DETECTING EARNINGS MANAGEMENT: A COMPARATIVE STUDY OF ACCRUAL-BASED MODELS

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ABSTRACT

This paper evaluates the problems with the alternative accrual-based models in detecting earnings management. The researchers will focus on associating the Jones Model and the Modified Jones Model, which are the two most commonly used model in empirical analysis. Earnings management is a kind of management which uses accounting techniques to meet the officials" needs for earnings. Experts and professionals in this area found many methods to detect the earnings management; within these methods are the accrual-based models which include the modified Jones model. Previous research recognized that the Modified Jones model is effective in detecting earning management in mostly developed economies. Average total assets, cash flow from operation, accounts receivables, gross value of property plant and equipment, changes in net sales revenues, book value of common equity and regression coefficients will be explained in this paper.

Key words: Earnings Management; Discretionary Accruals; Jones Model and Modified Jones model.

INTRODUCTION

Earnings management has received substantial attention from researchers in recent years. Much of the research in this works uses discretionary accruals (abnormal accruals) to study earnings management, where abnormal accruals are defined as actual accruals less expected accruals. Given the importance of the expectations model in assessing abnormal accruals, it is important to use the most specific models of expected accruals available in tests of earnings management.

This paper explains the method of detecting the earning management and credence the common ways and motives behind the earning management made by the companies to gain fake public recognition and betrays their stakeholders. Earnings Management is a method of manipulating financial records to improve the picture or appearance of company's financial statement or position. Many accounting rules and principles require that a company's management make judgements in adopting these principles and rules, so Earnings Management takes advantage of how accounting rules and principles are applied and creates financial statements that inflate or "smooth" earnings. One of the most popular way to manipulate financial records is to use an accounting policy that produces higher short-term earnings. Management can feel pressure to manage earnings by manipulating the company's accounting practices to meet financial expectations and keep the company's stock prices up and a company's stock prices often rises or falls after an earning announcement, depending on whether the earnings meet or fall short of analysts' expectations. This study provides a sound model to the investor and regulated accounting

bodies like security exchange commission and IAS or IFRS board to discover about the financial statements how much realistic and gives a true and fair view of the investor and regulated bodies concern how to evaluate the accounting standards which can reduce the level of earnings management.

Earnings Management may be difficult for individual investors due to the complexity of accounting rules, principles. Although accounting researchers have proposed several methods and techniques for example research has shown that firms with large accruals and weak governance structure are more likely to be engaging in earnings management.

Meaning of Accruals

It is an accounting method that records revenue and expense when they are incurred, regardless of when cash is exchanged. There are two types of accruals: Discretionary and Non-discretionary accruals.

Discretionary accruals are non-essential or non-mandatory expenses/assets that take place to promote or enhance the company's standing and worth or it means that the company's uses its own.

Non – discretionary accruals are those expenses that are obligatory in nature and that has yet to be realised but is already recorded in the books of accounts.

Accruals are used to decrease incompatibilities and these are encountered due to difference in timing of the acknowledgement or identification.

The next phase of this paper is based on the models of these accruals which proved to be helpful in detecting the level of earnings management.

The analysis of this paper based on the Modified Jones Model (1991). It was first developed by Jennifer Jones as part of her doctoral education at the university of Michigan in the early 1990s and then it was modified by subsequent researches. It starts with the premise that the accrual portion of earnings should be a function of revenue growth and tangible assets.

Accruals that fit this model are 'normal accruals' that are explained by normal business activities. Accruals that do not fit this model are discretionary accruals and are more likely to reflect earnings management.

Thus, the Modified Jones model is framed to mitigate the measurement error of discretionary accruals. The study done by Dechow et al.(1995) finds that this model offers the most powerful and significant test of earnings management compared to the results of Healy De Anglo and Standard Jones and industry model.

