

Uncovering Opportunistic Earning Management Practices by the Listed Private Commercial Banks of Bangladesh

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This study attempts to identify the opportunistic earnings management practices by the 30 Dhaka Stock Exchange listed conventional private commercial banks of Bangladesh by applying panel data over the period 2007-2016. To this end, Discretionary Loan Loss Provision has been used as a proxy for measuring earnings management and has been operationalized as a function of non-performing loan, earnings before provision for loan, stock market crisis, capital adequacy ratio, stock market return, growth rate of GDP and total loan, total asset, and age of the company. By analyzing the data, the study reveals that earning management practices are prevalent in the private commercial banks of Bangladesh that the banks are adopting earnings management practices for income smoothing and capital risk management purposes, irrespective of the banks' size and age. We found that the presence of non-performing loan, earnings before provision for loan, stock market crisis, capital adequacy ratio, stock market return, growth rate of GDP and loan to exert significant impact on earnings management. Some policy measures are suggested to help the regulatory authorities to reduce the use of earning management practices by private commercial banks.

Key Words: *Capital Management, Discretionary Loan Loss Provision, Income Smoothing, Fixed Effect Model, Random Effect Model*

INTRODUCTION

Earnings Management (EM) has become a debatable issue among the researchers for last couple of years (Roy, 2006; Lo, 2008; Dechow, Ge and Schrand, 2010; and Nagar and Sen, 2016). According to Nia, Huang and Abidin (2015), EM covers a number of

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legal and illegal activities that may affect the earnings of a company. EM is considered as fraud when it is managed beyond the GAAP boundaries (Beneish, 2001 and Nia, Huang and Abidin, 2015). However, differences in opinion are also found and EM should not consider as fraud when it is within the boundaries of GAAP (Stolowy and Breton, 2004). Healy and Whalen (1999) define EM as distortion in economic events using of managerial judgments. Xu, Taylor and Dugan (2007) explain that the reliance on disclosure information to measure the performance of company reflects the reasons for manager's paying more attention to the earnings (profitability) of any company. According to Tsitinidis and Duru (2013), flexible accounting methods along with several accounting choices have given managers the discretions to prepare the financial reports in their own way that may go against the interest of shareholders. EM is practiced to divert the stakeholder's attention from the true financial information of a company by the management (Degorge, Patel and Zeckhauser, 1999; Makhail and Sherer, 2017).

There are two reasons found for practicing of EM by the management. One is for creative accounting purposes and the other one is for income smoothing purposes. Creative accounting involves with increasing of reported income to portray a company in a more favorable way. Income smoothing involves with omission of some parts of the company's income from high yield years to low yield years (Bartov, 1993; Wan, Shaista and Zaini, 2011). It is evident that EM practices exist in every sector but it is difficult for researchers to document it (Healy and Wahlen, 1999; Lo, 2008). Empirical studies have found that managers engage in EM through changing accounting choice, real transaction, discretionary accruals and specific accruals approach. Several techniques have found throughout the accounting literature using of specific accruals, aggregate accruals and statistical distribution of earnings changes and earnings (Jones, 1991; Dechow *et al.*, 1995; and McNichols and Wilson, 2002). Since mid1990's, studies of EM have focused primarily on accruals estimation (Sun and Rath, 2010).

Bank management normally involves in EM activities by increasing the value using of accruals or real activities. In case of accruals, bank management usually uses the Loan Loss Provision (LLP). For real activities, they use security gains and losses (Abaoub, Homrani and Gamra, 2013). The use of LLP to manipulate reported earning has become one of the most cited issues in today's financial world (Ahmed, Mohammed, and Adisa, 2014). LLP has two parts—discretionary and nondiscretionary. Discretionary accruals are considered as abnormal accruals which are often used for manipulation purposes. Non-discretionary accruals are evolved within the normal course of business (Peasnell, Pope and Young, 2005; Yang, Chi and Young, 2012). Since banks constitute large accruals in the form of LLP, it has impact on earnings and is used as a tool for EM practices (McNichols, 2000; Sun and Rath, 2010; and Ahmed, Mohammed and Adisa, 2014). Healy and Wahlen (1999) state that most of the models for EM use aggregate

