

# LAND REFORM AND WELFARE IN VIETNAM: WHY GENDER OF THE LAND-RIGHTS HOLDER MATTERS

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**Abstract:** Vietnam's 1993 Land Law created a land market by granting households tradable land-use rights. This study uses mixed methods to analyze whether increased land titling led to improvements in household economic security and whether land titles in women's and men's names had different effects. Using a matched sample of households from Vietnam's 2004 and 2008 Household Living Standards Survey, we find that land-use rights held exclusively by women or jointly by couples result in beneficial effects that include increased household expenditures, greater women's self-employment, and lower household vulnerability to poverty. Results from interviews conducted in Vietnam support these conclusions by indicating that women with sole or joint ownership of land enjoyed greater well-being and higher status. Copyright © 2016 John Wiley & Sons, Ltd.

**Keywords:** Vietnam; property rights; land reform; gender; economic security; land-use certificates

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## 1 INTRODUCTION

Land ownership can have powerful consequences for household well-being. In principle, land rights have beneficial impacts for households through three channels: increased security of land tenure and freedom from expropriation, greater access to credit from being able to use land as collateral, and gains from trade in the rental and sales markets for land (Besley & Ghatak, 2010; Kumar & Quisumbing, 2013). With regard to greater security of land tenure, land-right holders are more likely to make long-term investments in their land if they are confident that their holdings cannot be expropriated. Allowing land to remain fallow for long periods of time to increase soil fertility, investing in improved drainage

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and irrigation, and planting perennial crops—which are considered a long-term agricultural investment—rather than annual crops are all examples of relatively costly investments that farmers might be reluctant to undertake in the absence of secure land rights. Strong land rights thus serve as an incentive for farmers to invest in their land, which in turn can contribute to increased agricultural output. Moreover, long-term investments in land may be labour-saving after the initial planting stage, with a resulting shift of labour hours into other non-agricultural activities (Do & Iyer, 2008). In addition to enhancing investment incentives, a low risk of expropriation decreases the need for farmers to spend private resources on protecting their land, which may liberate capital for other agricultural investments.

As for the second channel, stronger land rights can make it easier to obtain loans in the credit market because land is widely used for acquiring loans from banks that require collateral. Borrowing gives households the capital required to finance not only expenditures, but also entrepreneurial activities and land-based investments. In terms of the third channel, households have the opportunity to generate gains from trade in land sales and rental markets when land rights are transferable. Hence higher yields and saved labour time from agricultural investments, greater access to credit, and gains from trade in land markets can give men and women the financial capital they require to finance a host of economic activities.

These benefits accrue from ownership in general but can be especially potent when women own land. Each of these channels helps to boost women's control over resources and their income-generating capacities, and a number of studies have shown that additional income controlled by mothers leads to greater household expenditures on inputs that promote household well-being including food, education and health services.<sup>1</sup> Moreover, securing women's rights to land brings beneficial welfare impacts by reducing vulnerability in the face of economic shocks such as food price shocks, or after divorce or widowhood. These beneficial welfare effects do not necessarily arise from simply improving a household's access to land because intra-household distribution is not always equitable (Lastarria-Cornhiel *et al.* 2014). The income generation that can result from well-defined land rights serves as a viable means of incentivizing women's shift from low-paid work in marginally productive activities to remunerative work in productive activities. Opportunities to begin new entrepreneurial ventures and to increase the scale of existing microenterprises can be particularly beneficial for women in regions, where women have limited paid-employment opportunities because of labour-market discrimination or insufficient labour demand (Karlan & Morduch, 2009).

In practice, greater control over land in developing countries has come primarily through land-titling programmes. In the case of Vietnam, the 1993 Land Law created a land market by giving households the power to exchange, lease and mortgage their land-use rights. The law change prompted one of the largest land-titling programmes seen to date in the developing world both in terms of scope and pace of implementation; within 7 years, rural households were issued about 11 million land-use certificates (LUCs) (Do & Iyer, 2008). However, the reform process did involve drawbacks including uneven

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<sup>1</sup>See, for example, McElroy (1990), Thomas (1997), Quisumbing and Maluccio (2003), Doss (2006) and Menon and Rogers (2014). The latter studies how land titles that were solely held by women in Vietnam led to improved human capital investments in children including health insurance coverage, schooling and a reallocation of household expenditures away from 'adult' items such as alcohol and tobacco towards food.

implementation in coverage and speed across localities, and an increase in rural landlessness (Ravallion & van de Walle, 2008).

Given the comprehensive scope and nature of its land reform, Vietnam constitutes an interesting case for examining how the economic security and vulnerability of households were affected by the creation of a land market. The 1993 Land Law contributed to an enormous change in the security of land tenure with potentially large consequences for household decisions regarding agricultural investments and labour inputs. Furthermore, the Land Law may also have had strong gender implications, especially in light of the feminization of Vietnam's farm production. In the 1990s alone, household farm employment by men decreased by 0.3 per cent annually while that of women rose by 0.9 per cent annually (Akram-Lodhi, 2004). Close to 60 per cent of the female labour force is employed in agriculture as compared with 51 per cent of the male labour force (ILO, 2012). With proportionately more women employed in agriculture, an important question is whether land titling in Vietnam led to overall improvements in economic security for households and whether the gender of land-rights holder matters.

