

## **AN IMPACT OF 'DOUBLING OF AGRICULTURAL CREDIT' PROGRAMME ON COMMERCIAL BANK'S CREDIT SUPPLY TO AGRICULTURE IN INDIA**

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### **Abstract**

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In 2004, Government of India (GOI) has announced 'Doubling of Agricultural Credit' (DAC) programme to increase flow of formal source of credit to agricultural sector. The programme aim was to double the credit to agriculture sector by all formal sources of finance in merely three years with base year of 2003-04. After successful implementation of this programme and especially active involvement of CBs in this implementation, what were the changes happened in the flow of agricultural credit is the study matter of this current research paper. The Analysis of Variance (ANOVA) is used to test the framed hypothesis based on the analysis of significant difference between the mean of the two sample groups along with CAGR during different periods during 1997-98 to 2011-12.

*Firstly*, the share of long term credit has declined after implementation of DAC programmes. The direct and indirect credit supply data shows that CBs has supplied more credit under direct credit category to meet the target of DAC programme in Tenth FYP period and shifted to indirect credit in Eleventh FYP period but with

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### **Keywords:**

Agricultural;  
Commercial Banks;  
Doubling of Agricultural  
Credit Programme;  
Credit;  
Farmers.

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less growth of credit amount. *Secondly*, the land size-wise analysis shows that the CBs are extending more credit to large farmers compare to marginal and small farmers. It has been also observed that the share of amount has increased in only Tenth FYP period, but number of account was negative in Ninth FYP period but there after increased and remain at higher level.

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### **1. Introduction:**

The Government of India (GOI) has been taking various initiatives to increase the growth rate of agriculture sector since independence but hardly ever able to achieve sustainable more than 4 per cent rate of growth which is considered necessary condition to improve life of farmers and below poverty line households in India (Sharma, 2012).

The credit is assumed to be important input in modern capital intensive agriculture practices in Indian Economy. The policymaker has developed multi-agency credit delivery system which comprises Co-operative Banks, Regional Rural Banks (RRBs) and Commercial Banks (CBs) among the others. In 2004, GOI had announced 'Doubling of Agricultural Credit' (DAC) programme to increase flow of formal source of credit to agricultural sector. The programme aims to double the credit to agriculture sector by all formal sources of finance in merely three years with base year of 2003-04. After successful implementation of this programme (Ministry of Finance, 2007) and especially active involvement of CBs in this implementation (Satyasai, 2008), what changes happened in the flow of agricultural credit? Is this programme boosted sustainable growth in agricultural credit? Is marginal and small farmer's exclusion increasing? So this paper has analyzed direct and indirect credit flow and land size-wise credit flow by Commercial Banks in India during last three Five Year Plan viz. 1998-2012.

The agricultural credit has been studied by many researchers. After successfully implementation of DAC programme, NABARD as one of the monitoring authorities of this DAC programme has conducted studies in selected States viz. Rajasthan, Tamil Nadu, Madhya Pradesh, Maharashtra and Uttar Pradesh and found that in all five States, the CBs performed better than Co-operatives and RRBs (NABARD, 2009). But, some researcher has pointed out there is increasing regional

imbalance and exclusion of marginal and small farmers especially after implementation of DAC programme (Mehrotra, 2011). However, Satish (2012) in his keynote paper has pointed out emergence of two issues after DAC programme i.e. i) increasing share of indirect credit flow to agricultural sector and, ii) expansion of credit flow to marginal and small farmers, then he discussed few innovation in the agriculture credit market in India. In his speech, Subbarao (2012) has pointed out broad trends in agricultural credit in India were i) increasing share of commercial banks in total institutional credit to agriculture, ii) faster growth of indirect agricultural credit, iii) decline in the share of long-term agricultural credit and he elaborate various challenges in agricultural credit in India. Whereas, Jumrani and Agarwal (2012) argued that there has been both credit deepening and widening. On the other hand, they concluded that this credit deepening has been experienced more for indirect finance and credit widening has been more noticeable for direct finance during DAC programme period.

## **2. Research Method**

This study is based on secondary data. The data related to CBs have been obtained from Report on Trends and Progress in Banking in India and Handbook of Statistics on Indian Economy published by RBI. The Analysis of Variance (ANOVA) is used to test the framed hypothesis based on the analysis of significant difference between the mean of the two sample groups along with CAGR during different periods during 1997-98 to 2011-12.

