Audit Committee Independence, Director Ownership, Audit Quality and Non-performing Loans

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ABSTRACT

The rising trend of Non-Performing Loans (NPLs) in the banking sector of Bangladesh epitomises a common phenomena of loan default that mostly arises from unwillingness to repay tendency of the borrowers who usually fit into the defined higher class of the society. An appropriate governance and control framework can effectively control this growing trend of NPLs, supplemented by the loan default culture. In view of this setting, this paper looks for the impact of audit committee independence, director ownership, external audit quality, CEO power, and bank size to control NPLs. After identifying two endogenous variables in a system of linear equations, this paper employs the system generalized method of moment (GMM) approach of regression analysis. This paper finds the significance of audit committee independence, director ownership, and external audit quality in controlling NPLs. However, this paper finds no significant impact of CEO power on lowering NPLs. Bank Size, measured in relative sense, has non-linear impact on NPLs. This paper recommends that the existing governance guidelines and BASEL-II accords fail to boost up the asset quality that controls NPLs and ensures capital adequacy.

Keywords: Bangladesh; banking sector; CEO power; NPLs

INTRODUCTION

The sustainable development of a country calls for the economic wellbeing of the promising industrial sectors. To keep going the engine of industry and its growth, the role of the financial sector mostly comprised of banks in many developing countries is quite predominant (Levine 1977; Nguyen 2022). Hence, the banking sector also referred to the heart of financial sector which is well-functioning, well organized, and high resistant to abnormal crisis is central to the core economic development of an economy (Rushchyshyn et al. 2021). So as a major part of policy making of a country, the importance of ensuring solvency in banks is out of denial. It is extensively outlined in literature with high media coverage that bank insolvency creates economic vulnerabilities by backsliding foreign investments, rising capital short-fall, and dipping the major industries into crises (Oino 2021). The fall of the industries eventually creates high level of unemployment and inflation in the economy.

The crises led by insolvency in banks usually stem from the downfall of qualities of key revenue generating assets due to spur in non-performing loans (NPLs) (see Figure 1). This sudden rise of NPLs also questions the existence of banks as a result of not meeting minimum capital outlined by the regulatory framework, *BASEL* accord (Hasan & Suzuki 2021). The trend of NPLs is growing so hastily that loan default is being turned into a common phenomena in a developing country like Bangladesh. In addition, the social, psychological, and political power of borrowers fuel the culture of NPLs in Bangladesh (Ghosh et al. 2020).
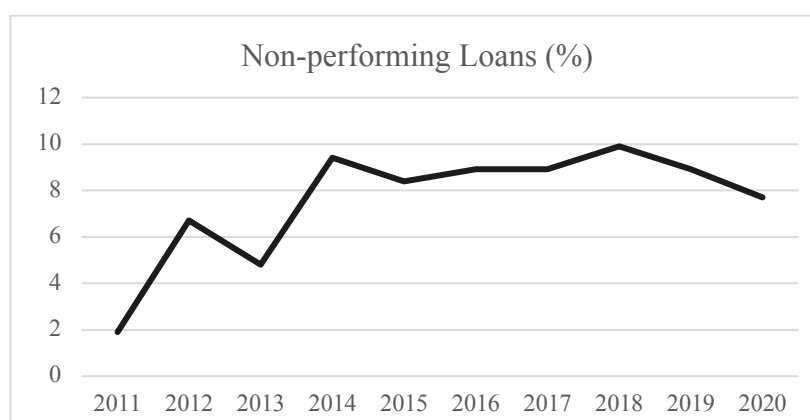

FIGURE 1. Ratio of total non-performing loans & advances to total loans & advances
Source: Authors' own creation

NPLs usually stem from the unwillingness to pay and the inability to pay (Ghosh et al. 2020). The unwillingness to pay is associated with the behavioral aspects of the borrowers. For example, in the backdrop of major loan scams (Hallmark scandal, Basic Bank, and Farmers Bank scandal etc.) in Bangladesh, loan defaulters virtually belong to the higher class of the society. Here, either the higher authorities of the banks taking loans for their own business or the people with powerful social and political background refuse to repay the loans (Kamal & Begum 2018). Next, the directors of 19 banks took loans from their own banks of BDT40000 million against collateral equivalent to BDT16900 million, and the rest are against personal guarantee (Ghosh et al. 2020). This personal guarantee with existing weak governance framework poses the threat of arising NPLs. Further, the Janata Bank, a state-owned commercial bank, ill-intentionally approved a loan of BDT26430 million of its total loans BDT55080 million to a single group – Anon Textile even after getting a warning from Bangladesh Bank, central bank of Bangladesh, that Janata bank did not classify the group's loan due to failing to pay installments on time. Besides, Janata bank sanctioned 98.4 percent of its total loans of Imamganj Corporate Branch to a single group – Crescent (The daily Star, September 09 2018). Further, in the case of Farmers Bank (renamed as Padma Bank), the chairman, the chief of audit committee, and the higher officials committed fraud into loan disbursement amounted to BDT7230 million (Dhaka Tribune, April 3 2018). Lastly, in the case of Basic Bank, the chairman deceived BDT45000 million from Basic Bank through loan fraud (Kamal & Begum 2018).

Here in all cases, the fraudsters possess a powerful social and political background. Sutherland (1983) argued that "*white collar crime committed by the person of respectability and high social status in the course of his occupation*" (p. 7). Besides, Chambliss and Seidman (1971) stated that white collar criminals are very deterrent types of fraudsters who do not commit fraud as an occupation rather their frauds are instrumental instead of expressive. Moreover, Edelhertz (1970) stated that white collar crime is a fraud or series of frauds occurred by non-physical ways and by disguising guile, to acquire money, to avert the repayment of money, or to acquire business. In this backdrop, NPLs can be identified as white collar crime (See also Ghosh et al. 2020).

It is fairly easy for banks to control NPLs arising from inability to pay. For example, if banks look into and assess the financial matrices of borrowers like profit, assets, cash flows, and eligible securities, banks can easily reach into a conclusion about the ability of borrowers in repaying the loans. However, taking decision about the unwillingness to pay loans by the borrowers is complex due to the existence of social, psychological, and political issues in this tendency (Ghosh et al. 2020). Hence, we demand for an appropriate governance and control framework, recommended in many literature (such as, Chowdhury 2012; Prakash et al. 2021; Tarchouna et al. 2021a), in controlling NPLs arising from unwillingness to pay, mostly classified as a white collar crime. Therefore, this paper explores the impact of audit committee independence, director ownership, CEO power, audit quality and bank size along with several bank-specific and macroeconomic control variables on the NPLs. This paper assumes that NPLs, arising from unwillingness to pay, can be controlled by establishing internal and external independent control and supervisory mechanisms through audit committee independence and external audit quality (Chowdhury 2012; Tarchouna et al. 2021a; Fiador & Sarpong-Kumankoma 2021). Next, ownership effect can reduce the conflict of interest between management and shareholder, encouraging directors to work more and take more care when taking risks (Fahlenbrach & Stulz 2011; Tarchouna et al. 2021a). Further, powerful CEOs (power concentration) have dominance over board actions and perhaps become risk averse, leading them to undertake in less risky projects particularly during crises (Pathan 2009). Lastly, bank size has a significant impact on NPLs (Stern & Feldman 2004; Pop et al. 2018; Tarchouna et al. 2021a). Therefore, this paper assumes that a functional and effective governance framework, director ownership and CEO power are central to controlling the tunnel of white collar crime, NPLs in banks.

This paper contributes into the existing literature in several ways. As per our best knowledge, we first address endogenous feedback between NPLs and CAR in the banking industry of Bangladesh before going to explore the determinants of NPLs. Next, we explore the impact of some governance attributes such as audit committee independence, CEO power, external audit quality etc., which are virtually absent in existing literature in the banking industry of Bangladesh since there is no consensus regarding the impact of corporate governance attributes on NPLs (Tarchouna et al. 2021a). In addition, this paper finds out the non-linear impact (U-shape) of size variable on NPLs and CAR.

