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Commercial banks credit to agricultural sector –A comparative analysis

[1]Dr. A. Joseph Xavier
[2]Ms. M. Kala Devi
[1]Assistant Professor, Department of Commerce, Ayya Nadar Janaki Ammal College, Sivakasi.
[2]Ph.D. Scholar, Department of Commerce, Ayya Nadar Janaki Ammal College, Sivakasi.
hpesoj_1986@rediffmail.com
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Abstract

Providing foodstuff is one of the main pursuits of any prosperous nation; a nation that cannot provender itself is everlastingly reliant on outside sources which may price more and may drop a region further into debt. Unindustrialized credit is a fiscal term that denotes to credits and other types of credit protracted for agricultural tenacities. Many provinces have farming credit arrangements that endorse the growth and sustained existence of farm and cattle operations. In some cases, agricultural credit can be used by agriculturalists to buying non-farm things, such as accommodation and arrangement. Most Asian and European nations all have long antiquities with agricultural credit systems. The present study is focused on the analysis of different types of loan provided to the agricultural sector by commercial banks during twelve years period from 1998 – 1999 to 2009 – 2010.

1 Introduction

In acknowledgment of the treasured and thoughtful work done in the agricultural manufacturing, many governments supervise special credit divisions that treat solely with agricultural and associated pursuits. Some farming credit advances are emergency loans extended subsequently regular catastrophes to assistance make firm maintenances and reestablish a farm or farmstead to functioning conditions. Loans may also be obtainable to fledgling agriculturalists, or those measured communally underprivileged due to racial or gender partiality. Provisional on the province, nearby are numerous dissimilar types of agricultural credit accessible. Some loans are geared specifically toward new farmers and farmers that are opening a new agricultural business and need start-up investment for land, materials, and salaries. Others are ordained for established agricultural productions that are observing to develop on the existing level of procedures. Commercial Banks deliver monetary facilities to industries, counting credit and debit cards, bank accounts, payments and mortgages, and protected and indiscreet loans. Due to de regulation, marketable banks are also challenging more with asset banks in money bazaar operations, bond guaranteeing, and financial consultative work. Commercial banks in contemporary entrepreneurial civilizations act as financial mediators, levitation funds from investors and advancing the same funds to debtors. The investors' entitlements against the bank, their payments, are liquid; sense banks are projected to exchange payments on request, promptly.
The following types of loan are provided to agricultural sector.

a) Short term loan
b) Medium term loan and
c) Long term loan

2 Data Analysis

The data is analyzed using SPSS and E- Views with the following tools.
a) Wilcoxon Signed Ranks Test

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b) Kendall's W Test
c) Correlation.

The following table shows the Short Term and Medium / Long Term credit provided by the commercial banks to agricultural sector.

Table 1 Commercial banks credit to agricultural sector during 1998 -2010

S.No	YEAR	SHORT TERM LOAN (AMOUNT) (A)	AMOUNT INCREASE/ DECREASE	MEDIUM TERM LOAN (AMOUNT) (B)	AMOUNT INCREASE/ DECREASE	SHORT / MEDIUM/ LONG TERM LOAN (AMOUNT) (C)	AMOUNT INCREASE/ DECREASE
1.	1998-1999	9622 (1.30)	-	8821 (1.67)	-	18443 (1.46)	-
2.	1999-2000	11697 (1.59)	2075 (21.57)	13036 (2.47)	4215 (47.78)	24733 (1.95)	6290 (34.11)
3.	2000-2001	13486 (1.83)	1789 (15.29)	14321 (2.71)	1285 (9.86)	27807 (2.20)	3074 (12.43)
4.	2001-2002	17904 (2.43)	4418 (32.76)	15683 (2.97)	1362 (9.51)	33587 (2.65)	5780 (20.79)
5.	2002-2003	21104 (2.86)	3200 (17.87)	18670 (3.53)	2987 (19.05)	39774 (3.14)	6187 (18.42)
6.	2003-2004	26192 (3.55)	5088 (24.11)	26249 (4.97)	7579 (40.59)	52441 (4.14)	12667 (31.85)
7.	2004-2005	36793 (4.99)	10601 (40.47)	44688 (8.46)	18439 (70.25)	81481 (6.44)	29040 (55.38)
8.	2005-2006	57640 (7.81)	20847 (56.66)	67837 (12.84)	23149 (51.80)	125477 (9.91)	43996 (54.00)
9.	2006-2007	83202 (11.28)	25562 (44.35)	83283 (15.76)	15446 (22.77)	166485 (13.15)	41008 (32.68)
10.	2007-2008	122289 (16.58)	39087 (46.98)	58798 (11.13)	-24485 (-29.40)	181088 (14.30)	14603 (8.77)
11.	2008-2009	147818 (20.04)	25529 (20.88)	81133 (15.35)	22335 (37.99)	228951 (18.08)	47863 (26.43)
12.	2009-2010	189908 (25.74)*	42090 (28.47)**	95892 (18.14)*	14759 (18.19)**	285800 (22.58)*	56849 (24.83)**
TOTAL		**737655 (100.00)**		**528411 (100.00)**		**1266067 (100.00)**	
Mean		**61471.25**		**44034.25**		**105505.6**	
Median		**31492.50**		**35468.50**		**66961.00**	
Maximum		**189908.0**		**95892.00**		**285800.0**	
Minimum		**9622.000**		**8821.000**		**18443.00**	
Std. Dev.		**61041.81**		**31963.29**		**90755.43**	
Skewness		**1.009022**		**0.358423**		**0.753639**	
Kurtosis		**2.631913**		**1.545704**		**2.230263**	
CGR		**50.68**		**45.19**		**50.85**	
Correlation		**A & B = 0.894056**		**A & C = 0.987477**		**B & C = 0.953531**	

