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**Borrowing Amongst Friends: The Economics of Informal Credit in Rural
China**

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Abstract This paper investigates the economic significance of informal borrowing between friends and relatives in rural China. Guided by an economic model of household-production interactions, we provide results from a survey of over 1,500 households including GLM and Logistic regression results. We find evidence of a ‘small farm bias’ in the use of informal credit, but we cannot generalize this to credit rationing as a matter of course. In part we believe that a preference for informal borrowing is related to some forms of credit rationing, spillover effects and collateral as some literature suggests, but our results suggest that by no means are these mutually exclusive or exhaustive.

Key Words: China, Informal lending, Household Production, Agricultural Finance, Development Finance.

The economic significance of informal lending and borrowing between friends and relatives in developing economies has been largely ignored in the finance literature. This is problematic since a number of studies from China have provided some remarkable results as to its importance. He and Li, (2005) found that nearly 41% of respondents received non-usurious loans from family and friends while Huo and Qu (2005) find that non usurious informal loans between individuals accounts for 76.6% of all loans with disputes among friends being virtually non-existent and money lending too rare to have social consequence. These numbers are confirmed in the present study which finds that approximately 2 out of every 3 loans are through a friend or relative.

The lack of focus on borrowing among friends and relatives is probably due to the general restriction placed on the term ‘informal finance’ which is viewed in terms of networks and institutions that operate outside of the formal system (Tsai 2004; Ayyagari et al 2008) or are tied to terms of usury. For example, Boucher and Guirkingner (2007) define the informal sector to include moneylenders, input supply dealers, traders, and agro-processing firms. As a general definition, Ayyagari et al (2008) suggest that informal finance relates to any and all non-market institutions such as credit cooperatives, moneylenders, etc. that do not rely on formal contractual obligations enforced through a codified legal system. The evidence does seem to indicate that informal credit channels are economically significant and can be tied to economic growth, especially in China. Such systems have been argued by Jain (1989) to be strong enough to crowd out formal finance or at least provide a co-product relationship and may in fact be the preferred route for accessing credit ((Chung 1995; Kochar 1997; Mushinski 1999). Boucher and

Guirkinger (2007) provide an additional argument that informal borrowing may be preferred because collateral is not at risk. While these studies generally exclude lending amongst friends and family the underlying reasoning is probably not that different with one exception: Lending and borrowing amongst friends and relatives occurs (for the very most part) at zero interest rate and this makes this particular aspect of informal credit unique¹. This has led some researchers to investigate alternative explanations based on the trustworthiness of the poor (Turvey and Kong, 2008) as well as guilt (Turvey et al 2008; Kropp et al 2008).

While lending and borrowing between friends and relatives is no doubt included within the breadth of the general definition of informal lending, the dearth of research papers on the subject suggests that such relationships have not been deemed to be economically significant, perhaps because in the absence of a negotiated interest rate there is no easy means to place a market value on the transaction beyond the accumulation of goodwill, social capital, and reciprocity. We disagree, and argue that informal lending between friends and relatives is not only economically meaningful as a subject of study but economically significant in the maintenance of funds flows between production, consumption, and investment. This is especially true in regions such as rural China that lack access to formal credit due to credit rationing or institutional availability. Then households must often resort to informal means amongst friends, relatives and money lenders a situation that is consistent with the ‘spillover effect’ discussed by Bell,

¹ This statement concludes from our study in which we asked the actual rate of those who borrowed informally and what they believed the rate would be of those that did not. It was overwhelmingly zero. Furthermore, very few actually used money lenders, and when we asked what respondents believed the money lending rates would be very few of the respondents could come up with a response. In contrast, most respondents were able to indicate that Rural Credit Cooperative rates were between 9% and 11% annually, and that commercial bank rates were higher than this.

Srinivasan, and Udry 1997; Conning 1996; Hoff and Stiglitz 1990) For the most part these micro economies work. Funds flow from surplus households to deficit households and back again. The flow of these funds is often not based on interest charges at all, but freeing up capital within a closed community can have many multiplier benefits. A farmer borrowing money for a wedding or a child's education frees up funds that can be placed into the production process. The production process in turn provides the cash to repay the loan with the remainder placed in savings for further consumption or production.

