

IMPACT OF CREDIT DISBURSED BY COMMERCIAL BANKS ON THE PRODUCTIVITY OF SUGARCANE IN FAISALABAD DISTRICT

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Agriculture sector contributes 3.4 percent to the value added in agriculture and 0.7 percent to GDP. Given its importance to the national economy, the Government attaches high priority to enhance agricultural productivity and farmer's income. This paper studied the impact of credit disbursed by UBL on the productivity of sugarcane. Data were collected randomly from 114 loanee and non-loanee farmers from Faisalabad district. Cobb Douglas production function was used for the analysis. It was found that the credit has a positive impact on the productivity of sugarcane.

Keywords: Agricultural credit, commercial banks, sugarcane productivity

INTRODUCTION

The economy of Pakistan depends on agricultural sector being the single largest contributor. Almost 22 percent of the GDP and 45 percent of total employment is generated by this sector. It has a substantial contribution to the country's exports. Moreover, it serves as a supplier of raw materials to industrial sector and markets for industrial goods. About 66 percent of country's population living in rural areas is directly or indirectly linked with agriculture for its livelihood. Whatever happens to agriculture is bound to affect not only the country's growth performance but to a large segment of the country's population as well.

Sugarcane crop serves as a major raw material for production of white sugar and gur. Their share in value added of agriculture and GDP are 3.4 percent and 0.7 percent respectively. For 2005-06, the area under sugarcane crop was targeted at 955 thousand hectares as against 966 thousand hectares of last year. However, sugarcane was sown on an area of 907 thousand hectares – 5 percent below the target and 6.1 percent less than the last year. Sugarcane production for the year 2005-06 is estimated at 44.3 million tons against the 47.2 million tons production of the last year. Thus sugarcane production is estimated to be lower by 6.2 percent over the last year. Factors responsible for decline in sugarcane production include late harvesting of wheat, farmer's shifting to other competing crops and frost affecting the crop in Punjab and NWFP (Government of Pakistan, 2006).

Credit is the back bone for any business, more so for agriculture which has traditionally been a non-monetary activity for the rural population in Pakistan. Rural credit, though not a direct tool of production, can help break the vicious circle of 'grow-eat-grow' by

removing financial constraints and accelerating the adoption of new technologies.

Agriculture as a sector, depends more on credit than any other sector of the economy because of the seasonal variations in the farmers returns and a changing trend from subsistence to commercial farming and credit may provide them opportunity to earn more money and improve their standard of living (Vogt, 1978).

The rural financial market in Pakistan can be seen as composed of two broad segments, i.e. the informal and formal. Traditionally, friends and relatives, village shopkeepers, traders, commission agents etc. have remained a major source of agricultural credit. These sources generally lend for short periods and charge an exorbitant rate of interest. Such loans are given to tide over bad periods and as such are meant for consumption purposes. Loans are also made available for buying seasonal inputs where cash is essentially required. These sources are both inadequate and non dependable. No comprehensive data are available on the amount of credit advanced by informal credit sources. As such it is difficult to find solid evidence regarding the relative share of these sources in the total credit supply. However, few reports and some other rough estimates show that the formal credit sources have been able to meet only 50 percent of the total credit requirements of the farm sector and it may be assumed that the rest are met by informal sources of credit (Irfan *et al.*, 1999).

Formal / institutional credit to the farmers is being provided through Government (Taccavi Loans), Cooperatives, Zarai Taraqati Bank Limited (ZTBL), Domestic Private Banks and Commercial Banks. Government considers it an important instrument for achieving higher production and attaches high priority to ensure its timely availability to the farmers. Credit

requirements of the farming community have shown an increasing trend over the years.

Commercial banks, having a large network of branches all over the country including rural areas, are playing a crucial role in the provision of agricultural credit and have designed and implemented a number of programs for this purpose. The study in hand was undertaken with the objective to focus on the impact of credit disbursed by commercial banks on raising the productivity of sugarcane crop with particular reference to District Faisalabad.

MATERIALS AND METHODS

Keeping in view the paramount importance of the study, it should have been conducted throughout the country but on account of scanty time and financial constraints, it was confined only to Faisalabad district. The district was divided into six zones and from each zone two villages were randomly selected. The selected zones and villages were fairly representative of the whole district. Table 1 shows the zones and the selected villages;

Table 1. Zones and randomly selected villages

Name of Zone	Villages
Chak Jhumra	109 JB and 113 JB
Jaranwala	630 GB and 652 GB
Samundri	442 GB and 474 GB
Tandalianwala	411 GB and 609 GB
Theekriwala	74 JB and 76 JB
Dial Garh, Millat Road	156 RB and 186 RB

According to Dixon and Massey (1969) any set of individuals or objects having some common observable characteristics constitute a population. The present study was designed specially to focusing on the role of credit disbursed by the commercial banks on the agricultural productivity. For the said purpose United Bank Limited (UBL) was selected as a representative of the commercial banks on the basis of its last year's credit disbursement in Faisalabad district. Time and cost are usually the limiting factors in social research. It is, therefore economical to base the study on sample rather than to study the whole population. A sample refers to small representative of a large whole (Goode and Hatt 1952).

There are two basic requirements of a good sampling procedure. First, it must be a representative and second, it must be adequate.

