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# Investigating the Impacts of Credits Granted by Agricultural Bank of Iran on Economic Conditions of Farmers in Hirmand Region

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## Abstract

One of the obstacles that has caused agricultural sector not to reach significant and expected growth is shortage of short, medium and long-term funds to finance various activities of this sector. This study aims at investigating the economic impacts of credits granted by Agricultural bank on farmers on Hirmand region. The statistical population of the survey included 4691 farmers of Hirmand region and the sample size were 117 farmers who had received loan from agricultural bank at least once during 2006-2011. The Sample was selected using simple random sampling and questionnaires were distributed among them. The results from t-Test showed that significant level for income manufacturing variants was 0.000 and for investment and livelihood variants were 0.014 and 0.077, respectively. This significantly levels suggest that received loan from bank has increased income and production, the living conditions of borrowers, economic profitability and increased productivity.

### Keywords:

*Agricultural sector, Credit, Agricultural Bank, Economic impacts, Loan, Hirmand region*

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## INTRODUCTION

In most developing countries, agriculture provides employment to a large segment of the population and it is also the key to sustainable economic growth in these countries (Enoma, 2010). Growth of the agricultural can bring development in other sectors and also can village an important role in poverty alleviation (Meijerink and Roza, 2007). Agricultural sector is also facing shortage of capital, so that this constraint first a uses agricultural sector face through endogenous and exogenous investment; and second lead them towards using informal sources (Ghorbani and Nemati, 2011).

One of the important needs of the agricultural sector that is not met in developing countries is capital and credits. Capital due to the ability to turn to other factor splays an important role in the production process. Proper utilization of capital and combining it with other inputs increase productivity of production elements. Since capital provides using appropriate and enough inputs for production, necessity of capital forming and financing it is a must (Mir *et al.*, 2004). In the meantime, bank credits a san appropriate alternative can provide the necessary capital for agricultural sector. In agricultural sector, allocating credits is of particular importance. Agricultural credits increase production efficiency where Management and work power of people lacking funds is combined with funds of people who do not have the knowledge and ability of agricultural work (Koohpaei, 2012).

found that Agricultural credit on the one hand due to lack of agricultural income for investing and on the other hand, because of the need for investment in this sector, is of great importance since short-term credits are important in providing financial needs of farmers and Medium and long-term credits are important in providing chance for Infrastructure investment for agricultural producers and increase production and productivity (Ghorbani and Nemati, 2011).

Access to credit has a direct impact on the welfare of farmers and their job performance (Briggeman *et al.*, 2007). The role of credit is very important agricultural economics, but its limitations are that could affect agricultural investment behavior (Adebayo and Adeola, 2008). Farmers and producers of agricultural products, to provide required capital and credit in their

producing, use different methods like personal savings and receiving loans and credit facilities and financial resources (Moghadasfarimani *et al.*, 2007). In most Countries, Governments or financial institutions are responsible for providing credit to agriculture sector. Agricultural Bank of Iran is the most important institution in financing this sector and this bank provides more than three quarters of the credits granted to the sector. Several researches in this field have been done so far.

Diane (1998) with access to a credit check on the welfare believes that access to formal credit by enabling households to reduce their debt from informal sources, the annual household incomes of beneficial effect. Shahidue and Faruquee (2003) examined the impact of agricultural credit on household welfare in Pakistan. The results of their study showed that agricultural credit not only crops but also on household consumption might have impact on other indicators of well-being might have the effect. Pajuyan and Farzinmotamed (2006) In the study titled Evaluation of the Effectiveness of Agricultural Bank granted credits on investment and employment in the agricultural sector capital that of the credits granted by Agricultural Bank during considered years on investment, employment and value added in agricultural sector was positive. Also Yaghobi and Torkamani, (2004) examined the Impact of formal credit on profit and agricultural production of Marvdasht city. Their results showed that the variable of received loans by farmers from formal credit sources have positive and significant impact at 10% on the level of agricultural production and profit. Therefore, by increasing credits the farmers receive, their production and profitability increased. Another study, by Bakhtiari and Paseban (2004) with the title "role of bank credits in developing job opportunities" showed that agricultural credit in the short and long term has significant positive impact on investment. Eftekhari and Eynali (2005) the study entitled "assessment of agricultural bank's credits in rural economic development in Khodabandeh city, the conclusion obtained was that rural credits of this bank has played a major role in economic development of the peasants as one of the main aspects of rural development at 5% of significance level.