This paper investigates the relationship between the informal and formal borrowing of 1,557 farm households surveyed in Shaanxi, Henan and Gansu provinces in China between October 2007 and October 2008. The extent by which farmers use informal credit relative to formal credit is the main focus of this paper and we conclude generally that informal borrowing amongst friends and relatives is not an economically trivial issue. We provide evidence of a *small farm bias* in which farms with a smaller land base and with a larger percentage of income derived from farming are more likely to borrow from friends and relatives. The use of money lenders is trivial. Furthermore, we cannot say for sure whether informal borrowing is a consequence of credit rationing; it appears that credit rationing plays a role for some farmers, but the opposite may be true as well. That is our results leave open the possibility that the strength of informal relationships may be significantly strong to crowd out formal institutions such as Rural Credit Cooperatives or agricultural banks.

We place the problem of formal and informal borrowing in the context of the farm household and production economics. We explain by way of a simple production model

how informal and formal credit interact or substitute for one other. In this sense our approach is consistent with Feder et al (1990) who argue that the separability of consumption and investment decisions within a household may not hold true. Credit rationing for example reduces the amount of liquid cash available to purchase agricultural inputs, forcing farmers to borrow informally. On the other hand, farms that are not constrained can freely choose between formal and informal sources, and indeed may choose the former if it is offered at a lower interest rate and with flexible, unsecured terms. We then provide an empirical evaluation of household borrowing. The main contributions of this study are to show the relationship between agricultural productivity, credit constraints and informal and formal lending.

2. An Economic Perspective on the Role of Lending in Agricultural Production

In this section we outline the economic significance of informal lending in a simple model of a profit maximizing firm. In our context the firm is a household from which the sole source of earnings is from farming. As a household the expenditures include not only the acquisition of production inputs but also food, health, education, recreation and so on. The budget constraint in the current period, t , is the amount of cash remaining, $\bar{\omega}_t$, after all household expenditures are made from the previous period cash balance, $\bar{\omega}_{t-1}$

$$(1) \quad \bar{\omega}_t = \bar{\omega}_{t-1} - h_t(\text{food}, \text{shelter}, \text{health}, \text{education} \dots)$$

with an incremental reduction in the production budget given by

$$(2) \quad \frac{\partial \bar{\omega}_t}{\partial h(y)} \frac{\partial h(y)}{\partial y} < 0.$$

Consider now the budget constraint defined by (1) . The household has several options to avoid credit constraints in the formal market. First, the household can set aside cash to cover the next period's required production expenditures. However, this creates disutility in terms of household consumption and well being. Many expenses such as health are not so easily predictable while other expenses such as education change from year to year. The second alternative is to use informal borrowing (B) to purchase non production household goods. By informal markets we mean friends, relatives or money lenders. Thus we can restate (1) as

$$(3)$$

$$\bar{\omega}_t = \bar{\omega}_{t-1} - h_t(\text{food}, \text{shelter}, \text{health}, \text{education}...) \\ + \left(B_t(\text{food}, \text{shelter}, \text{health}, \text{education}...) - B_{t-1}(\text{food}, \text{shelter}, \text{health}, \text{education}...) (1 + i^*) \right)$$

The effect of informal borrowing is to increase the cash available for production, which in turn reduces the incremental costs of borrowing in the formal markets and increases the likelihood of avoiding credit constraints. In this context informal borrowing substitutes for formal borrowing and in fact can crowd out formal lending markets. But households must also be disciplined to some extent. First if the amount repaid in the current period (B_{t-1}) exceeds the amount borrowed then informal lending could ultimately lead to increased demand for borrowing in formal markets. Second, in the case of money lenders or informal arrangements that charge interest (i^*), if the interest charge is too high that too could reduce cash available in the current period and increase demand for formal credit. However this assumes that informal borrowings are equivalent to a demand note. In many instances, excluding perhaps money lenders, informal borrowing

involves a degree of flexibility that can postpone repayment of previous borrowing until after harvest.

