Role of earnings management in determining firm value: An emerging economy perspective

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A B S T R A C T

Resource allocation decisions by investors are made on the basis of information provided by firm management. The reports providing information are prepared with the help of international financial reporting standards (IFRS) which provide a great deal of discretion to the management. Management, on the basis of this discretion, manipulates the financial information particularly earnings of firm termed as earnings management which has important implications for firm future. This earnings management can be accruals based and real activities based. This earnings management if beneficial for the firm is efficient and if detrimental is opportunistic. The current study investigates the behavior of earnings management for Pakistani non-financial listed firms for the period of 15 years for 2003-2017 and finds a positive relation between aspects of real and accrual earnings management and firm value variables. However, it appeared to be opportunistic for financially distressed firms and efficient for non-distressed firms when the sample was divided into four categories. Impact of accrual earnings management was more pronounced for Pakistani firms as compared to real earnings manipulation.

1. Introduction

Management of firm communicates with outside stakeholders with the help of financial reporting, by making use of International Financial Reporting Standards (IFRS) and accounting principles. The stakeholders of the firm make decisions, like resource allocation, on the basis of this information disclosed by the management of the firm. The quality of these decisions is determined by the quality of information communicated by the financial reporting which in turn determines the future direction and destiny of the firm. These accounting standards on the basis of which firm's management prepares financial statements to provide a great deal of flexibility and discretion to the management of the firm in preparation of financial statements. The management of a firm can make use of this discretion either efficiently or opportunistically. If the discretion and flexibility is used efficiently it would enhance the quality of financial information

and subsequently the quality of firm (Subramanyam, 1996). Alternatively, if the discretion is used opportunistically it may deteriorate the value of firm or resource allocation (Jiraporn et al., 2008).

Earning of a firm is one of the most fundamental and important information which the financial reporting discloses as the firm's future is also determined by it. Management or manipulation of this earning would result if the managers incorporate their judgment and discretion in the determination of earnings. The implications of this earnings manipulation for the firm's earnings and value is long lasting. Hence, earnings management has a crucial role in determining earnings of the firm and its future and has been extensively discussed and researched in the literature of corporate finance.

As already discussed, International Financial Reporting Standards (IFRS) offer financial managers to prepare financial statements with some flexibility by selecting accounting policies and alternative measurement methods of assets valuation, assessment of liabilities, revenue and expenses recognition. Financial results of firm can be altered by making use of this Earnings management flexibility in financial reporting (Ortega and Grant, 2003). According to Schipper (1989), in external reporting process purposeful intervention is made for communicating the firm's private information for

the purpose of obtaining private gains. This intervention is termed as earnings management.

Courtis (2002) pointed out the importance of conducting research in this area of interest in the following way:

"The accountancy profession should take constructive steps to understand the ramifications of narratives and visual techniques that contribute towards perception engineering".

Earnings management has two types which are accrual earnings management and real earnings management. This division is based on the nature of activities being manipulated. In accrual earnings management timing of expenses and revenue recognition is shifted from one period to another for the sake of meeting earnings targets. It can be done either by delaying the recognition of expense or advancing the recognition of revenue. On the other hand in real activities manipulation discretionary expenses including research and development (R&D) expenses, advertising expenses and maintenance expenses are decreased in order to increase profit.

Roychowdhury (2006) defined real activities manipulation as: "Management actions that deviate from normal business practices, undertaken with the primary objective of meeting certain earnings thresholds". Real activity manipulation may have negative implications for firm value because actions taken by management to boost earnings may hurt long term cash flows and future value. Real-activities based manipulation is gaining popularity over accrual earnings management as it is hard to detect even by analysts and auditors. It is also new as compared to accrual earnings management so there is scarcity of evidences particularly in case of emerging markets.

Though majority of literature describes earning management as negative phenomenon which aims to mislead investors and is opportunistic in nature yet there are also evidences of efficient utilization of judgment (Subramanyam, 1996; Jiraporn et al., 2008; Siregar and Utama, 2008) by management which increase the quality, predictability and utility of earning which in turn enhance value of firm. Hence on the basis of motive we can divide earning management into two types: efficient earnings management (i.e., to improve information about earnings to better communicate private information) and opportunistic earnings management (i.e., reporting earnings to gain the most personal benefit).

Ronen and Yaari (2008) also elaborated the concept of efficient and opportunistic earnings management. Efficient earnings management is "taking advantage of the flexibility in the choice of accounting treatment to signal the manager's private information on future cash flow" (Ronen and Yaari, 2008). Opportunistic earnings management is "choosing an accounting treatment that is opportunistic (maximizing the utility of management only)" (Ronen and Yaari, 2008).

As discussed above there is a wide variety of earning management in the financial results of firms both in developing and developed countries depending on the nature and motives for earning management. There may for example be capital market implication like affecting the stock price, initial public offering ,seasoned equity offering, stock based acquisition (Burgstahler and Dichev, 1997; Teoh et al., 1998a; Kim and Park, 2005; Cohen and Zarowin, 2010) contract based motives like avoiding the debt covenant violation, decreasing the cost of debt and opportunistic motives for self-serving like increasing bonus, pay, promotion and other perquisites and stock options etc., meeting or beating earning forecast by investors and creditors to satisfy transaction cost contracting or allocation of resource motives (Burgstahler and Dichev, 1997; Degeorge et al., 1999). Hence the scope of earning management is too broad and sometimes due to its widespread share in firm financial operations it is considered as inevitable for firm survival by one way or the other. Real earnings management is less likely to be detected by corporate governance mechanism and market participants as compared to accrual earnings management which can easily be detected, that is why firms have moved to real earnings management (Roychowdhury, 2006). Real earnings management too is detrimental for firm in long run though it may be beneficial for short term as it enables firms to satisfy short term motives by increasing cash flow from operation. However this short term benefit of real earnings management is at the cost of long term firm value. Studies report evidences of real earnings management by reducing or delaying R&D expenses or altering the shipment schedule, reducing advertising expenditures and securitization (Cohen et al., 2008; Cohen and Zarowin, 2010; Dechow et al., 2010). After the restriction of disclosure and regulation like IFRS and SOX managers have shifted to real activities manipulation as it is hard to detect and particularly in emerging markets where investors' protection is not much ripe. Taking into account the importance and excessive use of real earnings management this study also incorporates real earnings management along with accrual and intends to find implications of these earnings manipulations for firm value in perspective of emerging economy of Pakistan.

2. Literature review

2.1. Theoretical background

Two very popular theories can be considered in the context of earnings management which are agency theory and stewardship theory. Following section provide details of both theories.

