Journal of
Applied Sciences

Performance of Nationalized and Private Commercial Banks in Bangladesh

¹Saidul Hasan and ²Azizul Baten
¹Department of Statistics and Computer, Dhaka Commerce College, Mirpur, Dhaka, Bangladesh
²Department of Statistics, Shah Jalal University of Science and Technology, Sylhet-3114, Bangladesh

Abstract: This study was conducted to evaluate the comparative performance of the public and private commercial banks operating in Bangladesh with loan default as a big concern. Janata Bank (JB) has been taken as the sample bank to represent the Nationalized Commercial Banks (NCBs) and National Bank Ltd. (NBL) has been selected as the sample bank to represent the Private Commercial Banks (PCBs), respectively. A statistical analysis of dummy variables and log linear method have been used to compare the performance of NCBs and PCBs with respect to their loan default. The study (both dummy variable and log linear) reveals that the rate of default is the highest in NCBs as compared to PCBs. In sample banks' default rate, we observe that both JB and NBL have alarming default rate while NBL's default rate is a bit lower than that of JB. However, better situation of NBL in terms of loan recovery than JB. The study suggests that if the bank can successfully screen out the fake entrepreneurs and identify the genuine entrepreneurs; the recovery rate will automatically rise.

Key words: Nationalized Commercial Banks, Private Commercial Banks, loan default, log linear method

INTRODUCTION

In Bangladesh, banks are the main vehicles for mobilizing invisible funds and channeling those funds to faster the growth of the productive sectors of the economy in the absence of a healthy capital market. After the creation of Bangladesh, then the government nationalized all the commercial banks and financial institutions functioning in the East Pakistan. But during 1982-83, the government allowed commercial banks to operate in private sector side by side with the public sector banks to start a meaningful and constructive competition in the banking sector. Now about two decades in Bangladesh that banks are operating under both public and private sectors. Question arises how successfully the nationalized and private commercial banks are serving the country, how far they have achieved their desired goals? It is commonly believed that the NCBs are engulfed with the vicious problems of corruption, inefficiency, loan default etc. although the private commercial banks are efficient in their commercial activities and solving the problem of loan default.

Six Nationalized Commercial Banks (NCBs) were established taking over the assets and liabilities of the Commercial Banks (CBs) functioning in the East Pakistan. But the hectic re-organization of the nationalized banks in the chaotic, war-ravaged and crisis ridden post- liberation years was really a asked by

Herculean task. Moreover, the banking sector was the state to share the burden of keeping afloat the state-owned enterprises, which were corrupt undisciplined, over-manned mismanaged[1]. Karim[2] made an endeavor to identify the recovery problem of bank loan taking thirty industrial projects on a random basis. Research on Janata Bank (JB) reveals that the bank has an excellent fund utilization performance but very poor recovery performance[2]. Non-repayment is rampant in projects, which are now closed. But non-repayment is common to the running projects as well. It was found that default is a common phenomenon for both solvent and insolvent borrowers. However, repayment was found dependent on the volume of operations of the projects. The projects sanctioned under political pressures show the lowest recovery of loans. Measures pursued by the bank in expediting loan recovery like filling case and reminding are not effective, but rescheduling is a little bit effective.

Sarker[3] has analyzed only the credit management policy of commercial banks taking Sonali Bank from the NCBs and NBL from the PCBs as sample banks from 1986/87 to 1989/90. However, the findings of Ahmed[1] and Sarker[3] have some similarities. Sarker[3] found that private sector banking remained confined to industry and trade business ignoring agriculture small-scale industries, etc. With a view to implementing

