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Are free loans of land really free? An exploratory analysis
of risk-coping motives in land arrangements in the
Northeast of Thailand

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Abstract

This paper contributes to an emerging literature on the relationship between free exchange of land use rights and risk-coping motives in developing countries. We argue that in-depth empirical analysis of the nature of land arrangements is crucial to understand risk-coping motives in land tenure. Using mixed quantitative and qualitative data collected in Thailand, the paper proposes an innovative framework which looks at transfers of use rights in a continuum from pure market to free exchange. Land transfers are categorized along three dimensions: the nature of the relationship between the parties involved, the nature of the payment made, and how explicit the payment is in the contractual terms. The economic motivations in each of the consequent categories of land arrangement are then analyzed with a multinomial probit. Our main results suggest that while free loans of land are allegedly common practice in Thailand, only a small number of those transfers are really free. Most appear to be a ‘disguised form of rental contract’ set by households who rely heavily on their risk-sharing network for risk-coping, and hold property rights vulnerable to family claims despite the presence of formal titles. Our preliminary results also confirm what the literature has previously shown: when confronted with local social norms and the economic rationales created by multimarket failures, a sound formal property rights system proves non-sufficient to establish de facto formal property rights.

Keywords : Land Market, Vulnerability, Poverty, Income Shocks, Subsistence Agriculture.

Jel code: O12, O13, O17; O53

1 INTRODUCTION

Free loans of land made by private landholders is allegedly common practice in many developing countries, but is one of the least studied land arrangement in the development economics and land tenure literatures. Two reasons mainly explain this relative lack of research: the first is scant data on non-market land transactions in general, and especially so for free land loans. The second reason is that the traditional quantitative methodologies used in economics have had to cope with a vague and imprecise definition of what ‘free loans of land’ really entails in developing countries (Colin, 2008; Berry, 1994). The anthropological literature teaches us that an exchange in traditional economies can follow a set of complex rules that are not immediately visible to the external observer.

The land tenure literature applied to developing countries has either ignored free loans of land in their empirical analysis of the transfer of land use rights (see the land contract literature in Newberry and Stiglitz, 1979; Otsuka et al., 1992; Bezabih, 2009)¹; or considered it as a specific form of intra-family arrangement. In this last and emerging literature, the analysis of free land loans tends to be disconnected from sharecropping or fixed rent contract (Delpierre et al., 2012). Drawing on the main conclusions from these two literatures, we argue that free loans must be understood as just another form of land use rights contract, but with the singularity that repayment for use rights is much more complex to grab empirically. Our framework therefore acknowledges that households pick from a variety of contractual forms which involve different combinations of market and reciprocal motives.

In this paper, we combine qualitative and quantitative data on the transfers of farm land use rights settled by Thai permanent rural-urban migrants while being away. We propose a framework to categorize land transfers along three dimensions: the nature of the pre-existing relationship between the parties involved, the nature of the payment or compensation made, and the more or less explicit nature of this compensation. This framework allows a precise categorization of land arrangements, the economic rationals of which are then analyzed with a multinomial probit.

We find that despite the large number of transfers which are accounted for as “free loans” by Thai respondents, only a small portion of these are really free. Most ‘free loans’ are made against some form of repayment, and in some cases the nature of the repayment does not differ at all from what is observed in sharecropping arrangements, except for the fact that respondents officially refer to it as “free loans”. We label this last type of transfer ‘disguised rental’². Disguised rental mostly takes place between members of the risk sharing network (the institution of ‘extended relatives’ or *Yaadt Phi Nong* in Thai language). The econometric analysis also reveals that households offering their land as disguised rentals are the most dependent on their risk-sharing network for

¹this is what most of the traditional literature on sharecropping has done, in comparing sharecropping contracts to fixed rent and ignoring the presence of free loans of land as an alternative contract to transfer of land use rights

²in reference to the notion of ‘disguised sale’ used for transfers which are sales disguised as gifts (Colin and Ayouz, 2006).

risk-coping; and hold formal land title which are also vulnerable to claims from this risk-sharing network. Finally, if ‘disguised rentals’ had not been found to be a distinct category, risk-coping motives would not have appeared significant in the transfer of land use rights.

Section 2 introduces the paper’s framework to characterize land exchange. Section 3 presents the context of land rights in Thailand and survey methodology. Section 4 categorizes the transfers of use rights observed in the data. Section 5 gives the results regarding the main motivations driving the choice of land transfers. Finally, the paper discusses the main results of this investigation and concludes.

2 A methodology for the classification of land transfers

Attempts to provide a continuous - rather than binary as found in the standard theory of property rights³ - typology of land allocation systems have been found in property rights approaches including Berry (1997), Schlager and Ostrom (1992), Ostrom (2001) or Colin (2008). While keeping their emphasis on a richer classification of land allocation systems, our own framework focuses on the analysis of the transactions themselves (rather than on property rights *per se*⁴). Its main purpose is to provide a general methodology allowing observers to draw typologies of land arrangements that match local specific conditions and the diversity of forms in land arrangements.

The literature has identified three main features seen as ‘pivot’ in the identification of market as opposed to non-market exchange (‘rental’ compared to ‘loan’). Land markets are supposed to be impersonal (1), monetized (2), and set at explicit market prices (3). On the other hand, non-market transfers or gifts are supposed to be personal (1), unmonetized (2), and based on implicit compensation systems (3). However, empirical and field studies suggest that these three features (how impersonal, monetized and explicitly compensated is the exchange) are rarely found in the two and perfectly symmetrical combinations that would indicate unquestionably market or non-market transfers (Chimhowu and Woodhouse, 2006; Sjaastad, 2003). Instead, land arrangements are found to be hybrid forms in a wide panel of combinations of the three features (how impersonal (1), monetized (2) and explicitly compensated (3) is the exchange).

Our methodology therefore proposes to begin with a thorough analysis of the three features aforementioned, so as to draw a clear picture of their potential combinations in land arrangements. A transfer may for instance be personal, unmonetized, but be set at an explicit market price⁵. Moreover, each of those features is here seen as evolving in a continuum, and is therefore characterized in a scale rather than in a discrete evaluation of its two polar states⁶. Then, the

³For further reference see (Demsetz, 1967; De Soto, 2000; Feder and Nishio, 1998).

⁴We do not assume in this paper that there is a deterministic relationship between the nature of property rights and land allocation.

⁵Or be impersonal but monetized with implicit compensation systems; or any other combination.

⁶There are indeed degrees in the evaluation from purely impersonal to purely personal, or from purely monetized

so-defined combinations of our three continuous features are compared with the official categories under which economic actors refer to their transactions ('rental' or 'loan'). Discrepancies between the 'official' categories and the real nature of the arrangements may indeed reveal social norms, legitimacy issues, or particular institutional features such as the prohibition (or obligation) of specific transactions. In the end, observers should be able to infer regularities in the various forms of arrangements recorded in their data and to draw a typology that is both representative of local specificities and coherent with the diversity of land arrangements.

For the purpose of data analysis, we now go through a more definite description of the three features used in our methodology.