We assume that any shortfall in the cash available for production will need to be borrowed from a formal institution (e.g. Rural Credit Cooperative). The shortfall amount is defined by $(1-\omega)$ where ω is a pro rata proportion of $\bar{\omega}_i$ as defined in Eq 3. That is at an input cost, r , the maximum quantity of input that can be purchased from savings is $x_1 = \frac{\bar{\omega}}{r}$. If the optimum amount, x , exceeds x_1 then the remainder $x_2 = x - \frac{\bar{\omega}}{r}$ needs to be purchased on credit with an interest charge of i being levied. Furthermore, it is possible that the farmer will be credit constrained such that the amount of debt, D , made available to purchase inputs is less than the optimum amount required. The profit function is therefore given by

$$(4) \quad \begin{aligned} \text{Max } \pi &= PQ(x) - \text{Max}\left(rx, (\omega r + (1-\omega)r(1+i))x\right) \\ \text{Subject to} \\ D &\leq (1-\omega)rx \end{aligned}$$

In (4) P is the output price, $Q(x)$ is a single input production function, r is the variable cost of the input, x , and i is the interest rate on any borrowed funds. The amount borrowed is defined by the first constraint, and any rationing on borrowed credit is defined by the second. The Lagrange form of (4) assuming that $x > \frac{\bar{\omega}}{r}$ is given by

$$(5) \quad \text{Max } \pi = PQ(x) - (\omega r + (1-\omega)r(1+i))x - \lambda((1-\omega)rx - D).$$

Profit maximization is given by

$$(6) \quad \frac{\partial \pi}{\partial x} = P \frac{\partial Q(x)}{\partial x} - (\omega r + (1-\omega)r(1+i)) - \lambda(1-\omega)r = 0$$

Which reflects the condition that the marginal value product is equal to the marginal input cost, with the input cost increasing on margin by the amount borrowed. The effect of debt and credit rationing is given by the shadow price $\lambda \leq 0$ which will be zero if the debt constraint is not binding and less than zero if it is binding. If the constraint is not binding then

$$(7) \quad \frac{\partial \pi}{\partial x} = P \frac{\partial Q(x)}{\partial x} - (\omega r + (1 - \omega)r(1 + i)) = 0$$

so that the marginal value product is equal to the marginal input costs which includes an allowance for the interest charge on borrowed funds. If the constraint is binding and $\lambda \neq 0$ then (6) holds and the lack of credit reduces the amount of input used away from its optimum. When the credit constraint is binding the shadow price is given by

$$(8) \quad \lambda = \left[\frac{P \frac{\partial Q(x)}{\partial x} - (\omega r + (1 - \omega)r(1 + i))}{(1 - \omega)r} \right].$$

Differentiating (8) with respect to the budget gives

$$(9) \quad \frac{\partial \lambda}{\partial \omega} = \frac{r - P \frac{\partial Q(x)}{\partial x}}{(1 - \omega)^2 r} \leq 0,$$

which states that any relaxation of the budget constraint, which is equivalent to a reduction in the demand for debt, lowers the shadow price.

Farm Household Survey and Econometric Estimation

The data used were obtained through the survey of 1600 farm households in Yangling (Shaanxi Province, October 2007), Henan (July 2008), Gensu (September 2008) and Qianyang (Shaanxi Province, October 2008). The survey form was prepared in English,

translated into Chinese, and then back-translated into English. The English and Chinese surveys were then compared line by line by two independent bilingual graduate students, with the English speaking investigator present. This document was then forwarded for final review to the Chinese speaking investigator for a final check. With the exception of the Gensu survey, the survey was conducted by 30-40 graduate students from the Northwest Agriculture and Forestry University. The Gensu survey was conducted by undergraduate students as part of a course in statistics and was overseen and monitored by experienced graduate students. In each survey a target of 400 respondents was set and met, although 43 surveys were eliminated from the Gensu survey because of incomplete or missing data. The protocol, which was IRB reviewed by the host USA university allowed for respondents to refuse any questions or drop out of the survey at any time. The completion rate was actually 100% with very few problems. The survey took between 40 minutes and one hour and 20 minutes with the student reading the question to the farmer and filling in a paper questionnaire. Respondents were offered two bags of soap powder for participating in the survey.

Table 1 provides details of the survey sample. Each 'region' comprises a separate sample with Yangling being the first survey conducted in October, 2007 and Qianyang (also in Shaanxi Province) conducted in October 2008. The average years farming was 27.32 years which was not significantly different across regions., and farm size was 5.48mu which provided incomes ranging from 15,308 RMB in Qianyang to 6,177 RMB in Henan. On average about 47.47% of household income came from farming but this was as high as 71.17% in Henan. This income supported an average of 4.37 persons per household. There is also a range of debt, which included both formal and informal

amounts. The highest average debt was 20,314 RMB in Qianyang while the lowest was 6,972 RMB in Yangling. The highest reported debt was 480,000 RMB for a farm household in Qianyang . We also provide a comparison to the official statistics from the Chinese Data Handbook (2007) for %Income from farming, income/person, and land/person. The four regions in this study have land bases smaller on a per capita basis than for the provinces, and with the exception of Henan farm incomes are higher . Percent of income from farming is mixed with Gensu (45.33) and Qianyang (48.3) being lower and Henan (71.17) and Yangling (68.58) being higher than the provincial averages.