REVIEW OF LITERAURE

Keith Jones, Gopal V. Krishnan and Kevin Melendez (2005) evaluate that models of discretionary accruals detect actual cases of fraudulent and restated earnings or not. They used the Jones and Modified Jones model in their research -paper. The sample that was used by researchers were the firms misstated at least one 10-k filing. Their results suggested that the models of discretionary accruals do not capture fraudulent events and voluntary restatement of earnings.

Sugata Roychowdhury (2006) examines earnings management through real activities manipulation. She suggested price discounts to temporarily increase sales, overproduction to report lower cost of goods sold and decreases discretionary expenses to improve accounting quality and reported limits. She examined cash flow from operations, production cost and discretionary accruals.

Benjamin C. Ayers, John (Xuefeng) Jiang and Eric Yeung (2008) focused on the analysis of pretended earnings targets using discretionary accruals for earnings management. They found the positive association between the discretionary accruals proxies and beating the profit benchmarks extends to pretended targets throughout the earnings distribution.

Tianran CHEN (2010) in his study examines the accrual -based model in detecting earnings management. He used the two most frequently used model that is The Jones Model and Modified Jones Model. The researcher used samples in his paper the ST Companies. He accomplished that Modified Jones model is the best method to detect earnings management.

Md. Aminul Islam, Ruhani Ali and Zamri Ahmad (2011) analyses the usefulness of Modified Jones model in detecting earnings management among the companies listed in DSE. They stretched the model by including current period retirement benefit expenses with total assets, current period revenue, gross property plant and equipment. This enclosure proved significant in detecting earnings management.

Nuraddeen Usman Miko & Hasnah Kamardin (2014) detecting earnings management by comparing the accruals models in Nigeria. Their study makes comparative analyses of five different models of detecting earnings management using a sample of 81 out of 139 listed non-

financial firms' data for the period of 5 years (2009-2013). The study accomplished that Modified Jones model (1995) is able to detect earnings management better than other models and suggest future research to use this model in the case of Nigeria.

Lua Lvong Thi (2015) analysis the case study of Stockman Oy Adp from 2005-2014 to detect earnings management through accrual- based analysis. In his study, researcher could not find any indication of earnings management through accruals- based measures based on consolidated financial statements provided by the company.

B. Brian Lee and Willian Vetter (2015) critically evaluated the accruals models in earnings management studies. They conclude that no single accrual model is free from any misspecification, in this condition they suggested to follow performance-matched Jones model to estimate discretionary accruals.

Ivana Beslic, Dragana Beslic , Dejan Jaksic and Mirko Andric (2015) analysed the predictive power of accruals models for the detection of earnings management. They examined Serbian business environment by using multiple linear regression and shows that these predictive models do not have sufficient explanatory power and need for further modifications.

Ferentinou and Anagnostopoulou (2016) observed the effect of IFRS adoption on both accruals and real earnings management in Greece. They found that after the adoption of IFRS, accrual earnings management decrease.

Tereza Mikova analyses the influence of IFRS on accounting quality more precisely on earnings management by measuring discretionary accruals in EU companies.

Andrew B. Jackson (2016) investigate that Is discretionary accruals are enough to detect the level of earnings management? They discussed the limitations of discretionary accruals measure and found that only discretionary accruals measures are unable to provide believable detection of earnings management

Dr.Sherry Fang Li, Dr. Evelyn McDowell and Dr. Erin A. Moore studied accrual-based earnings management, real transactions manipulation and expectations management. They conclude that accrual-based earnings management are more common in countries with relatively weaker regulatory environment whereas expectations management is more widespread with stronger investor guard law countries.

Susana Callao, José I. Jarne, David Wróblewski (2016) did investigation on different models determining earnings management for developing eastern European countries and they confirmed that all earnings management models have sufficient weaknesses. New model, much more consistent and precise in separation of accruals into discretionary and non-discretionary components could be important progress in earnings management investigation.