(Rs.in Crores)

Source: Department of Agriculture and Cooperation, Credit Division.
Note: *Figures in parenthesis show percentage to total
Note: **Figures in parenthesis show percentage increase/decrease from the previous year amount
CGR : Compound Growth Rate

From the above table it is found that the mean value for short term credit is Rs. 61,471crores, for medium / long term credit is Rs. 44,034 crores and for total short/medium/long term credit is Rs.1, 05,505 crores. The median value for short term credit is Rs.31, 492 crores, for medium / long term credit is Rs. 35,468 crores and for total short/medium/long term credit is Rs. 66,961 crores. The maximum amount of short term credit of Rs.1, 89,908 crores is provided in the year 2009 – 2010. The

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maximum amount of medium / long term credit of Rs.95, 892 crores is provided in the year 2009-2010. The minimum amount of short term credit of Rs. 9,622 crores is provided in the year 1998 –

1999. The minimum amount of medium / long term credit of Rs.8,821 crores is provided in the year 1998-1999.

The standard deviation for short term credit is Rs. 61,042crores, for medium / long term credit is Rs.31,963 crores and for total short/medium/long term credit is Rs.90,755crores, The positive skewness value for short term credit is 1.00, for medium / long term credit is 0.35 and for short/medium/long term credit is 0.75 is found. The kurtosis value for short term credit is 2.63, for medium / long term credit 1.54 and for short/medium/long term credit is 2.23. To ascertain the association between the various terms loan Wilcoxon Signed Rank Test is applied and the result is analysed in the following part.

2 Wilcoxon Signed Ranks Test

To know the significant difference between pairs under short term, medium/long term and short / medium/ long term credit by commercial banks to agricultural sector, Wilcoxon Matched – Pairs Signed – Ranks test is applied and the results is presented in the following table
.

Table 2 Result of Wilcoxon Signed Ranks Test

		N	Mean Rank	Sum of Ranks
MTLTCB – STCB	Negative Ranks	6[a]	8.17	49.00
	Positive Ranks	6[b]	4.83	29.00
	Ties	0[c]		
	Total	12		
STMTLTCB – STCB	Negative Ranks	0[d]	.00	.00
	Positive Ranks	12[e]	6.50	78.00
	Ties	0[f]		
	Total	12		
STMTLTCB – MTLTCB	Negative Ranks	0[g]	.00	.00
	Positive Ranks	12[h]	6.50	78.00
	Ties	0[i]		
	Total	12		

a. MTLTCB < STCB
b. MTLTCB > STCB
c. MTLTCB = STCB
d. STMTLTCB < STCB
e. STMTLTCB > STCB
f. STMTLTCB = STCB
g. STMTLTCB < MTLTCB
h. STMTLTCB > MTLTCB
i. STMTLTCB = MTLTCB

	MTLTCB - STCB	STMTLTCB - STCB	STMTLTCB - MTLTCB
Z	-.784[b]	-3.059[c]	-3.059[c]
Asymp. Sig. (2-tailed)	.433	.002	.002

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a. Wilcoxon Signed Ranks Test
b. Based on positive ranks.
c. Based on negative ranks.

Table 3 Test Statistics

The output of the Wilcoxon matched pairs signed test shows that there is a significant difference between within the each groups. That is

a) There is a association between short term/medium term/long term credit and short term credit ($P<0.002$).

b) Association between short term/medium term/long term credit and medium/long term credit ($P<0.002$).

c) There is no association between medium term/long term credit and short term credit to agricultural sector by commercial banks during the study period ($P<0.433$).