The present study has been used ANOVA to test the hypothesis as to there is any significant difference between the three periods along with post-hoc test to know the period wise difference in mean of each variable for each separate time period. In this study, the first period relates to the period of Ninth Five Year Plan, that is, from 1997-98 to 2001-02, second period is Tenth Five Year Plan, that is from 2002-03 to 2006-07 and the third period relates to the Eleventh Five Year Plan, that is, from 2007-08 to 2011-12. If *p-value* of F in ANOVA table is less than 0.05, in this case we need to observe the *p-value* in post-hoc test table to identify the significance between the pair of groups. Addition to this, to study the significant change in mean between two groups between the two times periods the post-hoc test is used. To decide the application of method in post-hoc test it is essential to study the nature of data, if data is heterogeneous “Dunnett T3” test will be used in post-hoc test to know the significant changes between the two time periods and

for homogenous data “Least Significant Difference” (LSD) test may be used. To test the homogeneity of variances i.e. the Levene statistic is used to know whether the data is heterogeneous or homogeneous. The significance value  $>0.05$  shows homogeneity of the data and  $<0.05$  shows the heterogeneity in the data.

### 3. Results and Analysis:

The agricultural credit by commercial banks has been analyzed with reference to the announcement and implementation of DAC programme during the 1998-2012 with a comparative study of above mention three FYP periods i.e. P1, P2 & P3. For this purpose two parameters have been selected: i) Direct and Indirect Credit Flow, ii) Land Size-wise Credit Flow.

#### 3.1. *Direct and Indirect CreditFlow*

The commercial banks provide two types of credit to agricultural sector i.e. direct credit and indirect credit. These credits are supplied to directly to the farmers by the banks. Indirect credit for agricultural sector includes credit supplied for agriculture sector and allied activities to increase agricultural productivity and income of the famers in the sector. These loans are generally channelized though some other agencies.

To analyze the impact of DAC programme on direct and indirect flow of credit to agriculture sector by the commercial banks the mean values of percentage change have been compare between more than two groups using ANOVA fallowed by post-hoc test for group-wise comparison.

- **H<sub>0</sub>**: there is no significant difference between mean percentage of total, direct and indirect outstanding credit by Commercial Banks over the three periods, P1, P2 and P3.
- **H<sub>1</sub>**: there is significant difference in mean percentage outstanding credit of Commercial Banks over the three periods.

The calculated result shows that total agriculture credit number of account & amount and direct credit number of account & amount difference between at least two time periods are statistically significant with *P value* 0.022, 0.008, 0.021 and 0.001 respectively which is less than  $\alpha$  (0.05). Therefore, alternative hypothesis is accepted. But, in the case of indirect credit of number of

account and amount null hypothesis is accepted. That means it can be said that there is significant mean percentage change of total and direct outstanding credit number of account and amount by commercial banks between at least two time periods (Appendix Table A2).

To understand the significant difference in mean percentage of total and direct outstanding credit number of account and amount between the two time periods separately post-hoc test is used. The Levene's test is used to find the data is heterogeneous or homogeneous. This test shows that the data is homogeneous for number of account and amount of total agriculture outstanding credit and number of account of direct outstanding credit but data is heterogeneous for amount of direct outstanding credit (Appendix Table A3). So that, LSD test will follow to analyze the number of account and amount of total agriculture outstanding credit and number of account of direct outstanding credit and Dunnett T3 will be used for amount of direct outstanding credit.