Several previous studies have argued that strengthening women's land rights is important for improving their autonomy and relative status, particularly for women who are widowed or divorced.<sup>2</sup> Yet gender-disaggregated data on land ownership is scarce, which has limited empirical research on the benefits of women's land ownership. To the best of our knowledge, this study is among the first to analyze the effects of gender-segregated land rights on measures of household-level economic security and vulnerability in a developing country.<sup>3</sup> The topic of our paper is directly related to the previous framework as we study impacts of the law on household per capita expenditure and self-employment, two facets of household well-being that often relate to women and may be influenced by them. The focus on vulnerability, as measured by poverty and food poverty, may also be shaped by women and the decisions they make. Our study takes advantage of a unique feature in Vietnam's Household Living Standards Survey (VHLSS)—namely a module containing information on the gender of land-rights holders—to address this gap in the literature. Using a fixed effects estimation strategy applied to a panel dataset of matched households, this research examines whether land-use rights registered in the names of both husbands and wives or women only have different impacts on measures of households' welfare and vulnerability as compared with land-use rights registered in the name of men only. Our methods and data improve on other studies in that we can determine the causal impact of different categories of land-use registration by gender on measures of household well-being.

To inform our quantitative evidence, we conducted 25 interviews in Vietnam to better understand how land-use rights helped women and affected their households. *A priori*, we believe that any effects captured in the econometric work can be placed in a context of women's improved bargaining power. Central to the social context in which people operate is bargaining power, and control over assets can have empowering effects for

<sup>2</sup>See, for example, Deere and León (2001), Whitehead and Tsikata (2003), Doss (2013) and Peterman *et al.* (2014).

<sup>3</sup>The main exception is Allendorf (2007), which uses cross-section data from Nepal and finds that women who own land are more likely to have the final word in household decisions and less likely to have underweight children. However, if unobserved characteristics such as preferences determine land ownership and household outcomes at the same time (for example, progressive households may have more land registered in women's names and may also have healthier children); a single cross-section may not accurately capture causal impacts.

women in intra-household power dynamics. Women's control over assets may strengthen their negotiating power by improving their fallback position, which can have feedback effects on measures of autonomy such as an increased role in household decision-making, greater mobility and improved bargaining power *vis-à-vis* male members in the household. Previous studies have found that greater control of assets by women results in changes in norms and attitudes that influence economic decisions and social behaviours within and outside of the home.<sup>4</sup> Hence, women's control over assets is an important determinant of autonomy as embodied in their decision-making power, authority within the household and respect from other family members (Agarwal, 1994). We designed our survey questions to specifically capture these dimensions of women's autonomy and power. This strategy meets the need highlighted in Doss (2013) for combining quantitative and qualitative evidence on intra-household dynamics in order to better understand causal relationships and to better identify appropriate policy levers.

## 2 LAND REFORM IN VIETNAM: HISTORICAL DEVELOPMENTS AND IMPACTS

Since the beginning of the government's 'Doi Moi' policy in 1986, Vietnam has engaged in a massive transition from a centrally planned economy to a market-based one. With transition came a surge in economic growth at rates that exceeded many other comparable economies in terms of overall gross domestic product as well as exports, agricultural production and worker productivity. The transition entailed a distinct shift in patterns of land use in the agricultural sector with a reallocation of communally held land towards land controlled by individual households. At the same time, the mode of agricultural production shifted from agricultural cooperatives towards farm households (Ravallion & van de Walle, 2008; Tran, 1999).

In 1988, the Vietnamese government began the move away from a collective system based on agricultural cooperatives with a new policy that allowed farm households to lease plots of land for 10 to 15 years. The reform was intended to improve incentives for farmers to invest in their land. However, in practice, the land-use rights were not seen as secure as they were not tradable, and consequently, many farmers were reluctant to undertake long-term investments in their fields (Do & Iyer, 2008). Early assessments pointed to the need for further land reforms in order to continue the productivity gains that Vietnam experienced after the 1981 introduction of a contract system of rice production (Pingali & Xuan, 1992). To improve the incentive structure facing farm households, the government passed a new Land Law in 1993 that extended the lease period to 20 years for land used to produce annual crops and 50 years for land used to produce perennial crops. In addition, it allowed farmers to trade, transfer, rent, bequeath and mortgage their land-use rights.

The law change was implemented through the issuance to farm households of land-use certificates (LUCs). Although the issuance of LUCs proceeded quickly, implementation across the provinces was uneven. In 1995, just one-third of farm households had been

<sup>4</sup>See, for example, Jacobs (2002), Pitt *et al.* (2006), Garikipati (2008), Hare *et al.* (2007), Peterman (2011) and Deere and Twyman (2012).

allocated with LUCs. Problems included delays on the part of the management agencies in setting guidelines for issuing LUCs, land-use tax rates that were initially too high, inaccurate records on prior landholdings, large numbers of disputes that required resolution and debts that needed to be cleared before LUCs could be issued, and lack of awareness among farm households and local authorities (especially in remote areas) about the importance of formal land-use rights (Do & Iyer, 2008). The lack of clarity around regulations made it difficult for banks to capitalize on land in cases of default, which impeded the ability to borrow from formal credit markets.

Moreover, the issuance of formal land-use rights to agricultural land occurred more rapidly than the extension of rights for rural residential land (Smith *et al.*, 2007). Informal fees, high surveying costs, poorly skilled local government officials, complicated documentation rules, uneven procedures for assessing land values and government interference in the sales market for small plots of land all contributed to obstacles in the issuance of land-use rights for rural residential land. These obstacles were especially harmful for poor households and led to lower assessed land values, disagreements about ownership and problems with mortgaging land (Smith *et al.*, 2007).

Issuance of land-use rights also demonstrated uneven patterns in terms of gender because formal land rights were held predominantly by men. In principle, the legal reforms did not discriminate in granting rights because legal decrees on implementation of the Land Law relied on gender-neutral language such as ‘individuals’ and ‘users’ in referring to the targeted beneficiaries of the reforms. However, gender disparities in the issuance of land-use rights resulted from the implementation process. In the initial years, the reallocation process of agricultural land favoured men mostly because the LUCs had space for only one name that was to be filled by the household head. Because more households with both husbands and wives present were headed by the husband rather than the wife, the unintended consequence was that fewer women had their names on the LUCs (Ravallion & van de Walle, 2008). Thus, even though Vietnamese women were economically very active, rights were often registered in the names of men only. Consequently, women did not have control of the main productive asset owned by the household even though they might have carried primary responsibility for working it. Moreover, Ravallion and van de Walle (2008) argued that female-headed households were treated unequally in allocation decisions at the local level. Specifically, the land allocations were disproportionately biased toward male-headed households in excess of what the efficient allocation should have been.