2.1.1. Agency theory

A significant body of literature dealing with agency relationship has evolved over the last

decades. Agency theory was first developed by Jensen and Meckling (1976). Its framework is concerned with the contractual relationship of shareholders, managers, and employees in an organization. In general, shareholders are treated as principles, and managers are treated as agents. Agency relationship is described as a contract between two parties where one party is called principal or owner and other party is called agent or management. Under this contract agent agrees to perform services or expertise on behalf of principal against compensation. Principal, on the other hand delegates power of decision making to agent under this contract.

As both parties are rational individual it's likely that both principal and agent act for their own personal interest. Hence a conflict of interest arises between both principal and agent. Agency theory further states that as shareholders of firm are dispersed and they hold various diversified portfolios it is quite difficult for them to manage all the portfolio. Secondly they may not have the professional expertise required to manage, that's why they delegate the decision making authority and responsibility to manage the firm to corporate executives. However these managers have their own personal interest to pursue at the cost of owners of firm, here arises the agency problem.

Earnings management has attracted a lot of attention of researchers and they use agency theory to explain earnings management in the accounting literature framework. Based on Jensen and Murphy (1990), interest of managers and owners are divergent. So, aligning them in compensation is the primary mechanism. According to this theoretical framework, organizations should design compensation systems so that well-being of managers and owners are equitable (Jensen and Murphy, 1990).

It has also been argued in a number of academic studies that information value of earnings potentially increases due to earnings management hence it may be beneficial for firm. Managers by making use of discretion over earnings may communicate private information to public and shareholders earnings (Demski, 1998; Watts, 2003a; 2003b; Siregar and Utama, 2008). Subramanyam (1996) and Siregar and Utama (2008) provided empirical evidence that managers exercise discretion to improve the earnings ability to reflect the fundamental value of firm. Earnings management may not be harmful if the above mentioned cases hold.

Nevertheless many other studies favor the opportunistic view of earnings management (Jones, 1991; Dechow et al., 1995; kasznik, 1999; Dechow and Dichev, 2002). Managers may be induced to use the flexibility provided by financial reporting standards to opportunistic income management and increasing distortion in the reported earnings due to misalignment of incentives of managers and shareholders. Thus both beneficial and opportunistic views of earnings management exist in literature.

2.1.2. Stewardship theory

In contrast to agency theory the basis of stewardship theory is on sociological and psychological approach which states that corporate executives act as good steward of owners and their interest are aligned with those of organizational owners and organization itself (Albrecht et al., 2004). The focus of stewardship theorist is on a structure of empowerment and facilitation rather than monitoring and control. The view that opportunistic agents need to be invigilated by principals and monitoring and applying sanctions or incentive offering as a mean of control is also rejected by stewardship theorist.

Focus of stewardship theory is an opposite perspective to agency relationship. It takes the view that agents are trustworthy and they are good stewards of corporate resources which are entrusted to them and monitoring is not necessary for such stewards. Since managers act in best interest of owners and they are not opportunistic they should be trusted and given autonomy which in turn would reduce the cost of controlling behavior and cost of monitoring. According to Donaldson and Davis (1994), managers are assumed to be motivated by the need to exercise responsibility and authority, need to achieve and gain intrinsic satisfaction through performing effectively the inherently challenging tasks for the sake of gaining recognition from bosses and peers rather than material benefits.

Stewardship theory is based on the collective behavior of steward which seeks to achieve organizational goals like profitability rather than personal goals. This behavior positively affects the financial goals like profitability share price and dividend and benefits the principal (Davis et al. 1997). Managers believe in the alignment of their interest with that of firm's owners. Thus according to stewardship theory optimum governance structure should effectively coordinate within enterprise. Stewardship theory view both managers and directors as good steward of organization and would increase wealth of shareholders. According to Davis et al. (1997), greater satisfactions of steward come from achieving organizational goals rather than personal goals. Davis et al. (1997) maintained that personal needs satisfaction of stewards also come from achieving organizational goals. Thus stewardship theory considers non-financial motives as extremely important and motivating for managers these motives include need to recognition and achievement, respect for authority and the work ethic and the intrinsic satisfaction need of successful performance of work etc.

2.2. What is earnings management?

Earnings management was first studied by Hepworth (1953) as earnings smoothening. For the first time McNichols (2000) altered the expression earnings management for earnings smoothening therefore the focus of earnings management was to

prepare a summary of firm performance which enforce and reflect the intended results. Schipper (1989) defined earnings management concept as interference in financial reporting process which is deliberate and intended to achieve desired level of earnings. This means earnings may be increased or decreased or smoothened based on the targets and goals set by the management.

Many earlier studies have provided evidence of earning manipulation practices among companies. Healy and Wahlen (1999) have given the definition which is widely accepted and most cited and it states that 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 accounting numbers". This definition suggests that required level of earning is obtained by accounting choices adopted by remaining within the scope of generally accepted accounting principles and by operating decisions. The critical objective for regulatory bodies, researchers and standard setter is the implications of these practices adopted by firms. According to Magrath and Weld (2002) the practices of earnings management will either help managers in performance of duties or to deceive their stakeholders especially investors. Earnings management is "taking advantage of the flexibility in the choice of accounting treatment to signal the manager's private information on future cash flow" (Ronen and Yaari, 2008).

2.2.1. Accrual versus real earning management

Earning management can either be accrual or real depending upon the items and methods used for manipulation. Most literature particularly prior 2000 provide evidences of accrual manipulation however post 2000 real activities manipulation is also widely discussed in literature

Accruals earnings management is discretionary portion of accruals. Accruals in Accounting are divided into discretionary and non-discretionary portion. Normal accruals are non-discretionary while abnormal are discretionary. Non-discretionary accruals or normal accruals are those which come out as a result of previous accounting transaction or normal business operations. These also include previous transactions which are yet to be realized but have been recorded in books. Certain mandatory expenditures or assets also included in this category. Any upcoming bill, payroll taxes, obligatory expenses that are yet to be adjusted but recorded in the firm accounting statements are examples of non-discretionary expenses. Normally it is less likely that non-discretionary accruals are exposed to earnings manipulation.

On the other hand proxy variable for discretionary cash flow is real earning management. Discretionary cash flow from operation similar to discretionary accruals is derived from difference of normal cash flow and actual cash flow from operation. Dechow et al. (1998) developed the model for normal cash flow and this model was implemented by Roychowdhury (2006). Real earning management according to Roychowdhury (2006); is when we depart from normal business operation with the motive of meeting or beating short-term earning objectives. Another motivation of Managers is that they want the investor to believe that moving in normal course of operation the firm has met short term financial reporting objectives. Regulators are also less likely to challenge these decisions as they are based on actual business activities and decision and for the motive of realizing short-term benefit. Future cash flows in the long run however suffers a lot in realizing short term goals as a result of real earnings management.