Literature Review And Hypotheses

In backdrop of NPLs in East Asia, Sub-Saharan Africa, and Argentina in 1990s, Central Europe and the Baltics region in 1998 and Central, Eastern and Southeast European Countries countries after 2008, the researchers and policymakers were motivated to explore the reasons of NPLs. The seminal paper, Berger and De Young (1997) identified the presence of causal impact arising from bank and macroeconomic factors, presenting four hypotheses- *'bad luck'*, *'bad management'*, *'skimping'* and *'moral hazard'* on NPLs. Next, Naili and Lahrichi (2022) explored the determinants of NPLs by conducting a structured literature survey and classified the determinants into three categories such as bank-specific variables (such as size, efficiency, performance, loan, diversification and CEO compensation), macroeconomic variables (such as GDP, unemployment, inflation and interest rate) and industry-related variable (such as concentration). Using US commercial banks data, Tarchouna et al. (2021) found that a fragile corporate governance system leads to a bad

loan quality. Further, Ghosh et al. (2020) identified several behavioral determinants of NPLs in Bangladesh such as moral hazard, lack of proper monitoring, inadequate collateral, and nepotism. They analyzed the social, cultural, psychological, political, and law compliance aspects to reveal the behavioral determinants of NPLs. Again, Ballester et al. (2020) conducted a systematic literature survey that focused on corporate governance mechanism on NPLs such as ownership, board structure, and financial stakeholders' rights and relations. They found that a large extent of default risk is originated from the weak corporate governance structures of bank. This finding motivated us to concentrate on internal corporate governance to mitigate the NPLs. In this paper, we employ the following determinants to identify the impact on NPLs in Bangladesh.

AUDIT COMMITTEE INDEPENDENCE AND NPLs

Ghosh et al. (2020) identified that the lack of proper monitoring and nepotism have significant positive impact on NPLs in Bangladesh. Evaluating relationship between governance and efficiency, Prakash et al. (2021) found that strong risk governance frameworks impede the adverse consequences of high regulatory capital and expand efficiency. Next, Fiador and Sarpong-Kumankoma (2021) found that a large board comprising experts and non-executive members can contribute to the bank loan quality. Although independent directors in audit committee do not have a straight and exact control on bank lending process, independence in board argued by Switzer and Wang (2013) enhances the capability to establish an independent control and supervisory role of managerial actions. Hence, NPLs could be lessened with more independent directors (see also Tarchouna et al. 2021a). However, a systematic literature survey by Ballester et al. (2020) also found the existence of negative and not significant association between board independence and NPLs. Therefore, this paper expects:

H$_1$ There is a significant positive/negative impact of audit committee independence on NPLs.

DIRECTOR OWNERSHIP AND NPLs

Ownership effect contributes to align directors' interests with shareholders' interests, encouraging directors to work more and take more care when taking risks (Fahlenbrach & Stulz 2011; Beltratti & Stulz 2012). Using data of 184 US commercial banks, Tarchouna et al. (2021a) found a negative association between director ownership and NPLs in small and medium banks. However, they identified a positive association between director ownership and NPLs in large banks. Furthermore, separating between director ownership (shares held by the directors) and managerial ownership (shares held by CEO and executive directors), Chiang et al. (2015) found that default risk increases with director ownership (see also, Berger et al. 2016), and it decreases with the managerial ownership (see also, Gao & Lin 2018). A systematic literature survey by Ballester

et al. (2020) argued that there exists lack of consensus in previous literature on the effect of director ownership in Asia. Thus, this paper assumes:

H$_2$ There is a significant positive/negative impact of director ownership on NPLs.

CEO POWER AND NPLs

Powerful CEOs might dominate and shape the decisions of the board (Fama & Jensen 1983) and become risk averse, leading them to undertake in less risky projects particularly during crises. It would eventually generate lower credit risk (Pathan 2009). Conversely, in term of expertise, experience and influence, Mollah and Liljeblom (2016) developed an index that aspires to present the extent of power that CEO can exert in business. They found that powerful CEOs provokes credit risk in the sovereign debt crisis because they have greater entrance in competitive compensation contracts, in turn entailing higher risk taking, the idea that is in line with 'greater entrenchment' (Lewellyn & Muller-Kahle 2012). However, a systematic literature survey by Ballester et al. (2020) argued that there needs more empirical evidence to conclude association between CEO power and NPLs). Hence, this paper expects:

H$_3$ There is a significant positive/negative impact of CEO power on NPLs.

EXTERNAL AUDIT QUALITY AND NPLs

Chowdhury (2012) argued that the existence of independent audit, compensation, nominating and governance committees increases the value of corporate governance, and, in turn, contributes to the performance of the business. Next, Prakash et al. (2021) developed an audit index as a construct of governance practices to identify association between audit work and efficiency. They found an association between strict audit and better efficiency, which precedes productivity levels. Moreover, Ghosh et al. (2020) found that the lack of proper monitoring significantly causes NPLs in Bangladesh in which managers' reluctance in credit monitoring works as catalyst (Park & Zhang 2012). Thus, this paper expects–

H$_4$ There is a significant negative impact of external audit quality on NPLs.

BANK SIZE AND NPLs

The hypothesis 'too big to fail' states that large bank inclines to increase its leverage by investing in risky projects presuming their great economic significance for the country (Stern & Feldman 2004). Accordingly, these banks knows that there is a possibility of bailouts by government. This relationship is also supported by Pop et al. (2018). Next, dividing US banks into three asset-size categories, Tarchouna et al. (2021a) identified impact of bank size on NPLs and it reflected mixed results across

three categories. Conversely, Biekpe (2011) argued that larger banks face lower of loans issue since they have the likelihood of achieving well-diversified loan portfolios. However, Gaur and Mohapatra (2021) did not find any significance of bank size on NPLs. Therefore, this paper assumes–

H₅   There is a significant nonlinear impact of size on NPLs.

Next, the endogenous feedback exists between NPLs and capital adequacy ratio (CAR). It is also suggested by other studies (such as, Aggarwal & Jacques 2001; Hu & Izumida 2008; Suhartono 2012). Besides, several papers (such as, Abusharba et al. 2013; Aspal & Nazneen 2014; Aytul & Vuslat 2014; Binh & Thomas 2014; Zheng & Huq 2017) explored the factors affecting CAR. These papers identified a significant negative impact of NPLs on CAR. Binh and Thomas (2014) argued that the profitability of firm is an important factor of CAR. Analyzing a systematic literature survey, Tarchouna et al. (2021b) concluded that most studies show the factors affecting NPLs particularly from bank-specific and macroeconomic perspectives. In some cases, corporate governance mechanisms are largely linked with bank loan quality (Switzer & Wang 2013; Fiador & Sarpong-Kumankoma 2021; Prakash et al. 2021). Thus, there is no consensus regarding the influence of corporate governance attributes on NPLs (Tarchouna et al. 2021a). Consequently, the effects of such attributes are virtually varied across bank type, country and period of study. In this paper, we explore the impact of audit committee independence, director ownership, CEO power, external audit quality and size on NPLs in Bangladesh. Besides, we emphasize the non-linear impact of bank size on NPLs.

