



Political connections and land-related investment in rural Vietnam



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ABSTRACT

This paper uses household panel data from rural Vietnam to explore the effects of having a relative in a position of political or bureaucratic power. Our results suggest that households increase their investment in land improvements due to such ties. Likely explanations are that connections to office holders strengthen de facto land property rights and access to both credit and transfers. Results also indicate that officials prefer to use informal rather than formal channels of redistribution to relatives.

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1. Introduction¹

This paper investigates the potential effect of family ties between farmers and local government officials on investment in agricultural land improvements. The importance of agricultural investment for economic development is well recognized and has received increased attention in recent years, in part as a result of the ‘food price crises’ in 2007–08 (e.g. de Janvry and Sadoulet, 2008). A number of papers have investigated the effects of land property rights, credit, insurance, infrastructure and other factors on agricultural investment (e.g. Alston et al., 1996, Besley, 1995, Binswanger et al., 1993, Braselle et al., 2002, Carter and Olinto 2003, Do and Iyer 2008, Eswaran and Kotwal 1987, Feder and Onchan 1987, Hornbeck 2010, Jacoby et al., 2002, Jacoby and Mansuri 2008, Rosenzweig and Wolpin 1993). The literature on the political economy of local government in developing countries is also growing fast (e.g. Bardhan and Mookherjee, 2000, 2006, Besley et al., 2007, Ferraz and Finan 2008).

At the same time, few studies have brought the above two strands of literature together by studying the political economy of agricultural investment. An important exception is the contribution by Goldstein and Udry (2008). They investigated the effect of position in traditional, local power hierarchies on following of agricultural land in the Akwapim region of Ghana. Fallow is a major type of investment and Goldstein and Udry show that farmers with traditional political office have stronger property rights than other farmers. They therefore fallow their land much longer than others. We aim to contribute to these insights and do so in a very different context, namely that of rural Vietnam.²

Households may be connected with public officials in three different, but not mutually exclusive ways. First, one or more household members may themselves be public officials. Second, a household may have relatives living outside the household who are public officials. Third, friends or other non-family relations of the household may be officials. Our data set contains information on the presence of public officials in each household and on whether household members have relatives or personal friends who are officials. For methodological reasons, we focus on the effects of having relatives outside the household who are officials. This means that we mainly investigate government capture by the extended families of public officials. In other words, we study nepotism in local government.

The reason for focusing on connections with relatives (rather than looking at the effects of officials in the household or connections with non-relatives) is potential endogeneity. Whether a household member takes up work as a public official, and whether the household forms

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² Our analysis is also related to a group of papers addressing the economic effects of political connections (e.g. Fisman, 2001, Khwaja and Mian, 2005) and to the literature investigating personal connections between managers and workers within organizations (e.g. Bandiera et al., 2009; Prendergast and Topel, 1996).

and reports connections with non-relatives in government, is simultaneously determined with our main outcome variable, agricultural investment. To illustrate, if a household has invested heavily in the introduction of a new, high-value crop, the incentives for household members to seek employment as officials may be lower than those in other households. The returns from spending time on the farm are higher. A household planning to invest may actively nurture relationships with non-relatives in government in order to obtain approval or assistance for the investment project. Also, households may report an official as a 'friend' exactly *because* he or she assisted the household with a project, rather than the other way around. Connections with relatives outside the household are arguably more exogenous. A household's investment decisions do little to affect the probability of relatives in *other* households taking up positions as officials. Clearly, unobserved family characteristics (entrepreneurial spirit, risk and time preferences, etc.) may affect investment as well as the probability of having a relative in the local government. These factors are taken into account through the introduction of household fixed effects in our regressions.

The economic importance of family networks in Vietnam is documented by the survey data used here, as well as by other sources. For example, for more than half of the plots rented out by households in our survey, the tenants are relatives of the landlord. More than 90% of monetary transfers received by households from private sources are from relatives, and more than 70% report relatives as the main source of emergency funding. The 2001 World Values Survey in Vietnam asked respondents about the importance of different 'life domains'. Some 82% of respondents say that the family is 'very important'. Some 57% regard 'work' as being in the same category, while only 22% rank 'friends' as very important (Dalton et al., 2002). A key part of the background for these findings is undoubtedly the enduring influence of Confucianism in Vietnamese society.

So, family ties are important, but are ties to relatives with public offices particularly important and do they matter for agricultural investment? There are several reasons to expect that ties to government officials should matter for investment in land improvements. First, the attractiveness of such investment depends on the security of land property rights. Local government often plays a critical role in determining the strength of land rights. Local officials issue property deeds, decide on land expropriation for infrastructure and other development projects, and implement land use regulation such as 'zoning' laws. Second, investment needs to be financed, and in areas where commercial, financial institutions are not well developed, local government often plays a key role in regulating access to credit. Third, agricultural investment is risky, even when land property rights are secure. New crops may fail or the price of output may drop. Investment is particularly risky when land markets are poorly developed because recovery of investment through sale or rental is prevented. Local governments often control important sources of insurance. Access to credit is one such source, others include access to public sector employment and government transfers.

A priori, it is not clear whether discrimination in favor of relatives leads to efficiency losses. This depends on the motivation of officials. One possibility is that favoritism is driven by a 'taste for discrimination', in the words of Gary Becker (1971). In this case, the official attaches higher weight to the welfare of relatives than to others in his or her maximization problem. This type of behavior, which might be labeled 'true nepotism', generates inefficiencies relative to the goal of maximizing a welfare function that weighs everybody equally. Another possibility is that officials are constrained in their access to information and ability to enforce contracts. For example, administrators of a public lending scheme may not be perfectly informed about the ability and willingness of potential borrowers to repay loans. In this situation, officials may rely on family networks as a form of social capital. Officials may be better informed about the skills and honesty of relatives than those of other people. They may also rely on informal ties for enforcement of contracts. In this case, targeting public resources to relatives of officials might be efficient, helping the official solve an agency problem.

We use household-level panel data from the rural areas of 12 provinces in Vietnam. A bit more than 2000 households were surveyed three times over a period of four years during 2008–12, and it appears from our analysis that households with connections increase their investment in land improvement. We investigate three potential channels through which political/bureaucratic connections may affect investment: property rights, and access to respectively credit and transfers. The results suggest that connections decrease the probability of being expelled from land by the state, and have positive effects on access to informal credit and to both public and private transfers. Another interesting feature of our findings is that officials tend to prefer informal over formal channels of redistribution to relatives. Connections with public officials have no effect on the probability of holding a land title (a formal means of property rights protection) but do affect the probability of having land confiscated by the state. Although effects of connections on public transfers are of the same magnitude as effects on private transfers, connections have a much stronger effect on access to informal than to formal credit. Informal channels of redistribution are more difficult to monitor for those who may hold officials accountable for their conduct (local populations as well as higher levels of government) than formal channels. A preference for using informal channels of redistribution indicates in our assessment that officials seek to hide these transactions from their principals. This supports the view that favoritism is driven by a taste for discrimination, rather than by concerns for efficiency.