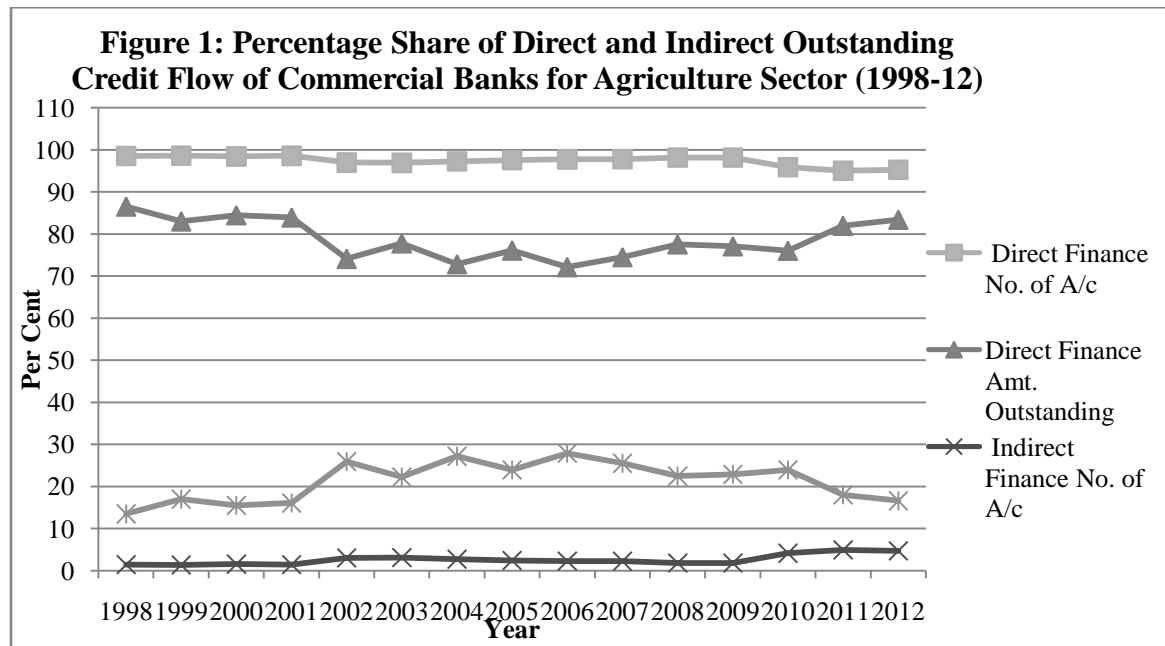
The analysis clarifies that there is statistically different pattern of CBs number of account and amount of total agriculture outstanding credit between period P1 and P2, period P3 and P1, period P1 and P2, period P2 and P3 respectively as their *P values* are less than  $\alpha$  (0.05). And also that there is statistically different pattern of CBs number of account and amount of direct outstanding credit between period P1 and P2, period P3 and P1 as their *P values* are less than  $\alpha$  (0.05) (Appendix Table A4).

The total agriculture and direct outstanding credit amount and number of account in P2 i.e. in Tenth FYP period, is higher than both the other FYP periods. The mean value of total agriculture and direct number of account of CBs in Tenth FYP period are 10.61 and 10.80 respectively, which are higher than Ninth FYP period as -1.90 and -2.25 respectively, and 9.37 and 8.82 in Eleventh FYP periods respectively. The similar pattern is observed in terms of mean value of direct and total agriculture outstanding credit by CBs during three FYP periods (Appendix Table A1).

It means that in Tenth FYP period, the total and direct agriculture outstanding credit and number of account has increased but this not true about indirect outstanding credit and number of account during the 1998-2012.

The share of number of direct credit account has declined from 98.56 percent in 1998 to 95.29 percent in 2012, whereas the share of number of indirect credit account increased from

1.44 percent to 4.71 percent during the same period. This shows that there was dominance of direct credit account in terms of CBs credit to agriculture sector but especially after implementations of DAC programme, the share of indirect credit account has increased which is positive impact on credit to agriculture sector by CBs in India, because indirect credit to agriculture sector work for improvement of the productivity of agriculture sector and income of farmers (Figure 1).



**Source:** Basic Statistical Returns of Scheduled Commercial Banks in India (1997 to 2012), RBI, Table 1.9.

However, the share of direct agriculture sector credit amount outstanding has decreased from 86.52 percent in 1998 to 74.10 percent in 2002 and then after increased to 83.40 percent in 2012, whereas the share of indirect agriculture sector credit amount outstanding has increased from 13.48 percent in 1998 to 23.94 percent in 2010 but after that it has sharply declined to 16.60 percent in 2012 (Figure 1).

Addition to this, the number of account share of both direct and indirect is not commensurate with the share of amount during the study period. This reflects that less account of indirect credit absorbing more credit than direct credit part in the agriculture credit by CBs during 1998-2012.

The number of account of direct credit has increased from with CAGR of -2.01 percent in Ninth FYP period, i.e. period P1, to 12.62 percent in Tenth FYP period, but it has decrease to CAGR of 7.12 percent in Eleventh FYP period. The same pattern has been observed in terms of amount of direct credit by CBs during the same period. This shows that, there was big push to direct credit account and amount due to implementation of DAC programme in Tenth FYP period, but this trend reversed in in Eleventh FYP period.

