The Social Sciences 9 (5): 321-334, 2014
ISSN: 1818-5800

How Earnings Are Managed? Evidence from a Developing Country

Md. Aminul Islam
School of Business Innovation and Technopreneurship, University Malaysia Perlis, Perlis, Malaysia

Abstract: This study examined new companies which were listed on the Dhaka Stock Exchange (DSE) for the period 1995-2005. Data were collected from company prospectuses, DSE daily diaries; DSE and SEC websites and annual report of listed companies. The lists of new listings were obtained from the various issues of the Securities and Exchange Commission (SEC) annual report. A total of 132 companies listed at DSE during the study period were selected for this study. Several hypotheses were constructed to answer the research questions drawn in this study. Findings confirmed the hypothesis that there are widespread uses of earning management among IPO firms in Bangladesh. It is found that income increasing firms employ different tools, as compared to that of income decreasing firms in their attempt to manage earnings. Income increasing firms tend to use current accruals and non-cash gains, as opposed to income decreasing firms which prefer to use non-current accruals more than current accruals. When the variables are further decomposed, it is found that change in assets and change of liabilities are significant factors used by income increasing firms whereas income decreasing firms use change of liabilities only. In final decomposition of variables, it was revealed that income increasing firms tend to use accounts receivables and accounts payables, as oppose to income decreasing companies which tend to use inventories and accounts payables in their pursuits on managing earnings. Further, research should be undertaken with larger sample and inclusion of other variables which may help explain more on issues related to earning management in context of Bangladesh.

Key words: Vehicles for earning management, Dhaka stock exchange, Earning management, discretionary accruals, Bangladesh

INTRODUCTION

Studies of short run and long run behavior of returns on IPOs reveal that IPOs are underpriced in the short run whereas in the long run the evidence is that of underperformance, i.e., negative returns accrue to the investors holding these IPOs (Chorruk and Worthington, 2010). This study explores a possible source for over optimism. IPO firms can enhance their earnings by adopting discretionary accounting accrual adjustments that raise reported earnings. Over time, investors may recognize that the firms earnings are not maintaining momentum and hence, investors may lose their optimism resulting in poor long run performance. Teoh *et al.* (1998a) and Iqbal *et al.* (2004) revealed that the offering firms report significant improvements in their operating performance in the pre-offer period which are not due to their cash flow performance. They have also recorded that an aggressive earnings management pre-offer leads to worse operating and return performance post-offer. Most of the prior studies on earnings management have focused on why firms manage earnings. Several reasons have been identified that include; income smoothing (Yoon and Miller, 2002b), ownership control (DeAngelo, 1986), equity offerings (Rangan, 1998; Teoh *et al*., 1998c; Yoon and Miller, 2002a) and political costs (Jones, 1991). However, few prior studies document the types of vehicles firms use when the firms either increase or decrease reported earnings. For example, McNichols and Wilson (1988) document that banks use bad-debt expenses to manipulate reported earnings and Yoon *et al.* (2006), find that in the Korean capital market asset disposal gains or losses and bad-debt expenses are used to manipulate earnings. Researchers found it arduous and challenging to detect or measure earnings management. It is not possible to observe earnings management directly. Therefore, researchers have investigated 2 venues for earnings management, the choice of accounting methods and the management of accruals. Past research in their attempt to study accruals use 2 models: Healy (1985) and DeAngelo (1986) use total accruals, as a proxy for earnings management while Jones (1991), Dechow *et al.* (1995), Rangan (1998) and Teoh *et al.* (1998a, b) use discretionary accruals, as a measure of earnings management. The possible explanation to exclude non-discretionary accruals is that since non discretionary accruals are used to reflect business condition; subject to firms condition and sales growth and thus, it cannot be controlled by managers, it is excluded from the studies. The most popular discretionary model is the standard

Jones (1991) Model. This model is able to decompose accruals into discretionary and non-discretionary accruals. When changes in sales are adjusted for the change in receivables, standard Jones Model becomes a modified Jones Model which is proposed by Dechow *et al.* (1995). The modified model is designed to reduce the measurement error of discretionary accruals when discretion is applied over sale. The study by Dechow *et al.* (1995), finds that a modified Jones Model provides the most powerful test of earnings management compared to Healy DeAngelo and standard Jones and industry model. Numerous studies conducted across the globe on detecting earning management. However, there are very limited researches undertaken on the tools employed in pursuit of earning management. Therefore, this study will attempt to find out tools used in managing earnings by the sample listed companies in Dhaka stock exchange.

Literature review: An abundance of literature has surfaced in the area of earnings management. Potential earnings management has become a concern throughout the world. Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports. The objective is to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers (Healy and Wahlen, 1999). Many studies have examined management's choice of accounting methods while other research has studied accrual management. As stipulated under Generally Accepted Accounting Principles (GAAP), managers may choose among various accounting policies that affect reported income differently. Most past researches were carried out in the United States market and some of them are described in the following sections.

According to Cormier and Magnan (1996), research supports the economic and financial theory assumption that managers make accounting choices to maximize their personal interests and well-being. An accounting choice that is economically beneficial for managers will be preferred to manage earnings because they generally do not require disclosure and often will not be questioned by an auditor. Shipper (1989) defines earnings management, as a purposeful intervention in the external financial reporting process with the intention of obtaining some private gains. As DuCharme *et al.* (2001), point out pure earnings management techniques available to managers tend to fall within 3 broad categories: Choice of accounting methods, revision of estimates and acceleration of deferral of revenues and expenses. At any point of time, some of the firm's future revenues and costs are genuinely uncertain and while no set of hard and fast rules can help to solve it and inevitably, there are instances where firm exercise judgment and thus, opens room for firms to manage earnings. It is not surprising that managers in their judgment, believe that they are acting in the firm's best interest. In particular without violating accounting rules, firms can accelerate the recognition of revenues and defer the recognition of certain expenses under business environment.

Economic and financial theory assumes that managers are by nature rational and opportunistic in the pursuit of their personal interests (Cormier and Magnan, 1996). These interests are determined by the terms set out in contracts between managers and the company, as well as in contracts between the company and specific external parties, such as suppliers, lenders, governments and regulators. Many of these contracts are based on earnings or other financial information issued by the company. For example, senior executives often receive bonuses based on accounting income and debt often has covenants that state minimum working capital amounts, establish maximum debt-to-equity ratios or restrict dividends based on the amount of retained earnings. An accounting choice that is economically beneficial for managers will be preferred over a choice with negative repercussions: It is assumed that the manager will adopt a strategic approach in his or her accounting choices. The study of the effect of contract terms on accounting choices is known as contracting theory or positive accounting theory.

Initial studies based on this theory focused on the reasons that motivate managers for choosing accounting policies. In general, prior research findings support the assumption that managers make accounting choices to maximize their personal interests and well-being. However, examining accounting policy choices reveals little information. Researchers have come to realize that:

- Firms do not and cannot constantly change accounting policies
- Managers do not choose an accounting policy without considering the firm's accounting procedures portfolio
- Earnings according to Generally Accepted Accounting Principles (GAAP) may be influenced by factors other than the choice of accounting policy

These limits have led researchers to examine whether managers use accruals (the difference between net earnings and cash flow) to accomplish their interests.