THE RECENT ENVIRONMENT OF NPLs IN BANGLADESH

The NPLs ratio of Bangladesh has reached at 10.7 percent in September 2017. According to central bank of Bangladesh, NPLs of the last seven months of 2017 have increased by BDT. 181.35 billion, and the total amount has reached at BDT. 1,253 billion (including BDT. 450 billion written off) (The Independent, February 1 2018). In 2017 state-owned banks have disbursed BDT. 140, 769 million loans of which BDT. 37,326 million or 26.52 percent has been in default. Besides, private banks have disbursed BDT. 603,603 million loans of which BDT. 29,396 million or 4.87 percent has been in default (Dhaka Tribune, March 18 2018). The extent of capital shortage in ten banks (including seven state-owned banks) up to march 2018 is BDT. 233,630 million which is BDT. 38,000 million more than previous quarter (October to December 2018). Among the 10 state-owned banks, the largest capital shortage occurred in Bangladesh Krishi Bank of BDT. 79,300 million following the Sonali Bank of BDT. 67,550 million (The Daily Star, June 24 2018). To meet up the capital shortage, government has paid BDT. 145050 million from 2009 to march 2018. Next, the NPLs ratio of Bangladesh has reached at 7.93 percent as of December 2021 which was 7.66 percent as of December 2020. According to Bangladesh Bank, the volume of NPLs has increased to BDT1032.74 billion (including BDT436.09 billion written off) as of December 31, 2021, which is 16 percent or BDT145.40 billion more than that of December 31, 2020 (The Financial Express, March 03 2022). In the fourth quarter (Q4) of 2021, the NPLs in six state-owned commercial banks have reached at BDT449.77 billion, which was 27.04 billion greater than that of Q4, 2020. Meanwhile, the total amount of NPLs in 42 private commercial banks have reached at BDT515.21 billion as of December 31, 2021, which was BDT403.61 billion as of December 31, 2020 (The Financial Express, March 03 2022).

CORPORATE GOVERNANCE GUIDELINES OF 2012

Corporate governance (CG) regulation in Bangladesh was first initiated in 2003 by Bangladesh Enterprise Institute (BEI). On 9 January 2006, Bangladesh Securities and Exchange Commission (BSEC) has made it mandatory to comply for all listed companies in Bangladesh (Biswas 2012). However, Siddoqui (2010) questioned the effectiveness of adopted codes, based on Western-style culture rather than developing codes based on cultural and economic conditions of the local country. To further improve, the BSEC revised the CG guidelines with some new areas on 3 July 2012. The CG guidelines of 2012 focused on areas such as board effectiveness, audit committee affairs, auditor independence, additional statements by board of directors, governance of subsidiary company, duities of CEO and CFO, removing CEO duality, reporting and compliance of CG, and mode of implementation etc. (Biswas 2012). This revised guideline has made a number of notable effects on the corporate behaviors and business outcomes. Besides, it has become costly to implement for the small enterprises since the firms required to obtain 'Certificate of Compliance' from a public accountant. Ghosh et al. (2020) argued that a significant amount of NPLs in Bangladesh was originated from the motive of 'unwillingness to pay'. In this respect, a strong CG guidelines may work a mechanism to mitigate NPLs in Bangladesh. Thus this paper focuses on analyzing whether any significant impacts were originated from the regime shift of CG guidelines of 2006 to CG guidelines of 2012 on NPLs.

SAMPLING, VARIABLE MEASUREMENT AND DESCRIPTIVE STATISTICS

We use the data of 29 listed commercial banks (CBs) out of 33 listed CBs of Bangladesh from 2005 to 2018. To make strongly balanced panel data (as long as possible), we do not take the earlier period of 2005 and have deducted 4 listed CBs, which are being listed after 2005. All variables except macroeconomic variables are collected from the published annual reports of listed CBs and macroeconomic variables are collected from World Development Indicators of the World Bank. Here, the size variables are considered as relative measures to

eliminate the discrepancy lying in size of different banks. TABLE 1 and TABLE 2 present variable measurement and descriptive statistics respectively. Here, the coefficient of variation (CV) shows the ratio of standard deviation to mean. It means how much the extent of variability in respect to population mean is. The higher the CV, the greater the dispersion. The sample firms have an average 4.714%, maximum 38.86% and minimum 0.19% nonperforming loans for the period 2005 to 2018. It also has 82.99% variability in population mean. Average firm age is approximately 20 years. Next, Bangladeshi banking industry does not emphasize on employing Big4 audit firms (average AQ 34%). Further, more than 50% of sample Banks have powerful CEOs.

TABLE 1. Measurement of variables

Variables	Definition	Measurement	Reference
Dependent Variable			
NPLR	Nonperforming loans ratio	The ratio of nonperforming loans to total loans	IMF (2005); Ghosh (2015); Tarchouna et al. (2017)
Independent Variables			
ACI	Audit Committee Independence	The percentage of independent directors in audit committee	Al Zobi et al. (2019); Akter et al. (2021);
CEOP	CEO Power	If the CEO leads at least two committees of a bank, it is valued 1, otherwise 0.	Pathan (2009); Mollah and Liljeblom (2016); Skousen et al. (2018)
AQ	Audit Quality	If audited by Big-4 firm, then valued 1, otherwise 0.	Ben Saada (2018)
DWN	Director ownership	Percentage of share hold by the directors	Chianag et al. (2015); Yen et al. (2015); Gao and Lin (2018)
SIZE1	Loans to Assets ratio	Total loans and advances to total asset ratio	Total assets, deposit and equity usually represent the size of a bank. To reduce inborn-size effects within banks, it is converted into relative measurement. It is calculated by authors' own discretion.
$SIZE1^2$		The square of total loans and advances to total assets ratio	
SIZE2	Loans to Deposits ratio	Total outstanding loans and advances to deposit ratio	
$SIZE2^2$		The square of loans and advances to deposit ratio	
SIZE3	Debts to Equity ratio	Total debt to total equity ratio	
$SIZE3^2$		The square of debt to equity ratio	
Bank-specific and Macroeconomic Control Variables			
AMF	Audit Meeting Frequency	The number of audit committee meeting in a year	Zgarni et al. (2018); Akter et al. (2021)
CAR	Capital Adequacy Ratio	The ratio of bank capital to total risk-weighted assets	Aggarwal and Jacques (2001); Hu and Izumida (2008); Suhartono (2012)
CG	Credit Growth	The percentage change of total loans and credits from previous year to present year.	Jimenez and Saurina (2006)
IEFF	Inefficiency Ratio	The ratio of non-interest expense to net operating income	Krarim et al. (2010);
AGE	AGE	The number of years from incorporation	Krarim et al. (2010); Shan and Xu (2012); Akter et al. (2021)
CGOVR	Corporate Governance guidelines	Years after intiation of revised corporate governance guidelines- 2012 valued 1, otherwise 0.	It is taken as authors' own discretion.
BIMP	BASEL II Implementation	Years after BASEL II implementation valued 1, otherwise 0.	Hasan and Suzuki (2020)
ROA	Return on Assets	Net profit is divided by total assets.	Boudriga, et al. (2009); Khan et al. (2019); Khan et al. (2020)
GGR	GDP Growth	Real GDP growth rate	European Central Bank (2011); Lee, et al.(2020)
RLR	Lending Rate	Real lending rate	Ikram et al. (2016); Tarchouna et al. (2017); Ghosh et al. (2020)
INF	Inflation	Consumer price index	Ikram et al. (2016); Ben Saada (2018)
UMP	Unemployment Rate	Unemployment rate is used.	Rinaldi and Sanchis-Arellano (2006); Berge and Boye (2007)

TABLE 2. Descriptive statistics

Variables	Mean	Maximum	Minimum	C.V.	Variables	Mean	Maximum	Minimum	C.V.
NPLR (%)	4.714	38.86	0.19	82.99	*GGR* (%)	6.37	7.2	5.04	45.92
CAR (%)	11.3	18.76	-29.6	31.15	*IEFF* (%)	93.89	984.8	9.48	87.04
ACI (%)	0.26	1	0	84.62	*ROA* (%)	1.32	6.05	-13.52	79.55
AMF	8.45	39	2.0	61.42	*RLR* (%)	4.64	7.49	2.36	32.11
AGE	19.8	58	3.50	58.18	*INF* (%)	7.26	10.70	5.42	20.94
AQ	0.34	1.00	0.00	139.10	*UMP* (%)	4.21	5.00	3.00	10.45
CG	22.4	286.32	-87.02	99.94	*SIZE*1 (%)	51.13	58.92	7.02	69.23
CEOP	0.55	1	0	89.09	*SIZE*2 (%)	83.81	117.31	13.76	13.07
DWN (%)	20.8	61.46	0	65.15	*SIZE*3 (%)	21.408	26.575	16.56	14.46

