CHAPTER IV  
Summary, Discussions and Conclusions Chapter

5.1. Summary

5.1.1. Summary on available prior studies

From the 1980s, researchers in developed and developing countries expressed a renewed interest in information about cash flows. One aspect of that interest focused on the assertion of the Financial Accounting Standards Board (FASB 1978), which pointed out that “enterprise earnings based on accrual accounting generally provides a better indication of an enterprise’s present and continuing ability to generate favorable cash flows than information limited to cash flows alone.”. This assertion was questioned, both directly and indirectly, in research that compared the predictive ability of accrual-based information to that of cash flow information in three different settings: (1) Bankruptcy prediction, (2) Predicting security returns, and (3) Predicting operating cash flows.

Prior studies in third setting strategy, which gathered from journals and other sources through the EBSCO database the SSRN e-Library database and popular search engines like the Google, Yahoo, and Ask.com and university’s library, could be fall in two categories based on using the cash flows data in their studies as bellow:

1) Those who used traditional measures of cash flows in their studies

2) Those who used cash flows data in their studies which derived from cash flows statement

Espahaodi (1988) did not suggest any significant variable for predicting future cash flows, but Greenberg and et al (1986), and Murdoch and Krause (1989) supported FASB assertion and others rejected this assertion in their conclusions. Besides of the importance of the works which conducted by these researcher as they initiated this field of study but as Seng (1997) showed, the traditional cash flow measures are highly correlated with earnings suggesting that they both are similar, while the correlations between reported cash flow measures (from cash flows statement) and traditional cash flow measures are low suggesting that the traditional cash flow measures used in prior research are poor proxies for reported cash flow measures which are now provided by the companies' statement of cash flows. Moreover Farshadfar and et al (2008) examined the relative predictive ability of earnings, cash flow from operations as reported in the cash flow statement and two traditional measures of cash flows in forecasting future cash flows for Australian companies. The authors provided evidence that reported cash flow from operations has more power in predicting future cash flows than earnings and traditional cash flow measures. Therefore the conclusions drawn by researchers in first category could not be exact grouped as evidence to support or reject the FASB assertion, but at least they proven the way for further studies in this field as the cash flows data from cash flows statement become more available.

The second group worked based on cash flows data which derived from cash flows statement .The studies which conduced by second group can also divided in to two main sub categories as bellow:

1) single variable models testing studies
2) multiple variable models testing studies
The first sub category contains those studies which mostly, only focused on assess and compare the aggregated earnings and cash flows from operations. These studies related to first, second, and some part of forth objectives, questions, and hypothesize of this current study (my study). The second sub category contains those studies which included the components of earnings and other variables like cash flows ratios in their studies. Third and fifth objectives, questions, and hypothesize of this current study (my study) have already covered by researchers in this sub category.

In addition and to summarize the prior studies based on how the studies related to the main hypothesis (hypothesis 1, 2, 3, and 5) and comparative hypothesis (forth hypothesis) in the current study, they could be divided in three groups. **First group** contains those the studies which concern on single variable testing and only addressed first and second hypothesizes of the current study (and compare them) such as the studies of Bowen and et al (1986); Greenberg and et al (1986); Espahaodi (1988); Murdoch and Krause (1989); Arnold and et al (1991); Percy and Stokes (1992); Finger (1994) \[ those who used traditional measures of cash flows in their studies]; McBeth (1993);Seng (1997); Black (1998); Quirin and et al (1999); Hadi (2005); Kim and Kross (2005); Zhao and et al (2006); Farshadfar and et al (2008), and Lorek and Willinger (2009).

**Second group** include those studies which have focused on multiple variables, such as the components of earnings including cash flow and accrual accounting data. They addressed the third hypothesis of the current study as well, such as the studies of Supriyadi (1998 in Indonesia); Barth, Cram & Nelson (2001 in USA); Stammerjohan and Nassiripour (2000/2001); Al-Attar and Hussain (2004 in UK); Chotkunakitti (2005 in Thailand);Lev and et al (2005 in USA); Yoder (2007 in USA), and Hollister and et al(2008 in USA).
Third group address to the study which conducted by Chotkunakitti (2005 in Thailand) that is the only study which addressed the fifth hypothesis of the current study (cash flows ratios).

In overall out of twenty four studies which reviewed in review literature chapter, three of them have supported FASB assertion; eleven studies have rejected FASB assertion, and rest of them neither support FASB view nor support opposite view and most of this group suggested that models which use disaggregated earnings, cash flows plus accrual components of earnings (third model of the current study which build based on third hypothesis) will produce accurate estimate of future cash flows.

Review of literature indicated that prior studies did not concern about some questions such as whether predictive ability of the variables are the same across the different industries, and also whether predictive ability of the variables are different in the indexed companies (small-cap, mid-cap,…) in compare with no indexed companies. Moreover no study focused on different predictive accuracy measures to compare their capabilities to test of hypothesis, and prior studies did not concern about cyclical manners of models as tools or clue to show turning points of industries or economic conditions.

As no research has been undertaken on cash flows prediction in India, this current study intended to replicate the previous studies in order to fill gaps from previous research, by using cash flow information directly from cash flow statements and aim to address unanswered questions as explained above.
5.1.2. Purpose of the current study

Based on the prior studies, and aim to addressed the gaps and unanswered questions the purpose of this study was to assess and compare the ability of past aggregated earnings, past cash flows from operations, combined of past cash flows from operation and accrual components of earnings, and cash flows ratios to predict future cash flows to address the FASB assertion (1978) and introducing the industrial wise models (by comparing predictive accuracy of competing models in and out of sample) and other potential capabilities of them which would help the current and potential investors who want to price the shares based on estimated future cash flows of Indian companies listed on Bombay Stock Exchange.

5.1.3. Scope of the current study

Based on viewing the previous studies; this study have chosen the design which aimed to contribute in more than two decades works that concentrated on the topic which compare the abilities of accruals earnings measures and cash flows measures in line of prediction of Future cash flows by using cash flows from operations (derived from cash flows statement prepared based on indirect method).

This current study designed to use the annual accounting data of selected Indian companies listed on Bombay Stock Exchanges which needed in the current study from Center for Monitoring Indian Economy (CMIE) data base (14, May, 2009) which available in Research center of Sinhgad Institute of management of Pune University in India.

This study designed to use past year (t-1), two years ago (t-2), and three years ago (t-3) annual data of independent variable in each model which named as one-year lag, two-year lags, three-year lags respectively.
The study selected the time period from 1998 to 2008 as main time span to collect the data and to complete the year lag data, the annual data 1995 to 1997 also add to main data.