These findings stress the significance of informal networks for economic behavior in developing economies. They also suggest the presence of a potential for faster economic development. If households without political or bureaucratic connections could obtain equally strong property rights and access to finance and insurance as the well-connected households, agricultural investment would increase. As a result, rural economic growth would be stimulated.

Section 2 provides background information on land and local government in Vietnam. Section 3 presents the data and defines key variables. Section 4 contains descriptive statistics, and Section 5 investigates whether households gain new connections through marriage or because relatives move into new positions as officials. Section 6 includes the core analysis of connections to officials and land-related investment. Section 7 studies the effects of political/bureaucratic connections on land property rights, while Section 8 analyses the effects of access to credit, and Section 9 focuses on the relationship between connections and access to transfers. Section 10 concludes.

2. Background

Vietnamese agriculture is dominated by small, owner-operated farms. Rentals account for only about five percent of agricultural land in our sample, and collective farms play a very minor role. The background for this pattern is the 1987 and 1993 land laws, which followed the Doi Moi reform program initiated at the 1986 Communist Party Congress. The 1987 land law, implemented in 1988 through a directive known as Resolution 10, transferred farming responsibilities from agricultural collectives to households.³ The 1993 land law went a step further and introduced Land Use Right Certificates (LURCs), also known as Red Books. They entitled holders to 20 years of user rights for annual cropland and 50 years for perennial crop land. LURCs may be traded, rented, mortgaged, exchanged, and bequeathed. For practical purposes, LURCs are therefore quite similar to proper land titles.

Ravallion and van de Walle (2004, 2006, 2008a) show that (i) the process of de-collectivization in the late 1980s and early 1990s was largely equitable and efficient, (ii) subsequent land transactions worked to decrease the inefficiencies that arose from administrative land allocation, and (iii) recent increases in landlessness should be interpreted as a

³ As described in Pingali and Xuan (1992), steps were taken in this direction as early as 1981.

side-effect of economic development, rather than as a sign of poor groups being marginalized. Do and Iyer (2008) argue that the issuance of LURCs in the 1990s stimulated investment in perennial crops and increased time allocated to off-farm employment. Deininger and Jin (2008) show that land markets in Vietnam, especially rental markets, function to allocate land to efficient small-scale farmers.

We do not dispute these findings. At the same time, it is important to note that land markets, especially sales markets, remain extremely thin in many regions of Vietnam, particularly in the north. For more than 70% of the plots in our sample, farmers declared themselves unable to estimate the sales value of the land and less than 15% of the plots have been acquired through purchase. Thin or non-existing land markets render land-related investment more risky than otherwise because opportunities to recover investments through sale are reduced.⁴

Vietnam has three tiers of local government, at province, district and commune levels. At each level, the local government is headed by 'People's Committees' (PCs). Some members of the PCs are appointed by higher levels of government, while others are chosen in local elections. Although non-party members are sometimes allowed to run and win elections, the election process is tightly managed by the Communist Party and the 'Fatherland Front', an umbrella organization closely linked with the Party. No other parties than the Communist is allowed. At each level, another elected body, the People's Council, undertakes an oversight function vis-à-vis the People's Committee. Local government leaders in Vietnam have generally been more accountable toward higher levels of government than toward local populations. However, downward accountability has been strengthened in recent years through the adoption of the so-called 'Ordinance on Grassroots Democracy' (OGD), passed in 1998 and strengthened in 2003 and 2007. The OGD spells out the rights of citizens in different areas, in terms of access to information, consultation and decision-making.

Local government in Vietnam impacts heavily on all areas of rural economic life. First, local governments play a crucial role in determining property rights security. Most obviously, the state manages the issuance of LURCs. While the process of issuing LURCs to millions of land users progressed with impressive speed and, as noted above, without obvious signs of widespread abuse by local authorities in the 1990s, current management of LURC issuance is widely perceived to be highly affected by corruption (World Bank, 2009, Fig. 3.5). Second, land expropriation by the state is quite common (four percent of households in our sample experienced at least one expropriation in the past two years). This is to be expected in an environment of rapid, economic development, where land needs to be taken into use for infrastructure and industry, but the terms of expropriation are contentious (Anderson and Davidsen, 2011, World Bank, 2009, chap. 3). Also, the State intervenes heavily in farmer decisions on land use. For example, local land-use plans often designate plots to be planted with specific crops, most commonly rice (Markussen et al., 2011).

Second, almost all formal lending institutions operating in rural areas of Vietnam are controlled by the state. In particular, commune authorities are widely used to screen applicants for loans from the most important state banks. These include the Vietnam Social Policy Bank (VSPB), which extends non-collateralized loans to poorer families, and the Vietnam Bank for Agriculture and Rural Development (VBARD), which lends to rural households with security in LURCs. Third, local officials control access to a number of public transfer programs targeted to the poor, the sick, the elderly and others. These transfers may be used to finance investment and also function to cushion households from the negative impact of investments that fail.

Some direct evidence on the importance of informal connections between government officials and private agents in Vietnam is provided by Appold and Phong (2001). They describe the functioning of such networks between government bureaucrats and firm managers. Gillespie (2002) argues that 'personalism', as opposed to merit-based systems of

recruitment and promotion, is the key mode of operation in the Vietnamese party and government hierarchies. Similarly, Gainsborough (2007) makes the case that patronage distribution plays a central role in the functioning of the Communist Party. Nguyen et al. (2012) show that towns where local officials are promoted to higher ranks of government experience faster improvement in local infrastructure than other towns. The entrenched nature of political patronage in Vietnam is also discussed in Abrami et al. (2008).

3. Dataset, estimation model, and identification strategy

Our three-wave household panel dataset was collected in the Vietnam Access to Resources Household Survey (VARHS). The VARHS was implemented in 12 provinces in Vietnam between July and September 2008, June and August 2010, and June and August 2012. It re-interviewed rural households sampled for the income and expenditure modules of the 2002 and 2004 Vietnam Household Living Standards Survey (VHLSS) in the 12 provinces.⁵ Provinces were selected to facilitate the use of the survey as an evaluation tool for Danida-supported programs in Vietnam. Seven of the 12 provinces are covered by the Danida business sector program support (BSPS), and five provinces are covered by the agricultural and rural development (ARD) program. The provinces supported by the agricultural support program are located in the north-west and central highlands, so these relatively poor and sparsely populated regions are over-sampled.⁶

The 2008 round of the VARHS survey covered 2,278 households. A total of 2,233 were identified and resurveyed in 2010 and 2,148 again in 2012 (implying an average attrition rate of three percent). The household survey collected detailed information on connections to officials, other types of social capital, land-related investment, land characteristics, agricultural inputs and outputs, household income, saving and borrowing, and general information about individuals and households.

