, politically unconnected and ethnic minority households are disproportionately vulnerable. Second, the reduction in household welfare can be attributed to a 9.0%-decline in household agricultural income and household inability to get earnings from other sources. Third, we look at household detailed behavior following the acquisition. Expropriated households tend to reduce agricultural capital and labor after their land is taken away. Quantitatively, households divest their agricultural capital by 10.9% and reduce their working days in agriculture by 6.7% in response to a 10 percentage point increase in the proportion of farmland expropriated. While resources devoted to agriculture decrease, there is no evidence that households reallocate their resources to non-agricultural activities such as salaried jobs or self-employment. These results imply that the barrier to the non-agricultural labor market prevents expropriated households from shifting their labor supply away from agriculture. We also show that compulsory acquisition decreases household's contribution to

agriculture-related social capital but not other forms of social capital. Furthermore, our findings indicate that cash compensations from the government increase household savings. By investigating the reasons for saving, we document a positive relationship between compensations and saving for educational purposes, with a suggestion that expropriated households attempt to raise their human capital, thus improving their competitiveness in the non-agricultural labor market. From a normative perspective, rural households should not be made worse off due to compulsory acquisition. Moreover, they should be able to substitute the income generated from their expropriated farmland with earnings from other activities. However, none of these points is supported by our findings. Our results highlight the need for government interventions that go beyond a lump-sum payment. In particular, the government should adopt policies that aim to increase the competitiveness for non-agricultural occupations among the affected households. Our results also call for extra attention being directed towards the ethnic minority population who is disproportionately vulnerable and could fall further behind during the development process. The paper proceeds as follows.

Literature Review

2.1 Legal Framework Dated by most authors, the period of central planning in Vietnam ended in 1986 with the introduction of various market-oriented reforms in both agricultural and non-agricultural sectors. In agriculture, a crucial reform was the enactment of Directive No.10 in 1988, which eliminated collective farming and regarded household as an independent unit of production in the economy. The Directive allowed agricultural land to be allocated to households along with certificates of land use rights (commonly known as Red Book). A Red Book is a license validating its recipient's rights to use an assigned parcel of land.³ With the issuance of the Directive, farmers were allowed to make their own decision regarding the uses of inputs and the sales of outputs,

thus, fueling a substantial incentive for agricultural production. Later, another agricultural reform, the Law on Land 1993, was enacted granting farmers the right to trade their Red Books (i.e. transfer, exchange, lease, inheritance, and mortgage rights). Since then, a series of adjustments to the Law on Land was introduced in 1998, 2001, 2003, and 2008 to stimulate land market development. It is important to note that agricultural land itself still belongs to the state.⁴ Farmers are only granted the right to use their state-assigned parcels for a certain amount of time. Formally, according to Article 1 and Article 5.1 of the Law on Land 2003, the land belongs to the entire people with the State as a representative of the ownership for the uniform administration of land. Article 5.2 and Article 22.1 further emphasize the powers of the State in land acquisition. According to these articles, the State shall exercise the right of land acquisition for purposes of socioeconomic development such as the development of industries, localities, and national security. Therefore, agricultural land can be expropriated when the land should be used for other public interests as rendered by the State. Article 42.2 further delineates the State's responsibility in paying compensations to those subject to compulsory land acquisition. The compensation amount is equal to the Red-Book value (based on cadastral surveys) at the time when the expropriation decision is made. It is also interesting to understand how the process of compulsory acquisition works. First, a 3 Information on a Red Book includes personal information of the recipient and plot characteristics (e.g. address, size, blueprint, expiration date, and land use purpose). 4 Note also that farmers are granted the right to trade their land-use right, i.e. Red Book, not the land itself. 45-year master land-use plan is established by the central government after being approved by the National Assembly. The master plan is designated to meet land demand based on the country's socioeconomic, defense, and security targets. According to the master plan, land is classified into three major groups, including (i) agricultural land such as rice land, forest