Of the 730 respondents who indicated that they have some form of debt and were able to proportion it between informal and formal sources 53.7% used only informal sources, 21.9% used only formal sources and 24.4% used some combination of both (Table 2). Table 2 shows some of the uses of debt based upon recall of the last time money was borrowed. Of the informal group 41.4% borrowed for house construction, while only 31.2% of the formal group and 27.4% of the 'both' category did; 25% of informal loans were for house construction while 46.2% of formal loans were for house construction. More generally informal loans were used for health. medicine (24%), education (20.4%) and house construction (25%). With formal loans the major categories of use were for house construction (46.2%), production agriculture (16.9%) and education (13.1%). In terms of formal loans it should be noted that Rural Credit Cooperatives are authorized to provide micro loans based upon the credit worthiness of the farmer. The farmer is issued a certificate stating the amount that could be borrowed

and up to this amount can be borrowed without restriction on its use; in other words RCC loans are not restricted to agricultural practices alone.

Table 3 presents GLM results for two separate regressions identifying relationships between the quantity of informal and formal credit. In the survey we had asked respondents to provide the total amount of money owed both formally and informally and then asked them to provide percentage weights to the amount borrowed from family, friends, RCCs, banks, money lenders and others. Here we add money from friends and relatives to define informal and RCC and banks to get formal. Money lenders and others were excluded because their numbers were negligible. Setting levels of significance aside for now larger farmers borrow more than smaller farms and the response for informal and formal is about the same (247.03 vs. 278.61). The greater percentage of household income from farming is positively related to informal borrowing (33.33) but negatively related to formal borrowing (-32.84). . Higher household income (from all sources) leads to lower informal borrowing (-0.119 and significant at 1% level) but higher formal borrowing (0.176). The asset value is an interesting variable which is significant for the informal amounts but not for formal amounts. Here we had asked farmers to give an estimate of how much they would receive if they could sell all of their assets. Without reliable reference points to market values we admit that this is subjective and interpretation should be taken within this context. However the regression results indicate that those with higher assets borrow less from friends and relatives ($p=0.001$) than RCCs and banks ($p=0.656$). The explanation we believe is that home construction and renovations, which require rather larger sums of cash than, say farm implements, are

largely accomplished through formal borrowing (see Table 2) or a combination of both formal and informal sources.

We include a binary variable with 1.0 indicating that a formal loan application had previously been denied. It is not significant for either regression but is positive for informal lending and negative for formal lending suggesting, at least within the limits of error, that respondents who had previously been denied a loan are more prone to borrow from friends and relatives (489.59) and borrow less from banks or RCCs (-2,256.69). The two variables Children in elementary school and years farming were included to capture some elements of demography. With children in elementary school the households would likely be younger, and would face different pressures than a respondent who has been farming for a long time with greater experience, community reputation, and capital accumulation etc. Households with children in elementary school borrow less informally (-1,854.79, $p=0.040$) while farm households with many years experience borrow slightly more from formal sources (1.27.33, $p=0.078$). The final variable, Shaanxi takes on a value of 1 if the respondent was from one of the two regions in Shaanxi surveyed. These farmers on average borrowed more informally than respondents from Gansu and Henan (2,754, $p=0.051$) and borrowed less from banks and the RCC (-6,511.72, $p=0.001$).

Table 4 examines the issue in a different light. Here we use Logistic regression against 4 binary dependant variables. First the 'denied loan' variable is set to 1.0 if the respondent has either informal or formal debt and indicated that at some point in the past had been denied a loan. That some debt is held indicates a demand for credit. With the remaining three variables we are interested in factors affecting the choice. Next, the variable 'Informal' is set to 1.0 if the respondent reported only informal loans; the variable

'formal' is set to 1.0 if the respondent only has formal credit; and the variable 'formal and Informal' is set to 1.0 if the respondent uses both formal and informal sources.