Due to the tightening of standards and increasing disclosure and regulatory requirements firms tend to move towards real activities manipulation (Graham et al., 2005) as they are hard to detect and these fall within the scope of accounting principles though these too can be detrimental for firms' long run performance. More recently authors are simultaneously considering the use of both types of earning management depending upon the need and convenience of firm for their use (Zhang, 2008; Cohen et al., 2008).

Regarding accruals, managers normally have much discretion over accounting judgment such as discretion in inventory valuation in terms of LIFO, FIFO or weighted average, discretion in terms of selecting depreciation method among straight line or diminishing balance method, discretion of loss and reserve for bad debts, discretion over deferred tax and discretion over expected lives and salvage value of long term assets (Healy and Wahlen, 1999). It is well documented mechanism to temporarily boost or drag down earnings for earnings management purpose by making use of discretionary accruals for the sake of achieving certain contractual or market outcomes (Dechow et al., 1995).

Managers are aware of the fact that by performing real earnings management to achieve short term goals they will have to sacrifice future cash flows. Detection of real earnings management is more difficult as it involves real operating and investment strategies regarding decisions and as a result cash flows are affected (Kothari et al., 2005). It has also been argued by Kothari et al. (2005) that real earnings manipulation is even more expensive for firm than accrual earnings manipulation, so before involving in real activities manipulation managers tend to engage in accrual based earnings management.

In recent years real earnings management has attracted more attention. in a survey of more than 400 executives of United states Graham et al. (2005) found that surprisingly the about 80 of the respondents reported that to meet an earnings target they would decrease discretionary spending on advertisement, research and development (R&D) and other maintenance expense, other 55 percent

reported to delay the launch of a new project to meet earnings objectives even if they have to sacrifice value of firm for this small delay. According to the evidences of Kothari et al. (2005) in abnormal reduction of research and development at the time of seasoned equity offering (SEO) to inflate earnings managers use real earnings management.

After the work of Roychowdhury (2006) on real earnings manipulation increasing number of recent studies have documented evidences on real earnings management, comparison of real and accrual earnings management role of real earnings management in equity offering and substitution of accrual earnings management with real one (Roychowdhury, 2006; Cohen et al., 2008; Gunny, 2010; Cohen and Zarowin, 2010; Zang, 2012; Kothari et al., 2005).

2.2.2. Efficient or opportunistic earning management

Managers' motivation to earnings management can either be principled or opportunistic. Empirical evidences show both types of behavior for earnings management. Opportunistic earnings management is done in order to boost managers compensation (Healy, 1985; Cheng and Warfield, 2005), similarly avoiding debt covenants violation avoiding earnings decreases and losses, meeting or beating analyst forecast, maximization of stock price before issuance of new stocks may be other motives of earnings management (DeFond and Jiambalvo, 1994; Burgstahler and Dichev, 1997; Teoh et al., 1998b; Skinner and Sloan, 2002; Gunny, 2010).

Evidences of earnings management to be efficient rather than opportunistic are also numerous (Jones, 1991; Adams and Ferreira, 2007; Subramanyam, 1996; Jiraporn et al., 2008; Siregar and Utama, 2008). Subramanyam (1996) analyzed if the stock market investors include discretionary accruals in pricing shares. The results suggest that after controlling for non-discretionary accruals current levels of cash flow from operations, discretionary accruals predict levels of future profitability. The results confirm that managers communicate information regarding future profitability using discretionary accruals.

Similarly, following Subramanyam's (1996) study, Siregar and Utama (2008) examined whether discretionary accruals are able to signal future profitability in publicly listed firms in Indonesia and whether earnings management is efficient or opportunistic. It was suggested that earnings management would be efficient if it provides significant positive relationship with firm profitability and significant and negative relationship would be an indicator of opportunistic earnings management.

Similarly literature suggest than earning management can also be used for the sake of signaling. Hence, Inside information from management to investors can be communicated by a mechanism which is signaled by EM. EM has also been depicted as rational equilibrium behavior in case of information asymmetry which is modeled in a number of studies (Ronen and Sadan, 1981; Dye, 1988; Bartov et al., 2002). These researches argue that earning management work as signaling evidence and facilitate efficient communication between information users and managers and hence the investors ability to predict firm performance and value relevance of information.

Moreover, signaling perspective of EM suggests that shareholders themselves sometimes demand earnings management. Beidleman (1973) and Dye (1988) studies suggested two possible reasons for EM. First, a smoother, more predictable income stream will reduce cost of capital. Second, Dye (1988) argues that prospective investors' perception of firm value is also influenced by stable income stream. In case of accrual based earnings management assumptions and estimates are adjusted with in accounting system while in contrast to that in real earnings management in order to achieve desired level of reported earnings timing and structuring of actual business activities are involved. For example deciding to sale the equipment in a quarter when extra earnings are required. Later on Roychowdhury (2006), Cohen et al. (2008), Zang (2012), and Dicheve et al. (2012) also provided evidences on real earnings management.

Roychowdhury (2006) maintained that motives for engaging in real transaction based earnings manipulation is to avoid reporting loss and also some evidences for involvement of real activities management to meet analysts' forecast. Cohen et al. (2008) documented the evidence of real transaction based earnings management around the Sarbanes Oxley Act period. Finding pointed out post Sarbanes Oxley real earnings activities based management enhanced reducing the accrual earnings management. In other words, the study of Cohen et al. (2008) provided evidence that with increase in the restriction of regulatory environment the focus has shifted from accrual earnings management to real earnings manipulations. Study of Zang (2012) provide evidence of usage of both real and accrual based earnings management but decision making regarding real earnings management is done prior to accrual earnings manipulation. The study further finds that after being name in a security class action lawsuit firm change mode of earnings manipulation from accrual to real.

This study will analyze the relationship of accrual earnings management and real earnings management with firm value separately for finically distressed and healthy firms and for family and non-family firms in order to investigate any significant difference in the behavior of earnings manipulation for firm value i.e. whether these firms manage earnings opportunistically or efficiently.

To the author best knowledge no such study exists which has simultaneously considered accrual earnings management and real activities based earnings management and investigated the impact of

both earnings managements on the value of firm in the context of emerging economy of Pakistan.