ECONOMETRIC METHODS, RESULTS, AND INTERPRETATIONS

MODEL DEVELOPMENT

The effect of independent and control variables on NPLs and CAR is estimated by following a system of two simultaneous equations:

$$NPLR_{it} = \alpha_0 + \lambda.CAR_{it} + \mathrm{B}'.X_{it} + \Phi'.Z_{it} + \varepsilon_{it} \qquad (1)$$
$$CAR_{it} = \theta_0 + \phi.NPLR_{it} + \Omega'.M_{it} + \Pi'.\mathrm{K}_{it} + \xi_{it} \qquad (2)$$

Here, i represents the $i - th$ Bank and t (2005, 2006,….., 2018) represents time period for each Bank. *NPLR* represents NPLs ratio and *CAR* represents capital adequacy ratio. X and Z represent column vectors of independent variables and bank-specific and macroeconomic control variables respectively affecting NPLs ratio. B and Φ represent the column vectors of coefficients of independent variables and bank-specific and macroeconomic control variables respectively affecting NPLs ratio. M and K represent column vectors of independent variables and bank-specific and macroeconomic control variables respectively affecting CAR. Ω and Π represent the column vectors of coefficients of independent variables and bank-specific and macroeconomic control variables respectively affecting CAR. λ represents the effect of CAR on NPLs and ϕ represents the effect of NPLs on CAR.

MULTICOLLINEARITY TEST

To check the multicollinearity problem, the pairwise correlation coefficients are calculated. TABLE 4 shows that all correlation coefficients are below 90 percent ($\leq$ 90%). Hence, there is no serious multicollinearity problem.

ENDOGENEITY TEST

In the Equation 1 and Equation 2, NPLs and CAR affect each other. It is evident in one of the very recent study on Bangladesh (Zheng *et al.* 2017). It is also suggested by the other studies (Aggarwal & Jacques 2001; Hu & Izumida 2008; Suhartono 2012). This paper checks endogeneity by applying Hausman test (Hausman 1978) in two-stage least square framework. Before, applying the Hausman test, Equation 1 and Equation 2 are reduced. TABLE 3 provides test results.

TABLE 3. Endogeneity test results

Variables	Coefficients
$\hat{X}_1$	-0.6470***
	(0.0092)
$\hat{X}_2$	-2.4555***
	(0.0001)

Note: ***Significant at 1 percent level, **Significant at 5 percent level, and *Significant at 10 percent level. $\hat{X}_1$ represents estimated values of *CAR* from reduced form of Equation 2 and $\hat{X}_2$ represents estimated values of *NPLR* from reduced form of Equation 1. In parenthesis, the p-value of t-statistic is reported.

TABLE 3 suggests that NPLs and CAR affect each other. Therefore, NPLs and CAR are endogenous variables. Due to this endogeneity, ordinary least squares produces biased and inconsistent estimates of parameters. Besides, hypotheses tests are seriously misleading. Therefore, this paper uses system generalized method of moments (GMM) of regression analysis to control endogeneity.

REGRESSION RESULTS AND INTERPRETATION

We use system GMM to estimate Equation 1 and Equation 2. This econometric approach fixes out the endogeneity problem apart from serial correlation, heteroscedasticity, and cross-sectional dependence lying in panel data. Other than removing the endogeneity problem (i.e. the regressors may be correlated with the error terms), it also removes firm specific unobserved (inborn) heterogeneity (i.e. the firm specific fixed effect may be correlated with the error terms) (Blundell & Bond 1998). Next, system GMM augments difference GMM estimation with introducing some additional assumptions, which generate additional set of moment conditions to leverage. To test over identifying restrictions, Sarjen J-statistic is used (Roodman 2006). The higher the p-value of Sarjen J-statistic, the better the GMM results is. TABLE 5 and TABLE 7 provide the regression results of Equation 1and Table 6 provides the regression results of Equation 2.. The impact of each independent variable (such as, audit committee independence, director ownership, CEO power and audit quality) is separately examined. The purpose of this separate estimation is to explore the individual impact on NPLs.Lastly, we explore the impact on NPLs taking independent variables all together.

TABLE 4. Correlation matrix

	NPLR	CAR	ACI	AGE	AMF	AQ	CG	DOM	DWN	GGR	IEFF	ROA	INF	RLR	UMP	SIZE1	SIZE2	SIZE3
NPLR																		
CAR	-0.56*** (0.00)																	
ACI	0.02 (0.69)	0.22*** (0.00)																
AGE	0.26*** (0.00)	0.02 (0.68)	0.24*** (0.00)															
AMF	0.16*** (0.00)	-0.04 (0.47)	0.28*** (0.00)	0.21*** (0.00)														
AQ	-0.16*** (0.00)	0.05 (0.34)	0.07 (0.16)	-0.08 (0.11)	-0.04 (0.44)													
CG	-0.09* (0.08)	0.006 (0.99)	-0.13*** (0.01)	-0.04 (0.39)	-0.09* (0.07)	-0.07 (0.20)												
DOM	-0.14*** (0.01)	0.04 (0.41)	-0.22*** (0.00)	-0.05 (0.32)	-0.15*** (0.00)	-0.03 (0.62)	0.06 (0.24)											
DWN	-0.21*** (0.00)	0.15*** (0.00)	0.03 (0.56)	-0.26*** (0.00)	0.01 (0.89)	0.01 (0.92)	0.08 (0.12)	-0.06 (0.26)										
GGR	0.13** (0.02)	0.05 (0.32)	0.09* (0.08)	0.08 (0.12)	-0.01 (0.93)	-0.07 (0.17)	-0.03 (0.54)	-0.03 (0.55)	0.04 (0.41)									
IEFF	0.44*** (0.00)	-0.21*** (0.00)	0.12** (0.02)	0.16*** (0.00)	0.17*** (0.00)	-0.05 (0.33)	-0.07 (0.17)	-0.16*** (0.00)	-0.17*** (0.00)	0.21*** (0.00)								
ROA	-0.55*** (0.00)	0.52*** (0.00)	-0.11** (0.04)	-0.11** (0.03)	-0.14*** (0.00)	0.09* (0.08)	0.08 (0.13)	0.17*** (0.00)	0.13*** (0.01)	-0.28*** (0.00)	-0.41*** (0.00)							
INF	-0.12** (0.02)	-0.12** (0.02)	-0.34*** (0.00)	-0.13** (0.03)	-0.07 (0.16)	-0.03 (0.58)	0.08 (0.12)	0.08 (0.10)	-0.09 (0.08)	-0.03 (0.51)	-0.15*** (0.00)	0.13 (0.01)						
RLR	0.05 (0.29)	0.09* (0.07)	0.23*** (0.00)	0.06 (0.19)	0.09* (0.05)	0.06 (0.28)	-0.06 (0.19)	-0.09* (0.05)	0.06 (0.21)	-0.44*** (0.00)	0.01 (0.90)	-0.04 (0.34)	-0.66*** (0.00)					
UMP	-0.08 (0.12)	0.03 (0.53)	0.02 (0.77)	0.01 (0.83)	0.05 (0.34)	0.06 (0.24)	-0.01* (0.05)	-0.07 (0.15)	0.06 (0.24)	-0.35*** (0.00)	-0.04 (0.42)	0.12** (0.02)	-0.27*** (0.00)	0.45*** (0.00)				
SIZE1	0.06 (0.19)	-0.02 (0.75)	0.45*** (0.00)	0.29*** (0.00)	0.23*** (0.00)	0.12** (0.02)	0.02 (0.84)	-0.27*** (0.00)	0.01 (0.81)	-0.16*** (0.00)	0.11** (0.04)	-0.03 (0.54)	-0.11** (0.03)	0.26*** (0.00)	0.17*** (0.00)			
SIZE2	-0.001 (0.99)	0.02 (0.69)	0.08 (0.13)	-0.02 (0.71)	0.03 (0.51)	0.08 (0.14)	-0.00 (0.98)	0.05 (0.37)	0.02 (0.71)	0.07 (0.21)	-0.02 (0.76)	-0.03 (0.61)	-0.06 (0.26)	-0.01 (0.92)	-0.02 (0.77)	0.03 (0.59)		
SIZE3	-0.07 (0.16)	-0.16*** (0.00)	-0.71*** (0.00)	-0.31*** (0.00)	-0.28*** (0.00)	-0.07 (0.15)	0.13*** (0.01)	0.36*** (0.00)	-0.14*** (0.01)	-0.21*** (0.00)	-0.19*** (0.00)	0.11** (0.03)	0.30*** (0.00)	-0.14** (0.01)	-0.09* (0.08)	-0.62*** (0.00)	-0.07 (0.20)	