5.1.4. Methodology

The main job of this study was to check the fit of models to predict accurate future cash flows. The R² measures the amount to which the models explain or account for the amount of variability in the dependent variable. To find the more accurate model in Indian context, based on in-sample comparing test, the R² is suggested by previous studies. To derive the R² of the competing models, running the regression technique is required. This study has employed the ordinary least squares approaches to estimate their regression models. To evaluate the forecasting performance of the models, both within-sample (the R²) and out-of-sample forecasting tests [The mean absolute percentage errors of prediction (MAPE), Theil’s U-statistics which used by Kim and Kross (2005), and Young's test (Z-statistic) to select the more accurate model based on the explanation of Dechow (1994) about non nested model selection] are employed.

This research utilized quantitative methods in which the data is analyzed based on statistical techniques, which include descriptive statistics, Pearson’s correlation and regression analysis.

The descriptive statistics provide an initial summary data of the essential features of the sample. The correlation analysis is used to fundamentally examine the relationship between dependent and independent variables. Regression analysis, simple linear, multiple, and stepwise regressions, are applied to test the prediction models depending upon the ability of predictor variables to explain future cash flows. All
analytical techniques use the computer software package Statistical Processing for Social Scientists (SPSS) Version 11.5.

For first three hypothesizes the analysis conducted in his study as bellow:

In pooled-year analysis, all data for dependent and independent variables of the ten years prediction period of 1998 to 2007 was pooled and analyzed together.

For the yearly analysis, the regression model was processed to analyze each set of prediction years separately. The analysis was performed for eleven prediction years spanning 1998 to 2008. In each prediction year, three sets of data were analyzed including a set of the one-, two- and three year lags of earnings.

This study designed to test the research hypothesis based on character of the firms share (stock) in Bombay Stock Exchanges (BSE) which demonstrated by CMIE data base as bellow:

- BSE small-cap (non financial cases)
- BSE mid-cap (non financial cases)
- Other share in BSE 500 which are not small-cap or mid-cap (non financial cases )
- Non indexed firms (which are not included in the above indexes)

This study also designed to test the research hypothesis (earnings model, cash flows model, combined model, and ratios model) in a whole (pool) sample which contained varieties of firm from spectrum of industries listed on Bombay Stock Exchanges (BSE) as well as a cross sectional sample which divide base on different sectors of
industries that allows to compare the abilities of independent variables in different industry which will give us a detail picture about cash flows prediction possibility and importance of accounting figures in each industry.

This study designed to test the research hypothesis in whole (pool) sample and cross sectional sample by industry in two different bases: pooled-year based, yearly based as well.

This study designed to test the forth hypothesis, comparing predictive ability of competing models (first, second, and third hypothesis) by using In-sample and Out-of-sample tests

1. **In-Sample test for comparing predictive ability of competing models**

   The adjusted $R^2$ value has been employed by previous prediction research to evaluate the explanatory power between models. The model producing a high adjusted $R^2$ value is a good explanatory model and it can be an important predictive model.

2. **Out-Of-Sample test for comparing predictive ability of competing models**

   In addition to adjusted $R^2$, current study employed the analysis of residuals involving the mean absolute percentage error to evaluate the predictive abilities of the prediction models. The mean absolute errors generate from the out-of sample period. That is, the sample split into two parts. The first sample, the estimated sample, to create regression equations of each prediction model and the second sample, the-out-of sample, to test the estimated equation of the three models; earnings, cash flows and cash flows and accrual components of earnings models (first, second, and third hypothesis).

   After calculating the predicted values of cash flows from the out-of sample, the $r^2$ square ($r^2$), mean absolute percentage errors of prediction (MAPE) and Theil’s U-statistics used by Kim and Kross (2005) calculate for the out-of-sample period. A
model producing relatively low MAPE would be considered to be a better predictor than model yielding higher MAPE. Moreover, based on explanation of Dechow (1994) about non nested model selection, in out-o-sample testing, this study also applied Vuong's test (Z-statistic) to select the more accurate model. Since there were many cash flow ratios considered to be predictors in the model, variable selection technique was used to choose which cash flow ratios are important. Stepwise regression was selected to examine each cash flow ratio. Each predictor variable is considered for addition prior to developing the regression equation. In the procedure, each possible predictor variable in simple regression was examined. Then the explanatory variable providing the largest partial F statistic was chosen to add to the model. Finally, the stepwise procedure generated suitable equations for the model.

5.1.5. Findings

5.1.5.1. Descriptive statistics to check rightness of data

Descriptive Statistics were consist with prior research, in that the means of cash flows from operations and earnings are positive and the mean of earnings is smaller than that of cash flows which led that the characteristics of the accounting variables of Indian listed companies used in this study were in line with the range of the variables that applied in previous studies in other countries, developed as well as developing countries.

5.1.5.2. Correlation analysis

Correlation analysis suggested that the correlation of future cash flow from operations with earnings is lower than the correlation of future cash flows with year-lag cash flows. A low correlation between cash flows and earnings could cause the earnings model (first hypothesis which supported by FASB assertion) to have a lower
explanatory power than the cash flows model (second hypothesis). Additionally, correlation results suggested that the variables could be included in the regression model to predict future cash flows.

5.1.5.3. Findings of pooled year analysis

Whole (pool) sample

First hypothesis

In using the one-year lag: EARNt-1 was found to be a significant predictor of CFOt. EARN t-1 also was found to be positive and significant in prediction of CFO t.

In using the two-year lags: a significant relationship was found between the pair of independent variables (EARN t-1 and EARN t-2) and CFO t. When the relative contributions to prediction of the two independent variables were evaluated, both EARNt-1 was found to be positive and significant in prediction of CFO t, and EARN t-2 was found to be negative and significant in prediction of CFO t.

In using three-year lags: a significant relationship was found between the three independent variables (EARN t-1, EARN t-2, and EARN t-3) and dependent variable (CFO t). When the relative contributions to prediction of the three independent variables were evaluated, EARN t-1 was found to be positive and significant in prediction of CFO t, EARN t-2, and EARN t-3 were found to be negative and significant in prediction of CFO t.

Comparing the adjusted $R^2$ of models based on pooled year data with different year-lags of earnings, the three-year lags of earnings model had the greatest power in explaining future cash flows. This implies that additional year-lags of earnings can improve the explanatory power of the model in explaining future cash flows.
In overall, the results of earnings models based on pooled year data are suggested that the earnings model had significant explanatory power in predicting future cash flows.

**Second hypothesis**

**In using the one-year lag:** CFO_{t-1} was found to be a significant predictor of CFO_{t}. CFO_{t-1} was also found to be positive and significant in prediction of CFO_{t}.

