

Impact of Agricultural Credit on Production of Wheat Crop: A Case Study of District Faisalabad-Pakistan

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Abstract: Agriculture sector plays an important role in the economic development of Pakistan. Wheat is an important and most cultivated crop because it is an essential ingredient of food commodities. Credit plays a vital role in agricultural farming by indirectly participating in purchasing of agricultural inputs i.e. seed, fertilizer, irrigation, machinery and labor etc. Majority of the farmers are poor and they are not able to fulfill the cash requirement of farming, therefore credit has become their dire need. Due to credit farmers can timely purchase the agricultural inputs which resulting a bumper crop. The objective of this study is to depict the impact of credit on the production of wheat crop. Survey was conducted and random sampling technique was used to select the sample borrowers. The collected data was interpreted through “Cobb Douglas Production Function” by using statistical software (SPSS 16.0). The results showed that credit has positive and significant impact on wheat production. The values of R^2 and F-statistics are found significant which represented that all selected variables are highly significant. The study not only shares the importance of credit to perform any agriculture activity but also helpful for economists and policy makers for designing agri financing policies.

Keywords: agricultural credit; wheat production; empirical analysis; Pakistan

1. Introduction

In Pakistan, agriculture is considered a major sector of the economy. Different kinds of crops are cultivated here. These crops are food like wheat, rice, cotton, sugarcane and maize and cash crops i.e. cotton, sugarcane, tobacco etc. Agriculture sector is contributing 24% of GDP because a large portion of population is engaged directly or indirectly with this sector. In Pakistan, agriculture is also a major source of earning foreign exchange through 64% of exports that are based on agricultural raw material. Pakistan's economy gets high foreign exchange by exporting wheat, rice, cotton crops etc. A large number of agriculture based industries are working

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and getting raw material from these crops. It is also generating employment for domestic labor force especially for illiterates; therefore there is no need to get labor from other countries at higher wages. Population of Pakistan is increasing day by day which tends to increase a demand of food crops. Therefore, wheat is considered an essential ingredient for daily food consumption. About 23, 311 thousand tons wheat and 6,883 thousand tons rice are produced in the country (Pakistan Economic Survey, 2009, p. 10). The sector has become a source of generating revenues for both Federal and Provincial Governments.

Credit is always important to perform any economic activity. Agricultural credit is a financial help to the farmers to fulfill the cash requirement of farm inputs (seeds, machinery, pesticides, labor and water chargers etc). The impact of credit in the form of enhancing purchasing power of quality seeds and fertilizers for small farmers and improves crop output (Ahmad et al, 2006).

In Pakistan, Most of the farmers have inadequate financial sources to purchase quality seeds, fertilizer, pesticides, and machinery etc; therefore the credit has become their basic need. There are two main sources of credit both formal and informal financial institutes to fulfill their financial needs. Informal financial institutes include friends, relatives, shopkeepers and other money lenders etc. they charge high interest rate on strict conditions from the oppressed farmers. On the other hand, formal financial institutes include Zarai Taraqiati Bank Limited, Cooperatives Societies and Commercial Banks etc. These institutions provide agricultural credit to the farmers for cash requirement of farm inputs and contributing a major role for the development of agriculture sector. Easy access to the formal credit institution is considered a constructive change from informal to formal credit market which not only increases the production capacity of the farm but also increases the income of poor farmers in rural areas (Sarap, 1990).

2. Historical Background of Agriculture Institutional Credit in Pakistan

In 1958, Taccavi loans were the main source of agricultural credit through the regulation of West Pakistan Agricultural Loan Act (WPALA). Revenue departments of Provincial Governments gave out Taccavi loans for the purpose of purchasing agriculture inputs i.e. fertilizer, seeds, pesticides and technology etc (Yusaf, 1984). Since 1993 Taccavi loans finished because of the high contribution of credit disbursement from formal institutions (Iqbal et al, 2003). The objectives

of cooperative societies were to disburse credit to the poor farmer for agriculture expenditure and invented to compare with informal credit sources (Qureshi and Shah, 1992). In 1976, Federal Bank for Cooperative (FBC) was established having a plan to change fundamental approaches to credit. (Iqbal et al, 2003). In 1950, Agricultural Development Finance Corporation (AFDC) and Agricultural Bank were institutionalized. In 1961 both AFDC and Agricultural Bank were merged into Agricultural Development Bank Pakistan which is currently known as ZTBL.

