COSTS OF AGRICULTURAL CREDIT AND INTEREST RATE SENSITIVITY OF SMALL FARMERS: AN EMPIRICAL STUDY

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDIX TABLES

EXECUTIVE SUMMARY

TITLE:	Costs of Agricultural Credit and Interest Rate Sensitivity of Small Farmers: An Empirical Study
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Over the years, farmer borrowers' perception of high interest rates and banks' view of the risks of agricultural lending and pricing continuously contribute to the problem of access to credit which is deemed necessary to increase agricultural production and income, and for financing institutions' viability and sustainability. The purpose of this study is to address the lack of empirical data on farmers' perception and sensitivity to varying interest rates, and find out what could be a fair and reasonable rate of interest. The study also aims to gather data on how banks and other lending institutions price their agricultural loans.

Of the total sample farmers surveyed, 80% of them has experienced borrowing in the past 12 months. Primary reasons why small-scale farmers borrow includes agricultural purposes (buying farm inputs, improving land, etc.) and personal use (household consumption, consumer durables, bills, etc.). Small-scale farmers vary in the types of lenders they source their loans from. Formal sources of loans includes commercial and government banks, cooperatives, lending institutions, all of which has a formal and defined process of lending to both farmers and non-farmers. On the other hand, those who are included in the informal sources type are trade millers, input suppliers, family and friends, wholesalers, who transacts lending in a more casual way. Based on the survey on small-farmer borrowers, average interest rates of loans sourced from informal lenders are much higher than those sourced from the formal type.

Lenders, both from the formal and informal sector, were interviewed to determine how they price their loans and what constitutes their lending costs. For formal lenders, the average annual interest rate is 11% for agricultural and 11% non-agricultural loans while for informal lenders, the rate is 14% for agricultural loans and 11% percent for non-agricultural loans. Majority formal lenders require collateral especially if it involves high amount of loan but only a small percentage of the informal lenders require collateral since most offer loans only to people they already know or relatives and the amount is lower as compared to formal lenders. The average transaction cost per amount loan is lower for formal lenders as compared to informal lenders. Lenders from both sector experienced various problems such as delayed payment of borrowers, unsecure funds, management issues, and lack of assistance.

The study utilized a treatment-effects model with a two-step consistent estimator. The treatment-effects model considers the effect of an endogenously chosen binary treatment on another endogenous continuous variable, conditional on two sets of independent variables. The first stage involves the decision of a small farmer to borrow from formal sources subject to various financial and farmer characteristics (actual interest rate paid, total income, civil status, age, gender, educational attainment, and total number of dependents) and transaction costs (total number of requirements, distance of lender, and time for loan approval). Results showed that the farmer's decision to borrow from formal sources is significantly affected by interest rate, the crops dummy variable, all the transaction cost variables (time approval, distance to wholesale market, road quality, interaction of distance and road quality, and TC ratio), lenders per ten thousand population (as a proxy for ease of access to credit), other income, and flexibility. For the second stage estimation, the study used predicted probabilities from the first stage probit estimation of the treatment effects model to estimate the different levels of interest rates and relevant factors at which a randomly chosen individual will choose a borrowing regime. Setting the switching probability at 0.5, the values are manually computed utilizing the marginal effects of each variable. Results from the second stage of the treatment effects model showed that interest paid on a loan has only indirect effects on the amount borrowed through the decision of the farmer to borrow from formal sources. Furthermore, the study found out that a higher transaction cost for every amount borrowed has significant negative effects on the amount borrowed proving that interest rates are not the sole basis of farmers in obtaining loans but also other costs involved in the loan process.

The computed "equilibrium" or "inflection" interest rate which would make an informal borrower shift to formal borrowing is 18%. This would mean that at an interest rate higher than 18%, the borrower will choose to borrow from informal sources.

COSTS OF AGRICULTURAL CREDIT AND INTEREST RATE SENSITIVITY OF SMALL FARMERS: AN EMPIRICAL STUDY

I. BACKGROUND AND RATIONALE

High interest rates on loans had always been the complaint of farmers. Interest rates comprise about 80% (De Guia–Abiad, 1991) of the total costs of borrowing and hence may influence farmers' credit demand and borrowing behaviour. On the other hand, the interest rate or total loan charges of banks and other lending institutions on their loans to small farmers cover lending costs plus a reasonable margin of profit. It reflects the high administration costs including risks of lending to the small farming sector. This affects banks/lenders' profitability and lending behaviour especially towards small farmer borrowers. Another argument in defense of higher rates is that access is more important than the loan price, evident in the prevalence of borrowing from informal lenders (e.g. private moneylenders, input dealers, "5-6" or "Bombay", etc.) despite exorbitant interest charges.

Farmer borrowers' perception of high interest rates and banks' view of the risks of agricultural lending and pricing, both contribute to the problem of access to credit necessary to increase agricultural production and income, and financing institutions' viability and sustainability. Both views however have yet to be proven empirically. Also, the thinking that small farmers view access to credit as more important than the interest rate remains untested and unverified.

Meanwhile, the Agriculture and Fisheries Modernization Act (AFMA) of 1997 (Republic Act 8435) declared a national policy to provide access to credit to small farmers using interest rates determined by market forces (AFMA, Chapter 3, Section 20). This policy and the contrasting perceptions on interest rates raise the question of "reasonable and fair interest rates."

This study therefore, is intended to address the lack of empirical data on farmers' perception and sensitivity to varying interest rates, and what could be a fair and reasonable rate of interest. The study also aims to gather data on how banks and other lending institutions price their agricultural loans.

II. OBJECTIVES

The general objective of the study is to understand how sensitive farmers are to varying interest rates, and how interest rates or loan costs, affect small farmers' loan take up and borrowing behaviour. Specifically, the study aims to:

1. Identify the components and estimate the costs borne by small farmers in availing of loans for their production and other income-generating activities;

2. Determine how banks and other lending institutions price their agricultural and non- agricultural loans, and estimate what constitutes the lending costs;

3. Establish empirical evidence to show the effect of varying interest rates to small farmers' decision to borrow;

4. Identify other factors affecting small farmers' and fishers' decision to avail loans for their production and other income-generating activities relative to the interest rate; and

5. Formulate recommendations on the components and equilibrium level of interest rate and price of agriculture and fisheries credit.

III. REVIEW OF RELATED LITERATURE

The presence of informal lending as an alternative to formal credit is due to the adverse selection problem faced by lenders. Lenders have little to no way of distinguishing good borrowers from the bad-risk borrowers; as a result, good borrowers are rationed out of the formal market (Stiglitz and Weiss, 1981). Small farmers who may be good credit risks are unable to acquire credit from formal channels and resort to these informal sources. In the Philippines, these are comprised of the traditional moneylenders which were the landlords, as well as traders, input suppliers, big farmers and warehouse owners. Llanto (1990) recognizes that these informal lenders are able to resolve the problem of information asymmetry since the borrower and the informal lender know each other quite well such that the lender can be more accurate in assessing the likelihood of repayment and default. Also, the loan contract that is negotiated carries with it specific characteristics that account for a farmer's circumstances. These include flexible repayment schedules, varying amounts of loan amortization, and adjustment of the required collateral, among others (Llanto, 1990).

A feature commonly associated with rural credit markets is the interlinking of transactions. This reduces the cost of acquiring information and reduces the transaction costs of the lender. Llanto (1990) cites such linkages between banks and rural organizations that are termed the self-help groups. These are associations organized, owned, operated, and controlled by the members themselves. Credit cooperatives, farmers associations, credit unions all fall under this category. The link or tie-up happens at an institutional level between the group and the bank. Llanto (1990) presents a case of a rural-based corporation in Cotabato which aids its farmer-members to acquire loans at market rates, acting both as a conduit of funds and a guarantor to the loans. The corporation is able to reduce transaction costs since it is able to identify the good risk borrowers among its members. In cases of default, the corporation is able to exact pressure on members to pay back their loans to ensure that credit access to members will be uncut.

The work of Saito and Villanueva (1981) provided an early attempt to estimate the transaction costs of lending by different Philippine financial institutions and compare these costs between the small and non-small sectors. The study found that transaction costs of lending to large-scale industry amount to less than 3% of the outstanding loans, which is twice as low compared to lending to small-scale industries or small-scale farmers (5%-7%). If the cost of obtaining funds is included, lending to small farmers then becomes three times more expensive compared to lending to large industries. Thus, providing credit to small-scale farmers is dependent on lowering administrative costs and/or the cost of default – an example is the presence of rural banking institutions which are able to obtain funds from the Central Bank at lower rates. La Due and Leatham (1984) point out that using variable interest rates shift the risk from lenders to borrowers and raise administrative costs – additional costs resulting from monitoring rate indices, informing borrowers of changes in the rates, and recalculating payments. Lenders might be better off looking for alternatives that shift the interest rate risk away from farmers such as asset-liability matching, hedging, and brokering.

Interlinking can also occur at the individual level. The study of Nagarajan and Meyer (1993). They focused on informal lending by rice traders and farmer lenders in the province of Nueva Ecija and found that credit was interlinked with product, labor, and land markets. Farmers that borrowed funds from a trader lender are typically required to repay with rice, and some lenders also require that the farmers' entire marketable surplus be sold to them as well. These traders want to avoid high search costs in finding low-priced and reliable sources of marketable output (Teh, 1994). This leads to a sort of "matching" of heterogeneous borrowers and lenders; for instance, trader lenders prefer to loan to farmers who are able to produce a large marketable surplus. Nagarajan and Meyer (1993) estimated a single equation logit model for each lender type and determined that trader lenders are more likely to lend to households with higher value of non-land assets, higher annual gross returns from farming, and larger farm size. These relationships are reversed when looking at farmer lenders' loan behaviour since they are matched with borrowers that are secure in their land tenure status as well as the availability of efficient family labor that can be utilized in their farms.

Teh (1994) focused on aspects of trading that provide an incentive to interlink credit with certain marketing arrangements in the provinces of Bohol and Iloilo. The trader's decision to lend is positively affected by his educational attainment as well as the number of farmers that the trader deals with. Also, a pure grains trader is more likely to lend as compared to a miller. A dummy variable to account for provincial differences shows that Bohol traders were more likely to lend than those from Iloilo mainly due to lower marketing costs. However he found little evidence to support his initial hypotheses that such contracts represent a forward sale of future output as a hedge against price risks and that these interlinks reduces search or transaction costs. On the other hand, traders were found to provide loans that are not subject to explicit interest rates and that they do not distinguish between borrowers and non-borrowers when paying for the farmers output; these farmers would thus be a regular supplier of their products to the traders.

Some studies have focused on the borrower's side of the rural credit equation. De Guia-Abiad (1991, 1993) used the 1987 ACPC household survey conducted in Batangas, Camarines Sur, Pangasinan, Iloilo, Negros Oriental, and Misamis Oriental to estimate a simultaneous equation model wherein loan demand and transaction costs are jointly determined. Transaction costs were found to negatively affect loan demand; they are less likely to borrow the higher the additional out-of-pocket expenditures and the higher the cost of time in applying for the loan. Variables that were found to affect the level of transaction costs are the type of banks and the distance to the bank. Rural banks incur higher transaction costs than non-rural banks due to screening and supervising a large amount of loans. Also, borrowers who live farther away from the bank have higher transaction costs because of higher transportation expense and the higher opportunity cost of travel time to the bank. Overall, a borrower's decision to apply for a loan is determined by the sum of transaction costs and the explicit interest rate charged, the year of loan application, the land area owned, and the level of education, household size, and the number of dependents (De Guia-Abad, 1991).

De Jesus and Cuevas (1988) sought to quantify credit demand that not only considers the household's loan but its overall liquidity position.

Turvey et al.'s (2012) study of Chinese farmers' credit demand elasticity attempted to provide evidence of credit demand being highly inelastic. They found that lower interest rates lead to more elastic credit demand. Furthermore, a farmer without formal or informal debt will have a highly inelastic demand for credit – however formal and informal debt when taken additively results in higher demand elasticity compared to whether they borrowed solely from the formal or the informal credit source. Farley and Ellinger (2006) studied American farmers' interest rate sensitivity which asked farmers to rate 13 reasons to switch between primary lending institutions. Only one variable was found to be significant to affect price sensitivity – sourcing from the FCS, a lending institution in the U.S. Other variables such as age, education, farm size, tenure, leverage, and off-farm income were insignificant.

Going back to the Philippines, Briones (2007) arrived at a similar conclusion that credit demand is not inelastic. Using a survey of rice farmers for crop year 2000-2001, a Heckman selection model was employed in order to address the possible endogeneity of the type of loan on the amount borrowed by the rice farmer. The latent equation regresses (formal) bank loans with the (formal) bank lending rate, sociodemographic farmer characteirstics, and control variables for differential access to technology, dgree of risk and risk aversion and differences in asset endowment, while the selection equation regresses the type of loan on all the second stage variables along with the informal lending rate. Results showed that bank lending rate is negative and highly significant. Credit demand response was also found to be nearly unit elastic, which disproves the conjecture. Other significant variables include age, nonfarm assets, geographical dummies for Luzon and Visayas (negative effect) and household size, farm assets, and claims history (positive effect).

This study takes off from the study made by Briones (2007) which addresses the bias that the type of loan may affect the credit behavior of small farmers. In this study, the sample is extended to include many commodities covering crops, livestock/poultry, marine fishery, and aquaculture and includes various transaction cost variables which would provide more insights on the factors affecting credit demand of these farmers. Also, the study attempts to compute the interest rate among various scenarios wherein an informal borrower would be willing to switch to formal borrowing which could be helpful in formulating future credit policy.

IV. METHODOLOGY

A. Sampling Scheme and Sample Size Determination for the Survey of Small-Scale Farmers

Selection of Sample Areas and Selection of Small-scale Farmers

Two-stage sampling was done in selecting the farmers. Two provinces for each commodity were considered as the primary sampling units while farmers were considered as the secondary sampling units. To randomly select provinces, simple random sampling using probability-proportional-to-size sampling (PPS) was done. The measure of size that was considered is the total production per commodity of each province. Hence, provinces have unequal probabilities of being selected, i.e. provinces with higher production have higher probabilities of being selected. Administrative data on the production of the different commodities per province was obtained from the Department of Agriculture Bureau of Agricultural Statistics. Cumulative-size method was used to draw simple random samples of provinces. From each selected province, the top producing barangay was selected.

Farmers were randomly selected from the top producing barangay in the province. Simple random sampling without replacement was employed to determine the farmer respondents in the survey. List of all small-scale farmers (i.e. including borrowers and non-borrowers) in the selected barangay was used to obtain the samples. The computed sample size was proportionally allocated for borrowers and non-borrowers.

Sample Size Determination of Small-Scale Farmers

Given the above sampling scheme, sample size was determined per barangay since it is expected to have varying population of farmers within each barangay to address issues of comparison and estimation across barangays and provinces. The sample size formula that was used is based on the assumption that the observations from the farmers is normally distributed. Hence, from Oñate and Bader (1990), under the assumption that the proportion of farmers who are sensitive to credit risk (P) is normally distributed, the appropriate sample size formula derived is given by,

$$n = PQ\left(\frac{Z_{\alpha/2}}{d}\right)^2 \qquad \text{Eq. (1)}$$

where, P hypothesized proportion of farmers shifting from formal to informal
Q (1-P)
$Z_{\alpha/2}$ standard normal deviate associated with certain α
d margin of error

For the study, the hypothesized proportion was set to 0.5 for all the provinces. The confidence level for the study was set to 95% thus α=0.05. Based from survey theory, the acceptable coefficient of variation (CV) must be less than 10% to ensure the reliability and validity of survey results. This value is directly proportional to the margin of error allowed to enter in the survey. Varying values of margin of error are used to obtain an optimum sample size that will yield to estimates with highest possible precision. Computed sample size was proportionally allocated for the formal and non-formal borrowers. Hence the approximate total number of respondents for this study is 616 farmers. Table below shows the margin of error allowed in the survey for each targeted commodity cluster.

Table 1. Selection of survey areas and sample size of small farmers, Philippines, 2014

Group	Commodity	Province	d	Target Sample Size	Production Level
Crops	Corn	Bukidnon	0.165	36	top
		Isabela	0.165	36	top
	Rice	Ilo-ilo	0.165	36	top
		Nueva Vizcaya	0.165	36	med
	HVCC	Benguet	0.165	36	med
		Davao del Norte	0.165	36	med
Livestock	Chicken	Nueva Ecija	0.17	34	top
		Camarines Sur	0.17	34	low
	Duck	Bohol	0.17	34	low
		Bulacan	0.17	34	top
	Cattle	Batangas	0.17	34	top
		Negros Occidental	0.17	34	med
	Swine	Bukidnon	0.17	34	top
		Nueva Ecija	0.17	34	med
Fisheries	Marine Municipal	Zambales	0.175	32	med
		Catanduanes	0.175	32	low
	Aquaculture	Batangas	0.175	32	med
		Pangasinan	0.175	32	top

B. Sampling Scheme and Sample Size Determination for the Survey of Formal and Informal Lenders

Sampling Scheme and Selection of Lenders

For the formal lenders, given the selected provinces in the survey of farmers, list of all formal lenders was used as the sampling frame. Simple random sample without replacement of formal lenders respondents was obtained.

For the informal lenders, network sampling was employed. An example of the network sampling is shown in the figure below.

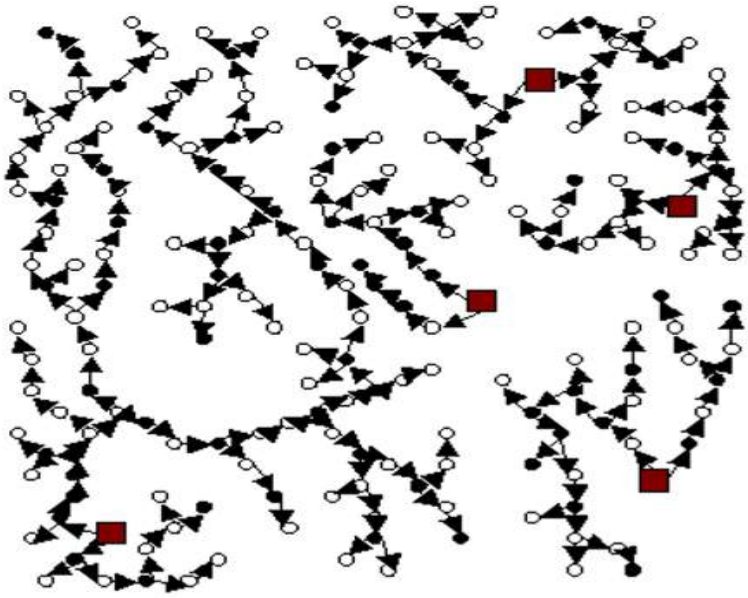

Figure 1. Sampling Scheme for Informal Lenders

Network sampling was done since the nature of the population of informal lenders in the Philippines are hidden. Initial informal lenders (i.e. reproductive seeds) will be recruited for the study. Then, networks of informal lenders was determined. After constructing the network up to the 5^{th} degree of association, sampling and sampling weights was done.

Sample Size Determination of Lenders

For the formal lenders, the sample size determination formula given by Onate and Bader was used. In this case, the proportion of lenders who strictly follow credit policy was considered. Consistent with the survey of farmers, α=0.05 and P=0.5. For the margin of error d, the value was set to 0.134 which is lower than that of the farmers' survey. This is because variation among responses of lenders was expected to be lower than that of the farmers. Thus

the computed sample size for the formal lenders is 54. This was equally allocated for all the provinces, thus 3 formal lenders were sampled per province.

For the informal lenders, maximum network formed is hypothesized to 36 networks. With this, the approximate number of respondents for the informal lenders is 36. This was equally allocated for all the provinces, thus 2 informal lenders per province were selected.

Table 2. Sample Size of Formal and Informal Lenders, Philippines, 2014

Group	Commodity	Province	Formal	Informal
Crops	Corn	Bukidnon	3	2
		Isabela	3	2
	Rice	Ilo-ilo	3	2
		Nueva Vizcaya	3	2
	HVCC	Benguet	3	2
		Davao del Norte	3	2
Livestock	Chicken	Nueva Ecija	3	2
		Camarines Sur	3	2
	Duck	Bohol	3	2
		Bulacan	3	2
	Cattle	Batangas	3	2
		Negros Occidental	3	2
	Swine	Bukidnon	3	2
		Nueva Ecija	3	2
Fisheries	Marine Municipal	Zambales	3	2
		Catanduanes	3	2
	Aquaculture	Batangas	3	2
		Pangasinan	3	2
Sub-total			*54*	*36*
Total				**90**

C. Theoretical Framework

Consider a farmer that is selecting the amount he/she wishes to borrow to finance the working capital requirements of his/her farming activity, with two possible sources of loans – the formal lender and the informal lender. The interest rate charged by the formal lender is denoted by R, and is lower than the informal lending rate denoted by Q. According to Briones (2007), a credit demand curve could be derived with total borrowing on the x-axis and the relevant interest rate (depending on the source) on the y-axis, shown in the figure below:

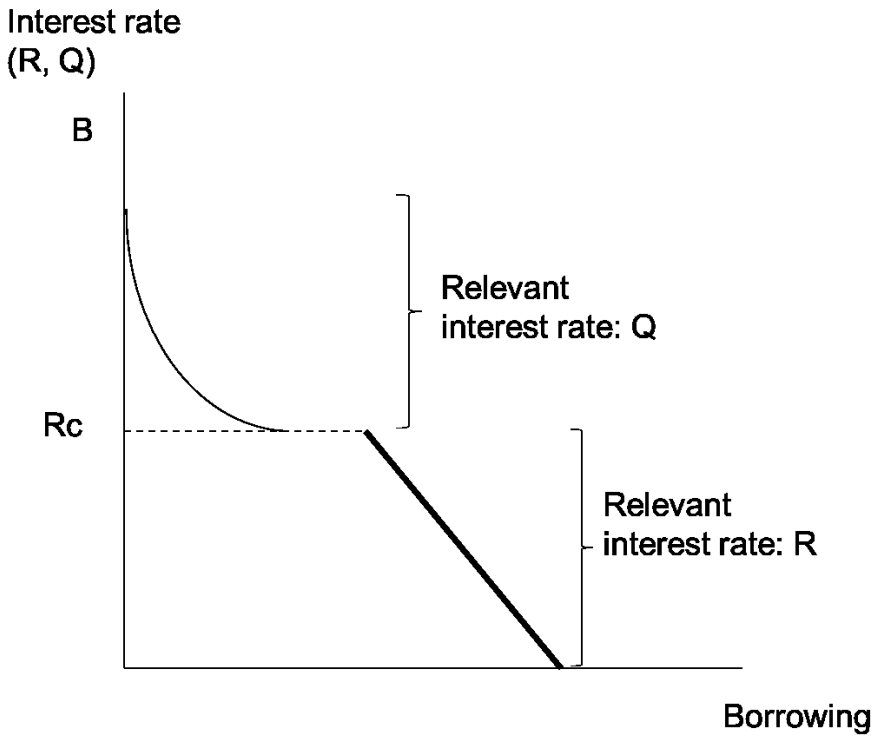

Figure 2. The credit demand curve

Source: Adopted from Briones (2007)

Assuming that farmers borrow from only one source during a crop/production season, for a sufficiently low R, borrowing is purely from formal sources; there is no informal borrowing for formal interest rates between [0, Rc]. As R increases within the range – controlling for other factors that can influence credit demand – the amount borrowed from formal sources declines until the interest rate Rc, at which point the farmer switches to informal borrowing and Q becomes the relevant interest rate. Similarly, as Q increases within the range [Rc, Qc], the amount borrowed from informal sources declines until the vertical intercept wherein the farmer does not borrow from the credit market and switches entirely to self-financing (Briones, 2007). The discontinuity in the credit demand curve can be attributed to the farmer reducing borrowing by a discrete amount since formal borrowing is usually accompanied by an insurance cover (to account for the risk of default) which disappears completely when the borrower takes on an informal loan. The interest rate Rc can thus be termed as the "equilibrium" or "switching" interest rate and is what this study tries to determine.

D. Empirical Model

The study used a treatment-effects model with a two-step consistent estimator. The treatment-effects model considers the effect of an endogenously chosen binary treatment on another endogenous continuous variable, conditional on two sets of independent variables. The treatment-effects model estimates the effect of an endogenous binary treatment, z_j, on a

continuous, fully observed variable y_j, conditional on the independent variables x_j and w_j. The primary interest is in the regression function.

$$y_j = \mathbf{x}_j\beta + \delta z_j + e_j \qquad \text{Eq. (2)}$$

Where, z_j is an endogenous dummy variable indicating whether the treatment is assigned or not. The binary decision to obtain the treatment z_j is modeled as the outcome of an unobserved latent variable z_j*. It is assumed that z_j* is a linear function of the exogenous covariates w_j and a random component u_j.

Specifically,

$$z_j^* = \mathbf{w}_j\gamma + u_j \qquad \text{Eq. (3)}$$

and the observed decision is,

$$z_j = \begin{cases} 1, & \text{if } z_j^* > 0 \\ 0, & \text{otherwise} \end{cases}$$

where e and u are bivariate normal with mean zero and covariance matrix.

$$\begin{bmatrix} \sigma^2 & \rho\sigma \\ \rho\sigma & 1 \end{bmatrix}$$

In the study, z_j represents the decision of the farmer to borrow from formal sources depending on sociodemographic characteristics, transaction cost variables, annualized interest rate, and income. Also, y_j corresponds to the amount borrowed of the farmer dependent on sociodemographic characteristics, transaction cost variables, interest rate, and income, but includes the farmer's decision to borrow from formal sources. The specific regression equations are presented below.

First-stage probit:

$$\begin{aligned} \text{FORMAL} = {} & \gamma_0 + \gamma_1\text{INTERESTRATE} + \gamma_2\text{AGE} + \gamma_3\text{GENDER} + \\ & \gamma_4\text{EDUCATION} + \gamma_5\text{DEPENDENTS} + \gamma_6\text{CROPS} + \\ & \gamma_7\text{FISHERY} + \gamma_8\text{TIMEAPPROVAL} + \gamma_9\text{DISTANCEW} \\ & + \gamma_{10}\text{ROADQ} + \gamma_{11}\text{ROADQxDISTANCEW} + \\ & \gamma_{12}\text{TCRATIO} + \gamma_{13}\text{LENDERRATIO} + \gamma_{14}\text{TRAINING} + \\ & \gamma_{15}\text{MAININCOME} + \gamma_{16}\text{OTHERINCOME} + \\ & \gamma_{17}\text{FLEXIBILITY} + \mu_i \end{aligned} \qquad \text{Eq. (4)}$$

where FORMAL = 1 if formal borrower, 0 if informal borrower
INTERESTRATE = annualized interest rate
AGE = age of respondent farmer
GENDER = 1 if male, 0 if female
EDUCATION = 1 if 10 years of education and above, 0 otherwise
DEPENDENTS = no. of dependents
CROPS = 1 if respondent's main activity is crop farming, 0 otherwise
FISHERY = 1 if respondent's main activity is fishery, 0 otherwise
TIMEAPPROVAL = no. of hours to approve the loan
DISTANCEW = distance to wholesale market
ROADQ = 1 if good road quality, 0 otherwise
ROADQxDISTANCEW = road quality interacted with distance
TCRATIO = index of transaction cost variables (i.e. such as cost of requirements and cost of transportation to the lender) over the amount borrowed
LENDERRATIO = number of lenders per ten thousand population
TRAINING = 1 if with formal training, 0 otherwise
MAININCOME = amount of income from main activity
OTHERINCOME = amount of income from other activities
FLEXIBILITY = 1 if with set repayment terms, 0 otherwise

Second-stage OLS given the treatment of FORMAL = 1 in the first-stage:

$$\begin{aligned} AMTBORROWED = {} & \beta_0 + \beta_1 INTERESTRATE + \beta_2 AGE + \beta_3 GENDER + \\ & \beta_4 EDUCATION + \beta_5 DEPENDENTS + \\ & \beta_6 CROPS + \beta_7 FISHERY + \\ & \beta_8 TIMEAPPROVAL + \beta_9 DISTANCEW + \\ & \beta_{10} ROADQ + \beta_{11} ROADQxDISTANCEW + \\ & \beta_{12} TCRATIO + \beta_{13} MAININCOME + \\ & \beta_{14} OTHERINCOME + \delta FORMAL + \varepsilon_i \end{aligned} \qquad \text{Eq. (5)}$$

where, AMTBORROWED = log of the amount borrowed

The study uses predicted probabilities from the first stage probit estimation of the treatment effects model to estimate the different levels of interest rates and relevant factors at which a randomly chosen individual will choose a borrowing regime. Setting the switching probability at 0.5, the values are manually computed utilizing the marginal effects of each variable.