land, and aquaculture land, (ii) non-agricultural land such as land for defense, land for industrial parks, and land for infrastructure development, and (iii) unused land such as land remaining unutilized and area to be used. After the aggregate targets are set for each land type (e.g. 1,578,000 hectares is designated for infrastructure development by 2020 (Resolution 17/2011/QH13)), the Ministry of Natural Resources and Environment and provincial governments work together to decide on the provincial, district, and commune targets for each land type. Since the process follows a top-down approach, the plan is highly rigid. Any adjustment at the lower administrative level requires changes in the aggregate targets set by the central government. Therefore, it is impossible for individual households to influence the master plan, which lays a foundation for our identifying assumption in Section 4, i.e. compulsory acquisition is not correlated with time-varying household characteristics. As industrialization and urbanization become national priorities, a significant quantity of agricultural land has been acquired for urban-industrial expansion. For example, in 2006, the Vietnamese government issued Resolution 1107/QD-TTg expressing its determination to extend the total area of industrial zones at the expense of agricultural land. Quantitatively, almost 1 million hectares of agricultural land, which corresponds to 10% of the total agricultural land nationwide, were expropriated from 2001 to 2010 (Anderson and Davidsen, 2011). For a nation with 70% of the population living in rural areas where agricultural land is extensively used for daily livelihood (Wells-Dang, 2013), the acquisition of agricultural land often results in severe social consequences (Wells-Dang, 2013; Nguyen et al., 2014), thus, posing a challenge to both scholars and policy-makers.

2.2 Literature Review

Our paper is related to two strands of literature. The first strand of literature explores the effects of the compulsory acquisition on both macroeconomic and microeconomic outcomes. From the aggregate-level analyses, it is documented that land expropriation accelerates urbanization and transforms rural villages in

developing countries (Narain, 2009; Lin and Yi, 2011; Xu et al., 2011). At the micro-level, a number of works concentrate on the interplay between the threat of acquisition and ex-ante investment in agricultural land. These papers find that farmers reduce investment in their farmland in response to the risk of compulsory acquisition. For example, Deininger and Jin (2006), Ali et al. (2011), and Fenske (2011) show that the threat of land expropriation reduces planting and productivity-enhancing practices in Africa. Jacoby et al. (2002) find that compulsory acquisition risk in China decreases the use of organic fertilizer but has no effect on other forms of plot-specific investment. In the context of India, Ghatak and Mookherjee (2014) documents that productivity-enhancing investments are also negatively influenced by compulsory acquisition. Similar to ours, a few papers assess the economic and social consequences of the compulsory acquisition on the lives of expropriated households. Conducting household surveys in India, Ghatak et al. (2013) reveal that the acquisition of agricultural land leads to the reduction in income and loss of employment. Specifically, affected households still attempt to cultivate in non-acquired plots, and their agricultural income declines by 17%. These results, however, are descriptive in nature, making it impossible to infer causality on the impacts of land acquisition. Others attempt to draw causal inferences from different identification strategies. Jiao et al. (2015) employ the propensity score matching method to investigate how compulsory acquisition affects rural households in Cambodia. The authors point out a reduction in household income by 15-19% if the household experiences land expropriation. Nevertheless, the propensity score matching method cannot address the fact that there exist unobserved factors that influence both land acquisition and household income at the same time, thus, making it hard to interpret the estimated effects as causal. Our paper overcomes this endogeneity issue by exploiting the within-household variation over time in a household fixed effects model. The closest works to our paper are Harris (2015) and Tran

et al. (2014a, 2014b). Harris (2015) explores the effect of land acquisition in the context of Ethiopia on a group of individual farmers. Employing the first-difference method, Harris (2015) does not detect any effect on overall food consumption but finds that land-losing households substitute home-produced food with food purchased from the market. These households receive lower income share from crops and more from household business, while the share of earnings from other sources generally remains unchanged. Tran et al. (2014a, 2014b) employ the multinomial logit model to study the effects of land expropriation in the context of Vietnam. The authors detect the increase in consumption immediately following expropriation, a reduction in agricultural income share, and a transition from agricultural to informal-waged occupations. Both Harris (2015) and Tran et al. (2014a, 2014b) look at the impact of compulsory acquisition on income share from multiple sources. The use of income share does not correctly reflect the increase or decrease in each activity. For example, the increase in wages/salaries share could simply result from the reduction in agricultural earnings without the actual increase in earnings from wages/salaries. In this paper, we directly examine earnings (not the share) from various revenue-generating activities (e.g. agriculture, salaried jobs, self-employment). In this sense, our income measures are more meaningful and provide direct earnings comparison in each activity. Besides, Both Harris (2015) and Tran et al. (2014a, 2014b) tend to focus on the extensive margin, i.e. whether the farmer experiences land acquisition, instead of looking at the intensive margin, the proportion of land expropriated. Our paper makes use of the intensity of land acquisition, which could better capture the effects of interest since the impacts on households who had a larger share of farmland expropriated could potentially differ from the impacts on those who only lose a small proportion of farmland. Our paper can further be distinguished from Tran et al. (2014a, 2014b) and Harris (2015) in multiple aspects. While Tran et al. (2014a, 2014b) only examine the