National Credit Consultative Council (NCCC) and Agricultural Advisory Committee (AAC) of State Bank of Pakistan (SBP) prepare agricultural credit estimation and approve annual credit disbursement plan. FBC gives credit for production while ZTBL and other commercial banks give out for both production and development purposes. In 1972, Commercial Banks increased credit disbursement for agricultural purpose but ADBP was the pioneer in credit disbursement to the needy farmers. In the same year, some other commercial banks for example, Habib Bank Limited (HBL), Muslim Commercial Bank (MCB), National Bank Limited (NBP), United Bank Limited (UBL) and Allied Bank Limited (ABL) failed to meet the target of credit disbursement from SBP.

State bank of Pakistan designs lot of techniques to make credit disbursement much significant. It introduced Crop Insurance Schemes to the farmers which support them to manage credit losses that are faced by banks. SBP arranges the data of district wise agricultural credit disbursements which is helpful for policymakers to implement the policy that has fruitful results for farmers. As per the directions of SBP, banks have to open 25% of their branches in rural areas. During 2001 – 2008, a successful rate of formal banks credit schemes increased to disburse the agricultural credit and then the share of formal sector for credit disbursement has also been increased. ZTBL was the only increased financing in the years of 2008 - 2009 with disbursement of Rs. 45, 399, 90 million (in Rupees) at the same time other Commercial bank and cooperative disbursed Rs. 18,556, 25 and Rs 3, 539, 90 million (in rupees) respectively. During the year 2008 – 09, Commercial Banks, cooperatives and ZTBL laid down the disbursement of agriculture credit. The Percentage of institutional credit disbursement was at the 78% to small farmers during the years 1987- 1988 and low in percentage during the years 1992 – 93. In year 1995 to 1997, Most of the famers enjoyed the agricultural credit and in year 2004 –05, the credit disbursement was at 74% famers got benefits and with the passage of time numbers of farmers tended to high.

3. Objectives of the Study

- to know the impact of institutional credit on agriculture productivity of wheat crop.
- to give suitable suggestions/policy implications.

Literature Review

Ahmad (2011) investigates that there is positive relationship between credit and agricultural output. Credit is always helpful for the needy farmers to buy agriculture inputs. Therefore, credit has indirect impact on output because it is important to purchase different agricultural inputs those have strong impact on agricultural output. He also concludes that output is enhanced through providing three input i.e. tractors, tube wells and seeds while credit is the main source for purchasing these inputs.

Mehmood et al ((2010) conclude that financial requirements for agriculture farming is increasing tremendously over the last decade. It is because of the extensive utilization of agriculture inputs i.e. seeds, fertilizer, pesticides, technology etc. He also finds that Credit has positive impact on the productivity of wheat crop that ultimately leads to increase living standards of the rural poor.

Saleem et al (2011) state that high population density and decreasing agricultural land are affecting farming sector in Pakistan but the requirements of foods are increasing day by day. Therefore credit has become a dire need of farmers to fulfill the cash requirements of agriculture inputs. Therefore, credit utilized for seeds, fertilizer and pesticides was found positive and having significant impact on agricultural productivity.

Khan et al (2008) analyze that the impact of agricultural credit disbursed by Zarai Taraqiati bank Limited is found positively significant on the farm productivity as well as income of the borrowers because they utilized the credit properly and enjoyed its benefits in shape of greater productivity.

Ayaz and Hussain (2011) conclude that rural financial markets are improving agriculture sector. Adequate finance for purchasing qualitative agriculture inputs i.e. improved seeds, fertilizer, new technologies and timely utilization of credit also affect the efficiency of farming sector in shape of higher production.

Hypothesis:

H₀: Credit has not positive impact on per acre production of wheat crop

H₁: Credit has positive impact on per acre production of wheat crop

Material & Methods

The present study was conducted in District Faisalabad which has been divided six towns for Agri-farming namely Jaranwala Town, Chak Jhumra Town, Samundari Town, Tandaliawala Town, Iqbal Town and Jinnah Town respectively and from each tehsil two villages were selected through sample random sampling technique.

Table No 1. Names of Towns and Villages Selected

S.No	Name of the Town	Villages Selected
1	Jaranwala Town	624 GB and 656 GB
2	Chak Jhumra Town	125 RB and 132 RB
3	Samundari Town	445 GB and 468 GB
4	Tandaliawala	418GB and 611 GB
5	Iqbal Town	231 RB and 246 RB
6	Jinnah Town	63 JB and 67 JB

Source: Selected at Simple Random Sample Method

The objective of the study is to know the impact of agricultural credit on wheat production, for this purpose Zarai Taraqati Bank Limited was selected as the source of providing agricultural credit. A listed of borrowers was obtained from the regional office of ZTBL Faisalabad. There were ten borrowers selected from the each selected village. Therefore, the number of total borrowers was one hundred twenty. An interview was conducted to collect the relevant information. The collected data was analyzed through *Cobb Douglas Production Function* given below;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \mu$$