Corresponding Author: Md. Azizul Baten, Department of Statistics, Shah Jalal University of Science and Technology, Sylhet-3114, Bangladesh

government policies, Sonali Bank is still pioneer in extending loans to government bodies, sector corporations and private enterprises. But the contribution of NBL was insignificant to public sector. The contribution of Sonali Bank in financing trade and commerce decreased gradually over time and stood 9% out of total outstanding credit in 1990 as against 20% in the year 1986. In contrast, the NBLs contribution was 62% out of total outstanding credit in 1999 as against only 12% in the year 1986. Both the Sonali bank and NBL distributed more than 40% of their total loans in the form of cash credit. NBL gave more emphasis on extending credit operations through foreign and domestic bills purchased and discounted. In 1990, this category of loans was responsible for about 13% of total loans and advances in case of NBL and 5% in case of SB. The most interesting findings of Sarker's[3] study was that only 2 to 5% of total borrowers were responsible for more than 35% of total outstanding loans and advances, while about 70% of total borrowers were responsible for only 10 to 15% of total outstanding loans and advances. This is an indication of the existence of high risk in credit management of the banks (according to famous portfolio theory) and also high lending operational cost. Sarker[3] also found that the Sonali Bank's recovery performance was not at all satisfactory and it's position in that respect deteriorated heavily during the last few years of his study. Among the various economic sectors, the industrial sector's recovery rate against demand for recovery rate was not more than 10 to 20%. In contrasts the agricultural sector's recovery rate was more than twice than that of industrial sector. On the other hand, the directors of the NBL directly or indirectly hold the highest portions of its total loans advances and they do not repay the loans in most of the cases. The total recovery rate of NBL is not more than 50%, on an average.

The political changes of 1975 ushered in an another era of political culture, wherein corruption gradually became institutionalized in loan sanctioning. 'Ex-bankers emerged as financiers of the newly floated private banks, but there was no mechanism to make them accountable about the sources of their 'Aladin's lamp' Islam *et al.*[4]. In addition, the banking sector was assigned the task of developing a new Bangladeshi entrepreneurial class to compliment the government's efforts of productive investment through the state-run sector corporations. Therefore, the nationalized banks were involved in two sorts of pressure- one from the insatiable credit demand from the loss-making state-owned enterprises and the other from so-called 'brief case-businessmen connected with politics, top bureaucrats and top bankers' Islam *et al.*[4].

No attempt has been made to check the performance of the public and private commercial banks with loan default, however, some work has been done for the NCB in Bangladesh Bhattacharya[5] and for

the NCB and PCB Sarker *et al.*[3]. Here, an attempt is made to study on performance evaluation of NCB and PCB in Bangladesh. JB has been selected from the NCBs because of its big size and wide operational network. On the other hand, NBL from the PCBs, because it is the first private commercial bank in the country.

MATERIALS AND METHODS

Data are collected from both primary and secondary sources. The secondary data sources included published materials of the banks (1990-1999) viz., Banking Regulations and Policy Department (BRPD) Bangladesh Bank, annual reports of the selected banks brochures, booklets and other relevant documents. Bangladesh Bank, Bureau of Statistics were also used in some cases.

The sampling design was constructed to cover a number of branches of the selected banks both in the private and public sector. Five branches of each JB and NBL were selected for this purpose. A single set of questionnaire was used to collect information at the branch level and questions were responded by the customers of the branches.

To compare the rates of loan default in all NCBs and PCBs, the Dummy variable regression analysis and two variable regression analysis have been used for which the results are obtained using the SPSS program. Using the log linear regression method to calculate the rates of defaulted loan with respect to disbursed loan for all NCBs and PCBs.

The extent of loan default
A statistical analysis: A major concern of this study is to compare the performance of government and private commercial banks in terms of their loan management. Dummy variable was used in comparing the amount of defaulted loan for each unit of disbursed loan. Contrasting analysis can be made by comparing FCBs with NCBs and PCBs. Since the data on total disbursed loan and total defaulted loan are available for all NCBs, PCBs and FCBs, we can compare their performance considering all of them.

Dummy variable regression analysis: Dummy variables can be used in regression models just as easily as quantitative variables. Now to compare the level of loan default by the NCBs, PCBs and FCBs, we have used this ANCOVA model[6].