For the probit model, we let θ be the vector of parameters, $\mathbf{z}$ as a vector of covariate values, and $f(\mathbf{z},\theta) = \Phi(\mathbf{x}\beta)$ as a scalar-valued function returning the value of the predictions where $\Phi(\mathbf{x}\beta)$ is the standard normal distribution function. The values are computed through the "margins" command of STATA. "margins" computes estimates of

$$p(\theta) = \frac{1}{M_{S_P}} \sum_{j=1}^{M} \delta_j(S_P) f(z_{j,}\theta) \qquad \text{Eq. (6)}$$

where $\delta_j(S_P)$ identifies elements within the subpopulation S_P (for the predicted probabilities),

$$\delta_j(S_P) = \begin{cases} 1, & j \in S_P \\ 0, & j \notin S_P \end{cases}$$

M_{S_P} is the subpopulation size

$$M_{S_P} = \sum_{j=1}^{M} \delta_j(S_P) \qquad \text{Eq. (7)}$$

and M is the population size.

Let $\hat{\theta}$ be the vector of parameter estimates. Then "margins" estimates $p(\theta)$ via

$$\hat{p} = \frac{1}{w} \sum_{j=1}^{N} \delta_j(S_P) w_j f(z_j, \hat{\theta}) \qquad \text{Eq. (8)}$$

where

$$w = \sum_{j=1}^{N} \delta_j(S_P) w_j \qquad \text{Eq. (9)}$$

$\delta_j(S_P)$ indicates whether observations j is in subpopulation S_P, w_j is the weight of the jth observation, and N is the sample size.

V. RESULTS AND DISCUSSION

A. Small-Scale Farmers

Small-scale Farmer Respondents

The team conducted survey of sample farmers in different assigned provinces per main commodity selected in the study. Upon coordination with the office of the municipal agriculturist, baranggays having the highest crop production, highest number of livestock and poultry population, and largest amount of fish catch were identified. The team then coordinated with the baranggay captain of the selected area in the municipality who then assisted in providing the list of the small farmers who can be considered for the survey.

a) Sample Farmer Respondents

Based on the sampling scheme and the actual survey of small farmers, the team was able to interview 646 small farmers from the three main farming activity – 1) crop farming; 2) livestock and poultry raising, and; 3) fishing. The highest number of small farmers interviewed is from livestock and poultry which includes the 4 main domestically-raised animals such cattle, swine, duck, and chicken. Crop farming includes main commodities such as rice, corn, and high value commercial crops (HVCC) while fishing activities are limited to marine municipal fishing and aquaculture.

Table 3. Main farming activity of sample farmers, Philippines, 2014

Main Farming Activity	Number of Sample Farmers	% of Total Sample Farmers
Crop Farming	217	34
Livestock/Poultry Raising	285	44
Fishing	144	22
Total	**646**	**100**

Table 4 shows the distribution of the sample farmers interviewed per main commodity produced. They are subdivided into three main farming categories: 1) crop farming, 2) livestock and poultry raising, and 3) fishing.

Table 4. Distribution of sample farmers by main commodity produced, Philippines, 2014

Main Commodity	No. of Sample Farmers	% of Total of Sample Farmers
Crop Farming		
Rice	72	11.15
Corn	73	11.30
HVCC	72	11.15
Livestock/Poultry		
Swine	72	11.15
Cattle	71	10.99
Chicken	72	11.15
Duck	70	10.84
Fishing		
Marine Municipal	72	11.15
Aquaculture	72	11.15
Total	**646**	**100**

b) Demographic Characteristics of Farmer Respondents

Based on the survey, crop faming and fishing activities are still considered a male-dominated job as 56 % and 87% of male farmers are engaged in these activities respectively.

However, when it comes to livestock and poultry raising, the number of male and female farmers are almost equal. This may be explained by the less physical activity demanded by animal raising compared to crop farming and fishing. When it comes to age, most of the small farmers in all farming activities are between the ages of 41-60. The oldest age group, 61-80 and 80 and above, comprise about 20% of the respondents while those who belong to the youngest age group comprise 25% of the sample farmers. The mean age for crop farming is 53 while those of livestock/poultry and fishing are much younger at 48 and 46, respectively. The youngest sample farmer interviewed is 20 years old and the oldest is 89, both from crop farming. Data for civil status of sample farmers indicate that 88 percent are married while only 5 percent are still single.

Out of 646 respondents, 80% have at least received formal education either on elementary or secondary level. Only 8% finished college level while 3% have undergone vocational training course. Only 2 respondents have no formal schooling.

Most of the respondent's household size are only of 3-4 or 5-6 members. This indicates a larger small-sized and medium-sized household group compared to the larger-sized family (those of more than 7 members) of which 20% of the respondents belong. The average household size of the small farmers interviewed is 5 members while the maximum household size is 19 members. Majority of farmers (65%) from all three main farming activity have 2-5 dependents while only few (5%) have dependents of 8 and above. Average number of dependents for both crop and livestock/poultry raising is 3 while for fishing, 4. Maximum number of dependents reached up to 17 dependents.

c) Annual Income of Sample Farmer Respondents

From the survey on income of small farmer respondents, those involved in aquaculture fishing activities registered the highest average annual income from their main source of income at Php 290,415. It is followed by crop farmers at Php 161,787 and by livestock/poultry raisers at Php 131,766 and having the lowest average annual income from main farming activity are the marine municipal fishermen at Php 102,818. Only few (5%) are earning Php 500,001 and above annually. The range of income coming from main farming activity is at extremes with some farmers earning none in the past 12 months to farmers earning up to 2.1 million pesos annually.

Income coming from other sources or activities aside from those included in farming activities shows that those who are in the aquaculture fishing activities have the highest average annual income at Php 109,150. This can be explained by the lesser time required in such kind of farming activity, thus more time for farmers to engage in off-farm income earning activities. However, most of the respondents (56%) on all farming activities have income from other sources only at the range of zero to Php 30,000. Maximum amount of income was recorder at 3.9 million pesos coming from a livestock/poultry farmer.

On the average, total annual income of crop farmers is at Php 213,401, livestock/poultry raisers is at Php 206,884, marine municipal fishermen is at Php 123,861 and, aquaculture fishers is at Php 397,701. When income from main farming activity and income from other sources is combined, majority (55%) of the respondents have annual total income ranging from Php 70,001 to Php 300,000. Average contribution of main farming activity to total income for crop farmers, livestock/poultry raiser, marine municipal fisherfolks, aquaculture fishermen are 77%, 63%, 83%, and 73% respectively. This shows that bulk of their total annual income is from their main farming activity.

Sample Farmer Borrowers

a) Borrowing Incidence

Based on the survey, there is a high borrowing incidence among the 646 respondents which is around 80% for all the main farming activities. Highest percentage borrowers are from the livestock/poultry (82%), followed by crops (81%) and fishery (77%).

Table 5. Incidence of borrowing, Philippines, 2014

Main Farming Activity	No. of Respondents	No. of Borrowers	% of Total Sample Farmers
Crops	217	175	81
Livestock/Poultry	285	233	82
Fishery	144	111	77
Total Sample Farmers	**646**	**519**	**80**

From the sample provinces, small farmers from Isabela, Nueva Vizcaya, and Negros Occidental top the highest number of borrowers at 97%, 92%, and 92% of the total sample farmers in their area. Noticeably, areas where crop farming is the main farming activity (Benguet, Isabela, Nueva Vizcaya, Iloilo) post high borrowing incidence. However, those coming from the southern part of the country (Bukidnon and Davao del Norte) has the lowest number of borrowers at only 58% of the total sample farmers in their respective provinces. For provinces engaged in livestock/poultry raising, borrowing incidence per province ranges from 78-92%.

Table 6. Incidence of borrowing by geographical origin, Philippines, 2014

Region	Province	No. of Respondents	No. of Borrowers	% of Provincial Sample Farmers	% of Total Sample Farmers
CAR	Benguet	36	31	86	5
I	Pangasinan	36	19	53	3
II	Isabela	37	36	97	6
	Nueva Vizcaya	37	34	92	5
III	Bulacan	34	29	85	4
	Nueva Ecija	72	63	88	10
	Zambales	36	28	78	4
IV-A	Batangas	70	63	90	10
V	Camarines Sur	36	32	89	5
	Catanduanes	36	32	89	5
VI	Negros Occidental	36	33	92	5
	Iloilo	36	28	78	4
VII	Bohol	36	28	78	4
X	Bukidnon	72	42	58	7
XI	Davao del Norte	36	21	58	3
Total		**646**	**519**		**100**

b) Source of Loans

Loans of the respondents were either sourced from formal or informal sources. Examples of formal lending institutions are banks, lending investors, cooperatives, etc., while trade millers, input suppliers, friends/relatives, etc are among the informal sources of credit. The number of farmer borrowers who source their loans from informal sources are 4 times larger the number of those obtaining loans from formal lenders. In terms of the number of loans, 74% of 633 loans are obtained from informal sources. This translates to almost 2 formal loans per formal borrower and 1 informal loan per informal borrower.

Table 7. Number of Borrrowers and Loans by Source, Philippines, 2014

Source of Loan	No. of Borrowers	% of Total Borrowers	No. of Loans	% of Total No. of Loans	Average No. of Loans
All loans					
Formal Sources	98	19	167	26	1.7
Informal Sources	421	81	466	74	1.1
Total	**519**	**100**	**633**	**100**	**2.8**
If only agricultural loans					
Formal Sources	88	29	104	28	1.2
Informal Sources	215	71	263	72	1.2
Total	**303**	**100**	**367**	**100**	**2.4**

If loans intended solely for agricultural purposes are considered, the size of borrowers obtaining loans from formal sources increases to 29% of the 303 borrower farmers. The trend is also similar if loans obtained are counted (28% of 367 loans from formal sources.

The table below shows the distribution of loans from specific formal and informal sources. On formal sources, loans from cooperatives account for 36% of the total loans from formal sources while it account 9% of the total loans from all sources. Rural banks, thrift banks and lending investors both account for 4% of loans from all sources. On the other hand, loans from friends/relatives account for 69% of the total informal loans and 51% of the total loans regardless of source. Loans from input suppliers/dealers, however, account for 10% of the total loans.

Table 8. Distribution of borrowers by sources of loans, Philippines, 2014

Source of Loan	**No. of Loans**	**% of Total Loans from Formal/ Informal Sources**	**% of Total No. of Loans**
FORMAL SOURCES			
Commercial banks	6	0.04	0.01
Rural banks	24	14	4
Thrift banks and other unspecified banks	26	16	4
Government Banks (LBP, DBP, UCPB)	3	2	0.5
Cooperatives	60	36	9
Lending Investors	28	17	4
NGOs, SLA	16	10	3
GOCCs (Quedancor, GSIS, SSS)	2	1	0.3
LGUs and other National Gov't Agencies (DTI, DAR, DILG)	2	1	0.3
Subtotal	*167*	*100*	*26*
INFORMAL SOURCES			
Trade Millers	2	0.4	0.3
Landowners/Employers	22	5	3
Input Suppliers/Dealers	63	14	10
Professional Money Lenders	45	10	7
Friends/Relatives	320	69	51
Sari-Sari Store, Wholesalers, Grocery Stores	14	3	2
Subtotal	*466*	*100*	*74*
Total	**633**		**1**

c) Number of Loans by Commodity Produced

Majority of formal loans in the past 12 months were made by livestock/poultry raisers (41%). Of the main commodity produced, aquaculture has the highest percentage of the total borrowers from formal sources (19%) while corn farmers have the lowest percentage at 7%. For informal loans, livestock/poultry farmers have the highest number of borrowers with chicken raisers comprising 14% of the total borrowers. Swine raisers and aquaculture have the lowest percentage of borrowers from informal sources at 7% and 8%, respectively. This is probably due to the high amount of borrowing that these activities require and can only be addressed by formal loans. Of the total loans, regardless of loan type, livestock/poultry raisers (44%) are still the lead borrowers followed by crop farmers (34%) and fisher folks (22%). Rice farmers, cattle raisers and swine raiser are the top borrowers with 13% each. Swine raisers in total borrowed the least with only 7% of the total borrowers.

Table 9. Distribution of formal and informal loans by main commodity produced, Philippines, 2014

Main Commodity	Formal		Informal		All Borrowers	
	No. of Loans	% of Total Loans from Formal Sources	No. of Loans	% of Total Loans from Informal Sources	No. of Loans	% of Total Loans
Crop Farming						
Rice	23	14	57	12	80	13
Corn	12	7	56	12	68	11
HVCC	18	11	47	10	65	10
Sub total	*53*	*32*	*160*	*34*	*213*	*34*
Livestock/Poultry						
Swine	13	8	34	7	47	7
Cattle	27	16	53	11	80	13
Chicken	14	8	67	14	81	13
Duck	14	8	56	12	70	11
Sub total	*68*	*41*	*210*	*45*	*278*	*44*
Fishing						
Marine Municipal	15	9	57	12	72	11
Aquaculture	31	19	39	8	70	11
Sub Total	*46*	*28*	*96*	*21*	*142*	*22*
Total	**167**	**100**	**466**	**100**	**633**	**100**

d) Demographic Characteristic of Borrower Farmers

Demographic characteristics of borrowers are shown in the Appendix Table B1. Three of five of all total borrowers are male farmers. This coincides with the proportion of male and female borrowers from both formal and informal sources. When it comes to age, majority of borrowers from formal and informal sources tend to fall under 41-60 years of age (63% and 57%, respectively). The average age range of borrowers regardless of type of loans obtained is 48 years old. The age for borrower farmers ranges between 20 to 89 years. In terms of marital status, borrowers of both formal and informal type are mostly married. Only 4% of the borrowers are single and 1% are separated.

Based on survey on educational attainment, majority of the borrowers regardless of loan type attained at least secondary school education. High school graduates comprise 29% of those who are borrowing from formal sources while elementary graduates and high school graduates comprise 26% each of those who are borrowing from informal sources. Only 2 borrowers did not receive formal schooling.

On the average, borrowers' household size is 5 members. This applies for both borrowers sourcing their loans from formal and informal lenders. There is also predominance of small-size and medium-size families for all borrowers at 34% and 37%. Only 5% of borrowers have a family size of more than 9 members. The maximum household size is 19 members. The average number of dependents for all borrowers is 4 and has a range of 0-17 dependents. For all borrowers, 69% have 2-5 dependents.

e) Annual Income of Borrower Farmers

Borrower's income from main farming and fishing activity has an average amount of Php 161,521. Most borrowers obtaining loans from formal lenders (29%) have annual income from main farming activity ranging from Php 70,001 – Php 150,000. While for borrowers who obtained loans from informal lenders, 30% have annual income from main farming activity ranging from Php 70,001 – Php 150,000. In terms of income from non-farm activities, on the average, borrowers earn Php 60,998 annually. There is a high percentage (41% and 56%) for both borrowers of loans from formal and informal sources falling under range of 0 – Php 30,000 annual income from other sources. Income from other sources ranges from 0 – 2.5 million pesos. When income from both sources are combined, average annual income is at Php 223, 858, for all type of borrowers. While there is still 6% of borrowers under the total annual income range of 0 – Php 30,000, the majority (33%) still fall under a higher total annual income range of Php 70,001 – Php 150,000. Maximum total income of the farmer respondent interviewed is 2.7 million pesos.

f) Loans of Borrower Farmers in the Last 12 Month

Average amount of loans availed vary per loan source. Formal loans obtained amounted to Php 37,985 on average while informal loans obtained averaged Php 20,395.

Swine farmers availed the largest amount of formal loans at Php 108,077. Aquaculture farmers have the highest percentage of formal loans at 19%, with an average loan amount of Php 83,161 and ranging from Php 2,000 to Php 2,000,000. The lowest percentage of borrowers from formal sources are the corn farmers (7%) who averaged Php 19,958 on formal loans. When it comes to loans availed from informal sources, the highest share belongs to poultry raisers (14%) with an average loan amount of Php 85,555. Highest average loan amount from informal sources is Php 46,706 still incurred by swine raisers. The maximum amount of loans from informal sources that was recorded was Php 500,000. Rice farmers, however, consistently have one of the highest percentages of borrowing from formal or informal loan sources and are among the top commodities that source loans regardless of type, along with cattle and chicken. This seemingly reinforces the importance of providing loans to rice farmers for enabling production and other activities given that rice is recognized as an important political commodity. In total, rice farmers have loans ranging from Php 500 – Php 200,000.

Table 10. Average amount of loans by main commodity, Philippines, 2014

Main Commodity	Formal				Informal				All Loans			
	No. of Loans	% of Total Formal Loans	Average Amount (in Php)	Min - Max (in Php)	No. of Loans	% of Total Informal Loans	Average Amount (in Php)	Min - Max (in Php)	No. of Loans	% of Total Loans	Average Amount (in Php)	Max - Min (in Php)
Crop Farming												
Rice	23	14	24,309	2,110 - 200,000	57	12	10,270	500 - 50,000	80	13	14,306	500 - 200,000
Corn	12	7	19,958	500 - 50,000	56	12	26,313	500 - 302,000	68	11	25,191	500 - 302,000
HVCC	18	11	13,639	500 - 70,000	47	10	37,228	3,600 - 500,000	65	10	30,695	500 - 500,000
Sub total	*53*	*32*			*160*	*34*			*213*	*34*		
Livestock/Poutry												
Swine	13	8	108,077	3,000 - 1,000,000	34	7	46,706	2,000 - 500,000	47	7	63,681	2,000 - 1,000,000
Cattle	27	16	15,370	1,000 - 150,000	53	11	9,143	100 - 80,000	80	13	11,245	100 - 150,000
Chicken	14	8	11,644	3,000 - 30,000	67	14	8,555	100 - 60,000	81	13	9,089	100 - 60,000
Duck	14	8	40,482	750 - 250,000	56	12	24,719	550 - 120,000	70	11	27,871	550 - 250,000
Sub total	*68*	*41*			*210*	*45*			*278*	*44*		
Fishing												
Marine Municipal	15	9	11,440	4,000 - 48,000	57	12	4,647	100 - 100,000	72	11	6,063	4,000 - 100,000
Aquaculture	31	19	83,161	2,000 - 2,000,000	39	8	35,915	500 - 450,000	70	11	56,839	500 - 2,000,000
Sub Total	*46*	*28*			*96*	*21*			*142*	*22*		
Total	**167**	**100**	**37,985**	**500 - 2,000,000**	**466**	**100**	**20,395**	**100 - 500,000**	**633**	**100**	**25,036**	**100 - 2,000,000**

During the past 12 months, highest percentage of formal loans of small farmer respondents came from cooperatives having an average amount of Php 21,460. Lowest average amount of formal loans is from LGU's and other national agencies amounting to Php 6,055. On the other hand, the highest amount borrowed (Php 2,000,000) is from commercial banks. In terms of loans from non-formal sources, friends/relatives are the most frequent source of loans with an average amount of Php 18,937. Loans from closer individuals can range from Php 100 up to Php 500,000. Input suppliers/ dealers are the second highest loan source wherein farmers avail loans with an average amount of Php 37,161 and can reach as high as Php 500,000. Rural banks, on the average provided loans for the famer respondents with an average amount of Php 79,500. Loans from such kind of banks range from Php 2,000 up to Php 1,000,000.

Table 11. Number of loans and average loan amount by specific loan source, Philippines, 2014

Source of Loan	**No. of Loans**	**Average Amount of Loan (in Php)**	**Min - Max Amount (in Php)**
FORMAL SOURCES			
Commercial banks	6	354,166.67	20,000 - 2,000,000
Rural banks	24	79500	2,000 - 1,000,000
Thrift banks and other unspecified banks	26	10885	2,000 - 50,000
Government Banks (LBP, DBP, UCPB)	3	37667	15,000 - 50,000
Cooperatives	60	21460	500 - 200,000
Lending Investors	28	13920	750 - 70,000
NGOs, SLA	16	9750	1,000 - 30,000
GOCCs (Quedancor, GSIS, SSS)	2	34500	19,000 - 50,000
LGUs and other National Gov't Agencies (DTI, DAR, DILG)	2	6055	2,110 - 10,000
Subtotal	*167*	*37985*	
INFORMAL SOURCES			
Trade Millers	2	32000	4,000 - 60,000
Landowners/Employers	22	12373	200 - 50,000
Input Suppliers/Dealers	63	37161	500 - 500,000
Professional Money Lenders	45	12662	200 - 100,000
Friends/Relatives	320	18937	100 - 500,000
Sari-Sari Store, Wholesalers, Grocery Stores	14	14093	100 - 97,000
Subtotal	*466*	*20395*	
Total	**633**	**25036**	

g) Reasons for Borrowing

Borrowers were able to state the actual intent for the loans obtained during the past 12 months. The greatest percentage (42%) belongs to the use of loans for purchasing farm inputs such as fertilizers, seeds, etc. which has an average loan amount of Php 33,591. On the otherhand, 33% of the total number of loans were intended for consumption needs of the family while 9% are used for paying other household expenses like hospital bills, medicines, education, etc. This suggests that loans are made mainly for facilitating production of the farmers' main activity and also as a means of providing stable consumption, i.e. while waiting for the harvest period of crops, or marketable size of livestock, poultry, and cultured fish. Noticeably, there are 5 loans that are intended for re-lending and/or payment for previous loans obtained. This count however, includes those who have multiple responses as their loans are intended for more than one specific purpose.

Table 12. Distribution of borrowers by specific loan purpose, Philippines, 2014

Specific Purpose	No. of Loans	% of Total Number of Loans	Average Amount of Loan
Farm inputs (seeds, fertilizers, etc.)	326	42.01	33,591
Buy equipment	21	2.71	28,452
Buy animals	17	2.19	20,382
Buy agr.land and other ag, costs	27	3.48	18,156
Purchase of inputs/or working capital	38	4.90	34,237
Improve buildings and equipment	16	2.06	41,313
Consumption needs and other personal expenses	257	33.12	11,085
For lending	5	0.64	283,200
Other purposes (i.e. hospital bills, medicine, education, etc.)	69	8.89	24,622

h) Costs of Obtaining Loans

One of the cost incurred by farmers in obtaining loans both from formal and informal sources are payments for loan requirements. Formal lenders generally charge higher cost of requirements than informal lenders. On the average, farmers sourcing their loans from formal sources pay Php 6.5 per Php 1,000 loan amount compared to Php 0.57 if loan is sourced from informal lender. Other requirements include promisory notes, legal stamps, notary, closing costs, IDs, cedula, etc.

Table 13. Cost of requirements per Php 1,000 loan amount, Philippines, 2014

Requirements	Formal	Informal
	Average	Average
Application Fees	6.5	0.57
Promisory Note, Legal Stamps, Notary	3.6	0.31
Closing Costs	0.14	-
Others (ID, baranggay clearance, community tax cert., etc.)	6.18	0.67

In order to obtain loans from lenders, most of the sample farmers (88%) visited the office/house of the lenders where they sourced their loans. In obtaining loans from formal sources, only 10% of the borrowers did not have to visit the lenders while 12% of them did not visit the informal lender's office/dwelling. The average distance of the lender's office/dwelling does not differ that much for both formal and informal lenders. In the last 12 months, for the 557 loans that were obtained by the borrowers which required a visit to the lender, the average distance of the farmer's dwelling to the lender's office is 10.37 kilometres. In terms of borrowing from formal lenders, duck raisers are most likely to be situated the farthest (30.42 km.) from the lender's office. In contrast, chicken raisers seem to be the closest in terms of average distance (3.62 km.) from formal lenders. For most commodities, office/dwelling of informal lenders are much closer to the borrower's dwelling than that of the formal lenders'. For example, for swine raisers, there is a huge difference in the average distance to formal lenders (18 km.) than that to the informal lender source (3.48 km). This goes the same for duck raisesr having an average distance from lender of 30.42 km. (formal) versus 13.05 km. (informal).

Table 14. Distribution of borrowers by visit to lender, Philippines, 2014

Main Commodity	Formal				Informal				All Loans			
	Visited the Lender	Did not Visit the Lender	% of Total Borrowers who Visited the Lender	Average Distance to Lender (in km)	Visited the Lender	Did not Visit the Lender	% of Total Borrowers who Visited the Lender	Average Distance to Lender (in km)	Visited the Lender	Did not Visit the Lender	% of Total Borrowers who Visited the Lender	Average Distance to Lender (in km)
Crop Farming												
Rice	19	4	11	17.07	49	8	11	5	68	12	11	5.88
Corn	10	2	6	12.86	54	2	12	4.85	64	4	10	7.15
HVCC	17	1	10	14.2	43	4	9	19.89	60	5	9	17.96
Subtotal	*46*	*7*	*28*		*146*	*14*	*31*		*192*	*21*	*30*	
Livestock/Poutry												
Swine	13	0	8	18	28	6	6	3.48	41	6	6	7.69
Cattle	23	4	14	8.06	46	7	10	9.93	69	11	11	9.14
Chicken	14	0	8	3.62	59	8	13	4.42	73	8	12	4.24
Duck	14	0	8	30.42	47	9	10	13.05	61	9	10	18.3
Subtotal	*64*	*4*	*38*		*180*	*30*	*39*		*244*	*34*	*39*	
Fishing												
Marine Municipal	11	4	7	10.05	51	6	11	19.97	62	10	10	17.37
Aquaculture	26	5	16	9.9	33	6	7	2.42	59	11	9	17.15
Subtotal	*37*	*9*	*22*		*84*	*12*	*18*		*121*	*21*	*19*	
Total	**147**	**20**	**90**	**11.89**	**410**	**56**	**88**	**9.57**	**557**	**76**	**88**	**10.37**

The costs of obtaining loans from both types of lenders seem to differ by a significant amount. In order to go to a formal lender's office/dwelling, a farmer will have to spend an average amount of Php 86.00 which when multiplied by the average number of visits to the formal lender (2 visits) results to a cost of Php 172.00. In contrast, obtaining loans from informal sources will be less time consuming since it will only require the borrower to visit once (on the average) and incur an average of transportation costs amounting to Php 127.48. It is important to note that for borrowing from formal loan sources, the maximum reported number of visits in order to obtain a loan is 12, whereas, the maximum number of visits is 5 when borrowing from informal sources. Another consideration is the time of approval of loans after loan requirements have been submitted by the borrower. For informal sources, on the average, it will only take 24 hours before the loan is granted to the sample farmer, but for formal sources, granting loans will be after 228.76 hours or roughly 9 days. There is also a lower average cost of loan requirements for those obtained from informal sources than from the formal ones (Php 88.91 vs Php 337.60). Also, there were extreme cases wherein the formal loan was approved after a year, and an informal loan was released after 30 days.

Table 15. Transaction costs, Philippines, 2014

Transaction Costs Variables	**Formal**		**Informal**		**All Loans**	
	Average Amount (in Php)	**Min - Max Amount (in Php)**	**Average Amount (in Php)**	**Min - Max Amount (in Php)**	**Average Amount (in Php)**	**Min - Max Amount (in Php)**
Number of visits to the lender	2	0 - 12	1	0 - 5	1	0 - 12
Cost of transportation to the lender (in Php)	86	0 - 2,000	127.48	0 - 2,000	108.76	0 - 2,000
Time of approval of loan after submitting requirements (in hours)	228.76	0.08 - 8,760	24	0 - 720	84.37	0 - 8,760
Cost of requirement for loans (in PhP)	337.6	2 - 12,250	88.91	0 – 500	296.26	0 - 12,250

Table below shows the cost of borrowing from both formal and informal sources per Php 1,000 loan amount. In terms of transaction cost, loans obtained from formal loans are of higher cost at Php 25 compared to loans sourced from informal lenders at Php 5. When actual interest payments are added to transaction costs, total cost of credit is obtained. In contrast with the results in transaction costs, total cost of borrowing from formal sources are also much lower at Php 171 than cost of borrowing from informal sources at Php 205.

Table 16. Cost of credit for all interest paying borrower farmers by type of loan, Philippines, 2014

Costs	Formal	Informal
	Average Cost	Average Cost
Transaction costs (per 1,000 loan amount)	25	5
Costs of requirements	16	2
Costs of travel	9	3
Interest Paid (per 1,000 loan amount)	146	200
Cost of Credit (per 1,000 loan amount)	171	205

Marine municipal fishers sourcing their loans from formal sources incur the highest cost of borrowing at Php 276 per Php 1,000 loan amount. While lowest cost of borrowing are sourced from formal sources by livestock/poultry raisers. Specifically, aquaculture farmers sourcing loans from formal sources have the highest transaction cost at Php 33 per Php 1,000 loan amount, while crop farmers have the lowest at Php 4.