The regressions reveal strong evidence to support a small-farm bias. By small farm bias we mean that there is a tendency for small farms that derive most of their income from farming to be denied loans and perhaps excluded from formal markets. In the 'denied' Logit the probability of being denied a loan decreases (increases) as farm size increases (decreases) ($p=0.005$) and increases as the percentage of income from farming increases ($p=0.06$). Of those respondents who reported only informal borrowing the results suggest that small farms are more likely to use informal credit exclusively than larger farms ($p=0.155$) but a key indicator is that exclusive use of informal credit is more likely with households with most income from farming ($p=0.008$). High asset valued respondents are less likely to borrow informally ($p=0.011$) which may indicate either greater access to formal credit or use both formal and informal credit. Households with children do not appear to be any more likely to borrow informally but there is weak evidence ($p=0.139$) that farmers with more years farming do, probably because of reputation and other forms of social capital.

Whether or not a respondent had been denied a formal loan does not appear to impact informal borrowing choices ($p=0.886$). This is not the case with formal loans. Here a denial of loans is negatively related to formal debt choices (-0.357 ; $p=0.093$). Sample cross-tabulations of loan category and loan denial indicate a statistical difference between the groups ($\chi^2 = 7.082$, $p=0.029$); 50% of respondents who use informal sources and 57.8% of those that used both had previously been denied a loan, while only

43.6% of those using formal credit had previously been denied a loan. While this explains the Logistic regression results, it should not be overlooked that 50% of households using the informal markets *had not* previously been denied a loan which indicates that credit rationing per se is not a good explanation for the use of informal sources. Likewise, we cannot ignore that 43.6% of households who had previously been denied a loan still used formal sources of credit regardless which indicates that the stigma of loan refusal is not necessary place a ration on future borrowing from formal sources.

It is more likely that larger farms borrow exclusively from formal sources ($p=0.043$) but proportion of income from farming does not appear to influence this choice ($p=0.593$) but higher total household income does appear to affect choice ($p=0.122$). Asset value is not significant even though Table 2 shows that 46.2% of formal loans went to house construction and improvements. Interestingly, households with children in school are more likely to borrow exclusively from formal sources ($p=0.035$), although the reasoning for this is not evident to us. Farmers with more years of experience are less likely to use formal sources exclusively ($p=0.020$) which together with the informal results suggests, perhaps, a preference for informal borrowing. Shaanxi farmers are more likely to borrow exclusively from informal sources ($p<0.001$) and less likely to borrow exclusively from formal sources ($p<0.001$) indicating that there are regional aspects to this lender-borrower relationship.

The final category is those respondents who use some combination of formal and informal borrowing to meet their needs. Farm size does not appear to influence this choice ($p=0.384$) but as the proportion of income from farming increases the likelihood of using both decreases ($p=0.002$) which is consistent with the finding that these

respondents are more likely to use informal credit exclusively. Higher household income is negatively related ($p=0.06$) is negative, supporting a strong preference for formal lending alone. Higher asset households are also more likely to use both perhaps using informal sources for house improvement and formal sources for agricultural production or other entrepreneurial activities. Households that have previously been denied a loan also rely on dual sources ($p=0.076$). Recall that this group were significantly less likely to use formal sources exclusively and had no influence on exclusive use of informal credit. Combined, the result suggests that just because a farmer had previously been denied a formal loan does not as a matter of course imply that they are forever rationed. The quantity of formal debt is likely insufficient and so informal sources are sought in order to balance total credit needs. The negative relationship with children is consistent with the near exclusivity of formal borrowing with this group ($p=0.019$) but years in farming has no significant explanatory power ($p=0.350$) which is consistent with the finding that more experienced farmers have a preference, in probability, for informal borrowing. Finally, a preference for using dual sources of credit is no different in Shaanxi than the other provinces. This neutrality is consistent with the finding of increased likelihoods of informal versus formal borrowing amongst Shaanxi farmers.