Similarly no such study exists in literature which has classified sample into financially non distressed family (NDF) firm, distressed family (DF) firms, non-distressed non family (NDNF) and distressed non family (DNF) firms' category for analyzing the behavior of earnings management for these classifications.

3. Methodology

The study is intended to classify 327 listed Pakistani non-financial firms into two groups based on their financial health, in order to differentiate the impact of earning management on these firms' value. The firms which are in financial difficulty and likely to default will be considered as financially distressed while the others will be considered as non-distressed or financially healthy. This study incorporates Altman's model (Altman and Hotchkiss, 2010) for classifying firms into financially healthy and distressed. This model was globally tested and applicable for emerging markets. Following equation determines the score of each firm and in case of score below 1.75, firm is classified as financially distressed firm.

$$Z = 6.56X_1 + 3.26X_2 + 6.72X_3 + 1.05X_4 + 3.25$$

where, X_1 working capital/total assets; X_2 retained earnings/total assets; X_3 earnings before interest and taxes/total assets; X_4 book value of equity/total liabilities; Z overall index, the lower a firm's Z-score the higher its probability to bankrupt.

Further the study will classify the firms into family and non-family and ultimately four categories of financially non distressed family (NDF) firms, non-distressed non family (NDNF) firms, distressed family (DF) firms and distressed non family (DNF) firms will be introduced.

3.1. Accrual earnings management

Since the study is considering both real and accrual types of earning management. The measurement models of both types of earnings management are described as follows. Following section provide a brief explanation of four accrual earnings management model with assumptions and limitation. One of the followings models shall be selected on the basis of explanatory power for final analysis.

Jones (1991) introduced a model in which change in economic circumstances of firm are controlled. In contrast to Healy (1985) and DeAngelo (1986) models which consider zero or constant non-discretionary accruals, Jones (1991) model took nonlinear accruals as linear function of firm's fixed assets and change in revenue. It is proposed that sales growth controls for firm's non-discretionary working capital while firm's depreciation expenses are controlled by fixed assets like property plant and equipment. Here change in revenue is considered as unmanaged change in revenues' proxy. In Jones (1991) model total accruals are regressed on change in revenue and gross property plant and equipment (PPE). The coefficients derived are then used to calculate unmanaged accruals. The managed accruals are taken from the regression residuals.

$$\frac{TA_{it}}{ASSTS_{it-1}} = \beta_0 + \beta_1 \frac{1}{ASSTS_{it-1}} + \beta_2 \frac{\Delta REV_{it}}{ASSTS_{it-1}} + \beta_3 \frac{PPE_{it}}{ASSTS_{it-1}} + \in_{it}$$

where, TA_{it} is total accruals; $ASSTS_{it-1}$ is the book value of total assets of firm i at the end of year t -1; ΔREV_{it} is sales revenues of firm i in year t less revenues in year t – 1 scaled by Total assets of t-1; PPE_{it} is gross property, plant and equipment of firm i at the end of year t scaled by Total assets of t-1; β_1, β_2, β_3 are estimated parameters and ε_{it} is the residual.

In modified Jones (1991) model; changes in revenues are adjusted for changes in receivables and regressed again total accruals along with property plant and equipment (Dechow et al. 1995).

$$\frac{TA_{it}}{ASSTS_{it-1}} = \beta_0 + \beta_1 \frac{1}{ASSTS_{it-1}} + \beta_2 \frac{(\Delta REV_{it} - \Delta RCV_{it})}{ASSTS_{it-1}} + \beta_3 \frac{PPE_{it}}{ASSTS_{it-1}} + \in_{it}$$

where, ΔRCV = Change in account receivables; Rest of the variables are same as above.

Kasznik (1999) further modified the Dechow et al. (1995) model by adding the change in free cash flow (ΔCFO) as it was suggested by Dechow (1994) that there was a negative correlation between total accruals and ΔCFO. Higher estimation error results if ΔCFO is omitted from the accruals equation.

$$\frac{TA_{it}}{ASSTS_{it-1}} = \beta_0 + \beta_1 \frac{1}{ASSTS_{it-1}} + \beta_2 \frac{(\Delta REV_{it} + \Delta RCV)}{ASSTS_{it-1}} + \beta_3 \frac{PPE_{it}}{ASSTS_{it-1}} + \beta_3 \frac{CFO_{it}}{ASSTS_{it-1}} + \in_{it}$$

Findings of Dechow et al. (1995) and Kasznik (1999) reveal positive association between discretionary accruals estimated by Jones model and return on assets (ROA). Kothari et al. (2005) introduce following model that controls for the firm prior performance using lag value of return on assets (ROA) and include an intercept.

$$\frac{TA_{it}}{ASSTS_{it-1}} = \beta_0 + \beta_1 \frac{1}{ASSTS_{it-1}} + \beta_2 \frac{(\Delta REV_{it} + \Delta RCV)}{ASSTS_{it-1}} + \beta_3 \frac{PPE_{it}}{ASSTS_{it-1}} + \beta_3 \frac{ROA_{it}}{ASSTS_{it-1}} + \in_{it}$$

where, ROA= return on assets which is ratio of net earnings and total firm's assets.

3.2. Real earnings management

In his seminal work Roychowdhry (2006) maintained that firms tend to move towards real earning management with the improvements and tightness of legislation like SOX and strict disclosure requirement and harmonization of financial reporting standards like IFRS and proposes the following model for determining the real activities

manipulation in firms' operations. The real earning management is in fact the combination of abnormal cash flow from operation (CFO) abnormal production cost (PROD) and abnormal discretionary accruals (DISX). Following models provide the normal level of CFO, Production (PROD) and discretionary expenses. Subtracting actual from normal level of these items provide their abnormal values.

$$\frac{CFOP_{it}}{ASSTS_{it-1}} = \beta_0 + \beta_1 \frac{1}{ASSTS_{it-1}} + \beta_2 \frac{REV_{it}}{ASSTS_{it-1}} + \beta_3 \frac{\Delta REV_{it}}{ASSTS_{it-1}} + \epsilon_{it}$$

$$\frac{PROD_{it}}{ASSTS_{it-1}} = \beta_0 + \beta_1 \frac{1}{ASSTS_{it-1}} + \beta_2 \frac{REV_{it}}{ASSTS_{it-1}} + \beta_3 \frac{\Delta REV_{it}}{ASSTS_{it-1}} +$$

$$\beta_4 \frac{\Delta REV_{it-1}}{ASSTS_{it-1}} + \epsilon_{it}$$

$$\frac{Disc\_Exp_{it}}{ASSTS_{it-1}} = \beta_0 + \beta_1 \frac{1}{ASSTS_{it-1}} + \beta_2 \frac{Sales_{it-1}}{ASSTS_{it-1}} + + \epsilon_{it}$$

where, PROD= Production cost; CFOP= Cash flow from operations; Disc_Exp= Discretionary expenditure which is the combination of R&D and advertising expenditure.

