

**FOREIGN TRADE UNIVERSITY**

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**SUBJECT:**

**DETECTING EARNINGS MANAGEMENT  
OF LISTED COMPANIES IN VIETNAM  
STOCK MARKET THROUGH MODIFIED  
BENEISHED MODEL**

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**Hanoi, 10/2017**

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## **ABSTRACT**

**Research aim(s):** The most important purpose of this study is to identify and measure current levels of earnings management of listed companies in Vietnam Stock market.

**Research Importance/Contribution:** This research provides the latest statistic of levels of earnings management in listed companies in Vietnam stock market. In addition, this study also gives some recommendations and solutions to earnings management problem in Vietnam.

**Research objectives:** In this study, discretionary accruals are main objectives that will be researched and measured.

**Research scope:** The research collects data from 180 listed companies in Vietnam stock market in 2016.

**Research methods:** The study use Modified Jones Model (1995) to identify how high level of earnings management of companies is.

**Research Limitation:** Due to the data available constrains, the data is mainly derived from formal and creditable financial websites (website of VNDIRECT securities corporation, website of Ho Chi Minh City stock exchange, Hanoi stock exchange).

**Keyword:** Vietnam, earnings management, accruals, Modified Jones model

## **CHAPTER I. INTRODUCTION**

### **1.1. The necessity of the topic**

In the current context of the economy, especially in the recent flourish of stock market, the transparency and accuracy of information disclosed in financial statements is the absolutely important concern of investors around the world. The quality of information on financial statements, especially earnings quality, has a significant impact on decisions made by investors and other stakeholders (Huynh, 2012). However, the distinction between ownership and management in firms gives rise to the problem called "principal - agent", in which principals (investors) are individuals who need to know accurate information on financial statements but agents (managers) are people who directly make those reports. It is evident that managers take responsibilities for total benefit of the firm but the fact that agents usually tend to put their advantage first raises the conflict of interest between investors and managers.

One of the most important criterion on financial statements which is highly likely to be distorted is profit. There are two main explanations for this. According to Ball and Shivakumar (2005), accounting has a vital role in communicating with current and prospective shareholders. In an accounting period, earnings is investors' leading concern when making investing decisions because it is regarded as a critical indicator for evaluating the effectiveness of the operating performance and prospect of firms (Nguyen, 2016). Hence, many corporates, especially listed companies always find various methods in order to exaggerate their income. Besides, earnings criteria are also considered a key tool in measuring the managers' capacity of management (Nguyen, 2016).

Earnings management behavior has negatively effect on investors' benefit in particularly and firms' benefit in general. It undermines investors' confidence in quality of the financial statement and reduces firms' reputation. Nevertheless, according to the survey made by Grahama (2005), 78 percent of CFOs admit that

they would give up a part of the economic value of their firms to gain the desired earnings target as long as the sacrificed value is not too great.

In Vietnam, there exists many gaps in the system of VAS that facilitates the distortion of criterion on financial statements such as the incomplete application of accounting standards, the lack of updates and content differences between Vietnam accounting standards and international accounting standards, lack of flexibility of enterprise accounting regime and the distance between accounting standards and guidance circulars (Nguyen, 2015). Moreover, this phenomenon still does not receive enough attention. As long as investors are not clear about this situation, they are still cheated by managers. Thus, finding an effective method measuring levels of earnings management of firms is regarded as a necessary mission to overturn dishonest behaviors and protect investors' right. From all of the reasons mentioned above, it is necessary for this study to be implemented in order to provide investors and people who use financial statements with a tool to identify earnings manipulation and helps them to avoid wrong decisions leading to unworthy losses.

## **1.2. Research objectives and scope**

### **1.2.1. Research objectives**

Earnings management is classified into two types which are real earnings management and accrual-based earnings management. In fact, due to characteristics of Vietnamese firms, accrual-based earnings management is more popularly used by firms in this country. Accrual variables are divided into two categories (discretionary accruals and non-discretionary accruals). Hence, to achieve the main purpose of this study which is identify earnings management in listed companies in Vietnam stock market, this study decides to choose discretionary accruals as the objective that need to be measured.

### **1.2.2. Research scope**

This research collects criterion on financial statements of 180 listed companies in Vietnam stock market in 2016.

## **1.3. Methodology description**

The modified Jones model was introduced in a research paper “Detecting Earnings Management” by Dechow et al (1995). Their study compared five commonly-used models of discretionary accruals and concluded that their modified Jones model works best in detecting earnings management. The model assumes that nondiscretionary accruals depend on the change in revenues, receivables (REV-REC), gross property plant and equipment (PPE).

## **CHAPTER II. REVIEW OF LITERATURE**

### **2.1. The definition of earnings management**

This study follows the definition about earnings management by Healy and Wahlen (1999) which is widely accepted:

“Earnings management occurs when managers use their own judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company, or to influence contractual outcomes that depend on reported accounting numbers.”

Companies may manage earning either upward or downward to achieve their own incentives. There are several reasons for managing earnings.

- Stock price effects: Especially, before the initial public offering announcement, most companies tend to use earnings management to demonstrate their great economic performance. The investors will be deceived when only looking at the income of the company. Thus, the company will earn much money after capital issue period.

- To attain contracts: Normally, most credit contracts have terms about the income of the company. So, the manager wants to make the financial statement better to meet all the terms of contracts. Moreover, if an entity have good earnings, it will be easier to borrow money from the banks and other investors.

- The managers get reward: A lot of companies apply principles about reward for the board of managers; the director wants to improve the real economic performance. Besides, managers with high equity incentives sell more shares after

earnings announcements and are likely to report earnings that meet or just beat the forecasts of analysts (Cheng and Warfield, 2009).

