International Journal of Research in Agricultural Sciences
Volume 3, Issue 4, ISSN (Online): 2348 – 3997

Determinants of Credit Use in Turkish Agriculture

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***Abstract* – In this study, we investigated sources, types and factors that influence agricultural credit use in selected regions of Turkey. Data was collected from interviews with 500 farmers in five provinces during the 2014-2015 agricultural production season. Factors affecting credit usage have been examined using Quantile Regression analysis. We found that the type of farm ownership (in this case, family owned and operated farms), size of cultivated land, amount of fixed and operating capital, and other indicators of financial status such as their current assets and liabilities were the most significant factors affecting credit usage. More specifically, family labor size, amount of capital and cultivated land were positively associated with the usage of agricultural credit. On the other hand, the larger was farmers' fixed capital and the higher their wealth, the less likely they were to use agricultural credit.**

***Keywords* – Agriculture, Credit, Quantile Regression, Turkey. Classification JEL: Q14**

I. INTRODUCTION

Turkey has experienced steady economic growth since 2010 and agricultural sector continues to be one of the main sectors in its economy. According to Turk STAT, agriculture sector accounted for 7.4% of the total Turkish GDP in 2013, compared to 8% and 8.4% in 2011 and 2010, respectively[1]. The average growth rate of the Turkish agriculture sector in the last ten years has been 12.16%. The agricultural exports of Turkey reached USD 17.74 billion in 2013 (35% of total agricultural GDP), with an export-to-import ratio of 104.9%. In addition, agricultural employment accounted for 21.9% of the total employment in 2014[1]. Most farms are family owned and operated.

In spite of their important contributions to the economy, the more than 3 million agricultural holdings within Turkish agricultural sector have had very small share of total credit market in Turkey. The share of agricultural loans in total loans was 4.2% in 2012 and declined to 3.5 % in 2013. The ratio of agricultural loans to agricultural output was 32.6%, compared to the overall loan-to-GDP ratio of 73.2% in 2012 [2].

In order to strengthen the Turkish agriculture, enterprises of all sizes operating in this sector should have better access to alternative sources of financing. In this context, banks and other financial institutions have a crucial role to play in increasing the supply of loanable funds and improve their promotional activities.

In this study, we investigated the various sources and types of credits that are available to Turkish farmers and drew on Quantile Regression method to identify the variety of factors that may have influenced the iruse of agricultural credit. In our review of prior work, as reported below, we found limited research conducted in this area. Our findings should be of interest and significance to banks, researchers and policy makers especially in regards to agricultural financing strategies, improvement in agricultural output and ultimately farmers' financial well-being.

II. LITERATURE REVIEW

Availability of agricultural credit, or lack thereof, has a crucial impact on the level of output, employment, productivity and the overall financial health of farming communities. It noted the significant role of credit in the adoption of modern technologies in the farming sector[3]. It was found that one additional yuan of credit would yield 0.235 yuan of additional gross value of output in China[4]. It was discovered positive relationship between access to credit and households' welfare in developing countries[5]. It was found that paucity of credit reduced farmers' capacity to negotiate better prices for their output, and some were even forced to make postharvest distress sales to meet their cash flow needs [6]. It was analyzed the contributions of agricultural credit towards production efficiency in Pakistan, using Data Envelopment analysis, and found farming experience, education, access to credit, land size and number of cultivation practices had significant impact on farmers' efficiency [7]. It was analyzed agricultural and rural capital markets in three EU candidates' market (Turkey, Croatia and FYP of Macedonia) and found credit constraints had limited access to finance by small scale farms in these countries, in turn making remittances and donor funds important sources of agricultural and rural economy investments in those countries[8].

Earlier studies have also shown the importance of several factors that impact agricultural credit usage. It was found that credit demand is moderately price inelastic in that 1% increase in interest rates will decrease loan demand by about 0.588% [9]. It was noted that in many cocoa producing countries, farmers had limited access to finance, due to shallow financial literacy, lack of collateral (such as titled land), unstable revenue flows, and risky farming activities [10].It was studied the adequacy and efficiency of formal credit resources allocated to agricultural sector in Turkey [11]. He found that during the review period, the relative size of formal credit resources allocated to agricultural area decreased gradually; recent inflationary trend in Turkey triggered by high food prices necessitated new adjustment policy

measures that included adoption of more selective and stringent credit policy tools. It was found that age, household size, membership in cooperative societies, marital status, education level, farm size and amount of loan repaid as significant predictors of the level of agricultural credit acquired by farmers. They found high interest rates, lack of collateral, long distance from source of credit, poor harvest, moratorium and delay in loan approval/disbursement as major constraints faced by farmers in acquiring credit[12]. Similarly, it was observed that education, distance to source of credit and types of credit source were significant factors that affected farmers' access to agricultural credit[13]. It is therefore imperative that a government policy that intends to improve the accessibility of agricultural credit facilities should create enabling environment to ease farmers' access to education and credit facilities.