immediate impacts of compulsory acquisition in a small peri-urban district (the effects of farmland lost 1-2 years ago), our study investigates the impacts of accumulated farmland expropriation (farmland was expropriated from many years ago up to a present year). Our estimation sample has a wider coverage with 134 districts of Vietnam over 8 years. Besides, we account for the potential endogeneity issue of land expropriation by adopting a household fixed effects model as well as conducting a series of placebo tests to support the causal interpretation of our findings. In this sense, our study complements Tran et al. (2014a, 2014b) by tackling the endogeneity issue and providing estimates that could be generalized to all Vietnamese rural households.⁵ Moreover, we differ from Harris (2015) and Tran et al. (2014a, 2014b) by further conducting rigorous analysis on (i) heterogeneity along the line of acquisition time, household political connection, household ethnicity, and (ii) household behaviors following land expropriation such as labor-capital allocation and behaviors contributing to social capital as well as savings. Our work also fits into the second line of research which assesses the impacts of cash transfers in the context of developing countries. Previous works show that cash transfers from the government facilitate the transition of unemployed youths into formal employment (Blattman et al., 2013), raise household expenditure and investment in productive activities (Gertler et al., 2012). The context of our paper differs from that of the above-mentioned paper in the sense that households in our study receive cash payments after they lose one of their most crucial income-generating assets, agriculture land. Although compulsory acquisition and cash compensations are intimately connected, most studies, with the exception of Ghatak et al. (2013) and Harris (2015), tend to consider them individually. Addressing this gap, not only do we quantify the impacts of land acquisition, but we also explore how households use compensations after losing their land. Notably, we examine household saving behavior and various purposes of saving.

Data

To estimate the impacts of the compulsory acquisition on a wide range of household-level outcomes, we employ the Vietnam Access to Resources Household Survey (VARHS), carried out in even years from 2006 to 2014. The VARHS is part of the UNU-WIDER's project on "Structural transformation and inclusive growth in Vietnam". Conducted jointly with the Central Institute for Economic Management and the Vietnam Institute of Labour Science and Social Affairs, VARHS is an unbalanced panel survey of rural households in 12 provinces of Vietnam.⁶ It is worth noting that 2006-surveyed households were chosen to constitute a representative sample of the rural areas in the 12 provinces. However, the subsequent rounds (2008, 2010, 2012, and 2014) are not provincially representative in a strict statistical sense as they are based on the 2006-surveyed households. The underlying sampling unit of VARHS is the household in rural Vietnam, which is composed of members living together and sharing income as well as expenditure for at least six months. Income and expenditure modules are defined consistently across the five waves of VARHS. For example, items underlying food expenditure and types of income-generating activities are all identical. The reference period is also the same, which always refers to the last 12 months for income and saving, and the monthly average for food expenditure as well as the number of workdays in various revenue-generating activities. We group our outcomes of interest into four sets of variables. The first set includes household food expenditure and income from agricultural activities, common property resources, salaried jobs, as well as self-employment. Household food expenditure refers to the monthly total spending of all members on food. Household income from each activity refers to the income contribution of all household members from that activity. The second set consists of the current

market value of total agricultural capital owned by the household, household time allocation on agricultural as well as non-agricultural work, and a dummy variable indicating whether the household has any member engaging in a salaried job. Household time allocation on an activity refers to the total number of workdays per month that all household members devote to that activity. Non-agricultural work covers all revenue-generating activities that are not classified as agriculture. The third set of outcomes includes social capital indicators such as whether the household has any member taking part in Farmer Union, Cooperative, and religious groups. The final set comprises household saving rate and dummy variables indicating various purposes of saving (e.g. for education, health care, old age, and interest-earning) in the last 12 months. Summary statistics of the primary outcome and control variables are respectively presented in Table A1 in the Appendix. Mean values with standard deviations in the brackets are provided for the whole sample (Column 1) and disaggregated by land acquisition status (Columns 2 and 3). While food expenditure (in thousands VND) refers to the amount of money household spends on food per month, income (also in thousands VND) refer to the revenues household receives from various activities in the last 12 months.⁷ An average household spends approximately 547,000 VND on food consumption per month. Households whose lands are expropriated spend slightly more than those who do not lose their land. The mean income from agriculture is around 9,968,000 VND annually, larger than the mean income from other activities, namely salaried jobs, common property resources, and self-employment. Households who experience compulsory acquisition tend to earn less from agriculture, common property resources, and self-employment but more from salaried employment, in comparison to non-expropriated households. Turning to time allocation, on average, households spend 22 days each month doing agricultural work, and 20 days doing non-agricultural work. The mean proportion of households with any member participating

