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A Comparison of Customers Profile and Default Probabilities of Consolidated and Non-consolidated Loans in the Peer-to-peer Lending Market

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- Toshitsugu Otake**

Abstract

The growth of the Online Peer-to-peer (P2P) lending market is induced by its ability to offer lower interest rates for the borrowers than that of the traditional lending market which encourages them to avail credit from the P2P market to pay off their existing debt. However, the interest charged on low-credit grade borrowers fails to compensate for the risk level of the borrowers. This paper analyzes the loan data of the low-credit grade borrowers to compare the loan attributes and the default probabilities of the debt-consolidated and the non-consolidated loans. Our study shows that the debt-consolidated borrowers are getting funded with worse credit grade and with a higher debt burden as compared with the non-consolidated borrowers. The low-credit grade consolidated borrowers are more likely to default than the low-grade non-consolidated borrowers and for both the groups of borrowers the borrowers' credit history fails to predict their default probabilities.

Keywords: Default Risk, Debt-consolidation, Peer-to-Peer Lending
JEL Classification: G20, G21

1. Introduction

1.1 Study Background

The emergence of web 2.0 technology has induced the rapid establishment of the online markets and the virtual community where an individual can interact virtually to meet their needs. Like the virtual market, in the online Peer-to-peer (P2P) lending market the borrowers and the lenders meet virtually through an online platform for processing a lending transaction without a formal conventional financial intermediary. The lenders and the borrowers in the P2P lending market can share the savings from the traditional intermediation cost. However, the lenders bear the default risk of the borrowers in case of loan default.

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To deal with the potential default risk of the borrowers, the lenders face the asymmetric information problem where the lenders lack information of borrowers which hampers taking prudent lending decision by the lenders which lead to adverse selection problem on the part of the lenders. Banking theory shows that traditional financial intermediaries like banks, credit unions, etc. can reduce some of the adverse selection problems through hiring expert executives, obtaining guarantees and collaterals, and ensuring post disbursement monitoring (Akerlof, 1970). Unlike the traditional financial market, in the online P2P market it is difficult to reduce the effects of the information asymmetry due to the high transaction cost and for the limitations of the virtual environment.

The lending platforms in the P2P lending market take initiatives to identify trustworthy borrowers to reduce the lending risk associated with information asymmetry. Firstly, platforms use their own screening system to drive out some of the potential borrowers based on some set thresholds. For example, the lending club uses a floor on the FICO score and below that FICO score customers are not able to be listed with the platform. Secondly, to reduce the risk exposures of individual borrowers, platforms set a ceiling of lending limit. Presently the lending club sets the highest limit of USD 35,000 for individual borrowing which makes enables investors to dilute risk among different borrowers. Thirdly, platforms offer portfolio recommendation services for the investors. Platforms with their expertise and scalability can better understand the risk level of borrowers and generate a workable recommendation mechanism. Like many other lending platforms, the lending club assigns credit grades and subgrades to its potential borrowers which the investors use as a recommendation considering the risk level of the borrowers. The ultimate investors can reduce the adverse effect of information asymmetry by using the platform assigned credit grades for their lending decision making. In addition to the above, the lending platform provides the management services of the Non-performing Loans (NPLs). Platforms, as market makers employ various tools and methods to reduce the problem of information asymmetry for better risk management of the P2P loans nevertheless the credit risks associated with the P2P loans, have not been eliminated and there are rooms for further improvement of the decision-making capacity of the investors as well as the market makers.

The pioneer market maker in the online P2P market is ZOPA of the UK which has started its platform business in 2005 followed by the prosper.com of the USA in 2006. Since then the P2P lending market shows a significant growth both in terms of a number of customers and in terms of the amount of the transactions. In 2018, one of the leading P2P lending platforms of the USA, the lending club facilitated 6,76,460 loans with a total amount of USD 8.84 b. Borrowers get investment for the purposes ranging from the weddings, the mortgages to the set off the existing loans with other financial institutions. Data from the lending club in 2018 shows that the consolidated loans constitute the highest proportion of the loans with a 57 percent contribution to the total portfolio of the lending club. Loan purposes are observed as one of the explanatory variables for the default prediction (Serrano-Cinca et. al., 2015). The consolidated loans are expected to have different default risk profile as compared with loans taken for purposes other than loan consolidation. With this hypothesis in mind, this study analyzes the consolidated loans and non-consolidated loans as two separate groups of loans to explore general attributes and to develop two different models for default risk prediction.

1.2. Defining the Peer to Peer Lending

The Peer to Peer lending (hereinafter refers as the P2P) can be considered as a type of direct financing mode where the fund flows from a surplus economic unit to deficit economic unit where lenders and borrowers meet each other through a virtual platform for loan transactions. The concept of direct finance i.e. private lending is not a new concept in banking literature rather the private one-to-one lending existed well before the origination of the formal banking system. However, the new dimension of this type of private finance uses the internet to interact with borrowers and investors. This marketplace is characterized by the absence of the traditional financial intermediaries which exist between the borrowers and the lenders to facilitate the transaction and to bear the credit risk of the borrowers, however, in the P2P lending, the borrowers virtually meet the lenders using the online P2P lending platform and negotiate the loan transactions. The role of a P2P lending platform (may be considered as an intermediary in this market) is to facilitate the borrowers and the lenders to meet virtually and to mature the transactions without bearing the credit risk of the borrowers by them.

Unlike a traditional lending market where a financial intermediary bears the credit risk of the borrowers. The lending platforms in the P2P marketplace only facilitate transactions and the credit risk of the borrowers is taken by the lenders. The P2P lending is a process of establishing a borrower-lender contract through removing the middleman from the process which enables them to save the cost of using a financial intermediary and share these cost-saving benefits by both the lenders and borrowers. The borrowers get access to the credit with a low-interest rate than the traditional credit market and the lenders earn an interest higher than the traditional bank deposits.

The online P2P lending platform business is characterized by a set of distinct features that are absent in the other platform business models like the UBER, the Airbnb, the trivago.com, etc. Firstly, the lending platforms provide financial advice in the form of initial processing of financial information of the borrower. For example, the Lending Club assigns a credit grade to each customer which is considered as financial advice regarding the risk, return, and profitability of the borrower. Secondly, the lending platforms develop a special type of principal-agent relationship under which the lending platforms collect the installment payments from the borrowers and transfer the money to the investors. Thirdly, the lending platforms provide the account management services for the investors enabling them for any subsequent reinvestment or resell of the product to the third party (Davis, 2016).

1.3. Objectives and Hypotheses

The purpose of this study can be viewed from three different aspects. Firstly, the paper explores the features of the high-risk consolidated loans and non-consolidated loans in the P2P lending market to compare these features between them. Secondly, it develops two separate models for the default prediction of these two groups of loans by identifying the factors that can significantly contribute to the default probability prediction. Finally, the similarities and differences in terms of default risk along with its explanatory variables are discussed.

1.4. Research Questions

The first research question of the paper is related to identifying the features of both the high risk consolidated and the high-risk non-consolidated loans. We work with the question of whether the loan attributes are significantly different between the consolidated and the non-consolidated loans. The second research question is whether two separate models can significantly contribute to the default prediction of these two groups of loans. The last research question for this paper is whether the high risk consolidated loans bear more default risk than the high-risk non-consolidated loans.

The general introductory ideas and research background are discussed in the first section of this article followed by a section on the existing scholarly contribution to the research on the online P2P market. The third part of the paper discusses the data and research methodology. The next section presents the results and analysis. Then this article wraps up with a conclusion and recommendation.

2. Literature Review

2.1. Research Trend

The emergence of the P2P lending market is a recent phenomenon and hence the scholarly contributions to this area are limited which can broadly be viewed under three different aspects. One group of scholars has been contributing to researching the emergence of the P2P lending market to explore the reasons for its emergence in addition to the existing financial systems (Hulme and Wright, 2006). Other groups of scholars concentrate on finding the factors and mechanisms of how successful transactions take place. Their research area also includes the identification and management of default risk. The third group of researchers contributes to the performance of lending platforms.

2.2. The Emergence and Growth of the P2P Lending

The emergence of a new form of the lending system reflects adapting the financial system with the new social trend to directly respond to the new social trend which generates the demand for a new form of relationship in the financial market under this information age (Hulme and Wright, 2006). Though the research findings of the study by Christensen (2000) doubt that whether the

innovation of the online P2P lending system will become a disruptive technology, the P2P market shows a significant growth since its inception in the year 2005. The rapid growth of P2P lending is explained through two theories- the financial intermediation theory and the market equilibrium theory. The financial intermediation theory states that as the online P2P lending platforms generate credit with a more cost-efficient manner than the traditional lending institutions like banks then both the lenders and the borrowers prefer the P2P lending market than the banks and other financial intermediaries. The market equilibrium theory suggests that due credit rationing the financial market a good number of borrowers are kept out of the system even they are ready to pay the high price. On the other hand, in the P2P lending market, the demand and the supply interact to clear the market towards its equilibrium point. The problem of credit rationing is minimum in the P2P lending market which helps the market to grow faster (Serrano-Cinca, 2015).

2.3. Research on Funding Outcome

The financial, demographic, and social variables are the determinants of successful lending in the P2P lending market. Some of these variables not only influence the funding probability but also influence the interest on the loan generate through the P2P lending platforms (Alexander et al., 2011). The influence of these variables is significantly different from each other in terms of their contribution towards the successful lending decision. Herzenstein et al*.,* (2008) showed that the funding success in the online P2P market is influenced by borrowers' financial strength, the degree of motivation for listing, and publicizing. Some scholars argued with the data collected from prosper.com that the funding success is negatively correlated with the credit grade of the borrower with the higher funding success rate for borrowers with low credit grade and vice versa (Lin et al., 2012).

The lenders use non-standard soft information regarding the borrowers before taking the lending decision. While dealing with high-risk borrowers the study also suggests that the use of soft information brings better results in evaluating the loan request. This soft information includes the reasons for which the loans are requested and the frequency of friends' endorsements. Lenders'

decision of funding also negatively influenced by factors like the past default rate, the debt-income ratio, and the most recent loan request frequency (Iyer et al., 2009). The study of Prystav (2016) also shows similar findings regarding the importance of soft information in evaluating the loan request by high-risk borrowers. Michels (2012) argues that lenders decision in the P2P market not only affected by the structured verifiable information of the borrowers but also is influenced by the voluntary and unverifiable information disclosures of the borrowers. These types of voluntary and unverifiable disclosures increase the likelihood of their loan proposals are being funded. Duarte et al. (2012) claim that trustworthy appearance matters in financial transactions like funding in the P2P market. Scholars in their recent studies show that the borrowers' creditworthiness may not be reflected properly by the credit grades assigned by the online P2P lending platforms and it is suggested that additional information disclosures if used together with the hard information like credit grades may give better result in evaluating borrowers' creditworthiness in the market (Serrano-Cinca et al., 2015; Tao et al., 2017; Zhu 2018). Chan and Han (2012) studies on the relative importance of the soft and hard information between the USA P2P market and the Chinese P2P market and show that in both the countries both the hard and the soft information play a significant role in lending outcomes. However, the investors in the Chinese P2P market are more dependent on the soft information.

2.4. Research on Default Probabilities

Though the research contribution regarding the P2P lending market is narrow, there are several scholarly contributions related to the credit risk and the default probabilities. Ma & Wang (2016) examined the factors influencing the credit risk in the online P2P lending market viewing the factors from three different perspectives like the borrowers' perspective, the platform`s perspective, and the environmental perspective. Borrowers' moral level and job security are considered as the important variables influencing credit risks related to the borrowers' perspective. The formal control mechanism of the lending platform and the overall policy environment are related to the platform and the environment which affect the credit risk of loans in the online P2P lending market. Reddy (2016) observed the relative importance of the variables in explaining the default probabilities of the loans in the online P2P market and

showed that the credit score is the most important variable which can describe whether the loans would turn into default loans. Lin X. et al. (2017) worked with the data from a large online P2P platform of China and explores that the demographic variables of the borrowers are the determinants of the default probabilities of the borrowers. The gender, marital status, level of education, age, length of service, installment size, loan amount, debt-to-income ratio, and credit history play a significant role in loan default. Serrano-Cinca et al. (2015) also found the credit grades assigned by the platforms are the most important variable which can explain the default probability of the loans. The accuracy of the model can be improved by adding variables like the debt level of the borrowers. In addition to this, they also find other variables like loan purpose, annual income, homeownership, and credit history as significant explanatory variables for default risk prediction. Guo et al. (2016) proposed an instance-based credit assessment model as an alternative to the credit grading-based risk assessment model. The model can evaluate the risk and return of individual loans in the P2P lending market and the performance measures of the model show that the model can efficiently improve investment decisions.

Miller (2011) studies on the causal relationship between the availability of information in the loan application and the final lending outcome. The study shows that when the investors get more information regarding the borrowers this can substantially reduce the default risk of the borrowers for high-risk borrowers however fails to establish any relationship of the information availability and the default risk for low-risk borrowers.

Emekter et al. (2015) undertakes a comprehensive study on the lending club data and explores that the most creditworthy borrowers in terms of their FICO score and higher income level remain out of the P2P lending networks. The P2P lending market fails to attract the most creditworthy borrowers. The good borrowers have a selection bias towards the traditional formal financial market over the online P2P lending market. The study also reveals that the interest charged on the high-risk borrowers is not enough to compensate for the risk level of the borrowers. The lending platform fails or is inefficient to predict the adequate risk level of the borrowers especially the high-risk borrowers and hence

the charged risk premium is less than the actual risk premium which is consistent with the risk level of the risky borrowers. With this research findings, the investors in the P2P lending market seem to be more interested to lend money to the high creditworthy borrowers and it is shown that the good borrowers have selection bias against the P2P lending market. This dilemma may hamper the growth and sustainability of the P2P lending system. This study focuses on the analysis of high-risk borrowers where existing models fail to assess the actual risk of these customers hence the risk premium for these loans seems lower than the required risk premium corresponding to the risk level. The research finding of Serrano-Cinca et al. (2015) shows the difference in risk levels depending on the purposes of loans in the P2P market. To analyze the risk level of the high-risk borrowers, this study classifies the high-risk borrowers into two board groups: the one group is the high-risk consolidated loans and the other group is the high-risk non-consolidated loans and compare the variables of both the groups of loans and then propose two separate default prediction model for these groups of loans.

3. Research Methodology

This research is quantitative in nature which involves quantitative data analysis to answer the research questions. The secondary data is collected from one of the largest online P2P lending platforms of the USA, the lending club. The lending club successfully facilitated 676,460 loans listing during the period from January 2018 to December 2018 with a total disbursement amount of USD 8.84 billion. Out of the total loans listed during the period, 131,730 loans are categorized as “high-risk” loans which are the sample size for this thesis. The data analysis technique for this paper is done in two parts. The first part of the analysis is the consist of summarizing the variables parameters for both the high-risk consolidated loans and the high-risk non-consolidated loans by calculating descriptive statistics for the concerned variables using the SPSS software. For comparing the variables of the groups, the ‘t’ test statistics are used. In the second part of the data analysis, we use the binary logistic regression analysis which helps in generating two separate models for predicting the default probabilities of each of the two groups of loans. The target outcome of the models is binary i.e. the occurrence of the event here is “the default” of the concerned

loan and the nonoccurrence of the event is the "no default" event. In the proposed default prediction models the dependent variable in the probability of default of a loan and the independent variables are the loan amount, the credit term, the interest rate, the credit grade, the employment length, the homeownership status, the annual income of the borrower, the information verification status, the debt-to-income ratio, and the delinquency record in last 2 years.

The regression analysis is widely used to describe the relationship between the outcome variables with one or more explanatory variables. The linear regression model is best fitted in a situation where the outcome variable is continuous in nature. This research explores the relationship between the default probability with the explanatory variables where the outcome variable is binary in nature. To establish a relationship with the binary outcome variable, the binary logistic regression analysis is used (Hosmer and Lemeshow 2000). Under this model the expected value of the outcome variable can be explained by the equation below::

$$E(Y|x) = \beta_0 + \beta_1 x \quad \text{.....(1)}$$

where E (Y|x) is the conditional expected value of the Y given x.

The above equation gives the value range for the expected value of the outcome variable from -∞ to +∞. However, for the binary outcome variable, the expected value of the outcome should be within the range of 0 to 1. To get the desired expected value a mathematical transformation is done as follows which is termed as "the logit transformation" in the binary logistic regression model.

$$d_x = \frac{e^{\beta_0 + \beta_1 x}}{1 + e^{\beta_0 + \beta_1 x}} \quad \text{.....(2)}$$

Now with this logit transformation (Equation-1), the model can explain the binary outcome variable in terms of its explanatory variables.

4. Results and Analysis

4.1. Classification Analysis

The data shown in Table-1 are collected from the lending club are first presented in terms of the purposes for which the loan is requested. This data is

required to disclose by the borrowers to the lending platforms for their loan requests are being listed.

Table 1: Distribution of Loans by the Purposes

Purpose	N	% of Total N	Amount	% of the Total Sum
Debt Consolidation	387117	57.2%	$2.20 b	60.2%
Credit Card	159427	23.6%	$5.32 b	24.9%
Car	7851	1.2%	$0.06 b	0.7%
Education	423	0.1%	$0.00 b	0.0%
Home Improvement	39318	5.8%	$0.49 b	5.5%
House	3035	0.4%	$0.04 b	0.5%
Major Purchase	14207	2.1%	$0.14 b	1.6%
Medical	7304	1.1%	$0.06 b	0.6%
Moving	4862	0.7%	$0.03 b	0.4%
Wedding	2346	0.3%	$0.02 b	0.3%
Renewable Energy	515	0.1%	$0.00 b	0.1%
Small Business	8799	1.3%	$0.13 b	1.4%
Vacation	4446	0.7%	$0.03 b	0.3%
Others	36809	5.4%	$0.32 b	3.6%
Total	**676459**	**100.0%**	**$8.85 b**	**100.0%**

Out of 6,76,459 loans distributed in the year 2018, around 60 percent of the loans are requested for paying off the existing loan liabilities of the potential borrowers. The proportion becomes around 80 percent of the total disburse loan when credit card loan is added with the other consolidated loans. The credit grades[1] assigned by the platform represent the risk level of the potential borrowers. Presently the lending club assigns six alphabetic grades as 'A', 'B', 'C', 'D', 'E', 'F', & 'G' where the 'A' grade presents the best credit grade with the lowest level of risk and the 'G' grade represents the worst grade with the highest level of risk. Each credit grade further is subdivided into five sub-groups which makes total thirty-five credit grades.

The data show that the high-risk borrowers constitute about 20 percent of the total loan portfolio with an approximate fifteen percent of the default rate.

[1] The lending club assigns a credit grade for each of the borrowing customer based on the customer's profile including the FICO score. There are seven credit grades namely A, B, C, D, E, F. and G where the "A" grade represents the highest credit grades with low level of risk and the "G" grade represents the worst credit grade with the highest level of risk. Then each of these seven credit grads are subdivided into further five subgroups like A1, A2, A3, A4, A5, and so on.

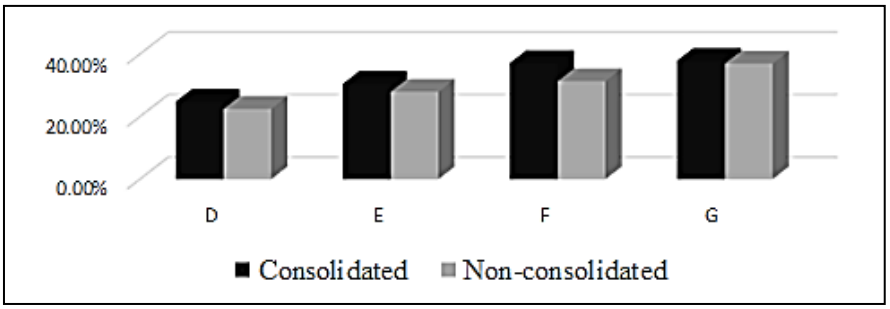
The dollar value of the loans extended to the high-risk customers is around USD 1.8 billion and the Table-2 shows the classification of the high-risk loans according to whether they are consolidated loans or not. This distribution portraits many similarities in their distribution according to the respective credit grades.

Table 2: Comparing the High-risk Consolidated and High-risk Non-Consolidated Loans

Credit Grade	Consolidated				Non-consolidated			
	N	% of Total N	Sum	% of Total Sum	N	% of Total N	Sum	% of Total Sum
D	44003	67.1%	$0.60 b	62.1%	34513	64.7%	$0.39 b	60.7%
E	15841	24.2%	$0.26 b	26.8%	13221	24.8%	$0.17 b	26.3%
F	4805	7.3%	$0.09 b	9.2%	4622	8.7%	$0.06 b	10.2%
G	886	1.4%	$0.02 b	1.9%	1003	1.9%	$0.02 b	2.8%
Total	**65535**	**100.0%**	**$0.97 b**	**100.0%**	**53359**	**100.0%**	**$0.64**	**100.0%**

Source: www.lendingclub.com

Figure 1: The Comparison of Default Proportion in High-risk Consolidated and Non-consolidated Loans



Source: Authors' Calculation

The Figure-2 shows a comparison between consolidated and non-consolidated loans with different credit grades. The vertical axis represents the percentage of default loans whereas the horizontal axis represents the credit grades in which the yellow bars are non-consolidated loans and the blue bars are consolidated loans. With almost similar distribution these loans show a significant difference in terms of their default risk. The data demonstrate that for each of the credit grades the default risk is higher in consolidated loans than that of non-consolidated loans.

The descriptive statistical analysis shows that the mean value, as well as the nature of the distribution of the variables, are significantly different for the high-

risk consolidated loans. The test statistics for equality of means also demonstrate the significant difference in test statistics between these two groups of loans. The t-test results show that the high-risk consolidated loans and the high-risk non-consolidated loans are significant in terms of variables like Loan amount, Interest rate, Installment, Employment length, Annual income, and Debt-to-income ratio at 99 percent significance level (Appendix-7).

Table 3: The Non-parametric Test for Differences in Important Variables

	Variables	Consolidated Loans	Non-consolidated Loans
1	Default Rate	Higher	Lower
2	Credit Grade	Higher	Lower
3	Interest Rate	Lower	Higher
4	Loan Amount	Higher	Lower
5	Debt-to-Income Ratio	Higher	Lower

Source: Authors' Calculation

The Table-3 shows the non-parametric test results for different variables between the consolidated and non-consolidated loans. The non-parametric test also reveals the difference between the high-risk consolidated loans and the high-risk non-consolidated loans. The Mann-Whitney test results show that in terms of the variables such as the credit terms, the credit grades, the verification status, and the loan status, the high-risk consolidated loans are different from the high-risk non-consolidated loans at 99 percent confidence level. However, the homeownership status does not show any significant difference between these two groups of loans (Table-3).

4.2. Default Probability Analysis

The non-parametric statistical test in the previous section explores the significant difference in terms of borrowers' features between consolidated and non-consolidated loans. This section develops two separate models to predict the default probabilities of these two different groups of loans and explores how the different factors contribute differently in default prediction for these groups. The binary logistic modeling is used to develop the logistic equation to measure the probability of the loans in terms of their potential binary status 'Defaulted' or 'Not Defaulted /Regular'. For this modeling, the 'Defaulted' loans include loans with status 'Late', 'Charged Off', and 'Default' whereas the 'Not Defaulted /Regular' loans mean the loans having status 'Current', 'Fully Paid', and 'In Grace Period'.

We assume that *y_Ci* and *y_NCi* are the continuous numbers representing the default probabilities of the consolidated loans and the non-consolidated loans respectively. The higher value of y is indicative of the higher probability of default and vice versa. As the outcome of the loans is best represented by the binary outcomes like 'Defaulted' or 'Not Defaulted /Regular', the dependent variable in binary logistic regression is the probability of an event being occurred which in this case is the default. So, the dependent variable can only take a value between '0' and '1' where the '0' represent the probability of not occurring the event and '1' represents the probability of occurring the event. To convert the open-ended continuous numbers *y_Ci* and *y_NCi* to the numbers between the '0' and the '1', the following binary logit transformation is used,

$$d\_Ci = \frac{1}{1+ e^{-y\_Ci}} \quad \text{for consolidate loans.....(3)}$$

$$d\_NCi = \frac{1}{1+ e^{-y\_NCi}} \quad \text{for non-consolidated loans .....(4)}$$

where the *d_Ci* represents the probability of default for consolidated loans and *d_NCi* represents the probability of default for non-consolidated loans. We further assume that the explained variables *y_Ci* and *y_NCi* are represented by n independent explanatory variables in the modeled binary logistic functions which can be written as,

y_Ci = b_0 + b_1C CG_1Ci + b_2C CG_2Ci + b_3C CG_3Ci + b_4C T_Ci + b_5C r_Ci + b_6C EL_Ci + b_7C HO_Ci + b_8C VS_Ci + b_9C DIR_Ci + b_10C LA_Ci + b_11C IS_Ci + b_12C DR_Ci + epsilon_Ci .....(5)

and

y_NCi = b_0 + b_1NC CG_1NCi + b_2NC CG_2NCi + b_3NC CG_3NCi + b_4NC T_NCi + b_5NC r_NCi + b_6NC EL_NCi + b_7NC HO_NCi

+ b_8NC VS_NCi + b_9NC DIR_NCi + b_10NC LA_NCi + b_11NC IS_NCi + b_12NC DR_NCi + epsilon_NCi.....(6)

here CG_1Ci, CG_2Ci, CG_3Ci, T_Ci, r_Ci, EL_Ci, HO_Ci, VS_Ci, DIR_Ci, LA_Ci, IS_Ci, DR_Ci represent Credit grade-1("D"), Credit grade-2("E"), Credit grade-3("F"), Term, Interest rate, Employee length in years, Homeownership status, Information verification status, Debt-to-income ratio, Loan amount,

Installment size, and Delinquency Record respectively for the consolidated loans. The terms with NCi represent corresponding variables for non-consolidated loans.

