

# A COMPARATIVE STUDY BETWEEN FREE CASH FLOWS AND EARNINGS MANAGEMENT

**Dr. Amalendu Bhundia**

Reader in Commerce; Fakir Chad College Under University of Calcuta, Diamond Harbour,  
South 24-Parganas, Pin. 743331, West Bengal, India India

[Email: bhundia.amalendu@gmail.com](mailto:bhundia.amalendu@gmail.com); [de.amalendu@rocketmail.com](mailto:de.amalendu@rocketmail.com)

## Abstract

This paper examines and compares free cash flows in the firms listed in Indian Stock Exchange with an emphasis on earning management. The main purpose of the study is the inquiry of disparity between free cash flows in Indian Stock Exchange with an emphasis on earnings management. Data and statistics of free cash flows and earnings management variables are measured by Len and Poulsen (1989) model and Jones model. The results of this study signify that there is a positive significant relationship between earnings management and free cash flows and confirm that firm's free cash flows can stimulate earnings management. **Key Words:** Free cash flows earnings management, discretionary accruals, non-discretionary accruals.

Naturally, all individuals have been looking for increasing their wealth in order to maximize their benefit, security and so on. This tendency escorts them to look for suitable opportunities in order to maximize their wealth by the investment. Nonetheless, there have been individuals who are unable to manage their own properties to make profit, so they have to employ others to do this task behalf of them.

According to agency theory, first groups are principals or owners and second ones are agents or managers. Indeed, managers are representatives for principals to conduct owner's property accurately and finally increase their owner's wealth. It should be noticed that individuals have tendency to maximize their vested-interest and also managers do so. Managers are eager to show a good picture of the firm's financial position to shareholders and other stakeholders to facilitate maximize their vested-interest and social welfare and or to keep their position. Agency problem arises when maximizing agent's or manager's wealth doesn't necessarily lead to maximize stockholder and stakeholders wealth. This position refers to interest conflict between agents and principals. However, taking this interest conflict into account, agents or managers may have an incentive to manipulate earnings to maximize their self-interest.

Operating cash flows on cash flow statement indicate firm's ability to produce cash flows. However, most of financial analysts argue that cash flows from operating activities are funds that not only should be invested in new fixed assets to enable firms to keep current level of

operating activities, but also a proportion of that fund should be distributed as a dividend or share-repurchase to satisfy stockholders. Earning management is defined as intentionally taking steps under generally accepted accounting principles (GAAP) to achieve from the reported earnings to the desired earnings. The converging the reported earning to the desired earning is done through accounting manipulation. Therefore, this call for a full diagnosis of the malady, that is identification, analysis and quantification of the interfering constraints in achieving maximization of profits, thus opens a vast field for research and enquiry.

In the present study, therefore; an attempt has been made to examine and compare the inquiry of disparity between free cash flows in Indian Stock Exchange with an emphasis on earnings management.

## Review of Literatures

### *Free Cash Flows (FCF)*

Operating cash flows on cash flow statement indicate firm's ability to produce cash flows. However, most of financial analysts argue that cash flows from operating activities are funds that not only should be invested in new fixed assets to enable firms to keep current level of operating activities, but also a proportion of that fund should be distributed as a dividend or share-repurchase to satisfy stockholders. Therefore, cash flows from operating activities, on its own, can't be considered as a firm ability

to produce the cash flows. Jensen (1989) was among the pioneers who introduced free cash flows theory and presented a definition for it. In his view, free cash flows is defined as the cash from operating activities after deducting the necessary cash in order to the investment in positive net present value projects. However, projects should be measured regarding to net present value through applying a reliable cost of capital; if the result is positive, the necessary cash for the investment deduct from firm's available cash, whatever remains will be considered as free cash flows.

According to Len and Poulsen (1989) free cash flows is operating income before depreciation expense after tax, interest expense and preferred and common stockholders' dividends. Also, Copeland (1995) defines free cash flows as the operating income after tax plus non-cash expenses after deducting the investments on working capital, property, plant, equipment and other assets. According to Dechow and Ge (2006) free cash flows is the cash flows from operating activities plus the cash flows from investment activities.