Specification of the model: We have three categories of banks: NCBs, PCBs and FCBs. Therefore following the rule that the number of dummies will be one less than the number of categories of variable, we shall introduce two dummies to take care of the three types

of bank[7]. Assuming that the three types of bank have a common slope but different intercept in the regression of half yearly defaulted loan on half yearly disbursed loan, we can form the following model:

$$Y_i = \alpha_1 + \alpha_2 D_{2i} + \alpha_3 D_{3i} + \beta X_i + U_i \qquad (1)$$

Where:
Y_i = Half yearly defaulted loan
X_i = Half yearly disbursed loan
D_{2i} = 1, if private commercial bank
= 0, otherwise
D_{3i} = 1, if nationalized commercial bank
= 0, otherwise,

β measures the elasticity of defaulted loan with respect to the disbursed loan and U_i measures the stochastic disturbance term.

Therefore in this model we have treated FCBs as the base category and hence the intercept α_1 will reflect the intercept of FCBs. The differential intercepts α_2 and α_3 tell how much the intercepts of the other two categories differ from the intercept of the base category, which can be readily checked as follows:
Assuming that $E(U_i)=0$, we have- Mean defaulted loan of FCBs:

$$E(Y_i | D_{2i}=0, D_{3i}=0, X_i) = \alpha_1 + \beta X_i \qquad (2)$$

Mean defaulted loan of PCBs:

$$E(Y_i | D_{2i}=1, D_{3i}=0, X_i) = (\alpha_1 + \alpha_2) + \beta X_i \qquad (3)$$

Mean defaulted loan of NCBs:

$$E(Y_i | D_{2i}=0, D_{3i}=1, X_i) = (\alpha_1 + \alpha_3) + \beta X_i \qquad (4)$$

After running the regression (1), we can easily find out whether the differential intercepts α_1 and α_3 are individually statistically significant, that is, different from the base group. A test of the hypothesis that $\alpha_2 = \alpha_3 = 0$ simultaneously can also be made by the F-test.

Two variable regression analysis: The extent of loan default of NCBs, PCBs and FCBs can be measure individually by using the log linear model. In this case, we shall be able to measure the percentage change in defaulted loan with respect to percentage change in disbursed loan for each category of bank individually.

RESULTS

The data on half yearly total defaulted loan and total disbursed loan for NCBs, PCBs and FCBs are used here. Total defaulted and disbursed loan are measured

half yearly, covering the year from 1990 to 1999. Therefore, we have twenty observations for each category of banks. Running regression on these data through SPSS computer program, we get the following estimated regression:

$$\hat{Y}_i = -7.763 + 4.167 D_{2i} + 6.290 D_{3i} + 0.37 X_i \qquad (5)$$

SE= (2.192) (2.377) (3.533) (0.010)
t = (-3.545) (1.753) (1.780) (38.787)

$R^2 = 0.974$, Adjusted $R^2 = 0.972$, d.f. = 56.

From regression (5), we can derive the individual regression equation for FCBs, PCBs and NCBs, which are as follows:
The mean defaulted loan of the FCBs (i.e. when all the dummies take a value of zero) is
$$\hat{Y}_i = -7.763 + 0.37 X_i$$
The mean defaulted loan of the PCBs (i.e. when $D_{2i}=1$ but $D_{3i}=0$) is $\hat{Y}_i = -7.763 + 4.167 + 0.37 X_i$,
i.e $\hat{Y}_i = -2.595 + 0.37 X_i$.
The mean defaulted loan of the NCBs (i.e. when $D_{2i}=0$ but $D_{3i}=1$) is $\hat{Y}_i = -7.763 + 6.290 + 0.37 X_i$,
i.e. $\hat{Y}_i = -1.473 + 0.37 X_i$.
These calculations for the three types of banks are done in the following sub-sections.

The Nationalized Commercial Banks (NCBs): Suppose we denote Y_i^N as the half yearly defaulted loan of all NCBs and X_i^N as the disbursed loan. Therefore, we can define the defaulted loan as a function of disbursed loan for all NCBs by the following equation:

$$\ln Y_i^N = \alpha + \beta \ln X_i^N + U_i \qquad (6)$$

There are twenty observations on defaulted loan and disbursed loan for all the NCBs. Running log linear regression on this data using the computer program SPSS and get the following regression equation:

$$\ln \hat{Y}_i^N = -1.74 + 1.12 \ln X_i^N \qquad (7)$$

Here:
Y_i^N = Defaulted loan of all NCBs
X_i^N = Disbursed loan of all NCBs.

