DETERMINANTS OF NON–PERFORMING ADVANCES: AN EMPIRICAL STUDY OF CENTRAL COOPERATIVE BANKS IN PUNJAB

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ABSTRACT

Central Cooperative Banks occupy an important position in the Indian Banking Industry. Like commercial banks, these banks are meeting the financial requirements of not only the farmers and village artisans but they have now diversified loan portfolio consisting of advances outstanding towards traders, manufacturers and even employees. They provide loan almost for all those purposes for which loan are available from commercial banks and to all those beneficiaries who are eligible to avail loan from commercial banks. In this paper an attempt has been made to identify the factors affecting non-performing advances in the cooperative banks of Punjab. The study which is conducted on nineteen out of total twenty central cooperative banks, pointed out that Central Cooperative Banks at Gurdaspur, Amritsar and Tarn Taran witnessed very high percentage, 21.36, 17.04 and 11.82 respectively, of Non Performing Advances (NPAs) to total advances. Amongst the macro economic factors Growth rate of GDP and inflation rate were found to inversely affect the level of NPAs in these banks. Bank Business, a microeconomic factor, was also found to have inverse relationship with percentage of NPAs to advances. GDP growth rate in six, Inflation rate in seven, IIP in one, Sensex and Repo rate in four, Bank Business in six, and Weighted Average Yield (WY) in two out of nineteen DCCBs were found to be significant factors. Causes for varying amount of NPAs are different in different DCCBs that might be due to situational factors and competency of bank staff in loan appraisal etc. It is suggested that a study at micro level for each bank, particularly for DCCB Gurdaspur, Amritsar and Tarn Taran, may be undertaken to find out the exact cause of NPAs as not only the percentage of NPA to advances is substantially different amongst banks but it is significantly high as well in case of some banks. Levene's test, Turkey post hoc test, Welch one way ANOVA test and stepwise method of linear regression model have been used. Loan portfolio diversification index has been calculated with the help of Hirschmann-Herfindhal Index.

Key Words: Hirschmann-Herfindhal Index, Levene's test, Turkey post hoc test, Welch one way ANOVA test, Diversification Index.

1.   Introduction

Cooperative Banking system emerged out of the need to free farmers and small village artisans from the cruel hold of indigenous money lenders. Though, they were formed to look after the credit need of farmers and artisans, but over a period of time they have diversified their business lines and have entered into those business areas which were meant for commercial banks. Now days, central cooperative banks, like commercial banks, provide almost all types of industrial loans, retail loans like financing for purchase of house or construction of house, financing of commercial and domestic vehicles, purchase of consumer durables, loan for education etc. These banks unlike commercial banks, operate on a district level, thus they have meager financial resources at their disposal as compared to commercial banks. Hence, cooperative banks have to be highly efficient and effective in carrying forward their business. A very small mistake at the end of these banks, can ruin the organization. Banking sector suffers from a wide variety of critical problems and the problem of Non-Performing Advances (NPA) is one of them. Like commercial banks, Central Cooperative Banks are experiencing a severe problem of every day mounting amount struck in defaulters' accounts. Around more than a decade ago, Reserve Bank of India issued directives to central cooperative banks vide which it has been made mandatory for the Cooperative Banks to create provisions in their income statement for the amount struck in the NPA accounts. So far as the problem of Non Performing Advances in central cooperative banks is concerned, theirs' is different kind of experience. Firstly, these banks mainly cater to the financial needs of agriculture sector and small and village artisans, i.e. the segments which are prone to heavy proportion of default loans because of failure of crops, poor repaying capacity of small artisans. Secondly, these banks are subject to heavy political pressures as their board of directors, have political affiliations and these board of directors often use their power to get the loans of their near and dears sanctioned from the bank. Though a number of studies are found in literature regarding factors affecting non-performing advances of banks, but most of these studies are either related to foreign country banking organizations or public and private sector banks in India. Inspite of our best efforts, we couldn't find a study concerned with factors affecting non-performing advances of cooperative banks, hence an effort has been made in this study to examine the factors affecting performance of central cooperative banks in Punjab.

2.   Review of Literature

Problem of non-performing advances has emerged as a threat to the existence of credit organizations, sub prime crisis of America and European economic crisis are the recent examples of this. Therefore the issue of management of NPAs has tempted a large number of researchers to explore the possible causes of ever mounting amount in NPA accounts. In this segment of the paper, few studies pertaining to the causes of NPAs have been reviewed.