- Meet the analysts' forecasts: According to the survey by Graham et al. (2005), about 78% of the surveyed executives would give up economic value in exchange for smooth earnings because they believe that less predictable earnings - as reflected in a missed earnings target - command a risk premium in the market.

- Decrease operation income tax: The accountant uses some techniques of earning management to minimize the reported income. Thus, the company can delay or decrease the corporate income tax that has to pay to the government.

## **2.2. Accrual – based earnings management**

There are two types of earnings management: real earnings management and accruals earnings management. The primary objective of accruals basis accounting is to demonstrate the true performance of the firm by recording revenues and expenses to the period in which they are incurred, rather than presenting the cash in- and outflows (Joosten, 2012). In contrary to AEM, which is only applied via accounting activities at the end of an accounting period, REM directly changes operating, investing as well as financing performance of firms during a production period.

In this paper, it primarily focuses on accruals earnings management. According to Ewert and Wagenhof (2005), accrual basis of accounting includes the way accounting standards are applied to record given transactions and events. Hung (2001) assumes that accrual accounting provides better matching of revenues and expenses than cash accounting and therefore makes accounting information more value relevant.

However, accrual-based accounting remains several weaknesses. Reported income can be manipulated when managers have to book accruals for events that require discretion in accounting standards. When companies engage in earning manipulation, they can increase or decrease accruals. Researchers decompose accruals into two types: discretionary accruals and non-discretionary accruals. The

nondiscretionary component reflects business conditions that naturally create and destroy accruals; while the discretionary component identifies management choices so discretionary accruals are a better proxy for earnings quality. The result of pulling discretionary accrual amounts from the total accrual amount is a metric that reflects accruals that are due to management's choices. Jiang, and Yeung (2006) argue that it maintains positive associations between discretionary accrual proxies and firms' propensity to beat earnings benchmarks. Baig and Khan (2016) confirmed that accruals are the differences between profit after tax – net income and cash flow from operating activities.

### **2.3. Review of previous studies about related topic**

Earnings management is a worldwide phenomenon (Michael D.Yu et al., 2014). The researches on earnings manipulation have been developed since the 1960s and in the beginning, this focused on the capital markets. After the release of Positive Accounting Theory in Watts and Zimmerman (1986), the research focus moved from capital markets to incentives related to internal contracts (Axenbrant and Håkansson, 2015). Watts and Zimmerman (1978) argues that the non-capital market focus during the 80s and 90s included incentives to manage earnings as being enhancement of management compensation and reduction of political costs and debt covenant violations. There have been several empirical studies that points out the motivation for earnings management such as pursuit of reporting excellence awards (Deegan and Carroll, 1993), positive effect on stock price (Healy and Wahlen, 1999), increase manager's compensation (Cheng and Warfield 2005, Shuto et al., 2007), decrease income tax (Graham et al., 2012), meet the analysts' forecasts (Graham et al., 2005).

Researchers have taken into account changed conditions when doing research in such a flexibly developed era, when commodity as well as financial markets are getting larger and more complicated. For examples, Burgstahler et al. (2006) analyze the earnings management activities of public and private firms in 13 European Union countries and document that earnings management is less pervasive



in publicly traded firms and in countries with relatively stronger legal systems. Extensively, Luez et al. (2006) examine earnings management practices in 31 countries and document that earnings management activities are lower in countries with large stock markets and strong investor protection laws.

Although the very early flourish of studies and models detecting earnings management issue in the world, there are a small number of researches about this issue in Vietnam. Vietnamese studies specifically analyze some aspects of the issue, for example, Bui and Nguyen (2015) examines entities' management by detecting determinants of income adjustment to reduce payable corporate income tax. The paper indicates four factors having significant impact which are tax incentive policies, recognition of unrealized revenue, recognition of number of reserves and recognition of deferred corporate income tax. According to Pham (2013), managers can take advantage of some techniques in order to adjust earnings criteria such as changing the depreciation costs via estimation of useful time of fixed assets or changing time of setting depreciation account. Many techniques used by managers to adjust accounting criteria are dishonest recognition of revenue, evaluation of exchange rate differences, provision for devaluation of stocks and financial investments (Nguyen, 2014). Nguyen (2014) applied Model Beneish (1999) in order to detect serious mistake/fraudulent financial statements of Vietnamese listed companies. The finding showed that the percentage of firms managing earnings is 53,33%. Nguyen (2014) concludes that the recognition of income statement on accrual basis provides managers with opportunities to adjust income through non-cash transactions.

Although there have been many prior studies in Vietnam on earnings manipulation situation, it is necessary to develop increasingly comprehensive researches so as to provide investors and people using financial statement with effective tools to protect themselves from fraudulent behaviors of managers. This study will contribute a way of measuring level of earnings management of listed firms on Vietnam Stock Exchange, using Modified Jones model. In particular, this

study use data of nearest years publicly published by firms and then apply them in the models to calculate earnings manipulation, to pull out a petition to improve remarkably unreliable financial report quality of listed companies, make it an effective and important reference for various financial users such as governance agencies, foreign and internal investors, investment funds, banks,...

### CHAPTER III. RESEARCH METHODOLOGY

#### 3.1. Research model

A modified version of Jones model is considered in the empirical analysis. The modification is designed to eliminate the conjectured tendency of Jones model to measure discretionary accruals with error when discretion is exercised over revenues. In this model, nondiscretionary accruals (NDA) are calculated during the event period when earnings management is researched. This study chooses Modified Jones model to explore the discretionary accruals based on the assumption that earnings is manipulated because of accrual basis of accounting.