This approach seems logical: Accruals represent the overall measurement of a firm's accounting disclosure policy and they are more likely to reflect a strategic decision made by the firm's managers than simply the study of a particular accounting choice. Accruals are also an attractive way for managers to manage earnings because they generally do not require disclosure and often will not be questioned by an auditor. It's important to note that earnings management is not the same as earnings manipulation. Earnings management, however complies with GAAP whereas earnings manipulation does not.

Neil *et al.* (1995) report that proceeds from the initial offering of IPO using income-increasing (liberal) for example, borrowing aggressively from future earnings are relatively higher than those using income-decreasing (conservative) methods when analyzing accounting method choice. Thus, there is incentive for issuing firms to manage earnings to raise enough capital when the investors foresee the share price to increase. In addition, managers personally can earn abnormal profits when they sell their shares. Managers attempt to manipulate earnings in order to influence short-term stock price performance and also for job security.

However, aggressive management of earnings through income-increasing accounting adjustments leads investors to be overly optimistic about the issuer's prospect and thus overvalues the new issues (Iabal *et al.*, 2004). When these high pre-issue earnings are not sustained over time, disappointed investors subsequently will devalue the firm.

Inevitably, according to Rangan (1998), managers will continue to manage earnings in the subsequent 2 quarters after the offering announcement for 2 reasons:

- An earnings reversal immediately after the offering and the associated price drop could invite lawsuits against the firm and its manager
- Firms enter into lock-up agreements with their underwriters that prevent insiders at issuing firms from selling their holdings until 90-180 days after the offering date

Earnings management in seasoned equity and initial public offerings: Many past literatures, such as Loughran and Ritter (1997), Rangan (1998) and Teoh *et al.* (1998a) provide evidence that managers manage earnings during seasoned equity offerings in the US market. These studies report that earnings management during seasoned equity offerings causes poor long run stock performance. During seasoned equity, reported earnings are high due to high discretionary accruals component. There is a negative relation between discretionary accruals and post-offering abnormal stock returns. The high discretionary accruals tend to predict worse stock price performance. Stock price under-perform, as investors are disappointed with subsequent earnings decline.

Alireza and Daniel (2003) indicated that the mean of abnormal accruals was statistically significant and the sign of abnormal accruals was positive. Their findings also indicated that the changes in accruals had an increasing effect on reported earnings numbers and earnings were managed upward. Teoh *et al.* (1998a) in their hypothesis predicts worse performance for issuers with usually large income-increasing accounting adjustments prior to the offering. Interestingly, their research reveal that issuers in the most aggressive quartile under-perform the matched non-issuers by 7.5% in the 3 years after the issue year and also they under-perform conservative issuers. In contrast, issuers conservatively outperform their match.

Pre-offering shareholders of issuing firms benefit from misevaluations of share prices that are caused by earnings management. Rangan (1998), also provides evidence to reject the notion that issuing firms are simply timing their offerings after quarters of high earnings and are not manipulating earnings and that at least a portion of the discretionary accruals represents deliberate earnings management. Rangan's study differs from Loughran and Ritter (1997) and Teoh *et al.* (1998a) because the only stock returns following the offering year and not the long-term performance. According to Shivakumar (2000), managers of offering firms manipulate earnings not to influence investor valuations but as a rational response to the expected negative market reaction at the announcement.

Tan (2001) in his study finds that there is an under performance trend in stock price in the post announcement period with the highest stock returns occur prior to or in the year of the rights issues announcement. As expected with discretionary accruals, the general pattern of pre-issue earnings management for instance higher discretionary accrual quartile, shows better pre-issue earnings performance than the lower discretionary current accruals and cannot predict post-issue stock return under performance. In more recent years, several studies have examined earnings reporting around IPOs of common stock. Among others, Teoh *et al.* (1998b), DuCharme *et al.* (2001), Iqbal *et al.* (2004), Yoon and Miller (2002b) and Yoon *et al.* (2006), all report empirical evidence that suggests earnings are managed in anticipation of going public. It is unclear, if the measures of earnings management employed in this research can truly reflect the deceptive nature of manipulation of

revenues and expenses intended to enhance reported earnings (and thereby, IPO proceeds) or reflective of normal operating, investing and financing decisions of IPO firms. It is difficult to distinguish legitimate earnings reporting from subtly misleading practices and there is no generally accepted method of doing so. If it is costly for management to mislead investors, then discretionary accounting choices might be focused on increasing the information content of reported earnings.

Ritter (1991) provides empirical evidence that IPO firms' stock returns are significantly less than those of a matched sample of non-IPO firms over the 3 year period after offering. His study implies that entrepreneurs mislead investors by manipulating earnings and investors react negatively. This finding is further supported by Jain and Kini (1994) who examine accounting measures of operating performance of IPO firms. They find that firms exhibit a decline in operating performance after their IPOs as a result of not being able to further borrow from future high expectations of future earnings growth that are not subsequently fulfilled.

Teoh *et al.* (1998b), also investigate earnings management during the year of IPO and subsequent stock returns. They find a significant negative association between abnormal accruals measured during the year of offer and stock returns over a 3 years post IPO period. Teoh *et al.* (1998b) report issuers with unusual high accruals in the IPO year experience poor stock return performance in the 3 years thereafter. IPO issuers in the most aggressive quartile of earnings managers have a 3 years after market stock return of approximately 20% less than IPO issuers in the most conservative quartile. According to DuCharme *et al.* (2001), pre-IPO abnormal accruals are positively related to initial firm value. Their results also confirm the earlier studies: Abnormal accruals during the offer year are significantly negatively related to subsequent form stock returns. In addition, they also find that abnormal accruals in the preceding year are also significantly negatively related to subsequent performance.

Vehicles used in managing earnings: Most of the prior studies on earnings management have focused on why firms manage earnings. Several reasons have been identified that include; income smoothing (Yoon and Miller, 2002b), ownership control (DeAngelo, 1986), equity offerings (Rangan, 1998; Teoh *et al*., 1998c; Yoon and Miller, 2002a) and political costs (Jones, 1991). However, finding out reasons of earnings management is not enough to formulate policies to tackle widespread practice of earnings management. It is essential to find out the vehicles/tools firms use in managing earnings. Few prior studies documented the types of vehicles firms use when the firms either increase or decrease reported earnings. For example McNichols and Wilson (1988), document that banks use bad-debt expenses to manipulate reported earnings and Yoon *et al.* (2006) find at the Korean capital market that asset disposal gains or losses and bad-debt expenses are used to manipulate earnings. A study on financial reporting practices of Malaysian companies by Latif reveals that reporting practices of non-blue-chip companies tend to exaggerate their profits and put their performance in a more favorable light in comparison with the larger blue chip companies. This study shows that one of the methods used to inflate earnings is to classify an expense as an extraordinary item. Over the years, empirical studies have been carried out and theoretical literature written to enhance people's knowledge towards this issue; yet it is arduous for people to clearly understand the various issues related to earnings management, especially with different types of equities in different industries and in different markets.