**Table 1: Period-wise Compound Annual Growth Rate of Direct and Indirect Outstanding Credit Flow of Commercial Banks for Agriculture Sector (1998-2012)**

(Per cent)

Particulars	I) Agriculture Total		A) Direct Finance		B) Indirect Finance	
	No. of A/c	Amount Outstanding	No. of A/c	Amount Outstanding	No. of A/c	Amount Outstanding
P1 (1997-2002)	-1.61	16.07	-2.01	11.66	18.27	36.66
P2 (2002-2007)	12.36	31.95	12.62	30.54	3.27	36.56
P3 (2007-2012)	7.92	19.65	7.12	21.86	37.23	10.94
Total (1997-2012)	6.41	21.87	6.15	21.55	15.83	23.69

**Source:** Basic Statistical Returns of Scheduled Commercial Banks in India (1997 to 2012), RBI, Table 1.9.

However, the number of account of indirect credit has declined from with CAGR of 18.27 percent in Ninth FYP period to 3.27 percent in Tenth FYP period and drastically increased with CAGR of 37.23 percent in Eleventh FYP period, whereas the amount of same credit CAGR was near about stagnant in Ninth and Tenth FYP period but it has declined in Eleventh FYP period (Table 1).

### 3.2. Land Size-wise Credit Flow

In the analysis of impact of agriculture credit programmes on CBs credit supply to agricultural sector during last fifteen years, the land size-wise distribution of CBs agricultural credit has important place especially after banking sector reforms in 1991. The CBs has started neglecting agriculture sector to supply credit after banking sector reforms especially after mid-90s, this resulted in to the exclusion of farmers from banking system. The NSSO Report on *Situation*

*Assessment Survey of Farmers-2003* (NSSO, 2005) has found that there is inverse relationship between land size and non-institutional credit sources as sources of credit to farmers in India i.e. lower the size of land, higher the dependency on non-institutional sources of credit. This indicates that especially marginal and small farmers are majorly dependent on non-institutional sources of finance to fulfill their credit requirements, because these farmers go through many problems to access the institutional credit.

The marginal and small size (below 5 acres) of farmers share in total number of land holding was 76.8 per cent in 2000-01 and it has increased to 80.94 per cent in 2010-11. Thus, the majority of Indian agriculture land size is occupied by marginal and small farmers. Many committees has recommended that the credit supply to marginal and small farmers must be proportionate with their share in total land holding share, the excluded section of the farmer households should be brought under institutional source of credit etc. (Vyas, 2004; GOI, 2007). Followed by this, in last three FYP periods GOI has taken various steps to increase credit supply to these farmers.

To understand the impact of DAC programme on land size-wise credit flow to agriculture sector by the commercial banks the mean values of percentage changes have been compare between more than two groups using ANOVA followed by post-hoc test for group-wise comparison.

- **H<sub>0</sub>**: there is no significant difference between mean percentages of land size-wise credit flow by Commercial Banks over the three periods, P1, P2 and P3.
- **H<sub>1</sub>**: there is significant different in mean percentage of land size-wise credit flow by Commercial Banks over the three periods.

The calculated result shows that credit amount to all land size category difference between at least two time periods are statistically significant with *P values* 0.028, 0.046, 0.015 and 0.005 respectively which is less than 0.05. Thus, alternative hypothesis is accepted in terms of credit amount of all land size category farmers during the study period. But, in the case of number of account of all land size category farmer's null hypothesis is accepted. That means it can be conclude that there is significant mean percentage change of amount of all land size category of farmers by commercial banks between at least two time periods (Appendix Table B2).

To analyze the significant difference in mean percentage of land size-wise credit flow between the two time periods separately post-hoc test is applied. The Levene's test is used to find the data



is homogeneous or heterogeneous. This test displays that the data is homogeneous of amount of all land size category of farmers (Appendix Table B3). Hence, LSD test will follow the analysis. The analysis shows that there is statistically different pattern of CBs amount of credit to farmers having upto 2.5 acres and above 2.5 acres to 5 acres land holding between period P1 and P2 as the *P value* is less than  $\alpha$  (0.05) respectively. And also that there is statistically different pattern of CBs amount of credit to farmers having above 5 acres land holding between period P1 and P2, period P2 and P3 as the *P values* are less than 0.05 (Appendix Table B4).

The direct finance to farmers according to size of land holdings by CBs shows that the amount of credit to all category of farmers is higher in Tenth FYP period i.e. P2, as compare to both the other FYP periods. The mean value of farmers having land holding upto 2.5 acres, above 2.5 acres to 5 acres, above 5 acres and in total are 34.39, 31.81, 27.91 and 30.36 respectively which are higher than Ninth and Eleventh FYP periods during 1998-12 (Appendix Table B1).

It means that in Tenth FYP period, the amount of credit to all categories of farmers has increased but this is not correct in terms of number of account of all categories of farmers during last three FYP periods.