### ***Earnings Management (EM)***

One of the aims of financial statements is to reflect the results of management stewardship or their accountability in the face of resources under their control. Since the management of trade (business) unit is responsible for preparing the financial statements, the managers in doing this important matter have enjoyed opportunities to exercise judgment in their reporting (Salehi, 2009a). Accrual accounting will give significant right of selection to determine earning in the different time periods to managers. In deed, under this accounting system, the managers have significant control time of distinction over some cost items such as advertisement, research and development expenditures. Significantly on the other hand in accrual accounting system, the manager will face different options about time of distinction of income. For example, the most rapid distinction of income is thorough credit sales. This kind of performance by managers is called "earnings management" (Moradi and et al., 2011).

Earning management is defined as intentionally taking steps under generally accepted accounting principles (GAAP) to achieve from the reported earnings to the desired earnings. The converging the reported earning to the desired earning is done through accounting manipulation (Malla-Nazari & Karimi-e-Zand, 2007). Today, earning management is one of the most debatable and interesting issues in accounting research since investors put lots of

emphasis on the profit digit as a one of the most important factors in the decision-making. Researches suggest that low earnings variation and its persistency indicate the quality of earnings. However, investors can invest with more confidence in the firms with more persistent earning trend. In this regard, earning management would be one of the methods of the window dressing of financial position that is done by management interfering in earning determination (Noravesh & et al., 2005).

On other hand, Jensen and Meckling (1976) defines the agency relationship as a contract under which one or more principals engage the agent to perform some service on their behalf which involves delegating some decision-making authority to the agents. With establishing agency relationship, both sides try to maximize their self-interest. Because principal and agents utility function aren't equal, interest conflict arises between them and drive in agency costs. It should be noticed that individuals have tendency to maximize their vested-interest and also agents do so. Agents are willing to show a good picture of firm's financial position to shareholders and other stockholder in order to maximize their vested-interest and social welfare and or to keep their position. Agency problem arises when maximizing agent's wealth doesn't necessarily lead to maximize stockholder and stakeholders wealth. However, with consideration of the interest conflict between agents and principals, agent will have an incentive to manipulate earnings to maximize their self-interest. Because earning management is done on various purposes by agents, empirical evidences of the research literature about agency relationship and earning management, in some extent, are mixed and vague. If earning management is done on an opportunistic purpose, firms will have more agency costs and agent will show more profit. In other words, there is positive relationship between earning management and interest conflict momentum. But if earning management isn't in favor of agent's vested-interest, it is expected that firms with high agency costs, have low earning management because earning management isn't done in favor of agent's interest (Pornsit, et al., 2008).

Jaggi and Gul (2000) in his research found that positive relationship between earning management and high free cash flows in firms with low growth. They argue that according to Jensen theory, in these firms, agents instead of distributing these free cash flows invest it in the projects with negative net present value which drops firms market value (market reacts). Therefore, these firms' managers try to adjust this situation by applying discretionary accruals items that step up income and achieve their vested-interest.

In addition, they showed that debt (financial leverage) adjusts the mentioned relationship.

Jones and et al. (2001) studied relationship between earning management and free cash flows in the firms with new and old-structured economy in Australia. He observed that there is positive relationship between discretionary accrual items and free cash flows in the firms with an old-structured economy (usually have low growth) because these firms' managers try to compensate their weak performance through discretionary accrual items, but he didn't find significant relationship in the firms with a new-structured economy (with high growth).

Chung, et al. (2005) investigated the relationship between earning management and free cash flows in firms with low growth during the period of 1984-1996. Their research sample consists of 22576 American firms. Their results indicate positive significant relationship between earnings management and free cash flows. Additionally, after survey on relationships among institutional stakeholders, audit firms and high audit quality they found out that the mentioned variables lead to a decrease in the relationship between earnings management and free cash flows and prevent managers from managing the earnings.

Opler and Titmen (1993) stated that firms with high growth opportunity are more probability to have low free cash flows, since available cash is invested on projects with positive NPV. Tsui and Gul (2000) investigated audit fee in high free cash flows and low growth firms in Hongkong. Their findings show, in this sort of firms, because of related agency problems of high cash flows, audit fee is high. Also, they explained that according to Jensen theory, debt factor can have important role in the audit fee reduction. According to Jensen theory, Jagi and Gul (2000) highlighted that debt factor adjusts the relationship between earning management and free cash flows in low growth firms. In other words, more debt ratio in these firms cause managers can invest less in negative NPV projects. Richardson (2006) found in firms with high free cash flows, the investment is more than optimal level. In his research sample, during 1998-2002, on average 20 percent of non- financial firms invested their free cash flows over optimal level.

