DETERMINANTS OF FARMERS’ DECISION TO ACCESS CREDIT: 
THE CASE OF ZIMBABWE

Shalone K. Chitungo, Simon Munongo, Lecturers 
Great Zimbabwe University, Zimbabwe 
E-mail: sharone_mail@yahoo.com, simonmunongo@gmail.com

ABSTRACT
In developing countries, improvement in productivity through investment in productive ventures, especially in the agricultural sector where majority of the population derive their livelihood is necessary for accelerated economic growth. In this study we look at the determinants of rural households’ decision on credit. The study used random sampling of 20-30 farm households from each district and 97 families responded to the questionnaire. The study concluded that the type of crop, household size and gender of household head positively affected the decision by households to borrow while age squared negatively affects decision to borrow.

KEY WORDS
Household; Credit; Productivity; Farmers; Development.

In developing countries, improvement in productivity through investment in productive ventures, especially in the agricultural sector where majority of the population derive their livelihood is necessary for accelerated economic growth (Awunyo-Vitor 2012). Given the low levels of income in African agricultural production, the accumulation of savings may be difficult. Under such circumstances, access to loans can help poor farmers to undertake investment and increase productivity.

Agricultural credit has been variously defined by authors. According to Nwaru (2004): Agricultural credit is the present and temporary transfer of purchasing power from a person who owns it to a person who wants it, allowing the later the opportunity to command another person’s capital for agricultural purposes but with confidence in his willingness and ability to repay at a specified future date. It is the monetization of promises and exchanging of cash in the present for a promise to repay in future with or without interest. Without the willingness and ability to repay, the promise to repay at a future date would be futile. Credit can be in cash or in form of agricultural inputs.

Agricultural household models suggest that farm credit is not only necessitated by the limitations of self-finance, but also by uncertainty pertaining to the level of output and the time lag between inputs and output (Kohansal and Mansoori, 2009). In Masvingo region of Zimbabwe where rainfall is erratic Agriculture is a risky business and output is uncertain thus facilitation of access to credit for the rural poor plays a role in alleviating rural poverty.

Thus, in order to increase agricultural productivity especially among the rural poor and to assist rural households in maintaining food security, many NGOs and private companies in Zimbabwe and in other developing countries initiated credit programmes including contract farming with the idea that rural smallholder farmers will have access to formal sources of credit and thus improve their welfare (Munongo 2012). Agricultural lending has become a vital function in financial operations as it facilitates the economic growth, agricultural development and improves efficiency. For a farmer to derive benefits from any institutional credit, the size of the loan, the process of granting such loans, timeliness in disbursement and repayment are very important (Nweze, 1991). In Zimbabwe the Bankers Association reported that in 2012 Agriculture received the greater share of loans and combined with the traditional contract farming programmes in most rural communities Agriculture in Zimbabwe receive substantial private funding.

Few studies which have dealt with the credit problems of limited-resource (small) farms have basically studied their attitudes toward borrowing, without exploring the economic validity of such attitudes (McManus; Otto; Snell, Hopkins, and Barnett; Spitze and Bevins; Spitze and Romans; Wise; Woodworth, Comer, and Edwards). The general consensus that emerges from these studies is that relatively few operators of small farms use credit. This problem is also visible in Masvingo where few rural households take credit and this has
reduced the pace of growth in rural banking and financial services. Bagi (1983) argues that conventional methods of estimating the demand for credit use information from only those farmers who have actually used credit and neglect the information from farmers who have not borrowed. Such studies cannot account for farmers’ initial decisions about whether or not to borrow; consequently, valuable information is wasted. Omitting non borrowers from the sample also distorts the properties of the original sample. Thus in this study we seek to determine the factors that determine the decisions by farmers to enter credit deal by looking at complete data including the factors that causes non participation.

The demand of credit is influenced by several factors such as personal attributes of the individual, area specific attributes and credit source attributes (Udoh, 2005). These attributes influence individuals differently irrespective of their gender such that what might determine the demand for credit by a particular female farmer might be different from what determines credit demand by another farmer. For instance, in studying informal lenders and formal credit groups in Madagascar, Zeller (1994) indicated that informal lenders and group members obtain information about the wealth, indebtedness and income potential of loan applicants and hence ration loan demands an in-depth view of total household wealth and leverage of the household.