Note: ***P<0.01 denotes significant at 1 percent level, **P<0.05 denotes significant at 5 percent level, *P<0.10 denotes significant at 10 percent level

TABLE 5. Regression results (Dependent variable-NPLR)

Variables	Audit Committee Independence	Director Ownership	CEO Power	External Audit Quality	All Independent Variables
$NPLR(-1)$	0.5472*** (0.000)	0.4837*** (0.000)	0.4764*** (0.000)	0.4779*** (0.000)	0.4777*** (0.000)
ACI	-0.5212 (0.350)				-1.4081*** (0.007)
DOWN		-0.0088** (0.029)			-0.0131** (0.013)
CEOP			-0.3076 (0.169)		-0.2927 (0.226)
AQ				-0.1883** (0.043)	-0.1992** (0.041)
$SIZE1$	-0.0264*** (0.003)	-0.0250* (0.099)	-0.0273** (0.072)	-0.0264* (0.082)	-0.2826* (0.058)
$SIZE1^2$	0.0003*** (0.000)	0.00003* (0.084)	0.00003* (0.060)	0.0003* (0.071)	0.00004** (0.045)
AMF					-0.0595*** (0.008)
CGOVR					-0.0783 (0.910)
BIMP					-0.5006 (0.472)
CAR	-0.2749*** (0.000)	-0.2868*** (0.000)	-0.2996*** (0.000)	-0.298*** (0.000)	-0.2673*** (0.000)
IEFF	-0.0078*** (0.000)	-0.0077*** (0.000)	-0.0076*** (0.000)	-0.0078*** (0.000)	-0.0069*** (0.000)
AGE	0.0292** (0.010)	0.0259*** (0.009)	0.2912*** (0.003)	0.0281*** (0.004)	0.0195* (0.058)
UMP	0.3889 (0.129)	0.3804 (0.137)	0.4472* (0.083)	0.3987 (0.119)	0.7117 (0.152)
INF	0.0859 (0.445)	0.1084 (0.313)	0.1149 (0.284)	0.1077 (0.319)	0.0455 (0.686)
RLR	0.4299*** (0.002)	0.4500*** (0.001)	0.4517** (0.001)	0.4473*** (0.001)	0.4329** (0.026)
GGR	-0.773*** (0.001)	-0.8097** (0.001)	-0.7932*** (0.001)	-0.7914*** (0.001)	-0.8549** (0.028)
ROA	-0.2642** (0.048)	-0.2399 (0.216)	-0.2043 (0.184)	-0.2204 (0.151)	-0.2486 (0.117)
$AR(2)$	-2.33 (0.203)	-2.60 (0.194)	-2.67 (0.238)	-2.32 (0.137)	-2.58 (0.264)
J-Statistics	94.02 (0.669)	93.56 (0.659)	89.95 (0.661)	78.56 (0.614)	96.24 (0.767)

Note: ***P<0.01 denotes significant at 1 percent level, **P<0.05 denotes significant at 5 percent level, *P<0.10 denotes significant at 10 percent level.

TABLE 6. Regression results (Dependent variable-CAR)

Variable	Model-1	Model-2	Model-3	Model-4	Model-5	Model-6
CAR(-1)	0.3625***	0.4115***	0.3557***	0.3496***	0.3983***	0.3982***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CGOVR	1.4988***		1.5924***		1.6399***	
	(0.000)		(0.000)		(0.000)	
BIMP		0.5559**		0.6784**		0.6965**
		(0.040)		(0.013)		(0.014)
NPLR	-0.3802***	-0.3690***	-0.4309***	-0.3935***	-0.3166***	-0.2927***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CG	-0.0027	-0.0041**	-0.0003	-0.0009	-0.0006	-0.0016
	(0.185)	(0.049)	(0.982)	(0.556)	(0.696)	(0.308)
$SIZE1$	-0.0336**	-0.0414**				
	(0.032)	(0.010)				
$SIZE1^2$	0.00004**	0.00005***				
	(0.020)	(0.005)				
$SIZE2$			-0.0416***	-0.0425***		
			(0.001)	(0.001)		
$SIZE2^2$			0.00005***	0.00005***		
			(0.001)	(0.001)		
$SIZE3$					0.0005**	0.0006**
					(0.011)	(0.012)
$SIZE3^2$					0.00001**	0.00002*
					(0.022)	(0.065)
ROA	1.5694***	1.4110***	1.5693***	1.3912***	1.6572***	1.5072***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
GGR	0.6934***		0.7775***	1.1989***	0.6276***	1.0621***
	(0.000)		(0.000)	(0.000)	(0.001)	(0.000)
$IEFF$	0.0046***	0.0048***	0.0042***	0.0044***	0.0034**	0.0038**
	(0.000)	(0.004)	(0.009)	(0.008)	(0.043)	(0.036)
AGE	0.0148	0.0206*	0.0136**	0.0204*	0.0181*	0.0241**
	(0.159)	(0.059)	(0.012)	(0.059)	(0.081)	(0.023)
AR (2)	0.57	-1.14	0.21	0.72	-1.68	-1.22
	(0.568)	(0.256)	(0.832)	(0.472)	(0.193)	(0.221)
J-statistics	49.82	72.25	42.73	71.72	68.95	83.85
	(0.589)	(0.567)	(0.534)	(0.593)	(0.527)	(0.679)

Note: ***P<0.01 denotes significant at 1 percent level, **P<0.05 denotes significant at 5 percent level, *P<0.10 denotes significant at 10 percent level.

We find that audit committee independence (ACI) has no significant negative impact over the NPLs ratio. Fortunately, we get statistical significance of ACI if we consider independent variables all together. It reflects that the presence of director ownership, CEO power, audit quality and size together with the audit committee independence may influence the supervisory and controlling role of audit committee, resulting significant impact on NPLs. Next, we identify that director ownership (DOWN) has significant negative impact on the NPLs ratio (see also, Fahlenbrach & Stulz 2011; Beltratti & Stulz 2012; Tarchouna et al. 2021a). It reveals that the ownership effect mitigates the conflict of interests between management and shareholders. Eventually, management works for shareholders' benefits. If director ownership (current average holding is 20.82 percent) can be increased even up to prescribed level by corporate governance guidelines-2018, the extent of NPLs can be controlled. Again, we find that the CEO power has negative impact on the NPLs ratio but statistically not significant (see also, Pathan 2009; Ballester et al. 2020). It indicates that CEO might not influence broad decisions or mangers' actions. Further, we explore the impact of external audit quality on NPLs. We find that external audit quality (AQ) has significant negative impact on the NPLs (see also Chowdhury 2012; Prakash et al. 2021). It reveals that quality audit can reduce NPLs, identified as white collar crime in banking industry of Bangladesh (see also Ghosh et al. 2020). However, we do not find significant impact of the implementation of the corporate governance guidelines-2012 and BASEL-II accords on NPLs. It reveals that existing governance guidelines and BASEL-II accords fail to ensure asset quality that controls NPLs. Finally, the size variables (SIZE1) have non-linear (U-shape) impact on the NPLs ratio. Thus, it can be concluded that at the initial stage (SIZE1, SIZE2 and SIZE3), NPLs decrease with respect to increase in size (see also Tarchouna et al. 2021a). However, after a threshold level (SIZE1^2, SIZE2^2 and SIZE3^2), NPLs will increase once again due to more

loan defaults later. It means larger banks face more NPLs, the idea that is in line with the hypothesis "too big to fail" (see also Stern & Feldman 2004; Pop et al. 2018).