**In using the two-year lags:** a significant relationship was found between the pair of independent variables (CFO_{t-1} and CFO_{t-2}) and CFO_{t}. When the relative contributions to prediction of the two independent variables were evaluated, CFO_{t-1} was found to be positive and significant in prediction of CFO_{t}, and CFO_{t-2} was found to be negative and significant in prediction of CFO_{t}.

**In using three-year lags:** a significant relationship was found between the three independent variables (CFO_{t-1}, CFO_{t-2}, and CFO_{t-3}) and dependent variable (CFO_{t}). When the relative contributions to prediction of the three independent variables were evaluated, CFO_{t-1} and CFO_{t-2} were found to be positive and significant in prediction of CFO_{t}, and CFO_{t-3} was found to be negative and significant in prediction of CFO_{t}.

In overall, the results of cash flows models based on pooled year data are suggested that the cash flows model had significant explanatory power in predicting future cash flows.

**Third hypothesis**

**In using the one-year lag:** A significant relationship was not found between independent variables and cash flow at year t, CFO_{t}. When the relative predictive contributions of two independent variables were evaluated, ACC_{t-1} was not found to be significant in prediction of CFO_{t}, (t = -1.631, p = .103).
In using the two-year lags: a significant relationship was found between the independent variables and CFO\(_t\). When the relative contributions to prediction of the four independent variables were evaluated, CFO\(_{t-1}\) and ACC\(_{t-2}\) were found to be positive and significant in prediction of CFO\(_{t}\), and CFO\(_{t-2}\) and ACC\(_{t-1}\) were found to be negative and significant in prediction of CFO\(_{t}\).

In using three-year lags: A significant relationship was not found between the independent variables and CFO\(_t\).

Regression analysis based on whole (pool) sample, in overall, are suggested that the cash flows and accrual components of earnings model (In using the two-year lags of pooled cash flows and pooled accrual components of earnings) had significant explanatory power in predicting future cash flows.

**Forth hypothesis**

In overall, pooled year analysis (in sample and out-of-sample) suggested that second model, cash flows alone (formulated based on second hypothesis) is more powerful model for predicting future cash flows.

**Fifth hypothesis**

According to pooled year analysis of whole (pool) sample analysis, out of ten cash flow ratios two of them, cash flow return on assets and cash flow per share ratios were found significant predictors to predict future cash flows (adj R\(^2\)=.152 in average).
Index wise analysis

**First hypothesis**

In using the one-year lag: $\text{EARN}_{t-1}$ was found to be a significant predictor of CFO$_t$ in all categories. Moreover earnings model had highest explanatory power among the other index (BSE 500 but non common with small & mid cap) category and followed by no indexed, mid-cap, and small-cap firms respectively. In overall the two-year and three-year lags of earnings model were not significant (NS) among the categories.

**Second hypothesis**

In using the one-year lag: cash flows model had highest explanatory power among the no indexed category and followed by, other index (BSE 500 but non common with small & mid cap) mid-cap, and small-cap firms respectively. In overall the two-year and three-year lags of cash flows model were not significant (NS) among the categories.

**Third hypothesis**

In overall cash flows and accrual components of earnings model, in all year lags had no more explanatory power among the categories.

**Forth hypothesis**

In overall, pooled year analysis (in sample) suggested that second model, cash flows alone (formulated based on second hypothesis) is more powerful model for predicting
future cash flows among the no indexed category and followed by, other index (BSE 500 but non common with small & mid cap) mid-cap, and small-cap firms respectively.

**Fifth hypothesis**

In poled year index wise analysis, cash flow return on equity was found significant predictor for small and mid cap categories and cash flow return on assets was found significant predictor for no index category. For other index category none of the ratios were found significant.

**Industrial wise analysis**

**First hypothesis**

*In using the one-year lag:* \( \text{EARN}_t-1 \) was found to be a significant predictor of \( \text{CFO}_t \) in all industries except construction industry. Moreover earnings model had highest explanatory power in transport equipment industry and lowest in textiles industry.

In overall the two-year and three-year lags of earnings model were not significant (NS) among the most of industries in sample

**Second hypothesis**

*In using the one-year lag:* \( \text{CFO}_t-1 \) was found to be a significant predictor of \( \text{CFO}_t \) in all industries. Moreover cash flows model had highest explanatory power in transport equipment industry and lowest in construction and miscellaneous manufacturing industries.

In overall the two-year and three-year lags of cash flows model were not significant (NS) among the most of industries in sample

**Third hypothesis**
In using the one-year lag: \( \text{CFO}_{t-1} \) and pooled accrual components of earnings in year \( t-1 \) \( (\text{ACC}_{t-1}) \) were found to be significant predictors of \( \text{CFO}_t \) in all industries except nonmetallic mineral, metal & metal products, diversified, and mining industries. Moreover, combined model had highest explanatory power in transport equipment industry and lowest in construction and food & beverages industries. In overall the two-year and three-year lags of combined model were not significant (NS) among the most of industries in sample.

**Forth hypothesis**

In overall, pooled year analysis (in sample) suggested that third model (combined model) which has formulated based on third hypothesis is more powerful model for predicting future cash flows among the industries in sample.

**Fifth hypothesis**

In poled year industrial wise analysis, in two industries (food and beverages and transport equipment) cash flow return on assets was found significant predictor and in textiles industry the cash flow to revenue was found significant predictor. In other industries none of the ratios were found significant.
5.1.5.4. Findings of yearly analysis

Whole (pool) sample

First hypothesis
The mean of adjusted $R^2$ of one-, two- and three-year lags are 0.372, 0.392, and 0.416 respectively. A comparison of the mean of the adjusted $R^2$ between the model with two-year lags of earnings and the model with one-year lag of earnings reveals that the model using two-year lags of earnings provides a higher adjusted $R^2$ value, with the difference of mean of adjusted $R^2$ 0.02 (0.392-0.372). The three-year lags produced the highest values of adjusted $R^2$. This implies that on average, the additional lags of earnings can improve predictive power.

Second hypothesis
The mean of adjusted $R^2$ of one-, two- and three-year lags are 0.532, 0.591, and 0.607 respectively. A comparison of the mean of the adjusted $R^2$ between the model with two-year lags of cash flows and the model with one-year lag of cash flows reveals that the model using two-year lags of earnings provides a higher adjusted $R^2$ value, with the difference of mean of adjusted $R^2$ 0.059 (0.591-0.532). The three-year lags produced the highest values of adjusted $R^2$. This implies that on average, the additional lags of cash flows can improve predictive power.