Nwaru (2004) examined rural credit markets and resource use in arable crop production in Imo State, Nigeria. The study concluded that credit demand was significantly influenced by interest rate, educational level of farmer, amount borrowed previously, farm size and gross savings, while gross income of lender, total cost of lending, source of loan (whether formal or informal), worth of loan application and previous loan repayment significantly influenced credit supply. We wish to carry a similar study in the Masvingo province of Zimbabwe with the view of helping government and the private sector on how they can assist in improving rural household agricultural output and welfare.

THE AGRICULTURAL CREDIT MARKET IN ZIMBABWE

The smallholder agricultural sector plays an essential role in ensuring food security, economic growth and employment creation. Therefore financing smallholder farmers becomes an important undertaking for poverty reduction in developing countries, especially those in Sub-Saharan Africa (Made 2000). The smallholder sector is characterized by diversified farming of crops and livestock. Specialization of commodities is minimal, for example some smallholder farmers specifically grow sugar cane under irrigation. Food crops are grown right alongside cash crops, for example maize, cotton and vegetables.

The Agricultural market was liberalised in 1990 at the inception of The Structural Adjustment Programme (ESAP) in Zimbabwe. Trade liberalisation in the Agricultural sector from this period involved reduction of government direct involvement in the production, marketing and distribution of agricultural commodities. There was also removal of agricultural price controls and subsidies. There was also transformation of Agricultural marketing boards into independent entities with governments having limited shareholding. Zimbabwe is also a signatory to the World Trade Organisation which requires opening up of the agricultural sector.

The major aim of this liberalisation was to create entrepreneurship in smallholder agriculture in the view to increase output and improve food security. The liberalisation thus brought the profit motive in the Zimbabwean Agricultural sector and thus the credit market in agriculture also started to be visible from this period. In Masvingo region this is the period where the production of cash crops such as cotton, paprika, wheat and sugarcane as households sought to enhance their earnings from agriculture.

The creation of independent agricultural marketing entities also led to the growth of the credit market in Agriculture as most firms introduced contract farming to enhance their business. Some companies engaged in certain agricultural commodities have resorted to financing smallholder farmers for a specific crop. One example is the Cotton Company of Zimbabwe, which operates an input-credit scheme for cotton farmers. Loans are recovered from the proceeds of the next season’s crop. This method of financing has proved to be effective for farmers.
Multilateral and bilateral aid has been the most common forms of financing smallholder farmers in the developing world and in Zimbabwe it is also visible. These come as either grants or loans. This form of aid has come about through the recipient governments signing multilateral or bilateral agreements with aid agencies. Through this aid, farmers benefit from large investments, such as dam construction, irrigation facilities, machinery and other equipment. They also benefit from the transfer of technology and other 'softer' sides of financing, such as management and organizational skills (Made 2000).

Central governments have the role of ensuring that there is an equitable allocation of resources for development, especially of marginalized people. Apart from allocating funds from aid agencies, governments in developing countries have made efforts to assist smallholder farmers by financing from their own resources programs such as:

1. Essential infrastructure for agricultural development, including dams, irrigation, roads and provisions of inputs
2. Credit has been subsidized, to some extent, for smallholder farmers, whereby the interest rates are lower than those charged for commercial farmers. In the case of Zimbabwe, the credit has been provided through the Agricultural Finance Corporation. This institution provides short term, medium term and long term credit.
3. In most developing countries, and especially in Sub-Saharan Africa, the government provides research and extension services for smallholder farmers.
4. Decentralization of functions to regional levels has resulted in the empowerment of the local authorities, including the allocation of resources for development projects. However, more often than not, the local authorities lack the necessary capacity to generate more income and finances in order to meet demand from their communities. In the end, they still rely on the central government.
5. In most cases, both central and local governments are constrained in terms of resources and are unable to meet the financing requirements of the majority of smallholder farmers.

Commercial financial institutions comprise the conventionally accepted financial service sources, such as commercial banks and financial houses. The loans offered by these institutions are charged at market related interest rates and require loan guarantees in the form of immovable assets, shares, savings, land, etc. Due to these conditions, most smallholder farmers are not eligible for the loans, and they are considered a high-risk group in terms of repayment.