This pattern began to change with a further set of legal reforms in 2000 and 2001. The Marriage and Family Law of 2000 stipulated that any LUC obtained by husband and wife over the course of the marriage would be considered their common property, while any LUC obtained prior to the marriage or through inheritance by the husband or wife would be considered common property only by mutual agreement. Hence, for LUCs obtained during the marriage, the names of both husband and wife should be inscribed. Further, the 2001 Land Law reform led to the issuance of LUCs at the plot level. Thus, household members could own multiple plots, and any plot under the common ownership of husband and wife was required by law to be registered under the names of them both. In practice, however, these new regulations governing joint ownership were not well enforced because the government agency in charge of rural land titling lacked the administrative capacity to ensure full compliance across provinces (Ravallion & van de Walle, 2008). In fact, a survey conducted in relatively remote rural provinces after 2001 found that most new LUCs issued still had space for only one name (World Bank, 2002).

Another source of gender discrepancies in the implementation of land reform was that many localities stipulated that the amount of acreage allocated to a household should depend on the ages of household members, with individuals of working age receiving the largest allocations and young children the smallest. Because female-headed households tended to have fewer adults of working age, female-headed households on average received less land than male-headed households. Contributing to this discrepancy, the legal retirement age for women remained 5 years earlier than that for men (age 55 for women as compared with 60 for men). As a result, the amount of land allocated to women ages 55 to 59 was half that allocated to men of the same age. Gender disparities also occurred in land rental and sales markets as Vietnamese women who headed households faced bias in the market for land sales (Deininger & Jin, 2008). Closely related, land-market imperfections may also have induced women to behave as if they are risk averse. In particular, Vietnamese households with a higher proportion of female members appear to have a lower willingness to pay for secure property rights as compared with households with fewer female members (Linde-Rahr, 2008). More broadly, gender inequities in the issuance of land-use rights were also exacerbated by social norms and cultural traditions in which decisions on farm production and the ownership of assets were made primarily by men (Tran, 2001).

Previous analyses of the impacts of Vietnam's land reforms on household decision-making and well-being have tended to examine changes in agricultural production and income at the household level without a focus on gender. In particular, Do and Iyer (2008) used province-level variation in the speed of implementation and two waves of Vietnam's Living Standards Survey from the 1990s to identify effects of the land reform. The study found that as a consequence of acquired land rights, households allocated a larger proportion of cultivated areas towards perennial crops and increased their labour supply in non-farm activities. Because household borrowing did not exhibit any variation during the period of analysis, these results are attributed mainly to the additional security of land tenure rather than increased access to credit. In contrast to Do and Iyer's (2008) finding of little variation in household credit access, Kemper and Klump (2010) found that the formalization of property rights through LUCs has a substantial positive effect on household borrowing from formal sources. Explanations for the difference in results include the use of a more recent wave of the survey data (2004) as well as a more direct measure of land-use rights at the household level.

In terms of household vulnerability, Imai *et al.* (2011) found that Vietnamese households with more land are less vulnerable to poverty, but this analysis does not disaggregate land ownership by gender. Further, Markussen *et al.* (2011) examined repercussions of the Vietnamese government's restrictions on types of crops that may be grown (especially rice) that accompanied land reforms. The study found that these restrictions helped to promote food security and production without jeopardizing household income.

In one of the few empirical assessments of Vietnam's land reform with an explicit gender dimension, Van den Broeck *et al.* (2007) found that land-use rights positively impacted rice yields in male-headed households but not in female-headed households. Possible explanations are that the land ownership right is not viewed in the same way when women have their names on the LUCs; men may experience relatively greater access to credit following land titling, or women may be more risk averse than men in offering their land as collateral. This last explanation is confirmed with evidence based on a set of controlled experiments in Fletschner *et al.* (2010), which found that women in Central

Vietnam were relatively less likely to choose risky options even after controlling for the area of land owned by the household. In gender-separated estimates, land ownership had a statistically significant positive effect on risk taking behaviour for men but not for women. Our study contributes to this literature by studying the effects of land-use rights demarcated by gender on measures of household well-being and vulnerability to poverty.

### 3 DATA AND METHODOLOGY

#### 3.1 Data Sources and Sample Composition

The study uses household survey data from the 2004 and 2008 waves of the VHLSS. The VHLSS, begun in 2002 and conducted every 2 years by Vietnam's General Statistics Office, has data on a range of individual and household characteristics including income, ethnicity, region of residence, household structure, hourly wages, education and income earned from different agricultural activities. The surveys are panel in nature with a subset of the households surveyed in one wave tracked and re-surveyed in the following wave. The 2004 and 2008 waves contain specialized modules on land use with detailed information on registration of LUCs and the identity of the first and second stakeholders (the 2006 wave did not collect land use information). In both 2004 and 2008, the full samples contain information for 9189 households. In addition to the household data, we also utilized data on commune-level characteristics including geographical terrain, poverty rates, major religion, and access to roads and electrical power.

We began by constructing a panel data set of households and their members from 2004 and 2008 following an established and widely used method outlined in McCaig (2009). The panel allows us to identify departure of old (2004) members, arrival of new (2008) members, and whether there was a switch in holdings of LUCs from male-only to female household members (either held alone or jointly with the husband). The panel also allows us to control for heterogeneity in household preferences and other unobservables. Construction of the panel involved several steps that began with using the 2004–2006 household identifier cross-walks to match households across these years. Using gender and year of birth of household members between 2006 and 2008, a similar cross-walk was created for households between 2006 and 2008. Matched households between 2004 and 2008 were identified by combining information from the 2004–2006 and 2006–2008 household identifier cross-walks. The final dataset at the household level has 1728 matched households across the 2 years. Because the dependent variables we consider are at the household level, the estimations later are run on the sample of 1728 matched households in each year for a total of 3456 observations.