III. Data Sources and Methodology

Data were collected through face to face interviews with a random sample of 550 farmers, equally distributed, from Antalya, Konya, Ankara, Karaman and Eskisehir provinces between June and August 2015.All data was based on 2014/2015 production period. Farmers' capital such as land, buildings, plant, livestock, machinery and equipment were valued based on market prices provided by farmers. The survey was designed to assess farmers' knowledge, demographic characteristic (age, experience, population etc.), production facilities (farm land, types of production etc.), and financial position(capital, profitability, financial ratios, etc.) on their agricultural credit use. The survey was developed drawing on findings of earlier studies, augmented by unique structural characteristics of Turkish agriculture. The provinces selected for research areas are important in their use of agricultural credit in that they accounted for 15.2 % of the total agricultural credit in Turkey in 2014 according to FINTURK database [14]. Konya, Ankara and Antalya are among the top 10 provinces in Turkey in terms of agricultural credit usage. Along with other provinces which have also been the recipient of large amount of agricultural credit, the selected region is also important for production of such field crops as orchard, grapes, vegetable, greenhouse and livestock. Table 1 summarizes the statistically significant variables at 5% and %1 levels that emerged in our survey analysis.

Table 1. Descriptive statistics

Variables	Unit	Minimum	Maximum	Mean	Standard Deviation	Kurtosis	Skewness
Family Population	Number	2.00	9.00	4.13	1.41	.281	.517
Farm Land Size	Decar	7.00	2950.00	186.85	238.43	42.479	5.159
Fixed capital	TL	495,00.00	2,979,500.00	262,361.00	262,500.86	29.712	4.260
Operating capital	TL	15,916.00	1,208,500.00	124,963.70	116,459.64	17.545	3.329
Equity capital	TL	59,984.00	2,927,925.00	351,612.34	276,141.56	20.632	3.509
Current ratio	%	0.01	43.77	3.50	4.54	15.176	3.037
Acid test ratio	%	1.00	72.11	2.64	4.50	110.079	8.567
Financial leverage ratio	%	0.35	78.05	6.62	8.46	22.830	4.114

Note: 1 US Dollar is equal to 2.85 Turkish Lira (TL).

The Quantile Regression approach used in this study provides a more complete picture of various factors that influence the use of agricultural credit usage. It is a generalized state of the median regression for the determined quantiles and more sensitive to extreme values and inclinations than those from the Least Squares Method. Quantile Regression is a robust regression technique that ignores the hypothesis of normal distribution of the error terms [15]. Whereas traditional regression models struggle to explain changes in the conditional average of the variables, Quantile Regression explains changes in the quantiles. It is more flexible than the traditional regression method, and different quantiles can be used for research. Quantile Regression allows for the possibility that important predictors may be different depending on the quantile (a term that closely corresponds to percentile) of the outcome variable (i.e., whether they are low, average, or high outcome [16]. As the distribution of dependent variables provides important information regarding how it is affected by the independent variables, Quantile Regression has been widely in social sciences [17, 18, 19, 20].

The Quantile Regression model is actually a placement model expressed as,

$$Y_i - Xi\beta_\theta + \varepsilon_{\theta i} \quad (1)$$

where Y_i is an independent, identical dependent variable with the β median. This situation can be expressed as:

$$\theta(Y_i \mid X_i) = X_i\beta_\theta \quad (2)$$

The θth simple quantile in this modelis derived with the minimization of the expression [21].The Quantile Regression covariance shows distribution with different forms of asymptotic covariance matrices that depend on asymptotic normal model assumptions [15]. Calculating the coefficient of covariance matrix plays an important part in the Quantile Regression analysis. In the Quantile Regression, in order to avoid inefficient estimation in calculating the covariance matrix, preload techniques have been used. Among these, the Bootstrap method has been used frequently. In cases when the error terms and assumptions made regarding the independent variables do

not hold, the Bootstrap method is used to correct an operation. This method was developed for the purpose of obtaining smaller estimation errors and decreasing the standard deviations, thereby obtaining more accurate parameter estimators and confidence intervals [22].The Bootstrap method has been calculated in three different ways according to the asymptotic matrix of $\beta_{e,}$ namely, the *residual bootstrap*, the *design bootstrap*(XY pair), and the *Markov Chain Marginal Bootstrap* (MCMB or MSMB-A) methods.