accruals and mainly focus on non-financial companies. A number of studies determined the relationship between LLP and EM in the developed countries (Perez, Fumas and Saurina, 2006; Wan, Shaista and Zaini, 2011; Ahmed, Mohammed and Adisa, 2014; Curcio and Hasan, 2015; Elnahass, Izzeldin and Steele, 2016; Chen and Li, 2016; Jin, Kanagaretnam and Lobo, 2016; and Ozili, 2017) but a few studies are found in the developing countries like Bangladesh (Charfeddine, Riahi and Omri, 2013; Ahmed, Mohammed, and Adisa, 2014; Razzaque, Ali and Mather, 2016; Shahzad, 2016; Ahmed and Naima, 2016; and Muttakin, Khan and Mihret, 2017).

Banking industry is going under tough time with the recent financial scandals in different public and private banks and hacking of reserve of Bangladesh Bank, the Central Bank of Bangladesh. Increasing the non performing loans create pressure on banks to maintain provision for loan loss recovery which in turns reduce the bank profitability. Lo (2008) claims that investors may suffer because of illegal practice of EM. EM can affect the reliability of financial information, which can lead to financial scandals and stock market crashes (Man and Wong, 2013). As a developing country, Bangladesh is yet to recognize the practice of earning manipulations via EM. In Bangladesh, few studies are conducted on identifying the existence of earnings management but in case of financial industry (i.e., banking industry) is hard to find. Based on this gap, this study examines the existence of earnings management practice by the management of banking industry of Bangladesh.

In this paper, we extrapolate these concerns on the market. Indeed, our study is anchored within the main stream research on corporate governance. The aim is to examine whether some governance mechanisms influence earnings management. The rest of the paper is structured as follows: Section two deals with theoretical overview and hypothesis development, section three presents the methodology followed by section four that present the results. Last section presents the conclusions with the policy implications based on the findings.

THEORETICAL OVERVIEW AND HYPOTHESIS DEVELOPMENT

Several studies have been found throughout the literature on EM practices by management of different industries. According to Barnea *et al.* (1976), EM is the deliberate omission of earnings this practice is perceived to be normal for the firm. Schipper (1989) defines EM as intentionally influencing financial reporting process so that managers could obtain some private gains. Healy and Whalen (1999) define EM as distortion to real reflections of economic events by the use of managerial judgment. Managers use various ways to keep control over the earnings. This control is mostly done by accrual part of earnings rather than the cashflow part (Beneish, 2001; Habib, 2004; and Razzaque, Rahman and Salat, 2006).

Existing literature on bank's EM is bestowed with three (3) conditions: (a) income smoothing; (b) capital management; and (c) signaling the capital market (Ahmed,

Mohammed and Adisa, 2014). Bank managers tend use LLP for income smoothing purposes. Bank managers often set aside LLP at good times so that they can use them during business downturn to cover higher loan deficiencies. For capital management, bank managers tend to use LLP for capital requirement when they are faced with capital shortfall. The signaling arguments support that managers tend to retain higher LLP as an indication of financial strength (Ahmed, Takeda and Thomas, 1999; Ashraf *et al.*, 2015). Collins, Shackelford and Wahlen (1995) investigate on detection on EM using of Provision for Loan Loss (PLL), loan charge-offs and issuance of securities. They found a positive relationship between PLL and EM. Rivard, Bland and Morris (2003) examine on income smoothing activities of the US Banks and their study provides the evidence of income smoothing practices using of LLP by management of banks. Anandrajan, Assan and McCarthy (2006) found the evidence of use of LLP to manage earning in Australia. Listed commercial banks engage more in the EM practice than their peers of unlisted commercial banks in Australia. Change, Shen and Fang (2008) studied the relationship between discretionary part of LLP and operating performance of Taiwanese listed banks. They found positive association between discretionary LLP and the Earning Before Loan Loss provisions (EBPLL). Taiwanese banks have tendency to increase (decrease) discretionary LLP for EM purposes.