- The pre-existing relationship between the parties involved (1): A relationship is considered perfectly impersonal if the two parties have never met each other in the past nor will ever interact in the future; and perfectly personal if the two parties have known each other for a long time and can hardly avoid repeated interaction in the future. A perfect example of personal exchange takes place between parent and child. The nature of the relationship is then evolving between those two polar cases. An in-depth analysis of the nature of local rights, following for instance the methodology by Colin (2008) is here compulsory to assess the real nature of the relationship between the parties. In the literature, personal or repeated relationships between parties have been stated to generate the establishment of non-market institutions (such as contracts), and they question the nature of motivations in exchange, specifically if social norms or altruism may be involved (in parent-child relationships for instance). On the other hand, the price mechanism involved in markets allows the establishment of impersonal relationships.
- The involvement of money (2): A monetary transaction of land involves a repayment in cash, while a non-monetary transaction of land involves no repayment or in-kind repayment. In the case of in-kind payment, the liquidity of the good involved is used to assess the monetary nature of the transfer. Although economic theory has not systematically associated markets with the use of money⁷, empirical evidence suggests that marketization and monetization in land transfers go hand in hand in the process of development (Chimhowu and Woodhouse, 2006; Colin and Woodhouse, 2010).
- The explicit nature of the compensation (3): A compensation is said to be explicit if it involves a compulsory payment at a price that has been explicitly (orally or by writing) negotiated and agreed on by the two parties. An implicit compensation has never been explicitly negotiated or agreed on by the two parties, and is repaid on a 'voluntary' base (it is therefore not binding). The explicit nature of the compensation helps to differentiate

(liquid) to purely unmonetized (illiquid) arrangements, and so on.

⁷barter is indeed considered as market.

between gift/countergift and market compensation systems. Markets indeed need visible prices to clear, while on the other hand, gift giving is “*reciprocated without certainty*” (Offer, 1997)⁸.

Market and non-market exchange have traditionally been related to specific types of motivations: self-interest or welfare maximization in sale or rental; reciprocity in gift or loan. On the other hand, the motivations involved in ‘grey zone’ transfers are not as easily classified *ex ante*. This paper applies the present methodology to draw a typology of the land arrangements recorded in our Thai data. This typology will then allow simple econometric estimations aimed at the analysis of the motivations involved in those land arrangements.

3 Context and data

(a) Property rights in Thailand

Thailand’s land history is singular. First, land had never been a symbol of power until the middle of the nineteenth century⁹ (Mehl, 1986), and by then the Thai monarchy had already imposed upper limits on the surface of land that could be held. Secondly, a long history of migration and the technology used in rice cultivation have led landholding toward small nuclear households units (Mehl, 1986; Foster, 1984). In legacy to those factors, the distribution of land in Thailand is quite even, with a rural economy of small landholders and a low rate of landlessness. Around 3 farmers on 5 hold all the land they cultivate, and in the Northeast the numbers are even higher (4 on 5). It is interesting to investigate land issues in Thailand since it has been considered by many as a successful case of land formalization, and an illustration of the benefits of private rights and sound titling systems for economic development. In the 1980’s, Thailand has indeed implemented an important land reform, mainly aimed at a large scale distribution of titles to speed up a process that was otherwise estimated to take over 200 years before full title coverage (Burns, 2004). Various papers, mainly published just after the first phase of the reform, find that titling has helped the development of a financial market and the increase of agricultural productivity (Chalamwong and Feder, 1988; Feder and Onchan, 1987).

Property rights appear to be well-defined in Thailand, and the security of tenure is quite high compared to other countries with equivalent levels of development. However, the success of Thailand’s titling policy, which has hardly been matched elsewhere, is not coming from scratch. Thailand has indeed a long history of private property rights and a well-established land administration. First,

⁸In the tradition of Mauss (2001), gift giving works through compensations with no explicit price. Various studies such as Akerlof (1982) have described in economic terms the compensations of gifts as responding to social norms rather than to explicit negotiations

⁹Because of the labour intensity necessary in rice cultivation, war intended at the control of labour rather than of the land itself.

the customary organization of land has traditionally favoured household ownership on land, so that the intervention of the State to establish a private property regime has not met any community defiance, opposition or incompatibility. This traditional individual (rather than communal) ownership pattern has also formally been recognized by the monarchy in 1872, when King Chulalongkorn put an end to the realm's symbolic ownership of land and established freehold. A land titling system (Department of Land, DL) has been created as soon as 1901, and a Land Code in 1954. Finally, the closure of the land frontier¹⁰ and a growing land scarcity made the titling of land desirable in the eyes of local farmers, who were increasingly confronted to land grabbing by private companies, and wished for an access to formal credit. The 1980's land titling programs was therefore implemented in a favourable institutional framework.

But if the effect of this large scale land reform has been significant for the development of credit in rural areas (Chalamwong and Feder, 1988; Feder and Onchan, 1987), its impact on land markets has not yet been demonstrated. Land markets are indeed much older than the formalization of plots, and their activity seems more easily influenced by the expansion of urban areas than by the issuance of land titles (Grandstaff et al., 2009).

(b) The Northeast: Economy, land, and rural anthropology

Land markets generally display low turnover rates, although the situation varies widely from one region to the other: Thailand is indeed divided in four regions: the Central Plains, the South, the North and the Northeast. Although those regions are not administratively recognized, they correspond to areas with very different cultural, ecological and economic characteristics. The Northeast, in which our empirical studies were led, is the poorest area of the country, with an agriculture much closer to subsistence farming than in the rest of the country. Its agriculture is nonetheless turning to cash crops such as sugarcane, cassava, or rubber. As mentioned above, the turnover rate on the Northeastern land market is remarkably low: in some representative provinces, less than 10 per cent of plots have been acquired through purchase (Phelinas, 2001), and the rental market seems to involve just a bit over 5 per cent of all agricultural land.

Demand-side constraints on market participation are also particularly high: land is generally quite poor and poverty reduces the liquidity of potential purchasers. In the meantime, there is an increasing number of households retiring from agriculture to undertake non-farming activities, specifically through permanent rural-urban migration. This could suggest an excess of land supply. However, this is not what we observe in the region. On the contrary, local farmers have an important land thirst, and land is scarcely available on the sale or rental market (Grandstaff et al., 2009).

¹⁰In the 1980's, forest land had drastically decreased, and remaining forests were protected by the Thai government in national parks.

According to Molle (2002), it is also in the Northeast that communal solidarity and organizational capacities are the highest, and that non-market land arrangements are the most visible. Rare are the papers that have actually looked in detail at the mechanisms involved in those non-market arrangements (Grandstaff et al., 2009).

The anthropology of Thailand may nonetheless give some insight on the nature of land arrangements in the Northeast of Thailand. According to Moerman (1968) or Vanwey (2003), glutinous rice (and through it, rice fields) is a cornerstone in the society of the Northeast. Access to rice fields is synonymous of being well-fed, which explains the reluctance of Northeastern farmers to abandon rice fields in favour of more profitable cash-crops (cultivated on the highlands). The economic and social status of rice fields and highlands therefore differs radically, since highlands are sustainable only for cash-crop cultivation.