Rajan and Dhal (2003) reported that the macroeconomic conditions and financial variables affect the NPLs of commercial banks in India. Fofack (2005) found economic growth rate and the real interest rate as imperative determinants of non-performing loans in the Sub-Saharan African countries. Jimenez and Saurina (2006) in their study of Spanish Banking reported that there is strong evidence that the level of non-performing advances is explained by GDP growth, real interest rates and credit conditions. Louzis et al. (2010) in their study related to Greek banking sector examined the effect of real rate of GDP growth, the unemployment rate and the real interest rate on NPLs. The evidence proved that bad loans are related to the macroeconomic variables such as GDP, unemployment rate and the interest rate. They further reported quality of management as an important factor affecting NPLs. Adebola et al. (2011) in their study about the determinants of NPL in Islamic banks of Malaysia found that macroeconomic variables such as Industrial Production Index (IIP), the interest rate and the index of producer prices were significant. They stated that these variables are in long-term association and interest rate has a significant positive long-term impact on bad loans. They further reported that producer prices seemed to have a negative impact on bad loans. Bofondi and Ropele (2011) in their study reported positive association between interest rates and non-performing loans. Saba et al. (2012) in their made study on the determinants of NPLs confirmed that inflation and Real GDP per capita had positive and lending rate had negative and significant effect on NPLs of US banking sector. Messai and Jouini (2013) in their study examined variables that affected the non-performing advances in the European banks. They found that GDP growth rate and return on assets affect the non-performing advances negatively. Direct relationship was noticed between unemployment rate and the real interest rate. Researchers advised that banks should give due weightage to profitability of the real economy when extending loans. Reddy, B.R. (2004) in a review of 38 research papers concluded that NPA is a threat to the very existence and stability of Indian banking. Jain Vibha (2007) found government interference as a major factor responsible for existence of NPA.

2.1   Objectives of the Study

1. To examine whether the movement of NPAs is different amongst the different district central cooperative banks of Punjab.

2. To identify the factors affecting level of NPAs in Central Cooperative Banks of Punjab

3.   Research Methodology

This study is based on secondary data of 12 financial years from 2002-03 to 2013-14. There are twenty district central cooperative banks in Punjab, this study covers only nineteen banks as one bank at Sahibzada Ajit Singh Nagar was established in the year 2006 and hence the data of all 12 years for this bank was not available. Data is collected from

comparative financial statement data book of different years published by The Punjab State Cooperative Bank Limited, Chandigarh, data was also collected from the head offices of each of the district central cooperative banks and annual reports of the district central cooperative banks. Information about the macro economic factors was collected from the website of World Bank, Ministry of Commerce and Industry, Government of India and Reserve Bank of India. To meet the first objective of our study, Welch one way ANOVA model of one way ANOVA test was applied as the assumption of homogeneity of variance was not fulfilled as tested through Levene's test. Levene's test assesses the assumption that whether the variances of the populations from which different samples are drawn is equal or not.

To test the second objective regarding the explanatory variables affecting credit risk, we have applied stepwise method of multiple linear regression model:

$$NPL_{it}= \beta0 + \beta1(GDP)_t + \beta2(UR)_t + \beta3(CPI)_t + \beta4(IIP)_t + \beta5(RR)_t + \beta6(S)_t + \beta6(BB)_{it} + \beta7(WY)_{it} + \beta8(HFI)_{it} + \varepsilon_{it}$$

Here NPL_{it} represents ratio of non-performing advances to total advances of bank i at time t,

$\beta0$ represents constant

3.1   Macroeconomic Variables

GDP_t represents Growth rate of GDP at time period t,

UR_t represents Unemployment Rate at time t,

CPI_t represents Inflation rate at time t,

RR_t represents Repo rate at time t

IIP_t stands for index of Industrial Production at time t

S_t is the Sensex of Bombay Stock market at time t,

3.2   Microeconomic Variables

BB_{it} stands for Bank Business representing Bank Size of Bank i at time

WY_{it} stands for weighted average yield of bank i at time t

HFI_{it} stands for Hirschmann-Herfindhal Index of Bank i at time t. HFI measures the degree of diversification of loan portfolio.