In another study Wan, Shaista and Zaini (2011) examine the relationship among EM, LLP, risk and dividend per share in Malaysia and the study found that LLP was negatively related with EM practices. Ahmed, Mohammed and Adisa (2014) explore the relationship between LLP and EM in Nigerian Deposit Money Banks and the study found a positive relationship between investigated variables. Kilic, Acar and Coskun (2014) tried to determine the existence of EM practice by the management of banks in Turkey. Manipulations of financial information are found in different years. Shahzad (2016) measures the earning quality of companies of BRIC countries. The discretionary accruals and nondiscretionary accruals are used as earning manipulation and EM respectively.

Abdelsalam, Dimitopoulos, Elnahass, and Leventis (2016) investigate on earnings quality of banks listed in the Middle East and North African region. Comparing Islamic banking companies with the conventional counterpart over the years of 2008 to 2013, they conclude that by adopting more conservative accounting policies Islamic banks are less engaged in EM activities. So far, across the world several studies have been carried out to explore the relationship between EM and LLP. However, there is a dearth of studies conducted on Bangladesh (Razzaque, Ali and Mather, 2006; Ahmed and Naima, 2016; Razzaque, Rahman and Salat, 2016; Muttakin, Khan and Mihret, 2017) and a few of the conducted studies in Bangladesh mostly focused on non-financial institutions. Given this backdrop the present study attempts to uncover the practice of EM by the private commercial banks of Bangladesh and posits the following hypothesis:

H_1 : Higher the ratio of non-performing loans higher the practice of earning management by the PCBs of Bangladesh.

Bank managements usually manipulate LLPs to reduce their net profit volatility as well as to improve their investors', regulator' and supervisor' risk perception. Banks' managers smooth the reported earnings to keep their compensation steady in one hand and smoothening the regular dividend flow to the shareholders on the other hand (Curcio, Simone and Gallo, 2016). Jin, Kanagaretnam and Lobo (2016) study on bank uses of Allowance for Loan Losses (ALL) for efficiency purposes or for opportunistic reasons and their results initiated that banks use ALL for efficiency purposes. Kanagaretnam, Lim, and Lobo (2010) reported that bank managers have incentive to engage in opportunistic EM by using LLP. Anandarajan, Assan and McCarthy (2006) studied on Australian commercial banks and found the evidence of earnings manipulation via using of provisions to smooth their income. Like these studies, Bouvatier and Lepetiti (2008) also found evidence of income smoothing behavior of Spanish commercial banks. Kanagaretnam, Lobo and Yang (2005) investigates on bank manager's discretion over estimation of LLP. They found that bank managers tend to attenuate perceive undervaluation of their banks by communicating private information. Based on this evidence of income smoothing behavior the following hypothesis is posited:

H_2 : Private commercial banks of Bangladesh exercise earnings management practices for income smoothing purposes.

Ahmed, Takeda and Thomas (1999) studied on the relationship between LLP and capital management. The results indicate that the banks have the tendency to increase their capital by increasing the LLP to cover capital adequacy under Basel Regulation II. Bank's manager can manipulate earnings to avoid cost of maintaining adequate capital under the prudential regulation (Curcio, Simone and Gallo, 2016). Perez, Fumas and Saurina (2006) studied on capital management by the management of Spanish banks. Their study documents that LLP is used as a tool for capital management or EM purposes. Hasan and Vivas (2002) found that managers of listed commercial banks have higher interest in meeting capital requirement as having good and stable solvency ratios may help them to sustain in the capital market. By engaging in capital management, managers can convey a signal of stability to the stakeholders and regulators. Based on this evidence, the following capital management hypothesis is posited:

H_3 : Private commercial banks of Bangladesh exercise earnings management for capital management purposes.

However, managers are encouraged to manage earnings to influence the share prices and to show the consistence growth of a company (DeAngelo, DeAngelo and Skinner, 1996 and DeGeorge, Patel and Zeckhauser, 1999). DeAngelo, DeAngelo and Skinner, (1996) identified that stock prices decline when the company's earnings are

not stable. Skinner and Sloan (2002) stated that non-compliance with analysts' expectations is considered as criminal offense and the study found an association between EM and the decision to sell or buy shares. Managers manage earnings upward before any act of issuing shares in order to increase the stock price (Charfeddine, Riahi and Omri, 2013). Cheng and Warfield (2005) find out that managers usually adopt a strategy to increase earnings in order to increase stock price in equity-based compensation system. Charfeddine, Riahi and Omri (2013) also pointed out that some managers manage earnings upward for fear of being dismissed and preservation of reputation. From these arguments the following hypothesis is proposed:

H₄: Manager of Private Commercial Banks with low performance engage more in earnings management practices for signaling purposes.