Anthropologists have also approached land ownership patterns through the structures of family and inheritance. Their research has for instance underlined the importance of small networks of relatives based on *coresidence* (including relatives who have shared the same roof) (Embree, 1950), or on the concept of *Yaadt phinong* (Foster, 1984; Whittaker, 1999). *Yaadt phinong* is a widely used term in Thailand which designates the extended family, and generally includes parents, siblings, uncles and aunts¹¹. The relationship to aunt and uncles is tighter on the wife's side, thanks to a matrilineal structure. This *Yaadt Phinong* structure is key to the access to solidarity mechanisms as well as land. Land arrangements are also mainly settled between *Yaadt Phinong*. Traditionally, land was bequeathed in equal shares to the daughters at their marriage, while sons accessed land through their wife's holdings and were thereafter free to clear new plots in the forest empty lands. The youngest child (or daughter) cultivated their parents' holdings under share-farming, until their death. But with marriage nowadays happening later in the life cycle, and the closing of the land frontier, inheritance practices are currently evolving toward equal share inheritance between all the children, in order to avoid landlessness¹². Loans of land are frequent (Grandstaff et al., 2009), for instance between siblings after inter-vivo bequests. We nonetheless did not find any evidence in the literature on the exact conditions or prevalence of such land arrangements.

(c) Survey methodology

The data used in this paper were originally collected to study land sale decisions made by rural-urban migrants coming from the Northeast of Thailand. Information was also collected on the land arrangements implemented by migrants when not selling their land. The survey was operated

¹¹This network is therefore larger than the nuclear household but smaller than a kinship or matrilineal line.

¹²The closure of the land frontier forbids land clearing as a mean of access to land. Therefore, the tradition to exclude sons from land bequest may lead them to landlessness. Moreover, with marriage happening later in life, sons (who traditionally accessed land through their wife) may have no land to cultivate until their 30's: parents therefore prefer to give some plots of land to their sons as well as their daughters.

in the second semester 2010, and followed two phases.

Survey: first phase

During the first phase, semi-structured interviews were conducted with farmers in rural areas. The purpose of this first phase of field research was to gather qualitative information on the land arrangements chosen by migrants while away. It was conducted in rural areas, where migrants' plots are. Six villages were sampled in the province of Khon Kaen, with the assistance of the Community Development Department database 2009 (CDD). The Villages were selected for their display of high permanent migration rates, but for being otherwise representative of other villages in the Northeast.

Village headmen were then interviewed and asked to provide the contact information of permanent migrant households and their close relatives living in the village. The migrants that we selected to be part of the survey had left the village permanently, with their entire nuclear household, and had owned some farm land before departing.

As most migrants were away, interviews were made with migrants' relatives, preferably those farming the migrants' land (when it had not been rented or sold out to outsiders). Respondents were asked to give basic information on the migrant households, to describe in detail the arrangements that were made about the migrants' land, and to offer their personal opinions on the choice made by migrants (the migrant they answered for but also all migrants in general). In the end, we gathered semi-structured interviews on 34 migrant households. The purpose of such qualitative surveys is not to test hypotheses, but to grasp intuitions, to understand the details behind observed phenomena, and to have a first feedback on the validity of our intuitions.

Survey: second phase

The second phase of the survey was originally thought to be made in continuity with the semi-structured interviews of the first phase: rural respondents were expected to provide the contact information of the migrant relatives they were asked about. As most of our respondents in phase 1 refused to provide such information, the second phase of the survey was finally implemented independently, with a new sampling procedure. The second phase took place in Bangkok compounds, with the purpose of gathering a large database on permanent migrants from the Northeast, their economic situation, their migration history, and the land arrangements they chose while being away. This second phase is therefore designed for econometric analysis.

The migrants sampled to participate to this second phase of the survey answered a few criteria: they had permanently left their home with the whole of their household, and had owned land before moving out. 467 migrant households were finally selected under a non-randomized process.

Because of the lack of a recent census, various complementary sampling methodologies were used, from snowballing to accidental sampling. From the 467 households, we obtain 475 temporary land arrangements (loans and rental). 15 observations have been removed from the final sampling because they involve forest land unsuitable for land cultivation. The 460 remaining arrangements are all temporary and involve partial transfers of land rights, which exclude the comparison to land sales. Land sales are indeed excluded from the database, since information on sale and temporary transfers have not been gathered symmetrically, precluding a parallel analysis.

The sampled land arrangements are then cross-analyzed with detailed information on the nature of the land and property rights, the relationship with both rural and urban *Yaadt Phinong* (network of relatives), the history and reasons behind migration, the economic stability and occupation of the migrant households.

Phase 1 and Phase 2 : the complementarity of qualitative and quantitative data

The rest of the paper uses both phase 1 and phase 2 of the survey to look at the different forms of temporary land arrangements. The database collected in phase 2 is used to provide quantifiable and statistically significant evidence. Basically, it means that all the statistics provided in the next sections derive from phase 2 of the survey.

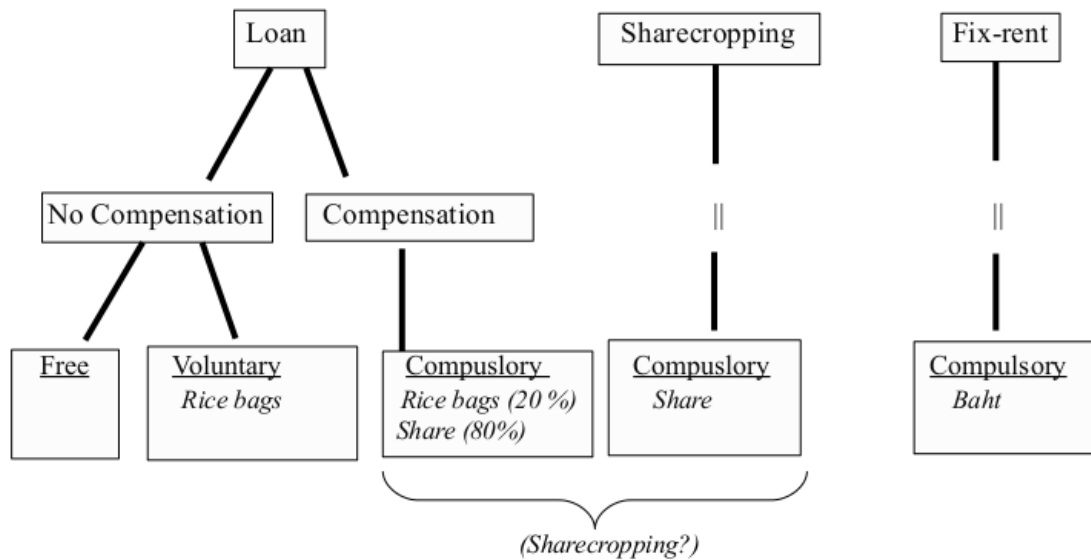
On the other hand, the semi-structured interviews of phase 1 help us draw intuitions and design an identification strategy for hypothesis testing. It is also a precious tool to make meaningful interpretations of some of the unexpected statistical results. In the next sections, qualitative information, quotes from local actors, and interpretations of statistical results all come from phase 1 of the survey. Overall, phase 1 and 2 are complementary and allow us to provide a meaningful picture of land arrangements in the field, backed up by statistical evidence.

The fact that data are collected among migrants has important consequences for most of our results. Migrants are specific in many aspects: their involvement in agriculture, their relationship with land and rural networks, their risk aversion, and so on. Our results therefore only apply to this particular population.