Step 1: Estimate the Modified Jones Model, which is defined below:

$$\frac{TA_t}{TA_{t-1}} = \beta_1 \frac{1}{A_{t-1}} + \beta_2 \frac{(\Delta REV_t - \Delta REC_t)}{A_{t-1}} + \beta_3 \frac{PPE_t}{A_{t-1}} + \varepsilon_t$$

Where

$TA_t$ : Total accruals in year  $t$  divided by total assets in year  $t-1$

$\Delta REV_t$ : Revenues in year  $t$  less revenues in year  $t-1$

$\Delta REC_t$ : Delta revenues in year  $t$  less delta net receivables in year  $t-1$

$PPE_t$ : Gross property plant and equipment in year  $t$

$A_{t-1}$ : Total assets in year  $t-1$

$\beta_1$ ;  $\beta_2$ ;  $\beta_3$ : Parameters to be estimated, namely beta

$\varepsilon_t$ : Residuals in year  $t$

Step 2: To calculate the total accruals, this study depends on the cash flow sheet:

$$TA_t = NI_t - CFO_t$$

Where

$NI_t$ : Net income in year  $t$

**CFO<sub>t</sub>**: Cash flow from operating activities

Step 3: Calculate the discretionary accruals

$$DA_t = TA_t - NDA_t$$

And the non-discretionary accruals can be calculated with the next formula

$$\frac{NDA_t}{TA_{t-1}} = \beta_1 \frac{1}{A_{t-1}} + \beta_2 \frac{(\Delta REV_t - \Delta REC_t)}{A_{t-1}} + \beta_3 \frac{PPE_t}{A_{t-1}}$$

Therefore

$$DA_t = \varepsilon_t$$

The estimates of  $\beta_1, \beta_2, \beta_3$  and non-discretionary accruals during the estimation period are obtained from the original Jones model. The Jones model totally admit that discretion is not exercised over revenue in either the estimation period or the event period. The modified version implicitly assumes that all changes in credit sales in the event period result from earnings management. Because it seems to be easier to manage earnings by exercise discretion over the recognition of revenue on credit sales than on cash sales.

### 3.2. Development of hypothesis

***Hypothesis: Listed companies in Vietnam stock market tend to use discretionary accruals to manipulate earnings.***

Collingwood, H. (2001) suggests that the earnings game does more harm than good. “The Earnings Game” is the desire of companies to meet the analysts’ earnings per share predictions. The manager even thinks that a penny more or a penny less may lead a terrible financial statement. However, Alareeni, B., & Aljuaidi, O. (2014) find out that 80/156 Palestinian listed company practice earnings manipulation. In Vietnam, according to Huynh Thi Van (2012), the conclusion points out that about 2/3 listed companies in stock market at the first year increase income and 1/3 one drops earnings. Through the above examples, earnings management is used by many companies although it has a lot of potential disadvantages.

### 3.3. Data collection

As the results of using quantitative method, this paper mainly relies on the secondary data collected using computational techniques. In this study, most of the data is collected from financial information in Hanoi and Ho Chi Minh stock market. The use of secondary data derives an issue of reliable sources. The data sources for this research are widely use databases which guarantee the reliability and accuracy.

The study collects and analyzes the financial statements of 180 companies listed on Vietnam Stock Market. There are also many different industry sectors such as food, energy, goods, service, retails..., but banks, stock and insurance companies are eliminated because they have some specific features. The research objects are financial reports in 2015 and 2016 of those companies.

### **3.4. Parametric method of analysis**

The best tool to examine for relationship between a dependent variable and multiple independent variables is the multiple linear regression analysis. A large number of researches have chosen this method to empirically study between accruals and other factors such as Bartov et al. (2000), SunDGRen (2007) and so forth. The multiple linear regression model required a large sample size to conduct a reliable regression result. As Harris (1985) suggested the sample size should contain at least  $N = 50 + k$  whereas  $k$  is the number of independent variables and  $N$  is the total number of observations. This research has 3 predictors while this research collect 180 observations, which meets the requirement of sample size. This study simply uses Stata software to conduct this test as well as their precautions tests.

## **CHAPTER IV. RESEARCH FINDINGS AND DISCUSSIONS**

### **4.1. Model accuracy verification**

#### **4.1.1. Homoscedasticity test result**

The existence of heteroscedasticity is a major concern in the application of regression analysis, as it can invalidate statistical tests of significance that assume that the modeling errors are uncorrelated and uniform, hence that their variances do not vary with the effects being modeled.

### Figure 1. Homoscedasticity test

$$\text{Chi2}(5)=275.94$$

$$\text{Prob}>\text{chi2}=0.0000$$

Chi – squared test shows the overall suitability of the model, chi-squared = 275.94 along with prob>chi2=0.0000 recommends that factors in the model all have effect on the dependent variable. Heteroskedascity doesn't happen in this model.

#### 4.1.2. Multicollinearity test result

In general, multicollinearity can lead to wide confidence intervals and less reliable probability values (P values) for the independent variables. In this study, because of collinearity, variable  $(\frac{1}{A_{t-1}})$  is omitted. We continue to examine multicollinearity between other variables through vif command in Stata.

Figure 2. Multicollinearity test result

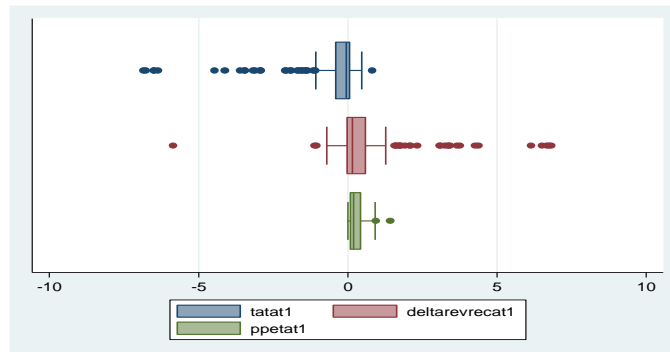
Variables	VIF	1/VIF
$(\Delta REV_t - \Delta REC_t)/A_{t-1}$	1.01	0.993907
$PPE_t/A_{t-1}$	1.01	0.993907
Mean VIF	1.01	

Fortunately, if values of all independent variables are less than 10 so multicollinearity in the model is considered to be not serious.