3.3. Relationship of earning management and firm value

Integrity of financial reporting and resource allocation throughout the economy are directly affected and significantly influenced by earnings management (Dechow et al., 1995; Healy and Wahlen, 1999). It has been demonstrated by Subramanyam (1996) and Siregar and Utama (2008) that after controlling current level of cash flow from operation and non-discretionary accruals, discretionary accruals have ability to positively signal future profitability of firm. Similarly Francis et al. (2004) have analyzed the impact of earnings quality attributes to resource allocation decision by investors. Following these researchers current study incorporates accrual earnings management, which is measured by discretionary accruals, non-discretionary accruals and cash flow from operation along with control variables in a single model and intends to determine their implication for firm value.

Efficient and opportunistic are two types of earnings management (Subramanyam, 1996). If managers use their discretion to communicate private information about firm profitability which the historical cost based earnings is yet to reflect it is efficient earnings management. On the other hand if they use their discretion for maximizing their utility it is opportunistic. Efficient earnings management adds value to firm i.e., it has positive relationship with firm value while opportunistic earnings management deteriorate value i.e., it has negative relationship with firm value (Subramanyam, 1996).

Present study intends to determine the nature of earnings management for firm value i.e. whether the earnings management is efficient or opportunistic in this particular context. This study further introduces four unique classification of listed Pakistani non-financial companies into financially non distressed family (NDF) distressed family (DF) non distressed non family (NDNF) firms, and distressed non family (DNF) firms and test the implication of earnings management for these categories. It is assumed that distressed firms are likely to have material overstatement with the intention to conceal their signs of distress and demonstrate opportunistic earnings management by demonstrating negative relationship with firm value variables, while healthy firms are expected to demonstrate efficient earnings management both in family and non-family firms.

3.3.1. Accrual earnings management and firm value

The current study aims to apply the same measures adopted by the above mentioned studies by combining them in the single model along with introducing other control variables like, size, leverage, growth and perform regression analysis in the following way:

$$PRFT_{j,t+1} = \beta_0 + \beta_1 DACCR_{j,t} + \beta_2 NDACCR_{j,t} + \beta_3 CFO_{j,t} + \beta_4 CNTRL_{j,t} + \epsilon_{it}$$

where, DACCR $_{j,t}$= Discretionary accruals; NDACCR $_{j,t}$ = Non-discretionary accruals; CFO $_{j,t}$ =Cash flow from operations; CNTRL= control variables including size (Log of Assets), leverage (Debt ratio), growth (sales growth); PRFT $_{j,t+1}$ is the future profitability, measured by following three variables:

1. CFO $_{j,t+1}$ = cash flow from operations of next year
2. NDNI $_{j,t+1}$ = non-discretionary net income (CFO $_{j,t+1}$ + NDAC $_{j,t+1}$) of next year
3. NI $_{j,t+1}$ = next year change in earnings (NI $_{j,t+1}$−NI $_{j,t}$)

all valuables scaled by total assets are at beginning of years.

Hypotheses 3.1 to 3.4 suggest positive relationship of earnings management for non-distressed firms and negative relationship for distressed firms, assuming efficient earnings management for non-distressed firms and opportunistic for distressed ones. The presumption behind the opportunistic earnings management is the desire of distressed firms to conceal sign of distressed by material overstatement of earnings.

3.3.2. Real earnings management and firm value

Real earnings management is also considered in this study in order to evaluate its impact on firm value in the presence of earnings quality variables. Following model considers real type of earning management and is intended to check its implication for firm value.

$$PRFT_{j,t+1} = \beta_0 + \beta_1 REM_{j,t} + \beta_2 CNTRL_{j,t} + \epsilon_{it}$$

where, REM= Real earning management which is combination of abnormal discretionary expenses, abnormal cash flow and abnormal production cost.

Rests of the variables are same as explained in the prior model.

3.4. Hypotheses of the study

In order to test the above mentioned methods for accrual earnings management, real earnings management, and impact of earnings management on different categories of firms following four hypotheses have been developed which would be investigated respectively.

H3.1: Accrual earnings management is efficient for firms listed on Pakistani stock exchange.
H3.2: Real earnings management is efficient for firms listed on Pakistani listed firms.
H3.3: Accrual earnings management (AEM) is more efficient for financially non distressed family (NDF) firms less efficient for financially non distressed non family (NDNF) firms, less opportunistic for

financially distressed family (DF) firms and more opportunistic for financially distressed non family (DNF) firms.
H3.4: Real earnings management (REM) is more efficient for financially non distressed family (NDF) firms less efficient for financially non distressed non family (NDNF) firms, less opportunistic for financially distressed family (DF) firms and more opportunistic for financially distressed non family (DNF) firms.

4. Results and discussion

By taking into account the criteria discussed in methodology section firms have been first classified into financially non distressed family (NDF) firms, non-distressed non-family (NDNF) distressed family(DF) firms and distressed non family (DNF) firms and then analyzed accordingly (Table 1).

Table 1: The classification of firms in the sample

	Financially healthy			Financially distressed			Total
Year	Family	Non family	Total	Family	Non family	Total	
2003	138	132	270	26	29	55	325
2004	141	141	282	24	21	45	327
2005	145	140	285	20	22	42	327
2006	164	129	293	16	18	34	327
2007	159	119	278	27	22	49	327
2008	164	112	276	28	23	51	327
2009	167	125	292	21	14	35	327
2010	173	118	291	17	19	36	327
2011	173	113	286	16	24	40	327
2012	163	113	276	23	28	51	327
2013	153	128	281	21	25	46	327
2014	158	126	284	17	26	43	327
2015	149	121	270	24	29	53	323
2016	146	116	262	27	34	61	323
2017	139	116	255	34	34	68	323

4.1. Earnings management and firm value

As this study considers both accrual and real aspect of earnings manipulation and detect its implications for firm value, in the following section results of both aspects are reported consecutively.

4.1.1. Accrual earning management (AEM)

As discussed in previous chapters there are various methods for detection of accrual earnings management. Four most popular methods of Jones (1991), modified Jones (1991) method (Dechow et al., 1995), kasznik (1999), and Kothari (2005) model are considered for this study. Of these models one would be finalized for further analysis on the basis of explanatory power, i.e., model whose explanatory is power is greater from all other models would be finalized. Hence earnings management would be detected considering all these models consecutively and later one the one with maximum explanatory power (adjusted R²) would be selected. As per the above stated selection criteria, Table 2 provides the explanatory power of the models discussed before.