Third hypothesis
In conclusion, the cash flows and accrual components of earnings model could explain future cash flows. On average, comparing each prediction year, the model had
a high explanatory power in the years 2003, and 2004, while it had a low explanatory power in the years 2007, and 2006. There may be many reasons for this as the period of this study encompassed many situations in India as well as related region and worldwide economy.

**Forth hypothesis**

yearly analysis (in sample and out-of-sample) suggested that third model, cash flows and accrual components of earnings (formulated based on third hypothesis) is more powerful model for predicting future cash flows.

**Fifth hypothesis**

Yearly analysis has not done for fifth hypothesis.

**Index wise analysis**

**First hypothesis**

*In using the one-year lag: \( \text{EARN}_{t-1} \) was found to be a significant predictor of \( \text{CFO}_t \) in all categories. Moreover, like the pooled year analysis, earnings model, in average, had highest explanatory power among the other index (BSE 500 but non common with small & mid cap) category and followed by no indexed, mid-cap, and small-cap firms respectively.

In overall the two-year and three-year lags of earnings model were not significant (NS) among the categories.

**Second hypothesis**

*In using the one-year lag: \( \text{CFO}_{t-1} \) was found to be a significant predictor of \( \text{CFO}_t \) in all categories. Moreover, unlike the pooled year analysis, cash flows model, in average, had highest explanatory power among the other index (BSE 500 but non
common with small & mid cap) category and followed by no indexed, mid-cap, and small-cap firms respectively.

In overall the two-year and three-year lags of cash flows model were not significant (NS) among the categories.

**Third hypothesis**

In using the one-year lag: CFO_{t-1} and ACCT_{t-1} were found to be significant predictors of CFO_{t} in all categories. Moreover, cash flows and accrual components of earnings model, in average, had highest explanatory power among the other index (BSE 500 but non common with small & mid cap) category and followed by mid-cap, no indexed, and small-cap firms respectively.

In overall the two-year and three-year lags of combined model were not significant (NS) among the categories

**Forth hypothesis**

Yearly analysis one year lag model (in sample) suggested that third model, cash flows and accrual components of earnings (formulated based on third hypothesis) is more powerful model for predicting future cash flows in all categories.

**Fifth hypothesis**

Yearly analysis has not done for fifth hypothesis.
Industrial wise analysis

First hypothesis

In using the one-year lag: \( \text{EARN}_{t-1} \) was found to be a significant predictor of \( \text{CFO}_t \) in all industries. Moreover earnings model had highest explanatory power in transport equipment industry and lowest in construction, machinery, and textiles industries. In overall the two-year and three-year lags of earnings model were not significant (NS) among the industries.

Second hypothesis

In using the one-year lag: \( \text{CFO}_{t-1} \) was found to be a significant predictor of \( \text{CFO}_t \) in all industries. Moreover cash flows model had highest explanatory power in mining and transport equipment industries and lowest in, machinery, construction, and diversified industries. In overall the two-year and three-year lags of cash flows model were not significant (NS) among the categories.

In using three-year lags: the three-year lags of cash flows model were not significant (NS) among the industries.

Third hypothesis

In using the one-year lag: \( \text{CFO}_{t-1} \) and accrual components of earnings in year \( t-1 \) (\( \text{ACC}_{t-1} \)) were found to be significant predictors of \( \text{CFO}_t \) in all industries. Moreover cash flows and accrual components of earnings model had highest explanatory power
in mining, nonmetallic mineral and transport equipment industries and lowest in construction, textiles, and machinery industries.

In overall the two-year and three-year lags of combined model were not significant (NS) among the industries.

**Forth hypothesis**

Yearly analysis one year lag model (in sample) suggested that third model, combined of cash flows and accrual components of earnings (formulated based on third hypothesis) is more powerful model for predicting future cash flows.

**Fifth hypothesis**

Yearly analysis has not done for fifth hypothesis.

### 5.1.5.5. New observations

In conclusion, the earnings model could explain future cash flows. On average, comparing each prediction year, the model had a high explanatory power in the years 1998, 2003, and 2004 while it had a low explanatory power in the years 2000, 2001, and 2007. There may be many reasons for this as the period of this study encompassed many situations in India as well as related region and worldwide economy. The Asian economic crisis occurred in the period 1997 to 1998. It can be seen that the earnings model lost explanatory power after year 1998 and recover its explanatory power after year 2000 and again the model lost its power after year 2003. Addition to observation in results of three-year lags model (above explanation), this up and down turns give an idea that the earnings model, in average had an interval cycle of 2 to 3 years. This implies that the economic crisis and improvement had an impact on the reported accounting information. Moreover, this
short interval could cause that the three-year lags earnings model was not significant in most years (only 2001, 2004, and 2005).

In conclusion, the cash flows model could explain future cash flows. On average, comparing each prediction year, the model had high pick in explanatory power in the years 1999, and 2004 (among other picks), while it had a low explanatory power in the years 2001, and 2007. There may be many reasons for this as the period of this study encompassed many situations in India as well as related region and worldwide economy. The Asian economic crisis occurred in the period 1997 to 1998.

It can be seen that the cash flows model lost explanatory power after year 1999 (as explain before, earnings model lost its explanatory power after year 1998) and recover its explanatory power after year 2001 (earnings model recover its explanatory power after year 2000) and again the model lost its power after year 2004 (earnings model lost it after year 2003). Addtion to observation in results of three-year lags model (above explanation), this up and down turns give an idea that the cash flows model like earnings model, in average had an interval cycle of 2 to 3 years only difference is that turning point of earnings model has started one year before cash flows model in both upward and downward cases.

It can be seen that the cash flows and accrual components of earnings model lost explanatory power after year 1999 (as explain before, cash flows model also lost its explanatory power after year 1999 and earnings model lost it after year 1998) and recover its explanatory power after year 2001 (cash flows model recover its explanatory power after year 2001 and earnings model recover it after year 2000) and again the model lost its power after year 2004 (like cash flows model and earnings model after 2003). This up and down turns give an idea that the three models, in average had an interval cycle of 2 to 3 years only difference is that turning point of
earnings model has started one year before cash flows model and cash flows and accrual components of earnings model (combined model) in both upward and downward cases. Moreover, this short interval could cause that the three-year lags model was not significant in most years for these three competing models. The figures (4.4 and 4.5) which showed these cycles are display again as bellow.
5.1.5.6. Summarize and comparing the findings

In overall, pooled year analysis (in sample and out-of-sample) suggested that second model, cash flows alone (formulated based on second hypothesis) is more powerful model for predicting future cash flows.