The most important disadvantage of the *residual* and *design bootstrap (XY pair)* is that each bootstrap-reproducing operation for relatively multidimensional linear programming problem estimation needs an intense calculation [19]. In addition, it increases the calculation load and consistency of the bootstrap MCMB method used in the multidimensional solutions [23].

$$\min_{\beta \in R} k\left\{\sum_{i:Y_i > X_i\beta} \theta \,|\, Yi - Xi\beta_\theta \,| + \sum_{i:Y_i < X_i\beta} (1-\theta) \,|\, Yi - Xi\beta_\theta \,|\right\} \quad (3)$$

The natural logarithm of each variable except for the dummy variable has been taken.

Current ratio (1.5>=1, 1.5<=0), financial leverage (4 >=1, 4<=0), Acid test ratio (2 >=1, 2<=0)and agricultural credit card usage (yes=1, no=1) are dummy variables. The entire Quantile Regression analyses have been performed using the Eviews 7.1 software package.

IV. Results and Discussion

In agriculture, capital serves as an instrument of production, whether used for purchase of fertilizer, insecticides, fungicides, and herbicides in growing crops and feeding animals. It is also used for acquisition and maintenance of high-efficiency machinery to plant, cultivate, irrigate or harvest. As such, capital plays a critical role in agricultural productivity and overall economic growth. Capital increases in importance as one goes from subsistence to commercial and large scale farming. It was found that agricultural capital explained 37% of the variation in production and fixed capital accounted for 33% of growth in agricultural output [24].

Among the analyzed farms, land ownership takes an important place within the total capital, both in terms of dollar amount in each province as well as the average size across all five provinces (Table 2). The size of farm capital ranged from $114,238 to $153,584 across five provinces, with an average of $151,879. Land had the biggest value among fixed capital, with an average of $59,051.The second and third largest component of capital items were buildings and plants, while land improvement had a small share. To increase productivity, though, a higher proportion of land improvement within the fixed capital would be needed.

Table 2. Farm capital structure selected for farms in provinces (in US Dollar)

Types of Capital	Antalya	Konya	Ankara	Karaman	Eskisehir	Average	The proportion in the capital (%)
Fixed Capital	77,889	77,025	101,413	100,432	103,524	92,056	67.7
Land	35,198	41,913	70,212	71,622	76,311	59,051	43.5
Land Improvement	2,527	1,967	1,705	1,482	1,390	1,814	1.3
Buildings	19,205	18,961	19,290	19,397	19,285	19,228	14.1
Planting	20,958	14,184	10,205	7,931	6,539	11,963	8.8
Operating Capital	36,350	37,732	44,622	50,447	50,084	43,847	32.3
Livestock	5,150	4,598	10,532	16,192	16,371	10,569	7.8
Agricultural Machinery and Equipment	28,466	30,299	30,652	30,965	30,123	30,101	22.2
Fertilizer, Seed, Fuel Oil etc.	464	727	1,552	1,645	1,771	1,232	0.9
Money	2,269	2,108	1,886	1,646	1,819	1,945	1.4
Active Capital	114,238	114,757	146,035	150,845	153,584	135,892	100.0
Loans	3,505	4,780	8,040	9,800	9,834	7,192	5.3
The Value of Leased/Jointly held Land	3,260	5,126	5,915	6,303	6,033	5,328	3.9
Foreign Capital	6,764	9,906	13,956	16,103	15,867	12,519	9.2
Equity Capital	107,474	104,851	132,079	134,742	137,717	123,373	90.8
Passive Capital	114,238	114,757	146,035	150,845	153,584	135,892	100.0

Among the operating capital items, agricultural machinery and equipment had the highest proportion, but most of them were not new which resulted in increase in fixed costs such as depreciation, repair and maintenance.

