

OWNERSHIP STRUCTURE AND REAL EARNINGS MANAGEMENT: AN EMPIRICAL STUDY ON EMERGING ECONOMY

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Abstract

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We observe the association amid ownership structure and real earnings management in Bangladesh. Our study takes 2195 firm-year observations which are listed on the Dhaka Stock Exchange over the period of 2000-2017. The outcome of the panel least square regression indicates that inside ownership, as well as foreign ownership, is inversely related to real earnings management, whereas institutional ownership is positively related to real earnings management. In particular, firms tend to reduce discretionary expenses to manage earnings if the magnitude of inside ownership is low. In contrast to that, when firms are characterized by more institutional ownership, they are more inclined towards real earnings management through additional price discounts, offering a more friendly credit facility, and lowering discretionary expense. This result is consistent with previous findings. Nevertheless, if firms encounter an absence of foreign ownership, they prefer to manage earnings through operating at over-production levels as well as lowering discretionary expenses. Additionally, we find that corporate governance is playing a beneficial role in limiting real earnings management.

Keywords: Real Earnings Management, Ownership Structure, Corporate Governance

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1. INTRODUCTION

Manipulating a company's earnings as shown in the respective financial statements is recognized as earnings management (EM) (Pfarrer, Smith, Bartol, Khanin, & Zhang, 2008). With reference to Healy and Wahlen (1999), EM is defined as the alteration of a company's reported financial statements on part

of the insiders to either influence contractual outcomes or to mislead some stakeholders. Therefore, EM has the potentiality of being applied to conceal the genuine performance of firms from minority investors which are not conveyed under the existing fundamental financial position of the firm (Klein, 2002). Previous research reveals that EM is inter-correlated to enlarged costs of paid-up

capital (Lang & Lundholm, 1996; Botosan, 1997), stock price decreases (Dechow, Sloan, & Sweeney, 1996) and high risk of the firm (Chatterjee, Lubatkin, Lyon, & Schulze, 1999). It is also observed that firms with high involvement in EM are more vulnerable to face diminished performance in later years (Sloan, 1996). Previous studies focused on different aspects of management's opportunistic behavior related to EM. They offer an analysis of compensation contracts (Holthausen et al., 1995) meet analysts' forecasting (Dhaliwal, Gleason, & Mills, 2004), initial public offerings (IPO) (Ball & Shivakumar, 2008), avoidance of losses (Burgstahler & Eames, 2003), reduction of political costs (Patten & Trompeter, 2003), stock-financed acquisitions (Savor & Lu, 2009) and private information signals of manager's (Louis & White, 2007).

To protect the investors, the existing legal system makes it mandatory for the insiders to discipline as well as to bound insiders' control benefits as deemed to be private (Nenova, 2003). In consequence, the legal system which successfully protects outside shareholders decreases insiders' requirement to hide their actions. Zingales (1994) states that insiders may wrongly present their own control advantages from outsiders to escape the disciplinary action against them. The pervasiveness of EM is prevalent in countries where the legal protection of outside investors is deficient because in these countries insiders experience more private control benefits compare to the countries with strong legal mechanisms. Similarly, we also argue that managers and controlling owners possess incentives to alter conveyed earnings in order to disguise actual firm performance and to hide their own benefits from outsiders.

Emerging economies are characterized by poorly defined property rights and weak rules of law (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 1999), suboptimal investor protection and governments with low-levels of administrative efficiency (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 2000) and a near absence of financial transparency (Fan, Wei, & Xu, 2011). As an emerging economy, Bangladesh shares almost all of these features. Khan (2003) argued that Bangladesh has many characteristics of an emerging economy, including widespread corruption, insufficient rule of law, lack of accountability and transparency, and low-capacity in terms of public governance. In a country endowed with poor regulatory environments, ownership concentration is likely to be high and litigation risk is low (Monem, 2013), law enforcement is modest (La Porta et al., 1999), and investor protection is minimal (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 1998; La Porta et al., 1999). Moreover, La Porta et al. (1998) state that the legal system helps to protect investors by conferring rights to discipline managers on them. Leuz, Nanda, and Wysocki (2003) also propose that a country's given legal and institutional climate influences the properties of reported earnings. Hence, it is imperative to uncover the impact of institutional issues on reporting earnings.

Corporate governance (CG) has mechanisms to protect investors' rights by reducing this sort of opportunistic behavior of management (Shleifer &

Vishny, 1997; Chung, Firth, & Kim, 2002). There are two variants of CG mechanisms, internal and external. Internal mechanisms constitute ownership structure and board, whereas external mechanism means external factors which control firms (Martin-Reyna & Duran-Encalada, 2012). In our study, we consider the ownership structure of the listed firms in Dhaka Stock Exchange (DSE), Bangladesh. We also analyze how this ownership structure affects EM behavior. Ownership is understood from two perspectives: inside and outside (Warfield, Wild, & Wild, 1995). Dempsey and Hunt (1993) also divide ownership of a firm into two modes, owner-managed and external-controlled. Owner-managed firms mean owners own a substantial share of the outstanding stock and in the case of external-controlled firms, the majority of shares are held by one or more external block-holders. Due to the different ownership structures of the firms, monitoring and controlling systems are also distinct. Some firms may have the largest inside owners and others may have institutional ownership. The behavior of different shareholders is also varied. Deng and Wang (2006) argue that ownership structure has a significant influence on a firm's financial reporting. Their influence on the firm's decision-making process is also different. So, ownership pattern may influence the attitude of the firm towards EM. In this study, our objective is to explicate the relationship between ownership structure and EM practices among listed firms functioning in an emerging market environment. We consider three types of ownership (inside, institutional, and foreign) to delineate their respective impacts on EM.

Our study will contribute to the existing literature in various possibilities. In the context of a developing country, most of the EM studies are conducted by discretionary accrual. While in Bangladesh, the nature of the association between real earnings management (REM) and ownership structured is considerably under-researched. Only, Razzaque, Ali, and Mather (2016) examined the association between REM and family ownership while overlooking the contribution of CG. We aim to see the association between REM and ownership structure (inside, institutional, and foreign). Our study utilizes 18 years of data (2000-2017). For ensuring the robustness of the result, we split the sample of our study into two-time frames. BSEC published CG guidelines for the first time in its history in 2006. This guideline was put into action on a "conform or explain basis". The BSEC issued amended compulsory guidelines in 2012. Thus, the two-time frames in use consist of pre-compulsory CG (2000-2011) and post-compulsory CG (2012-2017). Our study purports to see the contribution of CG on the REM behavior of managers. Our study finds that inside and foreign ownership is inversely associated with REM. In contrast, institutional ownership is positively associated with REM. We also found evidence to claim that revised CG guidelines contribute positively towards management to limit REM (if firms are dominated by institutional ownership).