Since the maximum explanatory power among all the above mentioned model is kasznik (1999) model,

so kasznik (1999) model of accrual earnings management detection model would be used for accrual earnings management measurement in the study.

Table 2: The explanatory power of the models discussed

Model	Adjusted R^2	P-value
Jones (1991)	0.081	0.00
Dechow et al. (1995)	0.072	0.00
Kasznik (1999)	0.311	0.00
Kothari et al. (2005)	0.122	0.00

AEM and value

As discussed above that this is a comprehensive study which intends to consider maximum aspects of earnings manipulation respectively with respect to firm value. So in the following sessions accrual earnings management is considered for detail analysis and its implications for firms valuation on the basis of classification discussed above. Descriptive correlation and regression analysis of accrual earnings management and firm value are described in the following session respectively.

Table 3 describes the descriptive of accrual earnings management for the entire sample of about 327 firms along with the control variables of firm size, leverage and sales growth and for valuation the

next year cash flow, non-discretionary net income and change in net income is used as per literature support. As we know that discretionary accruals denote accrual earnings management non-discretionary accruals and cash flow are used as other explanatory variables.

Table 3: Descriptive of AEM and firm value

variable	Mean	Median	Maximum	Minimum	Std. Dev.	Skewness	Kurtosis
EMOVERALL	0.00550	0.00162	1.609563	-0.650603	0.118158	4.388386	58.3067
NDACCRUAL	-175665	-20099.9	112000000	-31213141	3490735	19.53843	678.2693
CASHFLOW	753613	88000	44060642	-13962546	3302830	7.639466	74.4344
LOG_ASSETS	6.42882	6.36224	8.790017	4.597322	0.65978	0.426933	3.38813
LEVERAGE	0.11895	0.08206	0.962972	-0.153255	0.132004	1.986383	9.6667
SALESGRWTH	3.07994	1.09447	2914.031	-28.76275	73.33116	39.5582	1570.56
NEXTCFO	776653	85700	44060642	-13962546	3371885	7.031895	64.0986
NDNETINCOM	480620	52099.9	28330060	-44156263	2421876	0.329956	110.201
ΔNI	-97328	1864.6	21990358	-15200000	4009666	-34.65067	1319.76
ROANEXT	0.03822	0.025815	2.945108	-6.857556	0.219824	-17.46186	636.7691
ROENEXT	-0.1119	0.085855	27.34483	-334.2025	8.535696	-37.89646	1484.677

Degree of association between the variables of earnings management and firm value has been depicted in the Table 4. The results of correlation among variables would also be endorsed by the regression analysis of the same variables.

Table 4: Correlation of AEM and firm value

Var	$DACC_{j,t}$	$NDACC_{j,t}$	$CFO_{j,t}$	$Size_{j,t}$	$Lvge_{j,t}$	$S. Grw_{j,t}$	$CFO_{j,t+1}$	$NDNI_{j,t+1}$	$\Delta NI_{j,t+1}$
$DACC_{j,t}$	1								
$NDACC_{j,t}$	0.2401	1							
$CFO_{j,t}$	-0.155	-0.511	1						
$Size_{j,t}$	-0.040	-0.111	0.453	1					
$Lvrage_{j,t}$	-0.011	0.007	0.054	0.145	1				
$S.Grw_{j,t}$	-0.039	0.001	-0.006	-0.028	-0.023	1			
$CFO_{j,t+1}$	0.043	-0.336	0.758	0.447	0.032	-0.006	1		
$NDNI_{j,t+1}$	0.075	-0.506	0.604	0.334	-0.022	-0.004	0.716	1	
$\Delta NI_{j,t+1}$	-0.126	-0.756	-0.014	-0.075	-0.064	0.002	0.101	0.547	1

Selection of pooled, fixed or random effect

Fixed effect intends to control the unobserved heterogeneity to understand or estimate the pure effect of explanatory variable. In our case there may be many characteristics of firms which have not been considered in the model and which may affect our explanatory variables and may disturb the robustness of results so we intend to fix or control the effect of those characteristics (variables) which have not been considered. In order to decide the fixed random effect testing this study first opt the random option and run the regression. If the results of chi square test are significant it is an indication of fixed effect otherwise random or no effect is used. The decision of fixed and random effect lies on the result of Hausman's test. This test when run for the data of present study gave significant result which proves the use of fixed effect regression analysis so for every model before regression analysis Hausman's test was run and for almost all model fixed effect was applied as per the results of Hausman's test.

Regression results of AEM and value

Table 5 illustrates the results of model of accrual earnings management and firm value. For accrual earnings management as discussed above the Kasznik model was used and value is measured with the help of three dependent variables of non-discretionary net income next year cash flow and change in net income which have already been explained and are described in the separate columns in the Table 5.

Overall Accrual earnings management is positively affecting the value variables of next year cash flow and non-discretionary net income and negatively influencing the change in net income. It means on average the efficient earnings management hypothesis holds in the context of Pakistani firms. These results are consistent with the findings of future profitability predication of discretionary accruals by Subramanyam (1996) and efficient earnings management proposition by Siregar and Utama (2008).

Earnings management and value on yearly basis considering 10 year window

After the overall analysis of accrual earnings management and firm value it has also been tested for rolling window of 10 year in order to further investigate the behavior of firm's earnings management with respect to value and whether any significant difference or pattern was created with the passage of time in terms of firm's earnings management and its subsequent effect on firm value. This yearly analysis is performed for the year of 2013, 2014, 2015 and 2016, as there are lag and lead values of certain variables which need to be used in the analysis that's why 2017 and 2003 have been skipped for this analysis purpose. Results have been reported in the Table 6 for above mentioned years for all three dependent variables of next year cash flow ($CFO_{j,t+1}$), non-discretionary net income ($NDNI_{j,t+1}$) and change in net income ($\Delta NI_{j,t+1}$).

Table 6 of rolling window of 10 year exhibits the relationship of earnings management and firm value

variables for the year 2013 to 2016. On average the relationship of earnings management with firm value variable first slightly increases in the same direction from year 2013 to 2014 but then starts becoming negative from year 2015 onward. This means that in these years the efficient earnings management tends to convert to opportunistic nature for the overall sample.