Our research results showed that on average, assets per farm consisted of 67.7% in the form of fixed capital and 32.3% as operating capital; 5.3% of passive capital came from loans. This amount ranged between 3.1% and 6.5%, depending on the province. We also found that on average, 90.8% of farmers preferred equity capital during the production period, while external capital had a low average of only 9.2%because of repayment problems, as

expressed by some farmers (Table 2). Some also did not want to improve their production because of fluctuation in market prices.

Agriculture credit can be classified by terms and sources. As Table 3 indicates, agricultural credit usage varied by provinces. Karaman and Ankara had the biggest value in terms of total credit usage and per farm, as they had bigger land sizes and amount of livestock production.

Generally, short term credit are used largely for funding the operating capital requirements of farms while long term credit is utilized for purchasing assets. The surveyed farmers, on average, had used credit in 68% of the cases for short-term and 32% of the times for medium and long-term uses, in the last three years. Of special note is the proportion of medium-long term credit usage for orchard and green house at Antalya province during 2012-2014 period (Table 3).

Table 3. Agricultural credit usage for selected farms for 2012-2014 production period (in US Dollar)

Province		Total Agricultural Credit (US Dollar)	Terms		Rate (%)		Total credit per land (da)	The rate of agricultural credit card usage (%)
			Short (US Dollar)	Medium and long (US Dollar)	Short	Medium and long		
Antalya	1	1,156,491	204,737	951,754	17.7	82.3	13,642	37.27
	2	10,514	1,861	8,652			-	
Konya	1	2,016,263	1,134,509	881,754	56.3	43.7	16,667	43.64
	2	18,330	10,314	8,016			-	
Ankara	1	4,858,782	3,746,853	1,111,930	77.1	22.9	14,290	63.64
	2	44,171	34,062	10,108			-	
Karaman	1	5,031,825	3,768,316	1,263,509	74.9	25.1	27,940	78.18
	2	45,744	34,258	11,486			-	
Eskisehir	1	3,320,105	2,286,281	1,033,825	68.9	31.1	15,932	66.36
	2	30,183	20,784	9,398			-	
Average	1	3,276,693	2,228,139	1,048,554	68.0	32.0	17,536	57.82
	2	29,788	20,256	9,532			-	

1-Total Amount 2- Average

With the growth of the Turkish agricultural sector in recent years and higher needs for financing, private banks have increased their credit offering. Historically, Agricultural Bank and Turkish Agricultural Credit Cooperatives which conducted their activities under the directorship of former had monopoly over agricultural financing for a long time. In 2001, after changing the statue of Agricultural Bank, an informal privatization policy started which was a turning point in Turkish agricultural banking as it introduced intensive competition in the credit market.

Meanwhile, usage of agricultural credit card has also been increasing, reaching almost 1 million cardholders across the country. It has debit card properties that possess both revolving and spot credit with its diversified utilities and maturity structure. The main function of these cards is to pay for the purchase of agricultural input such as fuel, seeds and fertilizer, and particularly input and fuel, meeting the short term financing needs of the producers. We found that, across the five provinces we surveyed, 57.82% of the farmers had agricultural cards (Table 3).

Farmers in our survey borrowed from various sources, with banks being the most important among them, particularly in recent years as private banks have increased the agricultural loans in their assets portfolio. Unlike banks, agricultural cooperatives which have limited fund gave credit to small farmers. In addition, there were informal sources of credit such as individuals, merchants and dealers, though their share is small (Table 4). In general, farmers used these cards for urgent needs such as purchasing fertilizer, pesticide, seeds or obtain cash.

Table 4. The proportion of loan sources at farms in research areas (%) (2012-2014)

Province	Individuals, merchants, and dealers	Agricultural Bank	Agricultural Credit Cooperatives	Agricultural Sales Cooperatives	Agricultural Development Cooperatives	Private Banks	Total Loan
Antalya	2.7	47.6	10.9	3.3	1.3	34.1	100.0
Konya	2.9	46.8	8.7	3.3	0.1	38.2	100.0
Ankara	0.4	54.7	15.6	6.6	0.1	21.8	100.0
Karaman	1.4	51.6	6.1	3.1	0.3	37.4	100.0
Eskisehir	0.6	53.2	10.8	8.4	0.3	26.8	100.0
Average	1.2	52.0	10.5	5.3	0.3	30.5	100.0

According to the farmers surveyed, The Agricultural Bank and Cooperatives provided 62.5% and private banks gave 30.5% of the loans (Table 4). Apart from agricultural credit, farmers who had enrolled in the Farmer Registry

System received Direct Income Support from the Turkish government during the accession period to EU. They also received some input support like fertilizer, fuel, diesel, and agricultural techniques. Due to increased income level in the farming sector and along with the privatization policy of the banking sector, private banks discovered the loan potential in the agriculture sector. Private Banks have expanded their share despite the monopoly of Agricultural Bank in the disbursement of subsidized loans and agricultural subsidies. Individuals, merchants, and dealers are sources of loan for vegetable farmers in the Antalya and Konya.