ε is an error term for bank i at time t.

Hirschmann-Herfindhal Index is the sum of the squares of exposures as a fraction of total exposure under a given classification and is represented by the following formula:

$$\sum_{i=1}^{n}(X_i/X)^2$$

where n is the number of groups and Xi measures exposure in a particular loan scheme i. The smallest and the largest possible values for the Herfindahl Index are given by $1/n \leq H \leq 1$. Hence, lending is more concentrated the closer the Herfindahl Index is near to one and is perfectly diversified if H equals 1/n.

SPSS 16 statistical software is used. Following hypotheses are set to achieve the objectives of this study:

H_1: There is no significant difference between the movements of NPAs of different categories of banks.

H_2: There is no significant relationship between macroeconomic variables such as Growth rate of GDP, Inflation rate (CPI), Index of Industrial Production, Repo rate, unemployment rate, stock market index and micro economic variables such as Bank size, weighted average yield and diversification of loan portfolio on the Non-Performing Advances of Central Cooperative Banks.

4.   Data Analysis and Interpretation

4.1   Trend Analysis of Non-Performing Advances

Table 1 below shows the basic statistical information about the NPAs of banks under study.

Table 1: Non-Performing Advances as a Percentage of Advances-Basic Statistics

Banks	N	Mean	Std. Deviation	Minimum	Maximum
1	12	11.79	3.88	6.20	17.01
2	12	3.79	1.20	1.90	6.47
3	12	5.89	1.66	3.76	8.31
4	12	5.10	0.68	3.73	6.44
5	12	5.46	1.59	2.55	7.65
6	12	4.12	1.89	1.68	7.30
7	12	14.45	3.55	9.15	21.36
8	12	6.63	1.67	4.32	9.90
9	12	2.91	1.40	.92	5.94
10	12	3.58	1.06	2.15	5.48

11	12	6.40	1.93	3.66	9.28
12	12	8.87	1.96	6.81	13.95
13	12	4.31	1.13	2.11	6.03
14	12	4.93	1.55	3.00	6.93
15	12	2.95	0.95	1.60	5.09
16	12	5.54	1.85	1.14	8.24
17	12	7.01	1.33	4.75	9.85
18	12	4.54	.76	3.20	5.45
19	12	9.35	2.46	3.37	11.82
Total	**228**	**6.21**	**3.49**	**0.92**	**21.36**

Note: 1 Represents Amritsar District Central Cooperative Bank (DCCB); 2 stands for Bathinda; 3 for Fatehgarh Sahib; 4 for Fazilka; 5 for Ferozepur; 6 for Faridkot; 7 for Gurdaspur; 8 for Hoshiarpur; 9 for Jalandhar; 10 for Kapurthala; 11 for Ludhiana; 12 for Mansa; 13 for Moga; 14 for Muktsar; 15 for N'Shahr, 16 for Patiala; 17 for Ropar; 18 for Sangrur and 19 for Tarn Taran.

District Central Cooperative Banks, Amritsar (Sr. no.1) and Gurdaspur (Sr. no 7) have the highest level of NPAs as indicated by highest means of 11.79 and 14.45, followed by the Tarn Taran Central Cooperative Bank having mean of 9.35 at serial no. 19. These three districts have been the hub of terrorist activities resulting in high level of NPAs in agriculture loan schemes. Further, these banks are also experiencing very high level of NPAs in the retail lending schemes particularly in the schemes of consumer durable loans and vehicle loans. The main reason for high NPAs in these schemes is their unprofessional way of lending. The highest percentage of NPAs to total advances of 21.36 percent was noticed in the case of Gurdaspur Central Cooperative Bank and 17.04 percent in the case of Amritsar Central Cooperative Bank. District Central Cooperative Bank Nawan Shar (Serial no. 15) had the lowest average NPAs of 2.95% to advances.

The precondition of homogeneity of variances to ensure fitness of data for one way ANOVA test was tested through Levene's test, the results of Levene's test are given in table 2.

Table 2: Levene's Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
7.072	18	266	.000

F value of 7.072 and 0.000 significance level indicates that condition of homogeneity of variances is not met. Therefore, we have used Welch one way ANOVA test in this study. The results of welch one way ANOVA test are given in table 3.