The remainder of the paper is presented as follows. Section 2 reviews the existing literature and

develops hypotheses, Section 3 discusses the relevant research methodology, Section 4 explains the analyses and principal results, and Section 5 summarizes the major findings and provides new directions to further research.

2. LITERATURE REVIEW

2.1. Earnings management

There exists no general consensus on the definitions and characteristics of EM (Beneish, 2001). Healy and Wahlen (1999) defined EM as “Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported economic numbers” (p. 6). Their definition reveals several pertinent aspects. Firstly, management can manage earnings through individual judgment. For example, they can apply their judgment to estimate depreciation. Secondly, they can mislead the different stakeholders regarding the true economic outcomes of the firms. It may occur when the management access information and alter it from unethical motives that are not accessible by outsiders.

Companies achieve their institutional imprint through financial statements (Davidson & MacKinnon, 2004). Due to the separation of ownership and management, investors are supposed to rely on the information provided and authorized by the management. Scott (2000) categorizes EM in two different ways: efficient EM and opportunistic EM. Subramanyam (1996) and Balsam, Krishnan, and Yang (2003) explain the behavior of an efficient perspective of management. As a proxy of EM, they took discretionary accruals, discretionary accruals have a significant and positive relationship with the future earnings of the firms. Consequentially, Burgstahler and Dichev (1997) and Balsam, Bartov, and Marquardt (2002) provided evidence reliable with opportunistic EM behavior. Management is getting discretion while selecting accounting methods or estimations (Schipper, 1989; Bradshaw, Richardson, & Sloan, 2001). So, management has the opportunity to present financial reports in a direction desirable to them (Jensen, 2001). This strand of opportunistic behavior of management could result in provisional resource misallocation and related problems (Bradshaw et al., 2001). The two most common features for firms engaging in opportunistic behavior are pressure and opportunity (Zahra, Priem, & Rasheed, 2005). First, senior managers endure continuous market pressures to encounter and surpass financial aims, as well as financial analysts’ anticipations (Caton, Goh, & Donaldson, 2001). Second, executives may exploit their advantages related to the information to manipulate earnings for their own interest (Zahra et al., 2005). Previous studies affirm substantial evidence that top executives engage in EM (Defond & Jiambalvo, 1994; Guidry, Leone, & Rock, 1999; Healy, 1985; Teoh, Welch, & Wong, 1998a, 1998b). Management can also manipulate the financial statement in divergent ways. One of them is by

manipulating accrual (discretionary accrual, also known as abnormal accrual) without affecting cash flow. Higher discretionary accrual indicated more EM. There are different models to find out the discretionary accrual, such as the Jones model (Jones, 1991), the modified Jones model (Dechow, Sloan, & Sweeney, 1995), the modified Jones model due to DeFond and Subramanyam (1998), the modified Jones model due to Larcker and Richardson (2004), and followed by the modified Jones model with return on assets included as a new independent variable as due to Kothari, Leone, and Wasley (2005). In addition, prior studies argue that by testing accrual quality, we can measure EM. EM has been measured by taking operating cash flows into consideration (Dechow & Dichev, 2002).

Firms’ management can perform manipulation by affecting real activity decisions. Several studies conducted to examine the REM have mainly focused on investment activities (Bens, Nagar, & Wong, 2002; Bushee, 1998; Dechow & Sloan, 1991). Roychowdhury (2006) defined REM as “management actions that deviate from normal business practices, undertaken with the primary objective of meeting certain earnings thresholds” (p. 2). His analysis concentrated on operational activities of managers to identify REM. Previous research found that Roychowdhury (2006) model possesses an extensive explanatory success to detect REM (Cohen & Zarowin, 2008; Cohen, Dey, & Lys, 2008). Our study also exploits the REM model to detect EM. Graham, Harvey, and Rajgopal (2005) and Bruns and Merchant (1990) conducted a survey where they discover top financial executives love to manipulate income through REM activities rather than traditional accrual-based EM because management achieves extra flexibility in REMs compares to accrual EM. At any given time of the year, management can apply REMs whereas accruals management techniques are conversant to be applied only on the closing day of the year. REM involves alteration or manipulation concerning real activities of the firms to fulfill some target of management at a cost of a firm’s resources.

Roychowdhury (2006) documents that managers apply different REM techniques to fulfill the financial target. Specifically, he mentions that firms may offer more price discounts to boost-up sales, may resort to overproduction to show higher a gross profit margin ratio, and may reduce discretionary expenditure to report inflated earnings. REM also involves changing regular investment and operational decisions. If the reported types of change or alteration are brought for an optimum reason, we should not expect any negative result in the future for such managerial action or decision. However, these alterations may be happening for the personal interest of the management, rather than for the firm. Chief financial officer plays a keen role to discontinue investment undertakings to accelerate earnings expecting their adverse impact on potential income of the firms (Graham et al., 2005). Likewise, Cohen and Zarowin (2010) mention that REM causes an undesirable effect on future value. Moreover, it impacts the cash flow of the firms. Management offers a sales discount to pan sales manipulation. This generates customer expectations regarding lower sales prices in the future and may force

the firm to offer their product in a lower price as a result. If firms produce more to increase the gross margin ratio it may increase carrying cost and it may exert more effort as required to sell the products produced in excess. There may also exist different reasons for management's preference for REM over accrual management. However, Roychowdhury (2006) mentioned two reasons relevant to choosing REM. First, it is easier for auditors or regulators to find out accrual management than REM decisions regarding pricing and production manipulation. Second, management can manipulate by real decision at any time of the year. It allows more flexibility to the management. More importantly, consistent with the evidence provided by Graham et al. (2005), Cohen et al. (2008) document that management switched their choice from accrual management to REM in the post Sarbanes-Oxley Act (SOX) period. Our study will use the REM model by Roychowdhury (2006) to detect EM.

2.2. Ownership structure and earnings management

2.2.1. Ownership structure of a listed firm in Bangladesh

For a listed firm, Dhaka Stock Exchange reports five different types of ownership. These are inside institutions, foreign, government, and general. Inside ownership includes all shares that are held by sponsors or directors. Significant shares (41.31%) are held by inside owners in Bangladesh (see Table 3). In most cases, these inside owners control the board and make the key decisions. In the capital market of Bangladesh, the investment of institutional investors is insignificant. Only 15.47% of the shares are purchased by institutional investors (Table 3). The proportion of retail investors is rather high. This study attempts to see the association between REM and three different types of ownership structure. Government ownership in public limited companies in Bangladesh is very limited. Also, as the government is the ultimate regulator of the market, so we do not include government ownership in our analysis.