**Table 2: Percentage Share of Direct Finance to Farmers According to Size of Land Holdings by Scheduled Commercial Banks' (Outstanding) (1998-2012)**  
(In Percent)

Year	Up to 2.5 acres		Above 2.5 acres to 5 acres		Above 5 acres	
	No. of Accounts	Amount	No. of Accounts	Amount	No. of Accounts	Amount
1997-98	39.83	22.73	32.86	24.46	27.32	52.81
1998-99	38.31	23.11	32.25	23.82	29.45	53.06
1999-00	38.84	22.62	32.28	23.57	28.88	53.82
2000-01	38.84	22.91	31.15	23.21	30.02	53.87
2001-02	39.99	23.34	32.32	25.81	27.69	50.85
2002-03	37.46	21.83	32.28	25.17	30.25	53.00
2003-04	39.86	25.72	31.48	24.28	28.67	50.01
2004-05	39.57	26.12	31.84	26.45	28.59	47.43

2005-06	38.80	26.60	31.44	26.18	29.76	47.22
2006-07	40.65	26.68	30.82	27.02	28.53	46.31
2007-08	38.33	26.69	32.14	26.79	29.53	46.51
2008-09	36.40	27.45	29.76	27.26	33.84	45.29
2009-10	35.21	28.83	28.90	26.97	35.89	44.20
2010-11	37.23	28.68	38.21	30.75	24.56	40.56
2011-12	40.54	31.79	35.65	32.29	23.81	35.92

**Source:** Handbook of Statistics on the Indian Economy-2012-13, RBI, Mumbai, p.124.

The percentage share of above 5 acres category of farmers has declined from 52.81 percent in 1997-98 to 35.92 percent in 2011-12, but still occupies the highest share in direct financed by CBs during study period. The CBs direct finance to farmers, upto 2.5 acres size of land holding farmers has more shares in terms of number of account (Table 2).

As recommended by VS Vyas committee in 2004 that, 'the credit supply to marginal and small farmers must be proportionate with their share in total land holding share' (Vyas, 2004), this is true about only number of account financed by CBs during the 1998-2012. But, the share of amount is not commensurate with their share in total land holding share.

However, the share of finance above 5 acres land holding farmers has decrease after DAC programme and there has been increase in the share of finance upto 2.5 acres and above 2.5 to 5 acres land holding farmers, this is positive impact of DAC has happened on CBs credit during 1998-2012.

The total direct finance to farmers by CBs during study period increased from with CAGR of 13.96 percent in Ninth FYP period to CAGR of 32.83 percent in Tenth FYP period, but it has declined to CAGR of 22.46 percent in Eleventh FYP period. The number of account financed by CBs has increased from negative CAGR of -0.04 percent in Ninth FYP period to 17.89 percent in Tenth FYP period, but as like credit, it has also declined with CAGR of 8.16 percent in Eleventh FYP period. The same picture has been observed in term of all size of land holding farmers during the study period. Thus, the land size-wise analysis shows that there has been slower

growth of credit during Ninth FYP period but it has increased in Tenth FYP period due to programme like DAC and further declined in Eleventh FYP period (Table 3).

**Table 3: Period-wise Compound Annual Growth Rate of Direct Finance to Farmers According to Size of Land Holdings by Scheduled Commercial Banks' (Outstanding) (1998-2012)**  
(In Percent)

Area	Up to 2.5 acres		Above 2.5 acres to 5 acres		Above 5 acres		Total	
	No. of A/c	Amt.	No. of A/c	Amt.	No. of A/c	Amt.	No. of A/c	Amt.
P1 (1997-2002)	0.06	14.71	-0.46	15.50	0.30	12.88	-0.04	13.96
P2 (2002-2007)	20.32	39.66	16.54	35.21	16.17	28.42	17.89	32.83
P3 (2007-2012)	9.69	27.93	11.00	28.30	2.50	14.79	8.16	22.46
Total (1998-2012)	9.04	25.71	9.54	25.19	7.84	19.40	8.90	22.73

**Source:** Handbook of Statistics on the Indian Economy-2012-13, RBI, Mumbai, p.124.

Hence, the direct finance to farmers according to land size-wise by CBs indicates that, the CBs is extending more credit to large farmers compare to marginal and small farmers and this results has been found by other researchers also (Ramakumar et al. 2007). It has been also observed that the share of amount has increased in only Tenth FYP period, but number of account was negative in Ninth FYP period but there after increased and remain at higher level.