3 Trend Value

The trend value of commercial banks credit to agricultural sector for the years form 2013 – 2014 to 2022 – 2023 is calculated by using the formula Yc = a+bx.

Yc = a+bx

Where, Y = short term/medium term/long term credit in crores of rupees.

x = Time Variable ‘a’ and ‘b’ are parameters to be estimated.

Yc = computed trend figure for the period x

The above trend equation has been estimated by using the least squares method. The value of ‘a’ and ‘b’ is determined by solving the following two normal equations:

1.$\sum y = Na + b\sum x$--------------

2. $\sum xy = N\sum a + b\sum x^2$ ------------

Where,

N = Number of years for which data are given, that is nine years.

The x values for the year 1999 to 2010 are -6,-5,-4, -3, -2, -1, 0, 1, 2, 3, 4 and 5 Since $\sum x=0$ the above two normal equations are:

$\sum y$ = Na

a = $\sum \div N$

$\sum xy$ = $b\sum x^2$

b = $\sum xy \div \sum x^2$

The calculated trend value is presented in the following table.

Table 4 Trend Value of Commercial Banks Credit to Agricultural Sector

S.No	Year	Short Term Credit	Medium / Long Term Credit	Short / Medium/ Long Term Credit
1.	2013 – 2014	162263.03	94925.26	257188.54
2.	2014 – 2015	174862.00	101286.64	276148.91
3.	2015 – 2016	187460.98	107648.02	295109.28
4.	2016 - 2017	200059.95	114009.39	314069.65
5.	2017 - 2018	212658.92	120370.77	333030.02

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6.	2018 - 2019	225257.89	126732.15	351990.39
7.	2019 - 2020	237856.87	133093.52	370950.76
8.	2021- 2022	250455.84	139454.90	389911.13
9.	2022 -2023	263054.81	145816.28	408871.50

Source: Calculated Value

It is clear from the above Table that the trend value of short term credit to agricultural sector during the study period is varied between Rs. 1,62,263.03 crores and Rs. 2,63,054.82 crores, medium / long term credit is varied between Rs.9,49,25.26 crores and Rs.1,45,816.28 crores and short/medium/long term credit is varied between Rs.2,57,188.54 crores and Rs. 408871.50. The above trend value details are also presented in the following diagram compared with the actual trend.

Figure 1 Trend of short term credit to Agriculture sector by commercial bank

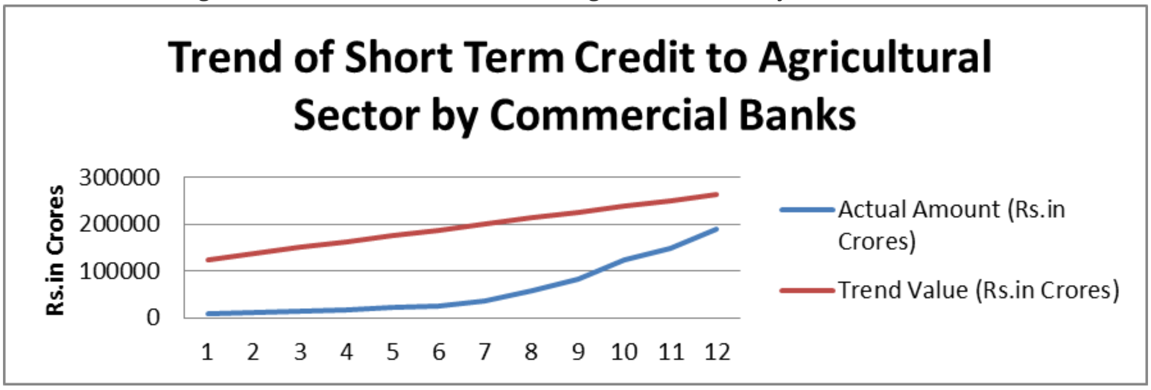

Figure 2 Trend of medium / long term credit to Agriculture sector by commercial bank