4 Land arrangements: Descriptive statistics

We now apply to our data the methodology for a typology of land transfers that we described in section 5.2. First, we examine the nature of the compensations involved in land arrangements (whether it implies a monetary transfer and whether it is explicit). We then characterize the relationship between the parties involved through a precise reviewing of local land rights and anthropology. Finally, we compare those features with the official category under which land arrangements have been referred to by questionnaire respondents.

Figure 1: Structure of land arrangement in the questionnaire



Statistics (phase 2 of the survey) are used to find regularities in the characteristics of land transfers, while qualitative data (phase 1 of the survey) are used for intuitions and interpretations.

(a) Land arrangements and the structure of the questionnaire

If we look at the basic structure of the temporal arrangements settled by Thai migrants on their land, the collected data first proposes that 86 per cent of those arrangements are classified as free loans, 8 per cent as sharecropping, and 6 per cent as fixed rent contracts ¹³). Rental contracts are therefore scarcely used by migrants, who favour free loans.

The semi-structured interviews (phase 1 of the survey) reveal that free loans, transcribed through the term “*hay chay fee*” in Thai language, apply to a wide variety of practices. The structure of the questionnaire was therefore designed to obtain a clear picture of the various arrangements named “*hay chay fee*” (free loans). This was not an easy process, as respondents were reluctant to give up their “*hay chay fee*” answer and admit to receiving compensation fees in exchange of lending their land.

The process followed by the questionnaire is summarized in figure 5.1. It is consistent with the guidelines for a categorization of land transfers proposed in section 5.2. First, respondents were asked which type of land arrangements they had settled on while being away. Their answer could

¹³Fallow land is rare with only 5 households leaving some plots fallow. Unused farm land can indeed be legally seized by the State.

either be free loans (*“hay chay fee”*), sharecropping, or fixed rent contracts (the general idea of ‘rental’ was not well understood by respondents¹⁴). Semi-structured interviews (survey phase 1) suggest that sharecropping and fixed rent contracts have well-established, structured and stable rules that do not vary much from a contract to another. In a fixed rent contract, the tenant offers a cash deposit before the cropping season, and pays a cash rent fixed in advance by the landlord. The rent is frequently paid at the sealing of the rental deal, but may also be expected after the harvest, although it is rather uncommon. In a sharecropping contract, tenant and landlord agree on the share of the harvest to be paid at the end of the harvesting season. The payment is either in-kind or in-cash, at the convenience of tenants and landlords and depending on the nature of the crop and its transportation cost. Payment in-kind is more frequent on rice fields, especially if the landlord intends to keep a part of the harvest for his own consumption. On land planted with cash crops, the share is almost always paid in cash due to high crop transportation costs. Sharecropping or fixed rent contracts were easily identified in this first step of the questionnaire’s process¹⁵.

In the case of land loans, further questions have been necessary to define the nature of the arrangements. Basically, if respondents had made a *“hay chay fee”* type of arrangement (free loans), they were asked whether the loan was made in exchange of some kind of compensation, or with no compensation at all. The term “compensation” was voluntarily kept vague in the questionnaire, or otherwise respondents would have refused to answer¹⁶. Respondents who admitted taking a compensation in exchange of lending their land were asked about the nature and amount of this compensation. Once they admitted to the compensation, respondents gave the required information much more easily. On the other hand, households who did not admit to taking a compensation were asked if they had been given something in exchange, as a thanks. The transfers given in return were almost always bags of rice.

It is only after this time-consuming process that more information could be gathered on the other features of the arrangements. This includes: the nature of the repayment as well as its amount, the length of the contract, details on the plot involved in the transaction, the relationship between the two parties as well as a rough evaluation of their wealth differential.

The questionnaire finally informs on three types of land loan. First, land loans may be completely free of charge, when migrants do not concede to taking or being given anything in exchange for their loan. Of course, no matter how careful the questionnaire, we cannot exclude that those free loans of land actually allow landlords to make some claims on ‘tenants’ in the long run. 21 per cent of all the *“hay chay fee”* arrangements (or 18 per cent of all arrangements) are classified as perfectly free. Secondly, land loans may occasion a compensation, but the quantity and nature of

¹⁴There was actually no generic and understandable term for the idea of ‘rental’ in Thai language.

¹⁵The categories ‘fixed rent’ and ‘sharecropping’ were coherent with the information that was later provided by respondents on the details of the arrangements.

¹⁶The refusal to answer when the nature of the compensation was made explicit (monetary, rice bags, service) was significant.

the compensation is decided freely by land ‘tenants’, and is not compulsory although implicitly expected by the migrant household (the landholder). Such loans with voluntary repayment represent 66 per cent of all loans (or 54 per cent of all arrangements). Finally, an arrangement may be called “*hay chay fee*” by respondents, but be made with an explicit compensation which is fixed by the landlord himself and compulsory for the tenant¹⁷. This last type of arrangements amounts to 13 per cent of all loans (or 11 per cent of all arrangements).

(b) The compensations: how and how much

Table 5.1 gives the type of repayment used in the various arrangements. As expected, the sharecropping contracts are paid as a share of the final production¹⁸, and fixed rent contracts as a fixed amount. The situation is not as clear in the case of loans. Overall, the majority of compensations for land loans are offered in rice bags, but they can also be found as a fixed share of the agricultural production. The nature of the compensation differ significantly depending on the different categories of loan that were mentioned earlier. When the compensation is compulsory and explicit, it is a fixed share of the harvest in 80 per cent of the cases. When the compensation is voluntary and implicit, it is made in rice bags in almost 90 per cent of the cases.

[INSERT TABLE 5.1]

The statistics reported in table 5.1 do somewhat matter. Rice bags are a much imprecise measure. The qualitative interviews (survey phase 1) suggest that Thai farmers all have an approximate idea of the kilograms of rice contained in those rice bags, but they also agree on the potential variations from a bag to another. The fact that rice bags are favoured in loans with voluntary compensations but not in loans with compulsory compensations is somehow symbolic, as if the gesture mattered more than the quantity itself. Besides, when sharecropping is repaid in-kind (on rice fields), rice is carefully weighted by the landlord. Rice bags are indeed not trusted as an accurate instrument of measure.

The various forms taken by compensations make comparison hard. We therefore try to compute the market equivalent value of all types of compensation, for each category of transfers. When the transfer is made in rice bags, we measure the average capacity of a rice bag and multiply it by the 2010 farm-door price for rice. When the transfer is made as a share, we use our data on the size of plots and their yields, as well as the 2010 farm-door prices, to obtain the market value of the fee. Table 5.2 shows the monetary value of the various compensation made in each type of arrangement.

¹⁷Renegotiation of the compensation in such loans is nonetheless stated as frequent.

¹⁸This share is repaid in rice on rice fields, and always in cash on the few highlands that are cultivated under sharecropping contracts.

[INSERT TABLE 5.2]

At first sight, loans seem to be made with a much lower compensation than rental contracts in general. But as proposed before, loans cover a quite wide reality. When analysed in detail, it appears that the market-equivalent value of compensations is very similar in sharecropping and in loans with compulsory payments fixed by migrant landlords. This raises the following question: why do respondents refer to those transactions as “*hay chay fee*” (free loans) rather than as sharecropping contracts? A possible interpretation is that free loans with compulsory repayment are sharecropping contracts that need to be legitimized as being ‘free’, rather than guided only by landlords’ self-interest. This strategy, which we call a ‘legitimization process’, might be implemented to match traditional institutions and social norms. In particular, this ‘legitimization process’ seems to be frequently required when land arrangements are made among relatives (table 5.3).