Discretionary provisioning is mostly used during the crises period. Packer and Zhu (2012) find that the global financial crisis has significantly increased income smoothing practice by the Indian banks. Evidence suggests that financial institutions are driven by income smoothing behavior and capital management than to credit risk consideration during the crises period (El Sood, 2012; Curcio and Hasan, 2015; and Ozili, 2017). Bangladesh has experienced two stock market crashes since its inception. Financial institutions and stock market are closely related. Massive regulatory changes were initiated after 2010 stock market crashes with a hope to management will practice less of EM. Consequently it may be claimed that commercial banks may indulge in the practices EM even after the regulatory changes and therefore we claim that:

H₅: Private commercial banks of Bangladesh may adopt earnings management even after stock market crisis.

METHODOLOGY

Detection of EM is a complicated task since flexible accounting methods, along with several accounting choices, have given managers the discretions to prepare financial reports in their own way that may go against the interest of shareholders (Tsitinidis and Duru, 2013). According to Mohanram (2003), two approaches are commonly found: qualitative approach, which requires a detailed analysis of accounting policies of a firm, and quantitative approach, which mainly focuses on analysis of accruals. Demerjians-Western, Lewis and McVay (2015) identify the reasons for using of accruals in EM Process. Accruals can be easily maneuvered upward or downward based on time of accrue. It is also evident that accruals management is inexpensive compared to real activities manipulations. This is why the majority of literature is based on accruals basis since the mid-1980s (Yang, Chi and Young, 2012).

There are several techniques available to determine the practice of EM. But it is found that most of the techniques are attributed towards real or accrual management practices and for non-financial industry. The Jones model and the modified jones

model are found most popular among the academicians but their models exclude the financial firms. The reason was specific nature of business under highly regulated business environment. On the other hand, banking literature has adopted the specific accrual methodology based on Loan Loss Provision (LLP). LLP is considered the most relevant and discretionary component in case of detecting EM in banking industry (Francies, Hasan and Li, 2016; Cornett *et al.*, 2006, 2009; Kanagaretnam, Lobo and Yang, 2005 and 2010; Anandarajan *et al.*, 2003 and 2007; Leventis *et al.*, 2010).

MODEL SPECIFICATION

It is difficult to calculate Discretionary Accruals (DA) in terms of Discretionary Loan Loss Provisions (DLLP). Specific accrual methodology is an appropriate technique to quantify the DLLP. Following Cornett *et al.* (2006 and 2009) and Beatty, Chamberlain, and Magliolo (2012), the following regression model is used (see Table 1):

$$LLP_{i,t} = \alpha_0 + \alpha_1 LnTA_{i,t} + \alpha_2 NPL_{i,t} + \alpha_3 LLA_{i,t} + \alpha_4 LOANC_{i,t} + \alpha_5 LOAND_{i,t} + \alpha_6 LOANE_{i,t} + \alpha_7 LOANI_{i,t} + \varepsilon_i \quad \dots(1)$$

Table 1: Variable Definition (Detection of Presence of Earnings Management Practices)	
Variable Name	Definition
DLLP	Discretionary loan loss provision
LLP	Loan loss provision to total assets
NPL	Non-performing loan to total assets
LLA	Loan loss allowance to total assets
Loan C	Consumer loan to total loan
Loan D	Director's loan to total loan
Loan E	Loan to executives to total loan
Loan I	Commercial and industrial loan to total loan

Discretionary accrual is the error term from the above equation. Discretionary accruals are non-obligatory expense that are yet to be realized but are recorded in the account books. Non-discretionary expenses are obligatory expense that need to be realized but are already recorded in the account books. Higher the value of DLLP, the higher is the presence of earnings manipulations through LLP. Here, only absolute value is considered ignoring the sign.