Where,

Y = Production per acre cultivated area in Kgs

X_1 = Credit amount in rupees

X_2 = Seeds for per acre production in Kg

X_3 = Fertilizers for per acre production in Kg

X_4 = Pesticides for per acre production in Kg

μ = Error term **and,**

β_0 = Constant

$\beta_1, \beta_2, \beta_3$ and β_4 = Coefficients or slopes of independent variables

4. Empirical Analysis

The present study was designed to know the impact of credit on per acre wheat production in District Faisalabad through selected areas. The result of descriptive statistics is presented in Table No 1.2. The average production of per acre wheat crop was found 40.88 per acre mounds with minimum and maximum production of 20 mounds per acre and 55 mounds per acre mounds respectively. Average credit was found Rs. 2, 11,533 rupees which has minimum amount of Rs. 50,000 rupees while maximum is Rs. 7,00,000 rupees. The per acre mean value of Seed is found 54.7 Kg with minimum 50 kg and maximum is 60 Kg. Similarly, the average per acre fertilizer is found 80.3 Kg while minimum is 50 kg and maximum 100 kg utilized. The mean vale of pesticides for per acre wheat crop is 87.73 milliliters with minimum and maximum of 50 ml and 200 ml respectively.

Table No 2. Descriptive Statistics of Variables

Variables	Minimum	Maximum	Mean
Wheat Production (in Mounds/ acre)	20	55	40.88
Credit (In Rupees)	50,000	7,00,000	2,11,533
Seeds (in Kgs/acre)	50	60	54.7
Fertilizer (in Kgs/acre)	50	100	80.3
Pesticide (in ml/acre)	50	200	87.73

Source: Researchers' own calculations

Table No 1.3 shows the results of Cobb Douglas Production Function. The intercept of the model is found 1.210 with t-value of 3.309 that represents the wheat production while keeping all other independent variables zero. It is significant at 5 percent level of significance. The coefficient of credit is 0.321 while t-value is found 10.196 which is significant at 5 percent level of significance i.e. 1 percent change of credit will bring 32.1 percent change in per acre wheat production. The coefficient of seed is found 0.226 with t-value of 3.604 which is significant at 5 percent level of significance which shows that 1 percent change in seed will bring 22.6 percent change in per acre wheat production in the selected areas. Similarly, the coefficient of fertilizer is 16.1 with t-value of found 5.288 significant at 5 percent level of significance i.e. 1 percent change in fertilizer will bring 16.1 percent change in wheat production. The coefficient of pesticide is 0.149 while t-value is 2.885 significant at 5 percent level of significance i.e. 1 percent change in pesticide will bring 14.9 percent in per acre production of wheat crop. In the earliest studies, these results are also aligned by Feder et al. (1991), Faruqee and Khandker. (1999), Olagunj. (2007).

Table No 3. Results of Empirical Analysis

Model	Coefficient	t-values	Significance
Constant	1.210	3.309	.001
Credit	.321	10.196	.000
Seed	.226	3.604	.000
Fertilizer	.161	5.288	.000
Pesticide	.149	2.885	.005
Dependent Variable: Wheat Production			
R-Square: 0.747			
F-Statistics: 84.766			

Source: Researchers' own calculations

The value of R-Square is found 0.747 which presents that there is 74.7 percent change in wheat production by the independent variables. The value of F-Statistics is calculated 84.766 which is highly significant and presents the overall

significance of the model. This includes that all independent variables in the model are positively significant on per acre wheat production in the study areas.

5. Conclusion and Discussion

It is concluded that credit has positive impact on the per acre production of wheat crop. It has rejected the null hypothesis i.e. Credit has not positive impact on per acre production of wheat crop and proved that credit is positively significant on wheat production and other variables i.e. seed, fertilizer and pesticide are also found positively significant. Therefore, it is concluded that the credit borrowed from ZTBL is positively affecting the production of wheat crop and indirectly becomes a helping hand for the poor rural farmers which may lead to increase their living standards.

It was also come to knowledge about the farmers' opinion for borrowing the credit from ZTBL. All borrowers criticized about the interest rate charged by the bank though they obtained benefits from credit. Majority of the borrowers complained that the process of credit disbursement was complicated and prolonged process which affected the timely utilization of credit.

Suggestions/Policy Implications

- Interest Rate charged by the bank must be reduced.
- Credit disbursement process may be simplified.
- Other Technical guidance related to get maximum productivity may be provided to the farmers by the Bank through training workshops and programs etc.
- Financial subsidies may be provided in purchasing of quality inputs i.e. seeds, fertilizers, pesticides and others inputs.

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