(c) The Relationship between the parties of the transaction

[INSERT TABLE 5.3]

Table 5.3 indeed examines the pre-existing relationship between tenants and landlords in each type of transaction. Most of transactions are made according to a principle of ‘co-residence’, that is when people have shared a same roof. Namely, ‘coresidence’ includes parents, children, and siblings. More distant relatives such as uncles and aunts (covered by the concept of “*Yaadt Phinong*”) are found less involved in land transactions than the Thai anthropological literature may have suggested. Finally, outsiders¹⁹ have a very small part in land arrangements, which are made mainly between relatives. Outsiders are nonetheless observed more frequently in rental contracts, and even more so in fixed rent contracts. Fixed rent contracts clearly differ from the other transfers in terms of the people involved in the transaction, being much more open to outsiders. Moreover, the prevalence of parent-child transactions is decreasing progressively in a continuum ranging from purely free transactions to fixed rent contracts.

Table 5.4 displays the market-equivalent value of the compensations for each type of ‘tenant’ - landlord pre-existing relationship. There seems to be a progressive increase of the payment as the ties between the two parties loosen. The compensation is lowest when the transaction takes place between parent and child, and highest when it is set with an outsider.

¹⁹Neighbours and people that the household has never had contact with have unfortunately been equally classified as outsiders.

[INSERT TABLE 5.4]

A few conclusions can be derived from those preliminary statistics. First, land arrangements indeed seem to follow a sort of continuum, going from non-market transactions influenced by apparent altruism or reciprocity (such as really free loans) to arrangements such as fixed rent that are set at market price independently of a pre-existing relationship. Secondly, separating this continuum in two groups (loans and rentals) seems coherent, but empirical analysis has to be careful in setting the boundaries between loans and rental: some arrangements officially classified as loans have for instance very similar characteristics to sharecropping (loans with compulsory compensations). Thirdly, the nature of the relationship between the two parties of the transaction seems to be an even better predictor of the amount of the compensation (the rental price equivalent), than the type of arrangement itself.

5 Choosing a type of arrangement

(a) Empirical approach

We propose to analyse here the profiles of households and plots involved in the different categories of land arrangements that we have just identified. In particular, we look for correlations between the nature of property rights attached to land, the safety net value of land, and the types of arrangements chosen. We estimate a series of regressions with land arrangement categories as a dependent variable. Regressions, compared to correlation indices or comparison of means, allow to track conditional relationships and provide a more precise identification of the important co-variations between dependent and independent variables. Regression estimates can nonetheless not be interpreted as causal relationships here, because of some obvious endogeneity biases. We estimate the following equation :

$$A_{i,p} = \alpha + \beta_1 PR_{i,p} + \beta_2 S_i + \beta_3 C_{i,p} \quad (1)$$

Where $A_{i,p}$ is the type of land arrangement settled by household i on plot p , $PR_{i,p}$ is the nature of the property right held by household i on plot p , S_i is the safety net value that household i credits land with, and $C_{i,p}$ is a set of control variable on household i and plot p .

According to the literature (reviewed in section 5.3), we first expect that plots involved in traditional systems of property rights involving the extended family or the “*Yaadt Phinong*” structure, are more likely to be exchanged through arrangements on the ‘non-market side’ of the continuum (i.e. loans). Secondly, we expect that households relying on traditional safety net mechanisms are also likely to choose arrangements on the ‘non-market side’ of the continuum of land arrangements (i.e. loans).

The previous section (5.6) warns that the definition of land arrangement categories (the definition of $A_{i,p}$) is far from neutral and needs to be set carefully when coming to empirical analysis. We therefore test different definitions of $A_{i,p}$.

- First, we estimate a simple binary variable of rental vs. free loan arrangements based on the official categories given by questionnaire respondents ($Rental_{i,p}$)²⁰.
- Secondly, to account for the intermediary status of loans with a compulsory compensation, we estimate the dependent binary variable $Rental_{i,p}^{BIS}$, which is quite similar to $Rental_{i,p}$ except for the fact that we now consider loan arrangements with compulsory payment as rental, because of its proximity to sharecropping arrangements²¹.

Section 5.6 also underlines that both loans with no compensation at all (really free loans) and fixed rent contracts seem to differ significantly from other transfers, since they are two extreme cases in the continuum of arrangements. We therefore estimate:

- The dependent variable $Free_{i,p}$ is equal to one if the arrangement set by household i on plot p is perfectly free of compensation²².
- The dependent variable $Fix_{i,p}$ is equal to one if the arrangement set by household i on plot p is under a fixed rent contract²³.

Finally, we propose a multinomial logit which enable the estimation of all the categories of arrangement proposed in section 5.6:

- The dependent variable $Transfer_{i,p}$, covering the following categories of land arrangements: free loan with no compensation (free), free loans with voluntary compensations, free loans with compulsory compensation, sharecropping, and fixed rent. Table 5.5 summarizes the variable $Transfer_{i,p}$. We set the base outcome at 0 (free loans with no compensation).

[INSERT TABLE 5.5]

(b) Explanatory variables

The independent variables of interest in our estimates are the nature of property rights $PR_{i,p}$ and the safety net value of land for households S_i . The safety net value of land for an individual

²⁰ $Rental_{i,p}$ is equal to one if the arrangement is a sharecropping or fixed rent contract, and equal to zero if the arrangement has been classified as “*hay chay fee*” by the respondent, independently of the nature of the compensation.

²¹ $Rental_{i,p}^{BIS}$ is therefore equal to 1 if the land is under fixed rent, sharecropping, or loan with compulsory compensation.

²²And zero otherwise.

²³And zero otherwise.

household is difficult to measure. We use a qualitative proxy here. Households were asked to assess the following sentence: “*Households from the Northeast who now live or work in Bangkok should always keep land because land is a safety if some problems were to happen to them*”. They could answer: 1. fully agree; 2. partly agree; 3. partly disagree; 4 strongly disagree. Households who answered 1 are classified here as giving a strong value to the safety provided by land. To complement this variable, we also proxy for the risk aversion of households. In the questionnaire, households were presented with the following hypothetical situation : ‘*Imagine that you have 60 000 baht²⁴. This money has to be kept in a bank and will be made available to you only in ten years. During those ten years, you have only two choices to make about this money.*

1st choice : you leave the 60 000 baht in an secured account. You will receive no interest rates, and in ten years, you will receive the exact sum of 60 000 baht, no more and no less.

2nd choice : you can play in the bank a win/lose game, with one chance on two (50/50) to win or lose. If you win, in ten years you will have tripled your original 60 000 baht and will therefore receive the sum of 180 000 baht. But if you lose, you will lose 50 000 baht and in ten years you will receive only 10 000.”

Households who choose the 1st choice are classified as risk-adverse, and those who choose the 2nd choice as risk-neutral. Of course this is a very rough proxy, but it at least offers a basic approximation of households’ risk preferences.