The VHLSS questions on land-use rights in 2004 and 2008 are at the plot level. Thus, households had responses for multiple plots of land for a particular type of land and/or for more than one type of land. For purposes of this study, the corresponding LUC variables are aggregated to the household level. The fact that households had multiple plots of land implies that the variables describing whether a LUC is inscribed in the name of the husband only, the wife only, and/or both the husband and the wife are not mutually exclusive.

There are three measures of economic security and two measures of economic vulnerability. The economic security measures include per capita household expenditures, women's self-employment and men's self-employment in agriculture. Per capita

household expenditures are a widely used aggregate measure of household welfare that is why we chose it; we focus on self-employment in agriculture because this sector employs a relatively large proportion of women. Even though self-employment in agriculture may be inherently risky because of susceptibility to weather outcomes and price shocks, it may be thought of as an indicator of economic security as the person may behave as a residual claimant, have more independence in terms of deciding the types of crops/food grown and face no risk of termination as may happen in the case of wage employment. In our sample, while per capita expenditures increased from 2004 to 2008, both forms of self-employment appear to have declined over this time span. The vulnerability measures are whether the household falls below the overall poverty line or the food poverty line, both of which are widely used indicators of this concept. In keeping with other evidence on the success of Vietnam's fight against poverty, both these measures decreased from 2004 to 2008 (Cuong, 2009; Imai *et al.*, 2011).<sup>5</sup>

The key independent variables of interest are whether a LUC is held just by a man, just by a woman or jointly by husband and wife. The regressions include a host of household characteristics as control variables, the choice of which was guided by Imai *et al.* (2011) and Allendorf (2007). These variables include age, gender, schooling and marital status of the household head; household ethnicity, size, gender composition and dependency ratio; household geographical indicators (rural *versus* urban); ownership of livestock; land area; and type of land owned—for annual crops that are replanted every year, for perennial crops that do not require annual replanting and land owned for residential purposes. The regressions also control for commune characteristics (such as geographical terrain, major religion, infrastructure and poverty status) and for province-level features (including population, number of farms, gross real agricultural output and land area).

Sample statistics for LUCs by different types of land and by the gender of the holder indicate that for the sample of matched households in 2004 and 2008, 75 per cent of all households in the sample held a LUC in 2004 with a decline to 60 per cent in 2008. The main reason for this drop is that the share of households who responded that they have land, regardless of holding a LUC, fell from 95 per cent of all sample households in 2004 to 71 per cent in 2008. This relatively large decline is in keeping with other studies on Vietnam that have noted dramatic increases in land sales and rental market activity over a relatively short time span arising from the advent of transferable land-use rights and a rise in off-farm work. For instance, using the 1992–1993 and 1998 VHLSS, Deininger and Jin (2008) documented that at the national level, the proportion of land sales increased from 0.3 per cent in 1992–1993 to almost 2 per cent in 1998 (an almost sixfold increase). Despite the decline in land ownership, LUC coverage increased during the period. If we condition on households that owned any type of land at the time of the survey, then 81 per cent of households had a LUC in 2004 and this share increased to 86 per cent in 2008.

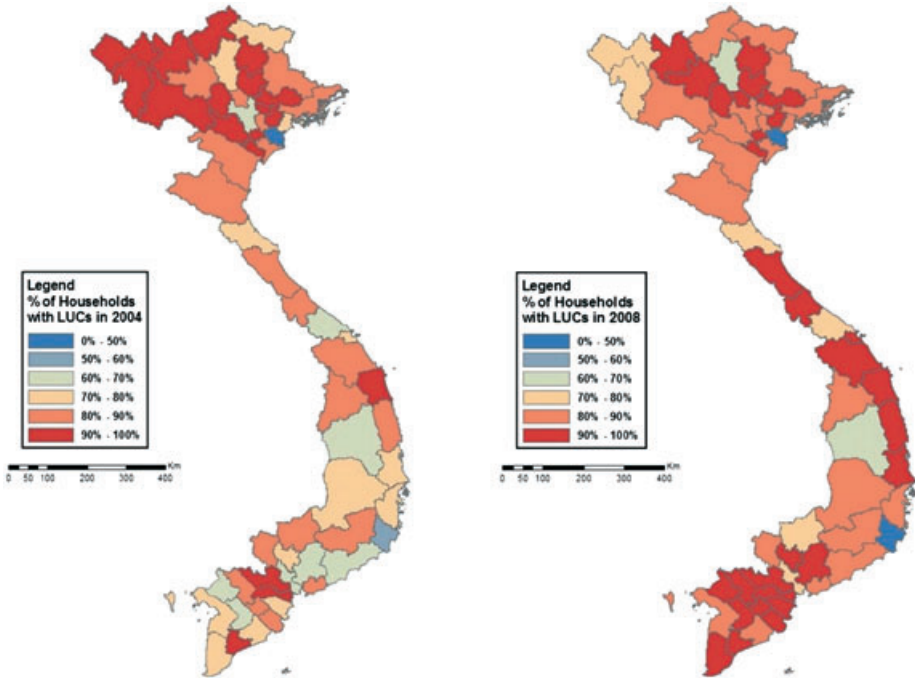
A closer look at LUCs among landholders by province in Figure 1 indicates that in 2004, provinces in the northern part of Vietnam tended to have the greatest coverage of LUCs while provinces in the south had relatively less coverage. This geographical variation is consistent with the argument that lack of awareness about the importance of formal land-use rights caused implementation of LUCs across provinces to remain uneven after the new Land Law was passed. By 2008, coverage had spread geographically to include the central and southern provinces.