Bukit & Iskandar (2009) studied about Surplus Free Cash Flow, Earnings Management and Audit Committee and found that independent audit committee helps companies with high surplus free cash flow to reduce income-increasing earnings management practices.

Wang and et al (2010) studied impact of compositions and characteristics of board of directors and earnings

management on fraud and concluded that discretionary working capital accrual has not influence on fraud and the interaction of institutional director holding and the discretionary working capital accrual has negative influence on fraud before the act of the independent directors and auditor, but the discretionary working capital accrual has negative influence on fraud afterward.

The conclusive sum of this retrospective review of relevant literature produced till date on the offered subject reveals wide room for the validity and originates of this work and reflects some decisive evidences that affirm its viability, as may be marked here it. Nor has any previous research examined the free cash flows and Earnings management and the existence of free cash flows and Earnings management relationship of firms' listed in Indian stock exchange.

## Objectives of the Study

The main object of the present study is to examine the inquiry of disparity between free cash flows in Indian Stock Exchange with an emphasis on earnings management. More specifically it seeks to dwells upon mainly the following issues:

- i. To observe the free cash flows and earnings management situation under the study;
- ii. To compare the free cash flows and earnings management situation under the study;
- iii. To explore the free cash flows and earnings management association;

## Methodology of the Study

### *Research Hypothesis*

There is a difference among firms free cash flows listed in Indian Stock Exchange with an emphasis on earnings management.

### *Sub hypotheses*

**H1:** *There is a difference among firms free cash flows listed in Indian Stock Exchange with an emphasis on discretionary accrual items of earning management.*

**H2:** *There is a difference among firms free cash flows listed in Indian Stock Exchange with an emphasis on non-discretionary accrual items of earning management.*

## Research Design

Research methodology which is used in this study is the correlation type. Since research aimed to investigate and compare firm's free cash flow with an emphasis on earning management, Correlation method is used for free cash flows and earning management variables. Statistical analysis is done by Eviews 6 software.

Documental along with survey-field methods are used in data collection.

Survey-field method for collecting data is from the financial statements of firms listed in Indian Stock Exchange and documental method is for literature study and research background review. In Survey-field method, required data for research variables measurement were acquired by using data bases of Indian Stock Exchange.

Research data sample consists of the listed firms in Indian Stock Exchange at all sorts of industry during the period of 2004-2010. Systematic-elimination random sampling is used for data sampling. Taking these characteristic into consideration, data sample reduced by 215 firms and from this number 142 firms selected, considering firms homogeneity and statistical guidance.

## Research Variables

Research variables are free cash flows as an independent variable and earning management as a dependent variable. Len and Pulson model (1989) is applied for measuring free cash flows. According to this model free cash flow is calculated by deducting total of taxes, interest cost and dividend from operating income before depreciation and standardized by dividing it to assets as following:

$$FCF_{i,t} = (INC_{i,t} - TAX_{i,t} - INTEP_{i,t} - PSDIV_{i,t} - CSDIV_{i,t}) / A_{i,t-1}$$

Where:

$FCF_{i,t}$  is FCF of firm (i) at year (t)

$INC_{i,t}$  is operating income after depreciation of firm (i) at year (t)

$TAX_{i,t}$  is total taxes of firm (i) at year (t)

$INTEP_{i,t}$  is interest expense of firm (i) at year (t)

$PSDIV_{i,t}$  is preferred stock holders dividends of firm (i) in year (t)

$CSDIV_{i,t}$  is common stock holders dividends of firm (i) in year (t)

$A_{i,t-1}$  is total assets carrying value of firm (i) in year (t-1)

Adjusted Jones model (introduced by Dechow, et al. 1995) is used for EM measurement, for its ability to solve present research problem.