The nature of property rights ($PR_{i,p}$) depends on various criteria and therefore has a composite nature. We propose a series of variables to proxy the nature of the property rights held by household i on plot p . First, we check whether the land is titled with a “*chanot*”. The titling system in Thailand is quite complex, and various types of titles have been distributed over the years. Yet only the “*chanot*” (NS3, NS3k, and NS4 titles) legally grants full ownership and sale²⁵. The semi-structured interviews (survey phase 1) suggest that the overlapping of rights is significant within relative networks (the “*Yaadt Phinong*” structure). A visible consequence of such overlapping is that arrangements made between relatives, especially inter-vivo bequests, are neither automatically followed by a modification of the name registered on the ownership title (*chanot* or any type of inferior title), nor by an official registration at the Land Administration Office. The legal transfer of ownership, in the case of bequest, actually takes from a few too many years, and will sometimes not be officially registered until the death of the parents or first holder. We therefore measure whether the legal transfer of ownership was made after households first acquired their plot p . We also check whether households have ever encountered land conflicts with their relatives and whether households are certain to sell their land in the future²⁶.

²⁴60 000 baht is equivalent to around 1500 euros.

²⁵Plots that do not have a *chanot* either have a SPK or *soopookoo*, which does not allow the transfer of ownership but gives a right to a *chanot* in the process of land reform; or no title at all.

²⁶Households were asked if they had the intention to sell their land in the future, and could answer 1.No for sure, 2.Yes maybe, or 3. Yes for sure. The variable is therefore equal to one if the household has answered 3. Yes for sure.

Keeping in mind the importance of overlapping rights over land in a network of relatives, we provide a few proxies on the nature of the relationship that migrant households keep with their “*Yaadt Phinong*”. First, we check whether migrant households have settled land arrangements with parent (or child), with siblings, more distant relatives, or outsiders. We check whether migrant households ever got assistance from village relatives²⁷, whether they send remittances²⁸, and the frequency of their visits to the village. We also proxy for the ‘lending’ power of the migrants’ relatives (village as well as Bangkok relatives), linked with migrant’s income: respondents were asked for the maximum amount of money they thought themselves able to borrow from their “*Yaadt Phinong*”, and we then weighted it with households’ yearly income.

We add a set of control variables. We first look at the economic and demographic characteristics of households : whether households own a house in Bangkok, the highest diploma held in the household, the age and gender of the household heads. Households’ migration characteristics are also important: the number of years elapsed since the first migration decision, whether households have migrated for lack of land, and whether migrants come from the Northeastern provinces classified as poor by the Thai Office of Statistics. Finally we also look at fundamental characteristics of the plots involved in the arrangement: whether the earth is classified as “*of a good yielding quality*” by the household, whether it is highland or rice fields, whether it has been accessed through purchase (rather than inheritance), and the overall size of landholdings. Table 5.6 provides summary statistics on the variables used in regressions.

[INSERT TABLE 5.6]

(c) Results

Table 5.7 presents the results for the probit estimation of the dependent variables $Rental_{i,p}$ (first column) and $Rental_{i,p}^{bis}$ (second column). Table 5.8 gives the results for the probit estimation of the dependent variable $Fix_{i,p}$ (first column) and $Free_{i,p}$ (second column). Table 5.9 gives the results for the multinomial logit estimation of the dependent variable $Transfer_{i,p}$. We make an IIA test, which states that the Ho hypothesis of independence of irrelevant alternative (IIA test) cannot be rejected, allowing us to run the multinomial logit estimation. We propose here a summary of the main findings from table 5.7, 5.8 and 5.9.

[INSERT TABLE 5.7, 5.8 AND 5.9]

²⁷This variable captures only non-monetary forms of assistance, and is partly subjective as to what type of assistance we were referring to. It is therefore rather based on respondents’ feeling of having received assistance, than on an objective measure of the nature and amount of such assistance.

²⁸The dummy for remittances is equal to one if the household sends remittances at least once a year, and zero otherwise.

Risk-coping motivations

First, risk-coping motivations are found to matter in the type of land arrangements to which households participate. Households who strongly value the safety net value of land are also more likely to have chosen loans (non-market arrangements), rather than rentals (market arrangements). Yet, this result only holds when loans with compulsory compensations are classified as loans rather than rentals (in the first column of table 5.7). The significance of the dummy proxying risk-lover households also confirms that households who participate to rental arrangements are not as risk-adverse as those who participate to loans. We may therefore conclude that risk-coping motivations do indeed contribute to make arrangements with non-market characteristics more attractive than rental contracts.

But if risk-coping motivations appear as coherent in a binary choice between loan and rental, table 5.8 and 5.9 give interesting insights on the real implications of those motivations in the design of land arrangements. Fixed rent contracts clearly involve households that give a low value to the safety net function of land (table 5.8). On the other side of the continuum however, free arrangements do not seem to involve the households that are the most dependent on land risk-coping mechanisms (none of the variables measuring risk behaviours are significant in the $Free_{i,p}$ model in table 5.8). Table 5.9 actually reveals that it is the intermediary transfers, those that are located in the grey zone of land arrangements (loans with compensation, voluntary or compulsory) that are the most related to risk-coping motivations, and explains the significance of risk-coping motivations in loans (table 5.7).

Property rights

Property rights also seem to matter in the participation to rental rather than loan arrangements (table 5.7), although not in the expected way. The holding of a *chanot* (full ownership title) is negatively correlated with the participation to rental arrangements: such a result is at odds with the propositions made in the literature. Moreover, households who have been legally made owners of their plots, and have their own name on the land title, are less likely to participate to rental than those who are not yet legal owners on their plots! Overall, this would suggest that legal ownership does not matter in the choosing of land arrangements or even decrease the participation to land rental markets.

To analyze this matter further, we created an interaction variable between the dummy *Chanot* and the dummy *Legal ownership status*. This interaction variable is significantly and positively correlated to the participation to rental (in the first column of table 5.7 only). We are tempted to interpret those results as follow: first, a *chanot* with no legal transfer of ownership (not the right name on the title) does not provide enough security to enter the rental market. Indeed, plots with

no legal transfer of ownership (not the right name on the title) are usually implicitly held under communal or overlapped rights: current land owners often share ownership rights with the relative from whom they acquired the plot (most likely parents or sibling). In such situations, a current landholder who has a title not registered in his own name, is entitled to transfer preferably to his unofficial ‘co-owner’ or ‘natural claimant’, with no expected charges. Such overlapping of rights among current and previous land owners was made very clear in the semi-structured interviews (survey phase 1). It generally happens preferably after a non-market, intra-family exchange of land - non-market, intra-family exchange of land being scarcely recorded officially.

Secondly, a plot where the transfer of ownership has been made (the right name on the title) but which is not covered by a full title of ownership (*chanot*) is also not secure enough to be rented out, and even more so to outsiders. To put it more simply, neither a *chanot* alone nor a legal transfer of ownership (the right name on the title) alone are sufficient to allow tenure security with outsiders or even relatives. On the other hand, if households have at once a full ownership title (*chanot*) with their own name on it, they may be secure enough to call on outsiders and market rental contracts. Titling programs therefore seem insufficient to develop land markets. Informal tenure can dominate land allocations systems even in a country with a well-established formal system of land rights. In the end, informal allocation systems take over the formal system, and titling programs that had been carefully designed become incomplete and ill-matched with *de facto* ownership patterns. Those results confirm other findings from the economic literature (Platteau, 1996, 2000; De Janvry et al., 2001).