But yearly analysis (in sample and out-of-sample) suggested that third model, cash flows and accrual components of earnings (formulated based on third hypothesis) is more powerful model for predicting future cash flows.

Therefore the results of this study (in sample and out-of-sample) were not support FASB(1978). But according to further findings (slide 23), it could be say that Earnings and cash flows are not substitute variables in predicting future cash flows otherwise they can use as complementary variables in the procedure of predicting future cash flows.

According to pooled year analysis of whole (pool) sample analysis, out of ten cash flow ratios two of them, cash flow return on assets and cash flow per share ratios were found significant predictors to predict future cash flows (adj R2=.152 in average).

In pooled year index wise analysis, cash flow return on equity was found significant predictor for small and mid cap categories and cash flow return on assets was found significant predictor for no index category. For other index category none of the ratios were found significant.

In pooled year industrial wise analysis, in two industries (food and beverages and transport equipment) cash flow return on assets was found significant predictor and in textiles industry the cash flow to revenue was found significant predictor. In other industries none of the ratios were found significant.
In overall, the analysis suggested that two ratios cash flow return on assets and cash flow per share have more potential to use as independent variable for predicting future cash flows.

As the aim for formulate of fifth hypothesis was to introduce new variables for cash flow prediction studies. Fifth hypothesis was accepted at least for two of ratios, cash flow return on assets and cash flow per share.
5.2. Discussion

5.2.1. Relate the findings to objectives

The objectives of this study were to assess the ability of past aggregated earnings, past cash flows from operations, combined of past cash flows from operation and accrual components of earnings, and cash flows ratios to predict future cash flows (operating cash flows) and also compare them to find the better predictor among these variables in the context of Indian companies to contribute with the prior studies to address and evaluate the FASB assertion which demonstrated that the past aggregated earnings has more predictive power for predicting the future cash flows.

As the most of prior studies to address the FASB assertion have focused on whole sample base method and ignored the potential of other bases. In addition this study aimed to assess and compare of these variables with two different methods of analysis, pooled year analysis and yearly analysis in three bases, whole sample base, index wise base, and industrial wise base to address the FASB assertion from different angles.

To answer the questions and hypotheses those have drawn according to these objectives, the results of this study in the context of Indian companies have summarized in previous section (section 5.1.5). The results of pooled year and yearly analysis demonstrated that in overall, and in context of Indian sample, past aggregated earnings, past cash flows from operations, and combined of past cash flows from operation and accrual components of earnings (which incorporated in first three objectives and hypotheses) have significant and different predictive power for predicting at least one year ahead of cash flows from operations. However the results did not support the predictive ability of the most cash flows ratios which
incorporated in this study. Therefore the whole procedure and results of the study along with the fulfill of the aims of assessing the targeted variables have led to accept the first three hypothesizes and reject the fifth hypothesis for most cash flows ratios which used in this study.

In addition, the results have supported the forth hypothesis which has formulated as “Predictions based on three different models do not suggest the same directions of future cash flows”.

Moreover, this study to find the best predictor among the variables in the context of Indian companies which allow the researcher to contribute his findings to address and evaluate the FASB assertion have compared the results of the first three models with two different methods of analysis (pooled year analysis and yearly analysis) in three alternative bases (whole sample base, index wise base, and industrial wise base).

The results of in-sample and out-of-sample comparisons of the models according to a pooled year analysis method which have suggested by prior studies and based on whole (pool cross sectional) sample have showed that past cash flows from operations had more predictive power in compare to past aggregated earnings and combined of past cash flows from operation and accrual components of earnings. In addition, based on whole (pool cross sectional) sample a yearly analysis which have introduced by this study (like ch 2005) have demonstrated that combined of past cash flows from operation and accrual components of earnings had more predictive power in compare to past aggregated earnings and cash flows from operations. Therefore, both pooled year and yearly analysis of a pool cross sectional sample of selected Indian companies listed on Bombay Stock Exchanges have not supported the FASB assertion.
To introduce the more alternative methods, this study also assessed and compared the variables in a pooled year analysis and a yearly analysis by split of the sample, index wise and industrial wise.

The results of pooled year analysis (in sample) of the split index wise sample in overall, suggested that second model, cash flows alone (formulated based on second hypothesis) is more powerful model for predicting future cash flows among the no indexed category and followed by, other index (BSE 500 but non common with small & mid cap) mid-cap, and small-cap firms respectively. In contrast yearly analysis of one year lag model (in sample) suggested that third model, cash flows and accrual components of earnings (formulated based on third hypothesis) is more powerful model for predicting future cash flows.

In addition, as yearly analysis has not done for fifth hypothesis, the poled year index wise analysis showed that cash flow return on equity was a significant predictor for small and mid cap categories and cash flow return on assets was a significant predictor for no index category. For other index category none of the ratios were found significant.

The results of pooled year analysis (in sample) of the alternative method which it had split the sample industrial wise suggested that EARNt-1 was a significant predictor of CFOt in all industries except construction industry and earnings model had highest explanatory power in transport equipment industry and lowest in textiles industry. Yearly analysis of industrial wise sample also showed that earnings model had highest explanatory power in transport equipment industry and lowest in construction, machinery, and textiles industries.

The results of pooled year analysis (in sample) of the industrial wise split sample suggested that cash flows model had highest explanatory power in transport
equipment industry and lowest in construction and miscellaneous manufacturing industries. Yearly analysis of industrial wise sample also showed that cash flows model had highest explanatory power in mining and transport equipment industries and lowest in, machinery, construction, and diversified industries.

The results of pooled year analysis (in sample) of the industrial wise split sample suggested that combined model had highest explanatory power in transport equipment industry and lowest in construction and food & beverages industries. Yearly analysis of industrial wise sample also showed that cash flows and accrual components of earnings model had highest explanatory power in mining, nonmetallic mineral and transport equipment industries and lowest in construction, textiles, and machinery industries.

In overall, pooled year analysis and yearly analysis one year lag model (in sample) suggested that third model (combined model) which has formulated based on third hypothesis is more powerful model for predicting future cash flows among the industries in sample.

Moreover, the ranks provided by yearly analysis of one-year lag model (based on $R^2$) which have shown in table 4.52, suggested that earnings model was best in transport equipment, services other than finance, food & beverages, and diversified industries respectively. Cash flows model was best in chemicals, textiles, and construction industries respectively. Cash flows and accrual components of earnings model was best in mining, services other than finance, miscellaneous manufacturing, nonmetallic mineral, metal products, and machinery industries respectively.

The results of the rank of models have shown that predictive powers of the models in context of Indian sample were vary in different industries. Therefore assessing of the
predictive power of accounting variables should be focus on an industrial wise split sample instead of a pool cross sectional sample.