2.2.2. Inside owners and earnings management

Bangladesh Securities and Exchange Commission issued a directive regarding shareholding proportion by sponsors/directors related to all firms listed in Dhaka and Chittagong stock exchanges. Sponsors and directors should have at least 30% amount of total outstanding capital in total (BSEC, 2011). In our study, we consider all such shares that belong to sponsors and directors acting as inside owners. Family ownership is widely prevalent in Bangladesh (World Bank, 2009). BSEC's directives induce higher ownership or control by family. Dempsey and Hunt (1993) suggest that owners-managed-firms are less likely involved in EM. Similarly, Warfield et al. (1995) find an inverse association between managerial ownership and EM. Sánchez-Ballesta and García-Meca (2007) find that the incidence of inside ownership can enable to limit EM practices. On the other hand, Leuz et al. (2003) found that inside owners are more likely involved in EM to achieve their private interests within feeblers investors' protection regime.

Similarly, Morck, Shleifer, and Vishny (1988) and Gabrielsen, Gramlich, and Plenborg (2002) encountered a positive relationship between the inside ownership and EM. Moreover, Morck et al. (1988) suggest that controlled ownership may give entrenchment and expanded scope for EM. Our hypothesis is given in an alternative form and given below:

H1: There exists no association between inside ownership and REM.

2.2.3. Institutional owners and earnings management

Prior researches document that most institutional investors' behavior will vary across different contexts. Institutional investors are playing an important role in managerial activities (Koh, 2003, 2007). As a variety of monitoring activities, they can actively participate in selecting board members (as a representative board member on behalf of the institution) and demand greater degrees of transparency and accountability in the process of reporting. Other empirical researches propose that institutional ownership induces managers to involve and implement an offensive earnings-management approach (e.g., Burns, Kedia, & Lipson, 2006; Cheng & Reitenga, 2001). Prior empirical and theoretical findings' are rather contentious. Dong and Ozkan (2008) categorize institutional ownership into two groups, "transient" and "dedicated". They noted that transient institutional investors trade their shares very frequently. Jarboui and Olivero (2008) argue that these institutions are oriented towards short-term investment opportunities. They do not get involved in corporate management decisions as they happen to sell their stock whenever their investment potentialities seem to be unsatisfactory (Tsai & Gu, 2007). Bushee (2001) argue that these transient institutional investors give more priority to short-term profit.

Due to excessive preferences by the transient institutional investor on current earnings, this attitude invites firm managers to show maximum performance (Koh, 2003) and managers will manipulate firms' earnings accordingly. In turn, these transient investors seem to induce managers towards opportunistic practice. Moreover, in the presence of transient investors, Koh (2007) predicts management are receiving an incentive to lean towards manage earnings. Institutional ownership is highly related to EM (Burns et al., 2006). Moreover, some institutions have certain business relationships with some specific firms. In this situation, with the consultation of institutional investors, management may decide by discretion for the benefit of managers and institutional investors even at the cost of the company's value.

Dedicated investors are oriented towards long-term investment opportunities. Institutions that have a long-investment objective, will monitor managers (Bushee, 1998; Chen, Harford, & Li, 2007). They have more power and resources to be involved in decision-making activities (Kim, Kim, & Kwon, 2009). In consistency with this empirical evidence, Siregar and Utama (2008) have argued that sophisticated investors are more capable to split earnings into discretionary and non-discretionary

portions. Indeed, several prior studies suggested, institutional ownership is not positively correlated with income increasing accruals (Djerbi & Jarboui, 2012).

In the context of Bangladesh, Farooque, Van Zijl, Dunstan, and Karim (2007) find that a lower level of institutional ownership has a significant inverse effect on performance but when the level of ownership increases, the relationship turns out to be proportional. In Bangladesh, institutional shareholders own 15.47% of the shares issued by non-financial companies on average (Table 3). Sometimes their representatives serve on the board of directors, pivoting on the fact that institutional ownership is likely to be affirmatively related to a firm's reporting quality. However, the low level of institutional ownership may provide insufficient motivation to accomplish that. Our following hypothesis is:

H2: There exists no statistical association between institutional ownership and REM.

2.2.4. Foreign owners and earnings management

Studying the Bangladesh context, Imam and Malik (2007) argue that if foreign ownership increase, it is likely to motivate to increase firm performance and governance. Shen, Lu, and Wu (2009) argue that more foreign strategic investor enhances earnings smoothing. The arguments considered for the association between dedicated institutional ownership and reporting quality are also valid for foreign ownership. As a result, the demand for the availability of financial information and efficient governance should improve with greater foreign ownership. The proportion of foreign ownership in Bangladesh in form of listed non-financial companies is comparatively low. However, the potential impact of foreign shareholdings on

reporting quality is a riveting puzzle to be encountered. The third hypothesis is:

H3: There exists no association between foreign ownership and REM.

3. RESEARCH METHODOLOGY

3.1. Data and methodology

There were no CG guidelines for the listed Bangladeshi companies till 2005. Following the global and national attention to protect stockholders/stakeholders from the questionable business practices, in 2006, the BSEC issued CG guidelines for all listed Bangladeshi firms, which was amended in 2012 (BSEC, 2012). Our study inspects data ranging over an eighteen-year from 2000 to 2017 and the sample size is 2195 firm years. Due to the diverse nature of business operations, following previous studies on REM (for instance, Alves, 2012; Roychowdhury, 2006), our study excludes all financial companies from the sample. As an electronic database of public listed companies is not available in Bangladesh, we employ primary data encoded manually in our study. The main sources of data include the company annual report, prospectus, different public issue offer documents and monthly review of Dhaka Stock Exchange. According to the previous study, we utilize panel study for our analysis of its exclusive capability to separate the properties of explicit treatments and actions both over across sections and time (Hsiao, 2003); moreover, it provides valid control over unobserved effects due to omitted variable bias (de Munnik & Schotman, 1994). Tables 1 and 2 chart the number of observations conferring to each year and each industry respectively.