The primary hypothesis studied here is whether family connections with public officials lead to increased levels of land-related investment, and we consider regressions of the type:

$$I_{ht} = \alpha C_{ht} + \beta' X_{ht} + v_h + \varepsilon_{ht} \quad (1)$$

where I_{ht} is the real value of land-related investment undertaken by household h in period t , C_{ht} is an indicator for having a personal connection to a local government official, and X_{ht} is a vector of potentially time-varying household characteristics. v_h represents unobserved, fixed household characteristics. The error term ε_{ht} captures measurement error in the value of investment and unobserved, time-varying household characteristics. Conditional on X_{ht} and v_h , ε_{ht} is assumed to be uncorrelated with C_{ht} .

There are three main elements in the identification strategy. First, as pointed out in Section 1, focusing on connections with relatives outside the household, rather than officials in the household or connections with friends, reduces concerns about simultaneity between investment and connections. Accordingly, C_{ht} is a measure of having a relative outside the household in government.

Second, household fixed effects remove the confounding effects of time-invariant unobservables, such as entrepreneurship, cognitive abilities and risk preferences.

Third, a set of control variables account for time-varying factors that may affect both connections and investment. Arguably, this is a potentially vulnerable element in the identification strategy. While a number

⁴ For general treatments of land issues in Vietnam, see Kerkvliet (2006), Brandt (2006), Ravallion and van de Walle (2008b), Kirk and Nguyen (2009) and Luu et al. (2013).

⁵ See CIEM et al. (2009) for further background information and details. The sampled provinces are, by region: Red River Delta: Ha Tay; North East: Lao Cai, Phu Tho; North West: Lai Chau, Dien Bien; North Central Coast: Nghe An; South Central Coast: Quang Nam, Khanh Hoa; Central Highlands: Dak Lak, Dak Nong, Lam Dong; and Mekong River Delta: Long An.

⁶ The VARHS was also implemented in 2002 and 2006, but several key variables used in this study were only introduced in 2008. Our sample is statistically representative at the provincial but not at the national level.

of important, time-varying factors are controlled in the regressions, causal inference relies on the assumption that unobserved shocks to the households' non-political connections, to the wealth or human capital of the households' relatives, or other unobserved, time-varying factors do not affect both connections to relatives in government and investment. For example, a daughter of the household may return from a stay in the city with savings and new knowledge about investment projects, and she might marry a government official and move to his house. The influence of such events is only partly controlled for (we control for recent marriages in the household and presence of a relative who can assist with money in case of an emergency). The use of an instrumental variable, thought to be uncorrelated with unobservables, would in principle further strengthen the causal interpretation of regressions, but such a variable is not available. Nevertheless, the focus on connections with relatives, inclusion of household fixed effects and the introduction of control variables should help deal with potential endogeneity.

Also, the analyses of connections and investment are followed by analyses of the effects of connections on plausible determinants of investment, namely property rights, and access to credit and to transfers. Some of the unobservables, which may be correlated with investment, are unlikely to be correlated with property rights, credit and transfers. We find that family connections to officials positively affect these variables, which help strengthen the case for a causal link between connections and investment. For example, while the returning daughter in the example above may affect investment, by providing funds and knowledge, she is unlikely to affect the household's risk of government land expropriation or access to public loans or transfers, except through her husband, the government official.

To test the hypotheses of effects from connections to property rights, and to credit and transfers, we replace I_{it} in equation (1) with measures of property rights and access to respectively credit and transfers.

We have data on four different types of land-related investment, including investments in soil and water conservation, perennial crops, structures for aquaculture (mainly ponds) and other structures, such as farm buildings, fences and animal sheds. For each type of investment, data was collected on cash spending as well as household labor input during the past year. Household labor is valued by the average wage rate in the province for an unskilled, agricultural laborer, calculated from the wage and employment data available in the survey. The total value of investment is calculated as the sum of cash spending and the value of labor inputs in all four types of investment.

To measure personal connections to officials, respondents were asked whether any of their (i) relatives or (ii) personal friends outside the household 'hold any office or other trusted positions in the commune or higher levels of government'. At most two connections could be listed. The survey also asks whether officials are residing in the household. This is the case for about 5% of households. To avoid mixing the effect of connections to officials with the effect of being an official, and because the decision to work as an official is potentially endogenous, these households are excluded from the analyses. The main results are unchanged when households with officials are included in the estimation sample.

4. Descriptive statistics

Table 1 presents descriptive statistics on connections to officials, land-related investment and a number of other household characteristics in the initial survey year, 2008. Results are presented for four categories of households: (i) those that did not have a relative in government in either 2008 or 2012 ('never connected'); (ii) those with such a connection in both years ('always connected'); (iii) those with a connection in 2012 but not in 2008 ('gained a connection'); and (iv) those with a connection in 2008 but not in 2012 ('lost a connection'). Results for the full sample of households available in both 2008 and 2012 are also shown. The table shows that 21% of households have a relative who is an official, while only 10% have personal friends in trusted government positions.

A total of 46% of households undertook some form of land-related investment in the past year. The most common form of investment is in soil and water conservation. Given the prevalence of paddy rice farming in Vietnam, this is not surprising. The most valuable type of investment, on the other hand, is in 'structures', such as fences and farm buildings. The average value of land-related investment is 2.1 million dong, which is equivalent to about five percent of average, annual household income. Households with family connections to officials in both 2008 and 2012 invest more than households that are never connected in all categories, although the difference is only statistically significant for total investment and in two of four sub-categories. However, the well-connected also stand out when it comes to other variables. For example, they have more schooling, are members of more voluntary-membership groups and are less likely to be female-headed. As already noted, we investigate in this paper whether the correlation between connections and investment is robust when these other factors are controlled for.

Since most of the regressions reported in what follows include household fixed effects, estimation of the effects of connections relies on the subset of households that either gain or lose a relative with a public office during the period of the survey. About 25% of households belong to this category.⁷ Table 1 shows that while households that gained or lost a connection, respectively, are about equally likely to undertake any investment, households who lost a connection (i.e. who had one in 2008) had substantially higher values of investment in 2008 than households who gained a connection (i.e. did not have one in 2008). This suggests that current connection status is a determinant of investment, although the difference between the two groups is not statistically significant when only 2008 data is used. Tables presented in Section 6 explore whether this changes when data from all survey rounds is exploited.

5. Source of connections

This section investigates the drivers of intra-household changes in connections to relatives in government. Households may gain or lose a connection to a relative with a public office for two types of reasons. First, a relative may be appointed as an official, or leave such a position. Second, the household may gain a new relative with a public office through marriage, or lose one through divorce. When a household gains a connection through marriage, we can distinguish between two different cases.

- A household member, for example a daughter of the household head, may marry an official and move out of the household.
- A relative outside the household may marry an official.