Table 4: Binary Logistic Regression Results of the High-risk Consolidated Loans

Consolidated Loans	β	SE	Walt Test Statistics	Significance	Exp(β)
Credit Grade			77.734	0.000	
Credit Grade 1	-0.256***	0.031	66.097	0.000	0.774
Credit Grade 2	-0.077***	0.024	10.222	0.001	0.926
Credit Grade 3	0.134***	0.031	18.545	0.000	1.143
Term 1	-0.082***	0.012	47.683	0.000	0.921
Interest Rate	1.883***	0.620	9.224	0.002	6.570
Employee Length	-0.010***	0.002	15.874	0.000	0.991
Home Ownership	-0.117***	0.014	72.114	0.000	0.889
Verification Status	0.141***	0.025	33.067	0.000	1.152
Debt-to-Income Ratio	0.012***	0.001	117.520	0.000	1.012
Constant	-1.149***	0.137	70.010	0.000	0.317
Hosmer and Lemeshow's Test: Chi-square = 10.7					

The results of the binary logistic regressions show that the default probabilities of the consolidated and non-consolidated loans are explained differently in terms of covariates as well as the coefficient of the covariates. The binary logistic regressions are performed using the SPSS software. At first, the model parameters are estimated by following the forward stepwise likelihood method, and then the process is repeated with the backward likelihood method and the results are similar in using both the methods.

Table 5: Binary Logistic Regression Results of the High-risk Non-consolidated Loans

Non-consolidated Loans	β	SE	Walt Test Statistics	Significance	Exp(β)
Credit Grade				0.000	
Credit Grade 1	-0.381***	0.033	134.868	0.000	0.683
Credit Grade 2	-0.078***	0.025	9.983	0.002	0.925
Credit Grade 3	0.114***	0.032	12.483	0.000	1.121
Interest Rate	-1.495**	0.634	5.563	0.018	0.224
Employee Length	-0.012***	0.003	19.872	0.000	0.988
Home Ownership	-0.102***	0.015	44.127	0.000	0.903
Verification Status	0.177***	0.026	47.030	0.000	1.194
Debt-to-Income Ratio	0.012***	0.001	105.515	0.000	1.012
Constant	-0.769***	0.139	30.704	0.000	0.463
Hosmer and Lemeshow's Test: Chi-square = 13.7					

For the logistic regression analysis of the high-risk consolidated loans, the nine variables are used and out of these nine variables, seven variables can significantly explain the default probability of the loans. The analysis is done considering both 1 percent and 5 percent confidence level and the result shows that all these seven variables are significant at 1 percent significant level. The model can predict the expected outcome with the correctness of 72.7 percent and the Chi-square value of 10.769 advocates for the acceptable goodness to fit of the model. The smaller SE's values for all the coefficients can be explained with the low level of the multicollinearity and the model's R^2 value in the final step of the model is 2.4 percent.

By incorporating the covariates and their calculated coefficients in the binary logistic regression model for high-risk consolidated loans as shown in Equation (1), the predicted default probability of a typical high-risk consolidated loan can be determined by using the following equation,

y_Ci = b_0 + b_1C CG_1Ci + b_2C CG_2Ci + b_3C CG_3Ci + b_4C T_Ci + b_5C r_Ci + b_6C EL_Ci + b_7C HO_Ci + b_8C VS_Ci + b_9C DIR_Ci + epsilon_Ci .....(7)

To explain the model, for a high-risk consolidated loan with interest rate 17 percent p.a., credit grade of 1 (the formal credit grade 'D'), with verified information (numeric value 1), lives in a rented home (numeric value 2), with 5 years of employment and having 50 percent debt-to-income ratio, the default probability is 21.35 percent. (y_Ci = - 1.149 + 1.883 x 0.17 – 0.082– 0.256 – 0.141 – 0.117x2 - 0.010 x5 - 0.012 x 0.50 = - 1.30389, d_Ci= $\frac{1}{1+e^{-(-1.30389)}}$ = 0.2135). By using the model for borrowers with credit grade 'E', 'F', and 'G' are predicted assuming all other variables in the above equation (5) remain same except for interest rate[3] as 20 percent, 23 percent, 24 percent, respectively. The predicted default probabilities are 25.57 percent, 30.98 percent and 28.58 percent, respectively.

Another similar model is developed using the same method with the same variables for the high-risk non-consolidated loans and the result shows that out of nine variables similar six variables are statistically significant. The loan term

is statistically significant for consolidated loans but not significant in this case. The variables are statistically significant at 1 percent significance level except for the interest rate which is statistically significant at 5 percent level. The default prediction model for high-risk non-consolidated loans looks as follows:

y_NCi = b_0 + b_1NC CG_1NCi + b_2NC CG_2NCi + b_3NC CG_3NCi

+ b_5NC r_NCi + b_6NC EL_NCi + b_7NC HO_NCi + b_8NC VS_NCi + b_9NC DIR_NCi + epsilon_NCi.....(8)

The predicted default probabilities for the high-risk non-consolidated loans by using the model shown in equation (6) and using the same variable parameters as used for the high-risk consolidated loan for the credit grade 'D', 'E', 'F', and 'G' are 18.47 percent, 22.67 percent, 25.35 percent, and 22.99 percent, respectively. The predicted default probabilities support our claim that the risk level of the consolidated loans and the non-consolidated loans for high-risk borrowers are different and the consolidated loans attribute a high default rate for each credit grade from the 'D' grade and worse.

Table 6: Calculated Default Rates for Each of the Credit Grades

Credit Grade →	D	E	F	G
Credit Group ↓				
Non-Consolidated	18.47 %	22.67 %	25.35 %	22.99 %
Consolidated	21.35 %	25.57 %	30.98 %	28.58 %

The predicted default rate using the models show that the high-risk consolidated loans are more likely to be defaulted as compared with that of non-consolidated loans. This result is consistent with the results of the non-parametric test to compare the means of these two groups of loans where the t-test shows that the mean default rate for high-risk consolidated loans is more than that of the high-risk non-consolidated loans.

In addition to default predictability, the models further explore new insights both in terms of the significance of explanatory variables and in terms of a coefficient of a variable. Earlier studies on default probabilities claim that along with other explanatory variables the credit history of the borrowers can significantly contribute towards default prediction and the default models developed by other scholars include the delinquency records of the customer as

an explanatory variable to calculate the value of dependent variables. However, in contrast with the earlier studies both of our models fail to consider the credit history of the borrowers (variable 'delinquency in the last 2 years') in the model as the variable is not even significant at 5 percent significance level. For high-risk loans, in the online P2P credit market, the credit history cannot help in predicting the default probabilities of the loans. Another aspect of the models is the coefficient of the interest rate where the interest rate shows an inverse relationship means the high-interest rate predicts higher default probability for high-risk consolidated loan customers whereas for non-consolidated loans the relationship is reverse that predict low default rate for high interest-paying customers.

4.3. Policy Implications

The previous literature related to the default risk of the loans in the online P2P lending market explores that the interest charge on the high-risk loans is not enough to compensate the risk level of the loans which raises a question mark in the existing risk modeling for high-risk loans. This paper further analyzes the features of these high-risk loans by dividing them into two separate groups depending on the purposes of the loans as high risk consolidated loans and high-risk non-consolidated loans. The result of this study helps investors as well as the lending platforms to make a more informed decision where the investors now understand that the high risk consolidated loans bear is more prone to default than the high-risk non-consolidated loans and either choose to invest in the high-risk non-consolidated loans than the high risk consolidated loans considering the other factors as fixed. The lending platforms may also be benefited by understanding the actual risk level of the high risk consolidated loans and design a separate method to assign risk grade for the high risk consolidated loans rather than using the present method of assigning the credit grades of these loan customers.

4.4. Limitation

The research is done with the publicly available data from a lending platform and for this reason, the research findings are limited by the available data of the website. In addition to this, for some of the data, the authenticity is not verified by the online lending platform that limits the research findings' ability to generate a credible result.

5. Conclusions

Though the growth of the online P2P market is supported by its ability to provide efficient, swift services with the lower transaction cost as compared to the traditional financial intermediaries, the sustainability of the system depend on its ability to address the credit risk issue and assign appropriate risk premium in the pricing. Our study focuses on the high-risk borrowers for measuring the appropriate credit risk which subsequently helps in assigning required interest rates considering the risk. The proportion of consolidated loans is much higher than all other loans together both in numbers and the amount of the loans. The results show that the borrowers who borrow for consolidation purposes avail funding from lending club with an average higher amount, better credit grade, and they have on average higher default rate as compared with those of non-consolidated loan customers. The high-risk consolidated customers are favored by the investors with a higher amount of loans and lower interest rates as compared with the high-risk non-consolidated borrowers. The credit grade assigned by the lending club also shows upward bias as it shows that with better credit grade the high-risk consolidated borrowers have a higher probability of default. Although the consolidated loans have higher default records the lending platform fails to recognize that this higher level of risk needs to be adjusted in the form of the risk premium and the analysis shows that the consolidated loan customers get funded with the same interest rate. The grouping of loans in terms of their credit grades shows that for all the high-risk credit grades the consolidated loans have a higher default rate than the non-consolidated loans.

The two separate models are developed using binary logistic regression analysis for the high-risk consolidated and the non-consolidated borrowers to predict the default risk associated with each of the two groups of loans. The analysis shows that the interest rate and the credit grades are the strongest explanatory variables in predicting the default probabilities of both the high-risk consolidated and non-consolidated loans. The models also predict the default probabilities for all the high-risk credit grades which are consistent with the actual calculated default risk of the loans. Most of the scholars who study delinquency in the P2P market finds a positive relationship between the credit history of the

borrowers and the default rate. However, our models reveal that there is no significant relationship between the credit history of the high-risk borrowers irrespective of their purposes of the loans.

Within the scope of this thesis, the research findings may be useful for the investors, the borrowers, and the online P2P lending platforms. The investors are the primary beneficiaries for the credit risk assessment in the online P2P lending system as the investors bear the default risk. With these research findings, investors are able to identify the risky customers even within a credit grade which generally symbolizes the same level of risk. For high-risk borrowers, investors will prefer non-consolidated borrowers, ceteris paribus, over consolidated borrowers, or charge more interest on the consolidated borrowers considering the higher level of risk. Of the high-risk borrowers, the non-consolidated borrowers can bid for lower interest rates, ceteris paribus, than the consolidated borrowers. The lending platform should develop a new model to assign the credit grade so that the grades can accommodate the risk differences between the high-risk consolidated and the high-risk non-consolidated borrowers.

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Appendices

Appendix 1: Description of Variables

Item	Description
Loan Amount	The listed amount of the loan applied for by the borrower. If at some point in time, the credit department reduces the loan amount, then it will be reflected in this value.
Installment	The monthly payment owed by the borrower if the loan originates.
Term	The number of payments on the loan. Values are in months and can be either 36 or 60.
Interest Rate	Interest Rate on the loan
Credit Grade	Lending club assigned loan grade
Sub-grade	Lending club assigned loan sub-grade
Homeownership	The homeownership status provided by the borrower during registration or obtained from the credit report. Our values are: RENT, OWN, MORTGAGE, OTHER
Verification Status	Indicates if income was verified by Lending Club, not verified, or if the income source was verified
Debt-to-Income Ratio	A ratio calculated using the borrower's total monthly debt payments on the total debt obligations, excluding mortgage and the requested LC loan, divided by the borrower's self-reported monthly income.
Delinquency in 2 Years	The number of 30+ days past-due incidences of delinquency in the borrower's credit file for the past 2 years
Loan Purpose	A category provided by the borrower for the loan request.
Employment Length	Employment length in years. Possible values are between 0 and 10 where 0 means less than one year and 10 means ten or more years.
Annual Income	The self-reported annual income provided by the borrower during registration.
Issue Date	The month which the loan was funded
Loan Status	Current status of the loan, where; 'In grace period' means the loan installment is yet to be fallen due. 'Current' means the loan installment payment is regular with maximum 15 days overdue. 'Late' means the loan installment is overdue for a period between 16- 120 days. 'Default' means the loan installemtn is overdue for more than 120 days. 'Charged Off' means there is no reasonable expectation of further payments of the loan.

Source: www.lendingclub.com

Appendix 2: Distribution of Loans by Their Credit Grades Assigned by the Lending Club

Credit Grade	N	% of Total N	Amount	% of Total
A	144228	21.3%	$2.00 b	22.7%
B	220255	32.6%	$2.78 b	31.4%
C	180248	26.6%	$2.27 b	25.6%
D	87158	12.9%	$1.11 b	12.5%
E	32154	4.8%	$0.48 b	5.4%
F	10352	1.5%	$0.17 b	1.9%
G	2064	0.3%	$0.04 b	0.5%
Total	**676459**	**100.0%**	**$8.85** b	**100.0%**

Source: Author's compilation for classification purposes.

Appendix 3: Distribution of Loans by Their Status

Credit Grade	N	% of Total N	Amount	% of Total Sum
Current	11482	1.7%	$0.15	1.7%
Fully Paid	563764	83.3%	$7.36	83.2%
In grace period	440	0.1%	$0.01	0.1%
late 16-30 days	148	0.0%	$0.00	0.0%
late 31-120 days	786	0.1%	$0.01	0.1%
Charged off	99837	14.8%	$1.32	14.9%
Default	2	0.0%	$0.00	0.0%
Total	**676459**	**100.0%**	**$8.85**	**100.0%**

Source: Author's compilation for classification purposes.

Appendix 4: Comparing High-risk Consolidated and High-risk Non-consolidated Loans by Their Status

Credit Grade	D	E	F	G
Consolidated	24.80%	30.51%	37.14%	37.89%
Non-consolidated	22.49%	27.95%	31.37%	36.99%

Source: Author's compilation for classification purposes.

Appendix 5: Descriptive Statistics for High-risk Consolidated Loans

Variables	N	Min	Max	Mean	Std. Deviation	Skewness	Kurtosis
						Statistic	Statistic
Loan amount	65535	700	35000	14846.38	9167.428	.712	-.462
term	65535	0	1	.23	.424	1.250	-.437
Interest rare	65535	.0600	.2849	.184977	.0244747	.829	.574
installment	65535	23	1445	488.77	294.470	.892	.201
Credit Grade	65535	3	6	3.43	.688	1.557	1.860
Employment Length	65535	0	10	5.54	3.808	-.104	-1.532

Variables	N	Min	Max	Mean	Std. Deviation	Skewness	Kurtosis
						Statistic	Statistic
Home ownership	65535	0	3	1.62	.657	.590	-.651
Annual income	65535	0	8900060	65682.74	55865.284	63.157	9586.269
Verification status	65535	0	1	.80	.398	-1.523	.320
Loan status	65535	0	1	.27	.446	1.017	-.965
Debt-to-income	65534	.00	672.52	19.8575	8.77518	6.412	466.267
Delinquency 2yrs	65535	.00	20.00	.3607	.92876	4.935	42.105
Valid N (listwise)	65534						

Appendix 6: Descriptive Statistics for High-risk Non-consolidated Loans

Variables	N	Min	Max	Mean	Std. Deviation	Skewness	Kurtosis
						Statistic	Statistic
Loan amount	53359	500	35000	11905	9094	1.073	.265
term	53359	0	1	.18	.385	1.661	.757
Interest rare	53359	.0600	.2899	.1865	.0258	.752	.434
installment	53359	5	1445	398	296.274	1.204	.924
Credit Grade	53359	3	6	3.48	.732	1.461	1.459
Employment Length	53359	0	10	5.24	3.797	.017	-1.527
Home ownership	53359	0	3	1.62	.680	.616	-.693
Annual income	53359	1770	7500000	67964	62108	35.372	3872.759
Verification status	53359	0	1	.76	.428	-1.213	-.530
Loan status	53359	0	1	.25	.432	1.162	-.650
Debt-to-income	53359	0	999	17.63	9.829	18.828	1861.329
Delinquency 2yrs	53356	0	18	.37	.934	4.762	37.365
Valid N (listwise)	53356						

Appendix 7: t statistics for High-risk Consolidated Loans and Non-Consolidated Loans.

	Independent Samples Test t-test						
	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	99% Confidence Interval of the Difference	
						Lower	Upper
Loan amount ($)	-57.4	115156	.000	-2941.0	51.199	-3072.9	-2809.2
Interest rate	11.3	110502	.000	.001605	.000141	.001240	.001970
Installment	-54.6	114125	.000	-90.677	1.659	-94.950	-86.404
Employment length	-13.9	114835	.000	-.297	.021	-.352	-.242

	Independent Samples Test t-test						
	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	99% Confidence Interval of the Difference	
						Lower	Upper
Annual income	7.0	104248	.000	2330.3	331.691	1475.91	3184.710
Debt-to-income ratio	-41.9	105318	.000	-2.21	.05274	-2.3498	-2.07815
Delinquency	1.06	114368	.287	.00557	.00524	-.00792	.01906

Note: The above table shows the t-test statistics for the variables to compare the means of the consolidated and non-consolidated loans. For the variables Loan amount, Interest rate, Installment, Employee length, Annual income, and Debt-to-income ratio, the means are different between the groups. This result is statistically significant at 1 percent level. This test statistics fail to reject the claim that the means are the same for the variable “Delinquency”.

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Comparative Study of Islamic Banks Versus Traditional Banks: Evidence from the MENA Region

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Abstract

This paper documents the difference in performance of Islamic banks and commercial banks in the MENA region during the period between 2009 and 2015. The findings indicate that Islamic banks perform better than the traditional banks during the sample period. More specifically, the findings show that the return on equity is higher for Islamic banks in comparison with traditional banks. Our findings are robust across alternate proxies of performance (return on invested capital, return on assets and net interest margin). Our results are moderated by various firm-specific characteristics that reflect managerial quality, asset quality, liquidity, and earnings quality. This paper extends the prior studies by documenting the performance difference between Islamic and traditional banks is moderated by various firm-specific characteristics.

Keywords: Islamic Banks; Traditional Banks; Islamic Finance; MENA Region
JEL Classification: G1, G21

1. Introduction

In any economy the banking sector helps channel the financial resources to those in need of money for either their investment or consumption purposes. A reliable and unswerving banking sector can generate significant benefits for the country and can drive its development forward. An important variation that has taken place in the banking sector around the world, and especially in the Muslim countries, is the introduction of Islamic banking. The need for Islamic banking arose because there was a general perception among Muslims that traditional banking is against the Islamic principles. The presence of interest (riba) in traditional banking is considered by many as against the Islamic Shariah. The Islamic banks were established to overcome this apprehension. Farook

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The views expressed in this paper are the authors' own.

(2007) argues that the Islamic banks are similar to traditional banks, but they conduct their operations in a way that are according to the principles set by the Islamic Shariah. By addressing the concerns of Muslims, the Islamic banks were able to increase their market share in the Muslim countries as well as in the West. According to the Global Islamic Finance Report, 50 percent of all banking assets will consist of shariah-compliant assets within the next 10 years in the Islamic countries (Pizzi, 2013)**.** The World Islamic Banking Competitiveness Report also portrays the similar picture by noting that the growth of Islamic banking sector is 50 percent faster than the growth of overall banking sector (Ernst & Young, 2012).

Such a spectacular growth of Islamic banking motivated us to ask an important question: Do Islamic banks perform better than traditional banks? In this paper, we attempt to answer this question by documenting the relative performance of Islamic banks and traditional banks in the MENA region during the period following the global financial crisis of 2008. Beck et al. (2013) argue that a high level of unease and disillusionment about the current banking institutions has emerged just after the international financial crisis of 2008. People were afraid of losing their funds and reserves due to the intensified risks undertaken by the traditional banks. We argue that the Islamic banks were better placed to help individuals overcome their fears because they impose certain levels of restrictions on their activities (Visser, 2009)**.** In fact, in the case of a loss, both the investors and the Islamic bank share the cost, a concept known as the Profit and Loss Sharing (PLS). This concept is not applicable for traditional banks. Chapra (2002) argues that the activities of Islamic banks are safer than the activities of the traditional banks. Al-Jahri (2004) also notes that because of their safer activities, the Islamic banks are more likely to survive and avoid bank runs. In addition to that, the disillusionment of individuals was also moderated by the fact that Islamic banking is shariah-compliant. It can be argued that the shariah compliance made both Islamic banks as well as the products they launched more unswerving and trustworthy by the consumers mainly in Muslim countries.

This paper shows that, by portraying more credible image, the Islamic banks were able to outperform the traditional banks during the period between 2009 and

2015. We report higher Return on Equity for the Islamic banks than for the traditional banks during our sample period. Our findings are qualitatively the same for alternate proxies of performance (return on invested capital, return on assets and net interest margin). The results of this paper also show that performance differential between the Islamic banks and the traditional banks are moderated by various firm-specific characteristics. For example, our results indicate that performance differential between the Islamic banks and the traditional banks increase as the credit risk or the managerial quality of banks decrease. Our findings also suggest that performance differential between the Islamic banks and the traditional banks decrease as the earnings quality or the liquidity levels of banks decrease.

Despite the higher performance of Islamic banks in the MENA region, we would like to stress that the Islamic banks face significant challenges. The biggest challenge for them is related to size, competition, standardization and cost structure (Hasan & Dridi, 2010; Hanif, 2011)**.** The size of Islamic banks remains substantially smaller in comparison to traditional banks that operate in the same markets. The level of competition is on the rise as traditional banks continue to offer Islamic windows. Concerning standardization and regulation, it should be noted that the appropriateness, relevance and acceptance of various products remains difficult as there are different interpretations of the shariah principles.

The rest of the paper is organized as follows: The literature review along with the theoretical background is presented Section-2. The methodology and the data are described in Section-3. Section-4 and Section-5 present findings to support of our arguments. The paper concludes with Section-6.

2. Background and Literature Review

After the financial crisis of 2008, investors and analysts became very skeptical with regards to traditional banks. Many of them argued that overreliance on the current banking system had disastrous impact on societies and resulted in a greater disparity between the rich and the poor. They claimed that traditional banks reflect the culture of modern corporations, which is driven merely by profits and ignore moral imperatives (Hasan & Dridi, 2010)**.** An important point raised during this discussion was: If traditional banks are fraught with such

problems, what is the alternate? An important alternate to traditional banking is the Islamic banking. Beck, Demirgüç-Kunt and Merrouche (2013) argue that, after enduring the harshness of the global financial crisis, many investors were in a quest for more ethical and transparent system. They note that the Islamic banking provided those investors with a desirable alternate. Alam et al. (2011) also presents similar arguments by noting that almost all elements that had led to the financial crisis (such as direct lending and borrowing) are prohibited according to the Islamic Shariah. Consequently, the Islamic banking showed a great deal of stability during the recent global financial crisis, thereby attracting investors.

While the functions performed by the Islamic banks are similar to those of the traditional banks, there are some important differences between the two. Major differences between the two are highlighted below:

- Unlike the traditional banks, the Islamic banks operate under the rules of Shariah, with justice being its main focus. The Islamic Shariah prohibits charging interests, and justice is attained by the sharing of risk between stakeholders, in addition to the sharing of profits and losses (Alkassim, 2005).
- The Islamic banks stand against any kind of speculations, auctions and derivatives. The deposits are invested in asset-backed transactions and in commodities, such as non-precious metals.
- The Islamic banks do not invest in operations related to weapons, tobacco, alcohol, pornography, gambling or any form of interest-bearing activities.
- Regarding social inequality, the Islamic banks do a better job. In order to decrease social disparities that exist between the different classes, all investors and depositors in Islamic banks are supposed to give a portion of wealth to charity through the concept of Zakat. This remains an essential notion necessary for an enhanced distribution of resources in a given economy.
- An improved supervision is benefiting Islamic banks more than traditional ones. In fact, Islamic banks take advantage from a supervisory

committee that continuously evaluates the acquiescence of the bank's operations and products to the Shariah. They ensure that no transaction breaches the precepts of Islam, and that they adhere to ethical, transparent and moral values emphasized by the Islamic religion (Siddiqi, 2008).

Prior literature shows that all of these differences between the two banks confirm the higher performance of Islamic banks. Ryu et al. (2012), for example, show that the traditional banks exhibit a higher risk and are less profitable than Islamic banks. Samad (2004) also argues that the Islamic banking system has become superior to the traditional banking system in terms of its profitability.

Hypothesis: *Islamic banks perform better than traditional banks in the MENA region.*

3. Empirical Methodology and Data

3.1 Sample

This paper documents the difference between the performances of Islamic and traditional banks that are publicly listed in the MENA region (Bahrain, Egypt, Jordan, Kuwait, Lebanon, Morocco, Oman, Qatar, Saudi Arabia and United Arab Emirates) during the period between 2009 and 2015. We use Datastream and S&P Global database to obtain the data used in this study.

3.2 Description of the Variables

In order to document the performance dissimilarity between the traditional and Islamic banks, we estimate various versions of the following pooled OLS regression. In the estimations performed in this paper, we use robust regression to control for heteroskedasticity.

$$\mathrm{PERF} = \alpha + \beta_1(\mathrm{ISLAMIC}) + \beta_2(\mathrm{LLRR}) + \beta_3(\mathrm{OER}) + \beta_4(\mathrm{CIR}) + \beta_5(\mathrm{LDR}) + \beta_6(\mathrm{CAR}) + \beta_7(\mathrm{ISLAMIC} * \mathrm{LLRR}) + \beta_8(\mathrm{ISLAMIC} * \mathrm{OER}) + \beta_9(\mathrm{ISLAMIC} * \mathrm{CIR}) + \beta_{10}(\mathrm{ISLAMIC} * \mathrm{LDR}) + \beta_{11}(\mathrm{ISLAMIC} * \mathrm{CAR}) + \sum_{Y=1}^{N-1} \delta_Y(\mathrm{YDUM}) + \sum_{C=1}^{N-1} \theta_C(\mathrm{CDUM}) + \varepsilon \quad (1)$$

The dependent variable (PERF) indicates, as mentioned in the regression equation above, the performance of banks. The return on equity is used in this study as an indicator of performance (PERF). The return on equity indicates the

total income engendered per unit of shareholders' equity. It displays the capability of banks to transform shareholders' equity into profit. It is computed as the ratio of net income to shareholders' equity. The main independent variable for this study (ISLAMIC) identifies whether a bank is an Islamic bank or a traditional bank. More specifically, the value of 1 is assigned to this dummy variable in the case of an Islamic bank and 0 if the bank is a traditional one.

Besides ISLAMIC, the ensuing firm-specific control variables are added in our regression analysis. All of these variables are supposed to affect the performance of banks to varying degrees.