Property rights and risk coping mechanisms: the interplay

Nonetheless, as in the case of the safety net value of land, the results on property rights only hold for the first column of table 5.7 ($Rental_{i,p}$), when loans with compulsory compensations are classified as loans rather than rental. An explanation may be found in the multinomial logit results. In table 5.9, we have chosen free loans (with no compensation at all) as our base outcome. But if instead we shift the base outcome to sharecropping (= 3), we find that households who participate to loans with compulsory compensations give a comparatively high value to the land safety net function, and are less likely to hold a *chanot* over their land²⁹. Households choosing loans with compulsory compensations are therefore dependent on the safety net value of land, and consequently not secure on their plots.

Loans with compulsory compensations actually involve some kind of ‘market’ motivations quite similar to sharecropping, which explains why its classification as rental may be relevant ($Rental_{i,p}^{bis}$) when looking at exchange with outsiders or at the quality of land. But loans with compulsory compensations also involve households dependent on traditional risk-coping mechanisms such as risk-sharing, which explains that its classification as loan ($Rental_{i,p}$) is relevant when looking

²⁹We do not give the results on the multinomial logit with a base outcome= 3 due to a lack of space.

at risk in land tenure. If those households are also insecure on their plots due to overlapping rights, officially asking for a fee in exchange of land transfer could look socially unacceptable and generate conflicts with relatives³⁰. Indeed, as stated before, if land is owned with no title or with a title registered to the wrong name, it is probably held through overlapping rights. Those overlapping rights could then enter in conflict with the idea of ‘making money’ individually over a land transaction. Conflicts with relatives and traditional institutions could in turn reduce the effectiveness of risk-sharing mechanisms in the future. As a consequence, those households disguise their rental transactions as loans, so as to legitimize them in the eyes of the “*Yaadt Phinong*”. This legitimization is necessary to help secure a plot and retain an access to solidarity mechanisms, whilst allowing the making of market benefits over a transaction of land. Those transactions may be called ‘disguised rentals’, in reference to the phenomenon of ‘disguised sales’.

Fixed rent and free loan: at both ends of the continuum

The model estimating the choice of fixed rent ($Fix_{i,p}$) seems to perform much better than the model estimating free loans ($Free_{i,p}$)³¹. The decision to undertake free loans is therefore poorly understood.

A few features are nonetheless visible: free loans ($Free_{i,p}$) take place between very close relatives, generally parent and child. This is visible in both table 5.8 (compared to all transfers) and table 5.9 (compared to other types of loans). On the other hand, fixed rent arrangements ($Fix_{i,p}$) are much more impersonal, open to outsiders or people that households have had no relation with before the land deal. Moreover, fixed rent contracts seem to be used when relatives are rich enough to afford such contracts for cash crop cultivation: table 5.9 indeed reveals that fixed rent contract, when compared to free loans, are likely to be settled with relatives who have a high lending power. Relatives’ lending power may be interpreted here as a proxy for relatives’ average wealth, or as a positive wealth differential between the relatives and the migrants. Fixed rent is also often designed for highland and cash crops.

Finally, the involvement of households in their village of origin takes an important part in the choice of fixed rent contracts: households who do not visit their village frequently, or have left for a long period of time, will find the enforcement of fixed rent contract costly and time-consuming.

Results on control variables

Results on some other control variables are also worth noting. Rental contracts involve more impersonal transactions, since arrangements are more frequently made with outsiders than they are in the case of loans. Households who participate to rental arrangements are generally wealthier

³⁰Classifying loans with compulsory compensation as loans ($Rental_{i,p}$) is here also relevant to identify the impact of the insecurity of tenure.

³¹See the R square in table 5.8.

(they own a house more frequently, see table 5.7) and better educated (in the case of fixed rent only, see table 5.8). This may either imply that they are well-integrated in the market economy, or that they are less vulnerable to consumption shocks and therefore able to take on risky yet profitable choices. In other words, they are able to rent land for profit and to forgo free loans and their safety net benefits.

Older households or households with a female head participate more frequently to rental arrangements than to loans, maybe because they feel secure in their land rights and as a result are protected from claims coming from their relatives. Land property is indeed traditionally held by women in the Northeast of Thailand. Older households are more likely than younger households to have made the legal transfer of ownership on land titles, and to feel that land is rightfully theirs. Those results nonetheless go against the idea that elders are not inclined to favour land markets. The results presented here are of course subject to caution. The empirical identification strategy that we used here is very basic and only intended at enabling preliminary insights on the land arrangements settled by migrants in Thailand, and what they involve. Results can be understood only as correlations, and may suffer from endogeneity biases. Finally, the nature of our sample does not allow the generalization of our results to the Thai population as a whole: it is specific to land arrangements in the Northeast of Thailand, and to the decisions made by migrants.

6 CONCLUSION AND DISCUSSION

This paper first suggests that a binary framework of land arrangements which separates rental and loan as two distinct categories with clear boundaries is not always the most relevant tool. Indeed, many of the transfers made by Thai permanent migrants appear to be hybrid arrangements sharing similarities with both ‘rentals’ and ‘loans’. The typology of land transfers that we apply in this paper allows for instance to identify ‘disguised rentals’, that is *de facto* rental arrangements disguised as loans, and officially referred to as ‘free loans’ by local actors.

Then, our typology of land transfers allows us to see the survival of intra-family ownership in an otherwise formal system of property rights. Finally, our typology underlines the importance of risk-coping motivations in land transfers. In particular, risk-coping motivations are found to lead households to prefer free loans, but also to legitimize *de facto* rental arrangements in disguising them as loans (‘disguised rental’) so as to safeguard their relationship with risk-sharing networks. To conclude, risk-coping motivations appear here as one of those forces that, because they are economically rational, go in the way of land formalization policies and market development. Thailand has tried, in the last two decades, to use land titling policies as a tool to tackle poverty in the Northeast. With the final completion on the 1980’s titling project in the offing, Thailand needs to find a new approach to address land issues. The consideration of risk-coping motivations in land tenure, and the setting of adequate social protection policies might be one way, among others, to

address this matter.

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Table 1: Type of repayment for the use of land (per cent)

	Free loans	Free	Voluntary compens.	compulsory comps.	Sharecropping	fix-rent
Rice Bags	64.6	0	89.9	19.6	2.6	0
Share (per cent)	17.1	0	10.1	80.4	97.4	0
Fixed amount (baht)	0.26	0	0	0	0	100
No payment	21.2	100	0	0	0	0
Total	100	100	100	100	100	100
Obs	391	85	257	51	39	28

Table 2: Amount of compensation per type of transfer

	Mean	Standard dev.	Min	Max	N
Free	0	0	0	0	89
Free loan, voluntary	304.4	491.3	0.4	3520	258
Free loan, compulsory	1250.3	597.3	75.4	2640	49
Sharecropping	1465.7	859.5	158.4	5000	36
Fixed rent	920.3	862.9	150	4000	28
All loans	357.5	576.7	0	3520	391
All rental	1138.4	920.4	0	5000	69
All	474.6	697.1	0	5000	460

Table 3: Pre-existing relationship between the parties, per type of land arrangement