<sup>5</sup>We also considered impacts on measures of self-employment in non-agriculture and real wages for women, but there were few statistically significant effects to report.



Panel A: 2004

Panel B: 2008



**Source:** Constructed using ArcGIS software applied to the 2004 and 2008 VHLSS.

Figure 1. Incidence of Land-Use Certificates Among Landholders in Vietnam, by Province. [Colour figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]

Several other sources of information were used to compile the full sample for estimation. Per capita expenditures across 2004 and 2008 were deflated with both a regional deflator provided in the original VHLSS databases and with the annual consumer price index for Vietnam [General Statistical Office (GSO), 2012]. Data from several different years of the *Statistical Handbook of Vietnam* and the *Statistical Yearbook of Vietnam* were used to include information on province-level characteristics including population, number of farms, gross agricultural output and land area (GSO, 2009; 2008; 2005). Further, we used the general poverty threshold in either year to construct measures of the proportion of households falling under the poverty line. We also constructed the proportion of all households falling under the food poverty line, an indicator of more abject poverty in which households do not have sufficient income to consume a diet of 2100 calories. The poverty and food poverty lines are calculated by Vietnam's GSO with support from the World Bank; the 2004 benchmarks were published in the *Vietnam Poverty Update Report* (Vietnamese Academy of Social Sciences, 2006), and the 2008 benchmarks were provided by the GSO.

### 3.2 Econometric Methodology

A potential challenge in analyzing the effect of LUCs on measures of economic security and vulnerability is selection bias. In particular, progressive or egalitarian households may be more likely to seek joint land-use rights and also have favourable economic

indicators for women. Because of similar concerns about household-level unobservables, Deininger *et al.* (2008) tested for wealth bias in the allocation of land rights in Ethiopia. Pitt *et al.* (2006) used a latent method framework and employed a village fixed-effects-instrumental variables technique to correct for selection at the household and village levels. We control for endogeneity arising from unobserved preferences or selection using a household fixed-effects framework. Province and commune-level characteristics are added to this framework to control for systematic variations in registration patterns at these levels. The specific details of our model follow.

To estimate the *causal* impact of LUCs, we use a method that controls for household-level unobservable characteristics related to preferences and tastes that may determine patterns of LUC registration and measures of economic security or vulnerability simultaneously. The standard remedial technique is instrumental variables. However, identifying an instrument that satisfies the exclusion restriction, remains free from correlation with omitted variables and has adequate strength is not straightforward in this context. For example, province-level characteristics that affected the speed of implementation of the reforms may at first seem a valid instrument as in Do and Iyer (2008). However, such characteristics would not satisfy the exclusion restriction here because although they might be related to LUC coverage, such characteristics are also likely to be correlated with other province-level measures that may determine household education and labour-market outcomes. For example, funding for education programmes may be determined at the province level and simultaneously be related to the speed of implementation of laws (well-funded and administered provinces may implement laws more efficiently and have more resources for programmes that build human capital). Because we do not possess information on health, education and other social development entitlements at the province level, these indicators would be omitted in our context and may invalidate the exclusion restriction. Given the difficulties associated with identifying an instrument that is relevant yet randomly assigned, we adopt a model that conditions out household-level heterogeneity in a fixed-effects framework. The 2004 to 2008 time window is arguably small enough such that household-level unobservable characteristics may be treated as time-invariant; however, fixed effects impose large demands on data, and estimates are measured with significance only if there have been substantial changes in the dependent variable over this relatively short time span of 4 years. Finally, region and time dummies and their interactions are included to control for other factors at these levels that may be changing contemporaneously.

The details of the empirical model are as follows:

$$y_{ijrt} = a_0 + a_1 H_{ijr} + a_2 C_{jr} + a_3 T_t + a_4 (R_r \times T_t) + \beta X_{ijrt} + \delta LUC_{ijrt} + \varepsilon_{ijrt} \quad (1)$$

where  $i$  denotes a household,  $j$  denotes a commune,  $r$  denotes a region and  $t$  denotes time. The notation  $H_{ijr}$  is the time-invariant household-level unobservable,  $C_{jr}$  is the time-invariant commune-level unobservable,  $R_r$  is the time-invariant region-level unobservable and  $T_t$  is a time dummy that controls for effects in 2008 relative to 2004.  $X_{ijrt}$  is a matrix of household, commune and province characteristics, and  $LUC_{ijrt}$  is a vector of up to (potentially) three types of land-use rights held by the household: male only, female only or joint (three separate dummies for having an LUC with each of the name possibilities). If the household owns no land, these dummies are all zero by definition. Households with land may also have zero values for LUCs, and this is controlled for by the variable that measures land area. We include interactions of regional indicators with the time dummy instead of commune and time interactions in order to facilitate model convergence and to

keep the number of parameters manageable (there are six regions *versus* 702 communes in the data). Taking differences of Equation (1) over time leads to the household fixed-effects model that sweeps out the household and regional time-invariant characteristics. Household, commune and province characteristics in  $X_{ijrt}$  are identified because they vary from 2004 to 2008. The vector of coefficients of interest  $\delta$  represents the impact of the three different categories of LUCs on  $y_{ijrt}$ , which is composed of five alternative indicators. In this specification, the coefficients in  $\delta$  are identified from variations in  $LUC_{ijrt}$  over time. All models cluster standard errors at the commune level.