The Wald test used to measure factors affecting the usage of agricultural credit in research areas was significant for all ten variables. The Bootstrap method was performed as a model analysis with 500 iterations and 100 % repetition. The random generator was obtained using Knuth algorithm [25]. The H1 hypothesis of the Wald test of whether the model is symmetrical or not was accepted (Table 5). In this case, Quantile Regression provides more robust LAM estimations, as noted by multiple researchers [26,27].

Table 5. The Wald test results for symmetry

Test Summary	Chi-Sq. Statistic		Chi-Sq. d.f.	Prob.
Wald Test	636.9296		10	0.0000
Restriction Detail: b(tau) + b(1-tau) - 2*b(.5) = 0				
Quantiles	Variable	Restr. Value	Std. Error	Prob.
	C	0.138553	0.082150	0.0917

* Own calculations

Quasi LR Goodness of Fit scale of the Q2 Median Model came to 474.3302 (Table 6). The Pseudo R2value indicating the goodness-of-fit of the independent variables affecting total credit usage came to 40.317%.This value shows the distinctiveness of Q2quantile among other quantiles. Family population, operating and fixed capital, and agricultural credit card usage were found to affect the use of agricultural credit positively. In contrast, equity and financial ratios had negative effect on credit usage in the surveyed farms.

Table 6. The estimation results of agricultural credit usage model

Bootstrap (Q_2 Median)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	1.955881	0.077375	25.27796	0.0000**
Family population	0.175396	0.067088	2.614431	0.0092**
Fixed capital	0.917568	0.017218	53.29135	0.0000**
Farm land	0.285287	0.02698	10.57386	0.0000**
Operating capital	0.683854	0.022598	30.26119	0.0000**
Equity	-1.27161	0.022056	-57.65429	0.0000**
Current ratio	-0.95945	0.059719	-16.06605	0.0000**
Acid test ratio	-0.30225	0.069434	-4.35305	0.0000**
Financial leverage ratio	-0.08584	0.04806	-1.7861	0.0746*
Usage of agricultural credit card	0.212253	0.053758	3.948299	0.0001**
Pseudo R-squared	0.403156	Mean dependent variable		3.856095
S.E. of Regression	0.6596	S.D. dependent variable		1.043229
Quantile dependent var.	3.806662	Objective		139.0058
Sparsity	1.583635	Restr. objective		232.9015
Prob(Quasi-LR stat)	0	Quasi-LR statistic		474.3302

* Coefficients or statistics are significant at α = 0.05 level of significance.
** Coefficients or statistics are significant at α = 0.01 level of significance.

Family labor was very important in agricultural production and accounted for 70-80% of the total labor in our surveyed area. Some of the farms needed external labor during special periods of farming such as harvesting, irrigation, and cultivating. According to the model results, if population increases by 1%, agricultural credit use will increase by 0.175%. In addition, agricultural credit use will go up with increased fixed and operating capital. Generally, these farmers have small and sizes and if they need more land to cultivate, they will apply for long term credit. Our results showed a positive relationship between agricultural credit card usages and level of credit use until 60% quantiles.

We also found that equity had a negative effect on the use of agricultural credit. Some farmers did not need loan because of large amounts of equity that they already possessed. Equity is clearly safer than outside capital and most farmers prefer not to increase their liabilities which they perceive as risky. Similarly as financial ratios improve, demand for agricultural credit decreases. Usage

of total credit according to different quantiles can been seen in Table 7. While the first 10% quantiles shows the lowest credit usage, the 90% quantiles portray the highest credit usage.