This research will look at the determinants of the household decision to get agricultural credit which includes contract farming and direct loans.

**METHODOLOGY**

Our study will follow the leads of Zapata, Jr* (2006) on credit decision and rationing rules a study of informal lenders in the Philippines. The borrowing process is characterized by the farmer’s demand for credit and his/her access to credit. To analyze the outcome of this process, it is important to look at the demand and supply factors separately. This can be conceptualized as a sequential decision process. At stage 1, the entrepreneur decides whether to obtain loan from the formal or the informal lenders. Then at stage 2, the informal lenders decide on the amount of funds to be lent and the level of interest rates to be charged (Zeller, 1994). This study will focus on Stage 1.

The factors that may affect the entrepreneurs’ propensity to borrow are age, household size, civil status, gender, education and income. These factors will be the explanatory variables that will be used in the econometric model. Age is expected to have a positive relationship with the demand for loan. The productive capacity of the entrepreneur increases with age. Consequently, the demand for productive fund also increases. The quadratic form of the age will be used in this study to allow for the diminishing impact of age. The diminishing impact of age means a decrease in marginal experience gained with age.

Household size is also expected to affect the decision to borrow by households. An increase in the household size will lead to an increase in the demand for consumption funds. Using the loan for consumption makes the funds unproductive. Therefore, large families and expected to desire high production output hence is expected to borrow. The entrepreneurs
will try to maximize return by choosing a fund source with “lower” borrowing cost or choosing a less risky programme such as contract farming.

Married entrepreneurs are also more likely to borrow. Married individuals need to create wealth to pass on to the next generation hence they are expected to borrow to increase their capabilities and remove the funds constraint in production. Educated entrepreneurs are expected to prefer funding for their agricultural activities. It can be assumed that they understand the dynamics of risk and need to fund agriculture and move from mere subsistence production and try to move up to commercial levels. Low-income individuals need to improve their earning capacity. They do not have sufficient asset that can serve as collateral. Therefore, they will be more inclined to get their funds from a source that can be easily accessed and does not require collateral. In most case these will prefer contract farming so that they will provide labour and land and try to work and ensure a surplus above the cost of funding and salvage something for their families.

Most families in the region receive remittances from their families in town and cities and those in the Diaspora. These households are expected to desire loans for their agricultural activities since this will continue to increase their social status. Agriculture in most rural areas is done communally and households share experiences and compete with each other for better output thus closeness to other households that participates in private sector funding mighty affect the household’s decision to participate.

The type of crop the household produce also determines the decision to get credit. Households that produce cash crops are expected to borrow since they expect higher future earnings and also the activities of cash crop farming require more inputs and are in most cases labour intensive thus require funding.

The PROBIT method was used to test the model. This method was chosen since the dependent variables are binary variables that take zero-one value. Since the probability that an event will occur is non-linear, the usual least squares estimation method is not appropriate. The Linear Probability Model (LPM) is characterized by heteroskedastic errors - variance of the error term varies among observations. Another problem with the LPM is that it yields unrealistic values of probability (i.e., less than zero or more than 1), because it assumes linearity between the explanatory variables and the probability. On the other hand, the PROBIT model constrains the probability to the (0,1) interval. It also assumes that the probability that an event will occur is non-linear. The following equation is used to estimate the probability that the entrepreneurs will obtain its loan from the informal moneylenders.

Entrepreneurs decide whether to borrow from lenders.

\[
\text{Prob(Apply)} = F(\text{agesq}, \text{ms}, \text{edu}, \text{hh}, \text{sex}, \text{income}, \text{rem}, \text{croptp}, \text{closens}),
\]

where: Apply dummy (1 if individual obtained loans from informal lenders, 0 otherwise); \text{agesq} = quadratic form of the entrepreneur’s age; \text{ms} = dummy for marital status (1 if married, 0 otherwise); \text{edu} = number of years in formal education; \text{hh} = household size; \text{sex} = dummy (1 if male, 0 otherwise); \text{income} = entrepreneur’s income (annual revenue of the enterprise was used as a proxy); \text{rem} = dummy (1 if household receives remittances and 0 otherwise); \text{croptp} = dummy (1 if household produces a cash crop, 0 otherwise); \text{closens} = distance from nearest neighbour who participate in the loans market.