In general, considering crucial and determinant role of agriculture in the economy of the Hirmand Region, stagnation of this section makes the economic structure of farmers in this city instable and fragile. Accordingly, granting facilities of agricultural bank is performed to stimulate agriculture, farming activities and financing economic and income-generating projects in this sector. Present study aims to investigate the effects of granted Agricultural Bank credits on economic situation of farmers in Hirmand Region and tried to response to the following questions:

What are the economic impacts of agricultural loans on farmers?

How much important is the agricultural loans in improving productivity?

### MATERIALS AND METHODS

The present study was applied in terms of purpose. Data collection method was library and field (questionnaires and interviews) and analysis method was descriptive and inferential. Validity of the questionnaire was assessed by performing panel of experts. In order to assess reliability, Cronbach's alpha test was used and Cronbach's alpha coefficient was obtained 87 percent, indicating a good level of reliability for research tool. Statistical population included 4619 farmers of Hirmand Region who received agricultural loans during the period 2006 to 2011 at least once. Size of the sample was obtained through Cochran formula with calculating the variance of population as 117 and the using simple random sampling method and drawing, sampling has been done.

$$n = z^2 pq / d^2 / (1 + 1/n(z^2 pq / d^2 - 1)) \quad (1)$$

Usually in the above formula, the maximum permissible error (d) is 0.05, Confidence: 0.95,  $z=1.96$  and the values of p and q, each equal to

0.5 and the population size is considered (N). P value is equal to 0.5 since If the  $P=0.5$ , n finds the maximum possible value and this causes the sample to be large enough. For data analysis SPSS software version 19 was used and to analyze the results of the study T-test and Spearman correlation test was used.

### RESULTS AND DISCUSSION

The Results obtained from descriptive statistics show that the average age of respondents was 47.38. The youngest respondent was 29 years and the oldest was 72 years. In terms of gender, the results showed that the 92.3 percent of farmers were men and only 7.3 percent of farmers were women. Most of the farmers (29.1 percent) were illiterate, 35.8 percent of them had literacy as reading and writing and only 11.9 percent of farmers had an academic degree. Among the respondents, 98.3 percent were head of families. The results of data related to main occupation of the farmers showed that 78.6 percent of farmers stated farming as their main job, 19.7 percent stated animal husbandry as the main job and only 1.7 percent of borrowers had occupation other than farming and ranching as their main job. Information about the income of farmers showed that 45.3 percent of farmers had annual income between 8 and 12 million, 10.3 percent of them up to 3 million, 13.7 percent between 3 to 5 million, 26.5 percent between 5 to 8 million, and only 4.3 percent had annual income more than 12 million. In terms of agricultural activities, 35.9 percent of borrowers had 10 to 15 years of work experience are 18.8 percent between 15 to 20 years and the minimum work experience in agriculture was related group with 1 to 5 years working experience that included only 5.1 percent of the respondents. Also, the statistics showed that 17.9 percent of people had 5 to 10 years work experience in agriculture and 22.2 percent of individuals had over 20 years of

Table 1: The loan amount received.

The loan amount received (IRR)	Number of receivers	Percentage
Less than 2million	2	1.7
20-50	2	1.7
50-100	19	16.2
100-150	53	45.3
More than 150 million	41	35.0
Total	117	100.0

Table 2: Distribution of loans made under the

	Number of	Percentage	The actual percentage	Cumulative percentage
Input sand equipment	63	53.8	53.8	53.8
Forage supply	29	24.8	24.8	78.6
Purchase of livestock	25	21.4	21.4	100.0
Total	117	100.0	100.0	

experience in their agricultural one. Statistics on the number of loans taken by the farmers revealed that 57.3 percent got loans 2 times from Agricultural Bank, 21.4 percent got once and 21.3 percent more than 2 times.

Information related to loans received indicates (Table 1) that the 45.3 percent of people received 100 to 150 million, 35 percent more than 150 million, 16.2 percent got 50 to 100 million and 3.4 percent of farmers received up to 50 million as loan.

The frequency distribution table titles of loans received (Table 2) shows that the highest number of loans received with 54 percent of borrowed loans has been for purchase of inputs and farm implements.