Table 17. Cost of credit for all interst paying borrower farmers by main commodity and type of loan, per Php1,000 loan amount, Philippines, 2014

Costs	Crops		Livestock/Poultry		Marine Municipal		Aquaculture	
	Formal Loans	Informal Loans	Formal Loans	Informal Loans	Formal Loans	Informal Loans	Formal Loans	Informal Loans
Transaction costs	30	4	18	5	23	8	33	5
Costs of requirements	15	0	13	2	17	7	27	3
Costs of travel	15	4	5	3	6	1	6	2
Interest Paid	111	193	121	217	253	179	200	149
Cost of Credit	141	197	139	222	276	187	233	154

i) Interest Payments

Based on the survey results for borrowers, most of the loans from informal sources were not subjected to interest payments. Conversely, for loans obtained from formal sources, 159 out of the 167 loans needed to be paid with interest. This may be a result of sourcing most of the informal loans from friends/relatives who typically did not require interest payments for the loans they extended to the farmer respondents. Also, as far as the sample is concerned, there were no loans and payments that were made in-kind.

Table 18. Number of loans with or without interest payments, Philippines, 2014

Interest Payment	Formal		Informal		All	
	No. of Loans	% of Total Formal Loans	No. of Loans	% of Total Informal Loans	No. of Loans	% of Total Loans
With interest	159	95	191	41	350	55
Without interest	8	5	275	59	283	45
Total	**167**	**100**	**466**	**100**	**633**	**100**

Loans obtained by sample farmer respondents in the past 12 months vary in interest rates per loan source. Interest rates also vary in the time unit set by the lender. For loans that are obtained from formal sources, majority (87) is charged interest for the whole loan amount. This also holds for the informal lenders wherein 135 of 191 loans charge interest on a whole amount basis. Considerably, for every time unit, loans sourced from informal lenders have relatively higher interest rates than that of sourced from formal ones. For example, for a loan paid with an interest every semester, loans from formal sources are paid only with 10% interest while loans obtained from informal sources are charged with 30% interest rate.

Table 19. Average interest rate by time unit, Philippines, 2014

Time Unit	Formal		Informal		All	
	No. of Loans	Average Interest Rate	No. of Loans	Average Interest Rate	No. of Loans	Average Interest Rate
Daily	2	20	1	20	3	20
Weekly	29	15	4	34	33	18
Monthly	24	6	26	15	50	11
Quarterly	3	3	0	0	3	33
Semester	10	10	22	30	32	24
Annual	4	6	3	15	7	10
For whole amount	87	13	135	33	221	25
Total	**159**	**12**	**191**	**30**	**349**	**22**

Average interest rates also vary per loan source. It is observed that loans from formal sources tend to have relatively lower interest rates than those sourced from informal lenders. On the average, cooperatives charge an interest rate of 7% while thrift banks charge the highest among formal sources with 18% interest rate. Meanwhile, for informal lenders, input suppliers/dealers charge the highest interest at 24% on the average while trade millers charge the lowest at 7%.

Table 20. Average interest rate per loan source of all borrower farmers, Philippines, 2014

Source of Loan	Average Interest Rate	Min-Max Interest Rate
FORMAL SOURCES		
Private banks	13	3 - 25
Rural banks	11	1.5 - 28
Thrift banks and other unspecified banks	18	1 - 68
Government Banks (LBP, DBP, UCPB)	9	1 - 13
Cooperatives	7	0 - 44
Lending Investors	16	1.9 - 73
NGOs, SLA	14	2 - 66
GOCCs (Quedancor, GSIS, SSS)	3	1 - 5

LGUs and other National Gov't Agencies (DTI, DAR, DILG)	1	0 - 1
average	***10.22***	
INFORMAL SOURCES		
Trade Millers	7	5 - 8
Landowners/Employers	10	0 - 10
Input Suppliers/Dealers	24	0 - 30
Professional Money Lenders	20	0 - 80
Friends/Relatives	19	0 - 80
Sari-Sari Store, Wholesalers, Grocery Stores	17	0 - 40
average	***16.17***	

If we consider only loans with interest payments, values for the average interest from both formal (9.92%) and informal (16%) loan source are almost similar with average interest rates of loans either interest paying or not.

Table 21. Average interest rate per loan source of interest paying borrower farmers, Philippines, 2014

Source of Loan	**Average Interest Rate**	**Min-Max Interest Rate**
FORMAL SOURCES		
Commercial banks	13	3 - 25
Rural banks	11.4	1.5 - 50
Thrift banks and other unspecified banks	14.7	1 - 68
Government Banks (LBP, DBP, UCPB)	8.8	1 - 13
Cooperatives	7.4	1 - 44
Lending Investors	16	1.5 - 73
NGOs, SLA	14	2 - 66
GOCCs (Quedancor, GSIS, SSS)	3	1 - 5
LGUs and other National Gov't Agencies (DTI, DAR, DILG)	1	1
average	***9.92***	
INFORMAL SOURCES		
Trade Millers	6.5	5 - 8
Landowners/Employers	10	5 - 20
Input Suppliers/Dealers	23.6	5 - 30
Professional Money Lenders	20	3 - 80
Friends/Relatives	18.5	1 - 80
Sari-Sari Store, Wholesalers, Grocery Stores	17.4	9 - 40
average	***16.00***	

In the table below, interest rate is computed by subtracting the principal amount borrowed from the total amount made by the borrower. This results in a per cycle interest rate that is neutral of the time unit set by the lender. For formal sources, the average interest rate is 15% while for the informal sources, it is higher at 20%. The maximum interest rate charged by a formal lender is 76% while it is 84% for an informal lender.

Table 22. Interest rate based on payments, Philippines, 2014

Interest Rate	Formal	Informal	All Loans
Average interest Rate* (in %)	15	20	18
Max - Min Interest Rate (in %)	0 - 76	0 - 84	0 - 84

*interest rate computed based on total payments minus amount borrowed all over amount borrowed

j) Payment Schedule

The average amount paid by a formal borrower who repays the loan on a daily basis is Php 176 for 62 days on the average. For informal loans that are also repaid on a daily basis, the mean payment is Php 108.57 for 45 days. Loans that are contracted to have a one time payment is more prevalent in informal borrowing. Loans that are paid in full only once have an average amount of payment set at Php 21,706.16 for informal loans and Php 48,284.70 for formal loans. There are also responses from the borrowers on loans which do not have a specific payment schedule set. In this kind of arrangement, loans acquired from formal sources tend to have a higher average amount paid than those loans sourced from informal lenders (Php 43,051.11 vs Php 20,583.86). The same trend can be observed whether the loan is sourced from formal or informal lenders, with the only difference being that the amount repaid by formal borrowers is seemingly higher than that of informal borrowers, most probably since larger amounts can be borrowed from formal sources.

Table 23. Distribution of loans by amount of payment per schedule, Philippines, 2014

Payment Schedule	Formal			Informal			All		
	No. of Loans	Average No. of Payment	Average Amount of Payment (in Php)	No. of Loans	Average No. of Payment	Average Amount of Payment (in Php)	No. of Loans	Average No. of Payment	Average Amount of Payment (in Php)
Daily	6	62	176	14	45	108.57	20	50	128.7
Weekly	71	24	558.61	21	19	994.62	92	23	658.14
Monthly	28	11	7,696.4	27	11	3,221.21	55	11	5,499.49
Quarterly	1	1	1,050	4	7	7,687.5	5	6	8,250
Semester	5	3	15,809.4	9	5	18,466.67	14	4	17,517.64
one final payment	47	1	48,284.7	255	1	21,706.16	302	1	25,842.55
no set schedule	9		43,051.11	136		20,583.86	145		21,936.17
Total	**167**			**466**			**633**		

k) Loan Status

Based on the interview with the sample farmer respondents, 95% of the loans obtained in the last 12 months is paid on time regardless of the payment schedule set by the lenders. Only 9 out of 167 formal loans and 25 out of 266 informal loans are not paid on time. On the average, with regards to all loans, 95% of them are paid on time irrespective of the type of lender.

Table 24. Distribution of loans by status of payment, Philippines, 2014

Loan Status	Formal		Informal		All	
	No. of Loans	% of Total Formal Loans	No. of Loans	% of Total Informal Loans	No. of Loans	% of Total Loans
On time Payment	158	95	441	95	599	95
Behind payment	9	5	25	5	34	5
Total	**167**	**100**	**466**	**100**	**633**	**100**

Non-borrower Sample Farmers

a) Non-Borrowing Incidence

In the survey of sample farmers, respondents who did not obtain any kind of loan is considered a non-borrower in the study. Of the 646 respondents, 20% fall under the non-borrower category. Non-borrowers in each of the main farming activity are almost similar in percentage. In total, 5% of the non-borrowers are engaged in fishing activity, 7% are in crop farming and 8% are in livestock/poultry raising.

Table 25. Incidence of non-borrowing, Philippines, 2014

Main Farming Activity	No. of Respondents	No. of Non-Borrowers	% of Sample Farmers per Main Farming Activity	% of Total Sample Farmers
Crop	217	42	19	7
Livestock/Poultry	285	52	18	8
Fishery	144	33	23	5
Total	**646**	**127**		**20**

On a provincial basis, Isabela has the least percentage on non-borrowers (3%) while Pangasinan has the largest (47%). Provinces such as Nueva Vizcaya, Negros Occidental, and Batangas also belong to the least non-borrowing percentage with the rates of 7%, 8% and

10%, respectively. On the other hand, aside from Pangasinan, top non-borrowing provinces are Bukidnon and Davao del Norte both having 42% non-borrowers of the sample farmers in their provinces.

Table 26. Incidence of non-borrowing by geographical origin, Philippines, 2014

Region	Province	No. of Respondents	No. of Non-borrowers	% of Provincial Sample Farmers	% of Total Sample Farmers
CAR	Benguet	36	5	14	1
I	Pangasinan	36	17	47	4
II	Isabela	37	1	3	0
	Nueva Vizcaya	37	3	8	1
III	Bulacan	34	5	15	1
	Nueva Ecija	72	9	13	2
	Zambales	36	8	22	2
IV-A	Batangas	70	7	10	2
V	Camarines Sur	36	4	11	1
	Catanduanes	36	4	11	1
VI	Negros Occidental	36	3	8	1
	Iloilo	36	8	22	2
VII	Bohol	36	8	22	2
X	Bukidnon	72	30	42	6
XI	Davao del Norte	36	15	42	3
Total		**646**	**127**	**20**	**20**

b) Non-Borrowing by Commodity

Based on the main crop produced, Swine raisers tend to have the highest non-borrowing percentage with 36% non-borrowing incidence. This is followed by aquaculture at 29% and HVCC farmers at 28%. On the other hand, chicken raisers seemed to be the more frequent borrower since there is only 8% non-borrowers of the sample farmers in the category. Of the total sample farmers, those belonging to livestock/poultry have the highest percentage of non-borrowers.

Table 27. Distribution of non-borrowers by commodity, Philippines, 2014

Main Commodity	No. of Non-borrowers	% of Total Sample Farmers by Main Farming Activity	% of Total Sample Farmers
Crop Farming			
Rice	10	14	2
Corn	12	16	2
HVCC	20	28	3
Sub total	*42*		7
Livestock/Poutry			
Swine	26	36	4
Cattle	7	10	1
Chicken	6	8	1
Duck	13	19	2
Sub total	*52*		8
Fishing			
Marine Municipal	12	17	2
Aquaculture	21	29	3
Sub Total	*33*		5
Total	**127**		**20**

c) Demographic Characteristics of Non-Borrower

The Appendix Table C1 shows the demographical characteristics of the non-borrower sample farmers. Six of ten non-borrowers are male which comprises 12% of the total sample farmers. When it comes to age, most of the non-borrowers fall between the ranges of 41-60 years old. There is only one observation of a non-borrower who belongs to the oldest age range of 80 years and above. The mean age of non-borrowers is 51 while the minimum and maximum age is 24 and 86 years. Majority (83%) of the non-borrowers are married while only 8% of them are single.

All 127 non-borrowers received formal education whereas 30% of them are high school graduate. Second highest percentage is the famers who are elementary graduates (22%) and the lowest percentage is for a sole farmer who received a vocational training course. Meanwhile 8% of the non-borrowers received a college diploma while 10% have at least reached college level.

Based on household size, non-borrower farmers with 3-4 household members have the highest percentage (39%). There are only 9 non-borrowers who belong to a large-sized family (9 members and above). The percentage of non-borrowers tends to decrease as the household size increases, suggesting a greater need for funding sources to finance farming and consumption needs. The average household size of non-borrowers is 5 members while family size can range from 1 – 11 members. In terms of the number of dependents, highest percentage of non-borrowers are the farmers having 2-3 dependents. This is followed by those having none or only 1 dependent (33%). Only 4 farmers who have 8-9 dependents are non-borrowers or 1% of the total sample farmers interviewed. The average number of dependent for a non-borrower is 3 individuals.

d) Annual Income of Non-borrower Farmers

As for annual income received from main farming/fishing activity, non-borrowers are more concentrated on the income range of Php 150,000 and below. The average income a non-borrower received during the past 12 months for the main farming activity engaged in is Php 164,327, while only 9 non-borrowers belong to the income range of Php 500,001 and above. For other income sources, 60% of non-borrowers are earning 0 – Php 30,000 annually. Income from other sources has a mean value of Php 83,488 and can go as high 3.9 million pesos. Summing up the income received from all sources, a non-borrower farmer has an average annual income of Php 247,150. Majority of non-borrowers are concentrated in the Php 30,001 – Php 70,000 and Php 70,001 – Php 150,000 income brackets.

e) Reasons for Non-Borrowing

There are various reasons provided by the respondents as to why they did not borrow for the past 12 months. Most of them indicated multiple responses for non-borrowing from a combination of various reasons. 17% of the non-borrowers responded that there is no need for them to borrow. There were 12 respondents who were not able to give a response as to why did they not intend to borrow. (See Appendix Table C5 for details on reasons for non-borrowing.)

B. Lenders

General Information

For the objective of determining how banks and other lending institutions price their agricultural loan and estimating what constitute the lending costs, lenders from both the formal and the informal sectors were interviewed using a pre-tested questionnaire. Table 28 shows the number of lenders interviewed by province. The study areas selected were the same as the borrowers. Three formal lenders and two informal lenders were set to be randomly selected in each study area so total of 54 formal lenders and 36 informal lenders were interviewed for the study. A list of all formal lenders in the area was collected from the

municipal office which became the basis for random selection while informal lenders were identified by getting information from the borrowers and other lenders. The number of lenders interviewed in provinces of Batangas, Nueva Ecija, and Bukidnon were doubled since there were two study areas in each province. Data from the formal sector were collected from 20 cooperatives, 17 rural banks, seven NGOs, five lending investors, two private banks, two cooperative banks, and a Land Bank (Appendix Table D1a). It can be noted that cooperatives and rural banks dominated the formal lenders with 37% and 31% shares, respectively. For the informal sector, data from 14 friends or relatives, 10 private money lenders, four farmer lenders, three traders, three input dealers, and two landlords or employers were gathered (Appendix Table D1b). Friends and relatives constitute 37% of the sampled informal lenders. This is followed by private money lenders with 28%. Landlords/employers are the least number of informal lenders.

Table 28. Distribution of sample provinces by classification of lender[a], Philippines,2014

Province	Type of lender				Total (n= 90)	
	Formal (n = 54)		Informal (n = 36)			
	number	%	number	%	number	%
Bulacan	3	5.56	2	5.56	5	5.56
Batangas	6	11.11	4	11.11	10	11.11
Nueva Ecija	6	11.11	4	11.11	10	11.11
Zambales	3	5.56	2	5.56	5	5.56
Pangasinan	3	5.56	2	5.56	5	5.56
Bukidnon	6	11.11	4	11.11	10	11.11
Davao del Norte	3	5.56	2	5.56	5	5.56
Bohol	3	5.56	2	5.56	5	5.56
Benguet	3	5.56	2	5.56	5	5.56
Nueva Vizcaya	3	5.56	2	5.56	5	5.56
Isabela	3	5.56	2	5.56	5	5.56
Catanduanes	3	5.56	2	5.56	5	5.56
Camarines Sur	3	5.56	2	5.56	5	5.56
Negros Occidental	3	5.56	2	5.56	5	5.56
Iloilo	3	5.56	2	5.56	5	5.56

[a] Details are shown in Appendix Tables D1a and D1b

Socio-Economic Characteristics of Respondents

The socio-economic characteristics of personnel and lenders who were interviewed are shown in Table 29. As a whole, there were 54% female and 46% male respondents. Of the 54 respondents from the formal sector, 54% were male while 46% were female. The respondents are usually the chair, bank managers, account officers, or loan officers of the lending institution. For the informal lenders, majority (67%) of respondents are female while 33% were male. All of the respondents who offered loan to relatives and friends were female while most (7/10) of the private money lenders are male.

The average age of respondents for both sectors is 44. The youngest respondent interviewed is 23 years old for the formal sector who is working in an NGO and 26 years old for the informal sector (farmer lender) while the oldest respondent interviewed is 78 years old for the formal sector who is involved in cooperatives and 63 years old for the informal sector who is classified as relative or friend (Appendix Tables D2a and D2b). Results show that there is not much difference in the age between formal and informal lenders. The average years in service for both formal and informal lenders are 10 years. Years in service for formal lenders is the length of their employment with the institution while for informal lenders, it is how long they have been in the lending business.

Table 29. Socio-Economic characteristics[a] of respondents by classification of lender, Philippines, 2014

Item	Classification of Lender				Total (n= 90)	
	Formal (n = 54)		Informal (n= 36)			
	number	%	number	%	number	%
Sex						
Male	29	53.70	12	33.33	41	45.56
Female	25	46.30	24	66.67	49	54.44
Age						
Average	44		44		44	
Min - Max	23 - 78		26 - 63		23- 78	
Years in Service						
Average	10		10		10	
Min - Max	0.5 - 31		2 - 20		0.5 - 31	
Educational Attainment						
Elementary Graduate	0	0	2	5.56	2	2.22
High School Level	0	0	1	2.78	1	1.11
High School Graduate	1	1.85	4	11.11	5	5.56
College Level	9	16.67	5	13.89	14	15.56
College Graduate	41	75.93	16	44.44	57	63.33
Vocational	1	1.85	2	5.56	3	3.33
No Answer	2	3.70	6	16.67	8	8.89

[a] Details are shown in Appendix Tables D2a and D2b

For the formal lenders, the least experienced with only half a year in the business came from the lending investors while the longest in service for 31 years each were in the private and rural banks. For the informal lenders, the shortest in lending business (2 years) were the relatives and friends while the longest with 20 years were the input dealers. This maybe because the input dealers who supplied agricultural inputs had been in contact with the farmers for quite sometime and had established long term relationships with the farmers.

Majority of respondents (76%) from the formal sector were college graduate. Most formal institutions, especially banks, require that their officers and managers are degree holders. Others reached college level or took a vocational course while one respondent only reached high school. Most of the informal lenders (44%) also graduated from college.

Around 19% of respondents did not go to college while the rest reached college level or vocational graduates.

Years in Lending Operation

Years of lending operation of lenders are shown in Table 30. Results show that 22% of the formal lenders have been operating for more than 30 years while 16.67% and 14.81% have been operating for 16 – 20 years and 11 – 15 years, respectively. Another 16.67% have been operating for 6 – 10 years, 12% have been operating for 1 – 5 years, and the rest have been in the business for 21-30 years. On the other hand, most of the informal lenders (39%) have been operating for 1 – 5 years, 22% have been operating for 6-10 years while 14% have been in the business for 11-15 years. Around eight percent have been operating for 16-25 years and the rest did not disclose the how long they have been operating. As opposed to the formal lenders, none of the informal lenders operated for more than 25 years. This shows that formal lenders are usually more established and have been in the business much longer. Informal lending is not a stable industry especially with all the risks involved and most lenders do it as a partial source of income. Among the formal lenders longest years of operations of more than 30 years have been reported by 29% of rural banks. On the other hand, 45% of the sample cooperatives have been into lending operations for 11 – 20 years (Appendix Table D3a). For the informal lender a great number (14/36) had been operating for at most five years and only one each from the private money lender, input dealer and farmer lender (3/36) had been operating for at least 16 years (Appendix Table D3b).

Table 30. Distribution of Lenders[a] by Years of Operation, Philippines, 2014

Year	Type of Lender				Total n= 90)	
	Formal (n = 54)		Informal (n= 36)			
	number	%	number	%	number	%
1 to 5	7	12.96	14	38.89	21	23.33
6 to 10	9	16.67	8	22.22	17	18.89
11 to 15	8	14.81	5	13.89	13	14.44
16 to 20	9	16.67	2	5.56	11	12.22
21 to25	2	3.70	1	2.78	3	3.33
26 to 30	2	3.70	0	0.00	2	2.22
> 30	12	22.22	0	0.00	12	13.33
No answer	5	9.26	6	16.67	11	12.22

[a] Details are shown in Appendix Tables D3a and D3b

Loanable Funds, Area of Coverage and Number of Borrowers

The respondents were asked about the capitalization of the institutions or the business. However, they were reluctant or hesitant to reveal the information but gave us the loanable amount, instead. Table 31 shows the average amount of loanable funds, area of coverage, and number of borrowers from both types of lenders. For the formal lenders, the average

amount of loanable fund in 2014 is Php 38,088,349 while for the informal lenders it is Php 502,679. Among the formal lenders, private banks have the biggest loanable fund with an average of Php 130,000,000 followed by rural banks with Php 57,500,000. Lending investors have the lowest capitalization in the formal sector with Php 8,666,667(Appendix Table D4a). Banks are the biggest institutions in the formal sector which offer loans to a much bigger market across various locations while most lending investors are focused on a single area and offer a limited amount of loan to its customers. In the informal sector, landlords/employers have the biggest amounts for loans with Php 2,000,000. This is followed by inputs dealers and traders with Php 1,500,000 and Php 1,150,000, respectively. Farmer lenders have the lowest amount for loans with Php 103,333(Appendix Table D4b). Landlords/employers are the richest among the informal lenders and part of their business is to finance the production of farmers, from land preparation to harvest. On the other hand, most farmer lenders are able to offer small amount of loan to their fellow farmers.

Table 31. Average amount of loanable fund, area of coverage and number of borrowers, by type of lender, Philippines, 2014

Item	Average	Minimum	Maximum
Formal			
Loanable fund[a] (Php)	38,088,349	100,000	300,000,000
Area of coverage[b]			
No. of Provinces	1	1	10
No .of Municipality	5	1	48
No. of borrowers[c]			
Individual Borrowers	929	13	16,000
Cooperatives/ Association	9	9	9
Group Borrowers (5 - 6 person)	52	20	75
Informal			
Loanable fund[a] (Php)	502,679	10,000	3,000,000
Area of coverage[b]			
No. of Provinces	1	1	2
No.of Municipality	1	1	3
No. of borrowers[c]			
Individual Borrowers	32	5	248

[a] Details by type of lenders are shown in Appendix Tables D4a and D4b
[b] Details by type of lenders are shown in Appendix Tables D5a and D5b
[c] Details by type of lenders are shown in Appendix Tables D6a and D6b

Both classifications of lenders cover one province on the average although there are formal lenders that cover at most 10 and 48 municipalities. On the other hand, the informal lenders cover 1 – 2 provinces with 1 - 3 municipalities. In the formal sector, each type of lender services one province except for NGOs and Rural Banks which cover two or more provinces (Appendix Table D5a) while in the informal sector, private money lenders are the only type that covers more than one province (Appendix Table D5b). On the average, the informal sector covers one municipality whereas the formal sector covers five municipalities. In the formal sector, a cooperative reported the highest number of up to 48 municipalities

covered and a rural bank covers a maximum of 10. On the average, each type of lenders in the formal sector cover more than one municipality while most type of lenders in the informal sector cover just one municipality except for landlords or employers.

Formal lenders have an average of 929 individual borrowers, nine cooperative borrowers, and 52 group borrowers while informal lenders offer loans to an average of 32 individual borrowers. Rural banks have the most number of borrowers followed by private banks with an average of 1,930 and 730 borrowers respectively. Cooperative banks have the least number of borrowers with an average of 230. Only cooperatives and lending investors allow group borrowing with an average of 68 and 20 group borrowers respectively (Appendix Table D6a). Land Bank is the only type that offers loan to cooperatives. The informal sector offers loan usually to individuals only. Traders have the most number of borrowers with 106 followed by landlord/employer and private money lender with 35 and 31, respectively (Appendix Table D6b).

Private Banks and Rural Banks are the biggest institutions that offer loan to farmers. They usually have a vast network with numerous branches to cover a wider range of customers. They can also offer huge amount of loans to finance farming investments. For these reasons, banks have more borrowers on the average as compared to other formal institutions. In the informal sector, traders, landlords, and private money lenders are the most common source of loan. These lenders can usually cover the production expenses of farmers and offer a stable supply of farm inputs to farmers (i.e. traders).

Credit Services

a) Purpose of Loan

The purpose of loan, agricultural and non-agricultural, granted by type of lender are shown in Table 32 .Majority (98%) of formal institutions provide loans for purchase of production inputs (seeds, fertilizer, chemicals) purposes. In fact, 100% of cooperatives and rural banks provide loan for this purpose (Appendix D7a). This indicates the importance of these institutions in providing credit assistance to small farmers. Some also provide for acquisition of farm implements, purchase of land or animal, and farm infrastructures. Moreover, most formal institutions (59%) provide business loans. Twenty percent offers loan for education expenses and 11% offers housing loans. Formal lenders also offer loans for placement fee, medical expenses, purchase of appliances, and personal use.

Table 32. Purpose[a] of loan granted by classification of lender, Philippines, 2014

Purpose[b]	**Type of Lender**				**Total (n = 90)**	
	Formal (n = 54)		Informal (n = 36)			
	number	%	number	%	number	**%**
Agricultural						
Purchase of inputs (seeds, fertilizer, chemicals, etc)	53	98.15	36	100.00	89	98.89

Acquisition of Farm Implements/Gears	2	3.70	1	2.78	3	3.33
Purchase of Land or Animal	6	11.11	2	5.56	8	8.89
Construction of Farm Infrastructures	1	1.85	0	0	1	1.11
Agricultural Land Rent	0	0	1	2.78	1	1.11
Non – Agricultural						
Capital for Business	32	59.26	2	5.56	34	37.78
Placement Fee	3	5.56	0	0	3	3.33
Education Expenses	11	20.37	2	5.56	13	14.44
Hospital and Medical	2	3.70	1	2.78	3	3.33
Purchase of Appliances	3	5.56	0	0	3	3.33
House Construction/Improvement	6	11.11	0	0	6	6.67
Personal	5	9.26	3	8.33	8	8.89
Others[c]	8	14.81	0	0	8	8.89

[a] Multiple responses
[b] Details are shown in Appendix Tables 7a and 7b
[c] Includes emergency, honorarium, manufacturing, and salary loans

All of the informal lenders provide loans for purchase of production inpust (seeds, fertilizer, chemicals, etc) purposes while around 11% offer loans for acquisition of farm implements, purchase of land or animal, and land rent. Only eight percent of the informal lenders offers loan for personal use. Other informal lenders provide loans for business, education, and medical expenses. Most lenders are only able to offer production loan to farmers since many farmers do not have the capability to pay for loans of bigger amount or the collateral and other requirements needed to avail higher amount of loans (Appendix Table D7b).

b) Commodities Covered by Loans Granted

Table 33 shows the distribution of lenders by the commodity where loan is offered. Most of the formal lenders offer loans to rice farmers (72%), swine producers (24%), and corn farmers (22%) while only a few offer loan to cattle raisers (3.7%), poultry raisers (3.70%), and duck raisers (1.85%). Some also provide loans for farmers of vegetables, sugarcane, cassava, flowers, fruit, and fishermen. Most of the informal lenders also offer loans to rice farmers (50%), vegetable farmers (28%), fishermen (16.67%), and corn farmers (13.89%). Other informal lenders offer loans to swine and cattle raisers (11%). Majority of farmers in the country plants rice so it is more likely that lenders offer loan specifically for them (See Appendix Table 8a and 8b for details on commodities covered by specific lenders).

Among the formal lenders, rural banks and cooperatives cover almost all the commodities listed. Private banks provide loan only for rice and corn while Land Bank, in addition to rice and corn covers also sugar cane and other crops such as cassava, cut flowers and fruits. Details of the commodties covered by other formal lenders are shown in Appendix Table D8a.