The Private Commercial Banks (PCBs): Like the NCBs, we have twenty observations for all PCBs. Running log linear regression on this data and obtain the following regression equation:

Table 1: Comparative evaluation of the performance of the public and private commercial banks

Name of Banks	SE (α)	SE (β)	t_α	t_β	R^2	Adj R^2	F	d.f.
NCBs	0.084	0.17	-20.771	67.169	0.996	0.996	4511.739	56
PCBs	0.195	0.046	-5.177	21.619	0.963	0.961	467.361	18
FCBs	0.097	0.002	-7.822	9.268	0.835	0.825	85.893	18
JB	0.280	0.034	-8.619	32.885	0.984	0.983	1081.414	18
NBL	0.490	0.072	-1.895	13.976	0.916	0.911	195.339	18

$$\text{In } \hat{Y}_i^P = -1.008 + 0.989 \text{ In } \hat{X}_i^P \qquad (8)$$

Where:

Y_i^P = Defaulted loan of all PCBs

X_i^P = Disbursed loan of all PCBs.

The Foreign Commercial Banks (FCBs): For FCBs also have twenty observations on disbursed loan and defaulted loan. Running log linear regression on this data and obtain the following regression equation:

$$\text{In } \hat{Y}_i^F = -0.617 + 0.01918 \text{ In} \hat{X}_i^F \qquad (9)$$

Here:

Y_i^F = defaulted loan of all FCBs

X_i^F = disbursed loan of all FCBs.

The Janata Bank: For JB individually, we have 20 observations on defaulted loan and disbursed loan. Then running log linear regression on this data and get the following regression equation:

$$\text{In } \hat{Y}_i^J = -2.410 + 1.129 \text{ In } \hat{X}_i^J \qquad (10)$$

Where:

Y_i^J = Defaulted loan of all JB

X_i^J = Disbursed loan of all JB.

The National Bank Limited: For NBL individually, we have 20 observations on defaulted loan and disbursed loan. Therefore, running log linear regression on this data, we get the following regression equation:

$$\text{In } \hat{Y}_i^{Na} = -0.929 + 1.004 \text{ In } \hat{X}_i^{Na} \qquad (11)$$

Here:

Y_i^{Na} = Defaulted loan of all NBL

X_i^{Na} = Disbursed loan of all NBL.

It is observed that the coefficient of the variable X_i is statistically significant at 1% level of significance and the coefficients of the dummy variables are significant of 10% level of significance. The regression model is overall significant. Since the differential coefficients of the dummy variables are statistically significant and the magnitude of the dummies D_{2i} and

D_{3i} are different, we can infer that for the same amount of disbursed loan, the defaulted loans are different for the three types of banks. More specifically, since the coefficient of D_{3i} is greater than the coefficient of D_{2i}, one unit of disbursed loan causes the highest amount of defaulted loan in NCBs and the lowest amount of defaulted loan in FCBs, while the effect is a bit less in PCBs than in NCBs (Table 1).

The coefficients are statistically significant at 1% level of significance. The regression line is overall significant also as measured by the F test. Since R^2 and adjusted R^2 are quite high, the regression line fits the data quite well. What is quite surprising is that the slope coefficient of Eq. 7 is 1.12 implying that for 100% increase in the disbursed loan, the defaulted loan increases by 112%.

Equation 8 shows that the coefficients are statistically significant at 1% level of significance. The regression model is overall significant also as indicated by the F test. The high value of R^2 and adjusted R^2 shows that the regression line fits the data quite well. Therefore, we can rely on the results. However, the slope coefficient 0.989 of the Eq. 8 shows that for 100% increases in the disbursed loan, the defaulted loan increases by 98.9%.