Table 1. Sample of firm-years by year

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Total
Number of listed firms	102	105	103	115	115	116	116	117	123	123	130	141	148	153	167	167	145	118	2304
Annual reports - not available	10	8	9	6	7	7	6	7	7	6	5	6	5	4	5	4	4	3	109
Final sample	92	97	94	109	108	109	110	110	116	117	125	135	143	149	162	163	141	115	2195

Table 2. Sample of firm-years by industry

Industry	Engineering	Food	Fuel & Power	Jute	Textile	Pharmaceutical	Paper & Printing	Service & Real estate	Travel and leisure	Cement	IT-Sector	Tannery	Ceramic	Telecommunication	Miscellaneous	Total
Number of listed firms	366	296	166	51	476	340	19	48	30	99	87	84	67	14	161	2304
Annual reports - not available	16	15	8	2	37	6	1	3	2	5	4	3	2	0	5	109
Final sample	350	281	158	49	439	334	18	45	28	94	83	81	65	14	156	2195

3.2. Research design

3.2.1. Dependent variable: Real earnings management

In addition to traditional accrual-based EM, lately, there has been a renewal of research interest to understand and document the procedure of firms to manipulate their reported income through real activities (Roychowdhury, 2006). Moreover, Roychowdhury (2006) documents that firms apply manifold REM techniques to achieve predetermined earnings and it is more flexible for the manager to manipulate financial reporting. Similarly, Graham et al. (2005) take interviews of top executives and provide evidence and recommending that top executives of corporate firms love REM procedures in comparison to the procedures of accrual-based EM. Since real management activities can be unsuspectingly vague and undetectable from optimal business decisions the costs induced under such processes are in no way economically insignificant to the firm. Cohen et al. (2008) investigate the pervasiveness of real earnings and accrual-based management in the period of pre- and post-SOX period on three different incentives for manipulating earnings. They found that following the passage of SOX REMs increased significantly, while accrual-based EM decline considerably. Consistent with Cohen et al. (2008), Graham et al. (2005) document those firms are switching from accrual-based management to REM, possibly because these will be costly as well as more difficult to detect. Moreover, they document that 80% of chief financial officers (CFOs) mentioned, they show a lower amount of research and development expenses to report a higher profit and 55% responded that they would be reluctant to initiate

a new project to meet an earnings target. Similar to Roychowdhury's (2006) proxies, to measure real activities manipulations, we choose abnormal cash flows from the operation, production costs, and discretionary expenses. Following Roychowdhury (2006), several studies examine the REM activities by employing the same proxies (Zang, 2007; Cohen et al., 2008; Gunny, 2010; Razaque et al., 2016) and increase the empirical utility of these proxies.

We apply three different methods and examine the influence on the three variables stated above:

1. Accelerating sales value through more lenient or increased price discount.

2. Reducing the cost of goods sold through increased production.

3. Reporting lower discretionary expenses.

We use Dechow, Kothari, and Watts's (1998) model as implemented by Roychowdhury (2006) to generate a normal level of operating cash (OCF), production cost, and discretionary expenses.

Abnormal operating cash flows (A_OCF): by offering more sales discount and lenient credit period, firms can increase sales for a short period of time. These sales discount and lenient credit period will boost current year earnings, assuming that firms' gross margin ratio is positive. This extra sales revenue will not result in higher current-year operating cash flows at the same proportion. Actual cash flows will be lower than normal level cash flows. Abnormal cash is measured as the divergence between actual cash flow from operation and normal level cash flows from the operation. We measure normal OCF as a function of sales and change in sales and estimate normal level operating cash flow from operation by following a cross-sectional regression model. This model has been applied for industries and years individually.

$$\frac{OCF_{it}}{Assets_{i,t-1}} = a_1 \frac{1}{Assets_{i,t-1}} + a_2 \frac{Sales_{it}}{Assets_{i,t-1}} + a_3 \frac{\Delta Sales_{it}}{Assets_{i,t-1}} + \varepsilon_{it} \quad (1)$$

where, OCF_{it} = cash flow from operation during the period for firms i and time t ; $Assets_t$ = t -th year-end value of assets in total t ; $Sales_t$ = sales value in total at the period of t ; and $\Delta Sales_t$ = variation in sales between $Sales_t - Sales_{t-1}$.

Abnormal production cost (A_PROD): by producing more units, management can spread the fixed cost per unit, thus per unit cost can be reduced. As long as this reduction cannot be outweighed by incremental marginal cost per unit and holding, management can produce more units

and show the lower cost of goods sold. So, firms can report a high operating profit margin. Due to excess production, production cost will be unusually greater than the normal level of production cost. The difference between the normal and actual level of production cost is abnormal production cost. We measure a normal level of production cost as a linear function of current year sales and previous two years' sales. According to Roychowdhury (2006), normal production cost will be estimated through the following cross-sectional regression.

$$\frac{Proc_{it}}{Assets_{i,t-1}} = a_1 \frac{1}{Assets_{i,t-1}} + a_2 \frac{Sales_{it}}{Assets_{i,t-1}} + a_3 \frac{\Delta Sales_{it}}{Assets_{i,t-1}} + a_4 \frac{\Delta Sales_{it-1}}{Assets_{i,t-1}} + \varepsilon_{it} \quad (2)$$

where, $Proc_t$ = production cost for the year t . We compute it by adding changes in inventory with the cost of goods sold. All other variables are explained and defined previously.

Abnormal discretionary expenses (A_DIS): in order to boost current year earnings, firms may report lower discretionary expenses, which includes selling and administrative expense, research and development expenses, and advertising expenses, in order to boost current year earnings. Hence, firms

are reporting an abnormally lower level of discretionary expenses than the actual discretionary expenses. Abnormal discretionary expenses are the difference between normal discretionary expenses and actual discretionary expenses. As a linear function of sales, we measure normal level discretionary expenses. According to Roychowdhury (2006), the following cross-sectional regression will estimate normal discretionary expenses.

$$\frac{Disex_{it}}{Assets_{i,t-1}} = a_1 \frac{1}{Assets_{i,t-1}} + a_2 \frac{Sales_{it}}{Assets_{i,t-1}} + \varepsilon_{it} \quad (3)$$

When we measure discretionary expenses using current year sales, it may exert a significant effect on the residual of the equation. To measure this, this study deploys previous year sales to measure discretionary expenses.

$$\frac{Disex_{it}}{Assets_{i,t-1}} = a_1 \frac{1}{Assets_{i,t-1}} + a_2 \frac{Sales_{i,t-1}}{Assets_{i,t-1}} + \varepsilon_{it} \quad (4)$$

where, $Disex_t$ = discretionary expense for the period of t . The combined value of research and development, advertising, and selling, and administrative expenses are considered to measure discretionary expenses. Other variables are defined as in the previous setting. To control for heteroscedasticity, all pertinent variables are scaled by prior-year asset ($Assets_{i,t-1}$) in all three previous equations.