A list of borrowers of United Bank Limited (UBL) was obtained from the respective branches for the selected villages. It was intended to select five loanees from each village. However, in one of the selected villages

(74 JB), there were only two loanees. The number of the sample respondents was, therefore, reduced from 60 to 57. An equal number of non-loaneees was also selected for the sake of comparison. Total number of respondents thus came out to be 114. An interview schedule was used for the collection of required data. The collected data were then analyzed using the following Cobb Douglas production function;

$$\ln \text{scyield} = \beta_0 + \beta_1 \ln \text{screatment} + \beta_2 \ln \text{loan} + \beta_3 \ln \text{scseedrate} + \beta_4 \ln \text{scnutkg}$$

Where,

$\ln \text{scyield}$ = natural log of the per acre sugarcane yield in mounds.

$\ln \text{screatment}$ = natural log of number of plant protection measures

$\ln \text{loan}$ = natural log of the amount of loan taken in Rs.

$\ln \text{scseedrate}$ = natural log of per acre seed rate of sugarcane used in Kgs

$\ln \text{scnutkg}$ = natural log of the per acre nutrients (Kg) used

$\beta_0, \beta_1, \beta_2, \beta_3, \beta_4$ and β_5 = Estimated parameters of the model

RESULTS AND DISCUSSION

The study in had was designed to check the impact of credit on the productivity of sugarcane. The descriptive statistics are presented in Table 2. The mean per acre yield of sugarcane of the selected respondents was 567.54 mounds with a minimum of 500.00 mounds and a maximum of 650.00 mounds. The average use of fertilizers in terms of nutrient Kgs per acre was 160.44 Kg while the minimum and maximum quantities used were 120 Kgs and 235 Kgs respectively. Plant protection measures applied to the sugarcane by the sample respondents were in the form of number of treatments per acre, the mean value of which was 1.65 while the minimum was 1 treatment and the maximum were 2 treatments applied by the respondents. The maximum amount of loan taken by any of the sample respondent was Rs. 900000 with a mean value of Rs. 118631.57. The average seed rate used was 93.68 mounds per acre while it ranged from 70 mounds to 120 mounds per.

Table 2. Descriptive Statistics

Variables	Min	Max	Mean
Yield	500.00	650.00	567.54(48.87)
Nut kgs	120.00	235.00	160.44(28.13)
Treatments	1.00	2.00	1.65(0.48)
Amount loan	.00	900000.0	118631.6(166380)
Seed rate	70	120	93.68(14.77)

Figures in parenthesis are standard error

The results of Cobb Douglas production function are presented in Table 3. The intercept of the model is 5.077, this represents the natural log of the expected yield of sugarcane when the input use level of all inputs is zero. Its t-value is 19.163 which is highly significant.

The coefficient of plant protection variable (ln sctreatment) is 0.034, with a t-value of 1.814 which is significant at 8 percent level of significance, meaning that an increase of 1 % in the use of these measures will bring 3.4 % increase in the production. The coefficient of loan (ln loan) is 0.004, with a t-value of 2.220 which is significant at 3 percent level of significance. This explains that with 1 percent increase in the tendency to take loans increases the yield of sugarcane by 0.4 percent. Zuberi (1989) suggested that additional inputs are required for improvements in agricultural productivity. Nazli (2000) found positive impact of micro credit on the input usage and poverty alleviation. Iqbal *et al* (2003) stated that the relationship between institutional credit and agricultural GDP was found positive and significant.

The coefficient of seed rate variable (ln sceedrate) is 0.179, with a t-value of 2.131 which is statistically significant at 4 percent of significance level, implies that an increase of 1 percent in seed rate induces 0.179 percent increase in the yield of sugarcane. The coefficient of fertilizer variable (ln scnutkgs) is 0.083, with t-value 1.714 which is significant at 9 percent level of significance. This coefficient indicates that the sugarcane yield increases by 0.083 percent with an increase in the fertilizer use by 1 percent.

The F-calculated value is 80.790 which is highly significant. This suggests that the four independent variables i.e. plant protection measures, loan, seed rate and fertilizers included in the model are significantly affecting the sugarcane yield.

Table 3. Results of Regression Analysis

	Coefficients	t	Sig.
(Constant)	5.077(0.265)	19.163	0.000
ln sctreatment	0.034(0.019)	1.814	0.072
ln loan	0.004(0.002)	2.220	0.029
ln sceedrate	0.179(0.084)	2.131	0.035
ln scnutkgs	0.083(0.048)	1.714	0.089

R² = 0.748

F = 80.790

The over all significance of the model can also be judged from the value of coefficient of multiple determination i.e. R-square. The value of R-square is 0.748 which indicates that about 75 percent of the total change in sugarcane yield is explained by the four independent variables.

CONCLUSIONS

It is clear from the above discussion that the credit does have an impact on the productivity of sugarcane crop. All these findings make anyone to conclude that

commercial banks are effectively serving the agricultural sector of Pakistan through their credit disbursement schemes hence improving the living standard of people living in rural areas, reducing the poverty and ultimately helping the economy of the country. Improvements can always be made in any system so is the case with credit disbursement schemes, according to the problems which were noted during the survey, a few suggestions are listed below to make the credit impact better:

1. Improvement in technical know how of the borrowers by the bank officials. For this purpose proper training of the staff concerned is necessary so the workshops and seminars should be arranged for the field staff.
2. Proper utilization of the loan must be ensured
3. Multipurpose cooperative societies must be re-introduced in the farming communities to look after their interests and to help them to get and spend the loan.
4. Interest rate should be decreased.
5. Zero interest lending (Islamic Lending) in agriculture must be initialized using the Musharka or Muzarba instruments of Islamic Banking.

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