In case a, it is relevant to consider that the marriage may affect investment and other outcomes in other ways than simply through the gain of a well-placed connection. For example, household labor supply may go down, and this may in turn affect investment positively or negatively. These issues are of much less concern if a relative outside the household gets married (case b). Since the typical family has many more relatives outside the household, we expect that it is more common that a connection through marriage is gained outside than inside the household. This is so even if the strength (quality) of the connection may be stronger if it is formed through the marriage of a household member.⁸ We do not have direct evidence on the sources of family

⁷ As argued in Ashenfelter et al. (1986, appendix), random measurement error tends to lead to upward bias in estimates of change rates (even when estimates of levels are unbiased), especially when the true rate of change is low. Therefore, 25% should be considered an upper bound on the true rate of change in connections status.

⁸ Although the current fertility rate in Vietnam is below two children per woman (somewhat higher in rural areas), fertility was around five in 1982 and around seven in 1972 (Source: World Development Indicators). Therefore, current household heads and their spouses are likely to have four to six siblings each and a large number of cousins.

Table 1
Descriptive statistics for initial year (means).

	Never connected	Always connected	Gained connection	Lost connection	All
<i>Connections to officials</i>					
Relative with public office	0.00	1.00	0.00	1.00	0.21
Friend with public office	0.06	0.221***	0.05	0.25***	0.10
<i>Land-related investment</i>					
Invested in land improvement	0.43	0.57***	0.55**	0.54***	0.46
Invested in soil and water cons	0.33	0.44**	0.46**	0.44***	0.37
Invested in perennial crops	0.12	0.17	0.13	0.15	0.13
Invested in aquaculture	0.06	0.13*	0.10	0.10	0.08
Invested in other structures	0.08	0.09	0.12	0.08	0.08
Total investment in land improvement	1869	3900	1767	2612	2089
Investment in soil and water cons.	595	2,033	889	586	699
Investment in perennial crops	306	460	221	365	317
Investment in aquaculture	232	662	253	663*	323
Investment in other structures	736	744	404	998	749
<i>Other variables</i>					
Household income	34,993	52,966**	47,465***	48,154*	39,023
Number of groups the hh belongs to	1.48	1.76**	1.47	1.65*	1.52
Number of weddings attended	15.59	20.73***	18.64*	18.82**	16.62
Relatives who can offer financial aid	0.65	0.74*	0.59	0.73**	0.66
Hosted wedding in last year	0.06	0.08	0.07	0.07	0.07
Household size	4.63	4.26**	4.59	4.61	4.61
Operated farm land, sqm.	8567	7150	7193	8028	8294
Share of land irrigated	0.64	0.65	0.64	0.67	0.65
Share of land with perennial crops	0.28	0.27	0.25	0.26	0.28
Age of household head	51.09	53.15	50.04	52.38	51.32
Years of schooling of household head	6.02	7.24***	6.43	6.53**	6.20
Female household head	0.20	0.11***	0.16	0.22	0.19
Share of land with LURC	0.74	0.79	0.67*	0.81**	0.75
Share of land rented	0.08	0.06	0.06	0.08	0.08
Expelled from land by state in last two years	0.03	0.09*	0.03	0.04	0.04
Has formal loan	0.35	0.36	0.31	0.38	0.36
Has informal loan	0.15	0.17	0.08***	0.16	0.15
Receives public transfers	0.42	0.42	0.40	0.37	0.41
Receives private transfers	0.34	0.45**	0.28	0.34	0.34
Number of households	1358	159	269	240	2,026

Data for 2008, for households available in both 2008 and 2012. Only households who own or operate agricultural land are included. Households with public officials are excluded. 'Never connected' means that the household did not have a relative with public office in either 2008 or 2012. 'Always connected' means that it had such a relative in both years, and so on. On the value of investment variables, three extremely high outliers are excluded (two of them have relatives with public offices). Money values are in '000 Vietnamese dong. Prices are adjusted for regional price variation, using 2008 prices in the Red River Delta as the basis. Stars indicate whether difference from 'never connected' households is statistically significant or not (standard errors clustered by commune). *Significant at 10%; **significant at 5%; ***significant at 1%.

connections. However, we do have data on whether households hosted a wedding in the last year, and on how many weddings they attended in other households.

Table 2 explores whether these two variables affect the probability that a household gained a connection to a relative, who is an official, between two survey rounds. The table presents conditional logit regressions with household fixed effects. The dependent variable is a dummy for gaining a connection since the previous round of the survey. The main explanatory variables are, first, a dummy for hosting a wedding in the household, and second, two alternative measures of the number of weddings attended outside the household. The frequency of wedding attendance is much higher than that which is typical in Western countries. Only about two percent of households did not attend at least one wedding in the past 12 months before the survey. The median of the variable is 15 and the mean is 17. We include either a dummy for attending at least 15 weddings, or $\ln(\text{Number of weddings attended} + 1)$. The logarithmic specification is attractive because the distribution of the variable is quite strongly skewed (30 households report attending 100 weddings or more). In addition, models 3 and 4 include a set of basic household characteristics that may conceivably be correlated with both wedding attendance and connections status. All regressions include year fixed effects.

The results in Table 2 show a strong and significant effect of the number of weddings attended in other households on the probability of gaining a connection. On the other hand, there is no significant effect of hosting a wedding or of any of the controls. A causal effect of weddings on connections cannot be inferred with certainty. First, reverse

causality may be important, in the sense that well-connected people get invited to more weddings. Second, omitted variables could play a role. For example, unobserved shocks to the wealth or social status of the household's relatives may affect both the number of weddings and the number of family connections with a political office. Nevertheless, the results are consistent with a significant share of connections being formed through marriages. Moreover, the fact that the indicator for weddings in own household is insignificant suggests that marriages in other households are more important. As discussed, this lessens worries about endogeneity in regressions for investment and other outcomes.

To investigate the rate of turnover among local officials, we conducted an add-on survey in 12 communes, randomly selected among the communes in the VARHS survey. One commune was sampled in each of the 12 provinces in the survey. Information was collected on the number of officials in each commune, the duration of employment of each official, and the number of officials who left a position in the commune during the last two years. Results show that current officials have on average been employed by the commune for 8.5 years. On average, communes have 17 officials and two officials left their positions in the last two years. This suggests a turnover rate of about six percent per year. Of the officials who left their positions about half retired. Two-thirds of the rest moved to other positions as officials. These results show that there is some turnover among officials. This contributes to generating within-household variation in connections to relatives in government. On the other hand, officials' typical duration of tenure is long, which implies that connections are potentially effective in terms of protecting long-term investments in land improvement.

Table 2
Marriages and family connections to public officials.