The model is as follow:

$$NDA_t = \alpha_1(1/A_{i,t-1}) + \alpha_2(\{\Delta REV_t - \Delta REC_t\}/A_{i,t-1}) + \alpha_3(PPE_t/A_{i,t-1})$$

Where:

$NDA_t$  is discretionary accrual items at year (t)

$A_{i,t-1}$  is total asset of firm (i) at year (t-1)

$\Delta REV_t$  is the difference between percent years sale to previous year

$\Delta REC_t$  is the difference between present net receivables to previous year

$PPE_t$  is gross plant, property and equipment in year (t)

$\alpha_1, \alpha_2, \alpha_3$  are firm's special parameters and calculated by following equation:

$$TA_t / A_{i,t-1} = \alpha_1(1 / A_{i,t-1}) + \alpha_2(\Delta REV_t / A_{i,t-1}) + \alpha_3(PPE_t / A_{i,t-1}) + \varepsilon_t$$

$TA_t$  is a proxy for total accrual items at year (t) total accrual items is calculated by following equation:

$$TA_{it} = NI - CFO$$

And discretionary accruals ( $DA_{i,t}$ ) is calculated by the difference between total accruals and non- discretionary accruals as following:

$$DA_{it} = TA_{it} / A_{i,t-1} - NDA_{it}$$

$A_{i,t-1}$  is total assets carrying value of firm (i) in year (t-1).

## Empirical Results and Analysis

Descriptive statistic of research variables are shown in Table-1. Free cash flows as the independent variable have the most co-efficient of variation and dispersion (400) and vice versa, discretionary and non-discretionary accruals as the dependent variable have fewer coefficient of variation

than free cash flows (69.3 and 153.4 respectively). The low persistence of free cash flows shows that, to some extent, level of free cash flows is independent from discretionary and non-discretionary accruals and can't explain these variations.

Table 1: Descriptive Statistics

| Variables | Discretionary Accruals | Non-Discretionary Accruals | Free Cash Flows |
|-----------|------------------------|----------------------------|-----------------|
| Criteria  |                        |                            |                 |
| Mean      | 0.39                   | 0.43                       | 0.05            |
| Median    | 0.38                   | 0.39                       | 0.04            |
| Maximum   | 3.54                   | 8.96                       | 1.94            |
| Minimum   | 0.87                   | 4.63                       | 1.13            |
| Std. Dev. | 0.27                   | 0.66                       | 0.20            |
| C.V. (%)  | 69.3                   | 153.5                      | 400             |

Pool unit root test is used for investigation of variables persistency. Results from pool unit root test of Levin, lin and chu statistic and also Im, Pesaran and Shin-W statistic is shown in Table-2. All research variables including dependent and independent variables are persistent in studied period.

| Method                    | Discretionary Accruals | Non-discretionary Accruals | Free Cash Flows     |
|---------------------------|------------------------|----------------------------|---------------------|
| Levi, Lin & Chu t         | -44/32<br>(0/0000)     | -27/69<br>(0/0000)         | -114/23<br>(0/0000) |
| Breitung t-stat           | -2/76<br>(0/0000)      | -3/25<br>(0/0000)          | -3/82<br>(0/0001)   |
| Im, Pesaran & Shin W-stat | -7/85<br>(0/0000)      | -9/34<br>(0/0000)          | -26/34<br>(0/0000)  |
| ADF-Fisher Chi-square     | 126/25<br>(0/0000)     | 279/02<br>(0/0000)         | 309/53<br>(0/0000)  |
| PP-Fisher Chi-square      | 289/37<br>(0/0000)     | 331/26<br>(0/0000)         | 351/58<br>(0/0000)  |
| Hadri Z-stat              | 8/48<br>(0/0000)       | 11/99<br>(0/0000)          | 14/79<br>(0/0000)   |

To analysis sub-hypothesis 1 and 2, free cash flows effects on discretionary and non- discretionary accruals of earning management along with compare means test for discretionary and non-discretionary accruals in firms with low and high free cash flows are shown in Table-3 and

Table-6. It should be noticed that, since free cash flows data isn't normal and has positive skewness, the median is used for dividing data into two groups- high and low free cash flows. Finding of free cash flows effect on discretionary accruals in table 3 show positive relation between these two variables; it means that increasing free cash flows in firm causes increasing discretionary accruals. Also, the relationship between free cash flows and discretionary accruals with taking regression coefficient of free cash flows (0.037) and t-statistic (0.684) into consideration is not significant and shows that discretionary accruals is relatively independent from level of free cash flows.