Table 33. Distribution[a] of commodity covered by loan by type of lender, Philippines, 2014

Commodity	Type of Lender[b]				Total (n= 90)	
	Formal (n = 54)		Informal (n = 36)			
	number	%	number	%	number	%
Rice	39	72.22	18	50	57	63.33
Corn	12	22.22	5	13.89	17	18.89
Vegetables	9	16.67	10	27.78	19	21.11
Cattle	2	3.70	1	2.78	3	3.33
Swine	13	24.07	3	8.33	16	17.78
Poultry	2	3.70	0	0	2	2.22
Duck	1	1.85	0	0	1	1.11
Fisheries	8	14.81	6	16.67	14	15.56
Sugarcane	4	7.41	0	0	4	4.44
Others[c]	4	7.41	0	0	4	4.44

[a] *multiple responses*
[b] *details are shown in Appendix Tables D8a and D8b*
[c] *includes cassava, flowers and fruits*

c) Amount of Loan per Borrower, Number of Borrowers and Loan Exposure

Table 34 shows the average amount of loan, number of borrowers, and loan exposure of lenders. Formal lenders offer an average amount of Php 236,172 per borrower on agricultural loan and Php 405,609 for non-agricultural loan. The average number of borrowers per type of lender of agricultural loan is 194 and 492 for non-agricultural loan. The average loan exposure of formal lender for agricultural loan is Php 6,892,800 and Php 15,528,380 for non-agricultural loan. By type of formal lenders, Land Bank provides loan only for agricultural purposes but none for non-agricultural purposes. This is followed by rural banks that provide the highest amount of loans also for non-agricultural purposes (Appendix Table D9a). In the formal sector, it was surprising that as whole, there are more people who avail non-agricultural loans which include business loan, education loan, and personal loan among others. One reason for this maybe that many farmers are not aware of the agricultural credit services that formal institutions offer. Also, some institutions find it hard to reach out to farmers especially those living in the more rural areas while many people who avail of non-agricultural loans have easy access on the institution so it's more convenient for them. The amount on non-agricultural loans are also higher especially the commercial loans which are meant for starting or improving business.

Table 34. Amount of loan, number of borrowers and loan exposure by purpose and type of lender[a], Philippines, 2014

Item	Type of lender		Total (n = 90)
	Formal (n = 54)	Informal (n = 36)	
Agricultural			
Amount of Loan (Php)			
Average	236,172.22	18,864.58	149,249.16
Min-Max	1,250 - 2,650,000	1,000 - 152,500	1,000 - 2,650,000
No. of Borrowers			
Average	194	30	128
Min-Max	1 - 1200	5 - 248	1 - 1200
Loan Exposure (Php)			
Average	6,892,800	358,053.6	4,278,901.43
Min-Max	10,000 - 60,000,000	6,000 - 3,000,000	6,000 - 60,000,000
Non-Agricultural			
Amount of Loan (Php)			
Average	405609.49	9,042.9	246,982.83
Min-Max	3,000 - 3,025,000	1,000 - 26,000	1,000 - 3,025,000
No. of Borrowers			
Average	492	13	300
Min-Max	3 - 2,190	3 - 30	3 - 2,190
Loan Exposure (Php)			
Average	15,528,380	392000	9,473,828.00
Min-Max	1,500 - 190,000,000	4,000 - 780,000	1500 - 190,000,000

[a] details by type of lender are shown in Appendix Tables D9a and D9b

Informal lenders provide an average amount of Php 18,865 agricultural loan and Php 9,043 non-agricultural loan. On the average, the total number of borrowers is 30 for agricultural loans and 13 for non-agricultural loans and a loan exposure of Php 358,053 for agricultural loan and Php 392,000 for non-agricultural loans. Landlord and employers reported the highest average amount of loan for both agricultural and non-agricultural purposes (Appendix Table D9b). Most of the informal lenders provide more agricultural loans than non-agricultural loan. Part of the reason for this is that most of the informal lenders interviewed are concentrated in the rural areas where majority of the residents are farmers. Many informal lenders specifically offer loan to farmers or fishermen only.

Comparing the amount of loans granted with the amount of loanable funds, it can be noted that the amount of loans granted, especially for the formal lenders were below the amount of loanable funds. This implies that the borrowers have not fully exploited the credit services of these financial institutions. One of the reasons maybe the documentary requirements of the formal lenders.

d) Maturity Period and Number of Days for Loan Approval

In Table 35, the average maturity period and number of days of approval are shown. In the formal institutions, the average maturity period is eight months with a maximum of 36 months among rural banks for agricultural loan and nine months with maximum of 30 months on non-agricultural loan for cooperatives. Land Bank has the highest average maturity period of 18 months while cooperative banks have the least with six months (Appendix Table D10a). The average number of days before approval is eight days for agricultural loan and seven days for non-agricultural loan. Longest period of loan approval was for agriculture loans as reported by private and rural banks with 30 and 20 days, respectively while the least with only three days was for cooperative bank. For the non-agricultural loan, the longest period before loan approval as also reported by rural banks. The long duration for loan approval maybe because of the documentary requirements by the banks.

For the informal sector, the average maturity period for agricultural loan is five months and two months for non-agricultural loan. The average number of days before approval of agricultural loan is three days and one day for non-agricultural loans. Both these indicators are relatively lower compared with those of the formal sector. Maturity period and days before approval usually depends on the amount of loan. For agricultural loan longest average maturity period of eight months was reported by inputs dealers while the shortest of three months was for traders and farmer lenders. For non agricultural loans the maturity period for all lenders is quite short at one to two months only (Appendix Table D10b). More often than not, the maturity period is longer if the amount of loan is higher regardless of the type of loan. For agricultural loans, maturity period also depends on the crop cycle. For example, maturity period for most rice loans is six months since it is the usual length of production, from land preparation to harvest. Days before approval of loan may also depend on the amount but there are other factors that may affect it like the practices of institutions. The differences in maturity period and number of days before loan approval between the formal and non-formal sectors may be because of the amount of loan and the documentary requirements in the formal sector.

Table 35. Average maturity period and number of days before approval of loan by type of lender and purpose[a], Philippines, 2014

Item	Type of lender		Total (n= 90)
	Formal (n = 54)	Informal (n= 36)	
Agricultural			
Maturity Period (months)			
Average	8	5	6.68
Min-Max	1 - 36	0.75 - 35	0.75 - 36
Days of Approval			
Average	8	3	6.00
Min-Max	1 - 30	1 - 15	1 - 30
Non-agricultural			
Maturity Period (months)			

	Average	9	2	6.03
	Min-Max	1 - 30	1 -3	1 - 30
Days of Approval				
	Average	7	1	4.60
	Min-Max	1 - 19	1 - 1	1 - 19

[a] details by type of lender are shown in Appendix Tables D10a and D10b

e) Application and Service Fees Charged by the Lender

Table 36 shows the average application fees and service fees set by lenders. The application fee and service fee differ depending on type of loan. On the average, formal lenders require a service fee of Php 8.78 per Php 1,000 for agricultural loans and Php 15.99 per Php 1,000 for non-agricultural loans. The amount of service fee charged per borrower is usually a %age of the total amount of loan so the bigger the amount, the higher the service fee charged. Most formal lenders do not require an application fee except for cooperatives who consider it as part of the membership application. On the average, they require an application fee of Php 1.36 per Php1,000 for agricultural loan and Php 0.1 per Php1,000 for non-agricultural loan. Rural banks require the highest amount of service fee among formal lenders with Php 16.04 per 1,000 while NGOs require the least with Php 1.88 per 1,000 (Appendix Table D11a). Almost all of the informal lenders do not require any fees prior to the loan except for one relative who charged his borrowers Php 0.02 per 1,000 to cover his cost of transportation and other minor expenses (Appendix Table D11b).

Table 36. Average amount of application and service fees by type of lenders[a], Philippines, 2014

Fees	**Type of lender**		**Total (n= 90)**
	Formal (n = 54)	Informal (n= 36)	
Agricultural			
Application Fees (Php/1000)			
Average	1.36	0	1.36
Min-Max	0.1 – 3.3	0	0.1 – 3.3
Service Fees (Php)			
Average	8.78	0.02	5.28
Min-Max	0.2 - 120	0.02 – 0.02	0.02 - 120
Non-agricultural			
Application Fees (Php/1000)			
Average	100	0	100
Min-Max	100 - 100	0	100 - 100
Service Fees (Php)			
Average	15.99	0	15.99
Min-Max	0.36 – 120.40	0	0.36 – 120.40

[a] details are shown in Appendix Tables D11a and D11b

f) Annual Interest Rate and Components of Interest Rate

During the survey, the respondents indicated interest charegs per laon cycle. It should be noted that loan cycle can be weekly, monthly, quarterly, by semester, or annually. Hence, the interest rates per cycle were converted into per year following the procedure by Kathy Zheng of Demand Media. For formal lenders, the average interest rates are 24.10% and 37.04% for agricultural and non-agricultural loan purposes, respectively. By loan purpose, results show that for the formal lenders, highest effective annual interest rate of 44% for agricultural loan is for purchase of agricultural land while the lowest is for the purchase of agricultural inputs such as seeds, fertilizer, pesticides and the like (Table 37). For the non-agricultural loan, highest interest of as high as 80% is chraged for placement fee for those who are applying for employment abroad. This is followed by purchase of appliances with 65.33%. The lowest annual interest charge reported is for hospitalization. By type of formal lender, highest average annual interest rate (29.07%) is reported by rural banks that provide wide array of agricultural loans while the lowest (3%) is for lending investor that provide loan only for purchase of agricultural inputs (Appendix Table D12a).

On the other hand, it appears that the informal lenders, on the average, charge lower annual interest rates with 22.21% for agricultural loans and 35.71% for non-agricultural purposes than the formal lenders. Highest average interest rate of 46.6 % is for the purchase

Table 37. Effective annual interest rate charges (in %) of formal and informal lenders by loan purpose, Philippines, 2014

Loan Purpose	**Type of Lender**	
	Formal	Informal
Agricultural Purpose		
Inputs (seeds, fertilizer, pesticides)	10.61	14.91
Acquisition of Farm Implements	22.50	
Acquisition of boat gears	30.00	
Agricultural land rent	0.00	5.12
Purchase of agri land	44.00	
purchase of animal	23.50	46.6
Constructtion of farm infra	14.00	
Non-Agricultural Purpose		
Capital for Business	11.00	9.31
Placement fee	80.00	
Capital for Non-farm tools	0.00	
Educational expenses	26.50	30.55
Hospitalization and med expenses	2.00	
Purchase of appliances	65.33	
House construction	34.33	
Others[a]	43.09	67.26

[a] include personal loan, emergency loan, salary loan that are sometime used for special occasions

of animal that is charged by private money lenders and input suppliers for agricultural purposes (Table 37 and Appendix Table D12b). For non-agricultural purposes, highest interest rate of 67.27% per annum is for other purposes suchas special occassion, enemergency loan and salary loan. It was surprising that none among the informal lenders reported providing loan for placement fee.

When comparing interest rates from survey of lenders and farmers, only interest bearing loans were considered. For loans obtained for production purposes, interst rates of formal lenders and loans of borrowers obtained from formal sources are comparable at 10.61% and 8.6% respectively. On the otherhand, interest rates as declared by borrowers and lenders for non-farm purposes are much different from the other both for formal and informal type of loans.

Table 38. Comparison of interest rate per loan purpose as declared by lenders and borrowers, Philippines, 2014

Purpose	Average Interest Rate			
	Formal Loans		Informal Loans	
	Lenders	Borrowers	Lenders	Borrowers
Farm Purposes				
Production	10.61	8.6	15	20.7
Other Farm Purposes				
Acquisition of Farm Implements	22.5	35	0	20.3
Acquisition of boat gears	30	0	0	0
Agricultural land rent	0	0	5.1	0
Purchase of agri land	44	20	0	0
purchase of animal	23.5	15	46.6	32.7
Construction of farm infrastructure	14	10	0	10
Others	0	10.6	0	21
Non-farm Purposes				
Capital for Business	11	22.8	9.3	17.7
Placement fee	80	0	0	0
Educational expenses	26.5	11	30.5	17.7
Hospital and med expenses	2	27.2	0	10
Special occasions	0	13	0	0
Purchase of appliances	65.33	6.7	0	15
House construction	34.33	0	0	0
Others (personal loan, salary loan, emergency loan)	43.09	12	67.3	20.4

The components or distributions of interest rates is divided into four; cost of funds, operational expenses, profit margin, and others. In the formal sector, profit margin gets the biggest component of interest rate with 39.72% for agricultural and 42.17% non-agricultural loan. This is followed by operational expenses then cost of funds. Operational expenses

include daily costs, maintenance, and fixed costs while the cost of funds is the payment for borrowings. Majority of the informal sector incur minimal expenses for cost of fund and operational expenses so profit margin gets the greatest allocation of interest, 60.98% for agricultural loan and 47.42% for non-agricultural loan (Table 39). This maybe because the informal lenders have less number of employees or do the transaction by him/herself and family members, no office to be paid rent, hence, part of interest rate is hidden under profit margin. Details by type of lender under the formal and informal sectors are shown in Appendix Tables D13a and D13b.

Table 39. Components[a] of interest rate as reported by lenders interviewed, Philippines, 2014

Item	Average	Minimum	Maximum
Formal	in %	in %	in %
Agricultural			
Cost of Funds	21.80	8	100
Operational Expenses	33.53	1.5	8
Profit Margin	39.72	10	100
Others[b]	1.70	15	10
Non-Agricultural			
Cost of Funds	14.80	8	50
Operational Expenses	38.76	10	80
Profit Margin	42.17	10	90
Others[b]	15	15	15
Informal			
Agricultural			
Cost of Funds	32.19	2	100
Operational Expenses	1.47	0	25
Profit Margin	60.98	0	100
Others[b]	2.02	0	85
Non-Agricultural			
Cost of Funds	0.50	0	3
Operational Expenses	2.25	0	1
Profit Margin	47.42	0	100

[a] details are shown in appendix tables D13a and D13b

[b] For the formal lenders, these include risk premium, service charge, incentive allowance for staff, hiring of on-call employees, donations, representation; for the informal lender these are representation, gifts, donations,

g) Risk Premium and Coverage

The average risk premium, basis for the amount of premium and coverage are shown in Table 40 and Appendix Table D14. Study showed risk premium are offered by formal lenders only. The risk premium is based on the amount of loan so for the study, the respondents were asked the value of risk premium as a %age of the total loan. On the average, the risk premium is 2.50% for agricultural loans and 2.11% for non-agricultural loans. For most of the lenders, 41% for agricultural and 67% for non-agricultural, the basis for the rate of premium is the insurance company where they avail it. Other lenders depend

on what was set by the board of directors and other agencies such as PCIC and CDA. The usual coverage for risk premium is death of borrower, followed by default payment.

Table 40. Average risk premium, basis, and coverage of premium of formal lenders[a], Philippines, 2014

Item	Agricultural		Non-Agricultural	
	number	%	number	%
Risk Premium (% of loan)[b]				
Average		2.50		2.11
Min		0.02		0.02
Max		16		14
Basis				
Insurance Company/Bank	9	40.91	6	66.67
Board of Directors	3	13.64	3	33.33
PCIC	1	4.55	0	-
CDA	1	4.55	0	-
No Answer	8	36.36	0	-
Coverage				
Death	22	78.57	10	76.92
Crop Insurance	1	3.57	0	-
Default	5	17.86	3	23.08

[a] details are shown in Appendix Tables D14
[b] no premium for Land Bank and cooperative banks

h) Bases of Charging Interest Rates

The interest rates set by formal lenders are based on various factors, as can be seen inTable 41 and Appendix Table D15. The basis of interest rate for majority of formal lenders (57%) is the board of directors of the institution. They are the ones who set the rate which must be followed by all institutions under them. The Board of Directors (BOD) set an average interest rate of 6.02%. For example, for cooperatives, the BOD formulates the guidelines for setting interest rate but these should be ratified by the cooperative members duing the General Assembly of the cooperatives. However, during the survey, respondents do not want to discuss fully how the board of directors determined the interest rate but they made sure that they have followed all laws and regulations of the government in imposing interest rates. For 22% of the lenders, their rate depends on the interest rate of the banks where they borrowed and their average rate is 4.38%. Lenders also consider Bangko Sentral ng Pilipinas (BSP) guidelines, loan type, and existing market rates.

Table 41. Distribution[a] of basis for interest rate of formal lenders, Philippines, 2014

Method	Formal Lender (n = 54)	
	number	%
Pre-Determined of BSP	3	5.56
Based on Loan Type	1	1.85
Based on Existing Market Rate	7	12.96
Based on Board of Directors	31	57.41
Based on Banks where they borrowed	12	22.22

[a] details are shown in Appendix Table D15

i) Relationship of Borrowers to Informal Lenders

In Table 42, the type of relationship of borrowers with the informal lenders is shown. Most of the informal lenders (69%) are friends/neighbours with the borrowers and 50% of the lenders offered loans to relatives. This goes to show that majority of the informal lenders have a personal relationship with the borrowers. This may be one of the reasons why most informal lenders do not oblige any fees or collateral to their borrowers. Only 25% of the informal lenders consider the borrowers as customers and 3 % as tenants.

Table 42. Distribution[a] of Type of Relationship of Borrower with Informal Lenders, Philippines, 2014

Relationship[b]	Informal Lender (n= 36)	
	number	%
Relatives	18	50
Neighbours/Friends	25	69.44
Customers	9	25
Tenant	1	2.78

[a] multiple responses
[b] details are shown in Appendix Table D16

j) Bases of Lending and Advertisement of Services Provided

There are various lending techniques, as shown in Table 43 and Appendix Tables D17a and D17b, used by lenders. Majority of the formal lenders (72%) look through the assets while 22% of them check the financial statement of the borrowers before considering loan applications. 26% has a relationship-based lending technique and cooperatives are usually the ones that use this. In the informal sector, majority (81%) use a relationship-based lending technique while 36 %, mostly private money lenders, still look through the assets. For all the lenders who do not have an established relationship with the borrowers, they make sure borrowers have the capability to pay the loan by assessing their assets and finances. It is also a way to ensure that they have collateral for the loan.

Table 43. Distribution[a] of Lending Technique used by Type Lender, Philippines, 2014

Technique[b]	Type of lender				Total (n= 90)	
	Formal (n = 54)		Informal (n= 36)			
	number	%	number	%	number	%
Relationship Based	14	25.93	29	80.56	43	47.78
Financial Statement Based	12	22.22	1	2.78	13	14.44
Asset based	39	72.22	13	36.11	52	57.78
Credit Scoring	4	7.41	1	2.78	5	5.56
Membership	3	5.56	0	0.00	3	3.33

[a] multiple responses
[b] details are shown in Appendix Tables D17a and D17b

Table 44 shows the method of advertisement done by lenders to promote their loan services. About 89% of the formal lenders advertise their loan services but only 11% of the informal lenders do it. Competition among the formal lenders is much more intense than informal lenders. This is why it is essential for them to advertise. On the other hand, most informal sectors are small-scale operation so they do not have the capability and resources to advertise like formal lenders. For formal lenders, the most common form of advertisement is face to face talk (42%) followed by flyers (29%). Most of them also conduct seminars (23%), meetings (10%), and get customers through referrals (15%). It is also noted that rural banks and cooperaitves performed several forms of loan information methods (Appendix Table D18a) compared with the other types of formal lenders. For informal lenders, most of them (89%) does not advertise since granting of loan is based on personal relations. For those who advertise, they do it on face-to-face basis (Appendix Table D18b).

Table 44. Distribution[a] of method of loan advertisement by type of lender, Philippines, 2014

Method	Type of Lender				Total (n=90)	
	Formal (n = 54)		Informal (n = 36)			
	number	%	number	%	number	%
Advertise	48	88.89	4	11.11	52	57.78
Form of Advertisement[b]						
Mass Media advertisement	5	10.42	0	0	5	9.62
Face to face	20	41.67	4	100	24	46.15
Flyers	14	29.17	0	0	14	26.92
Seminar	11	22.92	0	0	11	21.15
Meeting	5	10.42	0	0	5	9.62
Referrals	7	14.58	0	0	7	13.46
Coordination w/ Municipal Office	1	2.08	0	0	1	1.92
Information Drive	1	2.08	0	0	1	1.92
Do not advertise	6	11.11	32	88.89	38	42.22

[a] details are shown in Appendix Tables D18a and D18b
[b] multiple responses

k) Requirements for Loan

Lenders oblige various requirements, as shown in Table 45, as part of the loan application. 76% of the formal lenders require collateral. The most accepted collateral is land (85%), followed by house (29%) and vehicle (28%). For many lenders, collateral is the most important requirement since it will be their leverage in case a borrower fails to pay on time. Land is the most common collateral since it is usually the only property farmers can offer that has any value to formal lenders. Six percent of formal lenders oblige a co-maker, while others require a business plan, financial statement, cash flow, pay slip, total assets, and tax declaration for loan to be approved. Formal lenders entail such requirements to ensure borrowers are capable of paying and to avoid fraud (see also Appendix Table D19a for details by type of formal lender). Only a small portion of the informal lenders oblige any requirement for loan application. 17% requires collateral which could either be land (67%), vehicle (33%), or agricultural equipment (17%). Three % of the informal lenders require a co-maker while 6% needs a written agreement.

Table 45. Requirements[a] needed for loan by type of lender, Philippines, 2014

Requirements[b]	**Type of lender**				**Total (n= 90)**	
	Formal (n = 54)		Informal (n= 36)			
	number	%	number	%	number	%
Collateral	41	75.93	6	16.67	47	52.22
Form of Collateral						
House	12	29.27	0	0	12	25.53
Land	35	85.37	4	66.67	39	82.98
Vehicle	11	26.83	2	33.33	13	27.66
Agricultural Equipment	4	9.76	1	16.67	5	10.64
Co-signer	3	7.32	0	0	3	6.38
Building	1	2.44	0	0	1	2.13
Own Tree	1	2.44	0	0	1	2.13
Business Plan	2	3.70	0	0	2	2.22
Co-maker	3	5.56	1	2.78	4	4.44
Audited Financial Statement	2	3.70	0	0	2	2.22
Cash Flow Statement	2	3.70	0	0	2	2.22
Check	1	1.85	0	0	1	1.11
Payslip	1	1.85	0	0	1	1.11
Tax declaration	1	1.85	0	0	1	1.11
Cooperative member	1	1.85	0	0	1	1.11
Documents	1	1.85	0	0	1	1.11
Total Assets	3	5.56	0	0	3	3.33
Written Agreement	0	0	2	5.56	2	2.22
No Answer	10	18.52	0	0	10	11.11

[a] multiple responses
[b] details are shown in Appendix Tables D19a and D19b

l) Method of Collecting Interest

Table 46 shows the methods on how the lenders collect the interest from the borrowers. Around 81% of the formal lenders collect interest upon payment together with the principal amount while 30% collect it in advance. 4% of the lenders practice declining balance method. Like formal lenders, majority of informal lenders (82%) collects interest upon payment with the principal and the remaining collects in advance or practice declining balance method. It should also be noted that 11% of the informal lenders does not impose any interest at all. Many lenders practice multiple methods of collection depending on the type of loan and agreement with the borrowers (See Appendix Tables D20a and D20b).

Table 46. Distribution[a] of respondents by method of interest collection by type of lender, Philippines, 2014

Method[b]	**Type of Lender**				**Total (n= 90)**	
	Formal (n = 54)		Informal (n= 36)			
	number	%	number	%	number	%
In Advance	16	29.63	1	2.78	17	18.89
Upon Payment	44	81	30	83.33	74	82.22
Declining Balance Method	2	3.70	1	2.78	3	3.33
No Interest	0	0.00	4	11.11	4	4.44

[a] multiple responses
[b] details are shown in Appendix Tables D20a and D20b

m) Bases for Loan Rejection

Table 47 shows the reasons why lenders reject loan application. About 93 % of formal lenders and 92% of informal lenders have rejected a loan application before. For formal lenders, the most common reason for rejection bad credit history of borrowers (56%), followed lack of collateral (36%) and inadequate requirements (36%). As shown in Appendix Table D21a, rural banks and cooperatives are among the types of formal lenders with high rejection rates. For informal lenders, bad credit history is also the main reason for rejection (79%) followed by lack of funds (9%). Relatives and friends and private money lenders are those with high rates of rejection rates due to bad credit history of borrowers (Appendix table D21b).

Table 47. Reasons for loan rejection by type of lender[a], Philippines, 2014

Item	**Type of Lender**				**Total (n= 90)**	
	Formal (n = 54)		Informal (n= 36)			
	number	%	number	%	number	%
Did not Reject	4	7.41	3	8.33	7	7.78
Rejected	50	92.59	33	91.67	83	92.22
Reasons[b]						
No/Lack collateral	18	36	2	6.06	20	24.10

Unfavourable credit history	28	56	26	78.79	54	65.06
Inadequate requirements	18	36	2	6.06	20	24.10
Violation of guidelines	1	2	0	0	1	1.20
Not a member	1	2	0	0	1	1.20
No money to pay	3	6	2	6.06	5	6.02
Lack funds	0	0	3	9.09	3	3.61
Lack in feed supply	1	2	1	3.03	2	2.41
Unfavorable character	3	6	0	0	3	3.61
Invalid documents	1	2	0	0	1	1.20
No Answer	4	8	2	6.06	6	7.23

[a] details are shown in Appendix Tables D21a and D21b
[b] multiple responses

Other reasons for rejection are unfavorable character, violation of guidelines, non-member, invalid document, and lack of feed supply (for cooperative and farmer lenders). The latter refers to cooperatives that provide loan in kind like feeds for swine. It is a general rule for most lenders that once a borrower fails or refuses to pay his loan on time; he or she would not be allowed to borrow again. Application may also be rejected if there is no collateral or if the value of the collateral does not match with the amount of loan to be borrowed

Loan Repayment

a) Mode of Loan Repayment

As shown in Table 48, borrowers can pay the lenders either in cash or in kind. Majority of formal lenders (96%) accept cash as payment for agricultural loan while only about 9%, comprised of cooperatives, accept in kind payments. All formal lenders do not accept any in kind payments for non-agricultural loans. In kind payments are usually the produce of the farmers such as rice, corn, vegetable, etc. Moreover, majority of informal lenders (72%) accept cash as method of payment while around 14% accept in kind payment for agricultural loans. Like formal lenders, they also do not accept in kind payments for non-agricultural loans. Most of the lenders that accept in kind payment are middlemen who process the produce and sell it to traders or direct to the market.

Table 48. Mode of loan payment[a] by type of lender, Philippines, 2014

Mode of Payment[b]	**Type of Lender**				**Total (n= 90)**	
	Formal (n = 54)		Informal (n= 36)			
	number	%	number	%	number	%
Agricultural						
In Cash	52	96.3	26	72.2	78	86.7
In Kind	5	9.3	5	13.9	10	11.1
No Answer	0	0	5	13.9	5	5.6

Non-agricultural						
In Cash	32	100.0	6	16.7	38	42.2
No Answer	0	0	1	2.8	1	1.1

[a] multiple responses
[b] details are shown in Appendix Tables D22a and D22b

b) Notice of Deadline and Collection of Payment

Table 49 shows the methods on how borrowers notify and collect the payment from borrowers. For formal lenders, the most common method of notifying borrowers is through written letter (50%) followed by personal visit (42%), text messaging (20%), and pre-scheduled meeting (20%). It is a part of the guidelines of most formal lenders such as banks that a letter of notice is sent to all borrowers. If they fail to comply after a letter of notice, lenders visit them personally or hire someone to appraise the reason for non-repayment. Majority (67%) of informal lenders notifies borrowers by visiting them, 20% pre-schedule a meeting and 14 % notify borrowers through text. It is important for most lenders to personally visit the borrowers as it is the surest to notify them regarding payment of loan. It should also be noted that most lenders use more than one method in notifying the borrowers.