	Dependent variable: Household gained connection with relative, who is public official, in last two years			
	(1)	(2)	(3)	(4)
Attended at least 15 weddings	0.488 ^a (2.49)		0.520 ^a (2.47)	
ln(Number of weddings attended + 1)		0.527 ^b (3.83)		0.510 ^b (3.55)
Hosted wedding in own hh	0.031 (0.13)	-0.071 (0.27)	-0.123 (0.48)	-0.207 (0.73)
Age of head			0.244 (1.20)	0.239 (1.18)
Age of head, squared			-0.002 (1.16)	-0.002 (1.16)
Years of general education of head			-0.014 (0.28)	-0.018 (0.34)
Female head			-0.446 (0.52)	-0.347 (0.40)
Number of groups the hh belongs to			0.118 (1.20)	0.097 (0.98)
Hh members aged 15–64, log			0.025 (0.07)	-0.049 (0.14)
Operated farm land, log			0.008 (0.04)	-0.021 (0.11)
Year fixed effects	Yes	Yes	Yes	Yes
Observations	776	776	692	692
Households	388	388	346	346

Note: Household fixed effects (conditional) logit regressions. Absolute value of z-statistics in brackets. Households with officials are excluded. Note that only households with variation on the dependent variable are included.

^a Significant at 5%.

^b Significant at 1%.

6. Connections and investment

We now turn to estimating the effect of having relatives in government on investment. Table 3 presents estimates of equation (1). To implement the familiar log-linear version of equation (1) without dropping observations with zero-values on the dependent variables, we use $\ln(I + 1)$ as our dependent variable.⁹

A number of control variables are included. Models 1 and 2 include a few arguably exogenous characteristics of the household head, namely age, gender and schooling. For the age variable, we add a squared term to take account of possible non-monotonous effects. Models 3 and 4 include a larger set of controls. First, Table 2 shows that connections are related to wedding attendance. Wedding attendance may proxy for the quality of a household's informal networks more broadly than simply connections to officials. The strength of informal networks may affect investment through effects on access to credit and insurance. Therefore, we include $\ln(\text{Number of weddings attended} + 1)$. As discussed above, weddings involving household members may affect investment directly, for example through changes in household labor supply. Therefore, we include both a dummy for hosting a wedding in the household and the number of working-age household members (in logs).

In general, we need to distinguish the effect of connections to officials from the effect of other types of social capital. We therefore also include a variable measuring the number of formal groups the household belongs to. In Vietnam, the most important of these are the so-called 'mass organizations', including the Farmers' Union, Women's Union, Youth Union, and Veterans' Union. While these organizations have close links with the state, they do enjoy some degree of independence from local government and membership is voluntary. Group membership has been used as measure of social

capital in a number of studies, for example Narayan and Pritchett (1999) and La Ferrara (2002). Also, the effect of connections to public officials should be distinguished from connections to influential or wealthy individuals in general. While government jobs are a key source of prosperity and status, such success can in present-day Vietnam also be achieved through a successful career in the private sector. The survey asks respondents whether they have 'someone outside the household they can turn to for money in case of an emergency'. We use an indicator for having at least one relative who can offer monetary assistance as a measure of family connections to resourceful individuals in general.

We expect the level of land-related investment to depend on the amount of land operated by the household. At the same time, households with large landholdings may find it easier to forge connections with officials. Therefore, we control for the amount of agricultural land operated by the household, in logs. Moreover, year fixed effects are included to take account of changes over time in the economic environment (not shown). Random effects models include province indicators. Finally we reiterate the importance of household fixed effects. A number of difficult-to-observe household characteristics, such as entrepreneurial spirit, cognitive abilities and risk preferences are likely to affect both investment decisions and the probability that relatives are officials and therefore may be a source of endogeneity bias. Household fixed effects account for these factors, to the extent that they are time-invariant. Fixed effects are included in models 2 and 4, while models 1 and 3 use random effects. Standard errors are clustered by commune, the primary sampling unit.

All models show a strong and statistically significant, positive effect of family ties with a public official on land-related investment. The effect is somewhat smaller in the fixed effects than in the random effects models, as would be predicted if unobserved, fixed household characteristics affect both investment and connections in the same direction. Most control variables are insignificant in the various specifications. The main exceptions are farm size and household labor resources, which have the expected positive effects, although household labor resources is only significant in model 4.

⁹ Following Jacoby and Mansuri (2008), we also estimated models with $\ln(I + k) - \ln(k)$ as our dependent variable, where k is a constant. As in Jacoby and Mansuri, we set k to 0.1 times the lowest, strictly positive value of investment observed. Parameter estimates are somewhat higher in this specification but t-statistics are largely unaffected.

Table 3
Investment and connections to officials.

	Dependent variable: ln(total investment + 1)			
	(1)	(2)	(3)	(4)
Relative with public office	0.588 ^a (4.09)	0.461 ^b (2.35)	0.537 ^a (3.73)	0.477 ^b (2.23)
Age of head	0.056 ^a (2.59)	−0.013 (0.19)	−0.011 (0.45)	−0.06 (0.86)
Age of head, squared	−0.001 ^a (3.62)	0.000 (0.01)	0.000 (0.15)	0.000 (0.77)
Years of general education of head	−0.003 (0.20)	0.03 (0.81)	0.030 ^c (1.87)	0.045 (1.12)
Female head	−0.494 ^a (3.97)	0.083 (0.22)	−0.034 (0.28)	0.287 (0.71)
Ln(Number of weddings attended + 1)			0.125 ^b (2.09)	0.024 (0.30)
Hosted wedding			−0.069 (0.74)	−0.191 (1.58)
Number of groups the hh belongs to			−0.016 (0.14)	−0.093 (0.62)
Relatives who can offer financial aid			0.083 (0.48)	0.168 (0.76)
Hh members aged 15–64, log			0.052 (0.46)	0.604 ^a (2.89)
Operated farm land, log			0.752 ^a (12.75)	0.373 ^b (2.55)
Year fixed effects	Yes	Yes	Yes	Yes
Random of fixed effects (RE or FE)?	RE	FE	RE	FE
Observations	5939	5939	5422	5422
Number of households	2187	2187	2057	2057

Note: Linear regressions. Absolute value of t-statistics in brackets. Households with officials are excluded. Random effects models include province indicators. Standard errors clustered at commune level.

^a Significant at 1%.

^b Significant at 5%.

^c Significant at 10%.

The finding of a positive effect of relatives with public office on land-related investment is our main result. In Table 4, the robustness and interpretation of this result are explored. The dependent variable is total investment. Fixed household and year effects, and the full set of controls used in Table 3, are included throughout, so the regressions in Table 4 are all permutations of regression 4 in Table 3.

First, recall that Table 2 showed a significant effect of wedding attendance on the probability of gaining a connection with a relative who is an official. To explore whether connections gained in this way are driving the effect of connections on investment, the investment model is estimated separately for households who attended fewer weddings than the median household (15) and for those who attended more. The more weddings a household attended, the higher is the likelihood that new connections are gained through weddings. Therefore, if

connections obtained through weddings are driving investment, the effect of connections on investment is expected to be stronger among households who went to many weddings. Models 1 and 2 show that this is indeed the case. The effect of connections on investment is only significant in the sub-sample with high wedding attendance and the point estimate is also much higher in this group. This supports that connections gained through weddings are at least partly driving the relationship between relatives with public office and investment.