- LLRR: Loan Loss Reserves to Gross Loans Ratio (LLRR) portrays the credit risk linked to bank's loans investments. The banks with low LLRR are, sometimes, viewed as riskier banks.
- OER: Operating Expenses to Operating Income Ratio (OER) indicates management's aptitude to mitigate risks and confirm an institution's capability to reach its operational goals. It is also considered as an indicator of managerial quality. It is desirable to have lower value of this ratio because it infers that for any level of operating income, the bank suffers from a reduced amount of costs.
- CIR: Cost to Income Ratio (CIR) measures the earnings quality of a bank. An inferior CIR is commended as it means that a bank generates more sales at a lower cost. Dang (2011) and Faizulayev (2011) use CIR as a suitable factor to assess the earnings quality. It indicates the ability of a bank to uphold its present revenues in the upcoming years by devising rigorously regulated operations that do not ponder short-range benefits over the longstanding sustainability of the organization.
- LDR: Loan to Deposit Ratio (LDR) measures bank's ability to transform assets into cash easily, conveniently, and cheaply. A strong and dynamic bank should be capable to make money so that it can fulfill its financial commitments as well as satisfy the requests of its customers (Duttweiler, 2009). LDR is the chosen gauge to efficiently assess the liquidity levels of a bank. An inferior LDR ratio is desirable because it shows that the

bank is undertaking less risks as the level of deposits it holds is higher than the loans sold to clients.

- CAR: Capital Adequacy Ratio (CAR) assesses bank's capacity to compensate for losses and indicates its ability to risks. It is computed as the ratio of the sum of Tier-1 Capital and Tier-2 Capital to Risk Weighted Assets. It is better to have higher value of this ratio because it shows that the bank has a greater ability to meet immediate defaults and hazards (Bokhari et al., 2012).

3.3 Summary Statistics

The distribution of banks across the MENA region is presented in this section. Our sample is composed of 54 traditional banks and 30 Islamic banks. A detailed analysis of the banks' distribution indicates that seven countries have both Islamic and traditional banks operating in their respective economies. These seven countries are as follows: UAE, Egypt, Kuwait, Oman, Qatar, Saudi Arabia and Bahrain.

The number of traditional banks in United Arab Emirates, Egypt, Kuwait, Oman, Qatar, Saudi Arabia, and Bahrain is 11, 4, 4, 3, 5, 6 and 3, respectively. Whereas the number of Islamic banks in the same countries is 6, 4, 4, 1, 5, 5 and 5 respectively. Three countries namely Jordan, Lebanon and Morocco have no publicly listed Islamic bank. The number of traditional banks in Morocco, Jordan and Lebanon is 7, 8 and 3, respectively.

Table-1 documents the descriptive statistics of the independent variables. The table indicates that around 35 percent of banks in our sample are the Islamic banks. The table also shows that Operating Expenses to Operating Income Ratio is around 33 percent, Cost to Income Ratio is around 48 percent, and Loan to Deposit Ratio is around 63 percent.

Table 1: Descriptive Statistics

Variables	25^{th} Percentile	Mean	Median	75^{th} Percentile	Standard Deviation	Observations
ISLAMIC	0.0000	0.3571	0.0000	1.0000	0.4795	672
LLRR	2.7500	4.9732	4.0550	6.0800	4.9836	672
OER	0.3300	0.4432	0.4100	0.5000	0.1975	672

Variables	25th Percentile	Mean	Median	75th Percentile	Standard Deviation	Observations
CIR	0.4800	0.5938	0.5800	0.6900	0.1541	672
LDR	0.6200	0.7234	0.7500	0.8500	0.2209	672
CAR	14.5500	17.8294	16.9050	20.0000	5.1303	666

Note: Section-3 presents the definition of all variables.

Table-2 documents correlation between explanatory variables used in this paper. The table indicates that all of the correlations are weak to moderate. Therefore, they will not result in high multicollinearity in the analysis.

Table 2: Correlation Matrix

Variables	ISLAMIC	LLRR	OER	CIR	LDR	CAR
ISLAMIC	1.0000					
LLRR	0.0938	1.0000				
OER	0.2854	0.3381	1.0000			
CIR	0.2379	0.3545	0.4658	1.0000		
LDR	0.0813	-0.3137	-0.1713	-0.2940	1.0000	
CAR	0.1754	-0.1164	-0.0491	-0.1209	0.1986	1.0000

Note: Section-3 presents the definition of all variables.

4. Results

The results of our analysis are reported in Table-3. Our result from Model (7) – the most comprehensive model – indicates that Islamic banks outperform traditional banks. The table shows significantly positive coefficient of ISLAMIC. Our results indicate that Islamic banks have higher Return on Equity than traditional banks by 6.8390 percentage points. Furthermore, we also show that the difference between performances of the two groups is moderated by LLRR, OER, CIR, and LDR. Our results show that traditional banks would perform better than Islamic banks if both of them have similar level of CIR or LDR. Our estimation from a (7) reports significantly negative coefficient of ISLAMIC*CIR and ISLAMIC*LDR. Given that CIR (LDR) is a measure of earnings quality (liquidity), our results indicate that earnings quality (liquidity) has a stronger impact on the performance of traditional banks than on the performance of Islamic banks. In case of LLRR and OER, we show that Islamic banks would outperform traditional banks if both of them have similar levels of LLRR or OER. Our estimation from Model (7) reports significantly positive coefficient of ISLAMIC*LLRR and ISLAMIC*OER. Given that OER (LLRR) is a measure of

managerial quality (asset quality), our results indicate that managerial quality and asset quality have a stronger impact on the performance of Islamic banks than on the performance of traditional banks.

Table 3: Performance Difference between Traditional and Islamic Banks

Variables	Model (a)	Model (b)	Model (c)	Model (d)	Model (e)	Model (f)	Model (g)
ISLAMIC	0.5840*	-0.4620	-1.4911	0.5427	4.9381***	-0.2715	6.8390***
LLRR	-0.3402***	-0.5563***	-0.3413***	-0.3404***	-0.3927***	-0.3385***	-0.5595***
OER	-7.8622**	-7.4363**	-12.7892***	-7.8840**	-7.7322**	-7.9811**	-18.3076***
CIR	-16.5957***	-17.2015***	-15.2019***	-16.6149***	-17.2045***	-16.7963***	-8.3708***
LDR	-1.3361	-1.2642	-1.5932*	-1.3389	0.8073	-1.4320*	0.7661
CAR	-0.1356***	-0.1389***	-0.1464***	-0.1357***	-0.1301***	-0.1591***	-0.1668***
ISLAMIC* LLRR		0.2429***					0.2331***
ISLAMIC* OER			5.2806*				17.7808***
ISLAMIC* CIR				0.0744			-19.7761***
ISLAMIC* LDR					-5.6540***		-6.0876***
ISLAMIC* CAR						0.0473	0.0779
Year Dummies	Included	Included	Included	Included	Included	Included	Included
Country Dummies	Included	Included	Included	Included	Included	Included	Included
Observations	660	660	660	660	660	660	660
F-Value	44.91	45.80	47.72	43.99	53.28	43.65	52.53
R-Square	0.6433	0.6468	0.6463	0.643	0.6510	0.6436	0.6656

Note: Section-3 presents the definition of all variables. *** indicates 1% significance, ** indicates 5% significance and * indicates 10% significance.

5. Additional Tests

In an attempt to examine the strength of our findings, we estimate again different versions of Equation (1) by relying on the subsequent proxies of performance.

- Return on Assets: It indicates the income generated per unit of assets. It denotes the effectiveness of the bank in transforming its assets and resources into profit. It is computed as Net Income over Total Assets.

- Return on Invested Capital: It assesses the return generated via the investment made by those who supplied capital be it bondholders and/or shareholders. It informs us about the ability and efficiency of a company in transforming capital into profits.

- Net Interest Margin: It is calculated as the ratio of Net Interest Income to Total Assets. It focuses on the return generated from the main activities of a bank namely funding, lending, and investing (Ben Naceur & Goaeid, 2008). The net interest income is the difference between interest income and interest expense of a bank. It represents the difference between the revenues collected from lending and the expenses linked to the bank's borrowing activities. For Islamic banks, interest is measured as the income netted from the diverse offered financial products (Faizulayev, 2011).

Table-4 reports the results of our analysis when Net Interest Margin is used as a proxy for performance. As was the case in Table-3, our result from Model (7) – the most comprehensive model – indicates that Islamic banks outperform traditional banks. We notice significantly positive coefficient of ISLAMIC. Our findings show that Islamic banks have higher Net Interest Margin than traditional banks. Furthermore, we also show that the difference between Net Interest Margin of the two groups is moderated by LLRR and OER. Our results show that traditional banks would have higher Net Interest Margin than Islamic banks if both of them have similar level of LLRR. Our estimation from Model (7) reports significantly negative coefficient of ISLAMIC*LLRR. Given that LLRR is a measure of asset quality, our result indicates that asset quality has a stronger impact on Net Interest Margin of traditional banks than on Net Interest Margin of Islamic banks. In case of OER, we show that Islamic banks would have higher Net Interest Margin than traditional banks if both of them have similar level of OER. Our estimation from Model (7) reports significantly positive coefficient of ISLAMIC*OER. Given that OER is a measure of managerial quality, our result indicates that managerial quality has a substantial influence on Net Interest Margin of Islamic banks than on Net Interest Margin of traditional banks.

Table 4: Net Interest Margin (NIM) Difference between Traditional and Islamic Banks

Variables	Model (a)	Model (b)	Model (c)	Model (d)	Model (e)	Model (f)	Model (g)
ISLAMIC	0.0239	0.4973***	0.1270	0.4735*	-0.1098	0.1221	0.9212***
LLRR	-0.0197***	0.0819***	-0.0193***	-0.0177***	-0.0182***	-0.0202***	0.0832***
OER	0.6030	0.6508*	0.8779*	0.8442**	0.5925	0.5919	-0.1756
CIR	-2.9659***	-2.9146***	-3.0619***	-2.7563***	-2.9402***	-2.9205***	-2.2047***
LDR	0.0810	0.0678	0.0958	0.1113	0.0142	0.0902	0.1127
CAR	-0.0080*	-0.0075	-0.0076	-0.0064	-0.0081*	-0.0052	-0.0022
ISLAMIC* LLRR		-0.1108***					-0.1135***
ISLAMIC* OER			-0.2636				1.0700**
ISLAMIC* CIR				-0.8105*			-1.0062
ISLAMIC* LDR					0.1738		-0.1344
ISLAMIC* CAR						-0.0054	-0.0093
Year Dummies	Included	Included	Included	Included	Included	Included	Included
Country Dummies	Included	Included	Included	Included	Included	Included	Included
Observations	666	666	666	666	666	666	666
F-Value	39.03	45.64	37.89	36.83	37.72	38.07	40.57
R-Square	0.5454	0.5872	0.5458	0.5488	0.5458	0.5456	0.5907

Note: Section-3 presents the definition of all variables. *** indicates 1% significance, ** indicates 5% significance and * indicates 10% significance.

Table-5 reports the results of our analysis when Return on Asset is used as a proxy for performance. Our result from Model (7) – the most comprehensive Model – indicates that Islamic banks outperform traditional banks. We show significantly positive coefficient of ISLAMIC. Besides, we also display that the difference between Return on Asset of the two groups is moderated by CIR, LDR, and CAR. Our results show that Islamic banks would perform better than traditional banks if both of them have similar level of CAR. Our estimation from Model (7) reports significantly positive coefficient of ISLAMIC*CAR. Given that LLRR measures capital adequacy, our result indicates that capital adequacy has a stronger impact on Return on Asset of Islamic banks than on Return on Asset of traditional banks. In case of CIR and LDR, we show that traditional banks would perform better than Islamic banks if both of them have similar levels of CIR or LDR. Our estimation from Model (7) reports significantly negative coefficients of ISLAMIC*CIR and ISLAMIC*LDR. Given that CIR (LDR) is a measure of earnings quality (liquidity), our result would indicate that earnings

quality (liquidity) has a considerable effect on Return on Asset of traditional banks than on Return on Asset of Islamic banks.

Table 5: Return on Asset (ROA) Difference between Traditional and Islamic Banks

Variables	Model (a)	Model (b)	Model (c)	Model (d)	Model (e)	Model (f)	Model (g)
ISLAMIC	0.0310	0.0232	0.3258**	0.7106***	0.1521	0.3420	0.7396***
LLRR	-0.0419***	-0.0436***	-0.0411***	-0.0391***	-0.0433***	-0.0404***	-0.0542***
OER	-2.0532***	-2.0531***	-1.2867***	-1.6978***	-2.0447***	-2.0364***	-2.0179***
CIR	-2.6237***	-2.6253***	-2.8815***	-2.3006***	-2.6457***	-2.7746***	-2.1538***
LDR	0.1374	0.1377	0.1779*	0.1823*	0.1978**	0.1001	0.2960***
CAR	0.0227***	0.0227***	0.0240***	0.0252***	0.0229***	0.0122*	0.0152**
ISLAMIC*LLRR		0.0018					0.0154
ISLAMIC*OER			-0.7531**				0.5500
ISLAMIC*CIR				-1.2254***			-1.9156***
ISLAMIC*LDR					-0.1574		-0.3998**
ISLAMIC*CAR						0.0205**	0.0209**
Year Dummies	Included	Included	Included	Included	Included	Included	Included
Country Dummies	Included	Included	Included	Included	Included	Included	Included
Observations	663	663	663	663	663	663	663
F-Value	100.60	104.38	103.05	96.83	100.13	99.95	101.85
R-Square	0.7639	0.7639	0.7663	0.7690	0.7642	0.7663	0.7733

Note: Section-3 presents the definition of all variables. *** indicates 1% significance, ** indicates 5% significance and * indicates 10% significance.

Table-6 reports the results of our analysis when Return on Invested Capital is relied on as a proxy for performance. Our result from Model (7) – the most comprehensive Model – indicates that Islamic banks outperform traditional banks. We show significantly positive coefficient of ISLAMIC. Our findings show that Islamic banks have higher Return on Invested Capital than traditional banks by 1.3293 percentage points. Moreover, we also show that the difference between Return on Invested Capital of the two groups is moderated by CIR and CAR. Our results show that traditional banks would perform better than Islamic banks if both of them have similar level of CIR. Our estimation from Model (7)

reports significantly negative coefficient of ISLAMIC*CIR. Given that CIR is a measure of earnings quality, our result would indicate that earnings quality has a stronger impact on Return on Invested Capital of traditional banks than on Return on Invested Capital of Islamic banks. In case of CAR, we show that Islamic banks would outperform traditional banks if both of them have similar level of CAR. Our estimation from Model (7) reports significantly positive coefficient of ISLAMIC*CAR. Given that CAR is a measure of capital adequacy, our result would indicate that capital adequacy has a stronger influence on Return on Invested Capital of Islamic banks than on Return on Invested Capital of traditional banks.

Table 6: Return on Invested Capital (ROIC) Difference between Traditional and Islamic Banks

Variables	Model (a)	Model (b)	Model (c)	Model (d)	Model (e)	Model (f)	Model (g)
ISLAMIC	0.0948	0.1502*	0.7139***	1.5079***	0.0410	-0.5605	1.3293***
LLRR	-0.0534***	-0.0415***	-0.0511***	-0.0471***	-0.0528***	-0.0501***	-0.0623***
OER	-2.8200***	-2.8144***	-1.1700*	-2.0621***	-2.8243***	-2.7458***	-2.7144***
CIR	-3.0004***	-2.9944***	-3.5768***	-2.3418***	-2.9901***	-3.3032***	-2.0474***
LDR	0.0563	0.0547	0.1449	0.1515	0.0294	-0.0051	0.2356**
CAR	0.0327***	0.0328***	0.0351***	0.0376***	0.0327***	0.0140*	0.0209**
ISLAMIC* LLRR		-0.0129					0.0172
ISLAMIC* OER			-1.5820***				1.0149
ISLAMIC* CIR				-2.5470***			-3.6195***
ISLAMIC* LDR					0.0700		-0.4075
ISLAMIC* CAR						0.0361***	0.0340**
Year Dummies	Included	Included	Included	Included	Included	Included	Included
Country Dummies	Included	Included	Included	Included	Included	Included	Included
Observations	666	666	666	666	666	666	666
F-Value	60.06	61.22	62.60	61.94	59.80	59.31	63.91
R-Square	0.7412	0.7415	0.7475	0.7544	0.7413	0.7458	0.7597

Note: Section-3 presents the definition of all variables. *** indicates 1% significance, ** indicates 5% significance and * indicates 10% significance.

6. Conclusion

The Islamic banking has experienced rapid growth in recent years and is regarded as one of the fastest booming sectors in the international financial industry. It has become inherently prominent in many countries, and has taken a status of too big to ignore for others. Given the importance of Islamic banks, this paper compares the performance of Islamic banks and the performance of traditional banks in the MENA region. Our results show that the Islamic banks outperform the traditional banks during the period between 2009 and 2015. Our findings confirm that Islamic banks have higher Return on Equity than traditional banks. Our results are qualitatively the same for alternate proxies of performance (Net Interest Margin, Return on Assets, and Return on Invested Capital). Furthermore, this paper also shows that our findings are moderated by various firm-level characteristics that reflect managerial quality, asset quality, liquidity, and earnings quality of banks.

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Contribution of Agricultural Credit and Subsidy on Agricultural Production of Bangladesh: An Impact Study

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Abstract

Bangladesh is an agrarian country with a large population where the issue of food security in ongoing COVID-19 pandemic deserves more attention for ensuring smooth agricultural production. Along with the growth of agricultural production, Agri-credit and subsidy have a rising trend over time, although subsidy has experienced different patterns from that of the change in credit over the same period. Standard time series analysis has been used to learn about the contribution of credit and subsidy for the rising production in agriculture. Both the long run relationship and the short-term fluctuations are captured using the well-established techniques. Theoretical link supported by data analysis has been discussed along with the realistic picture of the economy which may have a significant impact on policy implications in both cases of Agri-credit and subsidy towards a sustainable agriculture in Bangladesh.

Keywords: Agricultural Credit, Government Subsidy, Agricultural Production, Impact, Food Security
JEL Classification: E23, G21, Q14

1. Introduction

The globe is passing the toughest time in its last 100 years of life. Despite the earth was injured by two consecutive world wars during last century where the enemies of each were known to other. But in the COVID-19 pandemic declared by the World Health Organization (WHO), the enemy seems to be mostly unknown, unpredictable, unmanageable, and unstoppable even after a significant time of its disaster. It has already disrupted imports, exports and supply chains across the world and has affected different sectors of Bangladesh like many other countries where agriculture is mentionable one. It is the priority sector of Bangladesh economy and also the main source of rural employment. Its contribution in Gross Domestic Product (GDP) is 13.7 percent (constant price 2005-06 base) and around 41 percent of the total workforce is directly engaged in agriculture sector (Bangladesh Bank Annual Report, 2018-19). Agriculture of

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The views expressed in this paper are the authors' own.

Bangladesh can be broken down into four/ five main components: crops, livestock, fisheries, forests and other agricultural activities. Here rice is the staple food of Bangladesh which makes up 48 percent of rural employment and half of agriculture's contribution to GDP[1]. This sector is also the main weapon of fulfilling nutrition demand, increasing export earnings, augmenting domestic production and ensuring food security of the country as a whole. But recently, COVID-19 has brought major agricultural disruptions globally particularly the agricultural value chain of North and Central Asia. Assaubayeva and Bi Yi (2020) observed that, in North and Central Asia, there are concerns that COVID-19 related measures might affect the 2020 harvest with seasonal workers being unable to travel for the spring sowing and harvest seasons. Bangladesh agriculture is also affected very badly by this contagion which requires thorough attention and effective measures from all concerns to safeguard this sector.

A recent survey conducted by BRAC[2] found that farmers have lost Tk. 56,536.68 crore from estimated income in first one and a half months; 100 percent of fish farmers, 97 percent of livestock, 93 percent of poultry and 81 percent of crops and vegetables experienced this estimated income to be lost. Around 82 percent do not see the problems going away soon, 42 percent had no way to cope with the crisis and 41 percent find loans the sole way to survive if they are unable to produce next season. As the way of recovery, 68 percent farmers are seeking credit on easy terms, 58 percent fair prices of produce, 48 percent availability of inputs at fair prices and 45 percent full operation of markets. So, among different corrective and suggestive measures to overcome these challenges in attaining target size of agricultural production, the necessary level of credit flow via financial institutions and subsidy from Government is noteworthy. Islam et al. (2014) also opined that adequate availability of credit on time is an important requirement for the rural people, particularly under conditions of scarcity of resources and uncertainty. Obilor (2013) also echoed the same sense by established in his study that inadequate capital is considered as the single most important factor affecting the performance of the agriculture sector

[1]https://databd.co/stories/an-overview-of-agriculture-in-bangladesh-4185

[2] https://www.thedailystar.net/business/news/farmers-lost-tk-56536cr-coronavirus-1909317

and Government fund allocation to agriculture produced a significant positive effect on agricultural productivity. It also revealed from study that state interventionism in agriculture is a part of the economic policy consisting of conscious and purposeful activities aiming at correcting the market mechanism, its supplementation and, in some cases, deactivation (Wilkin, 2003).

This study dwells on the few areas: (i) regulatory initiatives of financial assistance in agriculture of Bangladesh and (ii) assessment of the impact of agricultural credit and subsidy on agricultural production of Bangladesh.

2. Statement of the Problems

FAO (2015) estimates that global food production must increase by 70 percent by 2050 to feed an additional 2.3 billion people. So, in addition with COVID-19 threat, it becomes a great challenge to ensure expected level of agricultural production, especially for developing countries like, Bangladesh. According to Pullabhotla and Ganesh Kumar (2019), eighty percent of the increase in production in developing countries will have to come from improved crop yields and production. Bangladesh with her vast span of rich soil, few agro-industries are largely depend on importation of necessary raw materials in their production and many of the youths roam about unemployed. The situation is becoming acute when a huge number of expatriate return home losing their jobs abroad and local restricted movements due to COVID-19 pandemic. It is of note that various policies have been made to solve these problems in which the banks have been targeted to provide the pivotal roles in the area of funding through agricultural credits[3].

However, still there is an allegation that, commercial banks prefer granting credit to many other sectors than agriculture and where the credit was allowed, the credit terms seems dreadful to some extent. Besides, utilization of Government subsidy in proper and approved modus sometimes observed challenging and all together may push our agricultural production at a discomfortable juncture.

[3]Agricultural credit refers to the amount of money that the farmers borrow to meet their production requirements as well as their current consumption needs. (Sarker, 2006).

3.Objectives

The paper has focused on studying the contribution of agricultural credit and subsidy on agricultural production of Bangladesh. The specific objectives of the paper are as follows:

a) to articulate the conceptual linkage among credit, subsidy and agricultural production and

b) to assess the impact of agricultural credit and subsidy on agricultural production of Bangladesh.

4. Methodology

The analysis is done based on the data collected from the secondary sources of information. Variables are selected after library research. Tables and graphical presentation have been used for analytical purposes. For the regression analysis stationarity test has been done for the variables. It is followed by Johansen test for cointegration and Vector Error Correction Model (VECM). Logical discussion is also made in order to supplement the findings. EViews 9 has been used as a software to run the above-mentioned tests. Time period of the used data ranges from 1985 to 2019.

5. Trend of Agricultural Credit, Agricultural Subsidy and Agricultural Production in Bangladesh:

Agricultural Credit by Banks in Bangladesh

Credit is one of the important sources of funding for agriculture irrespective of all countries. In providing this credit facility financial sector of Bangladesh, particularly banking sector is playing a pivotal role as this sector is enjoying the lion portion of total financial system. Over the years, agriculture sector is boosting up with the credit assistance from banks in spite of some challenges. A comparative statement of agricultural credit performance by lending banks has shown in Table-1. It is perceived that, demand for fresh agricultural credit will increase in the mid and long-term after COVID-19 hit. In this situation, it is preferable to increase agricultural production through intensive agriculture where

adoption of intensive agriculture requires huge capital investment but our poor and marginal farmers lack sufficient capital (Alauddin & Biswas, 2014).

Table 1: Agricultural Credit Performance by Lending Banks (In billion BDT)

Aspect	FY15	FY16	FY17	FY18	FY19					
					SCBs	BKB	RAKUB	PCBs	FCBs	Total
Disbursement Target	155.50	164.00	175.50	204.00	31.95	50.00	16.80	113.44	5.81	218.00
Actual Disbursement	159.80	176.50	209.99	213.93	32.74	61.34	18.85	115.60	7.64	236.16
Recovery	154.10	170.60	188.41	215.03	33.09	66.17	19.39	111.05	7.64	237.34
Overdue	67.29	56.78	67.08	72.11	23.98	19.06	14.20	9.68	0.00	66.92
Outstanding	329.40	344.80	390.48	406.01	107.19	164.15	45.68	108.51	4.22	429.75

Source: Agricultural Credit Department, Bangladesh Bank

Due to lockdown for COVID-19, the credit disbursement started to decline and fell short of target as reviled by the Agricultural Credit Department of Bangladesh Bank. The actual agricultural credit disbursement targets exceeds from FY16 to FY19 in a row by 7.6, 19.7, 4.8 and 8.3 percent, respectively, although in FY20 the credit disbursement fell short of 5.72 percent (Table-2). It is observed that Bangladesh Krishi Bank (BKB), Rajshahi Krishi Unnayan Bank (RAKUB) and State-Owned Commercial Banks (SCBs) have jointly shared 73 percent of total outstanding agro credit whereas it was 45 percent of total disbursement in FY20 and in case of PCBs the growth of Agri credit is appreciating as they shared 51percent of total disbursement.

Table 2: Agricultural Credit Performance by Different Categories of Banks

(Tk. in Billion)

	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020-June					
					Total	PCBs	BKB	RAKUB	SCBs	FCBs
Target	164.0	175.5	204.0	218.0	241.3	130.7	55.0	16.8	32.0	6.8
Disbursement	176.5	210.0	213.9	236.2	227.5	116.5	61.97	16.0	25.6	7.4
Disbursement as % of Target	107.6	119.7	104.8	108.3	94.28	89.14	112.67	95.24	80.0	108.82
*Exceed/Deficit %	*+7.6*	*+19.7*	*+4.8*	*+8.3*	*-5.72*	*-10.86*	*12.67*	*-4.76*	*-20.0*	*8.82*
Due for Recovery	227.9	254.7	288.6	304.6	279.8					n/a
Recovery	170.6	188.4	215.6	237.3	212.5	111.0	52.6	16.9	25.6	6.4
Overdue	56.8	67.1	72.1	66.9	60.6	7.0	17.1	15.6	20.9	0.0
Total Outstanding	344.8	390.5	406.0	429.7	455.9	119.6	175.6	44.8	110.7	5.3
Overdue as a % of Outstanding	16.5	17.2	17.8	15.6	13.29	4.79	10.15	34.67	19.48	0.0
Disbursement of FY 2019 Exceed by Percentage					+8.3	+1.9	+22.7	+12.2	+2.5	+31.5

	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020-June					
					Total	**PCBs**	**BKB**	**RAKUB**	**SCBs**	**FCBs**
Disbursement of FY 2020 Exceed/Deficit by Percentage					-5.72	-10.86	12.67	-4.76	-20.0	8.82
Bank Category wise Outstanding as Percentage of Total Outstanding FY 2020					100.0	26.23	38.51	9.82	24.28	1.16
*+for Exceed & -for Deficit										

Source: Agricultural Credit Department, Bangladesh Bank

Agricultural Subsidy and Related Incentives in Bangladesh

Government of Bangladesh (GoB) is reasonably aware of the imminent risks for the production of food grains and cereals, it's imports, exports, supply and distribution particularly during the post-COVID-19. Considering all the micro and macro factors GoB has declared its subsidy in the agriculture sector of Tk. 9,500 crore which appreciably higher than immediate past year. Along with this, GoB has declared many other interest subsidy and incentives directly through ministry or via Bangladesh Bank.