#### 4 REGRESSION RESULTS

Table 1 presents results with estimates separated into three categories: all households, rural households and urban households. Because household choices and the relevance of LUCs may vary by rural or urban residence, we disaggregate impacts along these lines. The rural analysis does not include residential LUCs that are expected to be primarily urban and subject to different regulations. Coefficients are presented for the main variables of interest—the gender-disaggregated LUC variables. The models also include the full set of control variables. The discussion begins with an evaluation of the effect of LUCs on log per capita household expenditures that, as noted previously, is a general measure of household welfare. Results in Panel A indicate that LUCs held by women only have a statistically significant and positive effect on per capita expenditures. Estimates indicate that in households where LUCs are registered in the names of women, per capita household expenditures are 10.4 per cent higher. The most likely channel through which this increase occurs is a marginal improvement in a household's access to credit and the ability to undertake agricultural investments. Moreover, a comparison of the results for the rural and urban sub-samples indicates that virtually all of this effect occurs in the rural sector.

Panel B shows that in the total household sample, the share of women who are self-employed in agriculture rises by 5.5 percentage points with female-only held LUCs. Women's self-employment in agriculture rises by a similar amount (5.0 percentage points) in the case of LUCs held jointly. These positive coefficients for female-only held LUCs and jointly held LUCs could reflect the fact that women are growing crops for subsistence. A similar result is found for men in Panel C, where the share of household men who are self-employed in agriculture rises by 4.3 percentage points when the LUCs are held by men only. Again, most of this effect is evident in rural areas. Female-only held LUCs are found to reduce the proportion of men self-employed in agriculture among urban households.

Panels D and E investigate the impact of LUCs on the incidence of poverty and food poverty at the household level. Estimates indicate that LUCs held by women only and LUCs held jointly reduce the incidence of poverty at the household level by about 6 and 5 per cent, respectively. The second measure of household vulnerability considers the incidence of food poverty. Male-only held LUCs reduce the incidence of food poverty among all households by 2.5 per cent, a finding consistent with the interpretation that the formalization of land-use rights generates an income effect induced by greater access to credit and returns to agricultural investments. The effect for male-only held LUCs is slightly higher in the rural sector with a decrease of 3.3 per cent in the incidence of food poverty. Formalized land rights are not found to have statistically significant impacts on poverty or food poverty among urban households.

Table 1. Effects of land-use certificates on economic security indicators using fixed-effects models

	All households	Rural households	Urban households
Panel A: Log per capita household expenditures			
LUC held by male only	0.049 (0.031)	0.042 (0.036)	0.055 (0.065)
LUC held by female only	0.104*** (0.037)	0.083* (0.048)	0.082 (0.072)
LUC held jointly	0.050 (0.037)	0.053 (0.043)	-0.002 (0.087)
Test for equivalence of LUCs	1.180 [0.308]	0.490 [0.614]	0.360 [0.701]
Test for equivalence of male-only and female-only LUCs	2.280 [0.131]	0.930 [0.334]	0.120 [0.733]
Test for equivalence of male-only and jointly held LUCs	0.000 [0.969]	0.120 [0.725]	0.380 [0.540]
Number of observations	3456	2697	759
Panel B: Proportion of household women self-employed in agriculture			
LUC held by male only	-0.009 (0.024)	-0.007 (0.031)	0.013 (0.033)
LUC held by female only	0.055* (0.032)	0.068 (0.043)	0.063 (0.050)
LUC held jointly	0.050** (0.024)	0.049 (0.031)	0.061 (0.038)
Test for equivalence of LUCs	6.310 [0.002]	5.340 [0.005]	1.170 [0.314]
Test for equivalence of male-only and female-only LUCs	5.810 [0.016]	5.460 [0.020]	0.980 [0.324]
Test for equivalence of male-only and jointly held LUCs	8.730 [0.003]	6.420 [0.012]	1.860 [0.175]
Number of observations	3410	2664	746
Panel C: Proportion of household men self-employed in agriculture			
LUC held by male only	0.043** (0.020)	0.052** (0.024)	0.012 (0.039)
LUC held by female only	0.018 (0.025)	0.053 (0.035)	-0.075** (0.032)
LUC held jointly	-0.010 (0.024)	0.001 (0.028)	-0.071 (0.048)
Test for equivalence of LUCs	3.010 [0.050]	2.690 [0.069]	3.980 [0.021]
Test for equivalence of male-only and female-only LUCs	0.890 [0.347]	0.000 [0.986]	7.950 [0.005]
Test for equivalence of male-only and jointly held LUCs	5.690 [0.017]	5.310 [0.022]	1.740 [0.189]
Number of observations	3306	2576	730
Panel D: Incidence of poverty at the household level			
LUC held by male only	-0.033 (0.022)	-0.033 (0.028)	-0.019 (0.036)
LUC held by female only	-0.060* (0.036)	-0.062 (0.052)	-0.013 (0.027)
LUC held jointly	-0.054* (0.028)	-0.057 (0.038)	-0.014 (0.028)
Test for equivalence of LUCs	0.660 [0.515]	0.580 [0.559]	0.020 [0.977]

(Continues)

Table 1. (Continued)

	All households	Rural households	Urban households
Test for equivalence of male-only and female-only LUCs	0.670 [0.413]	0.430 [0.510]	0.040 [0.847]
Test for equivalence of male-only and jointly held LUCs	0.800 [0.372]	0.750 [0.386]	0.040 [0.847]
Number of observations	3456	2697	759
Panel E: Incidence of food poverty at the household level			
LUC held by male only	-0.025* (0.015)	-0.033* (0.019)	-0.010 (0.022)
LUC held by female only	-0.031 (0.019)	-0.042 (0.028)	-0.013 (0.014)
LUC held jointly	-0.018 (0.019)	-0.028 (0.025)	-0.008 (0.016)
Test for equivalence of LUCs	0.190 [0.825]	0.110 [0.898]	0.090 [0.914]
Test for equivalence of male-only and female-only LUCs	0.110 [0.745]	0.100 [0.754]	0.050 [0.829]
Test for equivalence of male-only and jointly held LUCs	0.160 [0.687]	0.070 [0.794]	0.010 [0.909]
Number of observations	3456	2697	759

LUC, Vietnam as land-use certificate.