Second, the investment variable is highly skewed. While the logarithmic transformation goes a long way towards reducing the influence of high outliers, it is nevertheless prudent to check the effect of excluding extremely high observations from the estimation sample. Regression 3 excludes 26 observations more than three standard deviations above the mean on the investment measure. Again, the

Table 4
Investment and connections to officials, robustness tests.

	Dependent variable:					
	ln(total investment + 1)				Any investment = 1	
	FE-linear	FE-linear	FE-linear	FE-linear	FE-tobit	FE-logit
Relative with public office	0.274 (0.81)	0.708 ^a (1.99)	0.426 ^a (2.08)	0.883 ^a (2.37)	0.455 ^b (1.80)	0.242 ^b (1.70)
Control variables as in Table 2	Yes	Yes	Yes	Yes	Yes	Yes
Permutation relative to regression 4 in Table 2	Only hh who attended less than 15 weddings	Only hh who attended at least 15 weddings	Outliers removed	Wage earners removed	Tobit model	Logit for any investment
Observations	2628	2794	5396	2106	5422	3256
Number of households	1476	1501	2055	1187	2057	1130

Note: Absolute value of z-statistics in brackets. Standard errors clustered by commune, except in regression 5. Households with officials are excluded. In the logit model, households with no variation on the dependent variable are excluded, which explains the low number of observations in regression 6. Regression 5 is a fixed effects tobit model, based on the estimator developed in Honoré, 1992 (least squares method used).

^a Significant at 5%.

^b Significant at 10%.

estimated coefficient on relatives with public office remains positive and significant.

A third concern is the effect of off-farm activities, in particular wage labor. Connections may often be generated through work relations, either because household members work for the government or because they are employed privately by government officials. At the same time, wage labor may induce investment, for example because it increases the opportunity cost of household labor and therefore increases the incentive for investing in labor saving technologies. Again, the reason for not including measures of wage labor in the preferred specification is potential endogeneity. Regression 4 in Table 3 takes account of this possibility by including only households who reported no labor market participation in any survey year in the estimation sample. The results show that the coefficient on connections to officials remains positive and significant. In fact, the point estimate is higher in this model than in the preferred specification. The effect of connections is also robust to including an indicator for earning income from wages (results not shown).

Fourth, the investment distribution clearly has a mass-point at zero. It may therefore be argued that a tobit model is the most preferable estimator. Model 5 presents results of using the panel tobit estimator due to Honoré (1992). The least squares version of the model is used. Model 6 is a conditional logit model for undertaking any investment. In both regressions, the effect of relatives in government remains positive and significant.

In sum, the above results support the thesis that family ties to public officials lead to increased levels of land-related investment. In what follows, we investigate which channels of causation are likely to bring about these results.

7. Land property rights

A key channel through which connections to officials may affect investment is property rights. Table 5 presents regressions for two different measures of land rights. First, we consider the share of a household's farm land which is held with a LURC. LURCs endow holders with a number of rights, and local officials have considerable discretion in the process of issuing LURCs. Second, we consider an indicator for having been expelled from at least one plot of land by the state during the past two years. This category does not include all transfers of land to the state. Only cases where households explicitly say that they were 'expelled' are included. In all three survey waves, the state was responsible for at least 93% of the cases where households were expelled from land. Hence, 'land grabs' by private agents are so far rare and government land expropriation is the main source of tenure insecurity.

The control variables in Table 5 are generally the same as in Table 3. However, in the regression for share of land with LURCs, we include the log of farm land owned, rather than operated. Households do not hold LURCs for land they rent.¹⁰ In the regressions for having lost land to the state, we include the amount of land owned including the land which was expropriated. For example, if concerns about equality of the land ownership distribution play a role in state land expropriation decisions, then initial land holdings are the relevant factor to consider. We present results both with a limited set of exogenous characteristics of the household head, and with a larger set of controls, including land holdings.

For the share of land held with a LURC, linear regressions are used. Results are similar if we use logit models for having any land with a LURC or for having LURCs for more than half the area owned. In the models for being expelled by the state, we use random effects and conditional (fixed effect) logit models. Results are similar if linear models for the amount of land expropriated are used instead.

The results show that family ties to officials have a positive but mostly insignificant effect on the share of land held with a LURC. This

indicates that even if officials demand bribes for issuing certificates (Anderson and Davidsen, 2011, World Bank, 2009), there is no strong tendency to discriminate in favor of family members.

The regressions for being expelled by the state show a stronger effect of connections. In the random effects model the effect of having a relative with public office is negative but not significant. In the fixed effect models a strong negative effect of family connections to officials appears. The coefficient is statistically significant at the five percent level in model 7 and at the 10 percent level in model 8. Having a relative with a public office is associated with a sizeable drop in the risk of having land expropriated. In sum, the findings indicate that while formal land rights are not strongly affected by personal connections to public officials, de facto property rights are strengthened by having such ties.

As argued above, this observation supports the view that the correlation between connections and investment reflects a causal relation. For example, an unobserved shock to the wealth of household *i*'s relatives might affect both investment in household *i* and the probability that relatives are government officials. However, such a shock is arguably unlikely to affect the property rights of household *i*, except through the effect of the wealth shock on the chance of having a connection in government. If connections affect land property rights, it is plausible that they also affect investment.

8. Credit

Another possible explanation for the investment differential between well-connected households and others is variation in access to credit. Local officials play an important role in the allocation of loans from state-run lending institutions. Also, connections to officials may improve access to informal loans, either because farmers can borrow money directly from officials, or because officials facilitate connections to lenders or act as guarantors for loans. If it is well known in the local community who is connected with whom, and connections with officials improve a household's earnings potential, then having a connection should improve credit-worthiness.

Table 1 reveals that 36% of households had an outstanding formal loan in 2008 and 15% had an informal loan. Table 6 presents regressions for currently having a loan with, respectively, formal and informal lenders. The set of control variables is similar to the set used in Table 3. Owned farm land is used instead of operated land. Only owned land can be used as collateral. Again, we present results both with a limited set of exogenous characteristics of the household head, and with a larger set of controls.

Random and fixed effects logit models for having a loan are presented. Results are similar if linear models for the amount borrowed are used (not shown). Focusing first on formal loans, the random effects models show no effect of connections. In the fixed effects model, the effect of relatives with a public office is positive but not significant. In the models for having an informal loan, on the other hand, relatives with public offices have a much stronger and statistically significant effect in random as well as in fixed effects models.¹¹ These results suggest that access to credit, especially from informal lenders, is improved by connections with government officials. This may contribute to explaining why well-connected households invest more in their land than other households.