Ahmed Shahzad (2016) measured the earning quality in BRIC countries. The researchers used discretionary accruals and non-discretionary accruals by applying Modified Jones (cross-sectional) to detect earnings management. He proposed that the accounting bodies should reduce the role of discretionary accruals to controls the earnings management.

Objectives

- To study the factors of earnings of the companies to what extent represents financial statements are trustworthy for their stakeholders on the basis of accruals.

- To suggest the appropriate use of accruals- based earnings management techniques to meet earnings expectations of the companies.

- To suggest the prevalent approach to measure discretionary accruals by discriminating Jones (1991) and Modified Jones model (1995).

MEASURES OF DISCRETIONARY ACCRUALS

Based on a review of the existing earnings management literature, we identify some

competing models that are commonly used to detect earnings management (Dechow et al.

1995; McNichols 2000; and Kothari et al. 2005 for analysis of model structures).

It comprises followings variables:

Accruals include all modifications that allow a business to change from a cash basis to an accrual basis - whether this means distributions, provisions or changes in accounting approaches. Fluctuations in working capital also form part of accruals. Equation is as follows:

Total accruals = earnings - cash flow (from operations). Object is to identify the discretionary component of accruals. It is hard to do this because non-discretionary and discretionary components of accruals cannot be detected directly, so it is required to develop approaches for assessing the discretionary accruals.

What researchers want to know can be shown as:

Discretionary accruals + Non-discretionary accruals = Earnings - Cash Flow (from operations)

Net income = cash earnings + non-cash earnings

1. Total and Current Accruals

Before assessment of discretionary accruals, total accruals must be calculated. Earlier studies provided two methods of assessing total accruals: (1). Traditional balance sheet method is broadly used before the use of cash flow method, which had been the frequently used method at the time (Dechow et al., 1995; Healy, 1985; Jones, 1991; Peasnell, Pope, & Young, 2000). Assessing total accruals is as follows using balance sheet method:

$$TAC_t = \Delta CA_t - \Delta CASH_t - \Delta CL_t + \Delta DCL_t - DEP_t$$

Whereas:

ΔCA_t = current asset changes in year t.

$\Delta CASH_t$ = cash and cash equivalents changes in year t.

ΔCL_t = current liabilities changes in year t.

ΔDCL_t = debt change included in the current liabilities in year t.

DEP_t = amortization and depreciation expenses in year t. Furthermore, balance sheet method did not include non-current accruals (except amortization and depreciation expenses).

Total accruals generally depend on changes in cash sales revenue, changes in cash expenses and some non-cash expenses including depreciation expenses. In order to get the discretionary accruals, non-discretionary accruals will be subtracted from the total accruals for each observation.

2. Jones Model

Jones (1991), (cross sectional regression model) comes up with the projected current new model of estimating non-discretionary accruals. The model uses plant, properties and equipment (PPE) to control changes in non-discretionary accruals arising from the change of depreciation. Additionally, sales variable is used to control changes in non-discretionary accruals related with working capital accounts which come from changes in the firm's economic environment. This model is based on the hypothesis that working capital accumulations are related to changes in sales and depreciation is associated to asset.

$$TA = \beta_o + \beta_1(1/AT_{it-1}) + \beta_2 \Delta REV_{it} + \beta_3 PPE_{it} + \varepsilon_{it} \; (residual \; variables) \qquad 1$$

where TA is total accruals firm, i calculated as the difference between income before extraordinary items and operating cash flows for year t; AT_{it-1} is assets at the beginning of the year, ΔREV is the change in sales from year t-1 to t, and PPE is gross property, plant, and equipment. TA, ΔREV, and PPE are scaled by AT_{it-1}. Residual from this model is JONES.