Table 49. Distribution[a] of method of deadline notification and payment collection by type of lender, Philippines, 2014

Method	**Type of Lender**				**Total (n= 90)**	
	Formal (n = 54)		Informal (n= 36)			
	number	%	number	%	number	%
Notification[b]						
Personal	23	42.59	24	66.67	47	52.22
Telephone	7	12.96	0	0	7	7.78
Written Letter	27	50	1	2.78	28	31.11
Text Messaging	11	20.37	5	13.89	16	17.78
Pre-scheduled	11	20.37	8	22.22	19	21.11
Collection[c]						
Borrowers visit them	41	75.93	29	80.56	70	77.78
Personal visit	15	27.78	9	25	24	26.67
Collector is Hired	10	18.52	2	5.56	12	13.33
Bank Account Deposit	2	3.70	0	0	2	2.22
Meeting place	3	5.56	0	0	3	3.33

[a] multiple responses
[b] details are shown in Appendix Tables D23a and D23b
[c] details are shown in Appendix Tables D24a and D24b

About 76% of the formal lenders require that borrowers go straight to their office to give their loan payment. Only 28% visit the borrowers personally and 19% hires a collector. The rest deposit through bank accounts or set a meeting place. For informal lenders, 81% are

visited by the borrowers while 25% visit the borrowers and 6% hires a collector.In most cases, lenders use various methods of collecting payments. Usually, lenders wait for the borrowers to pay but if they fail to do so after the deadline, that's the only time they visit the borrowers personally.

c) Penalty for non-repayment

In Table 50, it shows what lenders do if borrowers fail to pay their loan. Most of the formal lenders (50%) set fine or surcharge to borrowers when they are not able to pay on the deadline. On the average, the amount of fine is 5.48% of the loan but it can go up to 25% depending on the terms of the lending institution. In most cases, lenders try to communicate and assess the situation of borrowers before giving them any penalty. Many restructure the loan in order for borrowers to pay their debt. Other formal lenders give warning and reminder letters, use the collateral security, and personally visit the lenders when they fail to pay on time.

Table 50. Measures[a] done to avoid non-repayment of laon, by type of lender, Philippines, 2014

Measure[b]	**Type of Lender**				**Total (n= 90)**	
	Formal (n = 54)		Informal (n= 36)			
	number	%	number	%	number	%
Warning Letter	24	44.44	2	5.56	26	28.89
Use to Collateral Security	3	5.56	1	2.78	4	4.44
Reminder Letter	16	29.63	6	16.67	22	24.44
Fine/Surcharge	27	50	1	2.78	28	31.11
Amount (% of loan)						
Average	5.48	-	0	-	5.480	-
Min	0.001	-	0	-	0.001	-
Max	25	-	0	-	25	-
Personal Visit	3	5.56	8	22.22	11	12.22
Pay Capital first	0	0	1	2.78	1	1.11
Wait for Payment/None	0	0	10	27.78	10	11.11
Promisory note	1	1.85	0	0	1	1.11
Text	0	0	3	8.33	3	3.33
Report to Brgy.	0	0	1	2.78	1	1.11
No Answer	2	3.70	0	0	2	2.22

[a] multiple responses
[b] details are shown in Appendix Tables D25a and D25b

Most informal lenders (28%) do not do anything when the borrowers are not able to meet the payment deadline. They explained that since most of their borrowers are friends or relatives, they just try to understand if the borrower found it difficult to pay the loan on time. All lenders could do is to constantly remind them about their debt. Some lenders (22%) personally visit the borrowers when they don't pay on time. Other give reminder letters while there are instances when lenders report the borrower to barangay or use the collateral security.

d) Repayment Rate and Loan Default

The average repayment rate and number of delayed borrowers of lenders are shown in Table 51. The average repayment rate for formal lenders is 83%. Each type of formal lenders has an average to above average repayment rate except for cooperative which got a repayment rate as low as 10% (Appendix Table D26a). On the average, the number of delayed individual borrowers from the formal sector is 31 while there were 2 cooperatives who failed on pay on time to Land Bank (Appendix Table D27a). The average repayment rate for informal lenders is 80%, not much different from the formal sector. Some of the private money lenders and relatives/friends got a repayment rate lower than 50% while all others got an average to above average repayment rate (Appendix Table D26b). The average number of delayed borrowers from the informal sector is 5 and most of the delayed borrowers got their loans from private money lender or friends/relatives (Appendix Table D27b).

Table 51. Average repayment rate and number of delinquent borrowers by type of lender, Philippines, 2014

Item	Average	Minimum	Maximum
Formal			
Repayment Rate[a]	83	10	100
Number of Delayed Borrowers[b]			
Individual	31	1	220
Cooperative	2	2	2
I*nformal*			
Repayment Rate[a]	79.6	20	100
Number of Delayed Borrowers[b]			
Individual	5	1	20
Cooperative	0	0	0

[a] details are shown in Appendix Tables D26a and D26b
[b] details are shown in Appendix Tables D27a and D27b

e) Reasons for non-repayment

Table 52 indicates the reason for non-repayment according to the borrowers. For formal lenders, the most common reason for non-repayment is natural hazards (52%) followed by low sales (43%). Most of the natural hazards encountered by borrowers include typhoons, landslide, pests, or drought. Other reasons were lost of job, high repayment amount, migration, unforeseen expenses, mismanagement of loan, and others just refuse to pay. For the informal lenders, the most common reason given to them is low sales (44%) followed by natural hazards (22%) and no money for payment (11%). Others encounter unforeseen expenses or just refuse to pay while there was also an instance where the borrower died so he was not able to pay the loan to the informal lender.

Table 52. Distribution[a] of reason for non-repayment by type of lender, Philippines, 2014

Reason[b]	Type of Lender				Total (n= 90)	
	Formal (n = 54)		Informal (n= 36)			
	number	%	number	%	number	%
High Repayment Amount	2	3.70	0	0	2	2.22
Low Sales	23	42.59	16	44.44	39	43.33
Natural Hazards	28	51.85	8	22.22	36	40.00
Loss of Job	4	7.41	0	0	4	4.44
Refuses to Pay	3	5.56	3	8.33	6	6.67
No Money	0	0	4	11.11	4	4.44
Migrate to other town	2	3.70	0	0	2	2.22
Unfinished documents	1	1.85	0	0	1	1.11
Unforeseen expenses	2	3.70	1	2.78	3	3.33
Used again	1	1.85	0	0	1	1.11
Mismanagement	1	1.85	0	0	1	1.11
Death	0	0	1	2.78	1	1.11
No answer	3	5.56	1	2.78	4	4.44

[a] multiple responses
[b] details are shown in Appendix Tables D27a and D27b

Expenses

a) Transaction Costs

Table 53 summarizes the transaction costs of lenders. It was divided into five; client screening, evaluation of application, processing of loan, post loan follow-up, and collection of payment. For each aspect, data on the total number and salary of personnel involved and the percentage of time involved in each transaction were gathered. The value of time for each activity was computed by multiplying the amount of time allocated (converted into hours per month) for each activity by the monthly salary then dividing by the amount of loan granted. For the client screening, the average percentage of time involved is 27% for formal lenders and 13% for informal lenders. The average number of personnel is two and the value of time is Php44.51 per Php1,000 for formal lenders and Php8.33 per Php1,000 for informal lenders. For the evaluation of application, the average percentage of the time involved is 28% for formal lenders and 13% for informal lenders. The average number of personnel is two and the value of time is Php 42.24 per Php1,000 for formal lenders and Php8.33 per Php1,000 for informal lenders. For processing of loan, the average percentage of time involved is 35% for formal lenders and 14% for informal lenders. The average number of personnel is two and the value of time is Php 55.91 per Php1,000 for formal lenders and Php 9.40 per Php1,000 for informal lenders. For post loan follow-up, the average percentage of time involved is 16% for formal lenders and 10% for informal lenders. The average number of personnel is two and the value of time is Php 31.39 per Php1,000 for formal lenders and Php 6.53 per Php1,000 for informal lenders. For collection of payment, the average percentage of time involved is 14% for formal lenders and 9% for informal lenders. The average number of personnel is two and

the value of time is Php15.01 per Php1,000 for formal lenders and Php4.14 per Php1,000 for informal lenders. The value of time depends on the percentage of time involved, the greater the percentage of time involved, the higher the value of time. The average number of personnel for all sectors is two. For formal lenders, processing of loan consumes most of the time while collection of payment gets the least. On the other hand, collection of payment consumes most of the time for informal lenders and post loan follow-up gets the least.

The average total transaction cost per Php1,000 is Php 156.19 for formal lenders and Php 17.21 for informal lenders while average transaction cost per Php 1,000 of loan exposure is Php 61.62 for formal lenders and Php124.05 for informal lenders. Transaction costs of formal lenders are higher since they require a more rigorous application process for loans than informal lenders but the cost per loan is lower for formal lenders. This is because the loan exposure of formal lenders is higher as compared to informal lenders.

The average percentage of transaction cost to the total expenses is 41.85 for formal lenders and 87.94 for informal lenders. Majority of the expense of informal lenders is the transaction cost since most of them do not have other expenses unlike the formal lenders. The average percentage of transaction cost to the total loan exposure is 6.16 for formal lenders and 20.57 for informal lenders.

Table 53. Transaction costs by type of lender, Philippines, 2014

Activities[a]	**Formal (n = 54)**	**Informal (n= 36)**	**Total (n= 90)**
Client Screening			
Time Involved (%)	27.00	13.00	21.54
No. of Personnel	2	2	2
Value of time(Php/1000)	44.51	8.33	30.13
Evaluation of Application			
Time Involved (%)	28.00	13.00	22.14
No. of Personnel	2	2	2
Value of time(Php/1000)	42.24	8.33	28.77
Processing of Loan			
Time Involved (%)	35.00	14.00	26.76
No. of Personnel	2	2	2
Value of time(Php/1000)	55.91	9.40	37.41
Post Loan Follow-up			
Time Involved (%)	16.00	10.00	13.71
No. of Personnel	2	2	2
Value of time(Php/1000)	31.39	6.53	21.52
Collection of Payment			
Time Involved (%)	14.00	9.00	12.10
No. of Personnel	2	2	2.02
Value of time(Php/1000)	15.01	4.15	10.71

Average Transaction Cost (Php per 1000)	156.19	17.21	100.79
Average Transaction Cost (Php per 1000 loan exposure)	61.62	124.05	87.97
Transaction Cost per Total Expenses (%)	41.85	87.94	61.26
Transaction Cost per Loan Exposure (%)	6.16	20.67	12.20

[a] details are shown in Appendix Tables D28a and D28b

b) Maintenance and Other Operating Expenses

Respondents were asked about specific annual expenses which include interest payments, personnel, supplies, utilities, travel, capital outlay, training, monitoring, fixed costs, and others. The average maintenance and other operating expense (MOOE) is Php 680 per 1,000 for formal lender and Php 20 per 1,000 for informal lenders. The average MOOE per Php 1,000 of loan is Php 91.82 for formal lenders and Php 41.49 for informal lenders (Table 54). The MOOE of informal lenders is lower since most do not have offices to maintain or personnel to pay. Most of the expenses of formal lenders are from personnel and interest payments while for informal lenders, most expenses are from loan monitoring and interest payments.

Table 54. Average MOOE (in Php/1000) by type of lender, Philippines, 2014

Expenses	**Formal (n = 54)**	**Informal (n= 36)**	**Total (n= 90)**
No answer	8	18	26
With answer	46	18	64
Expenses(Average)			
Interest Payments	342	52	226.67
Personnel	453	29.5	283.86
Supplies	40	1	24.03
Utilities	58	2	35.93
Travel	68	18	48.30
Capital Outlay	124	4	75.89
Rent	75	-	45.16
Training	86	-	51.79
Monitoring	6	50	24.32
Fixed costs	20	-	11.94
Others	31	-	18.50
Average Mooe	680	20	416.02
Average Mooe per Loan Exposure	91.823	41.49	72.15

[a] details are shown in Appendix Tables D29a and D29b

c) Total Expenses

Table 55 shows the average total expenses of lenders. For formal lenders, most of the expenses are on personnel (wage, salaries, and benefits) and interest payments. The average total expense is Php 835.85 per 1,000. For informal lenders, most of the expenses are on interest payments (borrowings from banks) and monitoring of loan. Their average annual expense is Php37.22 per 1,000. The average total expense per 1,000 loan exposure is Php 153 for formal lenders and Php 165.54 for informal lenders.

Table 55. Average expenses (in Php/1000) by type of lender, Philippines, 2014

Reason[a]	**Formal (n = 54)**	**Informal (n= 36)**	**Total (n= 90)**
No Expenses	8	18	27
Incurred Expenses	46	18	63
Expenses(Average)			
Interest Payments	342	51.69	226.67
Personnel	503	29.52	314.12
Supplies	40	0.77	24.03
Utilities	58	2.40	35.93
Travel	68	18.35	48.30
Capital Outlay	124	3.60	75.89
Rent	88	-	52.69
Training	86	-	51.79
Monitoring	6	50.40	24.32
Fixed costs	20	-	11.94
Others	31	-	18.50
Average Total Expenses	835.85	37.22	979.49
Average Expenses per Loan Exposure	153	165.54	159.86

[a] details are shown in Appendix Tables D30a and D30b

d) Types of Assistance Received by Formal Lenders

Table 56 shows the type of assistance received by lenders from BSP. None of the informal lenders received any assistance from BSP since they are not being supervised by the BSP. Only 24% from the formal lenders received assistance. Of the formal lenders that received assistance from BSP, 38% received financial assistance and 15% received training from them. Others received insurance (8%) while some are part of the BSP's Credit Surety Fund Program (8%). 31% were not able to discuss what type of assistance they received.

Table 56. Type of assistance received from BSP[a] by formal lender, Philippines, 2014

Assistance	number	%
Yes	13	24.07
Type of Assistance		
Financial	5	38.46
Insurance	1	7.69
Surety Fund	1	7.69
Training	2	15.38
Cannot Answer	4	30.77
No	41	75.93

[a] details are shown in Appendix Table D31

e) Problems Encountered by Lenders

In Table 57, the problems encountered by lenders were shown. Majority of both formal and informal lenders (78%) experienced delays in payment of borrowers. They consider it a very serious problem because a lot of borrowers are not compliant when it comes to payment. The delay in payments affects other services of the banks and posts a major threat in their operations. 20% of the lenders confessed that they were not able to accommodate all the customers who want to loan because they lack funds. Other lenders also have management issues and admit that they are in need of assistance.

Table 57. Problems[a] encountered by type of lenders, Philippines, 2014

Problem[a]	Type of Lender				Total (n= 90)	
	Formal (n = 54)		Informal (n= 36)			
	number	%	number	%	number	%
Unsecure Funds	9	16.67	9	25	18	20
Lack of Assistance	1	1.85	0	0	1	1.11
Delay/Non-Repayment	45	83.33	25	69.44	70	77.78
Management Issues	7	12.96	3	8.33	10	11.11

[a] details are shown in appendix tables D32a and D32b

C. Estimation Results

Factors Affecting the Decision on How Much to Borrow

Table 58 presents estimates of the two-step treatment effects model. In the first-stage, results showed that the farmer's decision to borrow from formal sources is significantly affected by interest rate, the crops dummy variable, all the transaction cost variables (time approval, distance to wholesale market, road quality, interaction of distance and road quality, and TC ratio), lenders per ten thousand population (as a proxy for ease of access to credit), other income, and flexibility. More specifically, the lower the interest rate charged by the

lender, the more likely that a farmer will borrow from formal sources. This finding is consistent with the study of Briones (2007) who found a similar negative and significant result of interest rate on the demand for credit of Philippine rice farmers. Also, the computed mean interest rate on loans from formal sources is lower at 17% compared to the 20% average interest from informal loans. This finding only applies, however, to borrowers who actually pay interest, since majority of the farmers interviewed who borrowed from informal sources indicated friends or relatives as their source of loans – around 320 of the 466 informal borrowers – and were not subjected to paying any form of interest on their loans.

For the socio-demographic characteristics, age, gender, education, and the number of dependents do not affect the borrowing nature of the farmer. The significant negative coefficient of the crops dummy implies that compared to the livestock/poultry growers and aquaculture farmers, crops farmers are less likely to borrow from formal sources. A possible explanation can be attributed to the larger sum of credit that is usually needed by livestock growers compared to crop farmers, which is supported by the descriptive statistics presented earlier: a larger percentage of livestock/poultry growers and aquaculture farmers, especially for swine and duck, borrow higher amounts compared to rice, corn or HVCC farmers.

The significance and signs of the transaction cost variables confirm the descriptive statistics presented since greater transaction costs are associated with formal borrowing. The more time for the loan to be approved, a greater distance to the wholesale market, and a larger ratio of transaction costs (cost f travel + cost of requirements) to amount borrowed (meaning, a higher cost of requirements and/or higher transportation cost to the borrower) all point to a farmer who is willing to bear these costs in order to borrow from formal sources. For example, given banks' and cooperatives' stringent application procedures, borrowers are required to present IDs, community tax certificate, and barangay clearances among others as part of the process of loan approval result in higher requirement costs while those borrowing from informal sources involve little to no requirements at all. Also, formal lending institutions are usually located at the town or municipality's center might be far away enough for a farmer to incur greater transaction costs as compared to informal lenders. This has been cited in previous studies such as that of Fachini et al. (2008) which included bureaucracy and paperwork costs, transportation, and food and accommodation among borrowers' transaction costs. Cañeda and Badiola (1999) as cited by Briones (2007) also mentioned that farmers described informal loans to be more convenient because of quicker releases and the absence of documentation requirements. On the other hand, the positive coefficient of road quality seem to imply that improving access to formal credit by reducing transaction costs (such as better quality of road going to the lender) significantly increases the probability that a farmer chooses to borrow from formal over informal sources. The significant negative coefficient of the interaction of road quality and distance seems to suggest that even with good road quality, a farmer has a lower probability of borrowing from formal sources if he/she is farther away from the market and chooses to borrow from informal sources which are more conveniently located nearby.

Table 58. Estimates of two-step treatment effects model: regression results

Variable	First Stage (Formal =1)	Second Stage (Log of Amount Borrowed)
	Coefficient	Coefficient
Interest rate	-2.566***	0.3893
Age	-0.0025	-0.0014
Gender	-0.2614	0.1315
Education	0.1397	0.1364
Dependents	-0.0262	-0.0159
Crops	-0.495**	0.2156
Fishery	-0.058	-0.4454*
Time approval	0.004***	0.0001
Distance to wholesale market	0.011***	0.0003
Road quality	0.554**	0.0183
Road quality x Distance	-0.028*	0.0054
Transaction cost ratio	15.32***	-8.686***
Lenders per ten thousand population	0.155*	
Training	1.231***	
Main income	-9.02e-08	1.87e-06***
Other income	1.86e-06*	2.73e-06***
Flexibility	-1.037***	
Formal		0.7219***
Constant	-0.1583	8.2731***
LR chi2 (17)	199.14***	
Wald chi2 (29)		171.69***
No. of Observations	351	351

Note: (standard errors in parentheses)
*** significant at 1% level
** significant at 5% level
* significant at 10% level

The positive and significant variable on lenders per ten thousand population suggests that a farmer is more likely to borrow from formal sources when more formal lending institutions are located in the municipality. Also, those respondents who received training on managing their loans or information on loan sources are more likely to borrow from formal sources as indicated by the positive significant coefficient of the training variable. This is probably due to the knowledge that such training provides to farmers regarding formal loans that are subject to lower interest rates and other advantages over informal loans. Furthermore, a farmer is significantly more likely to source formal loans when other income (i.e. income other than main farming activity) increases. Lastly, the negative significant coefficient of flexibility indicates that a farmer who is looking for more flexibility in terms of loan repayment schedule would more likely borrow from informal sources.

The second stage of the treatment effects model showed that interest paid on a loan does not significantly affect the amount borrowed directly, but only indirectly influences it through the decision of the farmer to borrow from formal sources. Similar significant variables in the first stage probit indirectly affect amount borrowed in the same manner as interest rate. The positive significant coefficient of formal implies that formal borrowers have a higher loan uptake compared to informal borrowers. This result reflects the descriptive statistics presented earlier and reinforces the belief that formal loans offer larger amounts to be borrowed. The main income and other income variables, which are indicators of the farmer's capacity to pay the loan amounts are also significantly positively related with the amount borrowed.

In terms of transaction costs, the study also shows that higher transaction costs per amount borrowed significantly decrease the amount borrowed which shows that farmers not only consider the interest rate and ability to repay the loan but also other costs associated with the process of loan application. Lastly, the negative significant coefficient of the fishery dummy variable shows that compared to livestock/poultry raisers and aquaculture, those involved in marine fishing tend to borrow less.

Predicted Probability Values and Inflection Interest Rates

Table 57 shows the various scenarios and corresponding interest rates wherein a general borrower would choose to borrow from formal sources (the "equilibrium" or the "inflection" interest rate) or an informal borrower would choose to borrow from formal sources. This involves manually deriving the interest rate, ceteris paribus, which would result in a 50% probability of choosing formal loan sources, assuming that these farmers are paying interest. The most general scenario is if all farmers are assumed to be paying interest on loans, an average farmer (taken at random from all borrowers) will choose formal loans if the interest rate is 18%. At an interest rate higher than 18%, the borrower will choose to borrow from informal sources. For an average farmer in a municipality without formal lending institution, the interest rate at which they will be willing to switch to formal borrowing is 12%. If we consider an average farmer engaged in marine fishing, the equilibrium interest rate decreases to 16% while for an average crops farmer, the switching interest rate drops even lower to 6.4%. This implies that formal lenders may need to consider the type of farming activity in providing loans, as some sectors traditionally source their credit from informal sources such as in the crops sector.

Table 59. Summary of regime switching assumptions and equilibrium interest rates

Assumptions	Interest rate
If farmers are paying interest	18%
If farmers are paying interest, no lenders/10,000	12%
If farmers are paying interest and in marine fishery sector	16%
If farmers are paying interest and in crops sector	6.4%

If farmers are paying interest, informal borrower, 3 lenders/10,000, and in livestock/aquaculture sector	6%
If farmers are paying interest, informal borrower, 4 lenders/10,000	4%
If farmers are paying interest, informal borrower, 4 lenders/10,000, good road quality	8%

For other scenarios, given an informal borrower that pays interest, with good access to formal credit (3 per 10,000 population), and in the livestock or aquaculture sector, he or she will choose to borrow from formal sources at an interest rate of 6%. Increasing the access to 4 formal lenders/10,000 (but for all farmers in general) results in a switching interest of 4%. If road quality is included however, the interest rate increases to 8%. Since road quality represents one of the transaction costs involved in credit, this implies that setting low interest rates are not the only consideration of a farmer's choice where to borrow; lowering transaction costs is a prerequisite for an informal borrower to switch to formal sources and the farmer is also willing to bear higher interest rates.

Policy Implications

Given that other factors like transaction costs, aside from interest rates, affect the borrowing nature of small farmers, government may consider easing access to formal credit by minimizing the transaction costs involved in loan applications such as lessening the number of requirements and shortening the time for approving the loan. Since interest rates are already lower in formal lending compared to informal lending which increases the probability of an informal borrower to borrow from formal sources, easing access requirements may entice those small farmers who are relatively better producers (with better characteristics) to source their funds from formal lending institutions. Evidence of this can be seen in the Sikat-Saka program, the credit component of the Food Staples Sufficiency Program of the Department of Agriculture. Following the expansion of the list of allowable collateral and the relaxation of some eligibility requirements in 2013, an upsurge in the availment of the program has been experienced as can be seen in the table below.

Table 60. Accomplishments of the Sikat Saka Program, 2012-2013

Intervention	FY 2011		FY 2012		FY 2013	
	No. of Farmers	**Amount of Loan Released, Php**	**No. of Farmers**	**Amount of Loan Released, Php M**	**No. of Farmers**	**Amount of Loan Released, Php M**
Sikat Saka Program	-	-	764	48.2	5,833	464.5

Source: DA Annual Report, 2012-2013

More flexible payment schedules such as the "cash flow" payment scheme for formal credit facilities should also be considered. Credit facilities may be unwilling to ease requirements and provide more flexible payment schemes because of the risk factors involved. However, they may be enticed to do so if they are allowed to charge a higher interest on loans. This may be acceptable based on the empirical results. Considering that the threshold interest rate is 18%, above the average interest charged by formal lenders of 12-15% and still below the interest charged by informal lenders, increases in interest rates in between the 12% to 18% range in exchange for easier access and more flexible payment schemes may still increase the probability of formal loan uptake.

Government may also consider expanding the coverage of programs like the Sikat-Saka to to other agricultural commodity sectors and to municipalities that do not have formal credit facilities. The presence of programs like these increases the likelihood of small farmers to increase loan uptake from formal sources. As was shown empirically, presence of formal credit facilities has a positive impact on the probability of borrowing from formal sources.
More trainings on loan management should also be conducted as it increases the probability of borrowing from formal sources.

Rural infrastructure development should also be enhanced, as one of the additional benefits of this is the increase in the probability of formal loan uptake. Better roads and more food terminals closer to farms would not only make it easier to sell farmers' produce, it will also increase access to formal credit facilities. Given that access to credit increases productivity and eventually farmers' income, enhanced rural infrastructure development would have definite positive income effects.

Lastly, based on the results of the regression analysis, the type of farming activity is an important factor to be taken into consideration when crafting government credit programs as it has been shown that interest sensitivity and borrowing behavior varies from one sector to another.

VI. SUMMARY AND CONCLUSION

A total of 646 small farmers from the three main farming activity – 1) crop farming; 2) livestock and poultry raising, and; 3) fishing were interviewed for the borrowers side. The highest number of small farmers interviewed is from livestock and poultry which includes the 4 main domestically-raised animals such cattle, swine, duck, and chicken. For the lender side, the study areas selected were the same as the borrowers. Three formal lenders and two informal lenders were randomly selected in each study area so total of 54 formal lenders and 36 informal lenders were interviewed for the study. Data from the formal sector were collected from 20 cooperatives, 17 rural banks, seven NGOs, five lending investors, two private banks, two cooperative banks, and a Land Bank.

Based on the survey results, 80% of the sample farmers has borrowed in the past 12 months. Formal sources of loans which includes commercial and government banks, cooperatives, lending institutions, charge an average interest rate of 15%. On the other hand, those who are included in the informal sources type are trade millers, input suppliers, family and friends, wholesalers, charge an average of 20% interest rate. Meanwhile, the survey on lenders showed that formal lenders charge an average interest rate 11% for both agricultural and non-agricultural loans while for informal lenders they mostly charge 14% for agricultural loans and 11% for non-agricultural loans. It is also noted that formal lenders have lower average lending transaction cost per amount loan as compared to informal lenders.

Results of the first stage probit regression showed that the farmer's decision to borrow from formal sources is significantly affected by interest rate, the crops dummy variable, all the transaction cost variables (time approval, distance to wholesale market, road quality, interaction of distance and road quality, and TC ratio), lenders per ten thousand population (as a proxy for ease of access to credit), other income, and flexibility.

The second stage of the treatment effects model showed that interest paid on a loan does not significantly affect the amount borrowed directly, but only indirectly influences it through the decision of the farmer to borrow from formal sources. Similar significant variables in the first stage probit indirectly affect amount borrowed in the same manner as interest rate. The positive significant coefficient of formal implies that formal borrowers have a higher loan uptake compared to informal borrowers. The main income and other income variables, which are indicators of the farmer's capacity to pay the loan amounts are also significantly positively related with the amount borrowed.

Results of the study show that setting low interest rates are not the only consideration of a farmer's choice where to borrow; transaction costs may be a prerequisite for an informal borrower to switch to formal sources and the farmer is also willing to bear higher interest rates.

Given that other factors like transaction costs, aside from interest rates, affect the borrowing nature of small farmers, government may consider easing access to formal credit by minimizing the transaction costs involved in loan applications such as lessening the number of requirements and shortening the time for approving the loan. Since interest rates are already lower in formal lending compared to informal lending which increases the probability of an informal borrower to borrow from formal sources, easing access requirements may entice those small farmers who are relatively better producers (with better characteristics) to source their funds from formal lending institutions.