The abnormal OCF, abnormal discretionary expenses, and abnormal production costs are measured as the difference between the normal levels predicted from the above equations and actual values. As proxies of REMs, we use these three variables in our study. For a specific level of sales, if a company wants to show a higher profit by REM, they will try to act upon one or all of these: lower cash from the operation, and/or less discretionary expenses, and/or higher production cost. For the sake of simplicity, we multiply abnormal cash flow and discretionary expenses by negative one to reorganize all three variables in the same direction. A positive value indicates REM by lowering cash flow and discretionary expense, and overproduction. In order to measure REM proxies (REM_PROXY), we are taking the sum of the value of A_OCF , A_DIS , and A_PROD . In a similar fashion to Cohen and Zarowin (2008), to observe the effect of the individual variable, we encounter the empirical procedures on the variables individually as well.

3.3. Independent variable

We plan to test the effect of ownership structure on REM and hence, the ownership structure is our

Model 1

$$REM_{it} = \alpha_0 + \alpha_1 INSIDE + \alpha_2 CONT + \Sigma Industry Year Fixed Effect + \varepsilon_{it} \quad (5)$$

Model 2

$$REM_{it} = \alpha_0 + \alpha_1 INST + \alpha_2 CONT + \Sigma Industry Year Fixed Effect + \varepsilon_{it} \quad (6)$$

Model 3

$$REM_{it} = \alpha_0 + \alpha_1 FORN + \alpha_2 CONT + \Sigma Industry Year Fixed Effect + \varepsilon_{it} \quad (7)$$

where, REM_{it} is real earnings management, measured by management's real activities for firms i at time t . $INSIDE$ stands for inside or director's ownership. $INST$ and $FORN$ are institutional and foreign investor's ownership respectively. $CONT$ depicts

independent variable. Listed firms of DSE reports five types of owners. These are inside, institutional, foreign, government, and the general public. We exclude government ownership for two reasons. The proportion of government ownership is very marginal and the government is also a regulator. In our study, we consider three ownership structures (inside, institutional, and foreign) to test the association with REMs. Karathanassis and Drakos (2004) defined $INSIDE$ as the percentage of shares held by management or directors within the firm and their families. Public listed firms of DSE show inside owner who are the sponsor, officer, executive, or non-executive directors. Institution ($INST$) ownership is measured as the proportion of share held by different institutes including bank, non-bank financial institutions, mutual fund and, pension fund, etc. Foreign ($FORE$) ownership includes only those owners who are non-Bangladeshi nationals.

3.4. Control variable

This study considers several control variables as suggested by prior REMs and CG literature. Following existing literature, as control variables, we take account of LEV and $LOSS$ to measure the risk of bankruptcy (Dyreg, Hillegeist, & Penalva, 2011). This study also includes ROA , $GROW$, $SIZE$, and AGE as control variables (Becker, Defond, Jambalvo, & Subramanyam, 1998; Cohen & Zarowin, 2008; Deng & Wang, 2006; Roychowdhury, 2006).

LEV characterizes the proportion of total debts to total firms' asset, $LOSS$ is used as a limited dependent variable encoded with one when the firm experienced a loss in the preceding year, zero otherwise, ROA proxies for the ratio of current-period net earnings to current-period total assets, $GROW$ represents the current-period growth rate of sales, $SIZE$ states the natural log of total assets of the present period and AGE means the natural log of firm life.

We employ the following Models 1 to 3 to test the hypotheses:

control variables and ε_{it} is the usual error term. Similar to Razzaque et al. (2016) all models of our study have been estimated via two-dimensional fixed effects on the industry-year basis to account for the overlooked group level heterogeneity.

4. RESEARCH RESULTS AND DISCUSSIONS

4.1. Descriptive statistics

Table 3 reports descriptive statistics of all variables of this present analysis. On average, the sample firms have a negative *REM*. It indicates that Bangladeshi firms engage in manipulation through downwardly. On average, inside owners hold more than 41% shares of the firms inducted into the sample. Associating this inside ownership category to other categories of ownership, institutional ownership is 15.47% and foreign ownership is only 1.39%. Institutional ownership is significantly lower compared to other countries. Koh (2007) documents that the proportion of institutional ownership is 47-49% in developed countries. In the Bangladesh context, Imam and Malik (2007) report that institutional ownership is 16.67% and foreign ownership is 1.6%. This is not surprising because it's being an emerging economy with a tedious track towards institutional development as expected. Foreign ownership is very

low but it's included in our study. We want to see the firm's attitude to REMs in the presence of foreign investments. Among the control variables, *LEV* is 57%, which is near to what is found (about 54%) by Hsu and Koh (2005). Comparing to other developing countries, the leverage ratio is 36% in Jordan (Al-Fayoumi, Abuzayed, & Alexander, 2010) and 34% in China (Wei, Xie, & Zhang, 2005).

4.2. Correlation matrix

Table 4 exhibits the correlation among different variables included in this analysis. We find a negative relationship of REMs proxies with inside and foreign ownership and this relationship is statistically significant ($p < 0.01$). On the other hand, a positive relationship exists between REMs proxies and institutional ownership. REMs proxies are negatively associated with three control variables (*AGE*, *SIZE*, and *ROA*). Moreover, this study finds that REMs proxies are positively associated with the other three control variables (*LEV*, *GROW*, and *LOSS*).

Table 3. Descriptive statistics

Variable	N	Mean	S.D.	Quantiles				
				Min	.25	Mdn	.75	Max
<i>REM</i>	2195	-0.01	0.22	-1.10	-0.11	-0.00	0.10	0.92
<i>REM_1</i>	2195	0.00	0.11	-0.51	-0.05	0.00	0.06	0.39
<i>REM_2</i>	2195	-0.01	0.19	-0.93	-0.08	0.00	0.07	0.74
<i>A_OCF</i>	2195	0.00	0.09	-0.26	-0.04	-0.04	0.04	0.28
<i>A_DIS</i>	2195	-0.00	0.06	-0.24	-0.02	0.00	0.03	0.20
<i>A_PROD</i>	2195	-0.01	0.16	-0.70	-0.05	0.00	0.05	0.55
<i>INSIDE</i>	2195	41.31	22.00	0.00	30.00	45.62	53.00	90.00
<i>INST</i>	2195	15.47	13.20	0.00	4.27	13.21	23.97	51.77
<i>FORN</i>	2195	1.39	5.30	0.00	0.00	0.00	0.00	33.00
<i>ROA</i>	2195	0.07	0.08	-0.20	0.03	0.07	0.11	0.32
<i>AGE</i>	2195	2.45	0.89	0.00	1.95	2.71	3.14	3.66
<i>SIZE</i>	2195	20.85	1.69	17.26	19.68	20.70	21.99	25.29
<i>LEV</i>	2195	0.57	0.39	0.04	0.36	0.54	0.72	3.10
<i>GROW</i>	2195	0.17	0.65	-0.64	-0.18	0.01	0.30	3.38