#### 4.1.3. Outliers test result

Jason and Overbay (2004) argue that outliers can cause adverse effect to the statistical test and distort the research findings.

Figure 3. Box plot



Box plot is conducted by Stata software. Due to observations' feature, including differences between observations about size, line of business, capital structure and so on, the three variables involved in the model have outliers. Jason and Overbay (2004) suggest dealing with outliers by reexamining the data set to discover the sensitive of the result to outliers. As a result, the regression test has been carried out for both cases (with outliers and without outliers) and the results were mainly the same. Therefore, the research with outliers included will be used since the outliers do reflect the true performance of the populations and do not distort the study result.

#### 4.2. Linear Regression Results

The main purpose of linear regression analysis is to assess associations between dependent and independent variables and for this purpose, the following hypothesis were formed and verified:

H0: there is no significant relationship

H1: there is significant relationship

So that:

If p-value < 0.05, the null hypothesis is rejected

If p-value > 0.05, the null hypothesis is not rejected

In order to evaluate the impacts of dependent variables to independent variable, the result helps to explain the relationship which is shown in the following sections.

**Table 1. Model Summary**

Model	Number of obs	R- square	Adjusted R-square	F(2, 177)	Prob > F
1	180	0.8515	0.8499	507.62	0.0000

a. Predictors: Constant,  $(\Delta REV_t - \Delta REC_t)/A_{t-1}$ ;  $PPE_t/A_{t-1}$

b. Dependent variable:  $TA_t/A_{t-1}$

R-square represents the total amount of variance accounted for the dependent variable by the predictors (Miles and Shevlin, 2001). In this case, the  $R^2$  values at 0,8515 – 85,15% and the adjusted  $R^2$  values at 0,8499 – 84,99%, which indicates

that the dependent variable can be highly explained 85,15% by the independent variables.

The F-ratio output shows that the independent variables statistically significantly predict the dependent variable,

$$F(2, 177) = 507,62, Prob>F=0,0000 < 0.05$$

The null hypothesis is rejected. It is said that the overall regression model is a good fit for the data.

The outcomes presented in the Table 2. Coefficients are the most important findings of this paper.

**Table 2. Coefficients**

<b>TA<sub>t</sub>/A<sub>t-1</sub></b>	<b>Coefficien t</b>	<b>Standard error</b>	<b>Mean</b>
$(\Delta REV_t - \Delta REC_t)/A_{t-1}$	-0.8498	0.0267	0.5851
$PPE_t/A_{t-1}$	0.0155	0.1593	0.2715
.cons	-0.0432	0.0611	—

Dependent variable: TA<sub>t</sub>/Assets<sub>t-1</sub>

From the table, the regression model can be written as:

$$\frac{TA_t}{A_{t-1}} = -0.0432 + (-0.8489) * \frac{\Delta REV_t - \Delta REC_t}{A_{t-1}} + (0.0155) * \frac{PPE_t}{A_{t-1}} + \varepsilon_t$$

In other words,

$$\frac{NDA_t}{A_{t-1}} = -0.0432 + (-0.8489) * \frac{\Delta REV_t - \Delta REC_t}{A_{t-1}} + (0.0155) * \frac{PPE_t}{A_{t-1}}$$

In particular:

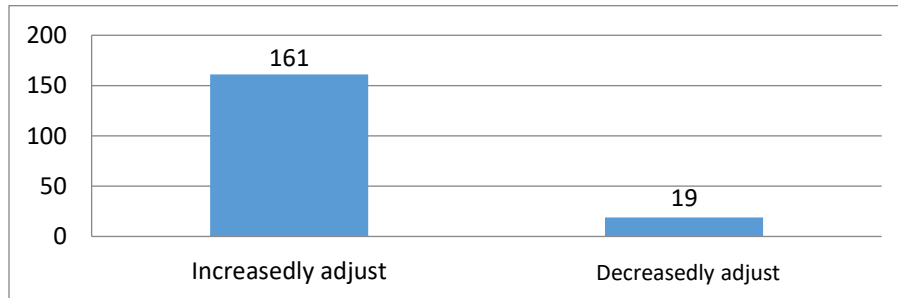
- $(\Delta REV_t - \Delta REC_t)/A_{t-1}$ . The relationship between  $((\Delta REV_t - \Delta REC_t)/A_{t-1})$  and  $(NDA_t/A_{t-1})$  is insignificantly positive at 0.05 significant levels.
- $PPE_t/A_{t-1}$ . The relationship between  $(PPE_t/A_{t-1})$  and  $(NDA_t/A_{t-1})$  is significantly positive at 0.05 significant levels.

As mentioned in the previous sections, after resulting  $(NDA_t/A_{t-1})$ ,  $DA_t$  of companies observed would be caculated by applying:

$$DA_t = TA_t - NDA_t$$

Examining the table of firm data, firstly, we classify two trends of adjustment with discretionary accruals.

**Figure 4. Two trends of adjustment**



Of 180 companies observed in this research, 161 companies – 89.4% manage their discretionary accruals to increase whereas there are just 19 entities – 10.6% manage towards the opposite way. This proportion is quite relevant to result in research paper of Huynh (2012), which draws out that 73% firms manage discretionary accruals to increase so the rest 27% observations decrease it.