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APPENDICES

APPENDIX A

Sample Farmer Respondents

Appendix Table A1. Distribution of sample farmers by gender, age and civil status, Philippines, 2014

Demographical Characteristic	Crop	Livestock/ Poultry	Fishery	% of Total Sample Farmers
A. Gender				
Male	122	139	125	60
Female	95	146	19	40
Total	**217**	**285**	**144**	**100**
B. Age Range				
18-20	1	0	0	0.2
21-40	35	86	44	25.5
41-60	118	149	90	55.3
61-80	61	49	10	18.6
80 and above	2	1	0	00.5
Total	**217**	**285**	**144**	**100**
Average Age	53	48	46	
Min - Max Age	20 - 89	24 - 82	22 - 77	
C. Civil Status				
Single	12	14	6	5
Married	184	258	129	88
Separated	4	0	3	1
Others	17	13	6	6
Total	**217**	**285**	**144**	**100**

Appendix Table A2. Distribution of sample farmers by educational attainment, Philippines, 2014

Educational Attainment	Crop	Livestock/ Poultry	Fishery	% of Total Sample Farmers
No Formal Schooling	1	1	0	00.3
Elementary level	28	41	18	13.5
Elementary graduate	53	74	29	24.1
High School level	29	46	27	15.8
High School graduate	57	75	48	27.9
College level	21	18	9	7.4
College graduate	20	26	6	8
Vocational Training course	8	4	7	2.9
Total	**217**	**285**	**144**	**100**

Appendix Table A3. Distribution of sample farmers by household size and number of dependents, Philippines, 2014

Household Size and Number of Dependents	Crop	Livestock/ Poultry	Fishing	% of Total Sample Farmers
A. Household Size				
1-2	34	25	11	11
3-4	76	102	47	35
5-6	73	102	48	35
7-8	26	40	23	14
9 and above	8	16	15	6
Total	**217**	**285**	**144**	**100**
Average Household Size	5	5	5	
Min - Max Household Size	1 - 11	1 - 19	1 - 13	
B. No. of dependents				
0-1	41	62	22	19
2-3	81	115	59	39
4-5	65	63	37	26
6-7	20	32	16	11
8-9	7	10	7	4
10 and above	3	3	3	1
Total	**217**	**285**	**144**	**100**
Average No. of Dependents	3	3	4	
Min - Max No. of Dependents	0 - 13	0 - 17	0 - 16	

Appendix Table A4. Distribution of sample farmers by income from main farming activity, other sources and total income, Philippines, 2014

Income Range	Crops	Livestock/ Poultry	Marine Municipal	Aquaculture	% of Total Sample Farmers
A. Main Source of Income					
Php 0 - 30,000	25	92	7	14	0.21
30,001 - 70,000	49	58	21	9	0.21
70,001 - 150,000	73	70	30	13	0.29
150,001 - 300,000	44	38	12	18	0.17
300,001 - 500,000	17	13	2	7	0.06
500,001 and above	9	14	0	11	0.05
Total	**217**	**285**	**72**	**72**	**1**
Average Annual Income (in Php)	161,787	131,766	102,818	290,415	
Min - Max Annual Income (in Php)	0 - 2,000,000	0 - 2,100,000	9,600 - 456,250	8,000 - 2,000,000	
B. Other Source of Income					
Php 0 - 30,000	130	139	59	31	0.56
30,001 - 70,000	35	67	7	13	0.19
70,001 - 150,000	27	48	4	18	0.15
150,001 - 300,000	22	22	2	6	0.08
300,001 - 500,000	2	7	0	2	0.02
500,001 and above	1	2	0	2	0.01
Total	**217**	**285**	**72**	**72**	**1**
Average Annual Income (in Php)	52,345	73,357	17,018	109,150	
Min - Max Annual Income (in Php)	0 - 1,000,000	0 - 3,900,000	0 - 186,100	0 - 2,500,000	
C. Total Income					
Php 0 - 30,000	11	27	3	1	0.065
30,001 - 70,000	32	59	19	9	0.184
70,001 - 150,000	67	86	35	19	0.320
150,001 - 300,000	62	66	9	13	0.232
300,001 - 500,000	33	26	5	16	0.123
500,001 and above	12	21	1	14	0.074
Total	**217**	**285**	**72**	**72**	**1**
Average Annual Income (in Php)	213,401	206,884	123,861	397,701	
	5,200 - 2,000,000	1,440 - 3,900,000	22,400 - 514,000	24,000 - 2,700,000	
Average Conribution of Income from Main Farming Activity to Total Annual Income	77%	63%	83%	73%	

APPENDIX B

Borrower Farmers

Appendix Table B1. Distribution of borrowers by demographics and loan source, Philippines, 2014

Demographic Characteristic	Formal		Informal		All Borrowers	
	No. of Borrowers	% of Total Borrowers from Formal Loan Source	No. of Borrowers	% of Total Borrowers from Informal Loan Source	No. of Borrowers	% of Total Borrowers
A. Gender						
Male	96	57	283	61	379	60
Female	71	43	183	39	254	40
Total	**167**	**100**	**466**	**100**	**633**	**100**
B. Age Range						
18-20	0	0	2	0	2	0
21-40	40	24	122	26	162	26
41-60	106	63	267	57	373	59
61-80	20	12	74	16	94	15
80 and above	1	1	1	0	2	0
Total	**167**	**100**	**466**	**100**	**633**	**100**
Average in Years	48		48		48	
Min - Max Age	24 - 89		20 - 82		20 - 89	
C. Civil Status						
Single	5	3	22	5	27	4
Married	151	90	411	88	562	89
Separated	2	1	6	1	8	1
Others	9	5	27	6	36	6
Total	**167**	**100**	**466**	**100**	**633**	**100**

Appendix Table B2. Distribution of borrowers by educational attainment, Philippines, 2014

Educational Attainment	Formal		Informal		All Borrowers	
	No. of Borrowers	% of Total Borrowers from Formal Loan Source	No. of Borrowers	% of Total Borrowers from Informal Loan Source	No. of Borrowers	% of Total Borrowers
No Formal Schooling	1	1	1	0	2	0
Elementary level	14	8	67	14	81	13
Elementary graduate	35	21	122	26	157	25
High School level	35	21	73	16	108	17
High School graduate	49	29	120	26	169	27
College level	10	6	30	6	40	6
College graduate	19	11	34	7	53	8
Vocational Training course	4	2	19	4	23	4
Total	**167**	**100**	**466**	**100**	**633**	**100**

Appendix Table B3. Distribution of borrowers by household size and number of dependents, Philippines, 2014

Household Size and Number of Dependents	Formal		Informal		All Borrowers	
	No. of Borrowers	**% of Total Borrowers from Formal Loan Source**	**No. of Borrowers**	**% of Total Borrowers from Informal Loan Source**	**No. of Borrowers**	**% of Total Borrowers**
A. Household Size						
1-2	16	10	44	9	60	9
3-4	55	33	159	34	214	34
5-6	67	40	169	36	236	37
7-8	22	13	67	14	89	14
9 and above	7	4	27	6	34	5
Total	**167**	**100**	**466**	**100**	**633**	**1**
Average Household Size	5		5		5	
Min - Max Household Size	1 - 12		1 - 19		1 - 19	
B. No. of dependents						
0-1	26	16	69	15	95	15
2-3	67	40	179	38	246	39
4-5	54	32	138	30	192	30
6-7	14	8	54	12	68	11
8-9	6	4	16	3	22	3
10 and above	0	0	10	2	10	2
Total	**167**	**100**	**466**	**100**	**633**	**100**
Average No. of Dependents	3		4		4	
Min - Max No. of Dependents	0 - 9		0 - 17		0 - 17	

Appendix Table B4. Distribution of borrowers by income, Philippines, 2014

Income Range	Formal		Informal		All Borrowers	
	No. of Borrowers	% of Total Borrowers (Formal Loan Source)	No. of Borrowers	% of Total Borrowers (Informal Loan Source)	No. of Borrowers	% of Total Borrowers
A. Income from Main Farming and Fishing Activity						
Php 0 - 30,000	39	23	96	21	135	21
30,001 - 70,000	23	14	95	20	118	19
70,001 - 150,000	49	29	138	30	187	30
150,001 - 300,000	35	21	79	17	114	18
300,001 - 500,000	13	8	28	6	41	6
500,001 and above	8	5	30	6	38	6
Total	**167**	**100**	**466**	**100**	**633**	**100**
Average Annual Income (in Php)	165,918		159,946		161,521	
Min - Max Annual Income (in Php)	0 - 1,700,00		0 - 2,100,000		0 - 2,100,000	
B. Income from Other Sources						
Php 0 - 30,000	68	41	263	56	331	52
30,001 - 70,000	28	17	89	19	117	18
70,001 - 150,000	38	23	74	16	112	18
150,001 - 300,000	28	17	32	7	60	9
300,001 - 500,000	5	3	6	1	11	2
500,001 - and above	0	0	2	0	2	0
Total	**167**	**100**	**466**	**100**	**633**	**100**
Average Annual Income (in Php)	79,362		54,416		60,998	
Min - Max Annual Income (in Php)	0 - 396,000		0 - 2,500,000		0 - 2,500,000	
C. Total Income						
Php 0 - 30,000	8	5	29	6	37	6
30,001 - 70,000	16	10	84	18	100	16
70,001 - 150,000	55	33	155	33	210	33
150,001 - 300,000	38	23	109	23	147	23
300,001 - 500,000	37	22	51	11	88	14
500,001 and above	13	8	38	8	51	8
Total	**167**	**1**	**466**	**100**	**633**	**100**
Average Annual Income (in Php)	246,654		215,689		223,858	
Min - Max Annual Income (in Php)	7,050 - 2,100,00		1,440 - 2,700,000		1,440 - 2,700,000	
Average Contribution of Main Farming Activity Income to Total Annual Income	63%		72%		70%	

APPENDIX C

Non-borrower Farmers

Appendix Table C1. Distribution of non-borrowers by gender, age and civil status, Philippines, 2014

Demographic Characteristic	No. of Sample Farmers	% of Total Non-Borrower	% of Total Sample Farmers
A. Gender			
Male	80	63	12
Female	47	37	8
Total	**127**	**100**	**20**
B. Age Range			
21-40	33	26	5
41-60	56	44	9
61-80	37	29	6
81 and above	1	1	0
Total	**127**	**100**	**20**
Average Age	51		
Min - Max Age	24 - 86		
C. Civil Status			
Single	10	8	2
Married	106	83	16
Separated	2	2	0
Others	9	7	2
Total	**127**	**100**	**20**

Appendix Table C2. Distribution of non-borrowers by educational attainment, Philippines, 2014

Educational Attainment	No. of Non-borrowers	% of Total Non-borrowers	% of Total Sample Farmers
Elementary level	21	17	3
Elementary graduate	28	22	4
High School level	16	13	2
High School graduate	38	30	6
College level	13	10	2
College graduate	10	8	2
Vocational Training course	1	1	0
Total	**127**	**100**	**20**

Appendix Table C3. Distribution of non-borrowers by household size and number of dependents, Philippines, 2014

Household Size and No. of Dependents	No. of Non-borrowers	% of Total Non-Borrowers	% of Total Sample Farmers
A. Household Size			
1-2	20	16	3
3-4	49	39	8
5-6	34	27	5
7-8	15	12	2
9 and above	9	7	1
Total	**127**	**100**	**20**
Average Household Size	5		
Min - Max Household Size	1 - 11		
B. No. of Dependents			
0-1	42	33	7
2-3	52	41	8
4-5	18	14	3
6-7	11	9	2
8-9	4	3	1
Total	**127**	**100**	**20**
Average No. of Dependents	3		
Min - Max No. of Dependents	0 - 9		

Appendix Table C4. Distribution of non-borrowers by income, Philippines, 2014

Income Range	No. of Non - Borrowers	% of Total Non-borrowers	% of Total Sample Farmers
A. Income from Main Farming and Fishing Activity			
Php 0 - 30,000	34	27	5
30,001 - 70,000	29	23	4
70,001 - 150,000	28	22	4
150,001 - 300,000	22	17	3
300,001 - 500,000	5	4	1
500,001 and above	9	7	1
Total	**127**	**100**	**20**
Average Annual Income (in Php)	164,327		
Min - Max Annual Income (in Php)	0 - 2,000,000		
B. Income from Other Sources			
Php 0 - 30,000	76	60	12
30,001 - 70,000	25	20	4
70,001 - 150,000	13	10	2
150,001 - 300,000	8	6	1
300,001 - 500,000	2	2	0
500,001 and above	3	2	0
Total	**127**	**100**	**20**
Average Annual Income (in Php)	83,488		
Min - Max Annual Income (in Php)	0 - 3,900,000		
C. Total Income			
Php 0 - 30,000	14	11	2
30,001 - 70,000	30	24	5
70,001 - 150,000	32	25	5
150,001 - 300,000	26	20	4
300,001 - 500,000	12	9	2
500,001 and above	13	10	2
Total	**127**	**100**	**20**
Average Annual Income	247,150		
Min - Max Annual Income (in Php)	5,200 - 3,900,000		

Appendix Table C5. Reasons for non-borrowing, Philippines, 2014

Reasons	No. of Non-borrowers
No need	88
Believed would be refused	19
Too expensive	46
Inadequate collateral	15
Do not like to be in debt	74
Do not know any lender	4
Other reasons	6
No response	12

*double counting is possible due to multiple responses

Appendix Table D1a. Distribution of sample provinces by type of formal lender, Philippines, 2014

Province	Private Bank (n= 2)	Rural Bank (n= 17)	Land Bank (n = 1)	Cooperative (n= 20)	Cooperative Bank (n= 2)	Lending Investors (n= 5)	NGO (n= 7)	All Formal Lenders (n = 54)
Bulacan	0	0	0	3	0	0	0	3
Batangas	0	3	0	1	1	1	0	6
Nueva Ecija	0	1	0	3	0	1	1	6
Zambales	0	1	0	2	0	0	0	3
Pangasinan	0	3	0	0	0	0	0	3
Bukidnon	1	1	1	2	1	0	0	6
Davao del Norte	0	0	0	3	0	0	0	3
Bohol	1	0	0	2	0	0	0	3
Benguet	0	1	0	1	0	0	1	3
Nueva Vizcaya	0	1	0	1	0	1	0	3
Isabela	0	1	0	1	0	1	0	3
Catanduanes	0	1	0	0	0	0	2	3
Camarines Sur	0	2	0	0	0	1	0	3
Negros Occidental	0	0	0	0	0	0	3	3
Iloilo	0	2	0	1	0	0	0	3

Appendix Table D1b. Distribution of sample provinces by type of informal lender, Philippines, 2014

Province	Relatives &Friends (n= 14)	Private Money Lender (n= 10)	Trader (n= 3)	Input Dealer (n= 3)	Farmer Lender (n= 4)	Landlord/Employer (n= 2)	All Informal Lenders (n= 36)
Bulacan	1	1	0	0	0	0	2
Batangas	3	0	0	0	1	0	4
Nueva Ecija	1	1	1	0	1	0	4
Zambales	1	0	0	0	1	0	2
Pangasinan	2	0	0	0	0	0	2
Bukidnon	1	1	0	0	0	2	4
Davao del Norte	1	1	0	0	0	0	2
Bohol	1	1	0	0	0	0	2
Benguet	0	0	1	1	0	0	2
Nueva Vizcaya	0	1	0	0	1	0	2
Isabela	0	1	1	0	0	0	2
Catanduanes	2	0	0	0	0	0	2
Camarines Sur	1	1	0	0	0	0	2
Negros Occidental	0	0	0	2	0	0	2
Iloilo	0	2	0	0	0	0	2

Appendix Table D2a. Socio-economic characteristics of formal lenders, Philippines, 2014

Characteristic	Private Bank (n= 2)	Rural Bank (n= 17)	Land Bank (n = 1)	Cooperative (n= 20)	Cooperative Bank (n= 2)	Lending Investors (n= 5)	NGO (n= 7)	All Formal Lenders (n = 54)
Sex								
Male	1	7	1	10	1	5	4	29
Female	1	10	0	10	1	0	3	25
Age								
Average	43	38	49	55	58	31	34	44
Min	30	25	49	29	56	24	23	23
Max	55	60	49	78	59	39	47	78
Years in Service								
Average	16	8	21	13	20	5	5	10
Min	1	0.7	21	1	10	0.5	3	0.5
Max	31	31	21	27	30	9	9	31
Educational Attainment								
High school Graduate	0	0	0	1	0	0	0	1
College Level	1	z	0	4	1	1	2	9
College Graduate	1	15	1	15	1	4	4	41
Vocational	0	1	0	0	0	0	0	1
No Answer	0	1	0	0	0	0	1	2

Appendix Table D2b. Socio-economic characteristics of informal lenders, Philippines, 2014

Characteristics	Relatives &Friends (n= 14)	Private Money Lender (n= 10)	Trader (n= 3)	Input Dealer (n= 3)	Farmer Lender (n= 4)	Landlord/Employer (n= 2)	All Informal Lenders (n= 36)
Sex							
Male	0	7	0	2	3	0	12
Female	14	3	3	1	1	2	23
Age							
Average	44	44	43	48	44	45	44
Min	31	32	42	48	26	31	26
Max	63	53	45	48	54	59	63
Years in Service							
Average	4	4	13	20	19	10	10
Min	2	3	10	20	19	5	2
Max	5	5	15	20	19	15	20
Educational Attainment							
Elementary Graduate	1	0	0	0	1	0	2
High school Level	1	0	0	0	0	0	1
High school Graduate	2	1	0	0	1	0	4
College Level	3	1	0	0	0	1	5
College Graduate	4	5	3	1	2	1	16
Vocational	2	0	0	0	0	0	2
No Answer	1	3	0	2	0	0	6

Appendix Table D3a. Distribution of formal lender by years of operation, Philippines, 2014

Year	Private Bank (n= 2)	Rural Bank (n= 17)	Land Bank (n = 1)	Cooperative (n= 20)	Cooperative Bank (n= 2)	Lending Investors (n= 5)	NGO (n= 7)	All Formal Lenders (n = 54)
1 - 5	0	1	0	2	0	3	1	7
6 - 10	0	4	0	2	1	1	1	9
11 - 15	0	2	0	5	0	0	1	8
16 - 20	0	2	0	4	0	0	3	9
21 - 25	0	0	0	2	0	0	0	2
26 - 30	0	0	0	1	0	1	0	2
> 30	2	5	1	3	1	0	0	12
No answer	0	3	0	1	0	0	1	5

Appendix Table 3b. Distribution of informal lender by years of operation, Philippines, 2014

YEAR	Relatives &Friends (n= 14)	Private Money Lender (n= 10)	Trader (n= 3)	Input Dealer (n= 3)	Farmer Lender (n= 4)	Landlord/Employer (n= 2)	TOTAL (n= 36)
1 - 5	8	3	1	0	1	1	14
6 - 10	4	1	1	0	2	0	8
11 - 15	1	2	1	0	0	1	5
16 - 20	0	0	0	1	1	0	2
21 - 25	0	1	0	0	0	0	1
No answer	1	3	0	2	0	0	6

Appendix Table D4a. Average amount for laonable fund (Php) by type of formal lender, Philippines, 2014

Amount	Private Bank (n= 2)	Rural Bank (n= 17)	Land Bank (n = 1)	Cooperative (n= 20)	Cooperative Bank (n= 2)	Lending Investors (n= 5)	NGO (n= 7)	All Formal Lenders (n = 54)
Average	130,000,000	57,500,000	20,000,000	30,334,153	26,390,497	8,666,667	16,100,000	38,088,349
Min	60,000,000	5,000,000	20,000,000	100,000	2,780,993	1,000,000	1,600,000	100,000
Max	200,000,000	200,000,000	20,000,000	300,000,000	50,000,000	15,000,000	48,000,000	300,000,000

Appendix Table 4b. Average amount for loanable funds (Php) by type of informal lender, Philippines, 2014

Amount	Relatives &Friends (n= 14)	Private Money Lender (n= 10)	Trader (n= 3)	Input Dealer (n= 3)	Farmer Lender (n= 4)	Landlord/Employer (n= 2)	All Informal Lenders (n= 36)
Average	104,231	576,667	1,150,000	1,500,000	103,333	2,000,000	502,679
Min	10,000	60,000	100,000	1,500,000	20,000	1,000,000	10,000
Max	350,000	2,000,000	3,000,000	1,500,000	150,000	3,000,000	3,000,000

Appendix Table D5a. Area of Coverage by Type of Formal Lender, Philippines, 2014

Area of Coverage	Private Bank (n= 2)	Rural Bank (n= 17)	Land Bank (n = 1)	Cooperative (n= 20)	Cooperative Bank (n= 2)	Lending Investors (n= 5)	NGO (n= 7)	All Formal Lender (n = 54)
No. of Provinces								
Average	1	2	1	1	1	1	1	1
Min	1	1	1	1	1	1	1	1
Max	1	10	1	1	1	1	2	10
No.of Municipality								
Average	4	5	7	7	4	4	2	5
Min	2	1	7	1	1	2	1	1
Max	5	10	7	48	6	6	7	48

Appendix Table D5b. Area of coverage by type of informal lender, Philippines, 2014

Area of Coverage	Relatives &Friends (n= 14)	Private Money Lender (n= 10)	Trader (n= 3)	Input Dealer (n= 3)	Farmer Lender (n= 4)	Landlord/Employer (n= 2)	All Informal Lenders (n= 36)
No. of Provinces							
Average	1	1	1	1	1	1	1
Min	1	1	1	1	1	1	1
Max	1	2	1	1	1	1	2
No.of Municipality							
Average	1	1	1	1	1	2	1
Min	1	1	1	1	1	1	1
Max	3	2	2	1	2	2	3

Appendix Table D6a. Average number of borrowers by type of formal lender, Philippines, 2014

No. of Borrowers	Private Bank (n= 2)	Rural Bank (n= 17)	Land Bank (n = 1)	Cooperative (n= 20)	Cooperative Bank (n= 2)	Lending Investors (n= 5)	NGO (n= 7)	All Formal Lenders (n = 54)
Individual Borrowers								
Average	730	1,930	-	453	230	580	439	929
Min	260	63	-	30	170	400	13	13
Max	1,200	16,000	-	2,227	289	1,200	1,580	16,000
Cooperatives/ Association								
Average	-	-	9	-	-	-	-	9
Min	-	-	9	-	-	-	-	9
Max	-	-	9	-	-	-	-	9
Group Borrowers (5 – 6 members)								
Average	-	-	-	68	-	20	-	52
Min	-	-	-	60	-	20	-	20
Max	-	-	-	75	-	20	-	75

Appendix Table D6b. Average number of borrowers by type of informal lender, Philippines, 2014

NO. OF BORROWERS	Relatives &Friends (n= 14)	Private Money Lender (n= 10)	Trader (n= 3)	Input Dealer (n= 3)	Farmer Lender (n= 4)	Landlord/Employer (n= 2)	TOTAL (n= 36)
Individual Borrowers							
Average	18	31	106	30	20	35	32
Min	5	10	30	30	10	30	5
Max	59	54	248	30	50	40	248

Appendix Table D7a. Distribution of purpose of loan granted by type of formal lender, Philippines, 2014[a]

Purpose	Private Bank (n= 2)	Rural Bank (n= 17)	Land Bank (n = 1)	Cooperative (n= 20)	Cooperative Bank (n= 2)	Lending Investors (n= 5)	NGO (n= 7)	All Formal Lenders (n = 54)
Agricultural								
Production	2	17	1	20	2	5	6	53
Acquisition of Farm Implements	0	3	0	1	0	0	0	2
Purchase of Land or Animal	0	4	0	1	0	0	2	6
Construction of Farm Infrastructures	1	0	0	0	0	0	0	1
Non – Agricultural								
Capital for Business	1	11	0	12	1	4	3	32
Placement Fee	0	1	0	1	0	1	0	3
Education Expenses	0	2	0	6	1	1	1	11
Hospital and Medical	0	0	0	1	1	0	0	2
Purchase of Appliances	0	0	0	3	0	0	0	3
House Construction/Improvement	0	2	0	3	0	1	0	6
Personal	1	1	0	0	1	1	1	5
Others[b]	0	2	0	4	1	0	1	8

[a]multiple responses
[b]includes emergency loan, honorarium loan, manufacturing loan, and salary loan

Appendix Table D7b. Distribution of purpose of loan granted by type of informal lender, Philippines, 2014[a]

Purpose	Relatives &Friends (n= 14)	Private Money Lender (n= 10)	Trader (n= 3)	Input Dealer (n= 3)	Farmer Lender (n= 4)	Landlord/Employer (n= 2)	All Informal Lenders (n= 36)
Agricultural							
Production	14	10	3	3	4	2	36
Agricultural Land Rent	0	0	0	0	1	0	1
Purchase of Animal	0	1	0	1	0	0	2
Non – Agricultural							
Capital for Business	1	0	0	0	0	1	2
Education Expenses	1	0	1	0	0	0	2
Hospital and Medical	1	0	0	0	0	0	1
Personal	2	1	0	0	0	0	3

[a] multiple responses

Appendix Table D8a. Distribution of formal lender by type of priority ommodity for loan, Philippines, 2014[a]

Commodity	Private Bank (n= 2)	Rural Bank (n= 17)	Land Bank (n = 1)	Cooperative (n= 20)	Cooperative Bank (n= 2)	Lending Investors (n= 5)	NGO (n= 7)	All Formal Lender (n = 54)
Rice	2	12	1	14	1	4	5	39
Corn	1	4	1	3	2	1	0	12
Vegetables	0	4	0	2	1	1	1	9
Cattle	0	1	0	1	0	0	0	2
Swine	0	6	0	1	1	2	3	13
Poultry	0	2	0	0	0	0	0	2
Duck	0	1	0	0	0	0	0	1
Fisheries	0	5	0	1	0	1	1	8
Sugarcane	0	1	1	2	0	0	0	4
Others	0	0	1	3	0	0	0	4

[a] multiple responses

Appendix Table D8b. Distribution of informal lenders by type of priority commodity for loan, Philippines, 2014[a]

Commodity	Relatives &Friends (n= 14)	Private Money Lender (n= 10)	Trader (n= 3)	Input Dealer (n= 3)	Farmer Lender (n= 4)	Landlord/Employer (n= 2)	TOTAL (n= 36)
Rice	5	8	1	1	2	1	18
Corn	1	2	1	0	0	1	5
Vegetables	5	2	2	1	0	0	10
Cattle	1	0	0	0	0	0	1
Swine	1	0	0	2	0	0	3
Fisheries	4	0	0	0	2	0	6

[a] multiple responses

Appendix Table D9a. Average amount of loan, number of borrowers, and loan exposure by type of formal lender, Philippines, 2014

Item	Private Bank (n= 2)	Rural Bank (n= 17)	Land Bank (n = 1)	Cooperative (n= 20)	Cooperative Bank (n= 2)	Lending Investors (n= 5)	NGO (n= 7)	All Formal Lenders (n = 54)
Agricultural								
Amount of Loan (Php)								
Average	195,000	350,029.4	1,750,000	182,127.5	256,000	51,500	35,821.4	236,172.2
Min	87,500	5,000	1,750,000	1,250	11,500	10,000	3,750	1,250
Max	302,500	2,650,000	1,750,000	2,512,500	500,500	120,000	77,500	2,650,000
No. of Borrowers who Availed								
Average	455	212	7	138	61	123	350	194
Min	110	3	7	5	50	1	60	1
Max	800	1200	7	524	72	284	1200	1200
Loan Exposure (Million Php)								
Average	32.88	6.89	14	4.80	10.13	2.12	6.92	6.89
Min	5.75	0.25	14	0.01	0.25	0.20	0.34	0.01
Max	60.00	39.90	14	30.00	20.00	8.00	18.00	60.00
Non-Agricultural								
Amount of Loan (Php)								
Average	26,500	696,727.3	-	493,472.2	11,500	34,583.3	57,083.3	405,609.5
Min	26,500	16,250	-	3,000	11,500	17,500	17,750	3,000
Max	26,500	3,025,000	-	2,525,000	11,500	65,000	77,500	3,025,000
No. of Borrowers who Availed								
Average	150	476	-	495	867	419	593	492
Min	150	40	-	3	867	30	205	3
Max	150	1604	-	2190	867	900	1200	2190
Loan Exposure (Php)								
Average	2	11	-	23	4	4	17	16
Min	2	1	-	0	4	0	0	0
Max	2	28	-	190	4	10	32	190

Appendix Table D9b. Average amount of loan, number of borrowers, and loan exposure by type of informal lender, Philippines, 2014

Item	Relatives &Friends (n= 14)	Private Money Lender (n= 10)	Trader (n= 3)	Input Dealer (n= 3)	Farmer Lender (n= 4)	Landlord/Employer (n= 2)	All Informal Lenders (n= 36)
Agricultural							
Amount of Loan (Php)							
Average	8,667.9	29,262.5	33,000.0	11,833.3	9,537.5	46,250.0	18,864.6
Min	1,000	3,500	4,000	3,000	1,750	14,500	1,000
Max	35,000	152,500	80,000	20,000	22,500	78,000	152,500
No. of Borrowers who Availed							
Average	17	30	106	30	20	23	30
Min	5	10	30	30	10	15	5
Max	50	54	248	30	50	30	248
Loan Exposure (Php Million)							
Average	0.1	0.6	0.5	0.6	0.1	1.6	0.4
Min	0	0	0	1	0	0	0
Max	0	2	1	1	0	3	3
Non-Agricultural							
Amount of Loan (Php)							
Average	8,387.5	2,250.0	1,500.0	-	-	26,000.0	9,042.9
Min	1,000	2,250	1,500	-	-	26,000	1,000
Max	25,000	2,250	1,500	-	-	26,000	26,000
No. of Borrowers who Availed							
Average	12	5	10	-	-	25	13
Min	3	5	10	-	-	25	3
Max	30	5	10	-	-	25	30
Loan Exposure (Php)							
Average	14,666.7	10,000	15,000	-	-	780,000	392,000
Min	4,000	10,000	15,000	-	-	780,000	4,000
Max	30,000	10,000	15,000	-	-	780,000	780,000