#### 4. Conclusion:

The share of long term credit has declined after implementation of DAC programmes, which might be hamper long term growth rate of agricultural sector in India because this type of credit is important for a sustainable agricultural growth. The direct and indirect credit supply data

shows that CBs has supplied more credit under direct credit category to meet the target of DAC programme in Tenth FYP period and shifted to indirect credit in Eleventh FYP period but with less growth of credit amount. The land size-wise analysis shows that the CBs are extending more credit to large farmers compare to marginal and small farmers. It has been also observed that the share of amount has increased in only Tenth FYP period, but number of account was negative in Ninth FYP period but there after increased and remain at higher level.

Thus, not only the direct and indirect credit flow but also land size-wise direct credit flow by commercial banks has been changed substantially during 1997-98 to 2011-12. The agricultural credit programme like DAC have created positive environment in supply of credit to agricultural sector during last decade.

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## Appendix

### A) Direct and Indirect Credit of Scheduled Commercial Banks to Agriculture (1998-2012)

**Table A1: Descriptive Statistics**

Groups	Period	Count	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min.	Max.
						Lower Bound	Upper Bound		
Total Agriculture (No. of Account)	P1	5	-1.90	5.14071	2.29900	-8.28	4.48	-8.89	3.76
	P2	5	10.61	9.53936	4.26613	-1.23	22.46	2.23	25.12
	P3	5	9.37	3.97218	1.77641	4.43	14.30	4.65	15.02
	Total	15	6.03	8.48508	2.19084	1.33	10.73	-8.89	25.12
Total Agriculture (Amount)	P1	5	15.23	5.09238	2.27738	8.90	21.55	11.47	23.74
	P2	5	29.35	7.53597	3.37019	19.99	38.71	18.63	38.83
	P3	5	19.62	4.87921	2.18205	13.56	25.68	12.89	26.12
	Total	15	21.40	8.23117	2.12528	16.84	25.96	11.47	38.83
Direct Credit (No. of Account)	P1	5	-2.25	4.73585	2.11794	-8.13	3.63	-8.82	3.55
	P2	5	10.80	9.62957	4.30648	-1.16	22.76	2.31	25.53
	P3	5	8.82	4.69595	2.10009	2.99	14.65	4.45	15.50
	Total	15	5.79	8.63477	2.22949	1.01	10.57	-8.82	25.53
Direct Credit (Amount)	P1	5	11.76	1.64678	.73646	9.71	13.80	9.24	13.61
	P2	5	29.50	7.79739	3.48710	19.82	39.18	18.70	37.68
	P3	5	22.39	5.81133	2.59890	15.17	29.60	12.30	27.33

	Total	15	21.22	9.20610	2.37701	16.12	26.31	9.24	37.68
<b>Indirect Credit (No. of Account)</b>	P1	5	23.09	55.2111 9	24.6911 9	-45.47	91.64	-14.2	118.8
	P2	5	4.04	8.88793	3.97480	-7.00	15.08	-9.42	12.89
	P3	5	35.89	61.9340 4	27.6977 5	-41.01	112.7 9	-6.11	144.1
	Total	15	21.01	46.6144 2	12.0357 9	-4.81	46.82	-14.2	144.1
<b>Indirect Credit (Amount)</b>	P1	5	34.51	40.1209 0	17.9426 1	-15.30	84.33	1.86	99.49
	P2	5	30.85	26.2094 2	11.7212 1	-1.70	63.39	1.81	61.75
	P3	5	10.61	15.7102 5	7.02584	-8.89	30.12	-11.1	32.05
	Total	15	25.32	29.0695 0	7.50571	9.23	41.42	-11.1	99.49

Table A2: One Way ANOVA

Groups	Source of Variation	Sum of Squares	df	Mean Square	F	Sig.
<b>Total Agriculture (No. of Account)</b>	Between Groups	475.134	2	237.567	5.350	.022*
	Within Groups	532.818	12	44.402		
	Total	1007.953	14			
<b>Total Agriculture (Amount)</b>	Between Groups	522.410	2	261.205	7.356	.008*
	Within Groups	426.119	12	35.510		
	Total	948.530	14			
<b>Direct Credit (No. of Account)</b>	Between Groups	494.995	2	247.498	5.411	.021*
	Within Groups	548.835	12	45.736		
	Total	1043.831	14			
<b>Direct Credit (Amount)</b>	Between Groups	797.402	2	398.701	12.295	.001*
	Within Groups	389.130	12	32.428		
	Total	1186.533	14			
<b>Indirect Credit (No. of Account)</b>	Between Groups	2568.269	2	1284.135	.553	.589
	Within Groups	27852.385	12	2321.032		

	Total	30420.654	14			
<b>Indirect Credit (Amount)</b>	Between Groups	1656.774	2	828.387	.977	.404
	Within Groups	10173.731	12	847.811		
	Total	11830.505	14			
*. The mean difference is significant at the 0.05 level.						