	Parent-child	Sibling	Distant relat.	Outsider	N	Total
Free	42.70	52.81	3.37	0	89	100
Free loan, voluntary	32.95	52.33	13.18	1.55	258	100
Free loan, compulsory	18.37	38.78	32.65	10.20	49	100
Sharecropping	5.56	61.11	16.67	16.67	36	100
Fixed rent	21.43	25	14.29	39.29	28	100
All loans	33.25	50.90	13.55	203	391	100
All rental	13.10	39.29	11.90	20.4	84	100
All	30.43	50	13.70	5.65	360	100

Table 4: Amount of compensation, and relationship between parties

	Mean	Standard dev.	Min	Max	N
Parent child	333.5	615.3	0	3520	140
Siblings	447.7	723.8	0	5000	230
Relatives	668.8	661.4	0	1760	63
Outsiders	1020.3	633.2	17.6	2500	26
All	474.6	697.1	0	5000	460

Table 5: Variable *Transfer*

Code	Type of arrangement
0=	Free
1=	Loan with voluntary compensation
2=	Loan with compulsory compensation
3=	Sharecropping
4=	Fixed rent

Table 6: Explanatory variable: summary statistics

	Type	Mean	Min	Max	N
Safety net value of land	(0;1)	0.89	0	1	475
Risk lover	(0;1)	0.17	0	1	475
Chanot	(0;1)	0.91	0	1	474
Legal ownership status	(0;1)	0.45	0	1	473
Land conflict	(0;1)	0.07	0	1	475
Will sell land	(0;1)	0.11	0	1	475
Child-parent	(0;1)	0.30	0	1	460
Siblings	(0;1)	0.50	0	1	460
Relatives	(0;1)	0.14	0	1	460
Outsiders	(0;1)	0.05	0	1	460
Assistance from relat.	(0;1)	0.55	0	1	475
Visit home	visit per year	1.44	0	2	475
Remittances	(0;1)	0.60	0	1	475
Village relat. lending power	of year income	9.69	0	246.55	473
Bkk relat. lending power	of year income	24.06	0	1190.48	474
House	(0;1)	0.16	0	1	475
Schooling	lowest to highest degree	2.76	0	5	473
Age of head	years old	43.06	21	71	475
Head as female	(0;1)	0.09	0	1	475
Good land	(0;1)	0.74	0	1	475
Highland	(0;1)	0.11	0	1	462
Land size	rai ³²	14.93	1	100	474
Bought land	(0;1)	0.11	0	1	474
Years since migr	years	16.61	1	50	475
Migr. for lack of land	(0;1)	0.07	0	1	475
Poor province	(0;1)	0.34	0	1	472

Table 7: Rental vs loan: Probit estimation

	$Rental_{i,p}$	$Rental_{i,p}^{BIS}$
Safety net value of land	-0.1*	-0.8
Risk lover	0.32*	0.39**
Chanot	-1.48***	-0.74*
Legal ownership status	-1.09**	-0.28
Chanot*legal status	1.43***	0.51
Land conflict	0.18	0.21
Will sell land	0.31	0.27
Child-parent	-0.30	-0.85***
Siblings	0.03	-0.61***
Relatives	omitted	omitted
Outsiders	1.46***	1.28***
Assistance from relat.	0.35*	0.37**
Visit home	0.21	0.32**
Remittances	0.013	-0.05
Village relat. lending power	0.49	-0.29
Bkk relat. lending power	0.07	0.05
House	0.63***	0.44**
Schooling	0.05	-0.06
Age of head	0.04***	0.04***
Head as female	0.47*	0.07
Good land	0.37	0.21*
Highland	0.71***	0.40
Land size	-0.02	-0.01
Bought land	0.26	-0.01
Years since migr	-0.03***	-0.03***
Migr. for lack of land	-0.48	-0.40
Poor province	-0.17	-0.21
cons	-2.72***	-2.02***
Pseudo R2	0.32	0.25
Pseudo log likelihood	-123.35	-188.88
N	447	447

Notes: Significance levels: * 0.10 ** 0.05 *** 0.01

Table 8: Free loans and fixed rent: Probit estimation

	$Fix_{i,p}$	$Free_{i,p}$
Safety net value of land	-0.44	-0.57**
Risk lover	0.24	0.14
Chanot	-0.01	0.08
Legal ownership status	0.09	-0.25
Chanot*legal status		
Land conflict	-1.85	-0.54
Will sell land	0.53	-0.06
Child-parent	0.25	0.35**
Siblings	-0.20	omitted
Relatives	omitted	-0.64**
Outsiders	1.32***	no obs.
Assistance from relat.	-0.02	-0.29*
Visit home	0.12	-0.24**
Remittances	-0.22	0.16
Village relat. lending power	1.45***	-0.16
Bkk relat. lending power	0.17	0.01
House	0.03	0.38*
Schooling	0.21**	-0.01
Age of head	0.03**	0.06
Head as female	0.86**	0.46*
Good land	0.17	0.11
Highland	0.87**	-1.09***
Land size	-0.01	-0.00
Bought land	0.27	0.02
Years since migr	-0.05***	-0.02
Migr. for lack of land	0.29	0.51*
Poor province	0.35	-0.03
cons	-4.47***	-0.71
Pseudo R2	0.40	0.18
Pseudo log likelihood	-61.09	-177.28
N	447	447

Notes: Significance levels: * 0.10 ** 0.05 *** 0.01

Table 9: Category of arrangement: Multinomial logit estimation

	<i>Base outcome : Free loan (no compensation)</i>			
	loan voluntary compens	loan compulsory compens.	sharecropping	fixed rent
Safety net value of land	1.19***	1.89**	-0.28	-0.08
Risk lover	-0.46	0.03	0.48	0.45
Chanot	-0.43	15.13	-4.13***	-1.87
Legal ownership status	-0.69	16.17	-2.72*	-1.57
Chanot*legal status	1.15	-15.43	4.23***	1.92
Land conflict	1.02	1.30	1.52	-4.42
Will sell land	0.05	0.43	0.51	1.03
Child-parent	-1.70**	-3.30***	-3.23***	-1.02
Siblings	-1.19*	-2.83***	-0.85	-1.59
Relatives	omitted	omitted	omitted	omitted
Outsiders	16.92	18.00	19.72	20.71
Assistance from relat.	0.48*	0.70	1.54***	0.47
Visit home	0.43**	0.91***	1.14**	0.86*
Remittances	-0.34	-0.45	0.32	-0.62
Village relat. lending power	0.22	-5.41*	-2.10	2.96*
Bkk relat. lending power	-0.33	-0.29	-0.55	-0.03
House	-1.16***	-0.79	0.92	-0.60
Schooling	0.21	-0.24*	-0.08	0.44**
Age of head	-0.01	0.07**	0.07***	0.09**
Head as female	-1.29**	-1.57**	-0.80	0.77
Good land	-0.24	0.11	0.56	0.35
Highland	-2.50***	-2.6***	-0.95	0.47
Land size	0.000	-0.000	-0.01	-0.06
Bought land	-0.03	-0.72	0.51	-0.17
Years since migr	0.07***	0.03	0.00	-0.57
Migr. for lack of land	-0.91*	-0.68	-16.81	5.65**
Poor province	0.26	-0.15	0.17	-0.54
cons	3.42***	-16.07	-1.72	-5.07

Pseudo R2= 0.30
Pseudo log likelihood=-394.06
N=447

Notes: Significance levels: * 0.10 ** 0.05 *** 0.01