Table 5: Regression results of AEM and firm value

overall	$CFO_{j,t+1}$		$NDNI_{j,t+1}$		$\Delta NI_{j,t+1}$	
	Coefficient	P value	Coefficient	P value	Coefficient	P value
$DACC_{j,t}$	0.046	0.045	0.060	0.000	-0.367	0.000
$NDACC_{j,t}$	0.000	0.013	0.000	0.038	0.000	0.000
$CFO_{j,t}$	0.000	0.000	0.000	0.521	0.000	0.000
$Size_{j,t}$	-0.026	0.008	-0.001	0.855	-0.013	0.153
$Leverage_{j,t}$	-0.101	0.000	0.014	0.489	0.049	0.003
Sales Grwoth$_{j,t}$	0.000	0.916	0.000	0.199	0.000	0.075
Adj. R^2	0.229		0.332		0.107	
F-Stat	4.270	0.000	6.468	0.000	2.244	0.000

Table 6: Regression results of AEM and firm value for rolling window of 10 years

Year	overall	$CFO_{j,t+1}$		$NDNI_{j,t+1}$		$\Delta NI_{j,t+1}$	
		Coefficient	P value	Coefficient	P value	Coefficient	P value
2013	$DACC_{j,t}$	0.029	0.019	0.031	0.119	-0.217	0.000
	Adj. R^2	0.156		0.313		0.035	
2014	$DACC_{j,t}$	0.054	0.000	0.221	0.002	0.562	0.021
	Adj. R^2	0.169		0.328		0.162	
2015	$DACC_{j,t}$	-0.040	0.112	0.422	0.004	-0.477	0.009
	Adj. R^2	0.231		0.268		0.122	
2016	$DACC_{j,t}$	-0.063	0.001	0.636	0.001	-0.437	0.003
	Adj. R^2	0.334		0.383		0.147	

Comparison for four categories on the basis of ownership and financial health

Another unique and relevant way of checking the robustness of results and analyze any significant difference or pattern has been introduced for this study. This criterion is to divide the sample into four categories on the basis of ownership of firm and financial health of firm as discussed in the chapter of methodology. Hence four categories of non-distressed and family (NDF) firm, non-distressed non family (NDNF) firms, distressed and family (DF) firms and distressed and non-family (DNF) firms. Results of all these four categories along with all three dependent variable and their level of significance have been reported in the Table 7.

Table 7: Regression results of AEM and firm value for four categories of firms

F. Health		$CFO_{j,t+1}$		$NDNI_{j,t+1}$		$\Delta NI_{j,t+1}$	
		Coefficient	P value	Coefficient	P value	Coefficient	P value
NDF	$DACC_{j,t}$	0.261	0.001	0.991	0.001	0.431	0.000
	Adj. R^2	0.129		0.493		0.286	
NDNF	$DACC_{j,t}$	0.025	0.003	0.351	0.004	-0.342	0.001
	Adj. R^2	0.335		0.545		0.194	
DF	$DACC_{j,t}$	-0.022	0.691	-0.174	0.002	-1.663	0.009
	Adj. R^2	0.234		0.238		0.571	
DNF	$DACC_{j,t}$	-0.063	0.018	-0.222	0.000	-1.112	0.002
	Adj. R^2	0.601		0.411		0.563	

Discretionary accruals which are the proxy for accrual earnings management provide positive significant relation with dependent variable of next year cash flow (CFO) with magnitude of 0.26 (P<0.00), positive and significant relationship with non-discretionary net income (NDNI) with magnitude 0.99 (P<0.00) and positive and significant relationship with change in net income (ΔNI) with magnitude 0.43 (P<0.00) indicating efficient use of earnings management by non-distressed family (NDF) firms.

As per Table 7, earnings management is positively related with firm value variable of next year cash flow (CFO) for non-distressed non-family firms with magnitude of 0.0247 (P<0.00) and coefficient of non-discretionary net income is also positive with magnitude 0.351 (P<0.00) and negative coefficient for change in net income (NI) with magnitude -0.34 (P<0.00). Though 2 of these 3 variables are positively linked with earnings management however their magnitude are less strong than the coefficients of non-distressed family (NDF) firms.

Relationship of accruals with dependent variable of next cash flow is insignificant and negative with coefficient of -0.022 (P<0.70) while with non-discretionary net income (NDNI) it is negative and significant with coefficient of -0.174 (P<0.00). Relationship of third dependent variable of change in net income (NI) is also negative and significant with quite high coefficient of -1.663 (P<0.00). These results are consistent with the hypothesis that relationship of earnings management with firm value in distressed family firms is opportunistic.

Impact of earnings management on firm value variable for distressed non family firms is negative and significant for all three dependent variables. For next cash flow (CFO) it is -0.063 (P<0.02) for non-

discretionary net income (NDNI) it is -0.22 (P<0.00) and for change in net income (NI) it is -1.11 (P<0.00). These results are also consistent with study hypothesis that earnings management for distressed non family firms is more opportunistic than distressed family (DF) firms.

4.1.2. Real earnings management (REM)

As it has already been discussed that the present study intends to incorporate the both major aspect of earnings manipulations i.e., accrual and real portion along with control variables so that a comprehensive picture with broader scope can be investigated for more robust and reliable results.

Following section takes into account the real earnings management detection and its implication for firm value.

Hausman's test has also been run for the model of real earnings management in order to decide the fixed or random effect regression. For Most of the models fixed effect regression analysis was suggested and performed accordingly. Table 8 provides the results of overall sample followed by the yearly analysis of rolling 10 year windows and later on the analysis of four categories of non-distressed family (NDF), non-distressed non family (NDNF), distressed family (DF) and distressed non-family (DNF).

Table 8: REM and value for overall sample

overall	$CFO_{j,t+1}$		$ROA_{j,t+1}$		$ROE_{j,t+1}$	
	Coefficient	P value	Coefficient	P value	Coefficient	P value
$REM_{j,t}$	0.010	0.013	-0.027	0.000	0.291	0.043
$Size_{j,t}$	0.028	0.031	0.012	0.151	1.283	0.051
$Leverage_{j,t}$	-0.102	0.001	-0.322	0.008	1.454	0.045
$Sales\ Grwoth_{j,t}$	0.000	0.831	0.000	0.951	0.009	0.094
Adj. R^2	0.229		0.044		0.401	
F-Stat	4.034	0.000	16.611	0.000	5.915	0.000

Results of relationship of real earnings management with firm value variables for overall sample is somewhat different than what was found in case of accrual earnings management. Here it is positive and significant for next cash flow (CFO) with magnitude quite lower than accrual earnings management. The coefficient in this case is only 0.010 (P<0.02). For return on asset variable it is negative with magnitude of -0.027 (P<0.00) and for return on equity (ROE) it is again positive with coefficient of 0.29(P<0.05).