Government Subsidy and Related Incentives for Agriculture Sector in Bangladesh

Assistance from Government to ensure the regular pace of production is overbearing, especially in case of macro level crisis like COVID-19. Obilor (2013) too echoed by saying that fund allocation by the government for the agricultural sector had a significant positive effect on agricultural productivity. Bangladesh Government also offer a number of incentives including subsidy directly and via Bangladesh Bank. Bangladesh Bank's role in this regard is praise worthy as they offer many refinancing facilities and some area specific benefits/ relaxations for agri-entrepreneurs through issuing different directions to banks via circulars.

As announced in the national Budget 2020-2021, GoB will continue their interventions, like- agricultural subsidies, incentives and support cards for fertilizers-seeds and other agricultural inputs, support for agricultural rehabilitation, special agriculture credit at low interests and easy terms, etc., at the required levels to effectively combat the effects of the novel coronavirus. In addition, farmers' subsidies on procurement of agricultural equipment used in harvesting crops will also continue. The number of farmers holding agricultural input support cards currently stands at 2 crore 8 lakh 13 thousand 477 to support

farmers' fertilizer requirement as it is one of the key inputs of agricultural production. The research conducted by Seck (2017), Darko and Ricker-Gillbert (2013), Ricker-Gilbert and Jayne (2010), Yawson et al. (2010) also revealed a positive and significant impact of fertilizer subsidy program on farm efficiency as the farmers, who get subsidized fertilizer, can overcome the extent of their budget constraint. Such an income effect transforms to a greater efficiency and an increase in overall productivity.

The major initiatives from Government end in the form of subsidy and other incentives including stimulus packages dedicated for agriculture sector in Bangladesh are given in Box-1.

Box 1: Major Initiatives Regarding Subsidy Including Stimulus Packages for Agriculture Sector in Bangladesh

1. For the affected customers of Agriculture sector Tk. 5,000 crore Refinance scheme was announced. From that scheme, affected customers/ farmers will get up to 20% extra of their existing loan facilities. BB will charge 1 percent interest on banks and banks will charge 4% on customers. Including 6 months grace period borrowers have to repay the loans within 18 months.
2. for low income professionals, farmers, micro businessmen Refinance Scheme of Tk. 3,000 crore was arranged through the Bank-MFI linkage. Loan limit to individual customer in this case is Tk. 75 thousand to Tk. 30 lakh. BB will charge 1 percent to banks whereas banks will charge 3.5 percent interest to Micro Credit Financing Institutions (MCFIs). Afterward, MCFIs will charge 9 percent interest to customer. Finally, customers will repay the loan within 1 to 2 years in addition with grace period.
3. Subsidy budget has been boosted by Tk. 1,370 crore for the agriculture sector in fiscal year 2020-21, and this is 16.85 percent above the revised budget of Tk. 8,130 crore.
4. Special Agricultural loan (for spices, onion, garlic, etc.) has now been extended for providing agricultural loan to the crop sector at 4 percent using banks' own funds and later on BB will provide 5 percent interest subsidy to those banks.
5. GoB has expanded low-interest bearing credit facilities to poor farmers, skilled but unemployed youths in rural areas and recently repatriated overseas workers to enable them to initiate self-employment ventures in sectors like agricultural production, agro-based service, Small and Medium Enterprises (SMEs), cottage

industries etc. Through three specialized banks Tk. 2,000 crore will be distributed under this program,

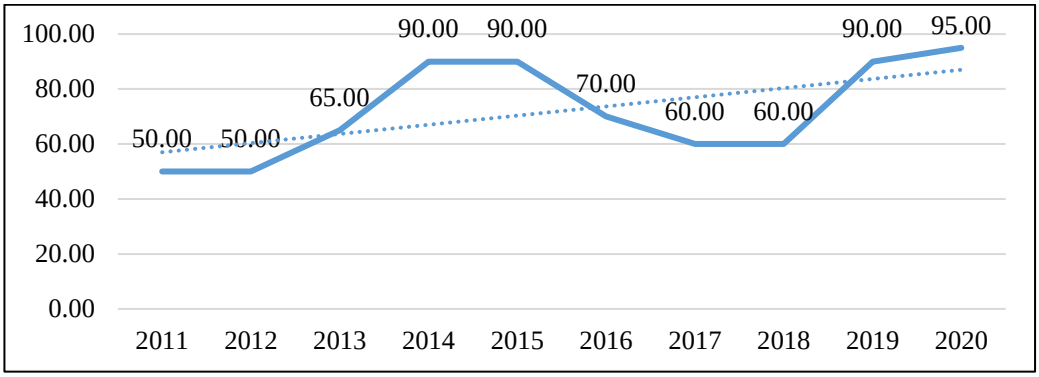
6. The government suspended payment of interest for the months of April and May against loans distributed by all commercial banks where the government will give Tk. 2,000 crore as interest subsidy out of total interest of Tk. 16,549 crore. Borrowers of such loans will not need to pay interest proportionately.
7. Until giving further notice BB instructed banks not to change interest on loans disbursed before 1st April, 2020.
8. Refinance scheme to establish agro-processing industry in the rural areas has been heightened to Tk. 1400 crore from Tk. 700 crore which will be provided by BB to banks/ MFI at 3 percent which is 7 percent at borrowers end.
9. Bangladesh Bank has declared its Agricultural and Rural Credit Policy and Program of Tk. 26,292 crore for FY 2020-2021, which is 9 percent higher than the targets for FY 2019-2020. The targets for PCBs is Tk. 14,546 crore, for BKB and RAKUB it is Tk. 7850 crore, for SOCBs it is Tk. 3,195 and finally FCBs are targeted by Tk. 701 crore.
10. The government has allocated Tk. 200 crore as incentives for farm mechanization.

Source: Various Circulars of Bangladesh Bank and Government Budget 2020-2021

It has been observed from the graphical presentation that from 2015 to 2018 the agricultural subsidy experienced a declining pace though it revives with a good swing after 2018 and then after it again exhibit a positive growth but at slower rate. Besides historical rights and tradition, farmers' economic decisions play a lot to ensure an effective utilization of Government subsidies in agricultural sector. In line with this observation, the OECD research (2001, 2005) indicates that farmers' economic decisions are heavily affected by subsidies based on the use of variable outlays, price support and by subsidies related with current production levels, while production levels are least affected by subsidies based on historical rights and the cultivation area. On the other hand, subsidies given to farmers allow a more free operation of the market mechanism and these programmes reduce the demand for other forms of government assistance (Tomek & Robinson, 2001).

Figure 1: Government Subsidy in Agriculture during 2011-2020

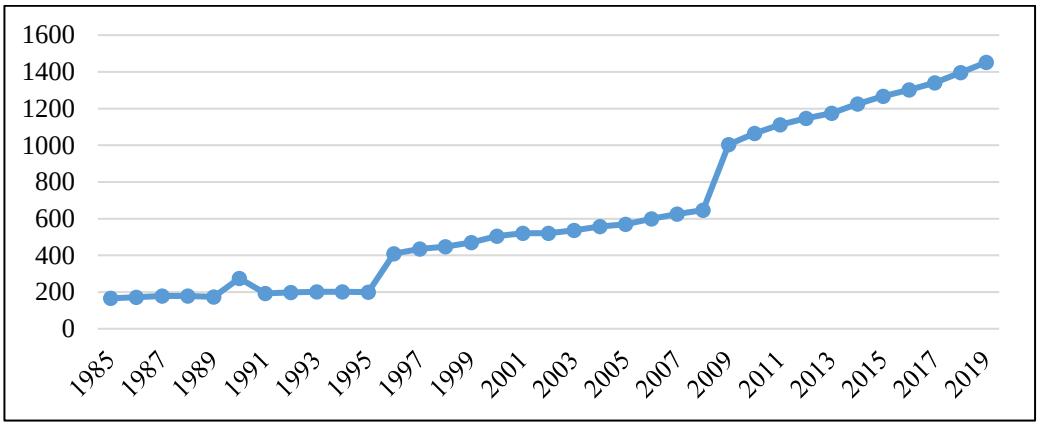
(BDT in Billion)



Source: National Budget Speeches, Government of Bangladesh

Bangladesh experienced a good jump in 1996 and 2010 in agricultural production (in real value) though rest of the years during 1985 to 2019, the overall trend was positive with the supports of fiscal, monetary and farmers' themselves. (Figure-2)

Figure 2: Agricultural Production (in Real Value) during 1985-2019



Source: *Annual Reports*, Bangladesh Bank (from FY1984-1985 to FY2019-2020)

6. Findings and Data Analysis: Descriptive, Econometric

As per the rules of time series analysis stationarity tests of the selected variables have been done. Augmented Dickey-Fuller test was used to check the stationarity. The augmented Dickey–Fuller test (ADF) tests the stationarity of

certain variable in time series analysis. Here, the null hypothesis is that a unit root is present in a time series. It is basically an augmented version of the Dickey–Fuller test.

It is found that y (Sectoral Share of Agriculture in GDP), X1 (Disbursement of Agricultural Credit) and X2 (Agricultural Subsidy) are all not stationary at level. Then all the variables are found stationary at first difference. Details are given in Appendix-2 and Appendix-3. The results found can be summarized as follows:

Table 3: Stationary Test (at Level)

Hypothesis	Result	Implication
H_0: Y has a unit root H_A: H_0 is not true	Calculated t < Critical t	Y is not stationary at level
H_0: X1 has a unit root H_A: H_0 is not true	Calculated t < Critical t	X1 is not stationary at level
H_0: X2 has a unit root H_A: H_0 is not true	Calculated t < Critical t	X2 is not stationary at level

Note: See Appendix 2 for detail

Table 4: Stationary Test (at 1st Difference)

Hypothesis	Result	Implication
H_0: D(Y) has a unit root H_A: H_0 is not true	Calculated t > Critical t	Y is stationary at 1st difference
H_0: D(X1) has a unit root H_A: H_0 is not true	Calculated t > Critical t	X1 is stationary at 1st difference
H_0: D(X2) has a unit root H_A: H_0 is not true	Calculated t > Critical t	X2 is stationary at 1st difference

Note: See Appendix 3 for detail

Since the variables Y, X1 and X2 are all stationary at 1st difference, Johansen Cointegration Test can be done to check the long-run relationship among the variables. The assumption of Johansen cointegration test is that there is a common stochastic non-stationary (i.e. I (1)) process underlying processes Y, X1 and X2. The regression of Y, X1 and X2 yields stationary residuals $\{\epsilon\}$. Regarding the trend assumption liner deterministic trend has been considered. After doing the Johansen test for cointegration it is found that there is one cointegration among the variables.

Table 5: Johansen Cointegration Test (y, x1, x2)

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.748622	60.60439	29.79707	0.0000
At most 1	0.351211	15.03808	15.49471	0.0585
At most 2	0.022788	0.760691	3.841466	0.3831

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.748622	45.56632	21.13162	0.0000
At most 1 *	0.351211	14.27739	14.26460	0.0498
At most 2	0.022788	0.760691	3.841466	0.3831

Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

To get more specific findings, cointegration tests were done between the variables (pairwise) where we found cointegration between y and x1 but not between y and x2. (See, Appendix-4 and 5)

With a view to showing the short run variations the Vector Error Correction Model (VECM) is conducted and it gives an idea about the short-term impact of the variables.

Table 6: Vector Error Correction Estimates

Sample (adjusted): 4 35
Included observations: 32 after adjustments
Standard errors in ( ) & t-statistics in [ ]

Cointegrating Eq:	**CointEq1**		
Y(-1)	1.000000		
X1(-1)	-8.306415 (0.85119) [-9.75855]		
X2(-1)	10.22996 (1.81064) [5.64990]		
C	-371.6483		
Error Correction:	D(Y)	D(X1)	D(X2)
CointEq1	0.031285 (0.13559) [0.23074]	0.056739 (0.01092) [5.19655]	-0.018932 (0.01336) [-1.41712]
D(Y(-1))	-0.009595 (0.21398) [-0.04484]	-0.039074 (0.01723) [-2.26757]	0.030693 (0.02108) [1.45575]
D(Y(-2))	-0.072358 (0.24399) [-0.29656]	-0.053243 (0.01965) [-2.70974]	0.014761 (0.02404) [0.61396]
D(X1(-1))	1.688796 (1.95553) [0.86360]	-0.282146 (0.15748) [-1.79166]	0.104842 (0.19269) [0.54411]
D(X1(-2))	-1.634482 (1.73069) [-0.94441]	0.121690 (0.13937) [0.87314]	0.539208 (0.17053) [3.16193]
D(X2(-1))	4.289695 (1.93357) [2.21854]	-0.680543 (0.15571) [-4.37060]	0.430393 (0.19052) [2.25902]
D(X2(-2))	-0.849153 (3.60885) [-0.23530]	-0.650994 (0.29062) [-2.24002]	-0.162937 (0.35559) [-0.45821]
C	35.67297 (31.9765) [1.11560]	14.11590 (2.57505) [5.48179]	-3.451634 (3.15077) [-1.09549]

So, stationarity tests, both at level and 1st difference, cointegration tests for checking the long run relationship and vector-error correction model for capturing short run impacts are done as per the standard procedure. All the variations observed are not statistically significant, but it deserves attention considering the facts and reality beyond the figures.

7. Concluding Remarks

Both credit and subsidy play important role for the development of agriculture in Bangladesh. Agricultural credit has a rising trend over the years and helps the production to grow significantly. On the other hand, for the sustainability of the agricultural sector in case of Bangladesh, subsidy is almost a necessity. Cointegration found between agricultural production and agri-credit indicates a long-run relationship between these two variables. This is quite logical. But as per the available data, no cointegration was found between agricultural production and agri-subsidy. Comparing the trend of change in agri-credit and agri-subsidy it becomes clear that the patterns of growth of these two over the years has some dissimilarities between them. Moreover, as a member of World Trade Organization (WTO), Bangladesh also has to look at the commitment in favour of free trade. So, credit program should be encouraged to grow more in the coming days. At the same time the necessity of agri-subsidy cannot be ignored at all.

The study has its limitations. Finding no cointegration with agricultural production and subsidy might have been caused by the pattern of available data and the applied statistical tools which are not beyond limitations as well. Some of the statistical results carry sign and statistical significance a bit different because of the same reason. Taking more explanatory variables could be done. But due to time constraint and factor of availability of data this could not be incorporated. There is good scope for the future research in this regard.

Practically agri-subsidy is to be continued for the sustainability and improvement of this agrarian economy. A significant portion of the labor force is employed in agricultural sector of this densely populated country. Moreover, the issue of food security is of immense importance in this pandemic. All these make the agriculture of Bangladesh get priority in the coming days. Policy initiatives

must address both agri-credit and agri-subsidy more vividly for a stronger agricultural sector and the economy as a whole.

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Appendices

Appendix 1: Sectoral Share of GDP, Actual Disbursement of Credit and Subsidy for Agriculture Sector during 1985-2019

Year	Y	X1	X2	Notation
1985	165.91	11.50	2.30	Y = Sectoral Share of GDP-Agriculture in real value (in billion taka)
1986	172.68	6.32	1.41	X1 = Actual Disbursement Amount for Agriculture Credit (in billion taka)
1987	178.08	6.67	0.94	X2 = Agricultural Subsidy (in billion taka)
1988	179.24	6.56	0.47	
1989	173.96	8.07	6.44	
1990	274.74	6.87	5.78	
1991	193.42	5.96	3.72	
1992	197.66	7.95	3.44	
1993	201.23	8.42	1.53	
1994	201.91	11.00	2.11	
1995	199.82	14.90	1.00	
1996	409.88	14.82	1.00	
1997	434.45	14.90	1.00	
1998	448.30	16.43	1.00	
1999	469.60	30.06	1.29	
2000	504.27	29.43	1.00	
2001	520.12	30.20	1.00	
2002	520.13	29.55	5.11	
2003	536.10	32.80	1.00	
2004	558.10	40.48	3.00	
2005	570.40	49.57	6.00	
2006	598.50	54.96	12.00	
2007	625.80	52.93	20.00	
2008	645.90	61.67	41.41	
2009	1003.40	69.92	42.85	
2010	1065.10	82.79	49.22	
2011	1112.60	92.10	50.00	
2012	1146.10	131.32	50.00	
2013	1174.40	146.67	65.00	

Year	Y	X1	X2	Notation
2014	1225.70	160.37	90.00	
2015	1266.50	159.78	90.00	
2016	1301.80	176.50	70.00	
2017	1340.50	209.99	60.00	
2018	1396.60	213.93	60.00	
2019	1451.40	236.16	90.00	

Source: Annual Reports of Bangladesh Bank and Budget Speeches available at *http://www.parliament.gov.bd/*

Appendix 2: Stationary Test (At Level)

Stationary Test (At Level) for Y

Null Hypothesis: Y has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=8)

		t-Statistic
Augmented Dickey-Fuller test statistic		0.802390
Test critical values:	1% level	-3.639407
	5% level	-2.951125
	10% level	-2.614300

Stationary Test (At Level) for X1

Null Hypothesis: X1 has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=8)

		t-Statistic
Augmented Dickey-Fuller test statistic		4.148803
Test critical values:	1% level	-3.639407
	5% level	-2.951125
	10% level	-2.614300

Stationary Test (At Level) for X2

Null Hypothesis: X2 has a unit root
Exogenous: Constant
Lag Length: 6 (Automatic - based on SIC, maxlag=8)

		t-Statistic
Augmented Dickey-Fuller test statistic		-1.832711
Test critical values:	1% level	-3.689194
	5% level	-2.971853
	10% level	-2.625121

Appendix 3: Stationarity Test at 1st Difference

Stationary Test (At 1st Difference) for Y

Null Hypothesis: D(Y) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=8)

		t-Statistic
Augmented Dickey-Fuller test statistic		-5.628793
Test critical values:	1% level	-3.646342
	5% level	-2.954021
	10% level	-2.615817

Stationary Test (At 1st Difference) for X1

Null Hypothesis: D(X1) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=8)

		t-Statistic
Augmented Dickey-Fuller test statistic		-3.902725
Test critical values:	1% level	-3.646342
	5% level	-2.954021
	10% level	-2.615817

Stationary Test (At 1st Difference) for X2

Null Hypothesis: D(X2) has a unit root
Exogenous: Constant
Lag Length: 7 (Automatic - based on SIC, maxlag=8)

		t-Statistic
Augmented Dickey-Fuller test statistic		-1.767563
Test critical values:	1% level	-3.711457
	5% level	-2.981038
	10% level	-2.629906

Appendix 4: Johansen Cointegration Test (y, x1)

Sample (adjusted): 3 35
Included observations: 33 after adjustments
Trend assumption: Linear deterministic trend
Series: Y X1
Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.455054	20.15812	15.49471	0.0092
At most 1	0.003777	0.124866	3.841466	0.7238

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.455054	20.03326	14.26460	0.0055
At most 1	0.003777	0.124866	3.841466	0.7238

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Appendix 5: Johansen Cointegration Test (y, x2)

Sample (adjusted): 3 35
Included observations: 33 after adjustments
Trend assumption: Linear deterministic trend
Series: Y X2
Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None	0.281059	11.78599	15.49471	0.1675
At most 1	0.026809	0.896787	3.841466	0.3436

Trace test indicates no cointegration at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None	0.281059	10.88921	14.26460	0.1598
At most 1	0.026809	0.896787	3.841466	0.3436

Max-eigenvalue test indicates no cointegration at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

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Effects of Non-Performing Loans on Economic Growth and Profitability of Banks in Bangladesh

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Abstract

Obtaining a progressive and stable growth in economic development, an effective flow of investment and efficient savings strategy is the main concern in a country where the financial sector is influenced by the banks. As a developing economy, Bangladesh has been facing bad credit culture along with weak and fragile capital market which is mostly backed by mobilization of saving and sanctioning loan facilities to defaulters by the banks. The problem of Non-Performing Loans (NPLs) is a burning question in today's banking sector, which is undermining the stability and profitability of banks. This research intended to search the relationship between NPL and factors of economy, such as rate of Gross Domestic Product (GDP) growth, Return on Asset (ROA), Return on Equity (ROE), interest rate, etc. Secondary data from different sources were used and analysis was done with data of the Bangladeshi State-Owned Banks over the time span of 2001 to 2017. The analysis was done based on the simple regression model to determine the intended relationships among the variables. From the research, it can be concluded that a negative relationship exists between NPL-GDP and NPL-ROA relationship, but a positive relationship exists between NPL and Interest Rate, whereas no specific relationship exits between NPL and ROE. As the NPL is affecting the economy, it is of paramount importance to get to the bottom of this problem and eliminate it.

Keywords: Non-Performing Loans, Bangladesh, Economic Growth, ROA and Profitability
JEL Classification: E51, G21

1. Introduction

1.1 Background of the Study

A Non-performing Loan (NPL) occurs when the loanee fails to pay the loan back in due time with the agreed arrangement. Non-performing loans are unable to "perform" or "generate" income for the bank. Basically, they are zero-

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The views expressed in this paper are the authors' own.

yield assets applied to loans and advances. Non-Performing Loans are a crucial problem of the banking sector of Bangladesh, more specifically of banks, located in the urban and corporate circumference, trading the industrial and business loans and the majority of them are sanctioned by political influences. This problem has commenced being spreading with a wrongful practice of embezzlement of credit among the industrial defaulters of Bangladesh and most of them are backed up politically. As Bangladesh has achieved all the benchmarks for emerging into a developing country, dire changes should be brought to reinforce the banking sector. The best way to do this is by extending the capital and liquidity ratio of the banks of any developing country. But in order to achieve that, banks must overcome this NPL issues at hand. Non-performing loans certainly wane the overall performance of banks. Banks are unlikely to earn any interest income from the classified loans. Non-performing loans decrease the loanable fund of the banks and thus stops the cyclic nature of the banking business. At present, non-performing loans seem to have become the Achilles heel of the commercial banking sector of Bangladesh. During the first nine months of the year 2017, the overall amount of loan defaults increased by BDT 181.35 billion according to Bangladesh Bank. Cumulative loan defaults reached BDT 803.07 billion. The actual loan default reached BDT 1253.07 billion adding written-off amount of BDT 450.00 billion and the overall NPL rate stood at 9.31 percent. Bangladesh placed 31st in the world, for the highest level of classified loan which is not acceptable for a country like ours.

1.2 Aims and Objectives

It is the duty of a researcher to develop the aims of the research and under this aim, some objectives will be determined. They are-

- To find reasons for growing NPL in Bangladesh,
- To show the Bank and Sector-wise NPL scenario in Bangladesh,
- To determine the relation between NPL and Economic Growth,
- To measure the relationship between NPL and Return on Asset (ROA) and Return on Equity (ROE) and
- To measure the relationship between NPL and Interest rate.

1.3 Research Hypothesis

On the basis of the objectives of the study the intended hypothesis is as follows:

No.	Hypothesis
H_0 (1)	There is a significant relationship between GDP growth rate and NPL Ratio.
H_0 (2)	There is a significant relationship between the Interest rate and NPL Ratio.
H_0 (3)	There is a significant relationship between ROA and NPL Ratio.
H_0 (4)	There is a significant relationship between ROE and NPL Ratio.

2. Literature Review

Fofack, (2005) defines NPL in his research as 'any loan against which the principal amount and/or the interest amount had been left unpaid for at least 90 days'. Rivai and Veithzal (2006) stated 'NPL is a loan in which implementation has not yet reached the expected target by the bank'. Arthesa and Handiman (2006) stated "NPLs are the loans which contain weakness or do not meet the quality standard set by the bank". Banks are the intermediaries that facilitate capital market transactions. Consequently, banks must compensate for making more efficient capital market transactions. Banks will perform two principal functions, including financing from lenders and creditors, and lending the funds to debtors (Drake & Fabozzi, 2010). Haneef and Riaz (2012) stated 'Return on Assets (ROAs) is an indicator of how profitable a company is relative to its total assets. ROA contributes a manager, investor, or analyst an idea as to how efficient a company's management is at using its assets to generate earnings.' Return on assets is displayed as a percentage. Zelalem (2013) used ROA as a proxy for financial performances and found a negative relationship between NPL and loan to asset ratio. Balasubramaniam (2012) conducted a study to show the relationship between NPL and the profitability of commercial banks of India which was also negative. Rajput et al. (2012) showed that NPL affected ROA of banks adversely. A paper by Begum (2017) showed that the expenditure-income ratio, NPLs negatively influence ROA and the paper also concludes that profitability (ROA) is

more sensitive to NPLs and expenditure-income ratio than to liquidity. The issuance of non-performing loans is a buffer for anticipated non-performing loan defaults. Practical appliance has shown that the high proportion of non-performing loans requires greater amounts of efficient provision, (Hasan & Wall, 2004). Glen and Mondragón -Vélez (2011) demonstrated that NPL provisions are driven by the real GDP growth and lending interest rate studying 22 countries for the time span of 1996 to 2008. 'National output during a year can be measured in a number of ways. The most common measure today is the Gross Domestic Product, which is the sum total of everything produced within a nation's borders' (Sowell, 2000). Beck et al. (2012) demonstrated that real GDP growth, exchange rate, interest rate and share prices affected NPL ratio and among them, they find GDP to be most significant to NPL. Saba et al. (2012) find that real GDP per capita, total loans and inflation have an influence on NPL ratio by studying US banking sector. Meaningful impact of GDP, interest rate and easier credit term on NPL was showed by Jimenez & Jesus (2005) by studying the banking sector of Spain. It was found by Espinoza & Prasard (2010) that diminishing economic growth with an increasing lending rate resulted in higher NPL. Based on a study on Guyana et al. (2009) showed that the relationship between GDP growth and NPL is an inverse one. A study by Salas & Sourina (2002) provide proof that GDP expansion, unemployment rate, real exchange rate and policies affect the changes in NPL. Muhammad et al. (2016) showed in their research that there is an inverse relationship between GDP and NPL but the lending rate has a favorable relationship with NPL by analyzing economic indicators (GDP growth, Interest rate and Inflation). ROE is one of the major indicators of a bank's profitability. ROE is an indicator of how stockholders go through the year. Because benefiting shareholders is banks' goal, ROE is, the true bottom-line measure of performance. ROE is usually measured as follows:

$$Return\ on\ Equity\ =\ Net\ Income\ /\ Total\ equity$$ (Ross, Westerfield and Jordan, 2010)

From reviewing the previous works related to this topic, we can see that, most of the works gave insights into the problem of NPL. Some highlighted the relationship between NPL and other factors such as GDP, profitability, interest

rate, etc. But very few works could be found regarding the impact of NPL on these factors, in the perspective of Bangladesh. So this paper intends to focus on how Non performing loans are related to the factors of economic growth, and how it affects them.