*Hence, the hypothesis is true that most of Vietnamese listed companies in stock market manage their reported earnings.*

Secondly, as shown in the table of firm data, generally, the greater size of the corporation is, the more serious level of earnings management is. In the group of increased – discretionary accruals, there are remarkably well-known corporations such as Vingroup, Vinamilk, Masan, Hoa Phat, Sabeco, Gas, Kinh Bac, which rank top in the list firms having the most serious earnings management level. Masan ranks the first with discretionary accruals up to approximate 39,167 billion VND, which accounts for 10804,6% total accruals; Vinamilk ranks the second when adjust to increase approximately 19,164 billion of discretionary accruals – 691,7% total accruals and so on. Meanwhile, in top of the decreased - discretionary accrual, Mobile World group ranks the second when decrease up to over 5,400 billion VND, which accounts for 11,7% total accruals.

## **CHAPTER V. CONCLUSION AND RECOMMENDATIONS**

### **5.1. Conclusion**



Earnings management seems to be used by many listed companies in Vietnam. Manipulation in financial statement becomes very sophisticated and hard for investors to detect. The manipulation affects not only the shareholders, the investors, the banks but also the development of the economy and society in Vietnam.

Even though the firms use complex techniques to manage their income, the findings of this study have shown that Modified Jones model is still worth acknowledging for Vietnam investors.

Because of the effectiveness of this modified model, Modified Jones should be paid more attention to improve the transparency in Vietnamese Stock Market. Thanks to that, the government, the shareholder would minimize the risk of earning management.

## **5.2. Recommendations**

### **a. Government**

The necessary way to control earnings management is setting more rigorous accounting standards. The government should update regularly the change of IFRS, and, in order to introduce new accounting standards in Vietnam. The adoption of IAS in some firms shows that they are less likely to smooth earnings. From 2018, foreign companies in Vietnam have to adapt IFRS 15- the new revenue recognition standard and other Vietnamese companies are also allowed use this standard in their financial reports. If the adoption has a good result, Ministry of Finance should consider to apply IFRS for all Vietnamese companies.

### **b. Audit firms**

The audit firms should be confronted with attempts to alter financial reports. Increasing audit quality could lead to the improvement in the quality of the financial reports. Audit committee members must understand the transactions to make the judgment, they always observe the principle “Substance over form” to make right decisions.

### **c. The shareholders**

The shareholders are the main object of earnings management. If they do not realize the real financial performance of the companies they hold share, they would lost a lot of money. At first, they should use the financial reports which are audited by big audit firms. Next, to ensure have a profitable investment, they can use models such as Modified Jones model which are highly accurate to detect whether their companies smooth income.

#### **d. Corporate Boards.**

Corporate boards are a group of individuals that have fiduciary duties in leading and directing a firm (Abdullah, 2004). Their primary objective is to protect the long-term interests of shareholders of the firm. To fulfill that task, corporate boards should use corporate governance to help ensure that companies are directed and managed to create value for their owners while concurrently fulfilling responsibilities to other stakeholders (e.g. employees, suppliers, society at large)” (Merchant et al. 2007). Zéghal, Chtourou and Sellami (2011) found the relation among 353 firms listed on French Stock Market and the reduction earning manipulation practices for firms with high levels of corporate governance.

## **CHAPTER VI. LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCHES**

### **6.1. Research limitations**

Although this study has provided a reliable and updated research about earnings management of listed companies in Vietnam stock market, it still has some limitations owing to limited time and narrow scope of the research.

Firstly, due to time limitation, the authors are able to collect data from 180 companies only. If there were more observations included in the model, the result would be more reliable,

The second limit is that the research is made on listed companies in Vietnam stock market which are publicly traded companies so it is not reliable used to indicate situation of small and medium enterprises.

Finally, although real earnings management is also a considerable problem when researching earnings manipulation, this study only has enough time to study on accrual-based earnings management. If possible, researching both two types of smoothing income will provide more comprehensive findings.

## **6.2. Suggestions for future researches**

For more effectively application of Modified Jones model in Vietnam in the future, there are some recommendations for future researches as below: Firstly, future researchers should spend time on studying thoroughly about differences in figures and fraud evidences used in Vietnam and in developed countries before applying Modified Jones model in order to have the most accurate and effective findings. Secondly, the sample size should be expended and time frame for study should be extended much longer (this study only researches figures in 2015 and 2016 but in the future, researchers can collect data from longer time in past as early as 2006 or 2007). Moreover, researching both real earnings management and accrual-based earnings management is highly recommended in order to have more comprehensive results. Finally, some other factors that can have influence on earnings management behavior of companies such as non-financial factors should also be examined when measuring levels of earnings manipulation of firms.