Results of F-statistic indicate model in whole is significant and considering Durbin-Watson statistic, it hasn't auto-correlation problem. Results of coefficient of determination show that 0.288 of discretionary accruals variations is related to the firm's free cash flows.

Table-3: Associations between Discretionary Accruals and Free Cash Flows based on Regression Model

| Dependent Variable: Discretionary Accruals |                    | Method: Least Squares |                     |
|--|--------------------|-----------------------|---------------------|
| Variables                                  | Coefficient        | t-Statistic           | Probability         |
| Discretionary Accruals                     | -0.38              | -12.35                | 0.000               |
| Free Cash Flows                            | 0.037              | 0.31                  | 0.684               |
| R-squared                                  | Durbin-Watson Stat | F-statistic           | Prop. (F-statistic) |
| 0.229                                      | 1.99               | 2.16                  | 0.000               |

Results of free cash flows effect on non-discretionary accruals which is shown on table 4 indicate negative relation between two variables. The relationship between firms free cash flows and non-discretionary accrual with taking regression coefficient of free cash flows variable (-0.016) is very weak and t-statistic (0.771) is not significant which indicates non-discretionary accruals is independent from firms free cash flows.

Results of F-statistic show that model isn't significant in whole and there isn't auto-correlation problem considering Durbin-Watson statistic. Results of coefficient of determination shows 0.192 of non-discretionary accruals variations is reversely related to firms' free cash flows.

Table-4: Associations between Non-discretionary Accruals and Free Cash Flows based on Regression Model

| Dependent Variable:<br>Discretionary Accruals |                    | Method: Least Squares |                     |
|---|--------------------|-----------------------|---------------------|
| Variables                                     | Coefficient        | t-Statistic           | Probability         |
| Non-discretionary Accruals                    | 0.32               | 17.20                 | 0.000               |
| Free Cash Flows                               | -0.016             | -0.114                | 0.771               |
| R-squared                                     | Durbin-Watson Stat | F-statistic           | Prop. (F-statistic) |
| 0.192   | 1.69               | 2.01                  | 0.000               |

In order to complete research results, compare means test is also conducted for discretionary accruals and non-discretionary accruals in firms with high and low free cash flows which is shown in Table-5 and Table-6.

ANOVA and t-statistic which is shown in Table-5 indicates that there isn't significant difference among discretionary accruals means in firms with high and low free cash flows.

Table-5: Compare Means Test of Discretionary Accruals in Firms' with High and Low Free Cash Flows

| Method            | df   | Value | Probability |
|-------------------|------|-------|-------------|
| t-test            | 140  | 0.49  | 0.19        |
| ANOVA F-statistic | 1.14 | 0.38  | 0.19        |

Table-6: Compare Means Test of Non-discretionary Accruals in Firms' with High and Low Free Cash Flows

| Method            | df   | Value | Probability |
|-------------------|------|-------|-------------|
| t-test            | 140  | 0.62  | 0.11        |
| ANOVA F-statistic | 1.14 | 0.85  | 0.11        |

ANOVA and t-statistic which is shown in Table-6 indicates that there isn't significant difference among non-discretionary accruals means in firms with high and low free cash flows.

## Conclusions of the Study

To test research hypothesis, two regression models with a constant effects are estimated which is explained as followings:

1. According to Len and pulson model 0.229 variations of discretionary accruals is related to firms' free cash flows;
2. There is weak and negative relation between non-discretionary accruals and level of free cash flows according to Len and Pulson model and 0.192 of non-discretionary accruals variations is related to free cash flows, reversely;
3. Results of Anova and t-statistic indicate that there isn't significant difference among discretionary accrual means in firms with high and low free cash flows;
4. Results of Anova and t-statistic indicate that there isn't significant difference among non-discretionary accrual means in firms with high and low free cash flows. Research results are consistent with Jaggi and Gul (2000), Jones (2001) and Chung, et al. (2005).