3. NPL Scenario in Bangladesh

3.1 Reasons behind Growth of NPL

3.1.1 Political Influences

Political corruption and bad influence are obviously the main reasons behind the increasing rate of NPL in Bangladesh. A huge chunk of bad loans is issued to PEP (Politically Exposed Persons) especially in state-owned banks which is the issue of poor governance of banks and regulators. The pre-election process has a substantial effect on the financial sector's regulatory side. The pressure on the Bangladesh Bank government and become evident with the ease of guidelines that let defaulters getting new loans and it was showed by Wallich (2006).

3.1.2 High Rate and Charges

High-interest rate, a higher amount of service charges and extend of hidden charge increase the size of installment of the borrower that contributed as a factor in loan default.

3.1.3 Lack of Good Governance and Accountability

Loans have been rescheduled for several years without proper justification and again defaulting yet persons responsible behind these decisions are hardly held accountable by the authority.

3.1.4 Improper Analysis

Sanctioning loan without proper analysis of business regarding its financial feasibility, profitability and visibility by designated personals increases the chance of becoming NPL. It was shown by Haneef and Riaz (2012) that absence of proper risk management resulted in the rise of NPL.

3.1.5 Lack of Monitoring

Improper monitoring after loan allows business to divert funds to non-revenue-generating assets such as land purchases, buildings and other luxury goods which do not generate expected cash flows. Sinkey and Mary (1991) showed that these lazy banking practices reflect on lending policy and portfolio of the bank.

3.1.6 Ignorant Financial Decisions by Business Concerns

Until investing in the new opportunity, some of the company houses do not have sufficient funding planning. They use short-term funds (working capital) in long-term funds (fixed capital), which is inconsistent with assets and ultimately leads to business instability as the company is unable to generate the funds needed to pay installments. and this also results in a shortage of working capital as they become unable to run business day to day without any discretion.

3.1.7 Greedy Bankers

It could be observed from some scenarios, where bankers were found to be responsible in turning the banking sector vulnerable because of their greed, by allocating loans to high-risk customers, so that they can get bribe from them in return.

3.1.8 Willful Default

Then, there are some clients, who had tendency to default willfully. These clients are habitual defaulters, who take bank-loans with prior intention of not paying them back. In maximum cases, this happens because banks fail to identify this kind of people beforehand due to lack of proper credit rating.

3.1.9 Financial Illiteracy among Clients

There are also some people, who default because of not having enough financial knowledge. Most of them are small business holders and have no clear idea about the pros and cons of banking systems and regulations. They may not default if they have proper financial knowledge. This burden falls to bank officials as they fail to provide clear conceptions.

3.1.10 Over Valuation

Banks usually provide loans against the value of the collateral, which is calculated by Asset Evaluation Agencies. Sometimes over-evaluation of the property leads to larger loan and banks may not obtain their expected return by selling the collateral.

3.1.11 Aggressive Banking

As the banking sector in Bangladesh is a glut economy, competition is very high among private commercial banks as a result banks tend to do aggressive banking to earn profit which includes loan target-oriented banking. This leads to a higher number of lending and a lack of proper loan pricing.

3.1.12 Political Unrest, Natural Disaster

In recent years political unrest and natural disaster like floods are on the rise, which delicately hampers business and agricultural loans. Thus, it ultimately results in loan default.

3.1.13 Fund Diversification

To create a diversified portfolio, management often diversifies the business, as well as the funds. Investing the business money in share market is one of the main varieties of fund diversification. Bank's failure to monitor these leads to loan default.

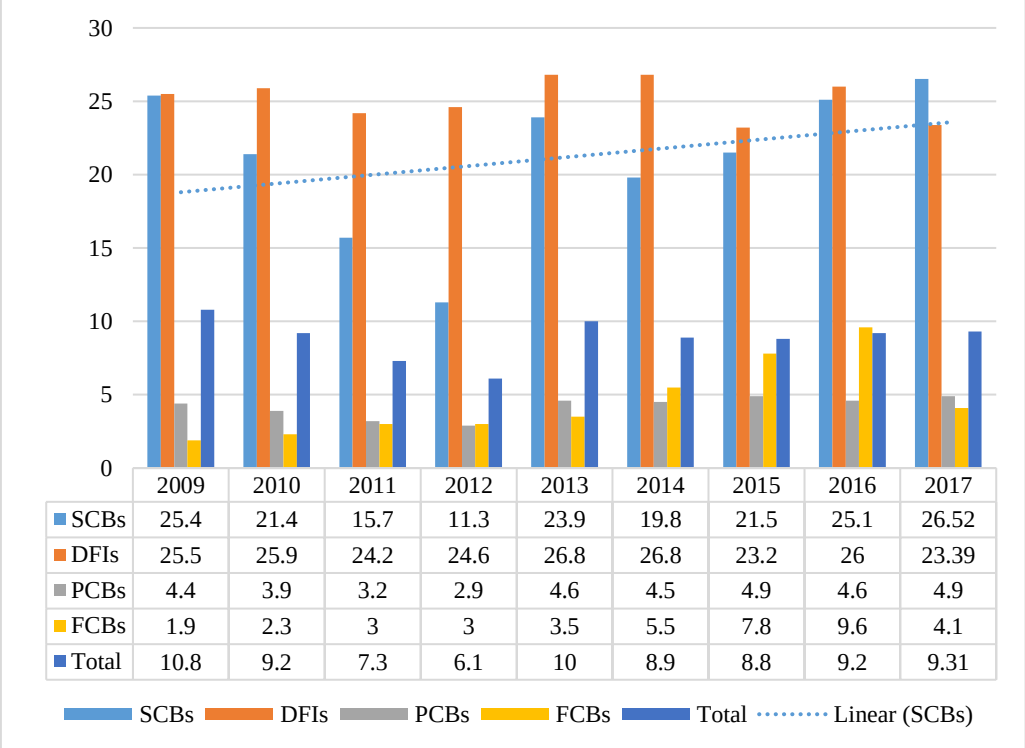
3.1.14 Overreach by Finance Ministry

Finance ministry of Bangladesh has negative overreach into the banking sector. As an example, providing a license to 4 new banks where Bangladesh has more than enough banks in proportion to its economic size. Proper investigation of an incident like BASIC Bank scam, Sonali Bank scams and Janata Bank scams are overreached by the finance ministry.

3.2 Comparative Analysis

Trends of NPL ratio and amount of NPLs related to different types of banks, trends of aggregate position on NPLs to total loans and the comparative position of the NPLs by bank types, and NPL as a percentage of the overall classified loan for different sectors are provided below with charts. We can have a clear perception of the NPL situation in Bangladesh via the following figures.

Figure 1: Trends of NPL Ratio by Types of Bank up to December 2017 (Percent)



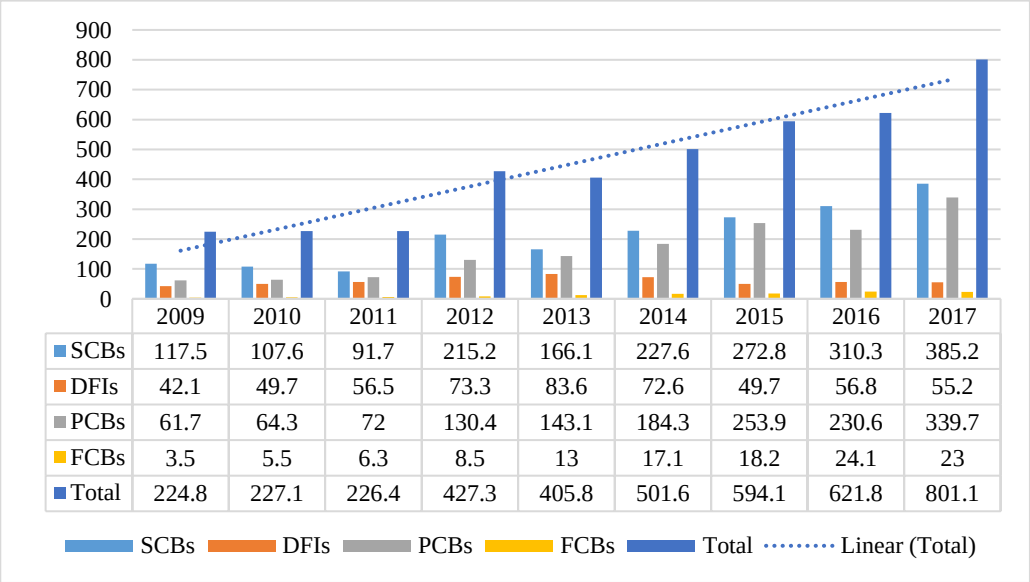
	2009	2010	2011	2012	2013	2014	2015	2016	2017
SCBs	25.4	21.4	15.7	11.3	23.9	19.8	21.5	25.1	26.52
DFIs	25.5	25.9	24.2	24.6	26.8	26.8	23.2	26	23.39
PCBs	4.4	3.9	3.2	2.9	4.6	4.5	4.9	4.6	4.9
FCBs	1.9	2.3	3	3	3.5	5.5	7.8	9.6	4.1
Total	10.8	9.2	7.3	6.1	10	8.9	8.8	9.2	9.31

Source: Authors' Calculation

We can see that the trend of NPL ratio is almost in the same range except in 2012 where it was 6.1 percent. NPL ratio has been increasing gradually since 2014 and it was 9.31 percent in December 2017.

Ratio of SCBs has been also increaing since 2014 and in 2017 it was a record high at 26.52 percent.

Figure 2: Amounts of NPLs by Types of Bank up to December 2017 (Billions BDT)

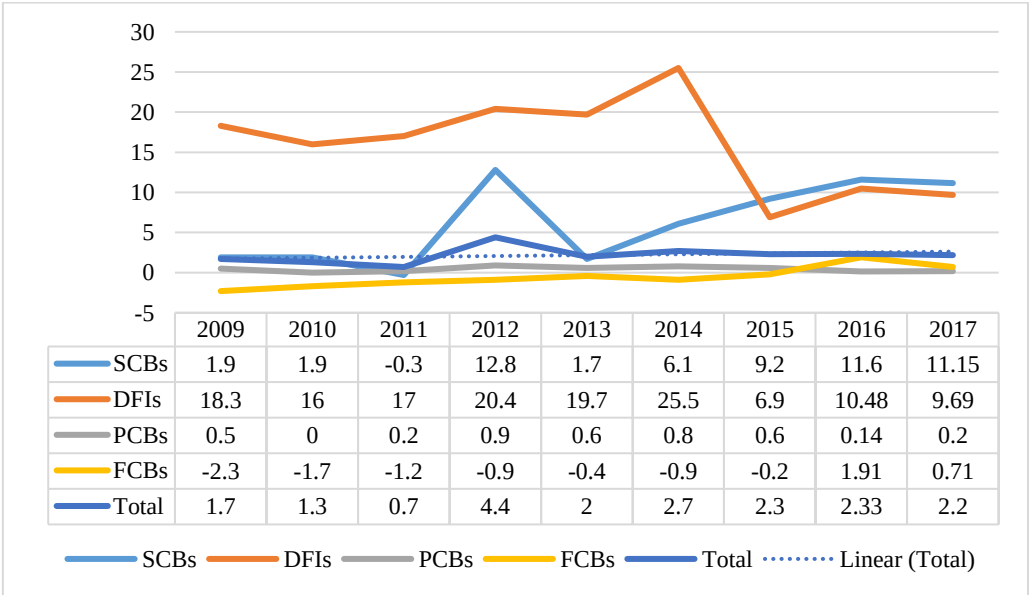


	2009	2010	2011	2012	2013	2014	2015	2016	2017
SCBs	117.5	107.6	91.7	215.2	166.1	227.6	272.8	310.3	385.2
DFIs	42.1	49.7	56.5	73.3	83.6	72.6	49.7	56.8	55.2
PCBs	61.7	64.3	72	130.4	143.1	184.3	253.9	230.6	339.7
FCBs	3.5	5.5	6.3	8.5	13	17.1	18.2	24.1	23
Total	224.8	227.1	226.4	427.3	405.8	501.6	594.1	621.8	801.1

Source: Authors' Calculation

The amount of total NPLs is increasing by a staggering rate since the year 2009.

Figure 3: Net NPL Ratio by Types of Bank upto December 2017 (Billions BDT)

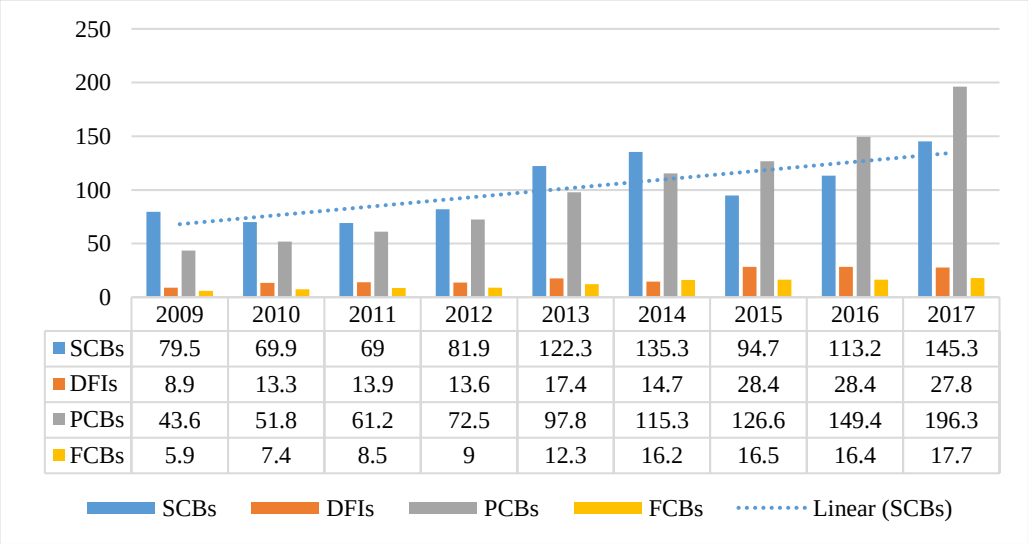


	2009	2010	2011	2012	2013	2014	2015	2016	2017
SCBs	1.9	1.9	-0.3	12.8	1.7	6.1	9.2	11.6	11.15
DFIs	18.3	16	17	20.4	19.7	25.5	6.9	10.48	9.69
PCBs	0.5	0	0.2	0.9	0.6	0.8	0.6	0.14	0.2
FCBs	-2.3	-1.7	-1.2	-0.9	-0.4	-0.9	-0.2	1.91	0.71
Total	1.7	1.3	0.7	4.4	2	2.7	2.3	2.33	2.2

Source: Authors' Calculation

SCBs have a stable increasing rate reaching an all-time high in 2017 registering 385.2 Billion BDT. PCBs have had a lower amount of NPLs but in 2017 it took a rise registering 339.7 Billion BDT which is also highest ever recorded. Total amount may increase more in 2018 reaching almost 900 Billion BDT.Net NPLs are determined by deducting the accruing provision balance remaining at the end of a period from the aggregate NPLs. It shows the actual loss of a bank. We see the performance of SCBs was better up to 2011 but in 2012 it increased and then again from 2015 it has been increasing. PCBs have managed to maintain stable performance over the years but the best performers here are the FCBs, they managed to maintain adequate NPL provisions over the years.

Figure 4: Provision Maintained for NPL by Types of Bank up to December 2017 (Billions BDT)



	2009	2010	2011	2012	2013	2014	2015	2016	2017
SCBs	79.5	69.9	69	81.9	122.3	135.3	94.7	113.2	145.3
DFIs	8.9	13.3	13.9	13.6	17.4	14.7	28.4	28.4	27.8
PCBs	43.6	51.8	61.2	72.5	97.8	115.3	126.6	149.4	196.3
FCBs	5.9	7.4	8.5	9	12.3	16.2	16.5	16.4	17.7

Source: Authors' Calculation

Non-performing loan or NPL provision is an instrument to minimize the losses faced from expected nonperforming loans, so it is very important to minimize the loss in the balance sheet and also to maintain a good liquidity ratio in the bank. We see PCBs maintain the highest number of loan provisions while the amount of NPLs is higher in SCBs but they have not able to keep an adequate provision in the last few years falling short by almost 73 Billion BDT in December 2017.

4. Research Methodology

4.1 Sources and Collection of Data

A quantitative research approach is employed in this research. Secondary data used to administer this research were accumulated from various sources. Data from all of the State-owned Commercial Banks (SCB) of Bangladesh dating from 2001 to 2017 were used for analysis. Macroeconomic variables like growth in real GDP, inflation was also included in the data set.

For this research, materials have been gathered from the annual reports of the nominated banks, different survey reports, and few classified information from the Bangladesh Bank library. Macroeconomic variables were accomulated from the websites of the World Bank and the Bangladesh Bank website.

4.2 Limitations

Some hindrances related to data collection should be considered.

- As earlier data of NPL were not available for most of the banks we could not elaborate the time span for macroeconomic variables.
- Our analysis is fully based on SCBs as they have more influential amount of NPLs over PCBs.
- This analysis does not cover any unpublished data.

4.3 Choice of Variables

The intention of this study was to analyze the relationship between macroeconomic variables and the NPL Ratio of SCBs. NPL ratio was used as independent variables and macroeconomic variables as well as other firm-specific variables were used as dependent variables. Specific macroeconomic variables used for measuring economic growth were as follows:

- GDP growth rate
- Interest Rate

Bank specific variables were as follows:

- ROA
- ROE

4.4 Statistical Techniques

For statistical analysis and hypothesis testing, SPSS 25 software has been used. We have used the ordinary least square model. For some cases, a variable might not be added to the model because of its level of collinearity with some other variable or a group of variables; or it might be because removing that variable would be more relevant for the model or any new variable.

The main explanatory variable is GDP growth; however, other control variables are included in the estimation.

4.5 Model Specification

The simple regression model used here connected the NPL ratio of a fully state-owned bank and other crucial macro-economic and bank-related variables. Specification of the models was as follows:

Regression Model 1:

$$GDP = \alpha + \beta_1 (NPL\ Ratio) + e_i$$

Here, GDP is the dependent variable and the NPL Ratio acted as the independent variable.

NPL = NPL ratio of Bangladeshi state-owned banks for the specified time period

α = Intercept Coefficient

GDP = Yearly growth rate of GDP of Bangladesh for specified periods.

□i = Slope Coefficient

ei = Error Term

Regression Model 2:

$$INT = \alpha + \beta_1 (NPL\ Ratio) + e_i$$

Here, INT is the dependent variable and the NPL Ratio acted as the independent variable.

NPL = NPL ratio of Bangladeshi state-owned banks for a specified time period

α= Intercept Coefficient

INT = Interest rate spread of Bangladeshi state-owned banks for selected time periods.

β_i = Slope Coefficient

e_i = Error Term

Regression Model 3:

$$ROA = \alpha + \beta_1 (NPL\ Ratio) + e_i$$

Here, ROA is dependent variable and NPL Ratio acted as independent variable.

NPL = Non performing loan ratio of state-owned banks of Bangladesh for the specified time span

α = Intercept Coefficient

ROA = Return on asset ratio of Bangladeshi state-owned banks for selected periods.

β_i = Slope Coefficient

e_i = Error Term

Regression Model 4:

$$ROE = \alpha + \beta_1 (NPL\ Ratio) + e_i$$

Here, ROE is dependent variable and NPL Ratio acted as independent variable.

NPL = Non performing loan ratio of state-owned banks of Bangladesh for a specified time period

α = Intercept Coefficient

ROE = Return on equity ratio of state-owned banks of Bangladesh for selected time periods.

β_i = Slope Coefficient

e_i = Error Term

5. Data Analysis, Results and Discussion

This chapter concerns with analyzing the data, results, and discussing the results. It covers descriptive analysis along with correlation coefficient matrix, hypothesis testing and discussion of research findings. Furthermore, fixed-effect regression analysis was applied on the statistics of SCB for a 17- year time period, from 2001 to 2017.

5.1 Descriptive Statistics

The descriptive statistics done on all of the variables of the model are presented in the table below. It mainly consists of the mean, Lowest and highest values of the respective variables.

Dispersion has been done according to their variances and standard deviation values.

Table 1: Descriptive Statistics

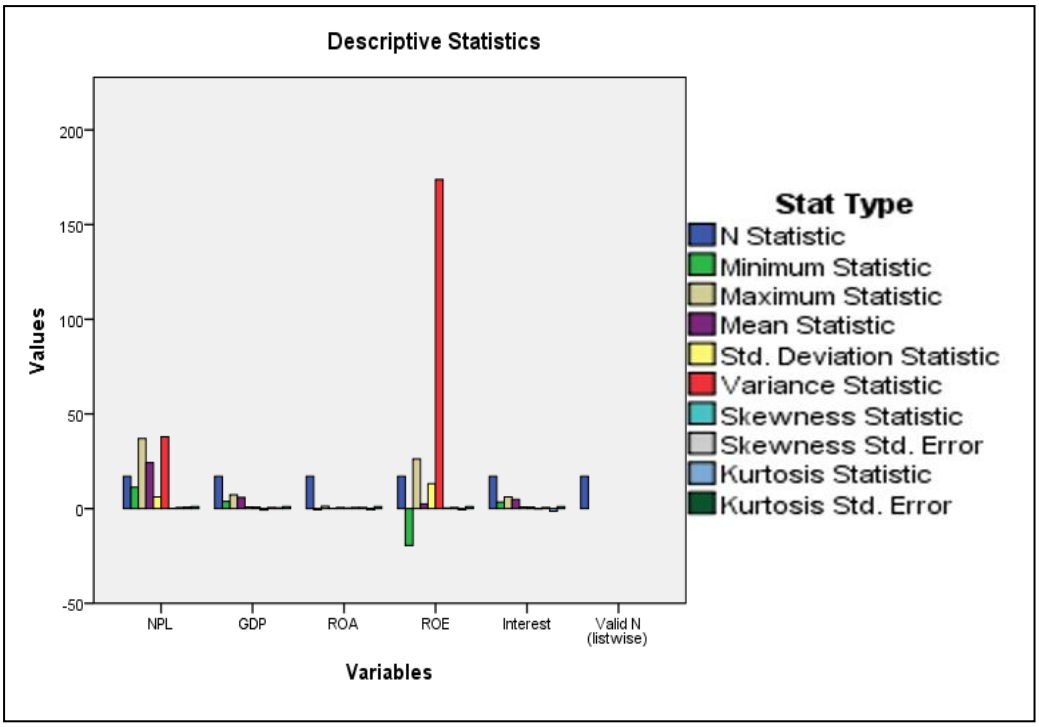
	NPL	GDP	ROA	ROE	Interest Rate
N	17	17	17	17	17
Mean	24.2365	5.8988	0.2171	3.8559	4.8529
Minimum	11.3	3.8	-0.56	-13.6	3.47
Maximum	37	7.28	1.3	26.2	6.15
Std. Deviation	6.15025	0.89937	0.54052	11.91170	0.89639
Variance	37.826	0.809	0.292	141.889	0.804
Skewness	0.085	-0.682	0.683	0.527	-0.082
Kurtosis	0.801	0.39	-0.250	-0.645	-1.388

Source: Authors' Calculation

From the descriptive statistical table, we can clearly see that the descriptive statistics have been done on 17 observations of NPL ratio, ranging from 2001 to

2017. If we look at the chart, the NPL ratio has the highest mean value of 24.25 with GDP having a mean value of 5.9 percent for the sample time period. Whereas, the mean value of the Interest rate can be seen to be 4.85 percent and the ROA and the ROE have an average of 0.23 percent and 3.86 percent, respectively.

Figure 5: Descriptive Statistics of ROA, Interest Rate and Economic Growth on NPL Ratio



Source: Authors' Calculation

When measuring the dispersion level of the analysis based on standard deviation, ROE shows the highest dispersion from its mean value at 11.91 while ROA shows the least dispersion from its mean value at 0.54. We can see that NPL Ratio has a dispersion of 6.16 and GDP has a dispersion of about 0.90. In addition, the interest rate shows a 0.896 standard deviation. On the variables' distribution, we find that the NPL ratio, ROA, and ROE are skewed towards the right meaning that they are positively skewed. On the contrary, growth rate of GDP and Interest Rate skewed negatively, meaning it is skewed to the left. If we want to deduce

the normality of the variables, we would see that variables are not normally distributed having a value of 0.801, 0.39, -0.250, -0.645 and -1.389 respectively which means the dataset is nowhere near to the standard kurtosis value of 3.0 and therefore the tails in this dataset is lighter than seen in a normal distribution (less in the tails).