Table 6 shows the impact of the implementation of the CG guidelines of 2012 and BASEL-II accords on CAR. Here, we also explore the non-linear impact of bank size which is constructed in three different ways. We find that NPLs ratio has significant negative impact on CAR (Zheng et al. 2017). It is also suggested by the other studies (Aggarwal & Jacques 2001; Hu & Izumida 2008; Suhartono 2012). The implementation of CG guidelines of 2012 (CGOVR) and BASEL-II accords (BIMP) has significant positive impact on the CAR because the banks have to comply the law. It shows that the compliance practices required by CG guidelines of 2012 may prompt to maintain mandatory requirements of BASEL accord. However, it falls behind to mitigate the extent of NPLs since there is no apparent threshold by regulatory bodies for NPLs.

Again, the size variables (SIZE1, SIZE2 and SIZE3) have non-linear impact on the CAR. Thus, it can be concluded that increasing size of firm has negative impact on the CAR because 'trade-off theory' argues that with the increasing level of firm size, firms get easier entry to raise capital with lower costs up to a certain threshold (Aktas et al. 2015) after that the costs of borrowing will increase. Hence, there is a U-shape impact of bank size on CAR.

CONSISTENCY TEST

TABLE 7 provides the consistency of the findings due to change in relative bank size measurements. Since bank size has a significant impact on NPLs (Stern & Feldman 2004; Pop et al. 2018; Tarchouna et al. 2021a), it is required to explore the consistency of the impact of independent variables separately and all together on NPLs. We find the consistency in our findings across three distinct bank size measurements. The findings of control variables are not reported due to space constraints.

TABLE 7. Regression results (Dependent variable-NPLR)

Variables	Audit Committee Independence		Director Ownership		CEO Power		External Audit Quality		All Independent Variables	
NPLR(-1)	0.4914*** (0.000)	0.4858*** (0.000)	0.4789*** (0.000)	0.5421*** (0.000)	0.4697*** (0.000)	0.5412*** (0.000)	0.4745*** (0.000)	0.5435*** (0.000)	0.4722*** (0.000)	0.5621*** (0.000)
ACI	-0.3376 (0.530)	-0.4259 (0.460)							-1.5017*** (0.005)	-1.5547*** (0.004)
DOWN			-0.0068** (0.041)	-0.0072** (0.037)					-0.1635* (0.054)	-0.0121* (0.095)
CEOP					-0.3317 (0.137)	-0.1511 (0.477)			-0.2703 (0.260)	-0.0113 (0.961)
AQ							-0.1596* (0.050)	-0.1007* (0.075)	0.0120** (0.016)	-0.0107** (0.023)
AMF									-0.0574** (0.010)	-0.0446** (0.039)
CGOVR									-0.0400 (0.954)	-0.3288 (0.621)
BIMP									-0.6266 (0.369)	-1.230 (0.173)
SIZE2		-0.0264** (0.023)	-0.0264*** (0.007)		-0.0289** (0.013)		-0.0266** (0.022)		-0.0300** (0.010)	
SIZE2²		0.00003** (0.022)	0.00003** (0.025)		0.00003** (0.012)		0.00003** (0.021)		0.00003** (0.010)	
SIZE3	-0.0007** (0.019)			-0.0007** (0.016)		-0.0006** (0.030)		-0.0007** (0.021)		-0.0005** (0.014)
SIZE3²	0.0001*** (0.000)			0.00006*** (0.000)		0.00006*** (0.000)		0.00006*** (0.000)		0.00005*** (0.000)
CAR	-0.1326** (0.030)	-0.2799*** (0.000)	-0.2898*** (0.000)	-0.1376** (0.019)	-0.3024*** (0.000)	-0.1488** (0.011)	-0.299*** (0.000)	-0.144** (0.014)	-0.2726*** (0.000)	-0.1192*** (0.005)
AR(2)	-2.58 (0.231)	-2.61 (0.193)	-2.64 (0.183)	-2.29 (0.221)	-2.72 (0.247)	-2.39 (0.172)	-2.60 (0.169)	-2.33 (0.213)	-2.64 (0.137)	-2.34 (0.321)
J-Statistics	96.39 (0.578)	98.11 (0.623)	98.08 (0.716)	96.26 (0.772)	83.25 (0.445)	87.32 (0.536)	97.01 (0.523)	104.46 (0.554)	97.76 (0.743)	95.46 (0.634)

Note: ***P<0.01 denotes significant at 1 percent level, **P<0.05 denotes significant at 5 percent level, *P<0.10 denotes significant at 10 percent level. The results of control variables are not reported due to page constraint.

Conclusion And Policy Implications

This paper explores the impact of audit committee independence, director ownership, CEO power, external audit quality, and bank size on NPLs in Bangladesh. Analyzing the behavioral drivers of NPLs in Bangladesh, Ghosh et al. (2020) concluded that the underlying motive of borrowers is 'unwillingness to pay' even though having financial solvency, provoking the NPLs. It reflects that there needs a supervisory and controlling role in management actions, which may be established by audit committee independence, director ownership and CEO power. Ghosh et al. (2020) also argued that in Bangladesh, NPLs are tantamount to white collar crime. Assuming the potency of internal and external independent control and supervisory mechanisms, this paper works to identify the impact of audit committee independence and external audit quality on NPLs. Audit committee independence has significant impact on NPLs (Prakash et al. 2021; Tarchouna et al. 2021a). Unfortunately, Ghosh et al. (2020) argued that in Bangladesh, independent directors can be mockingly described as *dependent-independent* directors. It reveals that the existence of ineffective audit committee, originated from the lack of either independence or expertise (sometimes both), has failed to ensure the good governance in the banking industry. Hence, the regulatory authority should work for establishing effective audit committee in terms of independence and expertise of the members. Next, this paper finds that audit quality has significant negative impact on NPLs (Dey 2008; Prakash et al. 2021). Thus, Big4 could play an instrumental role in controlling NPLs. Further, director ownership has significant negative impact on the NPLs (see also, Fahlenbrach & Stulz 2011; Beltratti & Stulz 2012; Tarchouna et al. 2021a). Therefore, regulatory bodies should work for attaining the percentage of director ownership (current average holding is 20.82 percentage) at least up to the threshold prescribed by corporate governance code. Hence, it needs to be ensured in line with the other governance attributes.

Besides, the implementation of BASEL-II accords and initiation of corporate governance guidelines-2012 have not played significant role to control NPLs. It reveals the culture of ornamental compliance of rules and regulation in banking industry, consistent with the finding of Ghosh et al. (2020). Again, size has non-linear impact on NPLs. It suggests that NPLs increase once again after decreasing at a certain stage with the increase in loan and advances. Hence, what the banks are doing to decelerate the NPLs ratio will not work in the long run. Therefore, banks should give more emphasis on investment in quality assets or recovery of existing assets. Finally, high lending rate contributes into the NPLs by increasing the burden of paying the larger amount of interest.