In addition, as yearly analysis has not done for fifth hypothesis, the poled year industrial wise analysis showed that in two industries (food and beverages and transport equipment) cash flow return on assets was a significant predictor and in textiles industry the cash flow to revenue was a significant predictor. In other industries none of the ratios were found significant.

In line to fulfill of the purpose for checking the other potential capabilities of the methods which have used for comparing predictive powers of the models, this study, by concentrating on the $R^2$ of the models from 1998 to 2008 (yearly analysis of one-year lag models), have revealed that the cash flows and accrual components of earnings model (combined model), on average, had a high explanatory power in the years 2003, and 2004, while it had a low explanatory power in the years 2007, and 2006. Moreover this model also lost explanatory power after year 1999 (like cash flows model and unlike earnings model, 1998) and recover its explanatory power after year 2001 (like cash flows model and unlike earnings model, 2000) and again the model lost its power after year 2004 (like cash flows model and unlike earnings model, 2003). Repeated recovery can be seen after year 2007 (like cash flows model and unlike earnings model).

These up and down turns give an idea that the three models, in average had an interval cycle of two to three years, the only difference is that turning point of earnings model has started one year before cash flows model and cash flows and accrual components of earnings model (combined model) in both upward and downward cases. Moreover, this short interval could cause that the three-year lags model was not significant in most years for these three competing models.
These cyclical manners of three models reveal new capacity of the explanatory power evaluation and predicting future cash flows studies which the previous studies did not mention about it. This finding suggested that regression analysis on accounting variable could use as a method to give early warning about turning points of industries and economic condition. Moreover it could be say that earnings and cash flows are not substitute variables in predicting future cash flows otherwise they can use as complementary variables in the procedure of predicting future cash flows. The figures (4.4 and 4.5) which showed these cycles are display again as bellow.
5.2.2. Hypothesis wise comparing the findings with prior studies

This section has compared the findings with prior studies related to the five hypothesis which have developed for the current study. This study is in the line of third setting that predicts operating cash flows to address the FASB assertion directly with five hypotheses.

The first and second hypothesizes with aims to assess the ability of past aggregated earnings and past cash flows from operations to predict future cash flows (operating cash flows) in the context of Indian companies were formulated as bellow:

1. “(Past) earnings have significant predictive power in estimating future cash flows of Selected Indian Companies listed on Bombay stock exchange.”
2. “(Past) cash flows have significant predictive power in estimating future cash flows of Selected Indian Companies listed on Bombay stock exchange.”
The results of pooled year and yearly analysis demonstrated that in overall, and in context of Indian sample, past aggregated earnings and past cash flows from operations (which incorporated in the first and second objectives and hypothesizes) have significant predictive power for predicting at least one year ahead of cash flows from operations. Therefore the whole procedure and results of the study along with fulfill of the aims of assessing the targeted variables have led to accept the first and second hypothesizes.

Prior studies which concern on single variable testing and only address first and second hypothesizes of the current study (and compare them) in two different bases. In a traditional design (they used the traditional measure of cash flow for dependent variable in their models) Burstahler and Daley (1986 in USA); Greenberg and et al (1986 in USA); Espahaodi (1988 in USA); Murdoch and Krause (1989 in USA); Arnold and et al (1991 in UK); Percy and Stokes (1992 in Australia); and Finger (1994 in USA), and also in a cash flows statement base, McBeth (1993 in US); Seng (1997 in New Zealand); Black (1998 in USA); Quirin and et al (1999 in USA); Hadi (2005 in USA & Kuwait); Kim and Kross (2005 in USA); Zhao and et al (2006 in Australia); Farshadfar and et al (2008 in Australia), and Lorek and Willinger (2009 in USA) had assessed the past aggregated earnings and past cash flows from operations in their works.

Espahaodi (1988 in USA ) and McBeth (1993 in US) inconsistent with findings of current study have pointed out that neither past net income nor past cash flows from operations provide a better predictor of future cash flows. But besides of them other studies in two different bases investigated the ability of past aggregated earnings and past cash flows from operations to predict future cash flows and consist with
findings of current study found that past aggregated earnings and past cash flows from operations are significant predictors of future cash flows.

The third hypothesis with aim to assess the ability of past combined of past cash flows from operation and accrual components of earnings to predict future cash flows (operating cash flows) in the context of Indian companies was formulated as bellow:

3. (Past) cash flows and accrual components of earnings have significant predictive power in estimating future cash flows of Selected Indian Companies listed on Bombay stock exchange.

The results of pooled year(two-year lags) and yearly analysis demonstrated that in overall, and in context of Indian sample, combined of past cash flows from operation and accrual components of earnings (which incorporated in the third objective and hypothesis) have significant predictive power for predicting cash flows from operations. Therefore the whole procedure and results of the study along with fulfill of the aim of assessing the targeted variable have led to accept the third hypothesis.

Prior studies which have focused on multiple variables testing, address the third hypothesis of the current study as well, such as the studies of Supriyadi (1998 in Indonesia); Barth, Cram & Nelson (2001 in USA); Stammerjohan and Nassiripour (2000/2001); Al-Attar and Hussain (2004 in UK); Chotkunakitti (2005 in Thailand);Lev and et al (2005 in USA); Yoder (2007 in USA), and Hollister and et al (2008 in USA).

Lev and et al (2005) inconsistent with findings of current study have pointed out that accruals do not improve upon current cash flow in predicting future cash flows. But besides of them other studies investigated the ability of combined of past cash flows
from operation and accrual components of earnings to predict future cash flows and consist with findings of current study found that combined of past cash flows from operation and accrual components of earnings is a significant predictor of future cash flows.

In addition, the results have supported the forth hypothesis which has formulated as “Predictions based on three different models do not suggest the same directions of future cash flows”.

Moreover, this study to find the best predictor among the variables in the context of Indian companies which allow the researcher to contribute his findings to address and evaluate the FASB assertion have compared the results of the first three models with two different methods of analysis (pooled year analysis and yearly analysis) in three alternative bases (whole sample base, index wise base, and industrial wise base).