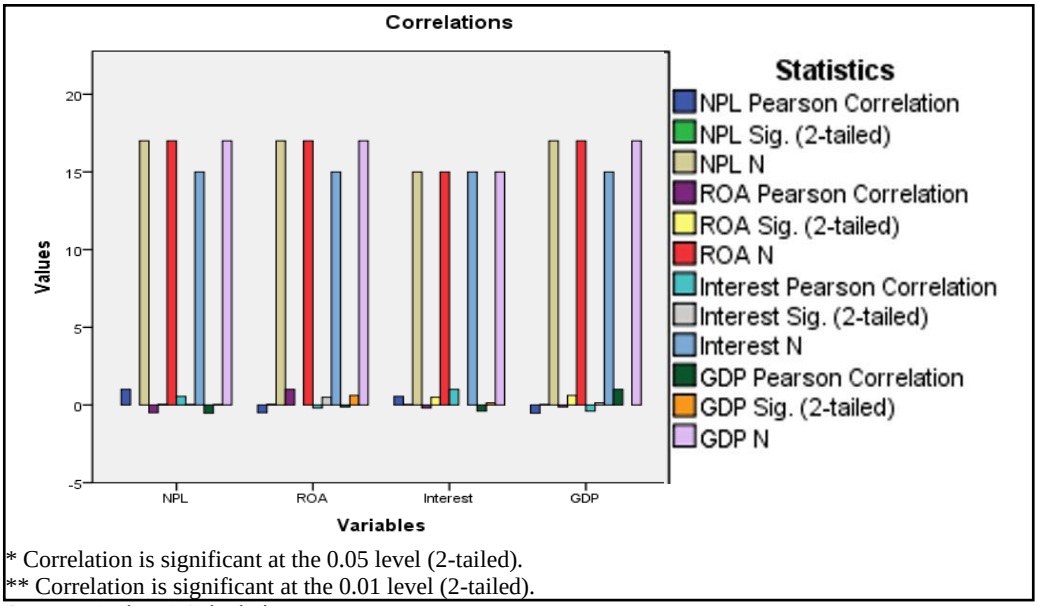
5.2 Correlation Analysis

The relationship between the selected quantitative, continuous variables has been determined by using Pearson's Correlation Coefficient technique The correlation matrix below shows the relationship among the variables of the study.

Table 2: Correlation Matrix

	NPL	GDP	ROA	ROE	Interest Rate
NPL	1				
GDP	-.535*	1			
ROA	-.493*	0.01	1		
ROE	-0.317	-0.136	.952**	1	
Interest Rate	.544*	-0.274	-0.256	-0.284	1

Figure 6: Correlations among ROA, Interest Rate and Economic Growth on NPL Ratio



* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

Source: Authors' Calculation

From the above observation, we can easily conclude that the highest correlation between the variables is between Interest Rate and NPL ratio which is approximately 55 percent and is a moderately positive relationship. We can also see that the growth rates of ROA, ROE, and GDP are negatively correlated to NPL ratio, which are approximately 49.3 percent, 31.7 percent and 53.5 percent respectively. As there are no variables that are strongly correlated to each other we can run the regression analysis without any elimination of selected variables.

5.3 Multiple Regression Analysis

By conducting the correlation matrix analysis we have verified that none of the variables in the dataset strongly correlates with each other. To do further analysis, we have run the regression model by using SPSS software

The result of Regression Analysis Model-1:

Table 3: Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
0.535a	0.286	0.239	0.78478	0.784

Notes: a) Predictors: (Constant), NPL
b) Dependent Variable: GDP

The table above shows that, the coefficient of correlation (R) of the model is 0.535 which indicates a moderate relationship between the independent and dependent variables. The value of the R square being 0.286, indicates that the independent variable (NPL Ratio) can explain 28.6 percent of the total variance in the dependent variable (GDP growth rate). The remaining 71.4 percent is uncounted for which might be due to other variables that are not included in this study.

Table 4: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	3.704	1	3.704	6.014	0.027b
Residual	9.238	15	0.616		
Total	12.942	16			

Notes: a) Predictors: (Constant), NPL
b) Dependent Variable: GDP

Here, the ANOVA table shows a significant value of p, (p-value < 0.05) which implies the acceptance of the model.

Table 5: Coefficients

	Unstandardized Coefficients		**Standardized Coefficients**	**t**	**Sig.**	**95.0% Confidence Interval for B**		**Collinearity Statistics**	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
(Constant)	7.795	0.796		9.790	0	6.098	9.492		
NPL	-0.078	0.032	-0.535	-2.452	0.027	-0.146	-0.01	1	1

Note: a) Dependent Variable: GDP

Using SPSS software we have determined the value of multiple regression equation,

GDP = 7.795-0.078 (NPL Ratio)

If we suppose that, the value of the coefficients is zero, it can be concluded from the above table that the growth rate of GDP would be 7.795 percent, regardless of the NPL Ratio. We find out that, a 1 percent increase in the NPL Ratio will reduce the GDP growth rate by 0.078 percent, holding other factors constant. In the above table we can see that the value of VIF is only 1, which is less than 10. Therefore we can conclude that there is no multicollinearity problem exists in this analysis.

1) The result of Regression Analysis Model-2:

Table 6: Model Summary

R	**R Square**	**Adjusted R Square**	**Std. The error of the Estimate**	**Durbin-Watson**
.544a	0.296	0.250	0.77663	1.512

Notes: a) Predictors: (Constant), NPL
b) Dependent Variable: Interest Rate

The table shows that the coefficient of correlation (R) of the model is 0.544, which indicates a moderate relationship between the dependent and independent variables. The value of the R square is 0.296, which means that 29.6 percent of the total variance in the dependable variable (Interest Rate) can be explained by

the independent variables (NPL Ratio). The remaining 70.4 percent is uncounted for which might be due to other variables which are not included in this study.

Table 7: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	3.812	1	3.812	6.321	0.024b
Residual	9.047	15	0.603		
Total	12.860	16			

Notes: a) Dependent Variable: Interest
b) Predictors: (Constant), NPL

Here, the ANOVA table shows a significant value (p-value < 0.05) which implies the acceptance of the model.

Table 8: Coefficients

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
(Constant)	2.929	0.788		3.717	0.002	1.250	4.609		
NPL	0.079	0.032	0.544	2.514	0.024	0.012	0.147	1	1

Note: a) Dependent Variable: Interest Rates

The value of the equation of multiple regression has been determined by using SPSS software.

Interest Rates= 2.929 + 0.079 (NPL Ratio)

If we suppose that, the value of the coefficients are zero, from the table we can conclude that the Interest Rate would be 2.929 percent regardless of NPL Ratio. We find out that if NPL Ratio increase by 1 percent then Interest Rate will increase by 0.079 percent holding other factors constant. From the above table if we look at the VIF value we can see that the values are only 1 which is less than 10. Therefore, we can conclude that no multicollinearity problem exists in this analysis.

2) Result of Regression Analysis Model-3:

Table 9: Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
0.493a	0.243	0.192	0.48575	1.355

Notes: a) Predictors: (Constant), NPL
a) Dependent Variable: ROA

The table above shows that, the coefficient of correlation (R) of the model is 0.493 which points towards a moderate relationship going on between the independent and dependent variables. The value of the R square 0.243, means that the independent variable (NPL Ratio) can explain 24.3 percent of the total variance in the dependable variable (ROA). The remaining 75.7 percent is uncounted for which might be due to other variables that are not included in this analysis.

Table 10: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	1.135	1	1.135	4.811	0 .044b
Residual	3.539	15	0.236		
Total	4.675	16			

Notes: a) Dependent Variable: ROA
b) Predictors: (Constant), NPL

Here, the ANOVA table shows a significant value (p-value < 0.05) which implies the acceptance of the model.

Table 11: Coefficients

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
(Constant)	1.267	0.493		2.570	0.021	0.216	2.317		
NPL	-0.043	0.020	-0.493	-2.19	0.044	-0.085	-0.001	1	1

Note: a) Dependent Variable: ROA

The value of the equation of multiple regression has been determined by using SPSS software.

ROA= 1.267-0.043 (NPL Ratio)

If we suppose that, the value of the coefficients is zero, from the table we can conclude that the ROA would be 1.267 percent regardless of NPL Ratio. We find out that, a 1percent increase in NPL Ratio will reduce the ROA by 0.043 percent, holding other factors constant. In the above table if we look at the VIF value we can see that the value is only 1, which is less than 10. Therefore, we can conclude that no multicollinearity problem exists in this analysis.

3) Result of Regression Analysis Model-4:

Table 12: Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
0.317a	0.100	0.04	11.66881	1.226

Notes: a) Predictors: (Constant), NPL
b) Dependent Variable: ROE

The table above shows that, the coefficient of correlation (R) of the model is 0.317 which points towards a weak relationship going on between the independent and dependent variables. The value of the R square is 0.10, which means the independent variables (NPL Ratio) can explain only 10 percent of the total variance in the dependable variable (ROE). The remaining 90 percent is uncounted for which might be due to other variables that are not included in this research.

Table 13: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	227.803	1	227.803	1.673	0.215b
Residual	2042.416	15	136.161		
Total	2270.219	16			

Notes: a) Dependent Variable: ROE
b) Predictors: (Constant), NPL

Here, the ANOVA table shows a significant value (p-value > 0.05) which is not consistent with the model. We can reject the hypothesis based on the significance value.

Table 14: Coefficients

	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
(Constant)	18.725	11.839		1.582	0.135	-6.509	43.960		
NPL	-0.614	0.474	-0.317	-1.293	0.215	-1.625	0.397	1	1

The value of the equation of multiple regression has been determined by using SPSS software

ROE= 18.725-0.614 (NPL Ratio)

If we suppose that, the value of the coefficients is zero, from the table we can conclude that the ROE would be 18.725 percent regardless of NPL Ratio. We find out that, a 1 percent increase in NPL Ratio increase will decrease interest rate by 0.614 percent, holding other factors constant. From the above table if we look at the VIF value we can see that the values are only 1 which is less than 10. Therefore, we can conclude that no multicollinearity problem exists in this analysis.

5.4 Research Findings

Hypothesis	Decision
H_0 (1): There is a significant relationship between GDP growth rate and NPL Ratio.	Fail to reject the hypothesis.
H_0 (2): There is a significant relationship between Interest Rate and NPL Ratio.	Fail to reject the hypothesis
H_0 (3): There is a significant relationship between ROA and NPL Ratio.	Fail to reject the hypothesis.
H_0 (4): There is a significant relationship between ROE and NPL Ratio	Hypothesis rejected.

5.5 Discussion of Research Findings

The research findings show that, NPL Ratio and the economic growth rate are inversely correlated to the correlation coefficient between them. Further, this is revealed in the model upon regression whereby increasing the NPL Ratio by 1 percent reduces the level of GDP growth rate by 0.078 percent, holding all other

factors constant. Again, increasing NPL Ratio by 1 percent will increase the Interest Rate by 0.079 percent, holding other factors constant. We also found out that increasing NPL Ratio by 1 percent will reduce ROA by 0.043 percent, holding other factors constant. And from the analysis between ROE and NPL Ratio we have determined that no significant relationship exists between the independent and dependent variables which leads to us a conclusion where no significant relationship exists between NPL Ratio and Return on Equity (ROA).

6. Conclusion

For a developing country like Bangladesh, it is very atrocious to maintain this high level of Non-Performing Loan as it hinders the financial growth of the banking industry, which is the core of the overall financial industry. From our study we can conclude that it is possible to reduce the NPL by proper lending rate and higher GDP and banks' profitability is also related negatively with NPL. The growth of NPL is very concerning for the economy of Bangladesh because when NPL is increased the interest-earning gets stopped and it reduces new investment possibilities which leads to slow growth of business ultimately to slow growth of the economy. So, it is very paramount and decisive to control the growth of NPL while it is still possible and necessary actions should be planned and performed to both prevent and resolve.

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Reinforcing the Essence of Corporate Governance and Corporate Social Responsibility in Banks in the Context of COVID-19

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Abstract

This paper reinforces the essence of corporate governance and Corporate Social Responsibility (CSR) as an emergent responsibility in the context of COVID-19 in banks in Bangladesh from the stakeholders' perspective. It shows that while businesses are expected to behave most responsibly during COVID-19, some firms are doing well, some are indifferent, some have discontinued their regular CSR expenditure, and even some are accused of profiteering from the pandemic. It argues that understanding the emergent nature of corporate governance and CSR is critically important to address the emerging needs of society, such as those created by the ongoing pandemic. It also argues that the best CSR during COVID-19 would be devising cost-effective business solutions and innovations to cope with the new normal, avoiding layoffs and greed for profit, cooperating with others, and taking care of the health and well-being of the employees, customers, and the community by constantly overseeing the ongoing developments, remaining open and interacting with the key stakeholders. Finally, the study provides some implications for businesses policymakers and academics and offers some avenues for future research.

Keywords: Bangladesh, Banks, Corporate Governance, Corporate Social Responsibility, COVID-19, CSR, Emergent Responsibility, Pandemic, Stakeholders

JEL Classification: G34, M14

1. Introduction

This conceptual paper (Gilson & Goldberg, 2015) analyses and reinforces the essence of Corporate Governance (CG) and Corporate Social Responsibility (CSR) as an emergent responsibility in the context of COVID-19 in banks in Bangladesh from the stakeholders' perspective. The pandemic has evolved as a grand challenge (George et al., 2016), which has been changing the world in terms of adversity, spread, speed, variations and unprecedented impact on public health, lives, livelihoods, financial markets, and global economy thwarting all sorts of

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predictions[1] (Allen & Overy, 2020; Zhang et al., 2020). It can be compared to 1-3 year-time in the case of the Great Depression (Euronews, 2020; World Economic Forum, 2020). It reminds us of the historic quotation of Vladimir I. Lenin, "[t]here are decades where nothing happens, and there are weeks where decades happen"[2]. It causes significant costs in terms of economic contraction, deficits, debt restriction, unemployment and layoffs, rescue packages etc. to the businesses and policymakers (Vella, 2020). The operational resilience of banks is also affected by the financial distress and liquidity crisis of the affected companies, and banks have no options but to reassess their business continuity plan and review their business models to align with the emergent circumstances (Habib & Ullah, 2020). Governments are offering various stimulus packages to help mitigate the adversity of deadly economic shocks. Such supports are also beneficial to the banks in upholding the quality of their credit. The human tragedy in terms of loss of lives, broken families, and scarred communities, and the disruption in the economic and social system will have profound impacts on the economy and society at large in the long term (He & Harris, 2020).

Poverty, inequality, unemployment, hunger are some of the major concerns in a developing country[3] like Bangladesh (Khavul & Bruton, 2013; Idemudia, 2009; Newell & George Frynas, 2007). The reduced economic activities have further worsened these ingrained socioeconomic problems, and the existing inequalities have been reinforced with the disparate impacts[4] of COVID-19 on the working class - hurting the lower-income manual workers more than the higher-income managerial workers (Levy, 2021; Manuel & Herron, 2020). Even the financial position of the 'so-called essential workers'(whose claims have legitimacy and urgency, but who lack power) (Crane & Matten, 2021) has been weakened

[1]Wide variations in the forecasted Gross Domestic Product (GDP) growth rates, e.g., GDP growth rate in Bangladesh is projected to be 2.00 percent (IMF), 1.60 percent (World Bank), 4.50 percent (ADB) for 2020 and 9.50 percent (IMF), 1.00 percent (World Bank), 7.50 percent (ADB) for 2021.

[2]https://www.goodreads.com/quotes/342783-there-are-decades-where-nothing-happens-and-there-are-weeks

[3]All countries except advanced economies (IMF, 2016).

[4]Managerial workers are largely working remotely, while many service and manual workers have been laid off or are working under hazardous conditions.

because of the precarious work and risk of job loss (Kniffin et al., 2021). The pandemic has revealed that there is still higher level of inequality in terms of wealth, health, education, and so on not only in developing countries but also in the developed world (He & Harris, 2020, p. 177).

In Bangladesh, informal sectors represent about 85 percent[5] of the labour market and people working in these sectors, especially the urban-based low-income earners have either lost their jobs or have experienced sharp declines in their earnings. About 13 percent of people have become jobless[6] due to the general holidays and limited economic activities, including some 4 million people working in the ready-made garments industries[7] where the situation has worsened by the cancellation of lion's share of export orders. Declining economic activities and rising unemployment have been significantly affecting the income of the working people which will eventually lead to a sharp rise in poverty. The rate of poverty in Bangladesh may be doubled from 20 percent to 40.9 percent[8], which will, in turn, increase income inequality[9] because the rate of decrease in income is disproportionate among different people. Being unable to meet the cost of living, many people are changing their longstanding professions and are going back to the village. All these unexpected changes have been destabilising the socioeconomic order and urge firms to rethink and revise their CSR to tackle social challenges and build more inclusive and resilient economies (He & Harris, 2020; UN.ORG, 2020). Banks are expected to play a critical role in mitigating the socioeconomic problems of Bangladesh through their CSR activities (Ullah, 2013).

Banks have remained open during the strict lockdown because of their succinct role in the economy. Besides other forms of businesses, banks are also heavily affected by the pandemic and the difficulties in the banking sector could disrupt the entire economy further because of their unique role in an economy (Habib & Ullah, 2020). Banks mainly do business with the depositor's money and they are

[5]Labour Force Survey 2016-17, Bangladesh Bureau of Statistics (BBS)
[6]A survey conducted by the Bangladesh Institute of Development Studies (BIDS) in May 2020; https://www.thedailystar.net/business/13pc-people-lost-jobs-in-bangladesh-due-covid-19-pandemic-1920309
[7]http://textilefocus.com/review-outlook-2020-bangladesh-garments-textile-industry/
[8]https://tbsnews.net/economy/covid-19-impacts-may-double-poverty-bangladesh-says-think-tank-76027
[9]Only 0.23 percent of overall income belongs to the poorest 5 percent compared to 27.89 percent to the richest 5 percent people (Source: Data of the Bangladesh Bureau of Statistics for the year 2016-17).

also bailed out with various regulatory and financial supports (public funds) in case of financial distresses. Banks in Bangladesh are known for their charities[10] during the earlier natural calamities.

Banks are playing an important role in channelling various government stimulus packages to mitigate the hardship and help the revival of the economy. Hence, despite their hardship, banks cannot avoid their responsibility to society (Ullah, 2013). Therefore, banks are expected to play a pivotal role in restoring the economy and redressing social problems.

Banks are public organisations, irrespective of their ownership, and the CG of banks is different from that of other forms of businesses. It is believed that a well-capitalized and well-governed banking system can play a significant role in rescuing the real economy (Bellens, 2020a). To do this, banks need to adjust to the new normal, reshape their governance and business models (Habib & Ullah, 2020; He & Harris, 2020) in terms of innovation, technology-led disruption, convergence, and data analytics in COVID-19 (Bellens, 2020b). Banks also need dynamic leadership[11], greater engagement and a responsible approach on the part of the boards in making decisions (Wright et al., 2020).

During this pandemic when businesses are expected to address the needs of society most responsibly, emphasise more on protecting their employees and communities over financial return (Edelman, 2020), be transparent about how their business, the employees and the economy are being affected by the pandemic (Manuel & Herron, 2020) and how they rescue society (Talbot & Ordonez-Ponce, 2020), CSR responses from the businesses seem to be inadequate (Talbot & Ordonez-Ponce, 2020). Some firms behave responsibly and do good by doing charities, improving operations, providing sustainable goods and services, and transforming business models to meet social needs (Rangan et al., 2015), some firms' contributions are more symbolic than substantial (Belal & Roberts, 2010; Teoh & Thong, 1984), some firms are indifferent, some have

[10]Donations to various charitable institutions and the Prime Minister's Relief Fund in emergent crises, such as'Aila', 'Sidre'.

[11] Leadership in a crisis such as the COVID-19 (new normal) is not as same as that in normal time (Deloitte, 2020).

discontinued their regular CSR expenditure, and even some are accused of profiteering from the pandemic, or being irresponsible causing social despair and environmental disasters (Schembera & Scherer, 2017; Rhodes, 2016; Nyahunzvi, 2013; Sobhani et al., 2009; Banerjee, 2008). Even some of the largest Canadian banks, which are known for their responsible business, are doing very little to help their stakeholders during the pandemic (Talbot & Ordonez-Ponce, 2020). This implies that something is going wrong with the understanding and/or implementation of CG and CSR. Against this backdrop, this study reinforces the essence of CG and CSR in banks in the context of COVID-19.

The rest of the paper is structured as follows. Section-2 elaborates the conceptual aspects of CG and CSR. Section-3 reviews CG and CSR in COVID-19. Section-4 presents the rethinking of CG and CSR in banks in Bangladesh in the context of COVID-19. Finally, Section-5 concludes the paper.

2. Conceptual Aspects and Interdependence of Corporate Governance and CSR

2.1 Conceptual Aspects of Corporate Governance

The traditional view of CG is based on the primacy and wealth maximisation of the shareholders, and compliance with laws, rules, and regulations[12]. Responsibility and accountability[13] in an organisation are determined by the CG framework. However, critics question the effectiveness of the prevailing governance and accountability mechanisms which makes the employees rather than the organisation accountable. For example, Annisette et al. (2017) criticise that within institutions, accountability has been "turned on its head such that, rather than institutions being held accountable to their stakeholders, employees are accountable to their institutions;….. These metrics frequently make employees' lives miserable and stressful" (p. 2).

In contrast to the narrow view of addressing the agency problem caused by the separation of ownership and control, and protecting the interest of the

[12]Though CG is often meant as rules, regulations, and compliance, in fact, it is more than that.
[13]As per ISO 26000, accountability is 'the state of being answerable for decisions and activities to the organization's governing bodies, legal authorities and, more broadly, its stakeholders (Section-2.1)'.

shareholders (Fama & Jensen, 1983), there is growing awareness and consensus that CG is critical to upholding the interests of the broader stakeholders including the shareholders (Freeman et al., 2010). In the broadest sense, CG is the processes, operating relations, leadership, and organisational structure for attaining the organisational goals through the distribution of rights and responsibilities among the stakeholders. The broad perspectives of CG can be understood from the definition that CG is "the system by which companies are directed and controlled" (Cadbury Committee, 1992). It is "a set of relationships between a company's management, its board, its shareholders and other stakeholders" (G20/OECD, 2015, p. 9). It is 'holding the balance between economic and social goals and between individual and communal goals'[14], 'essentially about leadership'[15], 'a set of rules and behaviors'[16], 'blend of law, regulation and appropriate voluntary private-sector practices which enables the corporation to attract financial and human capital, perform efficiently and thereby perpetuate itself by generating long term economic value for its shareholders while respecting the interests of stakeholders and society as a whole" (Millstein & MacAvoy, 2003). The CG structure[17] specifies the distribution of rights and responsibilities among the stakeholders and lays down the rules and procedures for decision-making in an organisation[18].

2.2 Corporate Governance Environment in Banks in Bangladesh

Because of their different capital structure, regulations, products, and critical roles performed by them, the corporate governance of banks is different from that of other forms of businesses. As opposed to other forms of businesses, about 90 percent of a bank's total fund comes from the depositors. By virtue of about 90 percent ownership of the assets (claims on the assets) of banks, the depositors are de facto the owners of a bank. Again, the sponsors and directors of banks in

[14]Sir Adrian Cadbury, Foreword to Corporate Governance and Development, Global Corporate Governance Forum, Focus 1, 2003.
[15]Commonwealth Association for Corporate Governance, Guidelines - Principles for Corporate Governance in the Commonwealth, 1999.
[16]Belgian Code on Corporate Governance, 2004.
[17] "Corporate governance also provides the structure through which the objectives of the company are set, and the means of attaining those objectives and monitoring performance are determined" (G20/OECD, 2015, p. 9).
[18]https://stats.oecd.org/glossary/detail.asp?ID=6778

Bangladesh own 30-50 percent of the shares representing 3-5 percent claims on the total assets of a bank. But with the minority ownership of only 3-5 percent, the sponsors and directors ultimately lead and control the whole bank. That is why regulating[19] the banks and the board of directors of banks is also critical to safeguard the interest of the depositors and minority shareholders.

Corporate governance in developing countries is dominated by the owners and thus, can be termed as "owners' governance" (Ullah, 2020). Companies maintain some structural arrangements for the sake of compliance, but ultimately everything is directed and controlled by the owners. In Bangladesh, the number of bank directors from the same family has been increased to four from the earlier two through the persuasion of some quarters. Despite such an increase in the number of directors from the same family, still there exists non-compliance in this regard[20]. The sponsors of banks unduly dominate management decisions and day-to-day affairs, and such "dominance is so severe that in some cases, top management has to either compromise with unlawful pressures or quit the company. …some CEOs had to resign even in the highly regulated banking sector for not agreeing with the unethical desire of the owners. However, there are no visible and effective attempts on the part of the regulators to safeguard the management in such circumstances" (Ullah, 2020, p. 158). Besides the depositors, bank employees are also the victims of the misappropriations of funds by the unscrupulous board of directors. For example, it is believed that the then board of directors of the state-owned BASIC Bank Limited was liable for the embezzlement of funds from the bank, but they remained untouched, while the salaries and benefits of the bank employees have been cut due to its financial distress caused by irregularities. Thus, improving the corporate governance environment is imperative for every bank in Bangladesh (Muttakin & Ullah, 2012).

[19] Whereas other forms of businesses have discretion regarding the amount of capital, banks are required to comply with the minimum capital requirement set by the central bank in line with the capital adequacy framework of Basel Committee on Banking Supervision.

[20]For example, five directors of a bank are from the same family although the maximum permissible number of directors from the same family is four [https://www.nblbd.com/about/bod visited on February 9, 2021].

2.3 Conceptual Aspects of CSR

CSR refers to integrating the social and environmental concerns in business operations, voluntarily interacting with the stakeholders (Van Marrewijk, 2003; Commission of the European Communities, 2001), and enhancing social good, beyond the interests of the business and the legal requirements (Mcwilliams and Siegel, 2001). CSR is not just an optional one-off event nor an act of philanthropy, but a continued commitment by businesses to behave ethically, fairly and responsibly, and contribute to economic development while improving the quality of life of the employees and their families as well as the local community and society at large (World Business Council for Sustainable Development, 2000). The basic idea of CSR is that business and society are interwoven rather than two distinct entities (Wood, 1991); business only contributes fully to a society if it is efficient, profitable, and socially responsible (Cannon, 1992, p. 33). The challenge for companies is to understand how CSR is socially constructed in a specific context (Dahlsrud, 2008) and how to take it into account while formulating business strategies. Because CSR is located in wider responsibility systems (Matten & Moon 2008, p. 407) and is determined by "the institutional, legal and cultural setting within which business is practiced"(Halme et al., 2009, p. 2). There have been growing pressures and expectations of the business that to ensure that they should be accountable for the impacts of their actions on the community and environment (Parker, 2020; Frederick et al., 1992) and ensure that their activities are aligned with broader societal interests, and carried out ethically and responsibly (Ioannou & Serafeim, 2012, 2017; Martinez et al., 2017; Bhattacharyya, 2015; Ullah, 2013; Belal, 2008; Money & Schepers, 2007; Pachauri, 2006).

2.4 CSR in Developing Countries Including Bangladesh

Like CG, CSR[21] activities in developing countries are largely unsystematic, unstructured, and lack a strategic and inclusive approach (Amaladoss & Manohar,

[21]ISO 26000 has defined social responsibility as 'responsibility of an organization for the impacts of its decisions and activities on society and the environment, through transparent and ethical behaviour that contributes to sustainable development, including health and the welfare of society; takes into account the expectations of stakeholders; is in compliance with applicable law and consistent with international norms of behaviour; and is integrated throughout the organisation and practiced in its relationships (Section-2.18)'.