Based on above discussion, regulatory bodies can introduce the following governance mechanisms to govern white collar crime and mitigate NPLs. (i) Director ownership should be reached at least up to the threshold prescribed by corporate governance code; (ii) Independence must be established in board and independent directors must be appointed by Central Bank; iii) CEO power in banks must be controlled through the intervention of Central Bank; (iv) The compliance of governance codes must be crosschecked by Central Bank; and (v) External audit work must be crosschecked by the audit division of Central Bank. Unfortunately, this paper disregards distinct corporate culture, management philosophy, and operating style of each bank which also play some role in controlling NPLs. This paper is merely based on secondary data. Future researche can capture this issue through focus group discussion or key informant interviews.

END NOTES

1. Hallmark scandal in Sonali Bank includes loan scams by Hallmark group (BDT26861.4 million), T and Brothers (BDT6096.9 million), Paragon Group (BDT1466 million), Nakshi Knit (BDT663.6 million), DN sports (BDT332.5 million) and Khanjahan Ali (BDT49.6 million) at Ruposhi Bangla Hotel Branch, Dhaka, Bangladesh (The Daily Star, August 24 2012).

2. Non-performing loans and loan default are used interchangeably throughout the paper since NPLs are the pre-stage of loan default.

REFERENCES

Abusharba, M.T., Triyuwono, I, Ismail, M. & Rahman, A.F. 2013. Determinants of capital adequacy ratio (CAR) in Indonesian Islamic commercial banks. *Global Review of Accounting and Finance* 4(1): 139-170.

Aggarwal, R. & Jacques, K.T. 2001. The impact of FDICIA & prompt corrective action on bank capital & risk: estimates using a simultaneous equations model. *Journal of Banking and Finance* 25: 1139–1160.

Aktas, R., Acikalin, S., Bakin, B. & Celik, G. 2015. The determinants of banks' capital adequacy ratio: some evidence from South Eastern European Countries. *Journal of Economics and Behavioural Studies* 7(1): 79-88.

Akter, A., Hossain, M.K. & Islam, S. 2021. Do the attributes of audit committee explain non-performing loans? evidence from an emerging economy. *Asia-pacific Management Accounting Journal* 16(3): 28-357.

Al Zobi, M.K., Shubita, M.F., Alomari, M., Almatarneh, Z.S. & Alrawashdeh, N.H. 2019. The impact of board and audit committee characteristics on the credit risk in Jordanian commercial banks. *International Journal of Business Management and Economic Research* 10(5): 1669–1678.

Aspal, P.K. & Nazneen, A. 2014. An empirical analysis of capital adequacy in the indian private sector banks. *American Journal of Research Communication* 2(11): 28-42.

Aytül, G. & Vuslat, U. 2014. *The Structure of the Turkish Banking Sector before and after the Global Crisis* (Working Papers 14/29). Central Bank of the Republic of Turkey, Turkey.

Ballester, L., González-Urteaga, A. & Martínez, B. 2020. The role of internal corporate governance mechanisms on default risk: a systematic review for different institutional settings. *Research in International Business and Finance* 54: 101293.

Beltratti, A. & Stulz, R.M. 2012. The credit crisis around the globe: why did some banks perform better? *Journal of Financial Economics* 105(1): 1–17.

Ben Saada, M. 2018. The impact of control quality on the non-performing loans of Tunisian listed banks. *Managerial Auditing Journal* 33(1): 2-15.

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Berge, T.O. & Boye, K.G. 2007. *An Analysis of Banks' Problem Loans*. Norges Bank.

Berger, A.N. & De Young, R. 1997. Problem loans and cost efficiency in commercial banks. *Journal of Banking & Finance* 21(6): 849-870.

Berger, A.N., Imbierowicz, B. & Rauch, C. 2016. The roles of corporate governance in bank failures during the recent financial crisis. *Journal of Money, Credit and Banking* 48: 729-770.

Biekpe, N. 2011. The competitiveness of commercial banks in Ghana. *African Development Review* 23(1): 75-87.

Binh, D.T. & Thomas, A. 2014. Capital adequacy and banking risk– an empirical study on Vietnamese Banks. *Social Science Research Network* 1: 1-21.

Biswas, P.K. 2012. Corporate governance guidelines in Bangladesh: some observations.*The Cost and Management* 40: 5–9.

Blundell, R. & Bond, S. 1998. Initial conditions and moment restrictions in dynamic panel data Models. *Journal of Econometrics* 87: 115-143.

Boudriga, A., Boulila Taktak, N. & Jellouli, S. 2009. Banking supervision and nonperforming loans: a cross-country analysis. *Journal of Financial Economic Policy* 1: 286–318.

Chambliss, W.J. & Seidman, R.B. 1971. *Law, Order, and Power*. Reading, Mass.: Addison-Wesley.

Chiang, S.M., Chung, H.M., Huang, C.M. & Faff, R. 2015. A note on board characteristics, ownership structure and default risk in Taiwan. *Accounting and Finance* 55(1): 57-74.

Chowdhury D.K. 2012. *Incentives, Control, and Development: Governance in Private and Public Sector with Special Reference to Bangladesh (Chapter-5, 2nd edition)*. University of Dhaka, Bangladesh: Dhaka University Press.

Dey, A.2008. Corporate Governance and Agency conflicts. *Journal of Accounting Research* 46: 1143-1181.

Dhaka Tribune (April 3 2018). Farmers bank loan scandal: ACC issues travel ban on 17 people. Accessed on 2 June 2019. Retrieved from https://www.dhakatribune.com/bangladesh/corruption/2018/04/03/farmers-bank-loan-sc&al-acc-travel-ban.

Dhaka Tribune (March 18 2018). Default loan rises by Tk12000 crore. Assessed on 2 June 2019. Retrieved from https://www.dhakatribune.com/business/banks/2018/03/18/default-loan-rises-tk12000-crore.

Edelhertz, H. 1970. *The Nature, Impact and Prosecution of White Collar Crime* (Paper no. 77). Washington, D.C.: National Institute of Law Enforcement & Criminal Justice.

European Central Bank. 2011. The monetary policy of the ECB, Frankfurt am Main.

Fahlenbrach, R., & Stulz, R.M. 2011. Bank CEO incentives and the credit crisis. *Journal of Financial Economics* 99(1): 11–26.

Fama, E.F. & Jensen, M.C. 1983. Separation of ownership and control. *Journal of Law and Economics* 26: 301–325.

Fiador, V. & Sarpong-Kumankoma, E. 2021. Does corporate governance explain the quality of bank loan portfolios?: evidence from an emerging economy. *Journal of Financial Economic Policy* 13(1): 31-44.

Gao, K.J. & Lin, W.F. 2018. Margin trading, short selling, and bond yield spread. *China Journal of Accounting Research* 11: 51–70.

Gaur, D. & Mohapatra, D.R. 2021. The nexus of economic growth, priority sector lending and non-performing assets: case of Indian banking sector. *South Asian Journal of Business Studies* 10(1): 70-90.

Ghosh, A. 2015. Banking-industry specific and regional economic determinants of non-performing loans: evidence from US states. *Journal of Financial Stability* 20: 93–104.

Ghosh, R., Sen, K.K. & Riva, F. 2020. Behavioral determinants of nonperforming loans in Bangladesh. *Asian Journal of Accounting Research* 5(2): 327-340.

Hasan, A.K.M. & Suzuki, Y. 2020. A critique of Bangladeshi adoption of basel type capital regulation: an institutional view. *Financial internet Quarterly* 16(2): 49-65.

Hasan, A.K.M. & Suzuki, Y. 2021. *Implementation of Basel Accords in Bangladesh*. Palgrave Macmillan Singapore.

Hausman, J.A. 1978. Specification tests in econometrics. *Econometrica* 46(6): 1251–1271.

Hu, Y. & Izumida, S. 2008. Ownership concentration & corporate performance: a causal analysis with Japanese panel data. *Corporate Governance International Review* 16(4): 342–358.