Table 3: ANOVA Table

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2494.729	18	138.596	38.164	.000
Within Groups	965.996	266	3.632		
Total	3460.725	284			

As can be seen from table 3, there was statistically significant difference between the credit risk amongst various categories of banks as indicated by F value (38.164) and significance value of 0.00. Since the means differ among the various categories of banks, we have applied Turkey post-hoc test to see the categories of banks having different movement of NPAs from each other. Table 4 regarding **Multiple Comparisons** obtained through Turkey post-hoc test shows the various categories of banks that experienced movement of NPAs at significantly different rate from each other.

Table 4: Non Performing Advances as a Percentage of Advances- Inter Bank Comparison

Bank (I) \ Bank J	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1																			
2	.000 (-8.001)																		
3	.000 (-5.89)*	.003 (2.102)*																	
4	.000 (-6.687)*	.060 (1.314)	.258 (-.788)																
5	.000 (-6.687)*	.017 (1.674)	.538 (-.428)	.605 (.360)															
6	.000 (7.668)	.633 (.332)	.012 (-1.770)	.162 (-.981)	.055 (-1.34)														
7	.000 (2.659)*	.000 (10.66)	.000 (8.558)	.000 (9.346)	.000 (8.986)	.000 (10.32)													
8	.000 (-5.156)	.000 (2.845)	.287 (0.742)	.029 (1.531)	.093 (1.17)	.000 (2.51)	.000 (-7.81)												
9	.000 (-8.882)	.206 (-.81)	.000 (-2.98)	.002 (-2.19)	.000 (-2.55)	.082 (-1.21)	.000 (-11.54)	.000 (-3.72)											
10	.000 (-8.28)	.767 (-.20)	.001 (-2.3)	.030 (-1.52)	.007 (-1.88)	.439 (-.539)	.000 (-10.86)	.736 (-.234)	.333 (.674)										
11	.000 (-5.39)	.000 (2.61)	.46 (.508)	.064 (1.296)	.179 (0.936)	.001 (2.278)	.000 (-8.050)	.001 (-2.24)	.000 (3.49)	.000 (2.81)									
12	.000 (-2.91)	.000 (5.08)	.000 (2.98)	.000 (-3.77)	.000 (3.41)	.000 (4.753)	.000 (-5.57)	.001 (-2.32)	.000 (5.96)	.000 (5.29)	.000 (2.47)								
13	.000 (-7.48)*	.456 (0.520)	.024 (-1.58)	.255 (-.794)	.098 (-1.15)	.788 (.187)	.000 (-10.14)	.015 (-1.69)	.045 (1.401)	.297 (.726)	.003 (-2.09)	.000 (-4.56)							
14	.000 (-6.85)	.101 (1.14)	.170 (-.956)	.809 (-.168)	.449 (-.528)	.244 (.813)	.00 (-9.514)	.000 (-3.68)	.004 (2.027)	.053 (1.35)	.036 (-1.464)	.000 (-3.94)	.369 (.626)						
15	.000 (-8.83)	.230 (-.838)	.000 (-2.94)	.002 (-2.152)	.000 (-2.52)	.094 (-1.170)	.000 (-11.49)	.117 (-1.09)	.950 (-.043)	.365 (-.63)	.000 (-3.44)	.000 (-5.9)	.052 (-1.35)	.005 (-1.98)					
16	.000 (-6.25)	.012 (1.75)	.613 (-.352)	.531 (.43)	.913 (.076)	.043 (1.41)	.000 (-8.910)	.592 (.373)	.000 (2.63)	.005 (1.96)	.217 (-.86)	.000 (-3.33)	.078 (1.23)	.386 (.604)	.000 (2.588)				
17	.000 (-4.78)	.000 (3.21)	.110 (1.116)	.007 (1.90)	.027 (1.54)	.000 (2.886)	.000 (-7.44)	.003 (-2.08)	.000 (4.10)	.000 (3.42)	.383 (.608)	.008 (1.86)	.000 (2.69)	.003 (2.072)	.000 (4.05)	.036 (1.46)			
18	.000 (-7.24)	.287 (-.755)	.058 (-1.34)	.431 (-.558)	.196 (-.918)	.551 (.423)	.000 (-9.90)	.000 (-2.71)	.022 (1.63)	.175 (.962)	.009 (-1.85)	.000 (-4.33)	.739 (.235)	.582 (-.390)	.025 (1.59)	.162 (-.994)	.001 (-2.46)		
19	.000 (-2.44)	.000 (5.56)	.000 (3.45)	.000 (4.24)	.000 (3.88)	.000 (5.22)	.000 (-5.10)	.000 (-2.71)	.000 (6.44)	.000 (5.76)	.000 (2.94)	.489 (.474)	.000 (5.04)	.000 (4.41)	.000 (6.39)	.001 (3.81)	.000 (2.34)	.000 (4.804)	