Notes: Weighted to national level with weights provided by the Vietnam Household Living Standards Surveys. Standard errors, clustered by commune, in parentheses. *p*-values in square brackets. The notation

\*\*\*is  $p < 0.01$ ,

\*\*is  $p < 0.05$ ,

\*is  $p < 0.10$ .

All regressions include a constant term; controls for types of land; controls for household, commune, and province characteristics; and commune dummies, a time dummy and region-time dummy interactions. Sample size is 1728 households in each year for a total of 3456 observations.

We implemented three statistical tests for each of the five outcomes in Table 1. The first tested for joint equivalence of the three LUC variables—hence all that might matter is whether the household has an LUC and not the identity of the LUC holder. The second tested for equivalence of the male-only and female-only LUC, and the third tested for equality between male-only and jointly held LUCs. For per capita expenditures and the two poverty measures, we cannot reject the null hypothesis across all three tests. That is, there is no statistical evidence that the gender of the LUC holder matters. For the two categories of self-employment in agriculture, there is evidence that the identity of the LUC holder matters. For example, the test for joint equivalence of LUCs is strongly rejected ( $p$ -value of 0.002) for female self-employment in agriculture. Moreover, there is evidence that male-only and female-only LUCs have statistically distinct impacts on this dependent variable ( $p$ -value of 0.016) as does male-only and jointly held LUCs ( $p$ -value of 0.003). Similar patterns are found in the case of male self-employment in agriculture, except that we cannot reject the equivalence of male-only and female-only held LUCs in the full sample and among rural households. Hence for the self-employment dependent variables at least, there is differentiation in impacts by the identity of the LUC holder, and gender of the land-rights holder does matter.

## 5 QUALITATIVE EVIDENCE

To provide a richer context for understanding the quantitative results and to shed more light on what land reform has meant to women in terms of their perception of status and well-being, we also conducted a set of interviews among Vietnamese women. A total of 25 women were interviewed in Thot Not, a district of the city of Can Tho that is located in the Mekong Delta and ranks as Vietnam's 5th largest city. All respondents live in a rural part of Thot Not. Although Thot Not's main industry is agriculture (rice, soybeans, vegetables and fishing), the economy has grown rapidly and has continued to urbanize, as transportation, tourism and the service sector have prospered. Although our sample may not be representative, these interviews provide insight on how reforms have impacted women at the micro-level in a region of Vietnam, where land reform was active.

The local government granted LUCs to eligible residents of Thot Not during the 1990s. Before the land reform, residents were given a white certificate when they purchased land. This certificate was not a legal document; it acted as a receipt to prove they had paid for a certain plot of land. The certificate did not map out the boundaries of the land, however, and this increased disputes over land size and ownership between neighbours. These white certificates were brought to the local government office during the land reform so that the land could be officially measured. After the fees were paid, an official 'measurement team' came to the land in question to take measurements and photographs. LUCs were then administered as legal documents (and were changed in colour from white to red) that named the owner of the land, specified the type of land and included images of the outlines of land boundaries.

Our survey instrument included questions regarding land ownership, land use, demographics, decision-making in the home and community, gender roles, and the respondent's opinion of her status within the home and the community post-reform. These data provide additional insights into Vietnamese gender roles and decision-making power within households and provide a context in which to situate the quantitative results discussed previously. Overall, 12 of the 25 women interviewed own the land on which they live and have their names on LUCs while 13 women do not have their name on a LUC (but may still live on land owned by their spouses or other relatives). In addition, 16 of the respondents hold land for farming and housing purposes while eight of the respondents hold land for housing (residential) purposes only. In terms of employment, four women stated that they are not employed and that they are housewives. Of the remaining respondents, most are self-employed as rice farmers. Other types of self-employment included pig farmer, soybean seller, baker, juice vendor and seamstress. The rest of the women worked in wage employment (as a farm hand, government worker, construction worker or accountant). All women who have their names on LUCs are employed—this is in contrast to the nine employed women out of 13 who do not have their names on LUCs. Moreover, women who have their names on LUCs on average earn more than women who do not: eight of the women with their name on a LUC earned more than 900 000 VND per month (about US\$43), compared with just five of the women without their name on a LUC who are working and have earnings.

We coded and tabulated the interview data to generate indicators of self-reported decision-making power within the household, and specifically, the number of respondents who said that they have sole or joint decision-making power for the issue at hand. For many of the indicators, women who have their names on a LUC reported greater decision-making power than women who do not have their names on a LUC. This result

holds for decisions on borrowing money, paying bills, buying groceries, livestock transactions, agricultural product transactions, land transactions, farm-equipment transactions, home-maintenance transactions and voting in elections. For example, while eight of the women with their names on LUCs had decision-making power over the purchase or sale of agricultural products, just one of the women without their names on a LUC had decision-making power for this type of transaction.

Among currently married women, women with a LUC in their name were less likely to have a spouse who refused to allow them to work outside of the home compared with women without a LUC in their name (one woman with a LUC *versus* five women without a LUC). However, women without LUCs are about as likely as women with LUCs to make decisions about the number of children and the education and health of their children. The most plausible explanation is that women who do not have land in their names are younger on average and have younger children than women who have LUCs—there is thus more parental involvement for them in health and schooling decisions.

The interviews also asked women's opinions regarding status and empowerment in the household and community. Women who have their names on LUCs are more likely, than those who do not, to say that women's opinions are equal to men's in the household (10 of 12 women with LUCs *versus* 9 out of 13 women without LUCs) and in the community (10 women with LUCs *versus* eight women without LUCs). A similar conclusion applies for women who think that their land ownership will enhance their status in their homes (10 women with LUCs *versus* five women without LUCs). For example, one woman who currently does not have her name on the LUC stated, 'I currently feel shy and embarrassed because I do not own the land. I feel that my husband has a higher voice. I have already discussed this with him and when the government renews the programme in 8 years, he will add my name to the certificate'.