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## APPENDIX

STT	CÔNG TY	Mã CP	ĐA	% ĐA/TACCRUALS
1	Công ty cổ phần sữa Việt Nam	VNM	19164125374107,3000	691,7%
2	Tổng công ty cổ phần bia - rượu - nước giải khát HN	BHN	4869516777085,3600	547,2%
3	Công ty cổ phần Bibica	BBC	409540742140,1410	-584,2%
4	Công ty cổ phần thủy sản Mê kong	AAM	75388055529,9680	2124,0%
5	Công ty cổ phần bia Sài Gòn - Miền Tây	WSB	311802017905,6550	-198,9%
6	Công ty cổ phần đường Quảng Ngãi	QNS	1676873254383,4900	476,4%
7	Công ty cổ phần tập đoàn Kido	KDC	3440287275597,6100	213,2%
8	Công ty cổ phần cà phê Thương Phú	CTP	197493092959,4510	784,5%
9	Công ty cổ phần tập đoàn Dabaco Việt Nam	DBC	2318850611454,6500	2065,6%
10	Công ty cổ phần thực phẩm Sao Ta	FMC	214893930227,5700	61,1%
11	Công ty cổ phần thực phẩm Hữu Nghị	HNF	325245112496,7340	-532,6%
12	Công ty cổ phần nông nghiệp quốc tế Hoàng Anh Gia Lai	HNG	9047063886405,2000	-824,5%
13	Công ty cổ phần thực phẩm quốc tế	IFS	275012742265,8000	-325,4%
14	Công ty cổ phần đường Kon Tum	KTS	78868339557,1664	109,7%
15	Công ty cổ phần mía đường Lam Sơn	LSS	1235056060793,3900	-2982,5%
16	Công ty cổ phần hàng tiêu dùng Masan	MCH	7899293333537,5400	2524,9%
17	Công ty cổ phần tập đoàn Masan	MSN	39167417482600,0000	10804,6%
18	Công ty cổ phần Nafoods Group	NAF	244349204216,6940	313,6%
19	Công ty cổ phần giống cây trồng trung ương	NSC	653023253701,0340	-545,2%
20	Công ty cổ phần bia - rượu - nước giải khát Sài Gòn	SAB	16479649957239,9000	338,7%
21	Công ty cổ phần nước giải khát Chương Dương	SCD	199452821571,7810	627,4%
22	Công ty cổ phần mía đường Sơn La	SLS	34647831430,7976	-435,5%
23	Công ty cổ phần dầu thực vật Tường An	TAC	818881350074,5190	-19138,8%
24	Công ty cổ phần Thủy sản số 4	TS4	549513725980,6620	-1016,1%
25	Công ty cổ phần Vinacafe Biên Hòa	VCF	1075058402194,1300	-640,2%
26	Tổng công ty công nghiệp Dầu thực vật Việt Nam	VOC	1905428880643,2100	583,1%
27	Công ty cổ phần dịch vụ và xây dựng địa ốc Đất Xanh	DXG	3555717257413,6400	283,5%
28	Công ty cổ phần đầu tư Năm Bảy Bảy	NBB	1498036694006,130	6717,8%
29	Tập đoàn VinGroup	VIC	83159445286616,3	6790,7%
30	Tổng công ty phát triển đô thị Kinh Bắc	KBC	5835005019292,6200	122254,8%
31	Công ty cổ phần Phân bón Bình Điền (HOSE)	BFC	801661765377,0830	-149,3%
32	Công ty Cổ phần Thuốc sát trùng Cần Thơ (HNX)	CPC	65190588411,3272	13520,5%
33	Công ty Cổ phần Phân bón Dầu khí Cà Mau (HOSE)	DCM	3229477556271,0900	-431,1%
34	Công ty cổ phần DAP - VINACHEM (UpCOM)	DDV	-737835139273,6800	74,2%
35	Tổng Công ty Phân bón và Hóa chất Dầu khí-CTCP (HOSE)	DPM	2585154778850,4700	-385,3%
36	Công ty cổ phần Đầu tư Căn nhà Mơ ước (HOSE)	DRH	74339382404,9448	63,2%
37	Công ty Cổ phần Sơn Hải Phòng (UpCOM)	HPP	203211198261,9950	-1508,4%

38	Công ty cổ phần Supe Phot phát và Hóa chất Lâm Thao (HNX)	LAS	525427235721,6690	387,3%
39	CTCP Tập đoàn Đại Châu(HNX)	DCS	-30422534858,8222	69,1%
40	CTCP Tập đoàn Đức Long Gia Lai (HOSE)	DLG	3200028662498,9800	4220,1%
41	Tổng Công ty Hóa dầu Petrolimex-CTCP (HNX)	PLC	-592187788812,7170	139,6%
42	Công ty Cổ phần Sản xuất và Công nghệ Nhựa Pha Lê (HOSE)	PLP	169710225626,0520	-1522,7%
43	Công ty Cổ phần Phân bón Miền Nam (HOSE)	SFG	323732689805,7330	-274,8%
44	Công ty Cổ phần Đầu tư và phát triển Đức Quân (HOSE)	FTM	767863288947,1860	770,7%
45	Công ty Cổ phần Khử trùng Việt Nam (HOSE)	VFG	811018844087,0900	683,2%
46	Công ty cổ phần Nhựa Việt Nam (UpCOM)	VNP	-31024998107,2286	60,4%
47	Công ty cổ phần Khoáng sản Bình Định (HOSE)	BMC	80080878144,6008	-10517,6%
48	Công ty cổ phần Thương mại và Khai thác Khoáng sản Dương Hiếu (HOSE)	DHM	346293018128,5810	1588,0%
49	Công ty cổ phần Tập đoàn Hòa Phát (HOSE)	HPG	13328613950862,7000	-6271,8%
50	Công ty Cổ phần Tập đoàn Hoa Sen (HOSE)	HSG	3488348100976,4000	-2545,7%
51	CTCP Sản xuất Xuất nhập khẩu Inox Kim Vi (HNX)	KVC	107454439681,9780	108,9%
52	Tổng Công ty Khoáng sản và Thương mại Hà Tĩnh - CTCP (UpCOM)	MTA	963555592269,0390	1654,0%
53	Công ty Cổ phần Thép Nam Kim (HOSE)	NKG	4494281452773,7400	909,8%
54	Công ty Cổ phần Thép Pomina (HOSE)	POM	1440938870812,4700	-357,8%
55	Công ty Cổ phần Đầu tư Thương mại SMC (HOSE)	SMC	1344768177996,1000	130,8%
56	Công ty cổ phần Gang thép Thái Nguyên (UpCOM)	TIS	4216475977651,6400	-867,3%
57	Công ty cổ phần Tập đoàn Thành Nam (HOSE)	TNI	-206223328756,3350	-267,4%
58	Công ty Cổ phần Thép VICASA - VNSTEEL (UpCOM)	VCA	78292599266,7100	-275,9%
59	Công ty cổ phần Lưới thép Bình Tây (UpCOM)	VDT	11323879254,6772	-248,5%
60	Công ty Cổ phần Ống thép Việt Đức VG PIPE (HNX)	VGS	1542268283370,0700	572,7%
61	CTCP Dược Hậu Giang	DHG	2243752504795,2100	1996,0%
62	CTCP Cao su Sao Vàng	SRC	26277782718,0560	-18,7%
63	CTCP Quốc Cường Gia Lai	QCG	4247088670526,1200	-1980,3%
64	CTCP CNG Việt Nam	CNG	196661666149,3890	-635,4%
65	TCT Khí Việt Nam	GAS	18811472570623,2000	452,3%
66	CTCP Traphaco	TRA	724142137539,4830	733,9%
67	CTCP Dược phẩm dược liệu Phamedix	PMC	183254448857,7710	334,8%
68	CTCP Cao su Đà Nẵng	DRC	1035254317779,2600	-7170,0%
69	CTCP Kỹ thuật và Ô tô Trường Long	HTL	-201089088960,0990	-1509,2%
70	TCT Gas Petrolimex	PGC	669906843554,4240	4018,8%
71	CTCP Phân phối khí Thấp áp Dầu khí VN	PGD	721021409235,2030	-503,5%
72	CTCP Everpia	EVE	454352918070,0250	972,0%
73	CTCP Chế biến gỗ Đức Thành	GDT	144442692595,4150	780,0%
74	CTCP Chế biến gỗ Thuận An	GTA	96415714925,7188	-253,6%
75	CTCP Mirae	KMR	202330757878,9410	-577,7%