*Figures in parentheses shows difference between Mean of I and J Banks

Note :1 Represents Amritsar District Central Cooperative Bank(DCCB); 2 stands for Bathinda; 3 for Fatehgarh Sahib; 4 for Fazilka; 5 for Ferozepur; 6 for Faridkot; 7 for Gurdaspur; 8 for Hoshiarpur; 9 for Jalandhar; 10 for Kapurthala; 11 for Ludhiana; 12 for Mansa; 13 for Moga; 14 for Muktsar; 15 for N'Shahr; 16 for Patiala; 17 for Ropar; 18 for Sangrur and 19 for Tarn Taran.
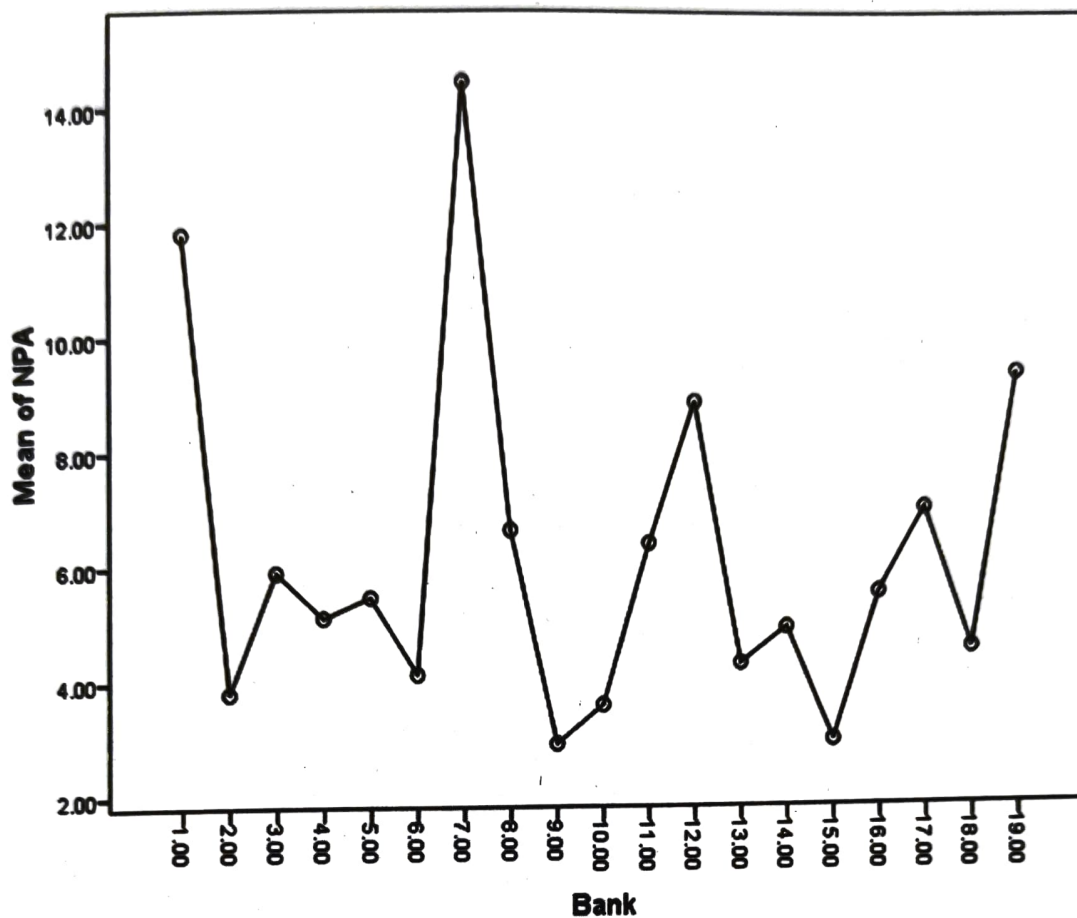
Figure 1: Mean of NPAs of DCCBs