More women who have their names on LUCs believe they will feel empowered by the current or future (through inheritance) possession of land than those who do not (eight women with LUCs *versus* seven women without LUCs). When asked if she feels empowered, one woman who held a joint LUC with her husband for farming but not for housing stated 'yes. I feel that my rights are shared jointly but he has more power because it is the land that he inherited. Once I inherit, I will feel empowered because when he is still alive, I will have my own property as my father will divide his land equally between his children. Because we live in harmony, my property will be shared between me and my husband and maybe I will have more rights'.

When asked if owning LUCs changes their standing in the community, seven of the women who do not own LUCs stated that their standing would increase in the community if they owned one. However, only four of the women with LUCs feel that their status has increased within the community because they obtained LUCs in their names; the remaining women felt that their status has stayed the same. Many stated this was because their parents owned land as well, and they felt the benefits of their parents' status. One woman stated that before her husband inherited a LUC from his parents, 'my position was higher than my husband at that time. Then, when my husband got his parents' LUC, the position changed'. She continued to state that once she has her name on the certificate, she will feel that her position will be 'higher than other people but not higher than my husband because I have my name on the certificate later than my husband.'

Some women who do not have their names on LUCs are still optimistic about their status in their homes and community. For example, one woman stated the following in regards to the LUC programme, 'if both the husband and wife have their names on the

LUC, they will be happy. I think this is important for both names to be on the property to protect the rights of the woman if a divorce happens. It ensures the property will be divided equally between husband and wife. It is a good policy because it ensures the rights of women'. While not all respondents understand the LUC programme (five women in the sample could not explain it), all feel that the policy is good. One woman stated, 'It makes a person able to live life more easily because it is a law that you have the right to decide what to do with your land...' Another respondent stated, 'I feel more confident because before I never thought about property rights'.

These interviews lend support to the argument that shared or sole ownership of land is viewed by women as being beneficial and is strongly correlated to measures of increases in bargaining power. These interviews have generated information about women's perceptions of changes in land tenure, with the conclusion that the main channel through which women's ownership of land-rights matters is increased bargaining power and elevated status in their home and community.

## 6 CLOSING REMARKS

Improving women's control over assets such as land can augment women's economic security and bargaining power, which in turn may have powerful consequences for household well-being. This study has provided new evidence on the relationship between land rights and the economic welfare of Vietnamese households, paying particular attention to whether gender of the land-rights holder matters. Vietnam constitutes an excellent case study given its large-scale land-titling programme, one of the largest in the developing world to date, which has enabled households across the country to have land-use rights. Results from regressions estimated with data on matched households from 2004 and 2008 VHLSS indicate some impacts of sole and joint ownership of land rights on improvements in economic security and vulnerability. In particular, land-use rights held exclusively by women have, on balance, beneficial effects on household expenditures, self-employment by women and the incidence of household poverty. Jointly held land-use rights are also found to bring beneficial effects in reducing poverty. In contrast, male-only held land-use rights are more effective in reducing the incidence of food poverty in the household and for men's self-employment in agriculture. Hence, while women's ownership of land rights does bring measurable benefits, male ownership is also important, suggesting that the overall environment in which gender dynamics play out in Vietnam is quite nuanced. Moreover, our empirical method imposes large demands on the data; hence, we are able to document only a limited number of statistically significant effects given the short window of time (2004–2008).

While the quantitative results point to beneficial effects of land-use rights held by women in terms of household economic security and vulnerability to poverty, the qualitative results supplement the empirical evidence by underscoring that many of these positive impacts may have increased perceptions of empowerment and status within the community. The qualitative framework of our analysis thus provides a context within which to understand the empirical results of this study. The interview respondents overwhelmingly felt that having their names on a land-use certificate gave them relatively more decision-making power on a variety of economic, political and social scales. In particular, interview results indicate that women who own land are more likely to be employed outside the home and feel that their land ownership improved their economic



status. For example, a woman who owns land stated, ‘before, when I didn’t own the land, I had to work for others which was very hard. Now, I feel better and happy to own land’. Another woman who will inherit farmland from her mother stated, ‘everybody thinks I am poor... When I inherit land...people will not look down on me’. In addition to shoring up the quantitative estimates, these qualitative results help us to better understand the intangible benefits of shared or sole female ownership of land, benefits that might not be reflected in the econometric work because the VHLSS does not explicitly include questions on decision-making power and autonomy. We thus use the qualitative results to interpret the empirical estimates of improved household economic security and lessened vulnerability in a context in which women felt more in control, enjoyed higher status, had greater personal satisfaction and felt better off because they own land (Figure 1).

Standard economic models argue that improvements in a woman’s fallback position serve to strengthen her relative bargaining position within the home and her ability to contribute to the economic viability of households. On balance, our results indicate that land-use rights in women’s names do indeed serve this role, thus providing a clear rationale for strengthening procedures to encourage titling to land for women. A lesson from the Vietnam land reform is that rights need to be guaranteed in such a way that women can exchange, lease, bequeath, sell or mortgage their land in an enforceable manner. Policy recommendations for Vietnam and other countries with similar land-titling initiatives centre on improvements in the administration and management of land law reforms, especially when implementation results in gender disparities in the issuance of land titles. Such changes include improving the administrative capacity at the local level to manage land-title applications and approvals, increasing the dissemination of information to households about the process through which they acquire land titles, ensuring that men and women have the same legal retirement age, and promoting gender equity in the distribution of certificates. Such procedures may have more potent impacts if they are embedded in a broader framework that strengthens social safety nets and changes existing institutional structures that may currently disfavour women.

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