Appendix Tabe D10a. Average maturity period and processing time before approval of loan by type of formal lenders, Philippines, 2014

Item	Private Bank (n= 2)	Rural Bank (n= 17)	Land Bank (n = 1)	Cooperative (n= 20)	Cooperative Bank (n= 2)	Lending Investors (n= 5)	NGO (n= 7)	All Formal Lenders (n = 54)
Agricultural								
Maturity Period (months)								
Average	10.5	9	18	6.4	6	6.2	7	7.8
Min	6	4	18	1	6	4	4	1
Max	15	36	18	14	6	12	12	36
Processing time (number of days)								
Average	16.5	10	21	6	2.5	10	5	8
Min	3	2	21	1	2	4	3	1
Max	30	20	21	14	3	15	8	30
Non-Agricultural								
Maturity Period (months)								
Average	3	12	-	9	6	8	7	9
Min	3	6	-	1	6	6	4	1
Max	3	24	-	30	6	12	9	30
Processing time (no. of days)								
Average	15	8.3	-	5	2	7	4	7
Min	15	4	-	1	2	3	3	1
Max	15	19	-	14	2	14	5	19

Appendix Table D10b. Average maturity period and processing time before approval of loan by type of informal lenders, Philippines, 2014

Item	Relatives &Friends (n= 14)	Private Money Lender (n= 10)	Trader (n= 3)	Input Dealer (n= 3)	Farmer Lender (n= 4)	Landlord/Employer (n= 2)	All Informal Lenders (n= 36)
Agricultural							
Maturity Period (months)							
Average	6	4.75	3	8	3	4	5
Min	1	1	1	6	0.75	4	0.75
Max	35	6	5	9	7	4	35
Processing time (no. of days)							
Average	3	3	2	2	3	1	3
Min	1	1	2	1	1	1	1
Max	15	7	2	2	7	1	15
Non-Agricultural							
Maturity Period (months)							
Average	1.75	2	1	-	-	1	1.57
Min	1	2	1	-	-	1	1
Max	3	2	1	-	-	1	3
Processing time (no. of days)							
Average	1	1	1	-	-	1	1
Min	1	1	1	-	-	1	1
Max	1	1	1	-	-	1	1

Appendix Table D11a. Average amount of application and service fees by type of formal lenders, Philippines, 2014[a]

Fees	Private Bank (n= 2)	Rural Bank (n= 17)	Cooperative (n= 20)	Cooperative Bank (n= 2)	Lending Investors (n= 5)	NGO (n= 7)	All Formal Lenders (n = 54)
Agricultural							
Application Fees (Php/Php1000)							
Average	0	0	1.36	0	0	0	1.36
Min	0	0	100	0	0	0	100
Max	0	0	3.30	0	0	0	3.30
Service Fees (Php/Php1000)							
Average	2.75	16.04	6.76	5.24	191	1.34	8.78
Min	110	0. 24	200	460	525	400	200
Max	4.45	120.30	62.87	10.01	3.30	2.95	120.30
Non-Agricultural							
Application Fees (Php/Php1000)							
Average	0	0	100	0	0	0	100
Min	0	0	100	0	0	0	100
Max	0	0	100	0	0	0	100
Service Fees (Php/Php1000)							
Average	1.32	34.78	14.64	0.46	1.48	1.79	15.99
Min	1.32	0.62	0.36	0.46	0.54	1,014	0.36
Max	1.32	120.40	62.59	0.46	3.25	2.56	120.40

[a] no fees for Land Bank

Appendix Table D11b. Average amount of application and service fees by type of informal lenders, Philippines, 2014

Fees	Relatives &Friends (n= 14)	Private Money Lender (n= 10)	Trader (n= 3)	Input Dealer (n= 3)	Farmer Lender (n= 4)	Landlord/Employer (n= 2)	All Informal Lenders (n= 36)
Agricultural							
Service Fees (Php/Php1000)							
Average	20	0	0	0	0	0	20
Min	20	0	0	0	0	0	20
Max	20	0	0	0	0	0	20

Appendix Table D12a. Effective annual interest rate (in %) charges by classification of formal lender and loan purpose, Philippines, 2014

Purpose	Type of Formal Lender							All Lenders
	Rural Bank	Private Bank	Government Bank	Cooperative Bank	Cooperatives	Non-Government Organization	Lending Investor	
Agricultural Purpose								
Production	14.16	12.00	8.50	10.00	9.46	11.86	3.30	10.61
Acquisition of Farm Implements	22.50							22.50
Acquisition of boat gears	36.00				24.00			30.00
Purchase of agricultural land	44.00							44.00
purchase of animal	28.67				24.00	15.50		23.50
Construction of farm infrastructures		14.00						14.00
Average	**29.07**	**13.00**	**8.50**	**10.00**	**19.15**	**13.68**	**3.30**	**24.10**
Non-Agricultural Purpose								
Capital for Business	11.38	47.00		2.00	11.27	9.47	2.73	11.00
Placement fee	180.00				24.00		36.00	80.00
Educational expenses	33.00			25.00	27.60	20.00	15.96	26.50
Hospital and med expenses				2.00				2.00
Purchase of appliances					65.33			65.33
House construction	29.00				43.33		18.00	34.33
Others[a]	82.67	20.00		16.00	27.31	25.00	36.00	43.09
Average	**67.21**	**33.50**		**11.25**	**33.14**	**18.60**	**21.74**	**37.04**

[a] include special occasion, personal loan, emergency loan, salary loan

Appendix Table D12b. Effective annual interest rate (in%) charges by classification of informal lender and loan purpose, Philippines, 2014

Loan Purpose	Type of Informal Lender						All Lenders
	Friends/ Relatives	Private Money Lender	Trader	Input Supplier/ Dealear	Co-Farmer	Landlord/Employer	
Agricultural Purpose							
Production	14.10	16.16	31.28	42.35	16.94	6.71	14.91
Acquisition of Farm Implements							
Acquisition of boat gears							
Agricultural land rent							5.12
Purchase of agricultural land					5.12		
purchase of animal		42.58		50.63			46.6
Average	**14.10**	**29.37**	**31.28**	**46.49**	**11.03**	**6.71**	**22.21**
Non-Agricultural Purpose							
Capital for Business	11.61					1.26	9.31
Placement fee							
Capital for Non-farm tools							
Educational expenses	50.63		10.47				30.55
Hospitalization and medical expenses							
Purchase of appliances							
Payment of loan							
House construction							
Others[a]	67.27						67.26
Average	**43.17**		**10.47**			**1.26**	**35.71**

[a] salary loan, special occasion, personal loan, emergency loan

Appendix Table D13a. Components of interest rate (%) by type of formal lenders, Philippines, 2014[a]

Components	Private Bank (n= 2)	Rural Bank (n= 17)	Cooperative (n= 20)	Cooperative Bank (n= 2)	Lending Investors (n= 5)	NGO (n= 7)	All Formal Lenders (n = 54)
Agricultural							
Cost of Funds							
Average	9	15.45	15.68	35	18.00	38.33	21.18
Min - Max	9 - 9	8 - 45	10 - 97	35 - 35	10 - 30	30 - 100	8 - 100
Operational Expenses							
Average	14	15.45	31.16	20	44	36.92	33.53
Min - Max	14 - 14	10 - 60	3 - 65	20 - 20	40 - 80	1.5 - 50	1.5 - 80
Profit Margin							
Average	77	37.10	52.37	45	18.00	19.75	39.72
Min - Max	77- 77	20 - 60	22 - 100	45 - 45	10 - 30	8.5 - 50	10 - 100
Others[b]							
Average	0	38.36	0.79	0	0	5	1.7
Min- Max	0	30 - 30	15 - 15	0	0	30- 30	0 - 30
Non-Agricultural							
Cost of Funds							
Average	0	11.67	11.25	35	15	26.67	14.80
Min - Max	0	8 - 40	10 - 50	35 - 35	10 - 25	30 - 50	8 - 50
Operational Expenses							
Average	0	40.89	37	20	45	33.33	38.26
Min- Max	0	10 - 60	10 - 60	20 - 20	50 - 80	50 - 50	10 - 80
Profit Margin							
Average	0	37.44	51.33	45	15	16.67	42.17
Min	0	20 - 60	30 - 90	45 - 45	10 - 25	50 - 50	10 - 90
Others[b]							
Average		0	1.25	0	0	0	0.48
Min - Max	0	0	15 - 15	0	0	0	15 - 15

[a] allocation for Land Bank is not available; [b] these include incentive allowance for staff, hiring of on-call employees, donations, representation

Appendix Table D13b. Components of interest rate (%) by type of informal lenders, Philippines, 2014

Components	Relatives &Friends (n= 14)	Private Money Lender (n= 10)	Trader (n= 3)	Input Dealer (n= 3)	Farmer Lender (n= 4)	Landlord/Employer (n= 2)	All Informal Lenders (n= 36)
Agricultural							
Cost of Funds							
Average	23.33	22.14	30	100	16.67	1	32.19
Min - Max	80 - 100	15 - 90	0 - 60	100 – 100	0 - 50	0 - 2	2 - 100
Operational Expenses							
Average	2.33	5.00	0	0	0	1.50	1.47
Min - Max	3 - 25	10 - 25	0	0	0	1 - 2	0 - 25
Profit Margin							
Average	74.33	60.71	50	0	83.33	97.50	60.98
Min - Max	20 - 100	25 - 100	0 - 100	0	50 - 100	97 - 98	0 – 100
Others[a]							
Average	0	12.14	0	0	0	0	2.02
Min - Max	0	85 - 85	0	0	0	0	0 - 85
Non-Agricultural							
Cost of Funds							
Average	0	0	0	0	0	3	0.5
Min - Max	0	0	0	0	0	3 - 3	0
Operational Expenses							
Average	12.5	0	0	0	0	1	2.25
Min - Max	25 - 25	0	0	0	0	1 - 1	0 - 25
Profit Margin							
Average	87.50	0	100	0	0	97	47.42
Min- Max	75 - 100	0	100 - 100	0	0	97 - 97	0 – 100

[a] these are representation, gifts, donations, etc.

Appendix Table D14. Average risk premium [a], basis, and coverage of premium by type of formal lenders, Philippines, 2014

Item	Private Bank (n= 2)	Rural Bank (n= 17)	Cooperative (n= 20)	Lending Investors (n= 5)	NGO (n= 7)	All Formal Lenders (n = 54)
Agricultural						
Risk Premium (% of loan)						
Average	3	2.37	3.48	3.15	0.78	2.50
Min - Max	3- 3	0.025 - 14	1 - 16	3.15 – 3.15	0.02 - 2	0.02 - 2
Basis						
Insurance Company/Bank	0	5	4	0	0	9
Board of Directors	0	1	0	1	1	3
PCIC	1	0	0	0	0	1
CDA	0	0	1	0	0	1
No Answer	0	6	2	0	0	8
Coverage						
Death	0	11	4	4	3	22
Crop Insurance	1	0	0	0	0	1
Default	0	1	1	1	2	5
Non-Agricultural						
Risk Premium (% of loan)						
Average	0	2.73	1.42	1.47	1.01	2.11
Min	0	0.5 - 14	1 - 2	1.43 - 5	0.02 - 2	0.02 - 14
Basis						
Insurance Company/Bank	0	4	2	0	0	6
Board of Directors	0	1	1	1	0	3
Coverage						
Death	0	5	3	1	1	10
Default	0	2	0	0	1	3

[a] no risk premium for Land Bank and cooperative bank

Appendix Table D15. Basis for interest rate by type of formal lenders, Philippines, 2014

Method	Private Bank (n= 2)	Rural Bank (n= 17)	Land Bank (n = 1)	Cooperative (n= 20)	Cooperative Bank (n= 2)	Lending Investors (n= 5)	NGO (n= 7)	All Formal Lenders (n = 54)
Pre-Determined of BSP	0	2	0	0	0	0	1	3
Based on Loan Type	0	0	0	1	0	0	0	1
Based on Existing Market Rate	0	2	0	4	0	1	0	7
Based on Board of Directors	1	9	1	10	2	6	4	31
Based on Banks where they borrowed	1	4	0	5	0	0	2	12

Appendix Table D16. Distribution by relationship [a] with borrowers by type of informal lenders, Philippines, 2014

RELATIONSHIP	Relatives &Friends (n= 14)	Private Money Lender (n= 10)	Trader (n= 3)	Input Dealer (n= 3)	Farmer Lender (n= 4)	Landlord/Employer (n= 2)	All Informal Lenders (n= 36)
Relatives	8	4	1	1	3	0	18
Neighbors/Friends	11	5	2	2	3	1	25
Customers	0	5	2	2	0	0	9
Tenant	0	0	0	0	0	1	1

[a] multiple responses

Appendix Table D17a. Distribution of lending technique [a] used by type of formal lender, Philippines, 2014

Technique	Private Bank (n= 2)	Rural Bank (n= 17)	Land Bank (n = 1)	Cooperative (n= 20)	Cooperative Bank (n= 2)	Lending Investors (n= 5)	NGO (n= 7)	All Formal Lenders (n = 54)
Relationship Based	1	2	0	8	1	2	0	14
Financial Statement Based	0	3	0	5	1	1	2	12
Asset based	2	14	0	12	1	5	5	39
Credit Scoring	0	1	1	2	0	0	0	4
Membership	0	1	0	0	1	1	0	3

[a] multiple responses

Appendix Table D17b. Distribution of lending technique [a] used by type of informal lender, Philippines, 2014

Technique	Relatives &Friends (n= 14)	Private Money Lender (n= 10)	Trader (n= 3)	Input Dealer (n= 3)	Farmer Lender (n= 4)	Landlord/ Employer (n= 2)	All Informal Lenders (n= 36)
Relationship Based	14	6	2	2	4	1	29
Financial Statement Based	0	0	0	1	0	0	1
Asset based	1	8	1	2	1	0	13
Credit Scoring	0	0	0	0	0	1	1

[a] multiple responses

Appendix Table D18a. Distribution of formal lenders by method of loan advertisement [a], Philippines, 2014

Method	Private Bank (n= 2)	Rural Bank (n= 17)	Land Bank (n = 1)	Cooperative (n= 20)	Cooperative Bank (n= 2)	Lending Investors (n= 5)	NGO (n= 7)	All Formal Lenders (n = 54)
Advertise	2	17	1	17	1	3	7	48
Form of Advertisement								
Mass Media advertisement	1	4	0	0	0	0	0	5
Face to face	1	6	0	5	0	1	5	18
Flyers	1	4	0	4	1	2	2	14
Seminar	1	3	0	6	0	1	0	11
Meeting	0	1	0	3	0	1	0	5
Referrals	0	3	0	1	0	1	2	7
Personal Endorsement	0	2	0	0	0	0	0	2
Coordination with Municipal Office	0	0	1	0	0	0	0	1
Information Drive	0	0	0	1	0	0	0	1
Do not advertise	0	0	0	3	1	2	0	6

[a] multiple responses

Appendix Table D18b. Distribution of informal lenders by method of loan advertisement [a], Philippines, 2014

Method	Relatives &Friends (n= 14)	Private Money Lender (n= 10)	Trader (n= 3)	Input Dealer (n= 3)	Farmer Lender (n= 4)	Landlord/Employer (n= 2)	All Informal Lenders (n= 36)
Advertise	0	3	0	1	0	0	4
Form of Advertisement							
Face to face	0	2	0	1	0	0	3
Personal Endorsement	0	1	0	0	0	0	1
Do not advertise	14	7	3	2	4	2	32

[a] multiple responses

Appendix Table D19a. Distribution of requirements [a] needed for loan by type of formal lender, Philippines, 2014

Requirement	Private Bank (n= 2)	Rural Bank (n= 17)	Cooperative (n= 20)	Cooperative Bank (n= 2)	Lending Investors (n= 5)	NGO (n= 7)	All Formal Lenders (n = 54)
Collateral	1	15	15	1	3	6	41
Form of Collateral							
House	0	7	4	0	0	1	12
Land	1	12	13	1	3	5	35
Vehicle	0	4	4	0	0	3	11
Agricultural Equipment	0	0	4	0	0	0	4
Co-signer	0	2	1	0	0	0	3
Building	0	1	0	0	0	0	1
Own Tree	0	0	1	0	0	0	1
Business Plan	0	0	1	0	1	0	2
Co-maker	0	1	2	0	0	0	3
Audited Financial Statement	0	2	0	0	0	0	2
Cash Flow Statement	0	1	0	0	1	0	2
Check	0	0	0	0	0	1	1
Payslip	0	0	1	0	0	0	1
Tax declaration	0	1	0	0	0	0	1
Cooperative member	0	0	1	0	0	0	1
Documents	0	0	0	0	1	0	1
Total Assets	0	0	0	0	2	1	3
No Answer	0	2	1	5	2	0	10

[a] multiple responses

Appendix Table D19b. Distribution of requirements [a] needed for loan by type of informal lender, Philippines, 2014

Requirement[b]	Relatives &Friends (n= 14)	Private Money Lender (n= 10)	Trader (n= 3)	Input Dealer (n= 3)	Farmer Lender (n= 4)	All Informal Lender (n= 36)
Collateral	1	2	1	1	1	6
Form of Collateral						
Land	0	1	1	1	1	4
Vehicle	0	1	1	0	0	2
Agricultural Equipment	1	0	0	0	0	1
Co-maker	0	0	1	0	0	1
Written Agreement	1	1	0	0	0	2

[a] multiple responses
[b] no requirements from landlord

Appendix Table D20a. Distribution of method of interest rate collection by type of formal lender, Philippines, 2014[a]

Method	Private Bank (n= 2)	Rural Bank (n= 17)	Land Bank (n = 1)	Cooperative (n= 20)	Cooperative Bank (n= 2)	Lending Investors (n= 5)	NGO (n= 7)	All Formal Lenders (n = 54)
In Advance	0	8	0	7	0	0	1	16
Upon Payment	1	11	1	17	2	5	6	43
Declining Balance Method	1	1	0	0	0	0	0	2
Amortization	0	1	0	0	0	0	0	1

[a]multiple responses

Appendix Table D20b. Distribution of method of interest rate collection by type of informal lender, Philippines, 2014[a]

Method	Relatives &Friends (n= 14)	Private Money Lender (n= 10)	Trader (n= 3)	Input Dealer (n= 3)	Farmer Lender (n= 4)	Landlord/Employer (n= 2)	All Informal Lenders (n= 36)
In Advance	1	0	0	0	0	0	1
Upon Payment	13	9	2	2	3	1	30
Declining Balance Method	0	0	0	0	0	1	1
No Interest	0	1	1	1	1	0	4

[a] multiple responses

Appendix Table D21a.Distribution of reasons [a] for loan rejection by type of formal lender, Philippines, 2014

Item	Private Bank (n= 2)	Rural Bank (n= 17)	Land Bank (n = 1)	Cooperative (n= 20)	Cooperative Bank (n= 2)	Lending Investors (n= 5)	NGO (n= 7)	All Formal Lenders (n = 54)
Did not Reject	0	0	0	4	0	0	0	4
Rejected	2	17	1	16	2	5	7	50
Reasons								
No/Lack Collateral	1	8	0	3	0	2	4	18
Unfavorable Credit History	1	8	1	8	2	4	4	28
Inadequate Requirements	0	7	1	5	1	1	3	18
Violation of Guidelines	0	0	0	0	0	0	1	1
Not a member	0	0	0	1	0	0	0	1
No money to pay	0	3	0	0	0	0	0	3
Lack in Feed supply	0	0	0	1	0	0	0	1
Unfavorable character	0	1	0	0	0	2	0	3
Invalid Documents	0	0	0	1	0	0	0	1
No Answer	0	0	0	4	0	0	0	4

[a]multiple responses

Appendix Table D21b.Distribution of reasons [a] for loan rejection by type of informal lender, Philippines, 2014

ITEM	Relatives &Friends (n= 14)	Private Money Lender (n= 10)	Trader (n= 3)	Input Dealer (n= 3)	Farmer Lender (n= 4)	Landlord/Employer (n= 2)	All Informal Lenders (n= 36)
Did not Reject	2	1	0	0	0	0	3
Rejected	12	9	3	3	4	2	33
Reasons							
No/Lack Collateral	0	2	0	0	0	0	2
Bad Credit History	10	7	3	3	1	2	26
Inadequate Requirements	0	1	1	0	0	0	2
No money to pay	2	0	0	0	0	0	2
Lack funds	0	1	0	0	2	0	3
Lack in Feed supply	0	0	0	0	1	0	1
No Answer	2	0	0	0	0	0	2

[a] multiple responses

Appendix Table D22a. Distribution of formal lenders by mode of loan payment [a], Philippines, 2014

Mode of Payment	Private Bank (n= 2)	Rural Bank (n= 17)	Land Bank (n = 1)	Cooperative (n= 20)	Cooperative Bank (n= 2)	Lending Investors (n= 5)	NGO (n= 7)	All Formal Lenders (n = 54)
Agricultural								
In Cash	2	17	1	18	2	5	7	52
In Kind	0	0	0	5	0	0	0	5
Non-Agricultural								
In Cash	1	11	0	12	1	4	3	32

[a] multiple responses

Appendix Table D22b. Distribution of informal lenders by mode of loan payment[a], Philippines, 2014

Mode of Payment	Relatives &Friends (n= 14)	Private Money Lender (n= 10)	Trader (n= 3)	Input Dealer (n= 3)	Farmer Lender (n= 4)	Landlord/Employer (n= 2)	All Informal Lender (n= 36)
Agricultural							
In Cash	12	6	1	3	4	0	26
In Kind	1	3	0	0	0	1	5
No Answer	1	1	2	0	0	1	5
Non-Agricultural							
In Cash	3	1	1	0	0	1	6
No Answer	1	0	0	0	0	0	1

[a]multiple responses

Appendix Table D23a. Distribution of method of due date notification [a] by type of formal lenders, Philippines, 2014

Method	Private Bank (n= 2)	Rural Bank (n= 17)	Land Bank (n = 1)	Cooperative (n= 20)	Cooperative Bank (n= 2)	Lending Investors (n= 5)	NGO (n= 7)	All Formal Lenders (n = 54)
Personal Communication	2	5	0	10	1	2	3	23
Telephone	0	5	0	1	0	0	1	7
Written Letter	1	12	1	11	0	2	0	27
Text Messaging	0	6	0	3	1	0	1	11
Pre-scheduled	0	3	0	1	0	3	4	11

[a] Multiple responses

Appendix Table D23b. Distribution of method of due date notification [a] by type of informal lenders, Philippines, 2014

Method	Relatives &Friends (n= 14)	Private Money Lender (n= 10)	Trader (n= 3)	Input Dealer (n= 3)	Farmer Lender (n= 4)	Landlord/ Employer (n= 2)	All Informal Lenders (n= 36)
Personal Communication	10	7	1	1	3	2	24
Written Letter	1	0	0	0	0	0	1
Text Messaging	2	2	0	1	0	0	5
Pre-scheduled	1	3	2	1	1	0	8

[a] multiple responses

Appendix Table D24a. Distribution of method of payment collection [a] by formal lenders, Philippines, 2014

Method	Private Bank (n= 2)	Rural Bank (n= 17)	Land Bank (n = 1)	Cooperative (n= 20)	Cooperative Bank (n= 2)	Lending Investors (n= 5)	NGO (n= 7)	All Formal Lenders (n = 54)
Borrowers visit them	2	13	0	16	2	3	5	41
Personal visit	0	5	1	5	0	2	2	15
Collector is hired	0	1	0	4	0	2	3	10
Bank account deposit	0	1	0	1	0	0	0	2
Setting of meeting place	0	1	0	0	0	1	1	3

[a] multiple responses

Appendix Table D24b. Distribution of method of payment collection [a] by informal lenders, Philippines, 2014

Method	Relatives &Friends (n= 14)	Private Money Lender (n= 10)	Trader (n= 3)	Input Dealer (n= 3)	Farmer Lender (n= 4)	Landlord/Employer (n= 2)	All Informal Lenders (n= 36)
Borrowers visit them	11	8	3	3	3	1	29
Personal visit	3	4	0	0	1	1	9
Collector is Hired	2	0	0	0	0	0	2

[a] multiple responses

Appendix Table D25a. Distribution of measures [a] to avoid non-repayment by type formal lenders, Philippines, 2014

Measure/Penalty	Private Bank (n= 2)	Rural Bank (n= 17)	Land Bank (n = 1)	Cooperative (n= 20)	Cooperative Bank (n= 2)	Lending Investors (n= 5)	NGO (n= 7)	All Formal Lenders (n = 54)
Warning Letter	2	8	1	5	2	3	3	24
Use to Collateral Security	0	2	0	1	0	0	0	3
Reminder Letter	1	6	0	7	0	0	2	16
Fine/Surcharge	1	10	1	10	1	3	1	27
Amount (% of loan)								
Average	24	6.58	3	4	3	1.00	8	5.48
Min - Max	24 - 24	0.05 - 25	3 - 3	1 - 10	3- 3	0.01- 2	8 - 8	0.01- 25
Personal Visit	0	1	0	1	0	0	1	3
Ask for Promisory note	0	0	0	0	0	0	1	1
Take over farm	0	0	0	0	0	0	1	1
No answer	0	0	0	0	2	0	0	2

[a]multiple responses

Appendix Table D25b. Distribution of measures [a] for non-repayment by type informal lenders, Philippines, 2014

MEASURE	Relatives &Friends (n= 14)	Private Money Lender (n= 10)	Trader (n= 3)	Input Dealer (n= 3)	Farmer Lender (n= 4)	Landlord/Employer (n= 2)	All Informal Lenders (n= 36)
Warning Letter	0	2	0	0	0	0	2
Use to Collateral Security	0	1	0	0	0	0	1
Reminder Letter	3	1	1	0	1	0	6
Fine/Surcharge	0	0	1	0	0	0	1
Personal Visit	5	2	1	0	0	0	8
Pay Capital first	0	0	0	0	0	1	1
Wait to until they pay	3	3	0	2	1	1	10
Text reminder	1	1	0	1	0	0	3
Report to Barangay Council	1	0	0	0	0	0	1

[a]multiple responses

Appendix Table D26a. Average repayment rate by type of formal lenders, Philippines, 2014

Repayment Rate	Private Bank (n= 2)	Rural Bank (n= 17)	Land Bank (n = 1)	Cooperative (n= 20)	Cooperative Bank (n= 2)	Lending Investors (n= 5)	NGO (n= 7)	All Formal Lenders (n = 54)
Average	94.5	86.33	72	78.9	90	82.5	85	83
Min - Max	90 - 99	60 - 99	72 - 72	10 - 100	90 - 90	80 - 85	67 - 95	10 - 100

Appendix Table D26b. Average repayment rate by type of informal lenders, Philippines, 2014

Repayment Rate	Relatives &Friends (n= 14)	Private Money Lender (n= 10)	Trader (n= 3)	Input Dealer (n= 3)	Farmer Lender (n= 4)	Landlord/Employer (n= 2)	All Informal Lenders (n= 36)
Average	80	71	87	80	82	93	80
Min- Max	30 - 100	20 - 93	70 - 95	80 - 80	50 - 100	90 - 95	20 - 100

Appendix Table D27a. Number of delayed borrowers and reasons[a] for non-repayment by type of formal lenders, Philippines, 2014

Item	Private Bank (n= 2)	Rural Bank (n= 17)	Land Bank (n = 1)	Cooperative (n= 20)	Cooperative Bank (n= 2)	Lending Investors (n= 5)	NGO (n= 7)	All Formal Lenders (n = 54)
Number of Delayed Borrowers								
Individual								
Average	18	25	-	28	8	44.4	50	31
Min – Max	10 - 26	1 - 132	-	3 - 139	8 - 8	1 - 96	6 - 220	1 - 200
Cooperative								
Average	-	-	2	-	-	-	-	2
Min - Max	-	-	2 - 2	-	-	-	-	2 - 2
Reasons[a]								
High Repayment Amount	0	1	0	1	0	0	0	2
Low Sales of Borrowers	2	9	0	4	0	2	6	23
Natural Hazards	0	10	0	11	0	3	4	28
Loss of Job	0	1	0	1	1	1	0	4
Refuses to Pay	0	0	0	1	1	1	0	3
Migrate to other town	0	1	0	0	0	1	0	2
Unfinished documents	0	0	0	1	0	0	0	1
Unforeseen expenses	0	0	0	1	0	0	1	2
Reuse of the Fund for Repayment	0	0	1	0	0	0	0	1
Mismanagement	0	1	0	0	0	0	0	1
No answer	0	0	0	3	0	0	0	3