IMF – International Monetary Fund. 2005. The treatment of nonperforming loans (BOPCOM-05/29)– Eighteenth Meeting of the IMF Committee on Balance of Payment Statistics. Washington D.C. June 27–July 1. Retrieved from https://www.imf.org/external/pubs/ft/bop/ 2005/05-29.pdf.

Ikram, A., Su, Q., Ijaz, F. & Fiaz, M. 2016. Determinants of non-performing loans: an empirical investigation of bank-specific microeconomic factors. *Journal of Applied Business Research* 32(6): 14-26.

Jensen, M.C. & Meckling, H. 1976. Theory of firms: managerial behaviour. Agency costs and ownership structure. *Journal of Financial Performance* 3: 305-360.

Jimenez, G. & Saurina, J. 2006. Credit cycles, credit risk, and prudential regulation. *International Journal of Central Banking* 2(2): 65-98.

Kamal, Y. & Begum, F. 2018. Corporate governance failures in Bangladesh: a study of Hall-mark and Basic Bank. *Journal of Green Business School* 1(1): 1-16.

Karim, Z.A, Chan, S.-G. & Hassan, S. 2010. Bank efficiency and non-performing loans: evidence from Malaysia And Singapore. *Prague Economic Papers* 2: 118-132.

Khan, I., Ilyas, M. & Khan, S. 2019. Assessing the impact of corporate governance on non-performing loans: empirical analysis of the listed commercial banks of Pakistan. *Global Social Sciences Review* IV(III): 188–196.

Khan, M.A., Siddique, A. & Sarwar, Z. 2020. Determinants of non-performing loans in the banking sector in developing state. *Asian Journal of Accounting Research* 5(1): 135–145.

Lee, J.M., Chen, K.H., Chang, I.C. & Chen, C.C. 2020. Determinants of nonperforming loans, firm's corporate governance and macroeconomic factors. *International Journal of Finance & Economics* 1(11): 48-70.

Levine, R. 1997. Financial development and economic growth: views and agenda. *Journal of Economic Literature* 35: 688–726.

Lewellyn, K.B. & Muller-Kahle, M.I. 2012. CEO power and risk taking: evidence from the subprime lending industry. *Corporate Governance: An International Review* 20: 289–307.

Mollah, S. & Liljeblom, E. 2016. Governance and bank characteristics in the credit and sovereign debt crises - the impact of CEO power. *Journal of Financial Stability* 27: 59–73.

Naili, M. & Lahrichi, Y. 2022. The determinants of banks' credit risk: review of the literature and future research agenda. International Journal of Finance and Economics 27: 334-360.

Nguyen, P.T. 2022. the impact of banking sector development on economicgrowth: the case of Vietnam's transitional economy. *Journal of Risk and Financial Management* 15: 358-371.

Oino, I. 2021. Bank solvency: the role of credit and liquidity risks, regulatory capital and economic stability. *Banks and Bank Systems* 16(4): 84-100.

Park, J.H. & Zhang, L. 2012. *Macroeconomic and Bank-Specific Determinants of the US Non-Performing Loans: Before and During the Recent Crisis*. Simon Fraser University, Canada.

Pathan, S. 2009. Strong boards, CEO power and bank risk-taking. *Journal of Banking and Finance* 33: 1340–1350.

Pop, I.D., Chicu, N. & Raduţu, A. 2018. Non-performing loans decision making in the Romanian banking system. *Management and Marketing* 13(1):761-776.

Prakash, N., Singh, S. & Sharma, S. 2021. A non-parametric framework for evaluating governance–efficiency–productivity associations in commercial banking. *Journal of Economic Studies*.

Rinaldi, L. & Sanchis-Arellano, A. 2006. Household debt sustainability: what explains household non-performing loans? An empirical analysis. ECB Working Paper, no. 570.

Rushchyshyn, N., Mulska, O., Nikolchuk, Y. & Rushchyshyn, M. 2021. The impact of banking sector development on economic growth: comparative analysis of Ukraine and some EU countries. *Investment Management and Financial Innovations* 18(2): 193-206.

Roodman, D. 2006. A note on the theme of too many instruments. *Oxford Bulletin of Economics & Statistics* 71(1): 135-158.

Shan, Y.G. & Xu, L. 2012. Bad debt provisions of financial institutions. *International Journal of Managerial Finance* 8(4): 344–364.

Siddiqui, J. 2010. Development of corporate governance regulations: The case of an emerging economy. *Journal of Business Ethics* 91: 253–74

Skousen, C.J., Song, X.H. & Sun, L. 2018. CEO network centrality and bond ratings. *Advances in Accounting* 40: 42–60.

Stern G.H. & Feldman, R.J. 2004. *Too big to fail: The hazards of bank bailouts*. Washington, DC: Brooking Institution Press.

Suhartono, S. 2012. Credit risk-taking & capital position: evidence from two-stage regression. *Journal of Economics, Business, & Accountancy* 15(1): 117–126.

Sutherland, E.H. 1983. *White collar crime: The uncut version*. NY: Holt, Rinehart & Winston.

Switzer, L.N. & Wang, J. 2013. Default risk estimation, bank credit risk, and corporate governance. *Financial Markets, Institutions & Instruments* 22(2): 91–112.

Tarchouna, A., Jarraya, B. & Bouri, A. 2017. How to explain non-performing loans by many corporate governance variables simultaneously? A corporate governance index is built to US commercial banks. *Research in International Business and Finance* 42: 645–657.

Tarchouna, A., Jarraya, B. & Bouri, A. 2021a. Do board characteristics and ownership structure matter for bank non-performing loans? Empirical evidence from US commercial banks. *Journal of Management and Governance* 26(1).

Tarchouna, A., Jarraya, B. & Bouri, A. 2021b. Non-performing loans and bank corporate governance: conceptual framework and literature review. *International Journal of Business Governance and Ethics* 15(3): 233-265.

The Daily Star (August 24 2012), Hallmark loan scam under ACC probe, Assessed on 2 June 2019. Retrieved from https://www.thedailystar.net/news-detail-246119.

The Daily Star (June 11 2018). Bring Basic Bank ex-chair Bacchu to book, HC asks ACC again. Retrieved from https://www.thedailystar.net/business/bring-basic-bank-ex-chair-bacchu-book-hc-asks-again-acc-1589614.

The Daily Star (September 09, 2018). Ghosts within Janata Bank Central bank's repeated warnings not working with the public bank. Accessed date (1 June 2019). Retrieved from https://www.thedailystar.net/frontpage/news/ghosts-within-janata-bank-1631230.

The Financial Express (March 03 2022). Non-performing loans surge to Tk 145b belying policy backup, Accessed on April 20, 2022. Retrieved from https://thefinancialexpress.com.bd/economy/bangladesh/non-performing-loans-surge-to-tk-145b-belying-policy-backup-1646275028.

The Independent (February 1 2018). Managing Non-performing Loan. Assessed on 2 June 2019. Retrieved from http://www.theindependentbd.com/printversion/details/135284.

Yen, J.F., Lin, C.Y., Chen, Y.S. & Huang, Y.C. 2015. Founding family firms and bank loan contracts. *Journal of Financial Services Research* 48: 53–82.

Zgarni, A., Fedhila, H. & Gaied, M.E. 2018. Audit committee and discretionary loan loss provisions in Tunisian commercial banks. *International Journal of Economics and Financial Issues* 8(2): 85–93.

Zheng, C. & Huq, S.M.U. 2017. Banks' capital regulation and risk: Does bank vary in size?: empirical evidence from Bangladesh. *International Journal of Financial Engineering* 4(2&3): 1-25.

Zheng, C., Huq, S.M.U., Rahman, M.M. & Ashraf, B.N. 2017. Does the ownership structure matter for banks' capital regulation and risk-taking behaviour? Empirical evidence from a developing country. *Research in International Business & Finance* 42: 404-421.

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