Table 9 provides the results of relationship of real earnings management and firm value for rolling window of ten years i.e. these results are for the year of 2013 to 2016 respectively in order to analyze the

behavior of real earnings management with firm value over time. It can be observed that there is no systematic or uniform pattern in the results as the coefficient of dependent variable of next cash flow (CFO) varies from 0.035 (P<0.00) in year 2013 to 0.024 (P<0.00) in 2014. In 2015 it turn negative with coefficient of -0.031 (P<0.00) and in last observation year of 2016 it again negative with magnitude of -0.008(P<0.00). For ROA and ROE it turns out to be 0.011(P<0.000) to -0.046(P<0.001) and 0.361(P<0.079) to -0.024 (P<0.02) respectively. Overall the efficient earnings management turns out to be opportunistic with the passage of time. It may be attributed to tightness of standards and vigilance of investors.

Table 9: REM and value yearly basis considering rolling ten year window

Year	overall	$CFO_{j,t+1}$		$ROA_{j,t+1}$		$ROE_{j,t+1}$	
		Coefficient	P value	Coefficient	P value	Coefficient	P value
2013	$REM_{j,t}$	0.035	0.000	0.011	0.000	0.361	0.079
	Adj. R^2	0.137		0.067		0.450	
2014	$REM_{j,t}$	0.024	0.009	0.016	0.006	-0.012	0.096
	Adj. R^2	0.243		0.271		0.381	
2015	$REM_{j,t}$	-0.031	0.000	-0.001	0.744	-0.011	0.068
	Adj. R^2	0.165		0.088		0.263	
2016	$REM_{j,t}$	-0.008	0.000	-0.046	0.001	-0.024	0.017
	Adj. R^2	0.235		0.021		0.247	

The link between real earnings management and firm value for non-distressed and family (NDF) firms has been provided in Table 10. As per results the relationship of real earnings management with dependent variable of next cash flow (CFO) is positive and significant with coefficient of 0.040 (P<0.00) and for return on asset variable it is negative and insignificant with coefficient -0.003 (P<0.20). For return on equity again the coefficient is significant with value of 0.186 (P<0.084). For non-distressed non family firms the coefficient of next cash flow (CFO) is positive but magnitude is less

than that of non-distressed family (NDF) firms. Coefficient here is 0.023 (P<0.00). For return on assets coefficient it is again significant and positive with magnitude 0.0142 (P<0.007). But for return on equity (ROE) the link is negative and significant -0.234 (P<0.004) in contrast to positive results for other two variables. Size and leverage are mostly negative for these firms.

For distressed family (DF) firms the next cash flow from operations (CFO) is negatively linked with real earnings management with coefficient -0.0116 (P<0.00) and for return on asset it is again negative

but magnitude is greater which is -0.0623 (P<0.05). For return on equity the results are negative and insignificant with coefficient of -0.066 (P<0.90). To some extent the results are consistent with study hypothesis.

Table 10: REM and value for four categories of firms

F. Health		CFO$_{j,t+1}$		ROA$_{j,t+1}$		ROE$_{j,t+1}$	
	Overall	Coefficient	P value	Coefficient	P value	Coefficient	P value
NDF	REM$_{j,t}$	0.040	0.000	-0.003	0.626	0.186	0.084
	Adj. R^2	0.214		0.184		0.165	
NDNF	REM$_{j,t}$	0.023	0.000	0.014	0.006	-0.234	0.003
	Adj. R^2	0.423		0.469		0.142	
DF	REM$_{j,t}$	-0.012	0.000	-0.062	0.044	-0.066	0.872
	Adj. R^2	0.828		0.453		0.131	
DNF	REM$_{j,t}$	-0.043	0.012	-0.951	0.434	-0.081	0.015
	Adj. R^2	0.404		0.174		0.156	

Impact of real earnings management on firm value for distressed non family (DNF) firms is negative for next cash flow with magnitude -0.043 (P<0.02) which is greater than distressed family magnitude. The magnitude of Return on assets (ROA) is much larger -0.951 (P<0.50) however it is insignificant. Return on equity (ROE) is negatively related with firm real earnings management. Result is consistent with the study hypothesis that real earnings management is more opportunistic for distressed non family firms.

5. Conclusion and recommendations

Role of earnings management for firm value has been investigated in this study. Considering both real and accrual aspects of earnings management the sample of Pakistani non-financial firms listed in Pakistan stock exchange (PSX) has been divided into four categories on the basis of ownership and financial health in order to have insight into the behavior of earnings manipulation for these categories. Furthermore, the efficient and opportunistic aspects of earnings management have also been taken into account as there are pieces of evidence for both in the literature. The sample has been divided into four categories of a non-distressed family (NDF) firms, non-distressed nonfamily (NDNF) firms, distressed nonfamily (DNF) firms, and distressed family (DF) firms. It was hypothesized that overall earnings management of both types is efficient in Pakistani companies. It was further hypothesized that earnings management is more efficient in non-distressed family firms less efficient in non-distressed nonfamily firms and less opportunistic in distressed family firms and more opportunistic in distressed nonfamily firms.

Both types of earnings management proxies when regressed against the firm value variables of non-discretionary net income (NDNI) change in net income (ΔNI) and next year cash flow (CFO) appeared to have a positive and significant impact on firm value endorsing the hypotheses. The impact of earnings management on firm value, however, was more pronounced in case of accrual earnings management and less significant in case of real earnings management. Similarly, as per hypotheses the earnings management was opportunistic in case of distressed family and non-family firms and was efficient in case of non-distressed family and non-family firms. Regression was also run on the basis of a ten year window period and results for 2013 and 2014 were efficient and turned to opportunistic for the year of 2015, 2016. However, in the case of real earnings management results for only 2015 were opportunistic while for rest of 3 years it was efficient yet the magnitudes of coefficients were quite lower as compared to accrual earnings management.

On the basis of findings of the study, it is recommended that both efficient and opportunistic aspects of earnings management must be considered rather than considering its mere negative phenomenon. It is further recommended that financial health must be considered prior to taking any decision regarding earnings manipulation of the firm. Moreover, disclosure requirement must be enhanced and audit should be more vigilant so that any manipulation of firm resources by management may be avoided. Finally, the study is limited to the mere emerging economy of Pakistan and covers only non-financial sector of economy.

Compliance with ethical standards

Conflict of interest

The authors declare that they have no conflict of interest.

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