Discretionary accruals models: How can earnings management be measured? It is not possible to observe earnings management directly. Therefore, researchers have investigated 2 venues for earnings management, the choice of accounting methods and the management of accruals. Previous research on accruals focused mainly for the fiscal year of IPO. The accruals methods that are employed by various researchers are summarized.

The Healy Model: Healy (1985) tests for earnings management by comparing mean total accruals (scaled by lagged total assets) across the earnings management partitioning variables. Healy's study differs from most other earnings management studies in that he predicts that systematic earnings management occurs in every period. His partitioning variable divides the sample into three groups with earnings predicted to be managed upwards in one of the groups and downward in the other 2 groups. Inferences are then made through pair wise comparisons of the mean total accruals in the group where earnings is predicted to be managed upwards to the mean total accruals for each of the groups where earnings is predicted to be managed downwards. This approach is equivalent to treating the set of observations for which earnings are predicted to be managed upwards as the estimation period and the set of observations for which earnings are predicted to be managed downwards as the event period. The mean total accruals from the estimation period then represent the measure of nondiscretionary accruals.

The Deangelo Model: DeAngelo (1986) tests for earnings management by computing first differences in total accruals and by assuming that the first differences have an expected value of zero under the null hypothesis of earnings management. This model uses last period's total accruals (scaled by lagged total assets) as the measure of nondiscretionary accruals. The DeAngelo Model can be viewed, as a special case of the Healy Model in which the estimation period for non-discretionary accrual is restricted to the previous year's observations. A common feature of the Healy and DeAngelo Model is that they both use total accruals from the estimation period to proxy for expected non-discretionary accruals. If non-discretionary accruals are constant over time and discretionary accruals have a mean zero in the estimation period, then both the Healy and DeAngelo Models will measure nondiscretionary accruals without error. If however, non-discretionary accruals change from period to period then both models will tend to measure non-discretionary accruals with error. Which of the 2 models is more appropriate that depends on the nature of the time-series process generating non-discretionary accruals? If non-discretionary accruals follow a white noise process around a constant mean then the Healy Model is appropriate. If non-discretionary accruals follow a random walk, then the DeAngelo Model is appropriate. Empirical evidences suggest that total accruals are stationary in the levels and approximate a white noise process (Dechow, 1994). The assumption that nondiscretionary accruals are constant is unlikely to be empirically descriptive. Kaplan (1985), points out that the nature of the accrual accounting process dictates that the level of nondiscretionary accruals should change in response to changes in economic circumstances. Failure to model the impact of economic circumstances on nondiscretionary accruals will cause inflated standard errors due to the omission of relevant (uncorrelated) variables.

The industry model: The final model considered is the industry model used by Dechow and Sloan (1991). Similar to the Jones Model, the industry model relaxes the assumption that non-discretionary accruals are constant over time. However, instead of attempting to directly model the determinants of non-discretionary accruals, the industry model assumes that variations in the determinants of non-discretionary accruals are common across firms in the same industry. The ability of the industry model to mitigate measurement error in discretionary accruals hinges critically on 2 factors. First, the industry model only removes variation in non-discretionary accruals that is common across firms in the same industry. If changes in non-discretionary accruals largely reflect responses to changes in firm-specific circumstances then the industry model will not extract all non-discretionary accruals from the discretionary accruals proxy. Second, the industry model removes variation in discretionary accruals that is correlated across firms in the same industry.

The Jones Model: Jones (1991) proposes a model that relaxes the assumption that non-discretionary accruals are constant. This model attempts to control for the effect of changes in a firm's economic circumstances on nondiscretionary accruals. The results were tremendous. It indicates that the model is successful at explaining around 1 quarter of the variation in total accruals. Revenues are assumed to be non-discretionary in this model. If earnings are managed through discretionary revenues then the Jones Model is able to remove part of the managed earnings from the discretionary accrual proxy. For example, considering a situation where management uses its discretion to accrue revenues at year-end when the cash has not yet been received and it is highly questionable whether the revenues have been earned. The result of this managerial discretion will be an increase in revenues and total accruals (through an increase in receivables). The Jones Model uses total accruals with respect to revenues and will therefore extract this discretionary component of accruals, causing the estimate of earnings management to be biased toward zero. Jones recognizes this limitation of her model.

The modified Jones Model: The Jones Model is then modified which is proposed by Dechow *et al*. (1995). The modification is designed to eliminate the conjectured tendency of the Jones Model to measure discretionary accruals with error when discretion is exercised over revenues. In the modified model, non-discretionary accruals are estimated during the event period. The adjustment relative to the original Jones Model is the change in revenues is adjusted for the change in receivables in the event period. The original Jones Model implicitly assumes that discretion is not exercised over revenue in either the estimation period or the event period. The modified version of the Jones Model implicitly assumes that all changes in credit sales in the event period result from earnings management. This is based on the reasoning that it is easier to manage earnings by exercising discretion over the recognition of revenues on credit sales than it is to manage earnings by exercising discretion over the recognition of revenue on cash sales. If this modification is successful then the estimate of earnings management has taken place through the management of revenues.

According to DuCharme *et al.* (2001), accruals models are preferred because this approach captures the subtle income management techniques allegedly used to avoid detection by outsiders. Accruals not only reflect the choice of accounting methods but also the effect of recognition timing for revenues and expenses, asset write-downs and changes in accounting estimates. Past research in their attempt to study accruals use 2 models: Healy (1985) and DeAngelo (1986) use total accruals, as a proxy for earnings management while Jones (1991), Dechow *et al.* (1995), Rangan (1998) and Teoh *et al.* (1998a, b) use discretionary accruals as a measure of earnings management. The possible explanation to exclude non-discretionary accruals is that since, non-discretionary accruals are used to reflect business condition; subject to firms condition and sales growth and thus, it cannot be controlled by managers, it is excluded from the studies.

The distinction between discretionary and non-discretionary components of accruals is important. In earnings management, it is accruals that change as a result of management's accounting decisions that are of interest which are discretionary accruals. Discretionary accruals represent managerial interventions into financial reporting process. Researchers face a difficult problem distinguishing between discretionary and non-discretionary components of accruals. The distinction is important. While changes in a company's underlying performance will cause non-discretionary accruals to change, it is accruals that change, as a result of management's accounting decisions that are of interest. For example, during a period of economic growth, one would expect accruals such as accounts receivable and accounts payable to change, as sales increase without any earnings management occurring. In contrast, discretionary accruals represent managerial interventions into the financial reporting process. For example, if the allowance for doubtful accounts were changed because of management's self-interest, the change in accruals would be discretionary.

