Journal of Development and Agricultural Economics Vol. 3(6), pp. 236-240, June 2011
Available online at http://www.academicjournals.org/JDAE
ISSN 2006- 9774 ©2011 Academic Journals

Full Length Research Paper

Effect of formal credit on the performance of the poultry industry: The case of urban and peri-urban Kumasi in the Ashanti Region

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Accepted 24 April, 2011

Farm net income was used as a measure to investigate the effect of formal credit on the performance of the poultry industry. Forty credit and non-credit users each were selected purposively for the study. Regression model was employed for the analysis. Results showed that there was a significant difference (t-value of 0.012 at 5%) between the net income of large poultry farmers who used credit and those who did not. This means that large-scale poultry farmers are likely to perform better than small-scale farmers when credit is made available to both groups. Therefore it is recommended that formal financial institutions should focus on giving loans to large-scale poultry farmers while not neglecting the needs of small-scale farmers.

Key words: Credit, poultry industry, peri-urban, urban, Kumasi.

INTRODUCTION

Livestock/poultry is one of the most important agricultural sectors serving as 'safety net' providing ready cash in emergency needs as well as an important source of protein for consumers. Its role in rural livelihoods and food security is enormous. In Ghana, it contributes 40% of the national animal protein supply and is able to produce enough poultry for self-sufficiency (FASDEP, 2002).

There are several challenges facing the poultry industry. According to Sakyi (2008) financial intermediaries are continually faced with challenges in providing financial services to agricultural sectors. Others include a high interrelated covariant risk which is often due to variable rainfall, pest and disease, price fluctuations, constrained smallholder access to inputs, advice and market, dispersed demand for financial services due to low densities and small size of individual transactions, high information/transaction costs of individual transactions due to remoteness of clients and heterogeneity among communities and These issues contribute to the reluctance of most farms (Wayo, 2002).

formal financial institutions to enter rural markets because of the high cost and risk of doing business in harsh economic and physical environments. In their absence informal financial institutions emerge, but typically they are able to offer a narrow range of financial services in a small geographic area (Mpuga, 2004).

There are evidences that in some African countries, some farmers do not utilize effectively the funds they receive for the intended purposes. Because of this, formal credit has seldom made marked contribution to economic development (FAO, 1995). Ghandi (1984) noted that despite the increasing amounts of formal loans and advances granted to the agricultural sector by banks and other formal institutions, there has been no corresponding impact on the agricultural sector. However, Hartmut et al. (1989) held a different view by reporting from their study that it is only when credit is used by farmers that that are in a position to take advantage of the production, without which it is impossible for them to change their methods of farming. The performance of the industry in Urban and Peri-urban Kumasi was measured based on the net profit obtained by the farmers as presented in their records in using formal credit in financing their farming operations

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Table 1. Major source of capital of the poultry farmers.

Source of capital			Source from commercial bank		
Responses	**Frequency**	**Percent**	**Responses**	**Frequency**	**Percent**
Borrowing	9	22.5	Commercial banks	21	52.5
Savings	28	70.0	Rural banks	12	30.0
Gift and inheritance	3	7.5	Credit unions	2	5.0
-	-	-	Others	5	12.5
Total	40	100.0	Total	40	100.0

Source: Field Survey, 2009.

Table 2. Requirements for formal credit from the farmers' point of view.

Item	Responses	
	Yes	**No**
Output	100	0.0
Farm records	90.0	10.0
Saving with the bank	82.5	17.5
Collateral	75.0	25.0
Guarantor	60.0	40.0
Farming group	57.5	42.5
Past repayment experience	27.5	72.5
Character	10.0	90.0
Place of residence	10.0	90.0

during the period 2003-2007. Important considerations of formal credit include amount obtained by the farmers, the requirements to obtain such credit and how the amount obtained should be utilized. The question that arise is 'has the formal financial credit accessed by the poultry farmers in the study area had a beneficial effect on the performance of the poultry industry?'

RESEARCH METHODOLOGY

The study area for this research was Urban and Peri-urban Kumasi. All poultry farmers in the study area comprised the population. Data were solicited from eighty (80) farmers by administering structured questionnaire. This consisted of two groups: 40 farmers who utilized formal credit in their operations and 40 farmers who did not use formal credit during the period 2003-2007. The simple stratified random sampling was carried out based on the groupings of poultry farms in Ghana divided into small-scale (less than 5,000 birds), medium-scale (between 5000 to 10000 birds) and large-scale (more than 10000 birds). The data collected from the respondents were analyzed using SPSS version 16.0. Descriptive statistics such as frequency distributions and percentages and inferential statistics that is chi-square test of independence were employed in analysing the data.