Borrower farmers in terms of education level were classified into seven groups from illiterate to bachelor and above. The study shows that the among borrowers, significant differences were observed in terms of educational level and According to Mann Whitney test results (Table 3) there is relationship between the major of borrowers and the economic effects so that its impact on the provision of basic needs and

increasing production in the agriculture graduates are seen. Farmers in lower ages with higher education levels tend to use more advanced technology, increases in acreage, increase production and meet their consumption and livelihoods needs more easily. Also, Varmazyari *et al.* (2010) in his research suggests that farmers who have an academic degree have used more agricultural loans than farmers who are illiterate or have primary education, and the average of the three groups indicated that by decreasing levels of education, moral hazard in using loans have also increased.

According to the table of Spearman test (Table 4), multiplicity of long-term taken by farmers brings better economic profitability and improve the living conditions of farmers and increase agricultural production. According ideas of borrower farmers, agricultural in growing season which is generally spring has good prosperity. They have by receiving two loans and more they could provide sufficient fund to increase acreage, purchase inputs and agricultural implements and ultimately increase their production. This increase in production at this time of year

Table 3: Whitney test to compare two groups of farmers with agriculture and non-agriculture.

	Effect of loans on increasing agricultural production	Effect of loans on subsistence needs
Mann-Whitney U Test	1204.500	1205.00
Wilcxcon W Test	2530.500	2531.00
Z	-2.780	-2.769
Asymp. Sig.(2-tailed)	0.05	0.06

a. Data group: Course (agricultural or non-agricultural)

Table 4: Spearman's test to explore the relationship between the number of loans received by farmers and its economic impact.

	Increase production	Improving quality of life	Profitability
Spearman test	0.225*	0.250**	0.403**
Asymp. Sig.(2-tailed)	0.015	0.007	0.000
Number of samples	117	117	117

\*\*p<0.01

\* P<0.05



Table 5: Test "F" to compare the economic impact of agricultural loans, loans to the one-year, three-year and five-year.

	SS	DF	Mean Square	F	p-value
<b>Between Groups</b>	4.025	2	2.012	6.753	0.002
<b>Within Groups</b>	33.974	114	.298		
<b>Total</b>	37.998	116			

Table 6: The frequency distribution of employment.

	Percent	Number
<b>Yes</b>	50.4	59
<b>No</b>	49.6	58
<b>Total</b>	100.0	117

Table 7: Table of jobs created by agricultural loans granted in the sample.

	Percent	Number
<b>Family Involvement</b>	26.5	31
<b>Worker</b>	25.6	30
<b>Total employment generated</b>	52.1	61
<b>Without job creation</b>	47.9	56
<b>Total</b>	100.0	117

brings good profits, thus farmer gains appropriate level of income and thus his purchasing power increase and his life will be improved.

Results show that there is a significant difference in the efficacy of long-term loans repaid in five years, with short-term loans and long-term loans have better economic effects (Table 5). The result similar this is brought in book of agricultural development policies by Roger, DC. Norton (2004) According to his research conducted in countries such as Kenya and South Africa, one of the important needs of agricultural sector that have not been well serviced in developing countries, is long-term credit. He stated that a lot of investments in the agricultural sector require long-term credits and in this regard brought arguments that justify the need for government's support and financial institutions from long-term credits. Also, it can be stated that since crops are gained after a relatively long time after investing, it would be easier for the farmer to pay back the loan installments and the other hand farmer can increase his productivity in long-term timeframe, and make adequate use of the loan.

As is evident from the above Table 6, among 117 individuals who received agricultural loan

at least once during the 85 to 90 roughly 59 of them, fifty percent, stated that through loans granted by Agricultural Bank they could starting up new production activity in the agricultural sector And farmers who using agricultural bank loans had started a new production activity needed human power To make the location of production and its management. Therefore, the farmers were taking advantage of their family members first and if they did not use domestic labor force, they had to employed workers. Therefore, most of farmers used their family members to build a production place and manage it. Generally this indicates that Agricultural Bank loan has had little impact on the creation of the new production activities in agriculture sector of the city (Table 7). Pajuyan and FarzinMotamed (2006) also the study suggests that credits granted by Agricultural Bank had Very little impact on increasing employment in agriculture sector and states that Perhaps due to lack of proper supervision on the use of credits in job creating activities, and provision of credit to farmers to enhance their well-being that something natural In developing countries.

One-sided t-test results (Table 8) indicated that getting loan increase income, production, and

Table 8: One-sided t-test to assess the economic impact of agricultural loans on borrowers.