Notes: *REM* is real earning management; *A_OCF* is the abnormal cash flows from operations; *A_DIS* is the abnormal discretionary expenses; *A_PROD* is the abnormal production costs; *REM_1* is the aggregate of *A_OCF* and *A_DIS*; *REM_2* is the aggregate of *A_PROD* and *A_DIS*; *INSIDE* is inside ownership; *INST* is institutional ownership; *FORN* is foreign ownership; *AGE* means the natural log of firm life; *SIZE* states the natural log of total assets of the present period; *LEV* stands for the ratio of current total debt to current total asset of the time period; *GROW* represents the current-period growth rate of sales; *ROA* proxies for the ratio of current-period net earnings to current-period total assets; *LOSS* is used as a limited dependent variable encoded with one when the firm experienced a loss in the preceding year, zero otherwise.

Table 4. Pearson correlation

Variable	REM	REM_1	REM_2	A_OCF	A_DIS	A_PROD	INSIDE	INST	FORN	AGE	SIZE	LEV	GROW	ROA	LOSS
REM	1.00														
REM_1	0.70***	1.00													
REM_2	0.92***	0.43***	1.00												
A_OCF	0.51***	0.82***	0.14***	1.00											
A_DIS	0.52***	0.64***	0.56***	0.08***	1.00										
A_PROD	0.87***	0.25***	0.94***	0.13***	0.25***	1.00									
INSIDE	-0.12***	-0.13***	-0.11***	-0.07***	-0.13***	-0.08***	1.00								
INST	0.02	0.03	0.02	0.02	0.03	0.01	-0.16***	1.00							
FORN	-0.21***	-0.14***	-0.23***	-0.03	-0.20***	-0.18***	-0.02	-0.12***	1.00						
AGE	-0.04**	-0.06***	-0.06***	0.01	-0.12***	-0.02	-0.17***	0.12***	0.07***	1.00					
SIZE	-0.01	-0.00	-0.02	0.00	-0.01	-0.02	-0.02	-0.02	0.10***	-0.14***	1.00				
LEV	0.14***	0.14***	0.07***	0.18***	-0.01	0.09***	-0.12***	-0.08***	-0.03	0.20***	-0.13***	1.00			
GROW	0.02	-0.03	0.04	-0.03	-0.02	0.05	0.03	-0.00	0.03	0.09***	-0.07***	0.08***	1.00		
ROA	-0.22***	-0.25***	-0.14***	-0.24***	-0.12***	-0.12***	0.27***	0.04**	0.12***	-0.08***	0.19***	-0.37***	0.04**	1.00	
LOSS	0.07***	0.12***	0.02	0.14**	0.02	0.02	-0.06***	-0.09***	0.02	0.08***	-0.19***	0.35***	-0.05**	-0.53***	1.00

Notes: REM is real earning management; A_OCF is abnormal operating cash flows; A_DIS stands for abnormal discretionary expenses; A_PROD means the abnormal cost of production; REM_1 is the aggregate of A_CFO and A_DIS; REM_2 is the aggregate of A_DIS and A_PROD; INSIDE is inside ownership; INST is institutional ownership; FORN is foreign ownership; AGE means the natural log of firm life; SIZE states the natural log of total assets of the firms' present period; LEV stands for the proportion of current total debt to the current total asset of time period; GROW represents the positive change rate of sales for the current period; ROA proxies for the ratio of current-period net earnings to current-period total assets; LOSS is used a limited dependent variable encoded with one when the firm experienced a loss in the preceding year, zero otherwise.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

4.3. Regression results

Tables 5-8 reports cross-sectional time series regression analysis with time and firms specific fixed effect. Table 5 reports the regression result, which tests the association between ownership structure and *REM*. We present the relationship between different types of ownership with *REM* separately. Models 1 and 2 for inside and institutional ownership, respectively, and Model 3 for foreign ownership. The result shows that inside and foreign ownership is negatively associated with *REM*, where *REM* is significant at $p < 0.01$ and *t*-values are -2.73 and -5.75 respectively. Models 1 and 2 suggest that firms are more likely to involve in *REM* where the proportion of inside and foreign ownership is low. Prior studies attest to a similar result (Leuz et al., 2003; Sánchez-Ballesta & García-Meca, 2007; Warfield et al., 1995). They argue that when inside ownership is low, insiders may make strategic accounting choices to mitigate contractual constraints. Another plausible reason is that firms when are dominated by inside ownership, agency problem two (conflict between majority and minority shareholders) may not be that severe. In the case of foreign ownership, the foreign investor may be more aware of the transparency and accountability of the firms to make their investment safer. Before investment, they examine all rules and regulations and study the firm's attitude to *REM*. Their results support that inside and foreign ownership are able to constrain *REM*. On the other hand, *INST* ownership is positively associated with *REM*. This coefficient is significant at a 5% level. The proportion of institutional investors is low in Bangladesh and they may behave as a pool of transient investors when exposed to continuous market volatility. This result is consistent with some prior findings (Burns et al., 2006; Koh, 2003). They invest for the short-term

and exert excessive pressure on management for reporting an unusual profit. Sometimes they create a discordant relationship with management to fulfill their own objectives. Among the control variable, *ROA*, *AGE*, and *LOSS* are negatively associated with *REM* in all types of ownership. On the other hand, *LEV* is positively associated with *REM*. Other variables (*SIZE* and *GROW*) are not significantly associated in a statistical manner.

A manager can manipulate their earnings in three different ways. From Table 5, we are unsure about the management strategy to REMs. We want to know more specifically, what technique(s) management uses to manipulate financial statement accordingly in different ownership structures. Table 6 reports the relationship between three different types of ownership and three primary measures of REMs (abnormal cash flow from the operation, abnormal discretionary expenses, and abnormal production cost). We have a total of nine (3*3) regression models to test the association between ownership structure and REMs and we focus on the specific way(s) that management applies to perform such manipulations from nine regressions results. Table 6 reports that the association between inside ownership and REMs is negative. Specifically, the result shows, firms are more likely to manage earnings by lowering discretionary expenses if the magnitude of inside ownership is low ($p < 0.01$ and *t*-values is -5.87). On the other hand, if firms are dominated by institutional ownership, they are involved in more *REM* through more price discount, lenient credit facility, and lowering discretionary expense ($p < 0.05$). Foreign ownership is also negatively associated with REMs. In the absence of foreign ownership, firms prefer to manage earnings through overproduction and lowering discretionary expense ($p < 0.01$).