The results of in-sample and out-of-sample comparisons of the models according to a pooled year analysis method which have suggested by prior studies and based on whole (pool cross sectional) sample have showed that past cash flows from operations had more predictive power in compare to past aggregated earnings and combined of past cash flows from operation and accrual components of earnings. This findings is consistent with Bowen, Burstahler and Daley (1986 in USA), Arnold and et al (1991 in UK), Percy and Stokes (1992 in Australia), Finger (1994 in USA), Seng (1997 in New Zealand), Black (1998 in USA), Quirin and et al (1999 in US), Hadi (2005 in USA & Kuwait); Chotkunakitti (2005 in Thailand); Zhao and et al (2006 in Australia), Farshadfar and et al (2008 in Australia),Lorek and Willinger (2009 in USA). However based on whole (pool cross sectional) sample a yearly analysis which have introduced by this study ( like Chotkunakitti 2005) have demonstrated that combined of past cash flows from operation and accrual components of earnings
had more predictive power in compare to past aggregated earnings and cash flows from operations which is consistent with Supriyadi (1998 in Indonesia); Barth, Cram & Nelson (2001 in USA); Stammerjohan and Nassiripour (2000/2001); Al-Attar and Hussain (2004 in UK); Yoder (2007 in USA); Hollister and et al (2008 in USA) conclusions.

In addition, findings of both pooled year and yearly analysis of a pool cross sectional sample of selected Indian companies listed on Bombay Stock Exchanges in contrast with Greenberg, Johnson & Ramesh (1986 in USA), Murdoch and Krause (1989 in USA), and Kim and Kross (2005 in USA) conclusions have not supported the FASB assertion.

The fifth hypothesis with aim to assess the ability of ratios calculated based on past cash flows to predict future cash flows (operating cash flows) in the context of Indian companies was formulated as bellow:

“5. Ratios calculated based on past cash flows are significant predictors of future cash flows of Selected Indian Companies listed on Bombay stock exchange.”

The results of pooled year analysis demonstrated that in overall, and in context of Indian sample, most of ratios calculated based on past cash flows (which incorporated in the fifth objective and hypothesis) had not significant predictive power for predicting cash flows from operations. Therefore the whole procedure and results of the study in consist with Chotkunakitti (2005 in Thailand) that is the only study which addressed the fifth hypothesis of the current study (cash flows ratios) have led to reject the fifth hypothesis.

Moreover, to introduce the more alternative methods, this study also assessed and compared the variables in a pooled year analysis and a yearly analysis by split of the sample, index wise and industrial wise.
The findings of pooled year analysis (in sample) in the split index wise sample suggested that second model, cash flows alone (formulated based on second hypothesis) is more powerful model for predicting future cash flows among the no indexed category and followed by, other index (BSE 500 but non common with small & mid cap) mid-cap, and small-cap firms respectively. In contrast yearly analysis of one year lag model (in sample) suggested that third model, cash flows and accrual components of earnings (formulated based on third hypothesis) is more powerful model for predicting future cash flows.

The split index wise sample in pooled year and yearly analysis have led the same conclusions which both pooled year and yearly analysis of a pool cross sectional sample have suggested. Moreover, in both pooled year and yearly analysis, results were different among the categories which that firm size does appear to exert a strong influence on the results, it is consistent with Farshadfar and et al (2008 in Australia) which had concluded that the predictability of both earnings and cash flow from operations significantly increases with firm size, and Lorek and Willinger (2009 in USA)which have shown that larger firms exhibit significantly more accurate cash-flow predictions than smaller firms. However, in other hand, Kim and Kross (2005 in USA) had suggested that firm size does not appear to exert a strong influence on the results.

Yearly analysis of the split industrial wise sample have provided a base for ranking of three first models (which have drawn from first three hypothesizes).The rank of the models have suggested that predictive power of past aggregated earnings, past cash flows from operations, and combined of past cash flows from operation and accrual components of earnings to predict future cash flows (operating cash flows) in the context of Indian companies are vary in different industries.
The results of the ranking (table 4.52) suggested that past **aggregated earnings (earnings model)** was best in transport equipment, services other than finance, food & beverages, and diversified industries respectively; past **cash flows from operations (cash flows model)** was best in chemicals, textiles, and construction industries respectively, and **cash flows and accrual components of earnings model** was best in mining, services other than finance, miscellaneous manufacturing, nonmetallic mineral, metal products, and machinery industries respectively.

Moreover the **earnings model** had the best result in transport equipment industry and the worse one in diversified industry. **Cash flows model** had shown the best result in chemicals industry and the worse one in construction industry. **Cash flows and accrual components of earnings model** had the best result in mining and services (other than finance) industries and the worse one in machinery industry. As the most of previous studies had not shown comparable industrial wise results, the current study could not able to compare its industrial wise results to prior studies.

Finally, in line to fulfill of the purpose for checking the **other potential capabilities** of the methods which have used for comparing predictive powers of the models, this study, by concentrating on the $R^2$ of the models from 1998 to 2008 (yearly analysis of one-year lag models), have revealed that cyclical manners of three models (the figures 4.4 and 4.5) reveal new capacity of the explanatory power evaluation and predicting future cash flows studies which the previous studies did not mention about it. This finding suggested that regression analysis on accounting variable could use as a method to give early warning about turning points of industries and economic condition.
5.3. Limitations of the research

The study was administrated only on companies listed on Bombay Stock Exchange. The study was conducted on non financial companies. The sample not included financial companies. The sample only included the companies which had the cash flows data entire time span of the study. Therefore, the results of this research may not be generalized to financial as well as unlisted Indian companies.

5.4. Recommendation for future research

Further research can extend this study by replicating the methodology to investigate data of listed companies in the financial sector.

This study incorporates the total amount of accrual components of earnings in the model, but future research can test accrual components of earnings separately to show predictive power of each item.

This study finds that there are cyclical manners in first three models. This observation suggested that earnings and cash flows are not substitute variables in predicting future cash flows otherwise they can use as complementary variables in the procedure of predicting future cash flows. Further research can replicate this part of the methodology to proof the observation, which in turn it can help to change the focus of this field of study from reject or accept of the FASB assertion to try for finding the new ways to utilize the accounting data for providing the proper tools to give early warning about turning points in industries and economic condition which helps the players in share and money markets.

Moreover, this study showed that whole sample based analysis (both pooled year and yearly) selects the second model(cash flows alone) and in the other hand industrial
wise sample based analysis suggests the third model (adding the accrual to cash flows) and also yearly analysis of industrial wise sample showed different predictive power of the models in each selected industries. as the yearly industrial wise analysis will give the more clear picture about predictive power and also helps to track the cyclical manners of the models, therefore using the methodology based on yearly analysis of the split sample (instead of pool sample which covers some important data) by future studies could be resolve the current inconsistencies in conclusions.

5.5. Application of this research

Knowing that accounting variables can be used to predict future cash flows of Indian listed companies provides some implications for practice and policy relating to Indian accounting standards and the capital market.

The Stock Exchange policy setters can use the findings of this research to regulate policy in financial information disclosures of Indian listed companies.