Accruals include all adjustments that allow a business to change from a cash basis to an accrual basis-whether this means allocations, provisions or changes in accounting methods. Changes in working capital also form part of accruals. The following equation demonstrates the calculation:

$$\text{Total accruals} = \text{Earnings} - \text{Cash flow}\left(\text{from operations}\right)$$

The trick for researchers is to identify the discretionary component of accruals. It is difficult to do this because non-discretionary and discretionary components of accruals cannot be observed directly, so it is necessary to develop methods for estimating the discretionary accruals. What researchers want to know can be shown as: Discretionary accruals+non-discretionary accruals = Earnings-Cash flow (from operations)

Researchers have developed several techniques for estimating discretionary accruals (Healy, 1985; DeAngelo, 1986; Jones, 1991; Dechow *et al.*, 1995; Rangan, 1998; Teoh *et al.*, 1998a, b). One approach Healy (1985) and DeAngelo (1986) uses total accruals as an estimate of discretionary accruals and looks for earnings management by comparing the amount of accruals in different firms. A second method (Jones, 1991; Dechow *et al.*, 1995; Rangan, 1998), examines differences in accruals between periods. For example, a researcher might assume that non-discretionary accruals do not change between periods and attribute differences in total accruals to management discretion. The researcher might adjust the estimate of accruals to reflect economic changes, such as growth. A third approach uses regression techniques to separate the discretionary and non-discretionary components of accruals.

Previous research examines the specification and power of various discretionary-accrual models but not that of performance-matched accrual models (Dechow *et al.*, 1995). Dechow *et al.* (1995), conclude all models reject the null hypothesis of no earnings management at rates exceeding the specified test levels when applied to samples of firms with extreme financial performance. One interpretation of the results is that firms with extreme performance are more likely to engage in earnings management and that discretionary accrual models correctly detect it as such (Guay *et al.*, 1996). Alternatively, the discretionary accrual models might be mis-specified when applied to samples of firms with extreme performances in part because performance and estimated discretionary accruals exhibit a mechanical relation. To the extent that the concern is model misspecification and because earnings management research typically examines non-random samples (e.g., samples that firms self-select into by for example, changing auditors), earnings management studies must employ some means of mitigating the misspecification to reduce the likelihood of incorrect inferences. In this vein, use of a control sample to address specification issues is common in the literature.

MATERIALS AND METHODS

One of the main objectives of this research is to examine whether firms in different categories of earnings

(i.e., income increasing and income decreasing firms) employ different vehicles in making accounting decisions. The main challenge faced by financial researchers on earnings management is the difficulty, similarly faced by investors to observe or to measure the earnings management directly. Beneish (2001), notes that since accruals are the principle product of GAAP and if earnings are managed, it is more likely that the earnings management occurs on the accrual rather than the cash flow component of earnings. Therefore, a central issue in this research is the extent to which managers alter reported earnings if it ever existed. The firms' performance and accruals will then be examined from fiscal year 0 to +3. If the firm is de-listed during the sample period, the company will be excluded.

Firms are classified into 3 groups depending on the degree of earning management. These groups are income-increasing, neutral and income-decreasing firms. It is hypothesized that firms in different categories of earning management will utilize different vehicles. The differences should have systematic relationships with decomposition of accruals. It is predicted that income increasing firms will increase non-cash gains and the income decreasing firms should take the opposite strategies. There are 3 important factors considered to be important in detecting earnings management, i.e., current period revenues, balance of accounts receivables at year end and gross property, plant and equipment at year end in the modified Jones Model. However McNichols and Wilson (1988), document that banks use bad-debt expenses to manipulate reported earnings and Yoon *et al.* (2006) find at the Korean capital market that asset disposal gains or losses and bad-debt expenses are used to manipulate earnings. Hence, it is hypothesized that bad-debt expenses, asset disposal gains or losses are used in earnings management. Additionally, attempt is made to test whether depreciation expenses can be used in managing earnings in Bangladesh capital market. Therefore, the following 2 hypotheses are proposed:

H_1: Non-current accruals for the income-increasing firms will be higher than for the income-decreasing firms
H_{1a}: Non-cash expenses for the income-increasing firms will be lower than for the income-decreasing firms
H_{1b}: Non-cash revenues for the income-increasing firms will be higher than for the income-decreasing firms
H_{1c}: The component items of non-cash expenses (depreciation expenses, bad-debt expenses, asset disposal losses) for the income-increasing firms will be lower than for the income-decreasing firms
H_2: Current accruals for the income-increasing firms will be higher than for the income-decreasing firms
H_{2a}: Changes in operation related assets and their components (accounts receivable) for income-increasing firms will be higher than for the income-decreasing firms
H_{2b}: Changes in accounts payable for income-increasing firms will be higher than for the income-decreasing firms
H_{2c}: Changes in inventories for income-increasing firms will be higher than for the income-decreasing firms

Degree of earnings management: Past researchers employed several models in detecting earning management. Healy (1985), tests for earnings management by comparing mean total accruals (scaled by lagged total assets) across the earnings management partitioning variables. His partitioning variable divides the sample into 3 groups with earnings predicted to be managed upwards in one of the groups and downward in the other 2 groups. Inferences are then made through pair wise comparisons of the mean total accruals in the group where earnings is predicted to be managed upwards to the mean total accruals for each of the groups where earnings is predicted to be managed downwards. This approach is equivalent to treating the set of observations for which earnings are predicted to be managed upwards, as the estimation period and the set of observations for which earnings are predicted to be managed downwards, as the event period. The mean total accruals from the estimation period then represent the measure of non-discretionary accruals. DeAngelo (1986), tests for earnings management by computing first differences in total accruals and by assuming that the first differences have an expected value of zero under the null hypothesis of earnings management. This model uses last period's total accruals (scaled by lagged total assets) as the measure of non-discretionary accruals. The DeAngelo Model can be viewed, as a special case of the Healy Model in which the estimation period for non-discretionary accrual is restricted to the previous year's observations. A common feature of the Healy and DeAngelo Model is that they both use total accruals from the estimation period to proxy for expected non-discretionary accruals. If non-discretionary accruals are constant over time and discretionary accruals have a mean zero in the estimation period then both the Healy and DeAngelo Models will measure non-discretionary accruals without error. Kaplan (1985), points out that the nature of the accrual accounting process dictates that the level of non-discretionary accruals should change in response to changes in economic circumstances. Failure to model the impact of economic circumstances on nondiscretionary accruals will cause inflated standard errors due to the omission of relevant (uncorrelated) variables.

Jones (1991), proposes a model that relaxes the assumption that non-discretionary accruals are constant. Her model attempts to control for the effect of changes in a firm's economic circumstances on non-discretionary accruals. The results in Jones (1991) indicate that the model is successful at explaining around 1 quarter of the variation in total accruals. An assumption implicit in the Jones Model is that revenues are non-discretionary. If earnings are managed through discretionary revenues then the Jones Model will remove part of the managed earnings from the discretionary accrual proxy. The Jones Model uses total accruals with respect to revenues and will therefore, extract this discretionary component of accruals, causing the estimate of earnings management to be biased toward zero. The industry model then proposed by Dechow and Sloan (1991). Similar to the Jones Model, the industry model relaxes the assumption that non-discretionary accruals are constant over time.

However, instead of attempting to directly model the determinants of non-discretionary accruals, the industry model assumes that variations in the determinants of non-discretionary accruals are common across firms in the same industry.