Discretionary loan loss provisions are calculated as follows:

$$DLLP = (\varepsilon \times \text{Total Loan}) / \text{Total Asset}$$

Non-discretionary loan loss provisions (NDLLP) are calculated as follows:

$$NDLLP = [(\text{Loss} \times \text{Total Loan}) / \text{Total Assets}] - DLLP$$

DLLP is used as response variable (following Ahmed, Takeda and Thomas, 1999; Change, Shen and Fang, 2008; Curcio, Simone and Gallo, 2016). To determine the reasons for earnings management practice, the following equation is solved using panel data analysis. Based on the nature of the effects, Pooled, Fixed effect model or Random model can be used.

Table 2: Variable Definition and Expected Sign (Equation 2 and 3)		
	Variable Name	Sign
NPL	Non-Performing loan to Total Asset	+
EBPLLT	Earnings before Provision for loan loss and Tax to Total asset	+
EBPLLT*Crisis	Crisis (Stock Market Crisis); Value of 0 for year (2005 -2008) before the stock market crash and 1 for (2010-2014)	
CAR	Capital Adequacy ratio	+
StockRtn	Stock market return; Variation in stock price of company i at time t.	-
GDPGr	Growth rate of GDP	-
GwthLoan	Growth in Total Loan	-
LnTA	Natural logarithm of total asset	+
Age	Age of the company	+

Fixed Effects Model

Fixed Effect (FE) model allows the intercept in the regression model to vary across cross-section but does not allow varying across time. Independent variables may or may not be influenced by the individual characteristics of each entity (Park, 2011). The variable definition and expected sign of the variable is given in the Table 2 for equation 2 and equation 3. The functional form of fixed effects model is presented in Equation (2):

$$DLLP_{i,t} = (\alpha + \mu_i) + \beta_1 NPL_{i,t} + \beta_2 EBPLL_{i,t} + \beta_3 EBPLLT * PostCrisis_{i,t} + \beta_4 CAR_{i,t} + \beta_5 StockRtn_{i,t} + \beta_6 GDPGr_t + \beta_7 LnTA_{i,t} + \beta_8 Age_{i,t} + v_{i,t} \quad \dots(2)$$

Random Effects Model

Random Effects (RE) model examines the differences in error variance components across time period or individuals. In this model the variation across individuals is supposed to be random and uncorrelated with explanatory variables included in the model. In random effect model it is assumed that there is no correlation between individual effect and any predictor variable (Park, 2011). RE model is also termed as error component model. The model is specified as follows:

$$DLLP_{i,t} = \beta_1 NPL_{i,t} + \beta_2 EBPLL_{i,t} + \beta_3 EBPLLT * PostCrisis_{i,t} + \beta_4 CAR_{i,t} + \beta_5 StockRtn_{i,t} + \beta_6 GDPGr_t + \beta_7 LnTA_{i,t} + \beta_8 Age_{i,t} + (\mu_i + \nu_{i,t}) \quad \dots(3)$$

Here, i represents individuals specific bank. μ_i represents FE or RE specific to bank or time period that is excluded from the regression. $\nu_{i,t}$ denotes independent and identically distributed error. In Equation (3) DLLP is used as response variable Following (Ahmed, Takeda and Thomas, 1999; Change, Shen and Fang, 2008; and Curcio, Simone and Gallo, 2016).

In equation (2 and 3) DLLP is used as response variable Following (Ahmed, Takeda, and Thomas, 1999; Chang, Shen and Fang, 2008; Curcio, Simone and Gallo, 2016). NPL (Non-Performing loan to Total Asset) reflects the credit quality of banks and it is expected to have a positive coefficient as banks may increase its LLP when there is a probability of high loan default (Ozili, 2017; Curcio, Simone and Gallo, 2016). Earnings before Provision for loan loss and Tax (EBPLL to Total asset) is included for testing income smoothing behavior of commercial bank and the coefficient of EBPLL is expected to be positive. It is expected that bank with low (high) income would decrease (increase) their provisions (Bouvatier and Lepetit, 2008; Anandarajan, assan and McCarthy, 2006; and Curcio, Simone and Gallo, 2016).