Accounting Standard setters should continually develop Indian accounting standards to promote quality and reliable accounting information.

Moreover, the research findings are meaningful to financial analysts. Creditors can employ the prediction model to determine their customers’ ability to pay interest and repay amounts borrowed. Investors can access future cash flows of companies they are interested in for estimating future return, by using the prediction model. Other related parties, such as company managers can apply the findings of this research to decision making. For example, the prediction model can be applied to forecast future cash flows of a reinvestment project.
5.6. Conclusions

This study that assessed and compared the ability of past aggregated earnings; past cash flows from operations; past combined of past cash flows from operation and accrual components of earnings, and ratios calculated based on past cash flows to predict future cash flows (operating cash flows) in the context of Indian companies listed on Bombay Stock Exchanges (BSE) in the line to assess the first three mentioned variables was found that:

- In the pooled year and yearly analysis, in overall, and in context of Indian sample, past aggregated earnings and past cash flows from operations (which incorporated in the first and second objectives and hypothesizes) have significant predictive power for predicting at least one year ahead of cash flows from operations (accept of first and second hypothesizes).

- The results of pooled year(two-year lags) and yearly analysis, in overall, and in context of Indian sample, combined of past cash flows from operation and accrual components of earnings (which incorporated in the third objective and hypothesis) have significant predictive power for predicting cash flows from operations(accept of third hypothesis).

And also the study in the line to compare these three variables was found that:

- The results of in-sample and out-of-sample comparisons of the models according to a pooled year analysis method which have suggested by prior studies and based on whole (pool cross sectional) sample have showed that past cash flows from operations had more predictive power in compare to past aggregated earnings and combined of past cash flows from operation and accrual components of earnings. This findings is consistent with Bowen, Burstahler and Daley (1986 in USA), Arnold and et al (1991 in

- However based on whole (pool cross sectional) sample a yearly analysis which have introduced by this study (like Chotkunakitti 2005) have demonstrated that combined of past cash flows from operation and accrual components of earnings (third model) had more predictive power in compare to past aggregated earnings and cash flows from operations which is consistent with Supriyadi (1998 in Indonesia); Barth, Cram & Nelson (2001 in USA); Stammerjohan and Nassiripour (2000/2001); Al-Attar and Hussain (2004 in UK); Yoder (2007 in USA); Hollister and et al (2008 in USA) conclusions.

In contrast with Greenberg, Johnson & Ramesh (1986 in USA), Murdoch and Krause (1989 in USA), and Kim and Kross (2005 in USA), the results of pooled year and yearly analysis of a pool cross sectional sample of selected Indian companies listed on Bombay Stock Exchanges have not supported the FASB assertion.

Moreover, in the line to assess the ratios calculated based on past cash flows was found that:

- The results of pooled year analysis demonstrated that in overall, and in context of Indian sample, most of ratios calculated based on past cash flows (which incorporated in the fifth objective and hypothesis) had not significant predictive power for predicting cash flows from operations. Therefore the whole procedure and results of the study in consist with
Chotkunakitti (2005 in Thailand) that is the only study which addressed the fifth hypothesis of the current study (cash flows ratios) have led to reject the fifth hypothesis.

The results in this study are consistent with hypothesis that **combined of past cash flows from operation and accrual components of earnings** is the best predictor of the future cash flows in a pooled cross sectional sample analysis.

To the best of my knowledge, this is one of the first studies in India that assess and compare the ability of past **aggregated earnings**; past **cash flows from operations**; past **combined of past cash flows from operation and accrual components of earnings**, and **ratios calculated based on past cash flows** to predict future cash flows (operating cash flows). Whilst regression - based studies such as this one do have certain drawbacks, nonetheless assess and compare the ability of accounting variables to predict future cash flows paves a new way forward to understand future cash flows and its importance better in India. Some of the findings in this study have been reported in earlier studies from across the world, and therefore reiterate the importance of these variables to predict future cash flows in an Indian context.

Moreover, this study also demonstrated other findings based on industrial wise sample, which have not been reported earlier. These observations indicate that predictive power of past **aggregated earnings** (earnings model), past **cash flows from operations** (cash flows model), and **combined of past cash flows from operation and accrual components of earnings** (model) to predict future cash flows (operating cash flows) in the context of Indian companies are vary in different industries. These observations have shown that the **earnings model** had the best result in transport equipment industry and the worse one in diversified industry. **Cash flows model** had shown the best result in chemicals industry and the worse one in
construction industry. **Cash flows and accrual components of earnings model** had the best result in mining and services other than finance industries and the worse one in machinery industry. The reason(s) for these observations need to be explored in future studies.

While this study did show the importance of some variables to predict future cash flows, it can help the current and potential investors who want to price the shares based on estimated future cash flows of Indian companies listed on Bombay Stock Exchange.

Identification of these variables as reported in this study has several practical applications. whilst these observation need to be replicated in further studies, and that merely showing a correlation does not mean that it is causal in nature, nonetheless, these observation offer a potential platform for the possible avoidance of making under optimize or wrong investment decisions. Whilst the combined model was found to be the best predictor for predicting the future cash flow, past aggregated earnings and past cash flows are equally important.

From a finance perspective, the positive correlation between future cash flow and accounting variables suggest that investors can access future cash flows of companies they are interested in for estimating future return, by using the prediction model; creditors can employ the prediction model to determine their customers’ ability to pay interest and repay amounts borrowed, and other related parties, such as company managers can apply the findings of this research to decision making. For example, the prediction model can be applied to forecast future cash flows of a reinvestment project. It is important in reducing the risks which inherent in the financial markets. Moreover, the stock exchange policy setters can use the findings of this research to regulate policy in financial information disclosures of Indian listed companies, and
accounting Standard setters should continually develop Indian accounting standards to promote quality and reliable accounting information based on these findings.

Finally, the findings of testing the models in an out-of-sample period suggest that the cash flow and accrual component of earnings model (third model) is a better predictor of future cash flows than the other models in the context of Indian companies listed on BSE. Furthermore, additional year lags of accounting data can improve the predictive power of the model. However, the results indicate that most of cash flow ratios which incorporate in the study are not a good predictor of future cash flows.

In addition, this study finds that there are cyclical manners in three models which reveal new capacity for the explanatory power evaluation and predicting future cash flows studies that the previous studies did not mention about it. This observation suggested that earnings and cash flows are not substitute variables in predicting future cash flows otherwise they can use as complementary variables in the procedure of predicting future cash flows. Moreover regression analysis on accounting variable could use as a method to give early warning about turning points of industries and economic condition which helps the players in share markets and money market as well.