Table 5. Ownership structure and REM

Variables	Model 1	Model 2	Model 3
<i>INSIDE</i>	-0.001*** [-2.73]		
<i>INST</i>		0.001** [2.28]	
<i>FORN</i>			-0.009*** [-5.75]
<i>ROA</i>	-0.632*** [-6.80]	0.700*** [-8.03]	-0.631*** [-7.26]
<i>AGE</i>	-0.026*** [-4.34]	0.024*** [-4.17]	-0.018*** [-3.09]
<i>SIZE</i>	-0.003 [-0.91]	-0.002 [-0.58]	0.005 [1.39]
<i>LEV</i>	0.062*** [3.33]	0.066*** [3.60]	0.061*** [3.31]
<i>GROW</i>	0.008 [0.96]	0.007 [0.88]	0.008 [0.91]
<i>LOSS</i>	-0.031** [-1.99]	-0.034** [-2.23]	-0.030* [-1.93]
Constant	0.156** [2.10]	0.097 [1.35]	-0.029 [-0.38]
Industry year fixed effect	Yes	Yes	Yes
Observations	2,195	2,195	2,195
R-squared	0.09	0.09	0.12

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. Robust standard error has been used. Robust *t*-statistics in brackets.

Table 6. Ownership structure and three measurements of REM variables

Variables	A_OCF	A_OCF	A_OCF	A_DIS	A_DIS	A_DIS	A_PROD	A_PROD	A_PROD
INSIDE	0.000 [0.18]			-0.000*** [-5.87]			-0.000 [-1.45]		
INST		0.000** [2.34]			0.000** [2.42]			0.000 [0.78]	
FORN			-0.000 [-0.11]			-0.003*** [-7.11]			-0.006*** [-4.98]
ROA	-0.240*** [-6.89]	-0.237*** [-7.09]	-0.237*** [-7.12]	-0.097*** [-3.52]	-0.139*** [-5.15]	-0.119*** [-4.30]	-0.295*** [-4.57]	-0.324*** [-5.34]	-0.275*** [-4.57]
AGE	-0.002 [-0.91]	-0.003 [-1.32]	-0.002 [-0.96]	-0.012*** [-7.08]	-0.011*** [-6.37]	-0.008*** [-5.24]	-0.012*** [-2.60]	-0.011** [-2.49]	-0.007 [-1.64]
SIZE	0.002 [1.38]	0.002 [1.36]	0.002 [1.33]	-0.001 [-1.14]	-0.000 [-0.33]	0.002* [1.89]	-0.004 [-1.39]	-0.003 [-1.25]	0.001 [0.40]
LEV	0.033*** [4.34]	0.034*** [4.50]	0.033*** [4.32]	-0.007 [-1.41]	-0.005 [-1.02]	-0.006 [-1.39]	0.035** [2.39]	0.037** [2.48]	0.035** [2.32]
GROW	-0.006** [-1.96]	-0.006** [-1.97]	-0.006* [-1.96]	-0.000 [-0.05]	-0.001 [-0.24]	-0.000 [-0.21]	0.015** [2.30]	0.014** [2.26]	0.014** [2.28]
LOSS	0.003 [0.51]	0.004 [0.63]	0.003 [0.54]	-0.006 [-1.42]	-0.009** [-2.04]	-0.007* [-1.70]	-0.028** [-2.35]	-0.030** [-2.51]	-0.026** [-2.19]
Constant	-0.030 [-0.99]	-0.033 [-1.12]	-0.029 [-0.96]	0.076*** [3.74]	0.042** [2.14]	0.005 [0.22]	0.110* [1.71]	0.087 [1.40]	-0.004 [-0.06]
Observation	2,195	2,195	2,195	2,195	2,195	2,195	2,195	2,195	2,195
R-squared	0.09	0.09	0.09	0.05	0.04	0.07	0.04	0.04	0.07
Adj. R-squared	0.08	0.08	0.08	0.04	0.02	0.06	0.03	0.03	0.06

Firms may simultaneously apply one or more technique(s) for manipulating financial statements. Prior studies document that firms manipulate their earnings by exploiting more than one technique (Deng & Wang, 2006; Roychowdhury, 2006; Cohen et al., 2008; Razzaque et al., 2016). They report that REM stands as the proxy for A_OCF, A_DIS, REM_1, A_PROD, and REM_2. REM_1 is the sum of A_OCF and A_DIS. REM_2 represents the sum of A_DIS and A_PROD. In our study, we also examine the

relationship between REMs proxies and our independent variables. Table 7 reports that inside and foreign ownership are negatively correlated with both REM_1 and REM_2. Institutional ownership is positively associated with REM_1 and no association with REM_2. Control variables for firm performance, age, growth, and financial distress are negatively associated with different REMs proxies, whereas size and leverage are shown to have a positive association.

Table 7. Ownership structure and proxies of REM

Variables	A_OCF	A_DIS	REM_1	A_PROD	REM_2
INSIDE	0.000 [0.64]	-0.000*** [-6.38]	-0.000*** [-3.32]	-0.000** [-2.01]	0.001*** [-3.74]
INST	0.000** [2.42]	-0.000 [-0.02]	0.000* [1.91]	-0.000 [-0.60]	-0.000 [-0.53]
FORN	0.000 [0.14]	-0.003*** [-7.35]	-0.003*** [-4.86]	-0.006*** [-5.13]	-0.009*** [-6.01]
ROA	-0.244*** [-6.92]	-0.069** [-2.51]	-0.313*** [-6.36]	-0.233*** [-3.71]	-0.303*** [-3.97]
AGE	-0.003 [-1.20]	-0.010*** [-6.16]	0.013*** [-4.29]	-0.008* [-1.86]	0.019*** [-3.61]
SIZE	0.002 [1.34]	0.001 [1.16]	0.003* [1.68]	0.001 [0.21]	0.002 [0.53]
LEV	0.034*** [4.55]	-0.007 [-1.60]	0.027*** [2.80]	0.033** [2.23]	0.026 [1.55]
GROW	-0.006** [-1.99]	0.000 [0.02]	-0.006 [-1.57]	0.015** [2.34]	0.015** [2.05]
LOSS	0.004 [0.56]	-0.004 [-0.88]	-0.000 [-0.02]	-0.023* [-1.95]	-0.027** [-2.02]
Constant	-0.037 [-1.18]	0.036* [1.71]	-0.001 [-0.03]	0.024 [0.35]	0.060 [0.83]
Observations	2,195	2,195	2,195	2,195	2,195
R-squared	0.09	0.09	0.11	0.08	0.10
Adj. R-squared	0.08	0.07	0.09	0.06	0.09

Notes: Robust t-statistics in brackets. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

4.4. Robustness of our result

To ensure the robustness of our results, we conduct several forms of sensitivity analysis. The first sensitivity analysis illustrates the effect of the test variable on results in two different time periods. The ownership structure is the internal CG mechanism. BSEC issued a revised CG guideline in 2012. This code was mandatory for all listed firms to follow. Prior to that guideline, it had been optional.