The dummy variable for Crisis (Stock Market Crisis) takes a value of one (1) for (2010-2014) after the stock market crash on 2009 and a value of zero (0) for year (2005 -2008) before the stock market crash and. Following Anandarajan, assan and McCarthy (2006) and Ozili (2017), the use of EBPLLT*Crisis interaction term is used to detect income soothing behavior before and after of stock market crash. Stock return (StockRtn) is expected to have negative sign (Charfeddine, Riahi and Omri, 2013). For capital management purposes, Capital Adequacy Ratio (CAR) is considered. CAR variable is the bank's use of provisions to manage Tire 1 capital against their risk weighted assets and it is expected to take a positive sign as banks may increase their provisions when Tire 1 capital is low (Ozili, 2017; Curcio, Simone and Gallo, 2016; Charfeddine, Riahi and Omri, 2013). Other control variables used include GDP growth, bank size and age of the company. GDPGr (Growth rate of GDP) is used to take into account the economic fluctuation of the country and it is expected to have a negative sign because banks are expected to reduce their provisions during the economic

downturns (Ozili, 2017; Floro, 2010). LnTA (Natural logarithm of total asset) is used to compare the bank size as the bank's asset may differ. It is expected to have a positive relation between the LnTA and DLLP. The larger the bank becomes the larger the business activities, and it is considered that large banks are likely to keep more provisions to compensate risk compared to the smaller banks (Kilic, Acar and Coskun, 2014; Ozili, 2017). Growth in loan is expected to have negative sign. It may be expected that when a bank maintains improved quality of loans it may require fewer provisioning (Lobo and Yang, 2001).

DATA AND SAMPLE

For the study purposes, the listed bank companies of Dhaka Stock Exchange (DSE) are chosen upon the availability of data. In the present study the Islamic Banks are not included as they are operated under different regulations compared to the conventional private banks. Ten years of data were collected from 2007 to 2016 from the published annual reports and bank website. To be included in the sample, a bank needed to have the income statement and balance sheet over the study period.

RESULTS AND DISCUSSION

DESCRIPTIVE STATISTICS

Descriptive statistics for the sample from 2007 to 2016 is presented in Table 3.

Panel A data were used for identifying the existence of earnings management practices. LLP is found on an average 1.036%. Segment wise loan to consumers, directors, executives and industries are 48.52%, 0.12% 0.63% and 48.68% respectively. NPL is 5.03%. The average value of DLLP is 0.4249 and the high value of DLLP indicates that the private commercial banks of Bangladesh are indulged in EM practices.

Panel B data are used in regression Equations (2) and (3) to determine the factors motivating the practice of EM by the management of commercial banks of Bangladesh. On an average, NPL to total asset is 3.24% and the provisions maintained by the banks are on an average of 3.24% as well. On average banks maintain a CAR of 9.48% and the bank size (LnTA) is 11.05. Growth of, on an average, is 24.78% and GDP growth rate is 6.19%. Changes in the stock return are 24.78% and average age of the bank is 23.24 years.

TEST OF AUTOCORRELATION, HETEROSCEDASTICITY AND CROSS-SECTIONAL DEPENDENCE

Homoscedasticity and no autocorrelation are two important assumptions of OLS estimation. But, OLS estimator fails to produce efficient and consistent estimates if these two assumptions are violated. To test the presence of autocorrelation and cross-sectional dependence, Wooldridge test, Modified Wald test and Pesaran CD test are conducted on panel data. Table 4 contains all the diagnostic test results.

Table 3: Descriptive Statistics				
Variables	Mean	Std. Dev.	Minimum	Maximum
Panel A: Earnings Management Measurement Variables				
LLP	1.04	1.25	0.00	15.74
NPL	5.03	4.51	0.19	38.86
LOANC	48.52	27.04	33.34	99.34
LOAND	0.13	0.51	0.00	4.63
LOANE	0.63	0.86	0.00	4.01
LOANI	48.67	26.74	5.16	65.85
LWA	1.97	9.40	0.00	90.36
DLLP	0.43	0.62	0.00	5.70
Panel B: The Motives Behind the Practice of EM				
EBPLL	3.26	2.35	-0.26	35.36
CAR	9.48	3.66	-21.47	17.20
GwthLoan	24.78	62.47	-82.93	785.72
StockRtn	16.14	105.11	-96.64	1317.45
Age	23.24	13.95	5.00	68.00
GDPgr	6.20	0.54	0.54	5.05
LnTA	11.05	0.27	10.23	11.52