As is evident from table 4 and also from figure 1 regarding mean of NPAs, District Central Cooperative Banks (DCCBs) at Amritsar, Gurdaspur and Tarn Taran districts are experiencing very high percentage of NPAs to advances ratio. The movement of NPAs of Amritsar and Gurdaspur DCCBs don't match with any other DCCB, though movement of NPAs of DCCB Tarn Taran and Mansa are statistically significantly equal. DCCBs at Bathinda, Fazilka, Faridkot, Jalandhar, Kapurthala, Moga, Muktsar, N'Shahr, Patiala and Sangrur can be categorized as banks experiencing comparatively moderate level of NPAs as a

percentage of advances. DCCBs at Faridkot, Ludhiana and Ropar are the category of DCCBs experiencing above average level of NPAs.

4.2   Determinants of Non-Performing Advances

In this section of the paper, determinants affecting non-performing advances of the District Central Cooperative Banks have been examined on aggregate level. Table 5 presents the results of stepwise method of regression analysis.

Table 5: Factors Affecting Non Performing Advances in Central Cooperative Banks

Model	Equation	R Square	F	Sig.
1	7.666-0.571(CPI)	.326	5.31	.041[a]
2	7.666-.821(GDP)-.571(CPI)	.599	7.47	.010[b]
3	7.666-.821(GDP)-0.571(CPI)-0.553(Bank Business)	.723	8.31	.006[c]

a independent factor CPI, b independent factors GDP and CPI, c independent factor is GDP, CPI and Bank Business

Table 5 above shows that the most important factor affecting percentage of NPAs to advances in case of cooperative banks is the inflation rate represented by CPI. This factor is responsible for 32.6 percent variation in the default rate of loans. The second important factor selected by the stepwise method of regression model is the growth rate of gross domestic product. CPI together with growth rate of GDP accounts for 59.9 percentage of variation in the dependent variable. The third factor selected by the model is bank business. Together these three factors are accounting for 72.3 percentage of the variation in the dependent variable. However the relationship between CPI, growth rate of GDP and bank business with possible chance of default in repayment of loans is inverse.

4.3   Bank wise Analysis of Factors affecting Non Performing Advances

In this section of the paper, bank wise results of the factors affecting non-performing advances have been discussed. Table 6 below presents the detailed bank wise results of the stepwise regression model regarding factors affecting the non-performing advances.

Growth rate of GDP and weighted average yield on advances have been found to exert influence on the level of NPAs in the case of District Central Cooperative Bank at Amritsar. Weighted average yield seems to account for 58.8 percentage of the variation in the default rate. GDP growth rate along with weighted average yield of funds accounted for 86.6 percent variation in the dependent variable. Weighted average yield has direct whereas GDP growth rate has inverse relationship with NPAs. In the case of DCCB Bathinda, stock market index, GDP growth rate and Inflation rate were found to affect the NPAs. Together they accounted for 89.3 percent variation in the dependent variable. GDP growth rate and Sensex has direct association, whereas CPI was found to have inverse association with percentage of NPAs.

Rate of unemployment and degree of loan portfolio diversification were found to be statistically insignificant factors. In none of the nineteen DCCBs, they were found to be significant factors affecting chances of default in loan repayment. GDP growth rate in 6, Inflation rate in seven, IIP in one, Sensex and Repo rate in four, Bank Business in six, and weighted average yield in two out of nineteen DCCBs were found to be significant factors.

Table 4: Non Performing Advances as a Percentage of Advances- Inter Bank Comparison