RESULTS

Sources of formal credit received

Table 1 shows that most of the farmers (52.5%) accessed credits from commercial banks. A considerable number of the farmers (30%) also accessed loans from rural banks which are noted to extend banking activities to the doorsteps of people. The rest 12.5% was received from other sources such as ProCredit Savings and Loans Company Ltd., First Allied Savings and Loans Company Ltd., and Unique Trust Financial Services Ltd.

Requirements for formal credit

Farmers' and banks' perspective

All farmers (100%) reported that their annual output was a major determinant used in assessing their creditworthiness. Inspection of farm records (90%) was ranked second while a savings with the Bank (82.5%) was ranked third. Collateral (75%) and guarantor were ranked fourth and fifth in terms of such requirements (Table 2).

Utilization of credit by the poultry farmers

Table 3 reveals that 81% of the total amount of the formal credit accessed was used in purchasing feed. Twelve percent of the total income was used to buy birds and 7% was utilized to purchase vaccines, equipment, land and maintenance costs.

Table 3. Utilization of total amount of credit received.

Uses	Percent
Birds	12.0
Feed	81.0
Others	7.0
Total	100.0

Source: Field survey, 2009.

Table 4. Estimated models for the effect of formal credit on net income of small and large scale poultry farmers.

Variable	Small scale		Large scale	
Constant	-1107.788	(-0.8329)	-1062.053	(-0.0759)
Education	39.8524	(0.6984)	287.0146	(0.2997)
Experience	136.7454**	(2.1602)	23.7544	(0.0346)
Birds	1.05636*	(6.4313)	1.1964**	(2.9269)
Credit	0.3842	(0.9920)	5.0858*	(3.1642)
Cost	-0.7719	(-1.0387)	-14.3928*	(4.2612)
BJ (2)	0.6793	(0.7120)	2.0724	(0.3548)
White Test, p-value	7.7318	(0.6550)	16.6515	(0.0983)
JB(normality), p-value	0.0329	(0.9836)	3.5605	(0.1686)
DW	2.3569		2.3982	
Co. of Det (R^2)	0.8070		0.8196	
Adj. R^2	0.7380		0.7552	
F- statistic, p-value	11.70535	(0.0001)*	12.71987	(0.0001)*

*, significant at 1%; **significant at 5.

Effect of formal credit on the net income of farmers

Estimated model for both small and large scale poultry farmers who use formal credit

Table 4 reveals the results of the estimated model for large- scale poultry farmers who used credit. It shows that the probability values of the number of years of education (0.77) and that of the experience of respondents (0.97) are insignificant even at 10%; hence the null hypotheses are accepted. However, the probability value of the number of birds raised by the poultry farmers (0.01), amount of credit received (0.01) and the cost of credit (0.00) are significant at 5, 5 and 1% respectively. Therefore, the null hypotheses are rejected.

Table 5 presents results of the estimated model for small-scale poultry farmers who used credit. It shows that the p-values of the number of birds raised (0.000) and the number of years of experience in poultry business (0.0486) are significant at 1 and 5% respectively. On the other hand, the p-value of the number of years of formal education (0.4964), amount of credit received (0.3380) and the cost of credit (0.3166) are insignificant even at 10%.

The t-value obtained for testing the sixth hypothesis to ascertain a significant difference between the net income of large- scale poultry farmers who used credit and those who did not as well as that of small scale farmers are 0.012 and 0.569, respectively (Table 6).

DISCUSSION

Sources of formal credit received

Since personal savings limit the financial ability of farmers to employ modern technologies, they are likely to use a number of possible ways of acquiring funds to meet short term shortfalls in capital. Credit is based on trust in people's ability and willingness to pay bills when due (Kapoor et al., 2001). A study by Awuku (2009) showed that most poultry farmers had multiple accounts and mostly supplemented formal institutional funding with credit from either friends or relatives or other convenient sources. The low patronage of rural banks could be due to unfavourable services provided by rural banks in the country (Baah, 2008).

The farmers who obtained loans from credit unions were basically small-scale operators. This may be because credit provided by cooperative societies was safe as it does not hamper the borrower's stability and productive capacity (Fitchett, 1999). It could also be due to the flexible repayment conditions such as

Table 5. Estimated model for large-scale poultry farmers who used credit.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Education	287.0146	957.5865	0.299727	0.7688
Experience	23.75437	687.5004	0.034552	0.9729
Birds	1.196435	0.408775	2.926877	0.0110
Credit	5.085775	1.607293	3.164186	0.0069
Cost	-14.39277	3.377666	-4.261159	0.0008
C	-1062.053	13988.72	-0.075922	0.9406
R-squared	0.819586	Mean dependent var		32588.15
Adjusted R-squared	0.755153	S.D. dependent var		39377.33
S.E. of regression	19484.71	Akaike info criterion		22.83597
Sum squared resid	5.32E+09	Schwarz criterion		23.13469
Log likelihood	-222.3597	F-statistic		12.71987
Durbin-Watson stat	2.398187	Prob(F-statistic)		0.000086

Source Field survey, 2009.