To check the robustness of our result, we divide our sample into pre-compulsory CG (2000-2011) and post-compulsory CG (2012-2017). We test three regressions individually to check each ownership effect on REMs in two different sample periods. Sub-sample data has been used to test the relationships. Table 8 reports a negative association between ownership structure and REMs in both of the periods. Inside ownership is another influential factor on REMs. Inside ownership is negatively related to REMs, before compulsory CG ($p < 0.1$) and

during compulsory CG ($p < 0.05$). Foreign ownership is also negatively associated with REMs in both the periods under study. Contrasting to the stated observation, during 2012-2017, the association between institutional ownership and REMs is positive but not statistically significant; however, we do find a significant positive relationship between institutional ownership and REMs during 2000-2011. We can reproduce the similar findings in both the time frame for all the three variables in two-time duration, except the relationship between institutional ownership and REMs during 2012-2017. One possible explanation for this exception may be the issuance of CG guideline. Institutional investors are more aware of management activities and they are able to pressurize management for complying with financial reporting presentation. So, this table shows that CG governance plays a definitive role to change the attitude of management to REMs in the case of institutional ownership.

For the second robustness test, we use a dummy variable for CG (*Dummy_CG*). This dummy variable is encoded with one if the data are taken from 2012-2017, zero otherwise. Column 5 of Table 8 shows a negative coefficient. It indicates that due to revised CG, the magnitude of REM has been decreased but this is not statistically significant. Since the relationship between institutional ownership and REM is positive during compulsory CG, regulators and auditors should emphasize more on financial reports of the listed firms, in particular for the firms usually dominated by institutional ownership.

Third, we eliminate all the outliers from our test and control variables. A winsorizing procedure has been used to exclude all extreme variables from our study. All the observations, which are more than three standard deviations away from the mean, is replaced by exactly three standard deviation value.

Table 8. Ownership structure and REMs in two different sample periods

Variables	REM		REM		REM		REM
	2000-2011	2012-2017	2000-2011	2012-2017	2000-2011	2012-2017	2000-2017
INSIDE	-0.001* [-1.91]	-0.001*** [-2.98]					
INST			0.001** [2.22]	0.000 [0.78]			
FORN					-0.011*** [-5.70]	-0.005** [-2.33]	
Dummy_CG							-0.009 [-0.95]
ROA	-0.744*** [-5.64]	-0.464*** [-3.72]	-0.787*** [-6.27]	-0.639*** [-5.37]	-0.706*** [-5.90]	-0.602*** [-4.98]	-0.702*** [-8.03]
AGE	-0.021** [-2.55]	-0.039*** [-4.38]	-0.021*** [-2.59]	-0.034*** [-3.82]	-0.013* [-1.68]	-0.029*** [-3.33]	-0.023*** [-4.01]
SIZE	-0.001 [-0.21]	-0.004 [-0.68]	0.001 [0.19]	-0.002 [-0.38]	0.007* [1.76]	0.003 [0.45]	-0.002 [-0.55]
LEV	0.027 [1.21]	0.139*** [5.20]	0.035 [1.61]	0.128*** [4.78]	0.030 [1.34]	0.125*** [4.69]	0.062*** [3.38]
GROW	-0.003 [-0.35]	0.034** [2.28]	-0.004 [-0.38]	0.031** [2.10]	-0.003 [-0.32]	0.031** [2.10]	0.007 [0.86]
LOSS	-0.069*** [-3.35]	0.034 [1.40]	-0.070*** [-3.47]	0.026 [1.05]	-0.067*** [-3.32]	0.030 [1.26]	-0.036** [-2.30]
Constant	0.134 [1.44]	0.186 [1.49]	0.064 [0.74]	0.107 [0.88]	-0.056 [-0.62]	0.006 [0.04]	0.109 [1.52]
Observations	1,344	851	1,344	851	1,344	851	2,195
R-squared	0.08	0.15	0.08	0.13	0.13	0.14	0.08
Adj. R-squared	0.06	0.12	0.06	0.11	0.12	0.12	0.07

Notes: Robust t-statistics in brackets. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

5. CONCLUSION

In this study, we test the association between ownership structure and REM of Bangladeshi firms listed on the Dhaka Stock Exchange throughout the period of 2000-2017. We get a negative and statistically significant association between inside ownership and REM, which is consistent with Sánchez-Ballesta and García-Meca (2007) and Dempsey and Hunt (1993) who argue that when inside ownership is low, insiders may engage in strategic accounting choice to mitigate contractual constraints. This finding indicates that Bangladeshi listed firms that are dominated by inside ownership are less likely to be involved in REM. Moreover, our study documents that when inside ownership is low firms tend to increase their earnings management through increasing production cost and lowering discretionary expenses.

On the other hand, a positive association exists between institution ownership and REM. This study also illustrates that firms, which are dominated by institutional ownership, involve more in REM through more discount, lenient credit terms, and lowering discretionary expenses. These findings argue that the efficiency of monitoring activities of the institutional owners faces major limitations for pertinent issues. The reasons may entail: they may be forming a strategic alliance with the management for fulfilling their own interests (Pound, 1988), they may be suffering from a free-rider problem or lack of expertise (Admati, Pfleiderer, & Zechner, 1994), or they may be investing with short-term motives in the same manner as transient investors (Hsu & Koh, 2005). Finally, the study also reports a negative association between foreign ownership and REM.

The impact of CG on REM has also been tested. We find some level of the positive impact of CG on REM. In the case of institutional ownership, after CG,

we find no association with REM. Prior to CG guidelines, the correlation turned out to be significant and positive. It underscores that CG motivates or coerces the institutional investors to limit REM behavior of management. Due to the diverse nature of the business, we exclude financial sectors from our sample. We confined our measurement of EM to REM; however, the outcome could be interesting when EM measures by discretionary accruals. However, the outcome of this

study will provide insights regarding ownership structure to the regulatory authorities for protecting minority shareholders' rights. Though this study finds that inside ownership is negatively associated with REM, the regulator may think to increase the proportion of institutional ownership. Moreover, the regulator should take some measurements to address the passive role of the institutional owners to restrain managers from earnings management practices.

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