The Jones Model is then modified by Dechow. The modification is designed to eliminate the conjectured tendency of the Jones Model to measure discretionary accruals with error when discretion is exercised over revenues. In modified model, non-discretionary accruals are estimated during the event period (i.e., during periods in which earnings management is hypothesized) as:

$$NDA_{\tau} = \alpha_1 (1 / A_{\tau-1}) + \alpha_2 (\Delta REV_{\tau} - \Delta REC_{\tau}) + \alpha_3 (PPE_{\tau})$$

Where, ΔREC_{τ} = Net receivables in year τ less net receivables in year $\tau-1$ scaled by lagged total assets at $\tau-1$. The estimates of α_1-α_3 and non-discretionary accruals during the estimation period (in which no systematic earnings management is hypothesized) are those obtained from the original Jones Model. The only adjustment relative to the original Jones Model is the change in revenues is adjusted for the change in receivables in the event period. The original Jones Model implicitly assumes that discretion is not exercised over revenue in either the estimation period or the event period. The modified version of the Jones Model implicitly assumes that all changes in credit sales in the event period result from earnings management. This is based on the reasoning that it is easier to manage earnings by exercising discretion over the recognition of revenues on credit sales than it is to manage earnings by exercising discretion over the recognition of revenue on cash sales. If this modification is successful then the estimate of earnings management has taken place through the management of revenues.

Discretionary accruals are used, as a proxy to determine the extent of earnings management in this study. Discretionary accruals are obtained by subtracting non-discretionary accruals from total accruals. Non-discretionary accruals are estimated by using a Regression Model that regresses total accruals on several explanatory variables. However, a critical drawback to the total accrual approach is that researchers cannot distinguish discretionary components from non-discretionary components. Therefore, a model needs to be developed to separate discretionary accruals from total accruals. Prior research documents that the modified Jones Model (Dechow *et al*., 1995) is effective for this purpose. However, recently Yoon and Miller (2002b) and Yoon *et al*. (2006) document that the modified Jones Model does not fit for Korean firms. Therefore, the new model proposed by Yoon *et al*. (2006) is employed in this research. The model is described below:

$$TA_i / REV_i = \beta_0 + \beta_1 (\Delta REV_i - \Delta REC_i) / REV_i + \beta_2 (\Delta EXP_i - \Delta PAY_i) / REV_i + \beta_3 (DEP_i + RET_i)$$

Where:

TA (Total Accruals)	=	Aaccounting earnings-CFO
REV	=	Net sales revenue
REC	=	Receivables
EXP	=	Sum of cost of goods sold and selling and general administrative expenses excluding non-cash expenses
PAY	=	Payables
DEP	=	Depreciation expenses
RET	=	Retirement benefits expenses
Δ	=	Change operator

The model posits that total accruals will normally depend on changes in cash sales revenue, changes in cash expenses and some non-cash expenses, including depreciation expenses and retirement benefits expenses. In order to get the discretionary accruals, non-discretionary accruals will be subtracted from the total accruals for each observation as follows (Yoon *et al*., 2006):

$$DA = TA_i / REV_i - \begin{bmatrix} b_0 + b_1 (\Delta REV_i - REC_i) / REV_i + \\ b_2 (\Delta EXP_i - \Delta PAY_i) / REV_i + \\ b_3 (DEP_i + RET_i) / REV_i \end{bmatrix}$$

Vehicles used in earnings management: Series of multiple regression analysis will be employed to find out vehicles employed in managing earnings in the Bangladesh capital market. For regression analysis, the discretionary accruals on the components of the aggregate accruals will be regressed to determine the

components that influence the discretionary accruals significantly. To be consistent with the systematic decomposition of the aggregate accruals, 3 different regressions will be run, i.e., one regression for each group. This systematic decomposition of accruals is adapted from Yoon *et al.* (2006) who have done a similar study on Korean Stock Market. The first-tier decomposition decomposes the aggregate accruals into the non-current and current accruals. The decomposition of current and non-current accruals facilitates conducting in-depth analysis and detecting vehicles used in earning management. Therefore in the first-tier regression analysis, the discretionary accruals on the first-tier components will be regressed and the components that influence the discretionary accruals significantly will be identified (Yoon *et al.*, 2006). The model is as follows:

$$DA = \alpha_0 + \alpha_1 NACCR + \alpha_2 CACCR + \varepsilon$$

Where:

DA = Discretionary Accruals
NACCR = Non-Current Accruals
CACCR = Current Accruals

In the second-tier regression analysis, non-current accruals are further decomposed into non-cash expenses and non-cash revenues (Yoon *et al.*, 2006). Likewise, current accruals are further decomposed into changes in operation related assets and operation related liabilities. In this model, the discretionary accruals will be regressed on the 2 components of the non-current accruals and the 2 components of the current accruals to see, if there are any significant differences among the 3 groups of firms with different degrees of earnings management. The model is as follows:

$$DA = \alpha_0 + \alpha_1 NCASHE + \alpha_2 NCASHG + \alpha_3 \Delta ASSET + \alpha_4 \Delta LIAB + \varepsilon$$

Where:

NCASHE = Non-Cash Expenses
NCASHG = Non-Cash Gains
ΔASSET = Changes in operation-related assets
ΔLIAB = Changes in operation-related liabilities

In the third-tier regression analysis, the discretionary accruals on the individual elements of the non-current and current accruals by each group of firms will be regressed with similar levels of earnings management practices. The model as follows:

$$DA = \alpha_0 + \alpha_1 DEP + \alpha_2 BDEBT + \alpha_3 RET + \alpha_4 LOSS + \alpha_5 GAIN + \alpha_6 ONACCR + \alpha_7 \Delta AR + \alpha_8 \Delta INV + \alpha_9 \Delta AP + \alpha 1_0 OCACCR + \varepsilon$$

Where:

DEP = Depreciation expenses
BDEBT = Bad-debt expense
RET = Retirement benefits expense
LOSS = Asset disposal loss
GAIN = Asset disposal gain
ONACCR = Other non-current accruals
ΔAR = Changes in total account receivables
ΔINV = Changes in inventory
ΔAP = Changes in account payables
OCACCR = Other current accruals

RESULTS

The study presents results of the discretionary accrual estimation which is the proxy to the level of earning management and vehicles used in earnings management in the context of Bangladesh capital market.

Level of earning management: The discretionary accruals were calculated from the Eq. 1 (extended modified Jones Model) described in chapter 4. Overall, it is found that earning management is practiced by the IPOs listed in the Dhaka stock exchange. The food and allied industry registered the highest degree of earning management followed by the textiles and tannery. The lowest degree of earning management was detected in the study and printing and pharmaceutical sectors. The results of the level of earning management are presented in Table 1.