**Table A3: Test of Homogeneity of Variances**

Groups	Levene Statistic	df1	df2	Sig.
<b>Total Agriculture (No. of Account)</b>	2.097	2	12	.166
<b>Total Agriculture (Amount)</b>	.416	2	12	.669
<b>Direct Credit (No. of Account)</b>	1.774	2	12	.211
<b>Direct Credit (Amount)</b>	3.894	2	12	.050
<b>Indirect Credit (No. of Account)</b>	2.161	2	12	.158
<b>Indirect Credit (Amount)</b>	2.374	2	12	.135

**Table A4: Post-hoc Test (Multiple Comparisons)**

Dependent Variable	Test	(I) Year	(J) Year	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
<b>Total Agriculture (No. of Account)</b>	<b>LSD</b>	1	2	-12.51400	4.21	.012*	-21.70	-3.33
		2	3	1.24800	4.21	.772	-7.93	10.43
		3	1	11.26600	4.21	.020*	2.08	20.45
<b>Total Agriculture</b>	<b>LSD</b>	1	2	-14.12400	3.77	.003*	-22.34	-5.91
		2	3	9.72800	3.77	.024*	1.52	17.94

(Amount)		3	1	4.39600	3.77	.266	-3.82	12.61
Direct Credit (No. of Account)	LSD	1	2	-13.05400	4.28	.010*	-22.37	-3.73
		2	3	1.97800	4.28	.652	-7.34	11.30
		3	1	11.07600	4.28	.024*	1.76	20.40
Direct Credit (Amount)	Dunnnett T3	1	2	-17.74400	3.56	.016*	-30.57	-4.92
		2	3	7.11600	4.35	.345	-5.99	20.22
		3	1	10.62800	2.70	.033*	1.17	20.09

\*. The mean difference is significant at the 0.05 level.

### B) Direct Finance to Farmers According to Size of Land Holdings by Scheduled Commercial Banks (Outstanding) (1998-2012)

Table B1: Descriptive Statistics

Groups	Period	Count	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Min.	Max.
						Lower Bound	Upper Bound		
Up to 2.5 acres (No. of Account)	P1	5	-1.33	7.09677	3.17377	-10.14	7.48	-9.86	6.57
	P2	5	15.73	11.84535	5.29740	1.02	30.44	-3.12	28.15
	P3	5	13.67	28.56719	12.77564	-21.80	49.14	-27.45	47.94
	Total	15	9.36	18.69686	4.82751	-1.00	19.71	-27.45	47.94
Up to 2.5 acres (Amount)	P1	5	12.52	6.94186	3.10450	3.90	21.14	3.35	21.40
	P2	5	34.39	15.62858	6.98932	14.99	53.80	12.03	50.87
	P3	5	27.51	9.59783	4.29228	15.60	39.43	13.80	40.27
	Total	15	24.81	14.11567	3.64465	16.99	32.63	3.35	50.87
Above 2.5 acres to 5 acres (No. of Account)	P1	5	-1.11	5.91721	2.64626	-8.46	6.23	-8.01	7.37
	P2	5	13.94	6.97779	3.12056	5.27	22.60	3.31	22.22
	P3	5	15.58	22.66027	10.13398	-12.56	43.71	-9.28	48.59
	Total	15	9.47	15.20155	3.92502	1.05	17.89	-9.28	48.59
Above 2.5 acres to 5 acres (Amount)	P1	5	14.38	10.84961	4.85209	0.91	27.85	4.37	32.54
	P2	5	31.81	12.87951	5.75989	15.82	47.80	16.83	48.55
	P3	5	27.36	4.63946	2.07483	21.60	33.12	21.95	32.85
	Total	15	24.52	12.07317	3.11728	17.83	31.20	4.37	48.55