Modified Jones Model

In this model, account receivable was taken into account by Dechow et al. (1995) to develop modified Jones (1995) of Jones model (1991). Assessing of normal accruals in the first stage is similar to the model of Jones (1991). The present model changes in revenue are change in revenues

minus change in account receivable. Following Dechow et al. (1995), we estimate the modified Jones model as follows:

$$TA_{it} = \beta o + \beta 1(1/AT_{it-1}) + \beta 2(\Delta REV_{it} - \Delta AR_{it}) + \beta 3\ PPE_{it} + \varepsilon_{it} \qquad 2$$

Where:

ΔAR = change in accounts receivable from year t-1 to t .

TA_{it} = total accruals for the company in the current year.

$\beta o,\ \beta 1,\ \beta 2,\ \beta 3$ = estimated parameters or regression coefficients.

AT_{it} = assets at the beginning of the year.

ΔREV_{it} = change in net sales revenues of the company i in the current year t, compared with the previous year t-1.

PPE_{it} = gross value of property, plant, equipment for the company i in the current year t.

The Jones (1991) model indirectly undertakes that discretion is not exercised over revenue in either in the estimation period or the event period. The modified Jones model accepts that all changes in credit sales in the event period are due to earnings management.

Dechow et al. suggested that the modified Jones model outperforms the Jones model in detecting earnings management. The residual from model (2) is denoted as MJONES.

Modified Extended Jones Model

$$TA_{it} / A_{(t-1+t)}/2 = \beta o * 1/A_{(t-1+t)}/2 + \beta_1 * (\Delta REV_{it} / A_{(t-1+1)}/ 2) + \beta_2 * (PPE_{it} / A_{(t-1+1)}/2)+\varepsilon_{it} ; \quad 3$$

Where:

TA_{it} = total accruals for the company in the current year.

$A_{(t-1+1)}/2$ = average total assets.

$\beta_o, \beta_1, \beta_2, \beta_3$ = estimated parameters or regression coefficients.

ΔREV_{it} = change in net sales revenues of the company i in the current year t, compared with the previous year t-1.

PPE_{it} = gross value of property, plant, equipment for the company i in the current year t.

ε_{it} = residual variables or earnings management.

Modified jones model with book-to-market-value-ratios and cash flows (to mitigate measurement error)

$$TA_{it} = \beta_o + \beta_1(1/AT_{it-1}) + \beta_2 (\Delta REV_{it} - \Delta AR_{it}) + \beta3 \, PPE_{it} + \beta_4 \, BM_{it} + \beta_5 \, CFO_{it} + \varepsilon_{it} \quad 4$$

Where: BM = book value of common equity.

METHEDOLOGY

In this paper we explained Jones Model (cross-sectional analysis), Modified Jones model to detect earnings management with the help of prior research papers, articles and journals.

CONCLUSION

Analysing total accruals into normal and discretionary mechanisms has become a standard feature of research on earnings management. The discretionary or abnormal accruals are often used as a proxy for earnings management. We evaluate the ability of 5 measures derived from the present discretionary accruals models to detect the presence of earnings management. We find that the only difference between Jones (1991) and modified Jones model (1995) is due to accounts receivables i.e. (change in net sales revenue – change in accounts receivables) and accept all the changes in credit sales.

The next difference occurs between modified and extended Jones model is the average of total assets in place of changes in accounts receivables. Modified model of accruals also considers the book value of equity and cash flows to reduce the measurement errors in financial statements.

Our conclusions have important suggestions for several participants who use financial statements and researchers who hire models of discretionary accruals to discriminate earnings management as well as for those who understand observed signals on accrual-based earnings management. Our study suggest that the models of discretionary accruals do not capture fraudulent events or voluntary repetitions of earnings. We recommend that researchers consider using multiple measures to detect earnings management. The modified Jones model is still the best approach to detect earnings management compared to all other methods due to account receivables.

Researchers claim they are able to detect earnings management using cross-sectional data from a large database, to the degree that earnings management is a clear situation of low earnings quality. To this degree, analytic and structural modelling will be better placed to contribute to our understanding than simply thoughtlessly applying discretionary accruals models and simply assuming this provides an accurate measure of earnings management.

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