[a] multiple responses

Appendix Table D27b. Number of delayed borrowers and reasons for non-repayment by type of informal lenders, Philippines, 2014

Item	Relatives &Friends (n= 14)	Private Money Lender (n= 10)	Trader (n= 3)	Input Dealer (n= 3)	Farmer Lender (n= 4)	Landlord/ Employer (n= 2)	All Informal Lenders (n= 36)
Number of Delayed Borrowers							
Individual							
Average	5	7	8	10	3	3	5
Min - Max	1 - 15	3 - 20	2 - 12	10 - 10	1 - 5	2 - 3	1 - 20
Reasons[a]							
Low Sales	5	5	2	2	2	0	16
Natural Hazards	3	2	0	1	1	1	8
Refuses to Pay	2	1	0	0	0	0	3
No money	3	1	0	0	0	0	4
Death	0	0	0	0	0	1	1
Unforeseen expenses	0	0	1	0	0	0	1
No Answer	0	0	0	1	0	0	1

[a] multiple responses

Appendix Table D28a. Transaction costs by activity and type of formal lenders, Philippines, 2014

ACTIVITIES	Private Bank (n= 2)	Rural Bank (n= 17)	Land Bank (n = 1)	Cooperative (n= 20)	Cooperative Bank (n= 2)	Lending Investors (n= 5)	NGO (n= 7)	All Formal Lenders (n = 54)
Client Screening								
Time Involved (%)	30	33.78	32	22	0	11.15	38.85	27
No. of Personnel	1	3	2	2	0	2	2	2
Value of time(Php)	66000	79871	76320	21084	0	12767	60712	44508
Evaluation of Application								
Time Involved (%)	40	22.4	14	30	0	19	38.85	28
No. of Personnel	1	3	1	1	0	2	2	2
Value of time(Php)	72000	68346	16320	23061	0	22759	69498	42237
Processing of Loan								
Time Involved (%)	40	41	14	25	60	49	38.85	35
No. of Personnel	1	3	2	1	1	2	2	2
Value of time(Php)	96000	103387	32640	23751	21600	53134	69910	55905
Post Loan Follow-up								
Time Involved (%)	20	18	5	11	20	11	23.68	16
No. of Personnel	1	3	1	2	1	2	2	2
Value of time(Php)	48000	47835	5448	16741	7200	13843	50168	31390
Collection of Payment								
Time Involved (%)	20	11	5	16	20	13	7.27	14
No. of Personnel	7	3	1	1	1	2	2	2
Value of time(Php)	61226	20462	5448	6972	7200	14542	9103	15001
Average Transaction Cost	283226	266770	136176	70842	36000	110123	231272	156192
Average Transaction Cost per Loan Exposure	11.46	57.51	9.73	30.86	5.08	199.70	115.14	61.62
Transaction Cost as % of Total Expense	53.42	36.79	8	26.50	7	62.15	82.30	41.85
Transaction Cost as % of Total Loan Exposure	1.15	5.75	1	3.09	1	19.97	11.51	6.16

Appendix Table D28b. Transaction costs by type of informal lenders, Philippines, 2014[a]

Activity	Relatives &Friends (n= 14)	Private Money Lender (n= 10)	Trader (n= 3)	Input Dealer (n= 3)	Farmer Lender (n= 4)	All Informal Lender (n= 36)
Client Screening						
Time Involved (%)	4	10	3	33.3	25	13
No. of Personnel	2	1	3	2	2	2
Value of time (Php)	3706.56	6212.80	1956.20	21519	15114	8329.53
Evaluation of Application						
Time Involved (%)	4	10	3	33.3	25	13
No. of Personnel	2	1	3	2	2	2
Value of time (Php)	3706.56	6212.80	1956.20	21519	15114	8329.50
Processing of Loan						
Time Involved (%)	9	13	3	33.3	25	14
No. of Personnel	2	8936.4	3	2	2	2
Value of time (Php)	7270.60	2475.20	1956.20	21519	15114	9399.90
Post Loan Follow-up						
Time Involved (%)	4	11	0	10	25	10
No. of Personnel	2	2	0	1	2	2
Value of time (Php)	2993.80	7010.70	0	6781.6	15114	6534.20
Collection of Payment						
Time Involved (%)	7	7	6	21	0	9
No. of Personnel	2	2	3	1	0	2
Value of time (Php)	1950.70	3119.84	4042.90	13563	0	4148.10
Average Transaction Cost	8002.08	20682.80	5933.93	84900.82	30228.00	17214.53
Average Transaction Cost per Loan Exposure	133.45	129.15	118.68	141.50	151.14	124.05
Transaction Cost as % of Total Expense	63.67	64.95	50.00	100.00	50.00	87.94
Transaction Cost as % of Loan exposure (%)	13.35	12.91	11.87	14.15	15.11	20.67

[a] Landlords/Employers did not report any transaction cost

Appendix Table D29a. Maintenance and operating espenses (in Php) by type of formal lenders, Philippines, 2014

Expense	Private Bank (n= 2)	Rural Bank (n= 17)	Land Bank (n = 1)	Cooperative (n= 20)	Cooperative Bank (n= 2)	Lending Investors (n= 5)	NGO (n= 7)	All Formal Lenders (n = 54)
No Expenses	1	0	0	0	1	0	0	2
Incurred Expenses	1	17	1	20	1	5	7	52
Expenses(Average)								
Interest Payments	1,800,000	233,200	-	251,181	-	-		342,363
Personnel	1,996,774	229,311	1,123,824	383,223	135,541	449,877	-	452,872
Supplies	75,000	55,250	100,000	29,838	18,043	12,900	38,000	39,531
Utilities	180,000	94,444	150,000	30,347	81,239	14,400	30,000	58,245
Travel	216,000	101,489	98,000	46,484	13,856	29,000	20,000	67,932
Capital Outlay	-	305,000	-	50,054	233,738	30,000	-	124,018
Rent	-	120,000	-	85,400	-	48,000	-	75,271
Training	42,000	45,000	80,000	113,100	13,450	39,000	-	86,309
Monitoring	-	10,000	-	6,000	-	-	-	6,000
Fixed costs	-	80,000	-	8,835	15,790	18,500	22,000	19,896
Others	-	28,000	50,000	25,400	-	-	-	30,840
Average MOOE	2,139,300	834,937	1,601,824	673,073	511,657	320,402	33,044	679,661
Average MOOE per loan exposure	21	97	114	110	72	127	37	92

Note: one private bank and one cooperative bank refused to provide information on these.

Appendix Table D29b. Average MOOE (in php) by type of informal lenders, Philippines, 2014

Expense	Relatives &Friends (n= 14)	Private Money Lender (n= 10)	Trader (n= 3)	Input Dealer (n= 3)	Farmer Lender (n= 4)	Landlord/Employer (n= 2)	All Informal Lenders (n= 36)
No Expenses	9	7	1	3	3	0	24
Incurred Expenses	5	2	2	0	1	1	12
Expenses(Average)							
Interest Payments	6,375	9,000	180,000	-	3,750	14,000	51,688
Personnel	5,534	5,171	5,934	-	30,228	12,307	20,003
Supplies	765	-	-	-	-	-	765
Utilities	2,400	-	-	-	-	-	2,400
Travel	25,300	50,000	-	-	-	11,400	18,350
Capital Outlay	-	3,600	-	-	-	-	3,600
Monitoring	50,400	-	-	-	-	-	50,400
Average MOOE	1249.02	12520.00	90000.00	0.00	1875.00	18400.00	20002.71
Average MOOE per loan exposure	66.61	11.90	90.00	0.00	12.50	12.40	41.49

Appendix Table D30a. Average expenses (in php) by type of formal lenders, Philippines, 2014

EXPENSES	Private Bank (n= 2)	Rural Bank (n= 17)	Land Bank (n = 1)	Cooperative (n= 20)	Cooperative Bank (n= 2)	Lending Investors (n= 5)	NGO (n= 7)	TOTAL (n = 54)
No answer	0	5	0	0	1	1	1	8
With answer	2	12	1	20	1	4	6	46
Expenses(Average)								
Interest Payments	1,800,000	233,200	-	251,181	-	-		342,363
Personnel	2,280,000	615,946	1,260,000	418,864	171,541	351,875	231,272	503,304
Supplies	75,000	55,250	100,000	29,838	18,043	12,900	38,000	39,531
Utilities	180,000	94,444	150,000	30,347	81,239	14,400	30,000	58,245
Travel	216,000	101,489	98,000	46,484	13,856	29,000	20,000	67,932
Capital Outlay	-	305,000	-	50,054	233,738	30,000	-	124,018
Rent	-	120,000	-	85,400	-	48,000	-	87,817
Training	42,000	45,000	80,000	113,100	13,450	39,000	-	86,309
Monitoring	-	10,000	-	6,000	-	-	-	6,000
Fixed costs	-	80,000	-	8,835	15,790	18,500	22,000	19,896
Others	-	28,000	50,000	25,400	-	-	-	30,840
Average Expenses	2,422,526	1,101,707	1,738,000	743,915	547,657	430,525	259,186	835,853
Average Expenses per Loan Exposure	33	154	124	141	77	327	152	153

Appendix Table D30b. Average expenses (in php) by type of informal lenders, Philippines, 2014

Expense	Relatives &Friends (n= 14)	Private Money Lender (n= 10)	Trader (n= 3)	Input Dealer (n= 3)	Farmer Lender (n= 4)	Landlord/Employer (n= 2)	All Informal Lenders (n= 36)
No answer	8	5	1	2	2	0	18
With answer	6	5	2	1	2	2	18
Expenses(Average)							
Interest Payments	6,375	9,000	180,000	-	3,750	14,000	51,688
Personnel	13,536	25,854	11,868	84,901	60,456	-	29,521
Supplies	765	-	-	-	-	-	765
Utilities	2,400	-	-	-	-	-	2,400
Travel	25,300	50,000	-	-	-	11,400	18,350
Capital Outlay	-	3,600	-	-	-	-	3,600
Monitoring	50,400	-	-	-	-	-	50,400
Average Expenses	9251.10	33202.80	95933.93	84900.82	32103.00	18400.00	37217.24
Average Expenses per Loan Exposure	216.72	141.05	208.68	141.50	163.64	12.40	165.54

Appendix Table D31. Distribution of formal lenders by type of assistance received from BSP, Philippines, 2014

Item	Private Bank (n= 2)	Rural Bank (n= 17)	Land Bank (n = 1)	Cooperative (n= 20)	Cooperative Bank (n= 2)	Lending Investors (n= 5)	NGO (n= 7)	All Formal Lenders (n = 54)
Yes	1	7	0	4	0	0	1	13
Type of Assistance								
Financial	0	3	0	2	0	0	0	5
Insurance	0	0	0	1	0	0	0	1
Surety Fund	0	0	0	1	0	0	0	1
Training	1	1	0	0	0	0	0	2
Cannot Answer	0	3	0	0	0	0	1	4
No	1	10	1	16	2	5	6	41

Appendix Table D32a. Distribution of problems encountered by type of formal lenders, Philippines, 2014

Problem	Private Bank (n= 2)	Rural Bank (n= 17)	Land Bank (n = 1)	Cooperative (n= 20)	Cooperative Bank (n= 2)	Lending Investors (n= 5)	NGO (n= 7)	Al Formla Lenders (n = 54)
Unsecure Funds	0	1	0	6	1	0	1	9
Lack of Assistance	0	0	0	1	0	0	0	1
Delay/Non-Repayment	2	14	1	17	1	4	6	45
Management Issues	0	1	0	5	1	0	0	7

Appendix Table D32b. Distribution of problems encountered by type of informal Lenders, Philippines, 2014

Problem	Relatives &Friends (n= 14)	Private Money Lender (n= 10)	Trader (n= 3)	Input Dealer (n= 3)	Farmer Lender (n= 4)	Landlord/ Employer (n= 2)	All Informal Lenders (n= 36)
Unsecure Funds	4	2	1	1	1	0	9
Delay/Non-Repayment	8	8	2	2	3	2	25
Management Issues	2	1	0	0	0	0	3

APPENDIX E

Regression Runs

```
. treatreg logamount age annualized crops fishery gender incomemain incomeother distancew
roadquality i.roadquality#c.distancew timeapproval dependents education
> tcamountratio if paying==1, treat(formal= age annualized crops fishery gender incomemain
incomeother timeapproval distancewholesalemkt roadquality i.roadquality
> #c.distancew dependents education tcamountratio lenderspertenthousand training flexi)
twostep

Treatment-effects model -- two-step estimates   Number of obs      =       351

                                                Wald chi2(29)      =    171.69
                                                Prob > chi2        =    0.0000

------------------------------------------------------------------------------
             |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
logamount    |
         age |  -.0013909    .005774    -0.24   0.810    -.0127076    .0099258
  annualized |   .3893204   .4016078     0.97   0.332    -.3978163    1.176457
       crops |   .2155977   .1379254     1.56   0.118     -.054731    .4859265
     fishery |  -.4453696   .2304035    -1.93   0.053    -.8969522    .0062129
      gender |   .1314595   .1252008     1.05   0.294    -.1139295    .3768485
  incomemain |   1.87e-06   3.02e-07     6.21   0.000     1.28e-06    2.47e-06
 incomeother |   2.73e-06   8.12e-07     3.35   0.001     1.13e-06    4.32e-06
distancewh~t |   .0003246   .0028619     0.11   0.910    -.0052845    .0059338
 roadquality |   .0182885   .1655071     0.11   0.912    -.3060994    .3426765
             |
 roadquality#|
          c. |
distancewh~t |
          1  |   .0053524   .0088739     0.60   0.546    -.0120402     .022745
             |
timeapproval |   .0000707   .0001293     0.55   0.585    -.0001828    .0003242
  dependents |  -.0159017   .0299704    -0.53   0.596    -.0746425    .0428392
   education |   .1363701   .1247373     1.09   0.274    -.1081104    .3808507
tcamountra~o |  -8.686475   2.139709    -4.06   0.000    -12.88023   -4.492723
      formal |   .7218559   .2431574     2.97   0.003     .2452761    1.198436
       _cons |   8.273133   .3726883    22.20   0.000     7.542677    9.003588
-------------+----------------------------------------------------------------
formal       |
         age |  -.0024978   .0094165    -0.27   0.791    -.0209537    .0159581
  annualized |  -2.566466   .6652797    -3.86   0.000     -3.87039   -1.262542
       crops |  -.4954187   .2022251    -2.45   0.014    -.8917725   -.0990649
     fishery |  -.0580449   .3261618    -0.18   0.859    -.6973102    .5812204
      gender |  -.2613588   .1826153    -1.43   0.152    -.6192782    .0965606
  incomemain |  -9.02e-08   4.76e-07    -0.19   0.850    -1.02e-06    8.43e-07
 incomeother |   1.86e-06   1.07e-06     1.73   0.083    -2.44e-07    3.96e-06
timeapproval |   .0043516   .0008647     5.03   0.000     .0026568    .0060464
distancewh~t |    .010823   .0040029     2.70   0.007     .0029775    .0186686
 roadquality |    .553727   .2328229     2.38   0.017     .0974025    1.010051
             |
 roadquality#|
          c. |
distancewh~t |
          1  |  -.0283725   .0152005    -1.87   0.062    -.0581649    .0014199
             |
  dependents |  -.0262023   .0440253    -0.60   0.552    -.1124903    .0600857
   education |   .1396919   .1802049     0.78   0.438    -.2135032     .492887
tcamountra~o |    15.3193   4.292042     3.57   0.000     6.907051    23.73155
le~nthousand |   .1545908   .0875977     1.76   0.078    -.0170975    .3262791
    training |   1.231496   .2621449     4.70   0.000     .7177016    1.745291
       flexi |  -1.036844   .3741982    -2.77   0.006    -1.770259    -.303429
       _cons |  -.1582936   .5273338    -0.30   0.764    -1.191849    .8752616
-------------+----------------------------------------------------------------
hazard       |
      lambda |  -.3383955   .1664032    -2.03   0.042    -.6645399   -.0122512
-------------+----------------------------------------------------------------
         rho |   -0.30236
       sigma |  1.1191811
      lambda | -.33839554   .1664032
------------------------------------------------------------------------------
```

```
probit formal age annualized crops fishery gender incomemain incomeother timeapproval
distancewholesalemkt roadquality i.roadquality#c.distancew dependents educ
> ation tcamountratio lenderspertenthousand training flexi if paying==1

Iteration 0:   log likelihood = -241.74108
Iteration 1:   log likelihood = -156.61766
Iteration 2:   log likelihood =  -142.8131
Iteration 3:   log likelihood = -142.17176
Iteration 4:   log likelihood = -142.17069
Iteration 5:   log likelihood = -142.17069

Probit regression                                 Number of obs   =        351
                                                  LR chi2(17)     =     199.14
                                                  Prob > chi2     =     0.0000
Log likelihood = -142.17069                       Pseudo R2       =     0.4119

------------------------------------------------------------------------------
      formal |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         age |  -.0024978   .0094165    -0.27   0.791    -.0209537    .0159581
  annualized |  -2.566466   .6652797    -3.86   0.000     -3.87039   -1.262542
       crops |  -.4954187   .2022251    -2.45   0.014    -.8917725   -.0990649
     fishery |  -.0580449   .3261618    -0.18   0.859    -.6973102    .5812204
      gender |  -.2613588   .1826153    -1.43   0.152    -.6192782    .0965606
  incomemain |  -9.02e-08   4.76e-07    -0.19   0.850    -1.02e-06    8.43e-07
 incomeother |   1.86e-06   1.07e-06     1.73   0.083    -2.44e-07    3.96e-06
timeapproval |   .0043516   .0008647     5.03   0.000     .0026568    .0060464
distancewh~t |    .010823   .0040029     2.70   0.007     .0029775    .0186686
 roadquality |    .553727   .2328229     2.38   0.017     .0974025    1.010051
             |
 roadquality#|
          c. |
distancewh~t |
          1  |  -.0283725   .0152005    -1.87   0.062    -.0581649    .0014199
             |
  dependents |  -.0262023   .0440253    -0.60   0.552    -.1124903    .0600857
   education |   .1396919   .1802049     0.78   0.438    -.2135032     .492887
tcamountra~o |    15.3193   4.292042     3.57   0.000     6.907051    23.73155
le~nthousand |   .1545908   .0875977     1.76   0.078    -.0170975    .3262791
    training |   1.231496   .2621449     4.70   0.000     .7177016    1.745291
       flexi |  -1.036844   .3741982    -2.77   0.006    -1.770259    -.303429
       _cons |  -.1582936   .5273338    -0.30   0.764    -1.191849    .8752616
------------------------------------------------------------------------------
Note: 0 failures and 3 successes completely determined.


margins, at(annualized=.18)  atmeans

Adjusted predictions                              Number of obs   =        351
Model VCE    : OIM

Expression   : Pr(formal), predict()
at           : age             =    48.07123 (mean)
               annualized      =         .18
               crops           =    .3760684 (mean)
               fishery         =    .0854701 (mean)
               gender          =    1.401709 (mean)
               incomemain      =    156835.9 (mean)
               incomeother     =    60082.91 (mean)
               timeapproval    =    110.9246 (mean)
               distancewh~t    =    11.77208 (mean)
               roadquality     =    .3162393 (mean)
               0.roadqual~y    =    .6837607 (mean)
               1.roadqual~y    =    .3162393 (mean)
               dependents      =    3.327635 (mean)
               education       =    .4444444 (mean)
               tcamountra~o    =    .0140494 (mean)
               le~nthousand    =    1.026543 (mean)
               training        =    .2165242 (mean)
               flexi           =    .0797721 (mean)

------------------------------------------------------------------------------
             |            Delta-method
             |     Margin   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       _cons |   .5047736   .0388983    12.98   0.000     .4285344    .5810128
------------------------------------------------------------------------------
```

```
. margins, at(annualized=.12 lenderspertenthousand =0) atmeans

Adjusted predictions                                Number of obs   =        351
Model VCE    : OIM

Expression   : Pr(formal), predict()
at           : age             =    48.07123 (mean)
               annualized      =         .12
               crops           =    .3760684 (mean)
               fishery         =    .0854701 (mean)
               gender          =    1.401709 (mean)
               incomemain      =    156835.9 (mean)
               incomeother     =    60082.91 (mean)
               timeapproval    =    110.9246 (mean)
               distancewh~t    =    11.77208 (mean)
               roadquality     =    .3162393 (mean)
               0.roadqual~y    =    .6837607 (mean)
               1.roadqual~y    =    .3162393 (mean)
               dependents      =    3.327635 (mean)
               education       =    .4444444 (mean)
               tcamountra~o    =    .0140494 (mean)
               le~nthousand    =           0
               training        =    .2165242 (mean)
               flexi           =    .0797721 (mean)

------------------------------------------------------------------------------
             |            Delta-method
             |     Margin   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       _cons |   .5028962   .0555283     9.06   0.000     .3940627    .6117297
------------------------------------------------------------------------------
```

```
margins if formal==0, at(annualized=.06 lenderspertenthousand=3 crops=0) atmeans

Adjusted predictions                                Number of obs   =        192
Model VCE    : OIM

Expression   : Pr(formal), predict()
at           : age             =    47.48958 (mean)
               annualized      =         .06
               crops           =           0
               fishery         =     .078125 (mean)
               gender          =    1.421875 (mean)
               incomemain      =    145569.1 (mean)
               incomeother     =    43150.16 (mean)
               timeapproval    =    28.42031 (mean)
               distancewh~t    =    10.36615 (mean)
               roadquality     =    .3072917 (mean)
               0.roadqual~y    =    .6927083 (mean)
               1.roadqual~y    =    .3072917 (mean)
               dependents      =    3.302083 (mean)
               education       =    .4010417 (mean)
               tcamountra~o    =    .0050074 (mean)
               le~nthousand    =           3
               training        =    .0364583 (mean)
               flexi           =    .1197917 (mean)

------------------------------------------------------------------------------
             |            Delta-method
             |     Margin   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       _cons |    .502539   .0900413     5.58   0.000     .3260612    .6790167
------------------------------------------------------------------------------
```

```
margins roadquality if formal==0, at(annualized=.08 lenderspertenthousand=4) atmeans

Adjusted predictions                              Number of obs   =        192
Model VCE    : OIM

Expression   : Pr(formal), predict()
at           : age             =    47.48958 (mean)
               annualized      =         .08
               crops           =    .4270833 (mean)
               fishery         =     .078125 (mean)
               gender          =    1.421875 (mean)
               incomemain      =    145569.1 (mean)
               incomeother     =    43150.16 (mean)
               timeapproval    =    28.42031 (mean)
               distancewh~t    =    10.36615 (mean)
               roadquality     =    .3072917 (mean)
               0.roadqual~y    =    .6927083 (mean)
               1.roadqual~y    =    .3072917 (mean)
               dependents      =    3.302083 (mean)
               education       =    .4010417 (mean)
               tcamountra~o    =    .0050074 (mean)
               le~nthousand    =           4
               training        =    .0364583 (mean)
               flexi           =    .1197917 (mean)

------------------------------------------------------------------------------
             |            Delta-method
             |     Margin   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
 roadquality |
           0 |   .4953801   .1100816     4.50   0.000     .2796242     .711136
           1 |   .4953801   .1100816     4.50   0.000     .2796242     .711136
------------------------------------------------------------------------------



. margins if formal==0, at(annualized=.06 lenderspertenthousand=3 fishery=0 crops=0) atmeans

Adjusted predictions                              Number of obs   =        192
Model VCE    : OIM

Expression   : Pr(formal), predict()
at           : age             =    47.48958 (mean)
               annualized      =         .06
               crops           =           0
               fishery         =           0
               gender          =    1.421875 (mean)
               incomemain      =    145569.1 (mean)
               incomeother     =    43150.16 (mean)
               timeapproval    =    28.42031 (mean)
               distancewh~t    =    10.36615 (mean)
               roadquality     =    .3072917 (mean)
               0.roadqual~y    =    .6927083 (mean)
               1.roadqual~y    =    .3072917 (mean)
               dependents      =    3.302083 (mean)
               education       =    .4010417 (mean)
               tcamountra~o    =    .0050074 (mean)
               le~nthousand    =           3
               training        =    .0364583 (mean)
               flexi           =    .1197917 (mean)

------------------------------------------------------------------------------
             |            Delta-method
             |     Margin   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       _cons |    .504348   .0895297     5.63   0.000      .328873     .679823
------------------------------------------------------------------------------

.
```

```
margins, at(crops=1 annualized=.064) atmeans

Adjusted predictions                              Number of obs   =        351
Model VCE    : OIM

Expression   : Pr(formal), predict()
at           : age             =    48.07123 (mean)
               annualized      =        .064
               crops           =            1
               fishery         =    .0854701 (mean)
               gender          =    1.401709 (mean)
               incomemain      =    156835.9 (mean)
               incomeother     =    60082.91 (mean)
               timeapproval    =    110.9246 (mean)
               distancewh~t    =    11.77208 (mean)
               roadquality     =    .3162393 (mean)
               0.roadqual~y    =    .6837607 (mean)
               1.roadqual~y    =    .3162393 (mean)
               dependents      =    3.327635 (mean)
               education       =    .4444444 (mean)
               tcamountra~o    =    .0140494 (mean)
               le~nthousand    =    1.026543 (mean)
               training        =    .2165242 (mean)
               flexi           =    .0797721 (mean)

------------------------------------------------------------------------------
             |            Delta-method
             |     Margin   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       _cons |   .5002268   .0672969     7.43   0.000     .3683273    .6321264
------------------------------------------------------------------------------


margins if formal==0, at(annualized=.04 lenderspertenthousand=4) atmeans

Adjusted predictions                              Number of obs   =        192
Model VCE    : OIM

Expression   : Pr(formal), predict()
at           : age             =    47.48958 (mean)
               annualized      =         .04
               0.crops         =    .5729167 (mean)
               1.crops         =    .4270833 (mean)
               0.fishery       =     .921875 (mean)
               1.fishery       =     .078125 (mean)
               gender          =    1.421875 (mean)
               incomemain      =    145569.1 (mean)
               incomeother     =    43150.16 (mean)
               timeapproval    =    28.42031 (mean)
               distancewh~t    =    10.36615 (mean)
               roadquality     =    .3072917 (mean)
               0.roadqual~y    =    .6927083 (mean)
               1.roadqual~y    =    .3072917 (mean)
               dependents      =    3.302083 (mean)
               education       =    .4010417 (mean)
               tcamountra~o    =    .0050074 (mean)
               le~nthousand    =           4
               0.training      =    .9635417 (mean)
               1.training      =    .0364583 (mean)
               0.flexi         =    .8802083 (mean)
               1.flexi         =    .1197917 (mean)

------------------------------------------------------------------------------
             |            Delta-method
             |     Margin   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       _cons |    .500279   .1103119     4.54   0.000     .2840716    .7164864
------------------------------------------------------------------------------
```

```
margins, at(fishery=1) atmeans

Adjusted predictions                              Number of obs   =        351
Model VCE    : OIM

Expression   : Pr(formal), predict()
at           : age             =    48.07123 (mean)
               annualized      =    .1660676 (mean)
               0.crops         =    .6239316 (mean)
               1.crops         =    .3760684 (mean)
               fishery         =           1
               gender          =    1.401709 (mean)
               incomemain      =    156835.9 (mean)
               incomeother     =    60082.91 (mean)
               timeapproval    =    110.9246 (mean)
               distancewh~t    =    11.77208 (mean)
               roadquality     =    .3162393 (mean)
               0.roadqual~y    =    .6837607 (mean)
               1.roadqual~y    =    .3162393 (mean)
               dependents      =    3.327635 (mean)
               education       =    .4444444 (mean)
               tcamountra~o    =    .0140494 (mean)
               le~nthousand    =    1.026543 (mean)
               0.training      =    .7834758 (mean)
               1.training      =    .2165242 (mean)
               0.flexi         =    .9202279 (mean)
               1.flexi         =    .0797721 (mean)

------------------------------------------------------------------------------
             |            Delta-method
             |     Margin   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       _cons |   .4978614   .1213944     4.10   0.000     .2599326    .7357901
------------------------------------------------------------------------------
```