From Table 1, it can be easily observed that discretionary accruals are highest in year 1. The level of discretionary accruals reduces year by year. In the overall

Table 1: Level of earning management

		DA (year 1)		DA (year 2)		DA (year 3)	
Variables	N	Mean	SD	Mean	SD	Mean	SD
Manufacturing	16	0.24	0.90	-0.34	0.72	0.15	0.92
Financial	26	0.23	6.46	1.82	45.38	3.91	20.02
Food and allied products	13	11.74	41.90	-0.57	12.10	-24.60	75.39
Paper and printing	3	-0.17	0.82	0.30	0.34	-0.61	0.50
Pharmaceutical and chemicals	7	-0.31	0.43	0.23	1.32	-0.64	0.34
Tannery and textiles	25	1.88	11.81	-1.48	7.35	-0.38	0.49
Services and Misc.	10	-0.51	0.45	-0.32	0.57	-0.33	0.66
Overall	100	2.02	16.50	-0.03	23.51	-2.34	29.47

Table 2: Results of the first-tier decomposition regressions

Variables	Income increasing IPOs (n = 37)	Income decreasing IPOs (n = 38)	Total (n = 100)
Constant coefficient	0.446	0.742	0.342
t-ratio	-0.515	-0.973	-1.664
NACCR coefficient	-0.197	1.880	0.928
t-ratio	-1.352	2.530	3.979
p-value	0.185	0.016	0.000
CACCR coefficient	0.589	1.909	1.011
t-ratio	4.054	2.570	4.336
p-value	0.000	0.015	0.000
R^2	0.327	0.163	0.167

sample the discretionary accruals in the 1st year was 2.02, as compared to -0.03 and -2.34 for the years 2 and 3, respectively. This holds true for all sectors except financial sector. Financial sector documents that the year 3 with highest and year 1 with the lowest earning management.

Vehicles used in earning management: This study presents, findings on the vehicles used in managing earnings. Discretionary accruals which are used, as proxy to earning management are decomposed into 3 tiers. Regressions analyses were than employed to find out tools used by income increasing and income decreasing firms in earning management.

Results of the first-tier decomposition regressions: Table 2 reports the results for the first-tier decomposition regressions. Model 1 analyzes the relationships between the discretionary accruals and the 2 components of the total accruals: Non-current accruals and current accruals. The regression results for the total sample of 100 observations indicate that the discretionary accruals are similarly determined by both non-current accruals and current accruals. When researchers run the regressions separately for each group, the results indicate that the firms in different accrual categories show different levels of earnings management which was expected by construction.

It is observed that income increasing firms uses current accruals in earning management. Non-current accruals were not statistically significant in detecting earning management for income increasing firms. However, income decreasing seem to use both current and non-current accruals. Both of the 2 components of total accruals have strong explanatory powers across the different groups of accruals even though the goodness of fit for the income increasing firms are higher compared to income decreasing firms (Table 2).

All 3 regressions models with significance F-value. There was no auto correlations problem in the data. The VIF, tolerance and condition index were in the acceptable level and therefore were no multicollinearity problem in the regressions models used in this study.

Table 3: Results for the second-tier decomposition regressions

Variables	Income increasing IPOs (n = 37)	Income decreasing IPOs (n = 38)	Total (n = 100)
Constant coefficient	0.408	0.659	0.238
t-ratio	0.625	-0.257	-0.360
NCASHE coefficient	0.195	-1.387	-2.062
t-ratio	1.170	-0.571	-2.805
p-value	0.251	0.572	0.006
NCASHG coefficient	0.286	-0.473	0.059
t-ratio	1.804	-3.497	0.683
p-value	0.081	0.001	0.496
ΔASSET coefficient	-0.734	-1.766	-2.414
t-ratio	-3.143	-0.722	-3.189
p-value	0.004	0.476	0.002
ΔLIAB coefficient	0.986	0.574	0.782
t-ratio	5.861	3.121	7.610
p-value	0.000	0.004	0.000
R^2	0.528	0.417	0.390

Results of the second-tier decomposition regressions: The results of the model 2 regressions reveal that the explanatory power of NCASHG is very strong for the income decreasing firms but low for the income increasing firms. The coefficient for NCASHE for the income increasing firms is positive (though not significant), as opposed to the expectation. This strongly suggests that income-increasing firm may not utilize or at least not effectively utilize non-cash expense including depreciation expense and asset disposal losses. In a consistent manner, the explanatory power of NCASHG is the strongest for the income increasing firms even though, it is also statistically significant for the income decreasing firms. Both ΔASSET and ΔLIAB have very strong explanatory power for income increasing firms but ΔASSET is not statistically significant for income decreasing firms. The results of the second-tier decomposition regression suggest overall that there are clear differences in the ways firms manage earnings depending on the directions of earning management. Also, revealed by the regression results is that non-current accruals are utilities more conveniently than current accruals. This may reflect the fact that current accruals are hard to be consistently and pervasively used as a means to manage earnings, as they entail cash flow implications in the following years. Table 3 presents the results of the second-tier decomposition regressions.

Model 2 uses 2 elements of non-current accruals and 2 elements of current accruals, as explanatory variables for the discretionary accruals NCASHE (non-cash expenses and losses) and NCASHG (non-cash revenues and gains), ΔASSET (changes in operation-related assets) and ΔLIAB (changes in operation-related liabilities). All 3 regressions models were fit with significance F-value. There was no auto correlations problem in the data. The VIF, tolerance and condition index were in the acceptable level and therefore were no multicollinearity problem in the regressions models used in this study.

Results of the third-tier decomposition regressions: Model 3 uses the individual element of the non-current accruals as explanatory variables. Important elements are separately used as independent variables. For representative non-cash expenses, researchers include Depreciation Expenses (DEP) and Retirement Benefits Expenses (RET). For representative non-cash revenues, reseachers include only gains on asset disposition or gains on liability redemption. Likewise, researchers used 3 representative variables from the current accruals: Changes in trade Accounts Receivable (ΔAR), changes in Inventories (ΔINV) and changes in trade Accounts Payable (ΔAP). Based on the regression results for the third-tier decomposition accruals, the variations for discretionary accruals are explained by the individual accrual characteristics for the 2 groups.

The R^2 for the income increasing firms are relatively lower as compared to the income decreasing firms. First, researchers interpret that the individual elements show contrasting powers to explain the variations for discretionary accruals between the income increasing and decreasing firms. Second, researchers will also discuss the variables that lack explanatory powers to explain contrasting effects between the income increasing and decreasing firms. From the regression analysis outputs, the behavior for discretionary accruals is well explained by the current accruals than the non-current accruals. Only the retirement benefit expenses element from the non-current accruals found to be statistically significant for the income decreasing firms. Table 4 reports the results of the third-tier decomposition regressions.

However, DEP lacks statistical significance for any groups. A plausible reason for the lack of explanatory power may be related to the fact that the variable had been used, as an explanatory variable in the estimation process of discretionary accruals. Contrary to the expectations, the retirement benefits expenses have a statistically significant negative relationship with the discretionary accruals for the income decreasing firms. This may indicate that firms, even utilize retirement benefit expense to manage earning, even though the expense is believed to be the variable had been included, as an explanatory variable in the estimation process of discretionary accruals. The results reveal that the 3 elements of the current accruals (ΔAR, ΔINV and ΔAP) have strong explanatory powers for both groups except that ΔINV in not statistically significant for income increasing firms. Unlike the non-current accruals, the current accruals affect the future cash flows even though, the accruals do not affect the current period cash flows. Therefore, firms are not free to utilize the current accruals in managing earning because of ensuing cash flows in the near future. The results support this fact because the elements of the current accruals have rather equal explanatory powers across the different groups.

All 3 regressions models were fit with significance F-value. There was no auto correlations problem in the data. The VIF, tolerance and condition index were in the acceptable level and therefore were no multicollinearity problem in the regressions models used in this study.