Discussion and Conclusions

This paper has investigated the economic role of informal borrowing from friends and relatives in comparison to formal alternatives. Our survey and analytical results indicate that informal financing between friends, at least in China, is significant. We find evidence of a small farm bias in which smaller farms with the majority of income coming from agriculture are more likely to use informal financing, but we must stop short of

claiming that this is evidence of credit rationing. The evidence shows that whether or not a farmer had at one point been denied a loan does not significantly affect the choice of using informal sources, nor does the evidence suggest that the denial of a previous loan precludes the borrower from obtaining a formal loan. The economics, we believe, goes beyond the conventional model of credit rationing, collateral risk, or spillover effects that so often are used to explain the use of informal credit. We do believe that the economics is rooted in the relationship between the household demand for cash and the cash required for agricultural production as we describe in the theoretical component to this paper, but it cannot be explained using credit rationing (equations 8 and 9) as a matter of course. Of course the spillover effect plays a role, as does credit rationing, but the strong preference for informal borrowing beyond any evidence of credit rationing cannot be ignored. The evidence supports our model in that the evidence strongly supports the idea of multiple-non agricultural uses for informal loans (and formal loans) so there is clear evidence that borrowed money is fungible between consumption and production.

The role of borrowing from friends and relatives is popular in China, and in fact dominates borrowing activity. The results of this research indicate that there is economic significance to these relationships that need further exploration including the question of whether informal borrowing amongst friends is significant enough to crowd out formal finance in China's rural economy.

Table 1: Summary of Farm Household Characteristics

Region Province		Total household income	Percent of income from farming	Farm size	Years farming	Income/ Person	Land/ Person	amount of debt
Gansu	Mean	11186.68	45.33	7.82	26.88	2609.46	1.81	19,711.76
	N	355.00	355.00	356.0 0	355.00	355.00	356.00	221.00
	Std.	9646.79	27.08	5.39	12.31	2198.78	1.25	24,757.86
	Minimum	420.00	2.00	1.00	2.00	52.50	0.33	600.00
	Maximum	100000.00	100.00	50.00	60.00	20000.00	12.50	210,000.00
	Skewness	4.50	0.58	3.95	0.33	3.77	3.33	4.38
	Median	9526.88	40.02	6.80	25.73	2222.22	1.52	11,948.72
Henan	National Mean		60.54			2,134.05	2.55	
	Mean	6176.88	71.17	3.43	27.42	1732.68	0.96	12,433.49
	N	400.00	399.00	388.0 0	400.00	399.00	392.00	209.00
	Std.	10631.32	33.33	1.83	12.94	2810.82	0.69	30,163.06
	Minimum	250.00	8.00	0.70	1.00	41.67	0.12	100.00
	Maximum	200000.00	100.00	10.00	70.00	50000.00	4.00	400,000.00
	Skewness	15.39	-0.69	0.74	0.33	13.09	1.70	10.51
Qianyang	Median	4801.47	87.91	3.17	25.18	1237.84	0.78	5,277.78
	National Mean		64.65			3,261.03	1.59	
	Mean	15308.25	48.30	6.11	26.98	3730.16	1.56	20,314.21
	N	400.00	391.00	400.0 0	397.00	397.00	397.00	190.00
	Std.	13610.95	27.51	4.41	13.54	3645.80	1.65	38,810.90
	Minimum	500.00	3.00	0.90	1.00	250.00	0.22	300.00
	Maximum	140000.00	100.00	60.00	60.00	46666.67	25.00	480,000.00
Yangling	Skewness	4.22	0.47	6.00	0.19	5.83	9.24	9.22
	Median	10394.87	42.50	5.06	28.10	2857.14	1.24	11,250.00
	National Mean		53.95			2,260.19	1.91	
	Mean	13214.01	68.58	4.90	28.23	3112.93	1.16	6,972.50
	N	398.00	391.00	400.0 0	398.00	396.00	398.00	400.00
	Std.	12279.48	33.84	1.80	13.56	3241.81	0.62	13,876.24
	Minimum	500.00	2.30	1.00	1.00	200.00	0.20	0.00
Total	Maximum	97100.00	100.00	13.00	70.00	31933.33	6.00	150,000.00
	Skewness	3.63	-0.45	0.47	0.31	4.51	3.21	4.51
	Median	10068.49	81.16	4.79	29.14	2483.03	1.05	390.15
	National Mean		53.95			2,260.19	1.91	
	Mean	11477.46	58.71	5.52	27.39	2799.80	1.36	13,336.86
	N	1553.00	1536.00	1544. 00	1550.00	1547.00	1543.00	1,020.00
	Std.	12177.77	32.78	3.99	13.11	3127.35	1.18	26,585.34
	Minimum	250.00	2.00	0.70	1.00	41.67	0.12	0.00
	Maximum	200000.00	100.00	60.00	70.00	50000.00	25.00	480,000.00
	Skewness	5.73	0.02	5.12	0.29	6.53	8.05	9.74
	Median	9501.86	54.79	4.97	26.29	2055.38	1.08	5,560.00