76	CTCP Cổ phần Xuất khẩu Đông Nam Á Hamico	KSD	40716626904,6462	-2261,0%
77	CTCP Bột giặt Lix	LIX	522121853171,2200	878,4%
78	CTCP Máy Phú Thịnh - Nhà Bè	NPS	21333832117,4314	-518,9%
79	CTCP Quốc tế Sơn Hà	SHI	981707547437,3990	808,5%
80	CTCP Dệt may thương mại quốc tế Thành Công	TCM	1556470111189,6900	703,6%
81	CTCP Đầu tư và phát triển hạ tầng ALV	ALV	37884113591,9214	243,0%
82	CTCP Xây dựng và giao thông Bình Dương	BCE	375429709420,7580	1481,6%
83	CTCP Xây dựng hạ tầng CII	CEE	333621402907,8640	196,3%
84	CTCP Xi măng Vicem Bút Sơn	BTS	1562628854290,2300	3194,9%
85	CTCP Thủy điện Vĩnh Sơn - Sông Hinh	VSH	2057724850419,8600	8707,8%
86	CTCP Sách và Thiết bị trường học TP Hồ Chí Minh	STC	89609414233,9708	-3267,3%
87	CTCP Bê tông Becamex	ACC	213471068522,4150	353,5%
88	CTCP Xi măng Bim Sơn	BCC	2317953281464,4400	609,4%
89	CTCP Tập đoàn FLC	ROS	3477780415222,7700	-182,4%
90	CTCP Nhựa Bình Minh	BMP	1884756465483,3600	496,6%
91	Công ty cổ phần tập đoàn dầu khí An Pha	ASP	897831172514,3110	146,1%
92	Tổng công ty cảng hàng không Việt Nam	ACV	11533720497983,8000	-530,6%
93	Công ty cổ phần cảng Đà Nẵng	CDN	317607503323,1420	-927,8%
94	Công ty cổ phần cảng Cát Lái	CLL	379731735733,9650	395,7%
95	Công ty cổ phần đầu tư và phát triển cảng Đình Vũ	DVP	427086601624,8350	18632,9%
96	Công ty cổ phần cảng Đoạn Xá	DXP	78409184188,5972	283,7%
97	Công ty cổ phần dịch vụ hàng không sân bay Đà Nẵng	MAS	82622521922,4720	-776,7%
98	Công ty cổ phần vận tải và xếp dỡ Hải An	HAH	239729495358,1160	-810,2%
99	Công ty cổ phần dịch vụ hàng không sân bay Nội Bài	NAS	101220429180,1220	207,8%
100	Công ty cổ phần suất ăn hàng không Nội Bài	NCS	154763120305,6660	3682,2%
101	Công ty cổ phần dịch vụ hàng hóa Nội Bài	NCT	180928297590,8000	269,4%
102	Công ty cổ phần cảng Đồng Nai	PDN	-221975990922,5490	440,6%
103	Công ty cổ phần cảng Hải Phòng	PHP	1916496656820,3900	-1186,0%
104	Công ty cổ phần kinh doanh khí miền Nam	PGS	642522826979,5430	204,9%
105	Công ty cổ phần xếp dỡ và dịch vụ cảng Sài Gòn	SAC	59213420495,8288	1361,8%
106	Công ty cổ phần đầu tư và phát triển giáo dục Hà Nội	EID	216422390155,6050	1058,5%
107	Công ty cổ phần dịch vụ hàng hóa Sài Gòn	SCS	405704488507,4000	-2153,4%
108	Công ty cổ phần cảng Sài Gòn	SGP	1398275331562,1600	-259,4%
109	Công ty cổ phần thương mại bia Hà Nội	HAT	195636099235,5510	253,5%
110	Công ty cổ phần hàng không Vietjet	VJC	11635534386938,4000	1123,9%
111	Công ty cổ phần CONTAINER Phía Nam	VSG	742426973,4286	-0,7%
112	Công ty cổ phần cung ứng và dịch vụ kĩ thuật Hàng Hải	MAC	156373485122,0280	250,4%
113	Công ty cổ phần thiết bị y tế Việt Nhật	JVC	-576520172191,9370	73,2%
114	Công ty cổ phần thương mại dịch vụ vận tải xi măng Hải Phòng	HCT	22972536492,4934	955,2%