Table 4: Results for the third-tier decomposition regressions

Variables	Income increasing IPOs (n = 37)	Income decreasing IPOs (n = 38)	Total (n = 100)
Constant coefficient	0.499	1.289	0.147
t-ratio	0.062	-1.129	0.234
DEP coefficient	0.083	1.253	-2.687
t-ratio	0.560	0.436	-1.645
p-value	0.579	0.665	0.104
RET coefficient	-0.012	0.090	-0.212
t-ratio	-0.093	0.783	-0.219
p-value	0.926	0.440	0.827
ΔAR coefficient	-0.456	-11.107	-2.826
t-ratio	-2.802	-6.374	-4.422
p-value	0.009	0.000	0.000
ΔINV coefficient	-0.015	12.037	-0.522
t-ratio	-0.102	3.436	-0.345
p-value	0.919	0.002	0.731
ΔAP coefficient	0.862	0.469	0.936
t-ratio	5.320	2.995	8.867
p-value	0.000	0.005	0.000
R^2	0.488	0.589	0.490

DISCUSSION

It is an arduous task to detect earning management because it is not possible to observe earnings management directly. Therefore, researchers have investigated 2 venues for earnings management, the choice of accounting methods and the management of accruals. This study adopted the management of accruals methods, as DuCharme *et al.* (2001) states accruals models are preferred because this approach captures the subtle income management techniques allegedly used to avoid detection by outsiders. Accruals not only reflect the choice of accounting methods but also the effect of recognition timing for revenues and expenses, asset write downs and changes in accounting estimates. Alireza and Daniel (2003) supported DuCharme *et al.* (2001) stating that the changes in accruals had an increasing effect on reported earnings numbers and earnings were managed upward. In more recent years, several studies have examined earnings reporting around IPOs of common stock. Among others, Teoh *et al.* (1998b), DuCharme *et al.* (2001), Iqbal *et al.* (2004), Yoon and Miller (2002b) and Yoon *et al.* (2006) all report empirical evidence that suggests earnings are managed in anticipation of going public.

Findings of this study are consistent with earlier studies conducted in different countries at different times. Researchers detected earnings management in the sample population of Bangladesh capital market. The highest level of earning management was in the food and allied sector followed by the tannery and textiles sector. There was no evidence that paper and printing sector and the pharmaceutical sector practiced earning management. It is could be due the sample size for these 2 sectors. The number of IPOs for these 2 sectors tested to detect earning management in this study was 3 and 7, respectively. Findings could be different with an increased sample population for these 2 sectors. Previous work on accruals focused mainly for the fiscal year of IPO. But, this study focused on up to three years after IPOs are listed and found that earning management is highest at year 1 after IPOs are listed as compared to year 2 and 3 in all sectors except banking and financial sector. Discretionary accruals kept increasing in the financial sector over years.

Previous researchers in their attempt to detect earning management using accruals used 2 models: Healy (1985) and DeAngelo (1986) use total accruals, as a proxy for earnings management while Jones (1991), Dechow *et al.* (1995), Rangan (1998) and Teoh *et al.* (1998a, b) use discretionary accruals, as a measure of earnings management. The possible explanation to exclude non-discretionary accruals is that since, non-discretionary accruals are used to reflect business condition; subject to firms condition and sales growth and thus, it cannot be controlled by managers, therefore it was excluded from these studies. This research adopted the later approach. Discretionary accruals were used, as proxy to earning management.

Prior research documents that the modified Jones Model (Dechow *et al.*, 1995) is effective. However, recently Yoon and Miller (2002b) and Yoon *et al.* (2006) documented that the modified Jones Model does not fit for Korean firms. Therefore, this research adopted an extended modified model by incorporating few additional variables, i.e., depreciation expenses, bad debt expenses, retirement benefit expenses and current period expenses.

However, bad debt expenses were later excluded from the model due to unavailability of data. None of the sample (n = 100) firms declared bad debt expenses in their annual report. These inclusions have substantial impact the explanatory of the extended model. The R^2 increased from 9-83%. This indicates that the extended model used in this study is more effective in detecting earning management than that of modified Jones Model. This finding is consistent with Yoon *et al.* (2006) findings. They found out that modified Jones Model was not effective in detecting earning management for Korean firms. Findings of this study confirmed that modified Jones Model is less effective in detecting earning management for Bangladeshi firms, as compared to the extended model used in this study. Therefore, it can be concluded that the extended model used model for this study is more powerful and effective in detecting earning management and it is described as following:

$$DA_i = TA_i / REV_i - \begin{bmatrix} b_0 + b_1(\Delta REV_i - \Delta REC_i)/REV_i + \\ b_2(\Delta EXP_i - \Delta PAY_i)/REV_i + \\ b_3(DEP_i + RET_i)/REV_i \end{bmatrix}$$

Where:

TA (Total Accruals)	=	Accounting earnings-CFO
REV	=	Net sales revenue
REC	=	Receivables
EXP	=	Sum of cost of goods sold and selling and general administrative expenses excluding non-cash expenses
PAY	=	Payables
DEP	=	Depreciation expenses
RET	=	Retirement Benefits Expenses
Δ	=	Change operator

Vehicles used in earning management: Most of the prior studies on earnings management have focused on why firms manage earnings. Several reasons have been identified that include; income smoothing (Yoon and Miller, 2002b), ownership control (DeAngelo, 1986), equity offerings (Rangan, 1998; Teoh *et al.*, 1998c; Yoon and Miller, 2002a), minimizing financing costs (McNichols and Wilson, 1988) and political costs (Jones, 1991). However, finding out reasons of earnings management is not enough to formulate policies to tackle widespread practice of earnings management, as documented by prior and the current research. In order to curb the widespread use of earning management it is essential to find out the vehicles/tools firms use in managing earnings. This study attempted to find out the tools used in earning management. It is documented by earlier research (Yoon *et al.*, 2006) that different firms use different vehicles in their attempt in managing earnings. Therefore, IPO firms were classified into income increasing and decreasing firms. It is hypothesized that income increasing firms would employ different tools to manage their earnings, as compared to income decreasing firms. In order to analyze these financial items from balance sheet, income statement and cash flow statement were decomposed into 3 different tiers which is

explained earlier. It is evident from the analysis that income increasing firms employ different tools in managing earning than that of income decreasing firms. Income increasing firms tend to use current accruals whereby income decreasing firms prefer to use non-current accruals more than current accruals. When further decomposed, findings revealed that the explanatory power of non-cash revenues and gains (NCASHG) is very strong for the income decreasing firms but low for the income increasing firms. The coefficient for non-cash expenses and losses (NCASHE) for the income increasing firms is positive (though not significant), as opposed to expectation. This strongly suggests that income-increasing firm may not utilize or at least not effectively utilize non-cash expense including depreciation expense and asset disposal losses.

In a consistent manner, the explanatory power of NCASHG is the strongest for the income increasing firms even though it is also statistically significant for the income decreasing firms. Both ASSET and ΔLIAB have very strong explanatory power for income increasing firms but ΔASSET is not statistically significant for income decreasing firms. This indicates that income decreasing firms use liabilities less than assets.