Another interesting result emerging from Table 6 is the strong, positive effect of group membership on use of credit. The likely explanation is that mass organizations play an important role in screening potential borrowers. To obtain approval from commune authorities to borrow from VSPB or VBARD, a letter of recommendation or similar is often required from the Women's Union, Farmers' Union or another mass organizations.

¹⁰ We refer to land to which the household has user rights as 'owned land', even if the land is strictly speaking still owned by People of Vietnam and managed by the state.

¹¹ The result that networks are important for access to informal credit mirrors the findings in McMillan and Woodruff (1999) who studied the influence of inter-firm networks on Vietnamese firms' access to credit.

Table 5
Connections and property rights.

	Dependent variable:							
	Share of land with LURC				Expelled from land by the state in last two years			
	RE	FE	RE	FE	RE-LOGIT	FE-LOGIT	RE-LOGIT	FE-LOGIT
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Relative with public office	0.021 ^a (1.77)	0.008 (0.69)	0.012 (0.98)	0.014 (1.18)	-0.054 (0.25)	-0.633 ^b (2.30)	-0.195 (0.86)	-0.575 ^a (1.80)
Age of head	0.005 (1.55)	-0.007 (1.34)	0.001 (0.33)	-0.008 (1.43)	0.044 (0.86)	-0.391 (1.34)	-0.047 (0.84)	-0.536 ^a (1.70)
Age of head, squared	0.000 (0.20)	0.0001 ^a (1.70)	0.000 (0.81)	0.0001 ^a (1.79)	0.000 (0.50)	0.003 (1.26)	0.001 (1.20)	0.004 (1.64)
Years of general education of head	0.014 ^c (5.36)	0.002 (0.67)	0.008 ^c (3.81)	0.003 (0.90)	0.114 ^c (3.87)	0.09 (1.35)	0.063 ^a (1.86)	0.098 (1.38)
Female head	0.042 ^b (2.16)	0.009 (0.35)	0.007 (0.36)	0.001 (0.05)	0.521 ^b (2.28)	0.882 (1.23)	0.556 ^b (2.24)	0.527 (0.62)
Number of groups the hh belongs to			-0.001 (0.18)	-0.01 (1.44)			0.044 (0.47)	-0.077 (0.46)
Number of weddings attended			0.000 (0.05)	-0.011 (1.16)			-0.128 (0.99)	-0.106 (0.52)
Relatives who can offer financial aid			-0.003 (0.34)	-0.013 (1.11)			0.003 (0.02)	-0.129 (0.45)
Hosted wedding			0.013 (0.92)	0.011 (0.68)			0.137 (0.49)	-0.011 (0.03)
Hh members aged 15–64, log			0.035 ^b (2.39)	0.015 (0.76)			0.449 ^a (1.94)	0.157 (0.36)
Owned farm land, log			-0.023 ^c (2.60)	-0.038 ^a (1.89)				
Initial farm land owned, log							0.110 (1.03)	1.078 ^c (2.58)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	5885	5885	5549	5549	5936	481	5561	448
Number of household	2177	2177	2080	2080	2186	167	2083	156

Robust z-statistics in brackets. Standard errors clustered by commune, except in regressions 4 and 6. Households with officials are excluded. Province dummies are included in the random effects models. In the fixed effects (conditional) logit models, households with no variation on the dependent variable are excluded. This explains the low number of observations in regressions 6 and 8.

^a Significant at 10%.

^b Significant at 5%.

^c Significant at 1%.

9. Transfers

One reason why connections with relatives are not important for access to formal credit may be that relatives in many cases help each other through gifts, or transfers, rather than loans. Local government officials control access to a number of public transfers and are better able to afford private transfers than others. Potentially, government officials help their relatives finance investment through transfers. Also, transfers may function as a post-hoc insurance device, in case an investment project fails. Fafchamps and Lund (2003) show that transfers between relatives play a key role in mitigating the effects of shocks in the northern Philippines. The descriptive statistics in Table 1 show that in 2008, 41% of households report receiving at least one public transfer in the last year, while 34% report at least one private transfer. 'Always connected' households are equally likely to receive public transfers as 'never connected' households, but 11 percentage points more likely to obtain private transfers.

The regressions in Table 7 analyse the determinants of receiving public and private transfers in more depth. Again, control variables are similar to those used in Table 3 and we present results both with a limited set of exogenous characteristics of the household head, and with a larger set of controls. The first four regressions explore public transfers and the last four consider private transfers. The results show that family connections with officials have a positive and statistically significant effect on the probability of receiving both kinds of transfers. This is true in random as well as in fixed effect models. Linear regressions for the amount of transfer received yield similar results (not shown).

Again, this may contribute to explaining the positive effect of relatives in public office on investment.

Results for the control variables are also interesting. All variables measuring social capital have significant, positive effects on receipt of private transfers in the fixed effects model. Membership of formal groups also increases the likelihood of receiving public transfers. Again this probably reflects the important role of mass organizations in terms of screening applicants for public benefits. The fixed effects regressions show that the presence of relatives, who can offer financial assistance in case of an emergency, increases the likelihood of receiving public transfers (significant at the 10 percent level). Private transfers mostly benefit households with few working-age members. The random effects regressions show that private as well as public transfers disproportionately go to households with younger household heads, perhaps reflecting the fact that the presence of young children triggers transfers. The random effects models also show that education of the household head has a negative effect on receipt of both public and private transfers.

10. Conclusions

In this study we focused on the political economy of agricultural investment in rural communities in Vietnam. The core findings suggest that family ties to local government officials lead households to increase their levels of land-related investment, for example in perennial crops and in soil and water conservation. We also found that family connections with officials strengthen de facto land property rights and improve

Table 6
Connections and use of credit.