**DATA AND RESULTS**

The data used for this study is from a primary data collection in three districts of Masvingo. These districts are Chiredzi, Zaka and Masvingo rural which have similar weather conditions. During this survey, discussions were held with different stakeholders including farmers, traders and extension staff working directly with farmers. We did a random sampling of 20-30 farm households from each district and 97 families responded to the questionnaire. The survey collected valuable information on several factors including household composition and characteristics, land and non-land farm assets, livestock ownership, household membership in different rural institutions, varieties and area planted, costs of production, yield data for different crop types, indicators of access to infrastructure and
irrigation facilities, household market participation, household income sources and major consumption expenses.

Table 1 – Descriptive statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>mean</th>
<th>Standard deviation</th>
<th>minimum</th>
<th>maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agesq</td>
<td>2679.296</td>
<td>1824.857</td>
<td>400</td>
<td>8100</td>
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<tr>
<td>edu</td>
<td>10.61224</td>
<td>3.46003</td>
<td>3</td>
<td>21</td>
</tr>
<tr>
<td>hh</td>
<td>11.28571</td>
<td>5.687751</td>
<td>2</td>
<td>34</td>
</tr>
<tr>
<td>income</td>
<td>23656.4</td>
<td>22034.63</td>
<td>800</td>
<td>89000</td>
</tr>
<tr>
<td>Closens</td>
<td>5.94898</td>
<td>3.512489</td>
<td>1</td>
<td>32</td>
</tr>
</tbody>
</table>

Source: Author's computations.

Table 2 – Determinants of Propensity to Borrow

<table>
<thead>
<tr>
<th>Explanatory variable</th>
<th>parameter</th>
<th>Standard error</th>
<th>probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>agesq</td>
<td>.0005542</td>
<td>.0001502</td>
<td>0.000</td>
</tr>
<tr>
<td>ms</td>
<td>.0097235</td>
<td>.5066464</td>
<td>0.985</td>
</tr>
<tr>
<td>Edu</td>
<td>.0344881</td>
<td>.0507622</td>
<td>0.497</td>
</tr>
<tr>
<td>Hh</td>
<td>.1219105</td>
<td>.0456555</td>
<td>0.008</td>
</tr>
<tr>
<td>sex</td>
<td>1.374783</td>
<td>.5861633</td>
<td>0.019</td>
</tr>
<tr>
<td>Income</td>
<td>.0000316</td>
<td>.0000242</td>
<td>0.191</td>
</tr>
<tr>
<td>Rem</td>
<td>.0977715</td>
<td>.1431107</td>
<td>0.494</td>
</tr>
<tr>
<td>Croppt</td>
<td>1.223288</td>
<td>.0847374</td>
<td>0.00133</td>
</tr>
<tr>
<td>Closens</td>
<td>.0350914</td>
<td>.0475879</td>
<td>0.461</td>
</tr>
</tbody>
</table>

Source: Author’s calculations from stata

Probit regression: Number of observations = 97; Wald chi2 (9) = 30.28; Log likelihood = -19.607798; Prob > chi2 = 0.0004

Table 2 above shows the probit results, from the results age squared is negative and significant this shows the diminishing impact of age and as people get older the returns to experience vanish thus they become less productive and their demand for loans falls.

Household size is positive and significant thus an increase in the size of the family incentivises the household to increase its productivity. In most instances families that are agriculturally productive in rural Zimbabwe are polygamous hence they are big and the richer the family the more chances are that the family head if male will increase the number of wives and children thus the family continues to grow.

The gender variable is positive and significant thus male headed families are more risky taking than female headed families. This is based on the traditional belief that women in most cases are content with average life styles and male ego pushes male headed families to fight for surplus production for societal respect and status.

Crop type is also positive and significant thus those who embark on cash crop production borrow since they expect to get good returns. Cash crops grown in the region include sugarcane and cotton which have high returns and also require huge investments thus the need for funding.

CONCLUSIONS

The government of Zimbabwe need to intervene with seed and fertilizer subsidies since the most vulnerable families are not keen to participate in the private sector initiatives. Therefore in most case those who are in the middle class are benefiting and majority who are poor are not accessing the loans thus societies in Masvingo remain in need of food aid.

REFERENCES