## Limitations of the Study

The findings have important implications for policy makers and practitioners. The results reveal an association, not a causal link, between surplus free cash flow condition and the level of earnings management. Also, inferences in this paper are limited by the selected sample and time period, and the sample size is relatively small. A larger sample size may be necessary in order to obtain a more statistical power for the data analysis and significant results of hypothesis testing. Thus, future research may employ a larger sample size in order to also improve the generalizability of results.

## References

- Bukit, R. B. & Iskandar, T. M. (2009), "Surplus Free Cash Flow, Earnings Management and Audit Committee", *Int. Journal of Economics and Management*, 3(1), 204 – 223.
- Chung, R, Firth, M & Kim, J. (2005), "Earning Management, Surplus Free Cash Flow, and External Monitoring", *Journal of Business Research*, 58, 766-776.

- Copeland, T. E., Weston, J. F & Shastri, K. (2005), "Financial Theory and Capital Policy", Boston, MA, Addison-Wesley.
- Dechow, P. and G. S. (2006). "The Persistence of Earnings and Cash Flows and the Role of Special Items: Implications for the Accrual Anomaly", *Review of Accounting Studies*, 11, (2/3).
- Dechow, P. M., Sloan, R. G. & Sweeney, A. P. (1995), "Detecting Earnings Management", *Accounting Review*, 70, 193–225.
- Jaggi, B., & Gul, A. (2000), "Evidence of Accrual Managerial: A Test of the Free Cash Flow and Debt Monitoring Hypothesis", Working Paper, www.ssrn.com.
- Jensen M. C. (1986), "Agency Costs of Free Cash Flow, Corporate Finance and Takeovers", *Am Econ Rev*, 76, 323–329.
- Jensen M. C. & Meckling W. H. (1976), "Theory of the Firm: Managerial Behavior, Agency Costs, and Capital Structure", *J Finance Econ*, 3 (4), 305–360.
- Jones, J. (1991), "Earnings Management during Import Relief Investigations", *Journal Accounting Research*, 29, 193– 228.
- Jones, S. & Sharma, R. (2001), "The Impact of Free Cash Flow, Financial Leverage and Accounting Regulation on Earnings Management in Australia's "old" and "new" Economies", *Managerial Finance*, 27 (12), 18 – 39.
- Len, K., & Poulsen, A. (1989), "Free Cash Flow and Stock Holder Gains in Going Private Transactions", *Journal of finance*, 44, 774-789.
- Malla-Nazari, M. & Karimizand, S. (2007), "The Survey on Relationship between Income Smoothing and Industry Type in Listed Firms in TSE", *Accounting and Audit Review*, 47, 83-100.
- Moradi, M., Salehi M. & Shirdel, J. (2011) "An Investigation of the Relationship between Audit Firm Size and Earning Management in Quoted Companies in Tehran stock exchange", *African Journal of Business Management*, 5 (8), 3345-3353.
- Noravesh, E., Nikbakht, M. R. and Sepasi, S. (2005) "The Investigation of Earning Management in TSE", *Journal of human and social sciences of Shiraz university*, 2, 165-177.
- Opler, t. & Titman, S. (1993), "The Determinants of Leveraged Buyout Activity: Free Cash Flow vs. Financial Distress Costs", *Journal of Finance*, 48, 1985-1999.
- Richardson, S. (2006), "Over-Investment of Free Cash Flow", *Review of Accounting Studies*, 11, 159–189.
- Pornsit, J., Gary, A. M., Soon Suk, Y. & Young S. K. (2008), "Is Earnings Management Opportunistic or Beneficial? An Agency Theory Perspective", *International Review of Financial Analysis*, 17, 622–634.
- Salehi, M. (2009a). "In the Name of Independence: With Regard to Practicing Non-Audit Service", *Int. J. Bus. Res.*, 2(2), 137-147.
- Tsui, J., Jaggi, B., & Gul, F. (2001), "CEO Domination, Growth Opportunities, and Their Impact on Audit Fees", *Journal of Accounting, Auditing and Finance*, 16, 189-208.
- Wang, Y. H., Chuang, C. C. & Lee, S. Y. (2010). "Impact of Compositions and Characteristics of Board of Directors and Earnings Management on Fraud", *African Journal of Business Management*, 4 (4), 496-511.