Banks	R-Square	UR F-Ratio	UR Sig	GDP F-Ratio	GDP Sig	CPI F-Ratio	CPI Sig	IIP F-Ratio	IIP Sig	RR F-Ratio	RR Sig	SENSEX F-Ratio	SENSEX Sig	BB F-Ratio	BB Sig	WY F-Ratio	WY Sig	HFI F-Ratio	HFI Sig	Beta
1	.588			14.26	.004															-0.767
	.866			28.99	.000											28.99	.000			-1.213;
																28.99	.000			0.718
2	.623											16.53	.000							.789
	.807			18.84	.001							18.84	.001							1.126;
						22.30	0.000					22.30	.000							-0.545
	.893			22.30	0.000															1.256;
																				-0.619;
																				0.311
3	.517					10.71	.008													-0.791
4	.645					9.8	.006													-0.945
5	.827															45.85	.000			.906
	.881			35.30	.000															1.026;
																				-0.283
6	.654			18.91	.001	42.89	.00													.809
	.883			42.89	000															1.194;
																				-0.634
7	.414			7.065	.024															0.643
	.643			8.104	.010							8.104	0.10							1.180;
																				-0.743
8	.566							13.0	.005											0.752
								15.51	.001			15.51	.001							1.257;
														15.01	.003					0.654
9	.60									18.44	.001									0.775
	.80																			1.141;
																				-0.581

Factors affecting Credit Risk

Factors affecting Credit Risk

Banks	R-Square	UR F-Ratio	UR Sig	GDP F-Ratio	GDP Sig	CPI F-Ratio	CPI Sig	IIP F-Ratio	IIP Sig	RR F-Ratio	RR Sig	SENSEX F-Ratio	SENSEX Sig	BB F-Ratio	BB Sig	WY F-Ratio	WY Sig	HFI F-Ratio	HFI Sig	Beta
10																				
11	0.822					46.06	.000													-0.906
12	.657													19.14	.001					
	.846									24.70	.000			24.70	.000					
13	.644													18.01	.000					-0.802
14	.8333											22.75	.000							.833
15	.360													5.631	.039					.60
	.768									14.85		.001		14.85	.001					1.309*
																				-.954
16	.528																			
	.731																			
17	.528					11.12	.007							11.10	.004					.726
	.712																			-.800
																				.435
18	.349					8.92	.007							5.35	0.04					.590
	.665													8.92	0.07					.667
																				.568
19	.904			34.81	.000					.44	.000									
	.941			37.25	.000					34.81	.000									
	.966					37.25	.000			37.25	.000									

5.   Conclusion and Suggestions

Central Cooperative Banks occupy an important place in the Indian banking structure. Over the years they have substantially enhanced their contribution in channelizing the financial resources. According to National Federation of State Cooperative Bank's (NAFSCOB) report published on 1ˢᵗ April, 2014, 372 district central cooperative banks with a network of 13656 branches were performing their functions in direct competition with the large scale commercial banks. One of the severe problems faced by these banks, like the other category of banks is, the ever increasing quantum of money struck in bad accounts. Literature was scanned to find out if any effort has been made in the past by researchers to study the problem of NPAs in cooperative bank, though we could find lot of studies on the theme but most of the these studies were related to NPA problems of commercial banks. Therefore an attempt was made in this study to examine the NPA problem of nineteen DCCBs of Punjab. DCCB Gurdaspur, Amritsar and Tarn Taran were found to have very high level of NPAs. The highest percentage of NPAs noticed in case of DCCB Gurdaspur was at alarmingly high level of more than 21 percent. DCCBs at Bathinda, Fazilka, Faridkot, Jalandhar, Kapurthala, Moga, Muktsar, N'Shahr, Patiala and Sangrur were found to be experiencing comparatively moderate level of NPAs as a percentage of advances and DCCBs at Faridkot, Ludhiana and Ropar experienced above average level of NPAs.

Amongst the macro economic factors Growth rate of GDP and inflation rate were found to inversely affect the level of NPAs. Bank Business, a microeconomic factor, also found to have inverse relationship with the NPAs. GDP growth rate in 6, Inflation rate in seven, IIP in one, Sensex and Repo rate in four, Bank Business in six, and WY in two out of nineteen DCCBs were found to be significant factors. Causes are different in different DCCBs that might be due to situational factors, competency and sincerity of staff etc. It is suggested that a study at micro level for each bank, particularly for DCCB Gurdaspur, Amritsar and Tarn Taran, may be undertaken to find out the exact cause of NPAs as not only the percentage of NPA to advances is substantially different amongst banks but it is significantly high as well in case of some banks.

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List of Abbreviations

NPA	-	Non Performing Advances
GDP	-	Gross Domestic Product
WY	-	Weighted Average Yield
UR	-	Unemployment Rate
IIP	-	Index of Industrial Production
CPI	-	Consumer Price Index
RR	-	Repo Rate
BB	-	Bank Business
HFI	-	Hirschmann-Herfindhal Index