Table 7. Model of agricultural credit usage

Variable	Quantile			
	0.10	0.30	0.60	0.90
C	**1.810***	**1.780***	**2.113***	**1.810***
	(0.231)	(0.146)	(0.085)	(0.108)
Family population	**0.286****	**0.172****	**0.205***	**0.1998***
	(0.129)	(0.086)	(0.069)	(0.063)
Fixed capital	**0.811***	**0.926***	**0.915***	**1.357***
	(0.025)	(0.024)	(0.038)	(0.032)
Operating capital	**0.312***	**0.648***	**0.765***	**1.071***
	(0.019)	(0.020)	(0.029)	(0.039)
Farm land	0.005	**0.176***	**0.352***	**0.231***
	(0.017)	(0.020)	(0.027)	(0.061)
Equity	**-0.801***	**-1.180***	**-1.388***	**-1.787***
	(0.028)	(0.019)	(0.018)	(0.045)
Current ratio	**-0.949***	**-0.969***	**-0.931***	**-0.837***
	(0.099)	(0.056)	(0.061)	(0.076)
Acid test ratio	**-0.171*****	**-0.360***	**-0.328***	**-0.237***
	(0.100)	(0.068)	(0.069)	(0.063)
Financial leverage ratio	-0.020	-0.034	-0.080	**-0.162****
	(0.078)	(0.071)	(0.050)	(0.075)
Usage of agricultural credit card	**0.172*****	**0.186***	**0.097*****	**-0.074**
	(0.096)	(0.062)	(0.052)	(0.085)

Notes: Absolute values of std. error is in parentheses. Coefficient is significant *at the 0.01 level, **at the 0.05 level and ***at the 0.10 level.

Table 7 indicates that family size increases with each quantile. Generally, big family farms had big farm land. Similarly, big quantile of farm land need more agricultural credit. Farm land size had a positive effect on agricultural credit usage in 10% quantiles to 90%quantiles. Table 7 also shows that farmers needed extra credit as their fixed capital increased. They needed operating capital in order to increase agricultural productivity. Furthermore, operating capital had a direct effect on usage of credit with increased values from 10% quantiles to 90%quantiles.

Agricultural credit card usage had positively affected the financial structure of farms. Farmers used credit without going through the bureaucratic paperwork involved in loan applications. According to quantile model results, while farmer credit demand increased from 10% to 30 quantiles, this value decreased at %90 quantile.

In contrast, equity had a significant negative effect on agricultural credit usage for each quantiles. The larger was the farmers' equity, the lesser was their need for credit. The same scenario held in case of some of the financial ratios. While Current ratio had a steady effect in all quantiles, Acid test ratio had changing values. Financial leverage value was significant only at 90%quantile as-0.162.Increasing farmers' debt could lead to repayment challenges and consequently higher interest rate that would lessen demand for credit.

V. CONCLUSIONS

Agricultural credit is very important in farms' development during production, marketing and other farming activities. It acts as an enabling and critical input in agriculture production process.

In this study, we found that capital distribution was unbalanced among the surveyed farms. Fixed capital had a higher proportion compared to operating capital. The level of capital depended mostly on farmers' possession of real estate such as land and buildings. This situation resulted in some farms not improving adequately and agricultural productivity declining to low levels. At the same time, operating capital of farms needs to be strengthened. Sometimes it was difficult for farmers to find suitable financial sources such as short term credit. There is an urgent need to step up the growth of investment credit in order to sustain agricultural development in researched farms.

In our analysis, farm land size had a positive effect on credit use. As such, enlargement of land size through optimal consolidation could lead to more utilization of credit.

Our results also showed that the usage of agricultural credit card had a direct positive effect on the credit usage, as it has commonly been used for payment of operating expenses. But usage of agricultural credit card decreased from 10% quantile to 90% quantile. In addition, farmers preferred to use their cash over cards. Nonagricultural

usage of this card can lead to repayment problems and declining demand for credit among farmers.

All financial ratios as well as equity tended to affect agricultural credit use negatively. Farmers in our researched areas had confidence in their equity positions and consequently drew heavily on credit. To support such farming activities, more subsidized credit seem to be a prudent investment.

It would be helpful to conduct similar research in other regions of Turkey aimed at examining credit use in agricultural sector. Doing so would help validate our findings and may uncover other factors that impact agricultural credit use, which would be of interest to banks in expanding their credit offerings as well as governmental agencies focused on improving such keys areas as agricultural marketing, organization and production.

VI. ACKNOWLEDGMENT

This project was supported by a scholarship from Scientific and Technological Research Council of Turkey (TUBITAK) program 2219.This paper was prepared while Erdogan Gunes was a visiting scholar in the School of Business at Ithaca College of New York-USA.

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