Equation 9 shows that the coefficients are statistically significant at 1% level of significance. The regression model is overall significant also as indicated by the F test. The high value of R^2 and adjusted R^2 are also high. Therefore we can rely on the results. However, the slope coefficient 0.01918 of the Eq. 9 shows that for 100% increases in the disbursed loan, the defaulted loan increases by 1.91% in FCBs, which is 112% in NCBs and 98.9% in PCBs.

Equation 10 shows that the coefficients are statistically significant at 0% level of significance. The regression model is overall significant as well. The value of R^2 and adjusted R^2 are also satisfactorily high. The slope coefficient of the independent variable-disbursed loan is 1.129 implying that for 100% increased in disbursed loan the defaulted loan increases by 112.9% in JB.

Equation 11 shows that the intercept term is statistically significant at 7.4% level of significance while the slope coefficient is at recent level of significance. The regression model is overall significant at 1% level of significance. The values of R^2 and adjusted R^2 are quite high. In this case the value of slope coefficient is 1.004 implying that for 100%

increase in the disbursed loan, the default loan increases by 100.7%, which is 112.9% in case of JB.

CONCLUSIONS AND RECOMMENDATIONS

The recovery performance of NCBs and PCBs are different from each other as revealed by statistical analysis. Although FCBs are not the subject matter of our analysis, their inclusion helps us providing a contrast of them with our local banks. The regression analyses (both dummy variable and log linear) reveal that the rate of default is the highest in NCBs and the lowest in FCBs while PCBs' default rate is little lower than those of NCBs. Sample banks is default rate show that both JB and NBL have alarming default rate while NBL's default rate is a bit lower than that of JB. Loan recovery of NBL is less satisfactory than JB, it may be due to the insider loan sanctioning in the NBL.

JB and other nationalized commercial banks should improve their recovery performance. In order to reduce project failure, default and non-repayment of due installments, the existing project appraisal procedure should be made more operationally feasible. The selection process of genuine entrepreneurs should be improved so that non-deserving parties cannot obtain any loan and recovery rate rises automatically. Besides the selection of true entrepreneurs, the present project appraisal procedure, sanctioning and disbursement procedure, post–investment supervision and guidance procedure should be strengthen. The clerical complexities should be reduced to the minimum level by screening out the unnecessary and overlapping steps. The time lag between sanctioning and disbursement of loan should be minimum. Projects suffering from working capital stringency should be co-ordinatily balanced Modernization Rehabilitation and Expansion (BMRE) program can utilize to achieve profitable volume of production and sale.

To made analysis more contrasting we compare Foreign Commercial Banks (FCBs) with NCBs and PCBs. But ANOVA models are not common in the field of economics, in most economic research, a regression model contains some explanatory variables that are quantitative and some that are qualitative and that's why preferred over ANOVA.

REFERENCES

1. Ahmed, J.U., 1989. A comparative study on performance of the nationalized and private commercial banks in Bangladesh. The Bureau of Business Research, Faculty of Business Studies, University of Dhaka, Bangladesh.
2. Karim, A.K.M., 1991. Recovery Problem of Bank Loan: A Comparative Study on Selected Industrial Projects. The Bureau of Business Research, Faculty of Business Studies, University of Dhaka, Bangladesh.
3. Sarker and Maksudur Rahman, 1996. Credit Management of commercial banks: A comparative study of public and private sector banks. The Bureau of Business Research, Faculty of Business Studies. University of Dhaka, Bangladesh.
4. Islam, M., A. Shahid, A.T.M. Chaudhury, A. Jalil and M. Siddique, 1999. Bank loan default problem in bangladesh: A dialogue between borrowers and lenders. BIBM, Dhaka, Bangadesh.
5. Bhattacharya, D.S., 1989. An Evaluation of Performance of NCB in Bangladesh. Bank Parikramma, Vol. XIV Dhaka, Bangadesh.
6. Gujarati, D.N., 1995. Basic Econometrics, 3rd Edn., McGraw Hill Intl. Editions, Economic Series, pp: 499-516.