	Test Value = 3		
	t	DF	p-value
The impact of increased income on loans	14.146	116	0.000
Impact of loans on the rise	9.429	116	0.000
Impact of loans on more investment in agriculture	1.482	116	0.141
Impact on improving the living conditions of the loan borrowers	2.961	116	0.004
Impact on profitability for mortgage borrowers	3.819	116	0.000
Impact of loans on providing basic needs	1.784	116	0.077
Impacto de los loans en el aumento de la productividad	11.978	116	0.000

improve the lives of borrowers, Economic profitability and productivity. Yaghobi and Torkamani (2004) also found in their study that received loans of farmers had positive and significant impact on profits and agricultural production and expressed that by increasing received credits of farmers, their profitability and production increased which shows the advantage of providing formal credits in increasing farmers' income. Baghaei *et al.* (2007) Concluded in his study that the use of Agricultural bank facilities will help farmers to increase production and income.

### Policy implication

Results of data related to the main occupation of the farmers in the sample under study revealed that 78.6 percent of farmers stated farming as their main job, 19.7 percent animal husbandry and only 1.7 percent of borrowers had non-agriculture and animal husbandry job as main occupation. This indicates that the loan borrower tend to continue farming despite the risk from agricultural activities. Information about the income of farmers surveyed indicated that 45.3 percent of farmers had annual income between 8 and 12 million IRR, 45.3 percent up to 3 million IRR 13.7 percent between 3 to 5 million, 26.5 percent between 5 to 8 million IRR, and only 4.3 percent had annual income more than 12 million IRR. This suggests that agricultural activity, in case of availability of conditions, have generally good income to farmers because by increasing acreage through providing agricultural machinery using loans taken, they could increase profitability in this sector. In terms of agricultural activities, most experience belonged to the group 10 to 15 years that included 35.9 percent of borrowers and the least agriculture- work experience was 1

to 5 years that belonged to only 5.1 percent of the respondents. Statistics related to number of loans taken by the farmers also indicated that the 57.3 percent received loans from the Agricultural Bank for 2 times, 21.4 percent once, and 21.3 percent more than 2 times. The study shows that significant differences are seen among the borrowers in terms of educational level and according to Mann-Whitney between test results; there is relationship between borrowers and the economic impacts obtained so that its impact is observed on the provision of basic needs and increasing production in the agriculture graduates. Farmers with lower ages and higher education levels tend to use more of advanced technology, increase in acreage, production and satisfy consumption and livelihoods needs more easily. More over 50 percent of loan receivers believed that by using Agricultural Bank loan they could start up new production activity in the agricultural sector and this groups of borrowers need human power for building a place for production and management of it. So, the Farmers first use their own family members, then if they could not take advantage of domestic resources, had to hire workers. Also, most of farmers used their family members in and building place for production and its management.

Generally, Agricultural Bank loans had little impact on the creation of new productive activities in agriculture in this city. One-sample t-test results indicated that borrowing loan increase income, production, and improve the lives of borrowers, economic profitability and productivity. Spearman's test results showed that the greater area of land, profitability rate of the loan is greater and to greater amounts increases revenue of the beneficiary. The survey shows that increasing acreage provides ground for optimal

allocation and efficient use of it in farm. According to test results it can be concluded that the higher the interest rate of loans, the living conditions of farmers gets worse. Due to the seasonal nature of agriculture and low rates of return on investment in this sector, it is expected that by increasing interests, amount of paying back by farmers increase and farmer fails to repay the loan installments. According to the Spearman test table, multiplicity of loans taken by the farmers makes economic profitability better and improves the living conditions of farmers and also increases agricultural production. According to the loan borrower farmers' view, farming in growing season that is generally spring is prospered. They believed that by getting two and more loans, could provide enough funds to increase acreage, purchase agricultural inputs and ultimately increase their production. Results indicate that there are significant differences in the efficiency of loans which are repaid in long-term five-years and loans that are short-term and long-term loans have better economic effects. Also it can be stated that since crops are obtained after a relatively long time after investment, payments be easier for the farmer and the farmer can increase its productivity in long-term and make adequate use of loan.

### RECOMMENDATIONS

Due to the relatively high costs in the agricultural sector, in order to avoid the financial burden on farmers and improve their living conditions, it is recommended that agricultural Bank do not determine interest rate of loans mentioned high and reduce it as much as possible.

Since the education variable has positive and significant relationship with the use of agricultural loans in producing the agricultural activities, it is suggested that the Agricultural Bank put this variable in primary preference of lending criteria.

The results show that granted loan effectively lead to an increase in production, revenue, profitability, and improve the producer living conditions. Therefore it is recommended that agricultural bank increase its credits granted in this relation so that in the near future we witness the growth and development of the agricultural sector in the area of study.

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