2013; Ullah, 2013; Jamali, 2010). Because of the lack of an appropriate understanding of CSR, most of the firms in developing countries envisage CSR as philanthropy (Yin & Zhang, 2012). CSR does not always reflect social priorities, such as fighting against poverty, reducing disparities, improving health and safety, economic prosperity, employment. Companies, in some cases, focus more on less important issues such as youth entertainment (Jamali, 2010; Naeem & Welford, 2009). Moreover, businesses have very little engagement in critically important aspects of CSR such as anti-corruption, gender equality, child labour, community giving and the formal representation of workers (Naeem & Welford, 2009). Moreover, CSR in developing countries is designed in line with the expectation of the government and the ruling party (Beddewela & Fairbrass, 2016; Crotty, 2016; Miska, Witt, & Stahl, 2016).

Akin to many other developing countries, CSR in Bangladeshi firms is also random and aimless philanthropic actions characterised by low engagement, narrow scope, and is dominated by sporadic interaction (Ullah, 2013, 2020; Bala, 2013; Barai, Bala & Kar, 2015). Despite banks in Bangladesh are known for their donations to various charitable institutions and the Prime Minister's Relief Fund in emergent crises (e.g., 'Aila', 'Sidre'), their CSR activities are yet to be embedded in their daily operations (Ullah, 2013). Because of their known record of charities during the earlier natural calamities, and their critical role in promoting economic growth and wellbeing of the mass, banks in Bangladesh are expected to behave responsibly in this pandemic despite their financial distress.

2.5 The Connection between CG and CSR

The rights and responsibilities of stakeholders are at the centre of CG. Good governance helps build an environment of trust, responsibility, accountability and transparency necessary for fostering long-term investment, financial stability, and business integrity, thereby supporting stronger growth and inclusive societies[22]. CG takes care of the interests of the broader stakeholders rather than the stockholders only. By promoting transparency and accountability (Hossain & Alam, 2016), CG acts as a watchdog for the socially responsible behaviour of

[22]http://www.oecd.org/corporate/

businesses (Freeman et al., 2010). The OECD principles, for example, recognise "the interests of employees and other stakeholders and their important role in contributing to the long-term success and performance of the company" (G20/OECD, 2015, p. 9). Therefore, CG upholds the interests of all stakeholders by coping with the emerging circumstances.

Some scholars contend that good governance itself is an integral part of the responsibility of business (Zaman, et al., 2020; Freeman et al., 2010). 'Responsibility' is the combination of two terms 'response' and 'ability'. Responsibility refers to one's ability to respond to the calls of others. Responsibility is inherent in human life. Responsibility is like parenting, which varies from context to context depending on the existing and emerging needs of others. Responsibilities are connected – when one responsibility is satisfied, another responsibility emerges or follows. As the needs of others cannot be known in advance, responsibility can also not be determined in advance. Therefore, the scope of responsibility is not limited, rather unlimited, and is largely emergent (Kokubu et al., 2019). Similarly, CG is essentially a natural, dynamic, and emergent concept that promotes the fulfilment of rights and responsibilities. The fulfilment of responsibility simultaneously creates value for both the businesses and their stakeholders and thereby helps achieve organisational goals.

3. CG and CSR in Banks in COVID-19

3.1 Corporate Governance in Banks in Bangladesh during COVID-19

The roles of bank employees who possess the required expertise and skills for managing a bank are as important as that of the physicians in the health sector. They are equipped with the market information and know how to deal with emergent situations, such as COVID-19 because of their close contact with the market participants. It will be impossible for a bank to overcome the debacle due to the pandemic if the bank employees are disheartened, frustrated, and threatened to lose their jobs. The frustrations among the employees may weaken the internal control and compliance of banks which may, in turn, lead to increased financial crime and loss. People working in modern corporations are employees of the organisations, not that of the shareholders (Freeman, 1997). This is more

applicable to a bank as a public organisation. In the case of banks, management and employees are not only the agent of the shareholders but also the trustee and custodians of the depositors' money. If a bank fails, its employees may lose their jobs.

Surprisingly, the Bangladesh Association of Banks (BAB) has been doing some activities, which are beyond their authority. For example, BAB has recently requested the central bank to extend the existing relaxed repayment tenure by two to three years for term loans of corporate borrowers, which is contrary to the Bangladesh Bank (BB) guidelines that directors are not allowed to be involved in the daily operations of banks. Questioning this, a former Governor of Bangladesh Bank said, "The BAB was not authorised to submit such proposals to the central bank as there had been a conflict of interest due to the reciprocal relationship between the sponsor directors of PCBs (private commercial banks) and borrowing commercial organisations"[23]. Earlier, the superpower politician-cum-businessmen, many of whom are involved with the BAB, negotiated with the central bank and the government to reschedule classified large loans in favourable terms, reduce the tax rate and Cash Reserve Requirement (CRR), and so on. BAB also recommended cutting the salary of the employees of PCBs by up to 15 percent by bypassing the boards of directors of different banks. But they did not take any initiatives for the recovery of non-performing loans from the large borrowers, many of whom are directors of different banks. BAB is a non-profit organisation of the owner directors of private commercial banks. It does not include the independent directors of banks who are considered important for governance and CSR (Ullah, et al., 2019). As such, BAB does not represent the board of directors and the shareholders of different banks. Thus, it has no authority to intervene decisions of banks including cutting the salaries of employees of any bank. Rather they could offer some general prescriptions for how to survive during the crisis while motivating the management and employees of different banks.

[23]https://www.thedailystar.net/backpage/news/bank-directors-demand-extending-loan-repayment-tenure-faces-criticism-2041021

3.2 CSR during COVID-19: Experiences of Some Other Countries

COVID-19 shows that understanding how CSR is socially constructed in a particular context is more important than understanding what is CSR despite the confusions created by the multiplicity of CSR definitions (Dahlsrud, 2008). The pandemic has revealed the fragile and contingent nature of governance (Levy, 2021) and CSR. Several existing CSR assumptions, concepts, and practices are being challenged (Crane & Matten, 2021; He & Harris, 2020), and corporate commitments to ethical business and CSR are being tested (He & Harris, 2020; Kramer, 2020; Manuel & Herron, 2020). Besides other frontline workers in healthcare, food service, delivery, and public transportation, bankers are also essential to keep the economy going during the pandemic. Despite their essence (essential workers), they have also often been exposed to infection without necessary protections (Lancet, 2020), and remain poorly paid and economically vulnerable (Lowrey, 2020) due to their lack of power (Crane & Matten, 2021).

Although businesses are the contributors to many of the social problems, they are also exposed to those problems[24] (Leitheiser et al., 2020), and are expected to benefit society, protect employees, and maintain the trust of their stakeholders during the pandemic (Manuel & Herron, 2020). Face masks, ventilators, medicines, vaccines and all other essential goods and services are produced by businesses; even some manufacturing firms converted their production facilities to produce ventilators, personal protective equipment, hand sanitiser, and other essential goods while some of them donating instead of selling these products (He & Harris, 2020). Telecommunications companies (e.g., Vodafone) launched free access to unlimited internet data for many of their pay monthly customers (BBC, 2020); supermalls are offering flexible opening hours, specifically for the elderly and health workers, and donated food to food banks and charitable organizations (Fareshare.org.uk, 2020). Some firms are proactively engaging in various CSR activities and supporting consumers, businesses, and communities in different ways.

[24]Businesses are facing difficulties such as reduced sales, cancelled orders, delayed payments, rising uncollectible and demand for a deep discount (Leitheiser et al., 2020).

Some banks in the UK and Canada have either waived interest or lowered the interest rates (Talbot & Ordonez-Ponce, 2020; He & Harris, 2020). Some banks in Canada (e.g., RBC) donated more than $4.5 million to food banks and psychological support services; some banks (e.g., Desjardins) offered financial support to the affected students (scholarships), psychological support for caregivers, and donations to not-for-profit organisations; some banks reduced their customers' management costs (e.g., free use of ATMs) as well as to support them with new online service offers (Talbot & Ordonez-Ponce, 2020).

However, COVID-19 has also diverted the attention of companies from CSR and corporate governance (Levy, 2021). Instead of responding proactively (Kramer, 2020), many firms have been accused of neglecting health risks to workers, customers and communities (He & Harris, 2020; Kramer, 2020), laying off employees, profiteering from the pandemic, giving dividends without making a real profit, untruth publicity (Talbot & Ordonez-Ponce, 2020; He & Harris, 2020), increasing prices or making untrue claims about products leading the UK government to form a new task force to crack down on coronavirus profiteers (Butler, 2020). Some banks did not proactively extend credit to help mitigate the adverse impact of the crisis. For example, Bank of America refused to give credit to firms having no earlier lending relationship (Simon & Rudegeair, 2020). Wells Fargo initially reduced the size of funds they were willing to lend under regulatory directives well below demand, citing regulatory-imposed risk. Both the banks were also charged for not informing the customers that their credit applications were not being processed (Manuel & Herron, 2020). Talbot & Ordonez-Ponce (2020) have identified three clusters of banks based on their CSR actions, such as sweeping actions, cautious actions, and wait & see, and found that only three of ten largest Canadian banks are proactively supporting their stakeholders while forty per cent of the largest banks in Canada are doing very little to help their stakeholders in these times of need (Talbot & Ordonez-Ponce, 2020).

The pandemic reminds us that firms as a part of societal governance (Rhodes & Fleming, 2020) should be aware of their core purpose and should think of CSR that is fit for attending to social needs. By underscoring the core function of the business to meet the needs of society, it offers a great opportunity for firms to

shift towards more genuine and authentic CSR (He & Harris, 2020). It shows that the conventional concept of CSR appears to be out of date (dead-end) and urges for revising, repurposing and reinventing the products and services of the business to address the social needs (Talbot & Ordonez-Ponce, 2020). Firms need to explore alternative ways of ensuring doing business so that the rights and livelihoods of the precarious workers are protected (Crane & Matten, 2021). It is good to see that some firms have not only resisted unethical business practices but also proactively engaged in various CSR activities[25] in the crisis (He & Harris, 2020).

3.3 CSR in Banks in Bangladesh during COVID-19

The government of Bangladesh has created stimulus packages to ease the immediate pressure especially to the most vulnerable businesses, such as Micro, Small and Medium Enterprises (MSMEs), tourism, travel, hospitality, and labour-intensive readymade garments firms. Bangladesh Bank (BB) the central bank of Bangladesh, has also taken various policy supports including liquidity support, relaxed regulatory compliance, allowing and encouraging online meetings and reporting to redress the hardship faced by banks. BB has taken some praiseworthy initiatives to mitigate the adversity of the pandemic. BB has adopted several measures as immediate responses to the emerging circumstances arisen due to COVID-19. It has extended the moratorium period for loan repayment and asked the banks not to charge any yearly fees for deposit accounts with a single maximum transaction not exceeding BDT 200,000 in a year. BB has allowed the scheduled banks of the country to conduct regular meetings of the bank boards and board committees through video conferences[26]. Considering the turmoil, different departments of BB have extended the deadline for submission

[25]Proactive CSR entails full commitment and support of top managers along with the engagement of employees to address social issues (Carroll, 1979).
[26]BRPD Circular Letter No. 26: Conducting Board Meeting through video conference to prevent outbreak of Coronavirus COVID-19 dated 17 May 2020; BRPD Circular Letter No. 34: Conducting Board Meeting through video conference to prevent outbreak of Coronavirus (COVID-19) dated 30 June 2020.

of regulatory statements and audited balance sheets[27]. Based on the capital adequacy ratio, BB imposed restrictions on banks in paying dividends[28].

BB asked banks to cooperate with the health sector establishments through regular activities and provide essential medical equipment and supplies to those engaged in providing health care services. BB asked all the scheduled banks in Bangladesh[29] to revise their CSR expenditures by allocating 60 per cent to health (from the earlier 30 per cent limit), to tackle the emerging threats posed by the pandemic. They are also asked to make a significant contribution in their CSR activities by providing kits, personal protective equipment, hand gloves, masks, hand-sanitisers/ anti-bacterial hand wash/ alcohol-based soaps, necessary medicines, and essential medical equipment, such as PCR machine, ventilator machine, oxygen cylinder for the treatment of COVID-19 patients and protective materials to the doctors, nurses, ward boys and cleaners as part of their CSR according to the demand of and in consultation with the authorities of hospitals and health complexes as approved by the government by appointing their representatives. To reap the benefits of the favourable policy supports and implement the government stimulus packages that are aimed at rescuing the economy, banks must play a very proactive and responsible role. It is worth mentioning that vibrant leadership is a key to respond to emerging situations such as COVID-19.

Banks in Bangladesh are expected to extend their helping hands to mitigate the suffering of vulnerable people during the pandemic. To cope with the new normal situation, some banks in Bangladesh have redesigned their ways of doing business. Besides the internet banking facilities, the account opening form has

[27]BRPD Circular Letter No. 16: Deferral of the Regulatory Statement Submission to the Banking Regulation and Policy Department (BRPD) dated 11 April 2020; DOS Circular Letter No. 12: Deferral of the Regulatory Statement Submission to the Department of Off-Site Supervision dated 12 April 2020; SFD Circular Letter No. 02: Deferral of the Regulatory Statement Submission to Sustainable Finance Department dated 19 April 2020; DOS Circular Letter No. 15: Time extension for submitting annual audited balance sheet of schedule bank dated 27 April 2020; and DFIM Circular Letter No. 03: Deferral Submission of the Regulatory Statements to Department of Financial Institutions and Markets dated 1 June 2020.

[28]DOS Circular No. 03: Dividend Policy for banks for the year 2019 dated 11 May 2020; DOS Circular Letter No. 19: Dividend Policy for banks for the year 2019 dated 7 June 2020.

[29]SFD Circular Provide necessary assistance to the victims to prevent the risk of the country's coronavirus infection dated March 22, 2020 (https://www.bb.org.bd/mediaroom/circulars/gbcrd/ mar222020sfdl01.pdf)

been simplified making it a two-page form from the early six pages and several banks[30] have now introduced an online account opening system so that clients can open a new account from home during the pandemic. Most of the banks have restructured the interior of their office, such as installation of partition glass, keeping sufficient distance between desks. They have also rostered duties as well as allowed employees to work from home to keep maximum possible social distance among them. Besides giving free sanitisers and masks, some banks offered financial support to the employees who have been infected by the virus and financial support to their families in case of fatalities caused by the pandemic. However, some banks in Bangladesh are accused of not reducing interest rates and charges, and not spending from their CSR funds disregarding the direction of the central bank at the beginning of the pandemic. The Bangladesh Association of Banks (BAB) suggested, disregarding the critical needs of the distressed mass, the private banks to stop all CSR expenditure as a measure against the upcoming financial shocks. Subsequently, it has been observed that 53 banks out of a total of 59 banks spent BDT 5169.70 million as CSR expenditure in the first half of 2020. Of the total BDT 5169.70 million, banks spent only BDT 960.50 million or 18.58 percent for the health sector; six banks[31] did not allocate any funds for CSR, and 19 banks[32] did not spend any money from their CSR fund for the health sector in the first half of 2020[33]. Instead, most of the banks have been found interested in spending their CSR funds either through their own channels or through donations to the Prime Minister's Relief and Welfare Fund rather than following the Bangladesh Bank directed purposes. This raised the more relevant and pressing question of

[30] Examples include Dhaka Bank Ltd., Sonali Bank Ltd., Midland Bank Ltd., Prime Bank Ltd., Standard Chartered Bank.

[31]Bangladesh Krishi Bank, Rajshahi Krishi Unnayan Bank, ICB Islami Bank Ltd., Padma Bank Ltd., Shimanto Bank Ltd. and Commercial Bank of Ceylon PLC did not allocate any funds for CSR in the January to June period of 2020.

[32]Agrani Bank Ltd., Basic Bank Ltd., BDBL Ltd., Probashi Kallyan Bank, Bangladesh Commerce Bank Ltd., Modhumoti Bank Ltd., SBAC Bank Ltd., Standard Bank Ltd., Trust Bank Ltd., Uttara Bank Ltd., City Bank, NA, National Bank of Pakistan, and Woori Bank also did not spend any fund for the health sector in the first half of 2020.

[33]https://www.dhakatribune.com/business/banks/2020/09/09/19-banks-refrain-from-csr-spending-for-health-sector

not spending on CSR, but more about how to invest in CSR to achieve mutually beneficial and interdependent social goals (He & Harris, 2020).

Unfortunately, few banks also laid off some of their employees[34] and cut a certain percentage of employees' salaries[35], most probably following the unwise and illegitimate[36] recommendations of BAB. Like others, employees are also fighting against the pandemic both for their survival and the survival of their companies. Disheartening the fighter by layoff may frustrate and panic them resulting in an increased level of uncertainty and lack of trust. Any efforts flouting trust and confidence may lead the banks to irreparable loss which may, in turn, lead to adversely affect the banks and the economy.

It is great to observe that BB, upon receiving complaints of an increasing number of layoffs of employees in different banks, has come forward to address this through continuous communication with the banks and special inspections. As a result, some of the employees have already been reinstated and the current employees have overcome the fear of losing their jobs. BB also advised banks to introduced health insurance, grants, and special allowance for bank officials.

4. Rethinking CG and CSR in Banks in Bangladesh in COVID-19

Businesses are generally established based on the noble aspirations and dreams of the founders which are reflected by 'corporate philosophy[37]'. Corporate philosophy reminds everyone in an organisation of the organisation's original purpose and connecting corporate actions with corporate philosophy at all levels is essential to uphold the noble aspirations of the founders. The corporate

[34] For examples, some 296 BRAC Bank Ltd. employees lose jobs amid Covid-19 pandemic; at least 80 employees of AB Bank Ltd. were either terminated or forced to resign during the pandemic (https://www.dhakatribune.com/business/banks/2020/10/28/brac-bank-axes-296-employees-amid-covid-19-pandemic).

[35] For examples, The City Bank Ltd., AB Bank Ltd., EXIM Bank Ltd. and Al-Arafah Islami Bank Ltd. have reduced employees' salaries (https://www.newagebd.net/article/108843/4-banks-in-for-staff-pay-cuts-2-others-opt-out).

[36] Bank employees may be panicked due to layoffs and salary cut, which may in turn create panic among the depositors leading the whole economy to be unstable.

[37]Corporate philosophy tells us why business organisations exist in a society. Examples: 'Serving the nation in silence' (PHP group); 'Would make finest corporate citizen' (Mercantile Bank Limited); 'Building a profitable and socially responsible financial institution focused on market and business with growth potential, thereby assisting BRAC and its stakeholders to build a just, enlightened, healthy democratic and poverty free Bangladesh' (BRAC Bank Limited).

philosophy of a company is meaningless unless it is reflected in its day-to-day activities. However, being operated with many people, a business may deviate from its original purpose after many years of establishment. While profit-making is needed for growth and survival, the existence of a business only for profit is not socially acceptable. Corporate philosophy can be the starting point for understanding how to behave in an emerging situation responsibly, termed as 'emergent responsibility management' (Kokubu et al., 2019). Hence, the board of directors, management, and employees must be aware of their corporate philosophy.

COVID-19 affects not only the financial health of companies but also the lives, livelihood, health, and well-being of various stakeholders including the employees. Companies as corporate citizens have responsibilities to other stakeholders. Such responsibilities can only be discharged by the humans behind the company rather than the company itself as an artificial person. Facing a crisis requires united, collaborative and cooperative efforts of the stakeholders where the corporate philosophy can help build unity and follow the same goals in a concerted manner. People working for a company are not only employees but also citizens of the country. Being a citizen is more fundamental than being an employee because employees can quit a company or change their profession at any time. They are both internal (as employees) and external (as citizens) to a company (Kokubu et al., 2019). The fate of employees is closely related to the fate of the company they work for. That is why, employees are expected to be the most interested parties to the company because of their self-interest, such as livelihood, career prospect, and social status. They act as intermediaries between the shareholders and other stakeholders in attaining organisational goals. They are skilled professionals in the operations they do; they are in close contact with the key stakeholders and experience the ongoing developments in the market from the very front. So, they can, if allowed, help the board take appropriate and timely decisions by providing updated information and implement such decisions. If a company wants to tackle an emergency like COVID-19, the company must receive employees' feedback, keep them connected and boost their morale by focusing on a safe, inclusive, and encouraging system for all employees. Therefore, considering the employees as citizens, and an integral part of the company, rather

than only paid workers would help companies understand, design, and implement corporate governance in an emergent situation like COVID-19.

To ensure an appropriate distribution of rights and responsibilities among different stakeholders, and help achieve corporate objectives, CG must be based on a participative approach. CG as 'the system by which companies are directed and controlled' is very broad because it requires companies to adopt a holistic approach to achieve their goals. Directing and controlling a company in the right direction is not only a matter of compliance but also a matter of charismatic leadership that can motivate and convince all the stakeholders in contributing towards the attainment of the corporate goals. Leadership in an emergency, such as COVID-19 requires natural, emergent, and active roles to tackle the adversaries (Deloitte, 2020). Even if the goal of a company is making profit for the investors, its actions must be directed and controlled in such a way so that the key stakeholders (e.g., the customers, suppliers, employees, regulators, and the community) are satisfied to support the company in attaining its objectives. Moreover, companies must cope with the constantly changing environment in which they operate. The recent instance of public sentiment against Facebook for not removing the hate speech of the former US President Donald Trump in an excuse of their policy shows how terribly stakeholder reactions can adversely affect a company. In response to the other stakeholders' move, as many as 90 giant multinational companies have decided not to give ads on Facebook until June 27, 2020. Therefore, the formulation and implementation of business strategies should be aligned with the expectation of the stakeholders to survive and succeed in addition to mere compliance with laws and regulations.

Unlike the traditional mechanistic CG mechanism, emergent CG involves emergent strategies (Mintzberg, 1987), which are gradually formed even without being noticed. Emergent practices are at the opposite end of general management methods, such as the Plan-Do-Check-Act (PDCA) cycle. However, they are not contrary, but just at the extreme ends of the same line, and crafting is necessary to integrate the two extremes (Mintzberg, 1987). According to OECD (2015), to be relevant, CG rules and regulations must be adapted to the reality in which they will be implemented (p. 7). In contrast to the stereotype of CG, management must

consider governance as an active, spontaneous, and flexible activity. Importantly, CG as responsibility cannot be confined to rigid laws, rules, and regulations, but rather it needs to be flexible and adaptive to the emerging circumstances so that a company can tackle any unprecedented challenges, such as COVID-19 and reap the benefits of any unexpected opportunities.

COVID-19 is a complex phenomenon, which can be addressed through responsible governance. Responsible governance is also known as responsible innovation, governance responsibility, participative governance, reflexive governance, and innovative governance[38] (Voegtlin & Scherer, 2017). Innovative governance influences the innovation process so that the outcomes are socially acceptable, meet sustainability goals, and use resources to avoid harm and do good to society and the planet (Scherer & Voegtlin, 2020). Like the PDCA cycle, reflexive governance is the reconfiguration of governance structure, process, or set of ideas as a reflection of its performance or according to the deliberation and performance (Dryzek & Pickering, 2017). Addressing complex problems and grand challenges such as COVID-19 requires the knowledge and understandings of experts who are capable of recognising the problems, their causes, and potential ways to solve them (Scherer & Voegtlin, 2020). This can be possible through participative governance which can result in better decisions if they are based on logic and arguments, knowledge, interests, and perspectives of the people who are potentially affected by the decisions (Thompson, 2008). Responsible governance can do good and avoid harm for society and can help address the emerging social and ecological challenges like COVID-19 (Scherer & Voegtlin, 2020). Therefore, the board of directors and management should design appropriate systems that promote the free flow of information and spontaneous response within the organisation in an emergent situation.

Banking is a business of trust and confidence. Maintaining the trust of the clients and employees is a must for achieving both individual and organisational goals. Any unwise layoffs and irrational salary cuts may give a terrible signal to the

[38] Responsible governance is as 'a transparent, interactive process by which societal actors and innovators become mutually responsive to each other with a view on the (ethical) acceptability, sustainability and societal desirability of the innovation process and its marketable products' (Von Schomberg, 2012).

market that a bank is at the brink of bankruptcy. Instead of force resignations, bank management could try to reduce their operating cost by reducing discretionary costs, reducing bonuses, cash dividends, revising business models, and mild salary cuts as the last option. They could also justify such salary cut as a sacrifice for the greater interest of the depositors, shareholders and the economy, and that would help the banks ensure wholehearted support from the stakeholders instead of mistrust and panic. Therefore, the best CSR during COVID-19 would be devising cost-effective business solutions and innovations to cope with the new normal, avoiding layoffs and greed for profit, cooperating with others, and taking care of the health and well-being of the employees, customers and the community, and extending a supporting hand to the disadvantaged vulnerable people by constantly overseeing the ongoing developments, remaining open and interacting with the key stakeholders.

CSR is not just confined to charity, but rather a business model that integrates social benefits and works for solving different social problems. Banks need to modify their business strategies so that they are adaptive and cost-conscious. Banks should also collaborate among themselves and implement the stimulus packages properly to survive and help others survive during the crisis. Besides, charismatic leadership, engaging, empowering, and enabling employees can play a crucial role in generating innovations for emerging circumstances. To ensure uninterrupted production and distribution of necessary goods, banks should emphasise supply chain financing (especially a large number of micro, small, and cottage industries) and financial inclusion[39] even more during the pandemic. The banks should use online platforms to identify, analyse and disburse loans amongst the people in need.

It is critically important for emergent CG to effectively incorporate new perspectives into the organisation by stimulating employees' motivation and autonomy as well as reviewing issues, such as controlling avoidable costs and ensuring resource efficiency (e.g. unused office space and excessive rent, using

[39]BB instructed banks to provide agricultural loans at a 4 percent concessional interest rate from banks' own funds and the Bank can claim the rest of 5 percent interest from BB as subsidy with effect from 27 April 2020.

daylight and saving electricity, saving paper, saving energy, avoiding long-distance travel by arranging online training and meeting wherever possible, finishing work within the office hour, spending CSR fund for genuine cause) that are often disregarded in the normal scenario as opposed to the crisis. Instead of imposing decisions including jobs cuts from the top heavy-handedly, the board of directors and management should follow a consultative approach, respect the inherent perspective of employees, recognise their active roles, seek their feedback, and motivate them to cope with the adversity. To adopt an emergent CG approach, a bank should shift from the conventional top-down and inside-out approach to a bottom-up, participative, and outside-in approach. This approach can be termed as 'co-creative corporate governance', allowing the key stakeholders to participate and contribute to handling any crises.