To test the presence of autocorrelation Wooldridge test is conducted and the results indicates that there is evidence of first order autocorrelation in the data set and thereby we can reject the null hypothesis with a probability of 0.0000. The autocorrelation issue could be neglected for short panel data (Balgati, 2005). Modified Wald test of for group wise heteroscedasticity has been run with a null hypothesis of homoscedasticity. Chi-Square test statistics 2213.44 with a probability of 0.0000 and thereby we reject the null hypothesis and claim that there is evidence of heteroscedasticity in the data set. From the results, it is evident that Pesaran CD statistics with a probability of 0.5260 do not reject the null hypothesis and indicates cross sectional dependence is not present in the data set.

Woolridge Test (To detect the presence of autocorrelation)		Modified Wald Test (To test the Homoscedasticity in data set)		Pesaran CD Test (To detect the presence of cross-sectional dependence in data set)	
Null Hypotheses: No first order autocorrelation		Null Hypotheses: Homoscedasticity in data set		Null Hypotheses: No Cross-Sectional Dependence in data set	
Test Statistics Results	F (Prob.>F) 22.39(0.0000)	Test Statistics Results	F (Prob.>F) 22.39(0.0000)	Test Statistics Results	F (Prob.>F) 22.39(0.0000)

Variables	Coefficient of Variables					
	Pooled Regression		Fixed Effect Model		Random Effects Model	
	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
NPL	0.0998	4.19 (0.000)***	0.1309	5.59 (0.000)***	0.1012	5.68 (0.000)***
EBPLL	0.0753	4.03 (0.001)***	0.0935	4.69 (0.000)***	0.0760	3.70 (0.000)***
EBPLL_POSTCRISIS	0.0775	2.87 (0.009)***	0.0845	2.76 (0.011)**	0.0781	2.61 (0.009)***
CAR	-0.0577	-53 (0.000)***	-0.0569	-4.04 (0.001)***	-0.0577	-5.17 (0.000)***
GWTHLOAN	0.0031	2.91 (0.008)***	0.0028	3.14 (0.005)***	0.0030	6.51 (0.000)***
STOCKRTN	-0.0011	-2.46 (0.022)**	-0.0016	-3.27 (0.004)***	-0.0011	-2.29 (0.022)**
GDPGR	0.0679	2.76 (0.011)***	0.0893	3.90 (0.001)***	0.0687	1.15 (0.250)
AGE	0.0024	0.86 (0.397)	-0.0231	-0.69 (0.499)	0.0024	1.08 (0.280)
LNTA	-0.3079	-2.56 (0.018)**	-0.0480	-0.16 (0.876)	-0.3124	-2.02 (0.043)**
Constant	3.1695	2.22 (0.037)	0.5997	0.22 (0.824)	3.2080	1.88 (0.060)

Table 5 (Cont.)

Variables	Coefficient of Variables					
	Pooled Regression		Fixed Effect Model		Random Effects Model	
	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
	Pooled Regression		Fixed Effect Model		Random Effects Model	
R ² (Within)	0.5328		0.5044		0.4967	
F Test (Prob)	27.8794 (0.0000)***		131.07 (0.0000)***			
Wald Chi (Prob)					248 (0.0000)***	
Hausman Test			21.61 (0.0057)			
Breusch and Pagan Lagrangian						
Multiplier Test					3.37 (0.0331)	
Durbin Watson	1.36		1.64		1.36	
Note: *, **, and *** indicate levels of significance at 10%, 5% and 1% are represents. Values in Parentheses indicate p-values.						

SELECTION OF THE MODEL AND RESULTS OF THE ESTIMATION

Accuracy of panel data is based on the selection of the best model. So, FE model and RE model are conducted along with pooled OLS method. To determine best model, Hausman test, Breusch and Pagan Lagrangian Multiplier test for RE and pooled OLS models, and Fixed effect models with Driscoll Kraay standard error were conducted.