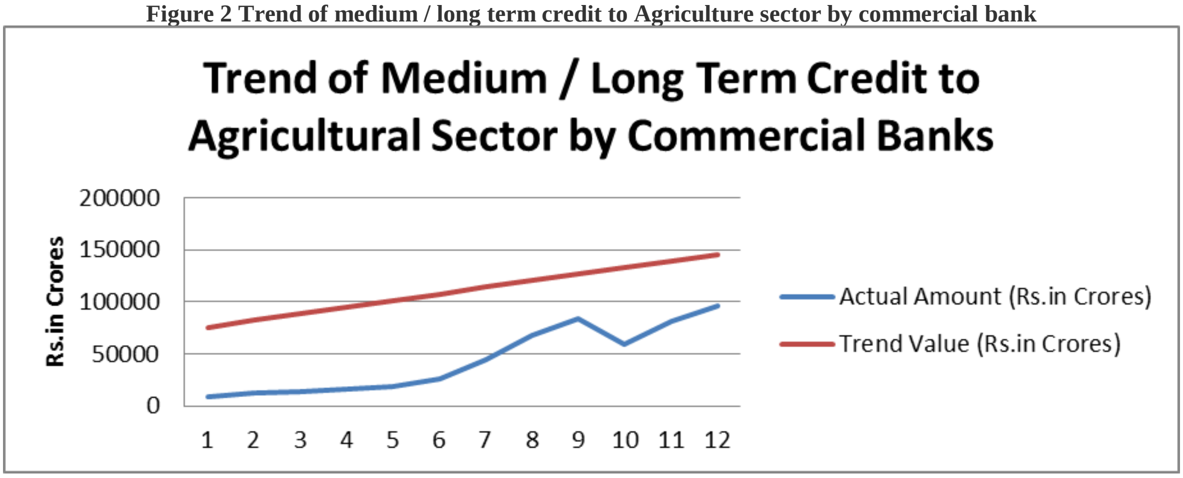

Figure 3 Trend of Short / medium / long term credit to Agriculture sector by commercial bank

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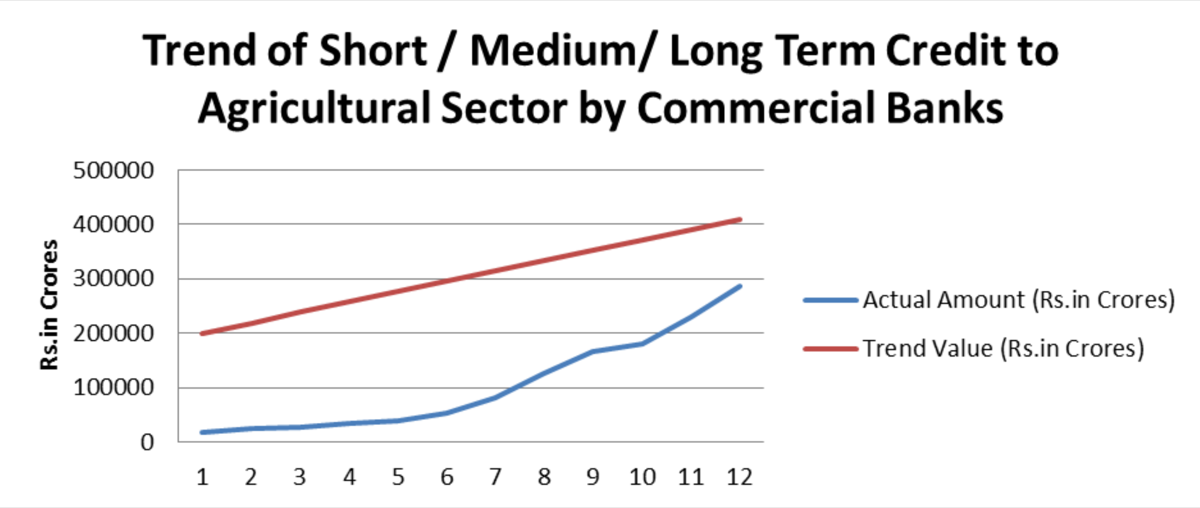

4 Kendall's W Test

To know the significant difference between the short/medium/long term loan provided by commercial banks, to agricultural sector, Kendall's W Test has been used. The results are shown in the following table

Table 5 Kendall's W Test

	ST CB	MT/LT CB	ST/ MT/LT CB	N	Chi-Square	Degrees of freedom	Significant	Asymp. Sig.
Mean Rank	1.50	1.50	3.00	12	750	18000	2	.000

From the above table it is found that, there is an significant difference between the short/medium/long term loan provided by commercial banks to agricultural sector. These difference could be anywhere within the possible pair wise comparisons. For example short term loan of commercial banks (M= 1.50) probably differs significantly from short/medium/long term loan by commercial banks (M=3.00) to agricultural sector.

5 Conclusion

The commercial banks credit to agricultural sector shows the increasing trend is a welcoming feature. When the repayment of loan is made without any default, the commercial banks will surely increase the credit to agricultural sector for the better development than existing level.

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