Table 2: Uses of Informal and Formal Loans

	Row %/ Colum %	Only Informal	Only Formal	Informal and Formal	Total
Sample	N	392	160	178	730
	% of Sample	53.70%	21.90%	24.40%	100.00%
Use of Informal and Formal Loans					
Health/Medicine	% Use of Loan	68.10%	10.10%	21.70%	100.00%
	% of Loan Category	24.00%	8.80%	16.90%	18.90%
Wedding	% Use of Loan	53.20%	6.50%	40.30%	100.00%
	% of Loan Category	8.40%	2.50%	14.00%	8.50%
Funeral	% Use of Loan	50.00%	16.70%	33.30%	100.00%
	% of Loan Category	0.80%	0.60%	1.10%	0.80%
Education	% Use of Loan	60.60%	15.90%	23.50%	100.00%
	% of Loan Category	20.40%	13.10%	17.40%	18.10%
Production Agriculture	% Use of Loan	50.60%	34.20%	15.20%	100.00%
	% of Loan Category	10.20%	16.90%	6.70%	10.80%
Machinery and Equipment	% Use of Loan	56.20%	29.20%	14.60%	100.00%
	% of Loan Category	6.90%	8.80%	3.90%	6.60%
House Construction	% Use of Loan	41.40%	31.20%	27.40%	100.00%
	% of Loan Category	25.00%	46.20%	36.50%	32.50%
Household Consumption	% Use of Loan	72.20%	5.60%	22.20%	100.00%
	% of Loan Category	3.30%	0.60%	2.20%	2.50%
Other	% Use of Loan	40.00%	40.00%	20.00%	100.00%
	% of Loan Category	1.00%	2.50%	1.10%	1.40%

Table 3: GLM Regression Results on Factors Affecting Amount Borrowed

	Owed to Friends/relatives		Owed to Banks	
	Coefficient	p-Value	Coefficient	p-Value
Chi-Sqr	4,087,110,853.26	0.000	7,510,485,916.76	0.000
	1		0	
(Intercept)	5,685.408	0.035	13,613.498	0.000
q3FarmSizemu	247.039	0.447	278.613	0.388
q7PercentFarmIncome	33.333	0.218	-32.845	0.452
q6HouseholdIncome	-0.119	0.006	0.176	0.249
q26AssetValue	0.064	0.001	0.010	0.656
q30deniedloan	489.594	0.727	-2,256.688	0.373
q9aChildreninelementaryschool	-1,854.785	0.040	645.213	0.652
q2YearsFarming	-69.985	0.329	127.331	0.078
Shaanxi	2,754.401	0.051	-6,511.717	0.001

Table 4: Binary Logit Results on Factors Influencing Type of Borrowing

	Denied		Informal		Formal		Formal and Informal	
	Coefficient	p-Value	Coefficient	p-Value	Coefficient	p-Value	Coefficient	p-Value
Chi-Sqr	13.970	0.052	57.070	0.000	43.536	0.000	30.137	0.000
(Intercept)	0.491	0.165	-1.365	0.001	-0.525	0.175	-0.110	0.776
q3FarmSizemu	-0.072	0.005	-0.039	0.155	0.050	0.043	-0.026	0.384
q7PercentFarmIncome	0.006	0.060	0.008	0.025	0.002	0.593	-0.011	0.002
q6HouseholdIncome	3.27292E-06	0.759	8.27929E-06	0.407	1.89872E-05	0.122	-	0.060
q26AssetValue	-	0.280	-8.1055E-06	0.011	1.02213E-06	0.614	5.56502E-06	0.021
q30deniedloan	n.a.	n.a.	-0.029	0.886	-0.357	0.093	0.358	0.076
q9aChildreninelementaryschool	0.095	0.487	0.058	0.685	0.302	0.035	-0.378	0.019
q2YearsFarming	-0.008	0.308	0.012	0.139	-0.019	0.020	0.007	0.350
Shaanxi	-0.385	0.067	1.108	0.000	-0.877	0.000	-0.259	0.264

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