Table 5 shows the results of all estimated models. First, the pooled OLS estimator is used to estimate the model. There are presences of first order autocorrelation and heteroscedasticity in the data set. It is evident that simple OLS regression method cannot control unobserved individual effects. Secondly, Breusch-Pagan Lagrange Multiplier test was conducted to identify weather random effect or pooled OLS method is better. The result provides evidence of rejection of null hypothesis at 5% level of significance and suggesting using random effect model. Finally, Hausman test is conducted to finalize between FE model and RE model. The chi-square value of 21.61 with a probability of 0.0057 rejects the null hypothesis of RE to be the preferred model. Based on the Hausman test, fixed effect model is finally selected. R-Sq value in fixed effect model is found 50.44%. Though the variation in the model is not found in greater way but the overall model (F Statistic, 131.07) is found to be significant at 1%

Table 6: Summary of Hypothesis Testing and Empirical Results		
Hypothesis	Empirical Results	Similar Findings from previous studies acknowledge this study
H_1 : The higher the ratio of non-performing loans, the higher the practice of earnings management by PCBs.	Strongly Supported	Ozili (2017); Curcio <i>et al.</i> (2016); Ahmed <i>et al.</i> 1(999)
H_2 : Private Commercial banks of Bangladesh exercise earnings management for income smoothing purposes.	Strongly Supported	Curcio <i>et al.</i> (2016); Ozili (2017); Jin <i>et al.</i> (2016); Packer and Zhu (2012); Kanagaretna <i>et al.</i> (2010);
H_3 : Private Commercial banks of Bangladesh exercise earnings management for capital management purposes.	Not supported	Leventis <i>et al.</i> (2011);, and Change <i>et al.</i> (2008). Curcio <i>et al.</i> (2016)
H_4 : Banks with low performance are more likely to engage in more earnings management practices for signaling purposes.	Strongly Supported	Lim and Matolcsy (1999); Vafeas <i>et al.</i> (2003); Othman and Zeghal (2006).
H_5 : Private Commercial banks of Bangladesh exercise more earnings management after stock market crises.	Strongly Supported	Anandarajan <i>et al.</i> (2013); Ozili,(2017)

level of significance and has satisfactory explanatory power. Seven variables out of nine independent variables are found to be statistically significant.

NPL is found statistically significant and has positive impact on DLLP (a proxy of EM). The value of the coefficient is 0.1309 and it indicates that one unit increase in NPL will lead to increase in practice of EM by 0.1309, holding other variables constant. Hypothesis 1 is used to relate the volume of NPL and practice of EM. The volume of NPL is the reflection of quality of credit of any bank and the higher is the ratio of non-performing loans, the higher the practice of earnings management by PCBs (Ozili, 2017; Curcio, Simone and Gallo, 2016; and Ahmed, Takeda and Thomas 1999). With the positive coefficient of NPL, it has been established that bank managers become more prone to practice of EM with the increase of NPL ratio in case of Bangladesh. Table 6 depicts the summary of the hypothesis and empirical results.

CONCLUSION

Present study attempted to discover the practice of EM by the private commercial banks of Bangladesh by analyzing a balanced panel data for ten years (2007 to 2016).

Based on the results, it is evident that there is presence of practice of EM by the management of private commercial banks in Bangladesh. The main contribution of this study is the detection of practice of EM by private commercial banks of Bangladesh. Studies in Bangladesh are mostly based on non-financial institutions. This study is an addition to the existing literature using specific accruals methods in case of developing country like Bangladesh.

EM is also considered as a major challenge for effective implementation of corporate governance mechanism. EM can affect the reliability of financial information, which can lead to financial scandals and stock market crashes (Man and Wong, 2013). Weak corporate governance will lead to manipulation in the financial reporting process, corruption, and mismanagement (Almasarwah, 2015; Leventis, Dimitropoulos and Anandarajan, 2011). Managers will engage with self-serving activities in the absence of a monitoring mechanism (Jiraporn, Miller, Yoon and Kim, 2008) and this engagement will increase agency cost of a company. Regulators need to increase their supervisory oversight strongly to reduce the practice of earnings management. Along with the strong regulatory oversight, educating and training of auditors and financial information users are also required. Future research may be conducted to identify the perception of stakeholders (Auditors, regulators and Investors) about earnings management practices in Bangladesh. Moreover, further study may be attempted to identify whether the culture of a particular country has an impact on earnings management or not.

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