<b>Above 5 acres (No. of Account)</b>	P1	5	-0.95	4.54141	2.03098	-6.59	4.69	-6.18	5.21
	P2	5	15.59	4.38626	1.96160	10.15	21.04	10.50	20.49
	P3	5	15.03	41.99781	18.7819 9	-37.11	67.18	-53.04	62.23
	Total	15	9.89	24.04955	6.20957	-3.43	23.21	-53.04	62.23
<b>Above 5 acres (Amount)</b>	P1	5	12.80	3.37302	1.50846	8.61	16.99	7.65	16.35
	P2	5	27.91	8.36757	3.74209	17.52	38.30	20.79	41.78
	P3	5	16.99	8.28686	3.70600	6.70	27.28	4.99	24.91
	Total	15	19.24	9.29203	2.39919	14.09	24.38	4.99	41.78
<b>Total (No. of Account)</b>	P1	5	-1.22	4.66370	2.08567	-7.01	4.57	-6.28	3.49
	P2	5	15.02	7.03159	3.14462	6.29	23.75	3.42	20.82
	P3	5	14.22	30.36901	13.5814 3	-23.49	51.93	-31.38	52.97
	Total	15	9.34	18.53881	4.78670	-0.92	19.61	-31.38	52.97
<b>Total (Amount)</b>	P1	5	13.06	4.87837	2.18167	7.00	19.11	7.15	19.19
	P2	5	30.36	8.99189	4.02130	19.20	41.52	19.80	42.39
	P3	5	22.92	4.93780	2.20825	16.78	29.05	14.40	26.54
	Total	15	22.11	9.52280	2.45878	16.84	27.38	7.15	42.39

Table B2: One Way ANOVA

Groups	Source of Variation	Sum of Squares	df	Mean Square	F	Sig.
<b>Up to 2.5 acres (No. of Account)</b>	Between Groups	866.973	2	433.486	1.292	.310
	Within Groups	4027.044	12	335.587		
	Total	4894.017	14			
<b>Up to 2.5 acres (Amount)</b>	Between Groups	1251.290	2	625.645	4.881	.028*
	Within Groups	1538.242	12	128.187		
	Total	2789.531	14			
<b>Above 2.5 acres to 5 acres (No. of Account)</b>	Between Groups	846.459	2	423.229	2.126	.162
	Within Groups	2388.763	12	199.064		
	Total	3235.222	14			
<b>Above 2.5 acres to 5 acres (Amount)</b>	Between Groups	820.179	2	410.089	4.032	.046*
	Within Groups	1220.482	12	101.707		
	Total	2040.661	14			
<b>Above 5 acres (No. of Account)</b>	Between Groups	882.612	2	441.306	.734	.500
	Within Groups	7214.720	12	601.227		

	Total	8097.333	14			
<b>Above 5 acres (Amount)</b>	Between Groups	608.524	2	304.262	6.083	.015*
	Within Groups	600.262	12	50.022		
	Total	1208.786	14			
<b>Total (No. of Account)</b>	Between Groups	837.741	2	418.870	1.265	.317
	Within Groups	3973.881	12	331.157		
	Total	4811.622	14			
<b>Total (Amount)</b>	Between Groups	753.435	2	376.718	8.759	.005*
	Within Groups	516.138	12	43.011		
	Total	1269.573	14			
*. The mean difference is significant at the 0.05 level.						

**Table B3: Test of Homogeneity of Variances**

Groups	Levene Statistic	df1	df2	Sig.
Up to 2.5 acres (No. of Account)	2.722	2	12	.106
Up to 2.5 acres (Amount)	2.181	2	12	.156
Above 2.5 acres to 5 acres (No. of Account)	4.900	2	12	.028
Above 2.5 acres to 5 acres (Amount)	1.846	2	12	.200
Above 5 acres (No. of Account)	3.308	2	12	.072
Above 5 acres (Amount)	2.132	2	12	.161
Total (No. of Account)	3.079	2	12	.083
Total (Amount)	2.087	2	12	.167

**Table B4: Post-hoc Test (Multiple Comparisons)**

Dependent Variable	Test	(I) Year	(J) Year	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
Up to 2.5 acres (Amount)	LSD	1	2	-21.87600	7.16	.010*	-37.48	-6.27
		2	3	6.88000	7.16	.356	-8.72	22.48
		3	1	14.99600	7.16	.058	-0.61	30.60
Above 2.5 acres to 5 acres (Amount)	LSD	1	2	-17.43200	6.38	.018*	-31.33	-3.53
		2	3	4.45600	6.38	.498	-9.44	18.35
		3	1	12.97600	6.38	.065	-0.92	26.87
Above 5 acres (Amount)	LSD	1	2	-15.11000	4.47	.005*	-24.86	-5.36
		2	3	10.92000	4.47	.031*	1.17	20.67
		3	1	4.19000	4.47	.367	-5.56	13.94
Total (Amount)	LSD	1	2	-17.30400	4.15	.001*	-26.34	-8.27
		2	3	7.44400	4.15	.098	-1.59	16.48
		3	1	9.86000	4.15	.035*	0.82	18.90

\*. The mean difference is significant at the 0.05 level.