The results of further decomposed variables revealed that the 3 elements of the current accruals (ΔAR, ΔINV and ΔAP) have strong explanatory powers for both groups except that ΔINV in not statistically significant for income increasing firms. Unlike the non-current accruals, the current accruals affect the future cash flows even though, the accruals do not affect the current period cash flows. Therefore, firms are not free to utilize the current accruals in managing earning because of ensuing cash flows in the near future. The results support this fact because the elements of the current accruals have rather equal explanatory powers across the different groups.

Few prior studies documented that bad-debt expenses are used in earning management. For example McNichols and Wilson (1988), document that banks use bad-debt expenses to manipulate reported earnings. Yoon *et al*. (2006), also find at the Korean capital market that asset disposal gains or losses and bad-debt expenses are used to manipulate earnings. Initially, this research hypothesized that bad-debt could be a significant tool used in earning management in Bangladesh. However, there was no bad debt reported in almost all firms across industries and therefore excluded from analysis.

Depreciation expenses lack statistical significance for both income increasing and income decreasing firms. A plausible reason for the lack of explanatory power may be related to the fact that the variable had been used, as an explanatory variable in the estimation process of discretionary accruals. In fact this is one of the additional variables that is tested in order to extend the modified Jones Model. Though, there was no statistical significance evident in this study on the effect of depreciation expenses on the earning management, it is believed that result could be different if sample size is increased.

CONCLUSION

This research attempted to find out vehicles used in earning management. Most prior studies focused on the reasons for earning management. Even though, there are some studies examining how firms manage earnings. The studies focused only on specific accruals like bad-debt expenses and ignore other components of accruals. However, this study follows a comprehensive accrual analysis approach by systematically decomposing accruals into 3 tier components. By doing this, it was easier to identify the particular accruals that are employed by different earning management groups. This research has successfully identified tools that are being employed in managing earning in the Bangladesh capital market. The model proposed in this study can be used on other developing economies in gauging the level of earning management. Earning management is widely practiced in almost all industries in Bangladesh. In order to contain this practice the SEC should:

- Design auditing procedures that is more stringent and effective in dealing with the widespread use of earning management. As reported by Maijoor and Vanstraelen (2006) in their study of earning management in Europe that a stricter audit environment reduces the magnitude of earning management
- Consider organizing seminars, workshops, etc., for academicians, auditors, representatives from relevant government agencies and other stakeholders to create awareness and to design an effective system of detecting earning management
- Consider to punishing firms that are caught in fraudulent financial practices while producing annual reports as it is done in many countries, i.e., USA and Malaysia, etc.

REFERENCES

Alireza, D. and Z. Daniel, 2003. Earnings management and the stock market environment. Discussion Paper, University of New Haven, USA.

Beneish, M.D., 2001. Earnings management: A perspective. Working Paper, Kelley School of Business, Indiana University, Indiana.

Chorruk, J. and A.C. Worthington, 2010. New evidence on the pricing and performance of initial public offerings in Thailand: 1997-2008. Emerg. Markets Rev., 11: 285-299.

Cormier, D. and M. Magnan, 1996. Decision, decisions. CA Magazine No. 129 Issue 7, pp: 38.

DeAngelo, L.E., 1986. Accounting numbers as market valuation substitutes: A study of management buyouts of public stockholders. Account. Rev., 61: 400-420.

Dechow, P.M. and R.G. Sloan, 1991. Executive incentives and the horizon problem: An empirical investigation. J. Account. Econ., 14: 51-89.

Dechow, P.M., 1994. Accounting earnings and cash flows as measures of firm performance: The role of accounting accruals. J. Account. Econ., 18: 3-42.

Dechow, P.M., R.G. Sloan and A.P. Sweeney, 1995. Detecting earnings management. Account. Rev., 70: 193-225.

DuCharme, L.L., P.H. Malatesta and S.E. Sefcik, 2001. Earnings management: IPO valuation and subsequent performance. J. Account. Audit. Fin., 16: 369-396.

Guay, W.R., S.P. Kothari and R.L. Watts, 1996. A market-based evaluation of discretionary accrual models. J. Account. Res., 34: 83-105.

Healy, P.M., 1985. The effect of bonus schemes on accounting decisions. J. Account. Econ., 7: 85-107.

Healy, P.M. and J. Wahlen, 1999. A review of the earnings management literature and its implications for standard setting. Account. Horizons, 13: 365-383.

Iqbal, A., S. Espenlaub and N. Strong, 2004. Earning management around UK open offers. Working Paper Series, Kent Business School, University of Kent, United Kingdom.

Jain, B.A. and O. Kini, 1994. The post-issue operating performance of IPO firms. J. Finance, 49: 1699-1726.

Jones, J.J., 1991. Earnings management during import relief investigations. J. Account. Res., 29: 193-228.

Kaplan, R.S., 1985. Evidence on the effect of bonus schemes on accounting procedure and accrual decisions. J. Account. Econ., 7: 109-113.

Loughran, T. and J.R. Ritter, 1997. The operating performance of firms conducting seasoned equity offerings. J. Finance, 52: 1823-1850.

Maijoor, S.J. and A. Vanstraelen, 2006. Earnings management within Europe: The effects of member state audit environment, audit firm quality and international capital markets. Account. Bus. Res., 36: 33-52.

McNichols, M. and G.P. Wilson, 1988. Evidence of earnings management from the provision for bad debts. J. Account. Res., 26: 1-31.

Neil, J.D., S.G. Pourciau and T.F. Schaefer, 1995. Accounting method choice and IPO valuation. Account. Horizons, 9: 68-80.

Rangan, S., 1998. Earnings management and the performance of seasoned equity offerings. J. Financial Econ., 50: 101-122.

Ritter, J.R., 1991. The long-run performance of initial public offerings. J. Finance, 46: 3-27.

Shipper, K., 1989. Earnings management. Accounting Horizon, 3: 91-102.

Shivakumar, L., 2000. Do firms mislead investors by overstating earnings before seasoned equity offerings? J. Account. Econ., 29: 339-371.

Tan, C.T., 2001. Performance of rights issues and earnings management. An empirical evidence from Malaysia. MBA Thesis, School of Management, Universiti Sains Malaysia, Penang, Malaysia.

Teoh, S.H., I. Welch and T.J. Wong, 1998a. Earnings management and the under performance of seasoned equity offerings. J. Fin. Econ., 50: 63-99.

Teoh, S.H., T.J. Wong and G.R. Rao, 1998b. Are accruals during initial public offerings opportunistic? Rev. Account. Stud., 3: 175-208.

Teoh, S.H., I.V.O. Welch and T.J. Wong, 1998c. Earnings management and the long-run market performance of initial public offerings. J. Finance, 53: 1935-1974.

Yoon, S.S. and G. Miller, 2002a. Earnings management of seasoned equity offering firms in Korea. Int. J. Account., 37: 57-78.

Yoon, S.S. and G. Miller, 2002b. Cash from operations and earnings management in Korea. Int. J. Account., 37: 395-412.

Yoon, S.S., G. Miller and P. Jiraporn, 2006. Earnings management vehicles for Korean firms. J. Int. Fin. Manage. Account., 17: 85-109.