in salaried employment is 0.6 and the average value of agricultural capital is 1,160,000 VND. Our main explanatory variable is the fraction of land expropriated. This variable is computed by dividing the household's accumulated area of expropriated land by the total land area in the survey period. Monetary values are adjusted for inflation and are expressed in the 2000 constant price. 9by dividing the household's accumulated area of expropriated land by the total land area in the survey period. The accumulated area of expropriated land refers to the total land area of the household being taken away up to the survey date. For example, the accumulated area of expropriated land reported in the 2010 survey includes all areas of the household's land taken away by the government in 2010 and before. Therefore, our measure of the fraction of land expropriated captures the cumulative effects of compulsory acquisition over time and not just the contemporaneous effects of expropriation. We refer to this measure as the Fraction of Land Expropriated hereafter. As reported in Table A1, the mean value of the Fraction of Land Expropriated is approximately 13% and 36% for all households and expropriated households, respectively. We also illustrate the distribution of Fraction of Land Expropriated among households who lose any part of their farmland in Figure A1. The horizontal axis gives the fraction of expropriated land while the vertical axis provides the frequency ranging from 0 to 1. The VARHS allows us to track the history of households' plots of farmland. Specifically, households were asked whether they had any plot expropriated, in which year the plot was taken, and the area of farmland lost through acquisition in each year. Figure 1 illustrates the fraction of land expropriated over time. In Panel (a), we provide the proportion of land lost through compulsory acquisition during each year (not accumulated). For example, sampled households lost less than 1% of their farmland in 2003. The share of land expropriated in 2011 was 2.5%. Panel (b) demonstrates the accumulated share of expropriated land relative to the total area reported in the

2014 survey. For instance, the accumulated share of sampled households' land expropriated in 2003 was around 1.5%, which also accounts for the land lost in 2003 and before.

Conclusion

Exploiting the panel nature of the Vietnam Access to Resources Household Survey which provides rich information on rural households within a fixed effect regression framework, we uncover the negative impacts of compulsory acquisition on household welfare (proxied by food expenditure). Specifically, a 10 percentage point increase in the fraction of land expropriated results in a 2.2% reduction in food expenditure. Our analyses further suggest that the adverse consequences of compulsory acquisition on household welfare may take up to 10 years to evaporate. Besides, politically unconnected and ethnic minority households are disproportionately vulnerable. We attribute the decline in household welfare to the 9% decrease in agricultural income and household's inability to participate in non-agricultural activities. A deeper analysis shows that the barrier to the non-agricultural labor market prevents expropriated households from shifting their labor supply away from agriculture. We also find that compulsory acquisition decreases household's contribution to agriculture-related social capital but not other forms of social capital. In the analysis of household saving, we provide evidence that cash compensations increase household saving rate. A closer look at the saving purposes reveals that households intend to raise their human capital levels, thus, their competitiveness in the non-agricultural labor market. The presented findings offer meaningful implications for policy-making on structural transformation and urbanization. In the process of rapid industrialization and urbanization, compulsory acquisition is an inevitable phenomenon in many developing countries, forcing millions of people off their farm livelihood (Xu et al., 2011; Jiao et al., 2015). The practice of compulsory acquisition is particularly prevalent in Vietnam, as it is one of the fastest-growing economies. Hence, by using

Vietnam as a laboratory, our study reveals that the loss of farmland due to compulsory acquisition lowers household welfare because households lose earnings from agriculture but cannot switch to other non-agricultural occupations. The provision of cash compensations alone does not solve the problem. Our findings call for immediate action by the policy-makers to ensure the lives of land-losing households. Government interventions should aim to facilitate household participation in the non-agricultural labor market such as enhancing skills and competitiveness for expropriated households. Extra attention should be paid to the ethnic minority population who are disproportionately vulnerable and could fall further behind during the development process.

Appendix 1

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