	Dependent variable:							
	Household has formal loan				Household has informal loan			
	RE-LOGIT	FE-LOGIT	RE-LOGIT	FE-LOGIT	RE-LOGIT	FE-LOGIT	RE-LOGIT	FE-LOGIT
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Relative with public office	0.082 (0.86)	0.183 (1.52)	−0.002 (0.02)	0.114 (0.89)	0.247 ^a (2.46)	0.457 ^b (3.41)	0.209 ^a (2.03)	0.483 ^b (3.45)
Age of head	0.102 ^b (4.23)	0.039 (0.74)	0.002 (0.10)	−0.013 (0.25)	0.01 (0.43)	0.041 (0.61)	−0.02 (0.81)	0.026 (0.39)
Age of head, squared	−0.001 ^b (5.29)	0.000 (0.79)	0.000 (0.77)	0.000 (0.19)	0.000 (1.50)	−0.001 (0.90)	0.000 (0.07)	0.000 (0.65)
Years of general education of head	0.015 (1.11)	−0.038 (1.46)	0.013 (0.93)	−0.031 (1.16)	−0.046 ^b (3.51)	−0.011 (0.31)	−0.057 ^b (4.12)	−0.022 (0.58)
Female head	−0.278 ^a (2.41)	−0.277 (0.75)	0.096 (0.81)	−0.068 (0.18)	0.092 (0.88)	−0.041 (0.10)	0.091 (0.81)	−0.092 (0.23)
Number of groups the hh belongs to			0.183 ^b (4.50)	0.057 (0.97)			0.125 ^b (2.86)	0.124 ^a (1.98)
Ln(Number of weddings attended + 1)			0.170 ^b (3.16)	0.146 ^c (1.92)			0.005 (0.08)	0.027 (0.33)
Relatives who can offer financial aid			−0.061 (0.74)	0.039 (0.40)			0.380 ^b (3.98)	0.222 ^c (1.69)
Hosted wedding			−0.011 (0.08)	0.014 (0.09)			0.354 ^b (2.62)	0.540 ^b (3.50)
Hh members aged 15–64, log			0.594 ^b (5.65)	0.511 ^b (3.00)			−0.087 (0.83)	−0.373 ^c (1.91)
Owned farm land, log			0.208 ^b (4.88)	0.202 ^c (1.92)			−0.059 (1.38)	−0.044 (0.28)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	5886	2666	5509	2596	5886	1959	5509	1866
Number of household	2185	925	2,080	903	2185	678	2,080	651

Robust z-statistics in brackets. Standard errors clustered by commune in FE-logits. Households with officials are excluded. Province dummies are included in the random effects models. In the fixed effects (conditional) logit models, households with no variation on the dependent variable are excluded. This explains the low number of observations in these regressions.

^a Significant at 5%.

^b Significant at 1%.

^c Significant at 10%.

Table 7
Connections and monetary transfers.

	Dependent variable:							
	Household receives public transfers				Household receives private transfers			
	RE-LOGIT	FE-LOGIT	RE-LOGIT	FE-LOGIT	RE-LOGIT	FE-LOGIT	RE-LOGIT	FE-LOGIT
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Relative with public office	0.253 ^a (2.47)	0.408 ^b (2.93)	0.225 ^a (2.13)	0.361 ^a (2.53)	0.345 ^b (4.73)	0.421 ^b (3.54)	0.263 ^b (3.32)	0.307 ^a (2.41)
Age of head	−0.117 ^b (4.48)	−0.098 (1.40)	−0.114 ^b (4.22)	−0.077 (1.07)	−0.011 (0.69)	0.035 (0.69)	−0.045 ^b (2.66)	0.000 (0.00)
Age of head, squared	0.001 ^b (6.21)	0.001 (1.57)	0.001 ^b (5.75)	0.001 (1.16)	0.0003 ^a (2.40)	0.000 (0.84)	0.001 ^b (3.81)	0.000 (0.07)
Years of general education of head	−0.067 ^b (4.52)	−0.021 (0.76)	−0.065 ^b (4.32)	−0.027 (0.95)	−0.011 (1.22)	−0.051 ^a (2.09)	−0.023 ^a (2.27)	−0.040 (1.46)
Female head	0.246 ^a (2.03)	0.442 (1.26)	0.264 ^a (2.08)	0.438 (1.22)	0.232 ^b (3.22)	0.085 (0.33)	0.03 (0.37)	0.175 (0.53)
Number of groups the hh belongs to			0.232 ^b (5.24)	0.213 ^b (3.48)			0.043 (1.29)	0.128 ^a (2.56)
Ln(Number of weddings attended + 1)			−0.197 ^b (3.44)	−0.021 (0.25)			0.164 ^b (3.75)	0.234 ^b (3.04)
Relatives who can offer financial aid			0.103 (1.18)	0.217 ^c (1.89)			0.258 ^b (3.78)	0.211 ^a (2.15)
Hosted wedding			0.125 (0.89)	0.116 (0.67)			2.471 ^b (16.08)	2.343 ^b (10.89)
Hh members aged 15–64, log			0.088 (0.79)	−0.100 (0.49)			−0.900 ^b (11.69)	−1.421 ^b (7.99)
Owned farm land, log			−0.062 (1.32)	−0.237 ^c (1.90)			−0.035 (1.13)	−0.003 (0.02)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	5935	2485	5625	2339	5935	4018	5625	3771
Number of household	2186	854	2140	810	2186	1389	2140	1360

Robust z-statistics in brackets. Standard errors clustered by commune in FE-logit regressions. Households with officials are excluded. Province dummies are included in the random effects models. In the fixed effects (conditional) logit models, households with no variation on the dependent variable are excluded. This explains the low number of observations in these regressions.

^a Significant at 5%.

^b Significant at 1%.

^c Significant at 10%.

access to informal credit and to public and private transfers. The latter findings contribute to explaining the effect of connections on investment and strengthen the interpretation of the correlation between connections and investment as causal.

Our findings also indicate that officials have a preference for using informal rather than formal means of redistributing resources to relatives. The most obvious explanation is that officials are less likely to be held accountable by their principals for informal than for formal transactions. The main results hold in models with household fixed effects, so they are not caused by unobserved, time-invariant household characteristics which drive both investment decisions and the quality of social networks.

These results underline the economic importance of informal connections, particularly in environments where property rights institutions and markets for credit and insurance are not fully developed. They also point to the possibility that faster economic development would be promoted if households without political or bureaucratic connections could obtain equally strong property rights and access to finance and insurance as well-connected households. This would help increase agricultural investment and in turn stimulate rural economic growth.

Future research should aim at advancing our understanding of the motivations behind nepotistic behavior of local government officials. As discussed in Section 1, such behavior may either be driven by a 'taste for discrimination' or by the need to solve an agency problem. For two reasons, we believe that the effects of family ties to public officials identified here are at least partly based on a 'taste for discrimination' among officials. First, it is difficult to explain the effect of connections on land expropriation as a response to an agency problem (there is no principal-agent relation between the government and the land holder). Second, the apparent preference of officials for using informal over formal means of transferring benefits to relatives is consistent with the view that officials prefer to hide these transfers, which in turn indicates that they are not motivated by benevolent concerns. To the extent that nepotism is indeed driven by a taste for discrimination, measures to increase the accountability of local governments in Vietnam are called for. Stronger accountability would increase the probability that officials with strong, nepotistic preferences are replaced and therefore also force down officials' (derived) preference for discrimination.

The literature on land reform in Vietnam has tended to converge on a largely positive assessment of the effects of reform and the role of local government in implementing it. We do not dispute these findings. At the same time, our results do indicate that elite capture and nepotism play important roles in the present day political economy of land relations in Vietnam. Is it possible to reconcile our findings with, for example, Ravallion and van de Walle's conclusion that the process of decollectivization was largely unaffected by corruption (Ravallion and van de Walle, 2004)? One way is to view the period of rapid and radical reform in the late 1980s and early 1990s as an exceptional epoch, where the zeal of local officials and monitoring by the central government were unusually intense. Arguably, our data were collected in more 'normal' times.

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