5. Conclusion

The pandemic is testing the commitment of corporates to ethical business and CSR, and many companies have been accused of neglecting health risks to workers, customers and communities (Kramer, 2020). Despite the high fatality rate, serious infections, increased poverty, hunger, and inequalities during the pandemic, some banks in Bangladesh are not responding (with zero CSR expenditure) to the urgent need, and some are even disregarding Bangladesh Bank's instruction. The nonresponse of several banks to the call of the emergency can be considered as irresponsibility. It reveals that their CSR programs are not genuine and need-based, and are thus, unable to address the emerging social challenges. It is critically important for the banks to understand the emergent nature of corporate governance and CSR, their interdependence, and the urgency to respond to the emerging needs during the pandemic. Thus, the study reinforces the essence of corporate governance and CSR, and the pressing need to respond to the emergent challenges in the context of the COVID-19 pandemic.

The study urges that firms having the ability to respond to the needs of others, including those created by the unprecedented pandemic must respond. It reinforces that the board of directors should constantly oversee the ongoing developments, remain open and interactive in welcoming enhanced dialogue and free flow of information from the key stakeholders, particularly the views of the

employees in finding ways appropriate to tackle the emerging risks. The best CSR during COVID-19 would be devising cost-effective business solutions and innovations to cope with the new normal, avoiding layoffs and greed for profit, cooperating with others, and taking care of the health and well-being of the employees, customers and the community, and extending a supporting hand to the disadvantaged vulnerable people by constantly overseeing the ongoing developments, remaining open and interacting with the key stakeholders.

The study offers some implications for the banks, policymakers and academics. For banks, the study reinforces that it is time for togetherness, inclusiveness, and cooperation rather than competition. Businesses should be operated within the bounds of the core purpose of business, usually represented by the corporate philosophy. They should assess if their CSR activities are genuine and appropriate for meeting the social needs during the pandemic, and if not, that symbolic CSR should be abandoned. The views of employees, as the representatives of society and an integral part of the business, should be heard with utmost care for finding strategies to the emerging challenges and getting their wholehearted support in implementing those strategies instead of frustrating and panicking them, who are fighting for both achieving their individual and organisational goals. Based on the fragility and vulnerability of voluntary CSR as revealed by the irresponsible behaviour of some banks during COVID-19, the government and central bank may think of improving the corporate governance environment and making CSR mandatory. Academics should explore how CSR is constructed in the context of the COVID-19.

Future studies can examine (a) why some banks/firms are doing good while others are not despite they are operating in the same context; (b) How stakeholders are responding to the responsible and irresponsible banks/firms; (c) whether there are any differences in the amount and composition of CSR expenditure of firms, particularly banks between the pre-COVID-19 and during the COVID-19, and whys for such differences; and (d) how the vulnerability of the essential workers who are weak in bargaining power and are exposed to precarious working conditions and risk of losing jobs will have impacted the business in the short, medium and long-run.

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Role of Organizational Citizenship Behavior of Bank Officers in Giving Loans to MSME Entrepreneurs in India

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Abstract

This research paper is to find out the role of two dimensions of Organisational Citizenship Behaviour viz. Organisational Citizenship Behaviour-Individual (OCBI) and Organisational Citizenship Behaviour - Organisational (OCBO) of bank officers in India while giving a loan to MSME entrepreneurs. This study presents an initial investigation of the degree to which Organisational Citizenship Behaviour of the bank officers correlates with loan decision taken by the bank officers. The study is conducted using quantitative research methods to measure Organisational Citizenship Behaviour of bank officers in India. A dummy loan proposal was prepared to find out the decision taken on a loan proposal and then the relation between the Organisational Citizenship Behaviour and the decision taken by the bank officers were analysed. The survey was conducted on 557 bank officers in India. Statistical test, Discriminant Analysis for multiple groups was used to analyse the results. The findings of the study revealed that the two dimensions of Organisational Citizenship Behaviour significantly influence loan decisions of bank officers in India. The literature review did not reveal a study on the influence of Organisational Citizenship Behaviour on loan decision taken by bank officers in India and hence the research work is original.

Keywords: Organisational Citizenship Behaviour; Banks; Loan Decisions; Entrepreneurs; Bank Officers.
JEL Classification: G21, L2, M12

1. Introduction

Micro, Small and Medium Enterprises (MSME) sector is an important sector of the Indian economy. This sector works at lower capital cost, plays a vital role in creating employment opportunities, helps in the development and upliftment of underdeveloped areas, thereby ensuring equitable distribution of national

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resources. MSMEs are the feeder lines for large industries and hence contribute to the overall development of the economy.

The MSMEs are defined based on the investment in plant and machinery as per the MSMED Act, 2006. For entities engaged in manufacturing, the investment limit in plant and machinery is Rs. 10 crore and for entities engaged in the service sector, the investment in the equipment should not be more than Rs.5 crore (Singh, 2016). However, the classification of MSMEs has been changed and the revised criteria for classification of MSMEs is applicable in India with effect from July 1, 2020. As per the new definition, an entity with investment up to Rs.1 crore and annual turnover of a maximum of Rs.5 crore will be termed as a Micro Enterprise, while those with investment up to Rs.10 crore and turnover between Rs.5 crore to Rs.50 crore will be classified as Small Enterprises and enterprises with investment up to Rs 50 crore and turnover between Rs.50 crore to Rs.250 crore, will be termed as Medium Enterprises (MSME, GOI, 2020). The total units in this sector are estimated to be 36 million which are employing nearly 80 million Indians; there are more than 6,000 products produced by this sector; the contribution of this sector to GDP is almost one-third; share in the manufacturing sector is 45 percent of total manufacturing output and contribution in country's export is 40 percent (Suresh & Balanaga, 2015).

Despite the sector playing such a significant role in the Indian economy, bank finance to MSMEs is not easily available and majority of bank lending to the MSME sector is against property mortgaged by MSME units. The bank lending to the MSME sector in India has registered a growth of 14.1 per cent during the year 2018-19 and stood at Rs.15.10 trillion (RBI Trend and Progress Report, 2019). However, the MSME sector is not able to get the required credit from the banking sector. As per the IFC Report (2018), the viable credit gap in the MSME sector has increased from Rs.2.93 trillion in 2012 to Rs.25.80 trillion in 2018. Though, Reserve Bank of India (RBI) has also advised banks to enhance credit flow to the MSMEs and has advised all banks to provide 7.5 per cent of their total loans to micro-enterprises (RBI Master Direction, 2017), the credit gap in MSME sector is only increasing. Similarly, specific targets have been given by the

Government of India as per the recommendations Prime Minister Task Force on MSMEs (RBI Master Direction, 2017).

Despite these actions, by Government and RBI, the bank finance to MSME sector is not increasing and there remains a significant gap in demand of credit by MSMEs (IFC 2012; IFC 2018) and supply by the banking sector. There are many reasons for non-availability of credit to MSMEs; the researchers have not attempted to explore the role of Organisational Citizenship Behaviour of bank officers. This research paper is, therefore, to find out the role of Organisational Citizenship Behaviour of bank officers on the decision made by them on giving bank loans to MSME entrepreneurs in India. The other factors which might impact the lending decisions of banks officers have been controlled to observe the impact of only Organisational Citizenship Behaviour of bank officers.

2. Literature Review

Organisational Citizenship Behaviour (OCB), emerged as an independent concept in the 1980s and it has become the focus of attention in today's time. OCB is defined as behaviours which are something extra, beyond the basic job description, these behaviours are without any compensation and are for the betterment to the organisation; these behaviours are discretionary, not directly related to the reward system of the organisation and are meant to improve the effectiveness of the organisation (Organ, 1988). Further, these behaviours are exhibited beyond the 'call of duty' and fall outside the premise of the formal reward system and are not considered in the process of performance appraisals system of the organisation (Van, Dyne & Le Pine, 1998). The other category of classification of behaviours is - in-role behaviour and extra-role behaviour (Organ, 1988). In-role Behaviour (INB) is defined as the compulsive behaviour, which is expected from an employee for successful accomplishment of assigned tasks. INB is the 'core' role-specific behaviour, which provides a base for performance appraisals and reward system (Tompson & Werner, 1997). Failure to exhibit INB can cause serious punishments or penalty, as it would affect the overall organisational outcomes (Brief & Motowildo, 1986).

On the other hand, Extra-role Behaviour (EXB) is the behaviour that is displayed beyond the formal lines of job requirements (Katz & Kahn, 1978).

Extra role behaviour is a discretionary behaviour, fully based on individual willingness and motivation to exhibit, to help or support individual, team and organisation (Somech & Drach-Zahavy, 2000). This "arbitrary behaviour" is mainly targeted towards the benefit of the organisation, without any acknowledgement in the formal rewards system, and failure to perform extra-role behaviour does not call for any punishment (Organ, 1988). Employees exhibiting extra-role behaviour are also known as 'good soldier' (Vigoda-Gadot, 2007), as it is carried out for the greater good they direct the effective flow of operations in the organisation, with softer product process and no explicit individual advantage.

There have been several studies which highlight the role of Organisational Citizenship Behaviour. The study of the insurance companies indicated that the branches with employees displaying higher Organisational Citizenship Behaviours are the most effective branches (Rego & Cunha, 2008). Organisational Citizenship Behaviour is the predictor of the intention of job turnover (Yafang & Shih-Wang, 2010). Organisational Citizenship Behaviours are positively related to the performance of organisation and job outcomes are positively influenced by Organisational Citizenship Behaviour (Chiang & Hsieh 2012). Othman (2002) conducted a study among nurses working in health care institution concluded that Organisational Citizenship Behaviour is positively correlated to organisational commitment and job satisfaction. Organisational Citizenship Behaviour leads to a significant positive impact on organisational performance (Shahin, et al., 2014). OCB helps employees in contributing and achieving organisational goals (Ibukunoluwa et al., 2015).

Organisational Citizenship Behaviour was found to be influencing the behaviour of bank employees. For example, the business orientation among employees of banks in Persia was found to be dependent on Organisational Citizenship Behaviour of bankers (Khoshnammoghadam, 2017), Ahmed (2016) found that Organisational Citizenship Behaviour improves organisational efficiency, job performance is enhanced by Organisational Citizenship Behaviours of bank officers (Shahin et al., 2014) and performance of service sector organisations is dependent on Organisational Citizenship Behaviour (Prasetio et al., 2017). In conclusion, the Organizational Citizenship Behaviour

contributes to the organisational efficiency and makes the organisation more effective (Organ, 1988). Hence, it is logical to assume that OCB may also be influencing the loan giving behaviour of the bank officers.

OCB can be divided into two categories, individual directed behaviour (OCBI) and organisational directed behaviour (OCBO). This study is to find out the role of both these behaviours viz. OCBI and OCBO in influencing the decisions of bank officers while providing finance to MSMEs in India.

The Hypotheses for the Study, Therefore are as Under

H_1: Organisational Citizenship Behaviour directed towards Individuals (OCBI) plays a significant role in influencing the decisions made by bankers while giving loans to MSMEs in India.

H_0: Organisational Citizenship Behaviour directed towards Individuals (OCBI) plays an insignificant role in influencing the decisions made by bankers while giving loans to MSMEs in India.

H_2: Organisational Citizenship Behaviour directed towards Organisation (OCBO) plays a significant role in influencing the decisions made by bankers while giving loans to MSMEs in India.

H_0: Organisational Citizenship Behaviour directed towards Organisation (OCBO) plays an insignificant role in influencing the decisions made by bankers while giving loans to MSMEs in India.

3. Methodology Used for the Study

3.1 Study Sample

The research was carried out on bank officers working in different public sector banks in India. The questionnaire was sent to bankers who were randomly chosen from those associated with MSME loans. Of the 730 bankers who agreed to participate, 557 submitted the questionnaires; therefore, the response rate was 76 percent. Responses with missing values and incomplete responses were not included in the analysis. Public sector banks hold the majority of banking assets in India (RBI Trend and Progress Report 2015-16, Chart 2.10) and hence the respondents were selected from public sector banks in India. The data collection

was done during the first half of calendar year 2018, and the growth of the Indian economy during that period was at 7.7 per cent (https://tradingeconomics.com/india/gdp-growth-annual).

Table 1: Demographic Descriptions of the Respondents

Demographic Details	**Number**	**Percentage**
Gender		
Male	450	80.8%
Female	107	19.2%
Total	557	100.0%
Scale/ Designation		
Officer Scale I	167	30%
Officer Scale II	152	27.3%
Officer Scale III	141	25.3%
Officer Scale IV	47	8.4%
Officer Scale V	16	2.9%
Officer Scale VI	12	2.2%
Officer Scale VII	3	0.5%
Un-answered	19	3.4%
Total	557	100.0%
Age Group (Years)		
21-25	19	3.4%
26-30	166	29.8%
31-35	174	31.2%
36-40	74	13.3%
41-45	34	6.1%
46-50	13	2.3%
51-55	31	5.6%
56-60	27	4.8%
Un-answered	19	3.4%
Total	557	100.0%
Total Banking Experience (years)		
Less than 10	400	71.8%
11 to 20	57	10.2%
21 to 30	40	7.2%
More than 30	41	7.4%
Un-answered	19	3.4%
Total	557	100.0%

3.2 Survey Instruments

Two survey instruments were used for the study, one for identifying the Organisational Citizenship Behaviour and the other one related to the decision taken on credit proposal. A dummy loan proposal was prepared for bank officers to record and evaluate their decision to sanction or not to sanction loan on this dummy loan proposal.

Organisational Citizenship Behaviour: A 16 item scale was used for Organisational Citizenship Behaviour-Individual directed (OCBI) and Organisational directed (OCBO) (Lee & Allen, 2002). The questionnaire was based on a five-point Likert scale with responses ranging from "Never (1) to Always (5)".

Dummy Loan Proposal: A loan proposal was prepared and administered on the bank officers. The loan proposal was developed on the lines of actual proposals submitted by entrepreneurs. Expert bankers' opinions were sought before administering this dummy loan proposal so as to have a close approximation to actual loan proposals handled by bank officers. Reliability of the test instrument was assessed by calculating Cramer's V value, which was 0.78 (> 0.5) and hence reliability was supported.

4. Analysis of Data and the Findings

The study was conducted based on the decision taken on loan proposal, which had three choices for the bank officers to exercise viz. 1=Reject, 2=Sanction with condition and 3=Sanction. The two dimensions of Organisational Citizenship Behaviours (OCB) were taken as independent variables.

Following prediction variables are used for the study in order to understand the discrimination among three loan decisions (1=Reject, 2=Sanction with condition, 3=Sanction).

Table 2: Group Statistics Results

Decision		Mean	Std Deviation	Valid N (List-wise)	
				Unweighted	Weighted
Reject	OCBI	30. 4706	5.02671	68	68
	OCBO	34.0000	4.65528	68	68
Sanction with condition	OCBI	31.5894	4.63951	341	341
	OCBO	34.9795	4.50191	341	341
Sanction	OCBI	32.2905	4.29879	148	148
	OCBO	36.3716	3.30178	148	148
Total	OCBI	31.6391	4.62330	557	557
	OCBO	35.2298	4.29626	557	557

Source: Authors' Calculation

Group Statistics test provides information on group statistics (Mean and SD) for all the two predictor variables across three dependent variable groups (1=Reject, 2=Sanction with condition, 3=Sanction). It is interesting to know that the mean values for both the variables defer across the three dependent groups.

The Group Statistics test also reveals that the mean value of both "OCBI" and "OCBO" is highest for "Sanction" group as compared to "Sanction with Condition" and "Reject" groups.

4.1 Group Means Equality Tests

The test of equality of group means is testing the hypothesis whether the group means for all the predictor variables significantly differ for all predictor variables.

Table 3: Test of Equality of Group Means

	Wilks' Lambda	F	df1	df2	Sig
OCBI	0.987	3.696**	2	554	0.025
OCBO	0.969	8.834**	2	554	0.000

Source: Authors' Calculation

Note: ** = *P < 0.05*

The "F" Test is significant for both predictors, "OCBI" (*f=3.696, p=0.025*) and "OCBO" (*f=8.834, p=0.000*). Since the *p values* in both the cases are less than *0.05*, hence both the null hypotheses are rejected. OCB directed at

Individuals (OCBI) and OCB directed at Organisation (OCBO), both play a significant role in influencing the loan decisions made by bankers in India.

Evaluating the strength of Discriminant Model - The strength of the Discriminant Model is evaluated through the values of Wilks lambda, Canonical Correlation and Eigenvalue.

4.2 Evaluating the Strength of Discriminant Model through Wilks Lambda

Wilks Lambda Values: Wilks Lambda is a mean of unexplained variance when the hypothetical model is fitted to the sample data. The value of Wilks Lambda for Model-1 is 0.965, and Wilks Lambda value for Model-2 is 0.999, indicating that Model-1 has 96 percent of the unexplained variance and Model-2 has 99 percent unexplained variance.

Table 4: Evaluation of Wilks' Lambda Values

Function(s) Test	Wilks' Lambda Values	Chi-square	Df	Sig.
1 through 2	.965	19.465**	4	.001
2	.999	$.739^{NS}$	1	.390

Source: Authors' Calculation

Note: NS – Not significant

Significance of the Discriminant Models: The discriminant models are generated by Discriminant Analysis. The number of models generated by Discriminant Analysis is equal to *k-1,* where *k* relates to the number of categories of dependent variables. In the current case, the dependent variable had three categories, and hence two models have been generated by Discriminant Analysis. The Chi-Square Test for Model-1 and 2 suggest that Model-1 is significant ($\chi 2 = 19.46, p = 0.001$) and Model-2 is insignificant ($\chi 2 = 0.73, p = 0.390$).

Canonical Correlation: Canonical Correlation is a measure of explained variables. The Canonical Correlation values indicate the amount of explained variance after the hypothetical model is fitted to those sample data.

Square of Canonical Correlation for Model-1 is 0.0331 (0.182^2) indicating that Model-1 has an explained variance of 1.79 percent. Square of Canonical Correlation for Model-2 is 0.0013 (0.037^2) indicating that Model-2 has explained variance of 0.12 percent.

Eigenvalue: Eigenvalue is a ratio of explained variance versus unexplained variance. Eigenvalue greater than 1 indicates better discriminant ability of the discriminant model. In the Canonical case, both the Eigenvalues and the Canonical Correlation are less than one meaning that more unexplained variance compared to the explained variance.

Table 5: Model Evaluation - Eigenvalues

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	0.034a	96.3	96.3	0.182
2	0.001a	3.7	100.0	0.037

Source: Authors' Calculation

Note: a. First two canonical discriminant functions were used in the analysis.

All three means viz. Wilks Lambda, Canonical Correlation and Eigenvalue indicate that the two models have a small effect.

4.3 Relative Importance of Predictor Variables for Both the Models

Table 6: Structure Matrix

	Function	
	1	2
OCBO	0.961*	-0.276
OCBI	0.603	0.798*

Source: Authors' Calculation

Structure Matrix provides information on the relative importance of predictor variables for both the models. From the Structure Matrix table, it can be seen that "OCBO" is the stronger predictor compared to "OCBI" in Model-1. For Model-2, "OCBI" is the stronger predictor compared to "OCBO".

4.4 Discriminant Function for Model-1

Table 7: Canonical Discriminant Function Coefficients

	Function	
	1	2
OCBI	0.064	0.224
OCBO	0.202	-0.152
(Constant)	-9.143	-1.713
Unstandardized coefficients		

Source: Authors' Calculation

Discriminant Score (DS) = -9.143 + 0.064 (OCBI) + 0.202 (OCBO)

Discriminant Function for Model-2:

Discriminant Score (DS) = -1.713 + 0.224 (OCBI) - 0.152 (OCBO)

The model therefore concludes that the two dimensions of organizational citizenship behaviors of bank officers, 'OCBI' and 'OCBO' were strong predictor of loan decision taken by bank officers in the current study.

4.5 Member Classification Graph (Reject, Sanctioned with Condition and Sanctioned)

The purpose of discriminant analysis is to develop a discriminant function that can predict group membership. Discriminant function is a discriminant equation (weighted linear combination of variables) used to compute discriminant scores. These discriminant scores, when compared with cutting scores (group centroids), group membership can be predicted.

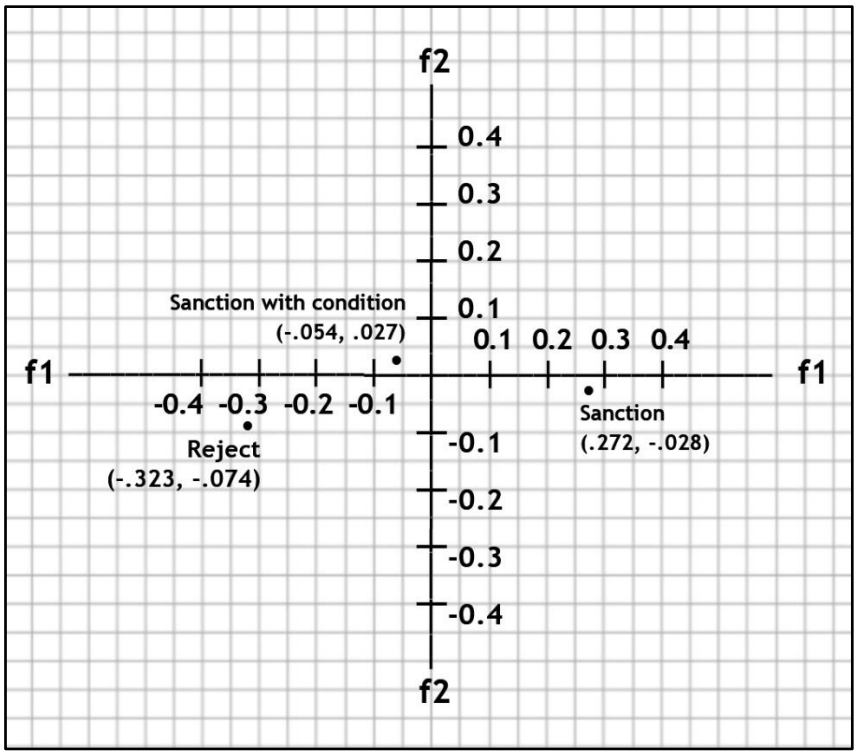
The following graph is developed based on information provided by "Function at group centroid Table."

Table 8: Functions at Group Centroids

	Function	
Decision	1	2
Reject	-0.323	-0.074
Sanction with Condition	-0.054	0.027
Sanction	0.272	-0.028
Unstandardised Canonical Discriminant Functions Evaluated at Group Means		

Source: Authors' Calculation

Figure 1: Values of Group Centroid



The Group Centroid graph reveals that a case with negative scores on Function-1 and 2 will be rejected, a case where the Function-1 is negative and Function-2 is positive, will be classified as "Sanctioned with Condition" and a case where Function-1 positive and Function-2 is negative, will be classified as "Sanctioned".

5. Discussion and Conclusions

5.1 This study was conducted to find out the role of two dimensions of Organisational Citizenship Behaviour of bank officers while bankers decide on a loan proposal of MSME entrepreneurs. The findings indicate that both dimensions viz. OCBI & OCBO play a significant role in influencing the decisions of bank officers. The significant values of both the predictor variables are less than 0.05, and hence both variables play a significant role in influencing the behaviour of bank officers while providing loan to MSME entrepreneurs. The Chi-Square test under Discriminant Analysis has given two models. Out of the two models, the first model is significant, while the second model is insignificant. The results of Structure Matrix table indicate that OCBO is stronger predictor as compared to OCBI. The Group Centroid graph reveals that a case with a positive score on Function-1 and a negative score on Function-2 will be sanctioned. Hence a bank officer, who is more likely to approve the loan to MSME entrepreneur, can be identified based on the values of Functions 1 and 2 in Group Centroid graph. In simple terms, both variables are significant and therefore, the banks may deploy those officers in MSME branches who have a higher score on the two dimensions of Organisational Citizenship Behaviour. The study concludes with rejection of null hypotheses that Organizational Citizenship Behaviour directed towards Individual (OCBI) and directed towards Organisation (OCBO) plays an insignificant role in influencing the decisions made by bankers while giving loans to MSMEs in India. The bank officers who have a higher score on the Organisational Citizenship Behaviour are more likely to sanction loan to MSME entrepreneurs. The role of OCB in bank lending was an unexplored area, the findings of the study have statistically proved that OCB influences the decisions of bank officers and hence the findings will have practical utility.

5.2 Limitations of the Study

The findings of this study are based on the responses of bank officers on OCB test and their decision on the loan proposal. Therefore, depending on the change in mental make-up of the participants during the study, the results of both of the tests can differ. Due precautions were taken to prepare a typical loan proposal, incorporating the suggestions and views of experienced bank officers;

however, the findings may vary if the same participants are presented with a different loan proposal. Similarly, if the same test is performed to the same participants for the second time or in a different context, the results of the test may vary.

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Appendix 1: Organizational Citizenship Behaviour Items Used in This Study

OCBI Items

1. Help others who have been absent.
2. Willingly give your time to help others who have work-related problems.
3. Adjust your work schedule to accommodate other employees' requests for time off.
4. Go out of the way to make newer employees feel welcome in the work group.
5. Show genuine concern and courtesy toward co-workers, even under the most trying business or personal situations.
6. Give up time to help others who have work or non-work problems.
7. Assist others with their duties.
8. Share personal property with others to help their work.

OCBO Items

1. Attend functions that are not required but that help the organizational image.
2. Keep up with developments in the organization.
3. Defend the organization when other employees criticize it.
4. Show pride when representing the organization in public.
5. Offer ideas to improve the functioning of the organization.
6. Express loyalty toward the organization.
7. Take action to protect the organization from potential problems.
8. Demonstrate concern about the image of the organization.

(The questionnaire has been adopted from Lee, K., & Allen, N. J. (2002). Organizational citizenship behaviour and workplace deviance: The role of affect and cognitions. *Journal of applied psychology*, *87*(1), 131. The questionnaire should be used with the permission of the authors)

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2. Literature Review
3. Objectives and Hypotheses
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5. Findings and Analysis
6. Policy Implications
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Top = 1", Bottom = 1", Left = 1", Right =1"

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XI. The length of the manuscripts should not exceed 30 pages, including footnotes, references, appendices, charts, figures, and tables.

XII. All the Figures and Tables must be in Black-and-White in Color.

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