Table 6. Estimated model for small- scale poultry farmers who used credit.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Edu	39.85243	57.06165	0.698410	0.4964
Exper	136.7454	63.30307	2.160171	0.0486
Bird	1.056359	0.164252	6.431318	0.0000
Credit	0.384159	0.387267	0.991977	0.3380
Cost	-0.771888	0.743132	-1.038696	0.3166
C	-1107.788	1329.979	-0.832936	0.4189
R-squared	0.806968	Mean dependent var		5614.300
Adjusted R-squared	0.738028	S.D. dependent var		2616.743
S.E. of regression	1339.334	Akaike info criterion		17.48106
Sum squared resid	25113408	Schwarz criterion		17.77978
Log likelihood	-168.8106	F-statistic		11.70535
Durbin-Watson stat	2.356905	Prob(F-statistic)		0.000135

Source: Field survey, 2009.

agreed upon period of payments.

Requirements for acquiring formal credit: Farmers' and banks' perspective

Annual output of farmers formed the basis for the loan quantity being decided. As a productive capital, one could not expect it to be ignored either. The use of farm records stood prominently in both perspectives. This is confirmed by Arzeno (2004) who stated that if the farmer decides to borrow money for the farm operation, the loan officer or bank will ask to see farmers' financial records so help determine farmers' repayment capacity. A farmer who has a well-kept farm records is in a more favourable position to borrow required funds than one without such farm records. Without it, obtaining a farming loan may be an uphill battle (Iton, 1999). Meyer and Nagarajan (1997) considered collateral as an important factor influencing access to credit as was the case in this study. Because of the absence of complete information about borrowers, banks require collateral either as a mechanism to enforce loan payment or as a screening device to sort borrowers of varying risk levels.

Utilization of credit by the poultry farmers

The reason why most of the farmers used the loans to purchase feed was that they experienced high cost of feeding during the production process. Similarly, Ojo (2003) found that greater portion of credit accessed by poultry farmers is used to buy feed because about 80% of the cost of production is due to the cost of feed. In Ghana, a study by Okantah et al. (2003) found that 65% of poultry farmers held the view that the cost of feed is high and this is mainly due to the high cost of

maize in the market.

Effect of formal credit on the net income of farmers

Estimated model for both small and large scale poultry farmers who use formal credit

The conclusion from the model estimation is that both the number of years of formal education as well as the experience in poultry production has no effect on the net income of the respondents. However, the number of birds raised and amount of credit received have a positive effect while the cost of credit has a negative effect on the net income of large-scale poultry farmers. It can also be concluded that the number of birds raised and the number of years of experience in poultry business had positive significant effect on the net income of small-scale holders. The results indicate that there is a significant difference between the net income of large- scale poultry farmers who used credit and those who do not, but insignificant in case of small-scale farmers. These results agree with a study conducted by Jones et al. (1999) stating that net incomes of small-scale farmers were found to be influenced by the number of years of education and livestock holding (number of birds). Arthur (2004) also stated that there was a strong positive correlation between credit and net income, thus, about 53.49% of the variation in net profit was accounted for by its relationship with credit. With respect to the effect of the number of years of experience on technical efficiency which affect net profit, the findings of Ojo (2003) were consistent with the result obtained for the large scale farmers but contradict its effect on the net profit of the small scale poultry farmers in the present study.

CONCLUSION AND RECOMMENDATIONS

The important factors used for assessing credit worthiness are annual output, farm records, and savings with the bank, collateral and guarantor. Farmers use their loans to purchase feeds. It can be concluded that the number of birds raised and the number of years of experience in poultry business had positive significant effect on the net income of small-scale holders. There is a significant difference between the net income of large- scale poultry farmers who used credit and those who do not. The study revealed that formal credit has a positive effect on the net income of large-scale poultry farmers in the urban and peri-urban Kumasi.

The study recommends that there should be subsidy on the price of feed and other feed ingredients for feeding poultry. Financial institutions can also focus on providing loans to large-scale farmers due to its stimulating effect on them. However, it should neither result in negligence for the needs of the small-scale farmers who form the majority of poultry farmers in Ghana.

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