115	Công ty cổ phần y dược phẩm Vimedimex	VMD	2879396578000,5500	-743,2%
116	Công ty cổ phần viễn thông FPT	FOX	3785126939787,3100	-938,2%
117	Công ty cổ phần tập đoàn đầu tư I.P.A	IPA	-9481251517805,7400	-14304,0%
118	Công ty cổ phần công nghệ viễn thông Sài Gòn	SGT	1281258537337,8900	6653,9%
119	Công ty cổ phần viễn thông VTC	VTC	217179510920,0960	832,7%
120	Công ty cổ phần đầu tư và phát triển giáo dục Đà Nẵng	DAD	22578721477,5854	-260,6%
121	CTCPCông nghệ Mạng và Truyền thông	CMT	138206975853,0710	-34,1%
122	CTCP Vận tải khí quốc tế	GSP	192302615828,2770	-17,6%
123	CTCP Thanh Hoa - Sông Đà	THS	7821996003,9416	-3,5%
124	CTCP Tập đoàn khách sạn Đông Á	DAH	77379276803,8276	-51,2%
125	CTCP Công viên nước Đầm Sen	DSN	37040181696,8778	-30,3%
126	CTCP Fiditour	FDT	-9413135703,0001	2,1%
127	CTCP Du lịch-Dịch vụ Hội An	HOT	54400868401,6600	-38,6%
128	CTCP Mai Linh miền Trung	MNC	248819446879,8530	-44,1%
129	CTCP Du lịch dầu khí Phương Đông	PDC	76896395552,4242	-194,5%
130	Tổng CTCP Dịch vụ Tổng hợp dầu khí	PET	1598710167341,1600	-16,2%
131	CTCP Quốc tế Hoàng gia	RIC	566271443329,2360	-262,5%
132	CTCP Vận chuyển Sài Gòn Tourist	STT	34286177451,0222	-59,2%
133	CTCP Vận tải đa phương thức duyên hải	TCO	110287891546,5680	-91,0%
134	CTCP Dịch vụ Vận tải và Thương mại	TJC	81728223099,7222	-60,0%
135	CTCP Cảng Rau quả	VGP	129290133298,3670	-413,8%
136	CTCP Vận tải Xăng dầu	VIP	520276649446,1130	-113,4%
137	CTCP Vinafreight	VNF	10702572317,5332	-0,6%
138	CTCP LOGISTICS VINALINK	VNL	108043630681,0700	-15,2%
139	CTCP Ánh Dương Việt Nam	VNS	594483606065,6980	-15,1%
140	CTCP Giao nhận vận tải ngoại thương	VNT	98940526308,7889	-14,6%
141	CTCP Vận tải biển Việt Nam	VOS	1791272444972,4500	-149,1%
142	CTCP Vận tải Xăng dầu Vitaco	VTO	853185886000,2940	-130,0%
143	CTCP Bến xe miền Tây	WCS	51916826417,7292	-66,5%
144	CTCP Công nghệ Sài Gòn Viễn Đông	SVT	71622449314,6424	-140,6%
145	CTCP Dịch vụ Bến Thành	BSC	5849101680,7630	-9,9%
146	CTCP Gia Lai CTC	CTC	105840249584,0470	-84,3%
147	CTCP thể giới số	DGW	328574735301,5930	-8,9%
148	CTCP Đầu tư và Phát triển Doanh nghiệp VN	FID	-100730680885,6000	36,5%
149	CTCP Văn hóa Phương Nam	PNC	180038045178,9060	-36,1%
150	CTCP Văn hóa Tân Bình	ALT	106331961514,3930	-99,2%
151	Công ty Cổ phần Mĩ thuật và Truyền thông (HNX)	ADC	348750743409,6950	-155,1%
152	Công ty cổ phần Đầu tư Thế giới Di động (HOSE)	MWG	-5417060565969,2500	11,7%
153	Công ty Cổ phần Nước và Môi trường Việt Nam (UpCOM)	VWS	35088433058,4138	-21,9%
154	Công ty cổ phần Du lịch tỉnh Bà Rịa - Vũng Tàu (UpCOM)	VTG	109216655502,7350	-77,3%

155	Công ty Cổ phần Quảng cáo và Hội chợ Thương mại (UpCOM)	VNX	2288237094,0796	-1,9%
156	Công ty Cổ phần Du lịch Thành Thành Công (HOSE)	VNG	158256553034,4360	-67,7%
157	Công ty Cổ phần Tập đoàn Vinacontrol (HNX)	VNC	89170293782,8678	-19,0%
158	Công ty Cổ phần Thương nghiệp Cà Mau (HOSE)	CMV	-251956887613,4060	6,2%
159	Công ty cổ phần Du lịch Quốc tế Vũng Tàu (UpCOM)	VIR	29923575594,5716	-64,4%
160	CTCP Trung tâm Hội chợ Triển lãm Việt Nam (UpCOM)	VEF	1277696876141,9100	-2448,1%
161	Công ty Cổ phần Nước sạch Vinaconex (UpCOM)	VCW	471281204372,9800	-260,3%
162	Công ty Cổ phần Tư vấn Xây dựng Vinaconex (UpCOM)	VCT	45418992490,5564	-468,7%
163	Công ty Cổ phần Nhân lực và Thương mại Vinaconex (HNX)	VCM	42056531831,4554	-30,0%
164	Công ty Cổ phần Du lịch – Thương mại Tây Ninh (HNX)	TTT	91556907371,8378	-40,9%
165	Công ty Cổ phần Du lịch Thương mại và Đầu tư (UpCOM)	TTR	13741425027,7340	-186,6%
166	Công ty cổ phần Thương mại Hóc Môn (HNX)	HTC	-70115346853,8013	5,2%
167	Công ty cổ phần thương mại dịch vụ tổng hợp Cảng Hải Phòng (UpCOM)	DVC	45890514711,4004	-25,3%
168	Công ty Cổ phần Thương mại Xuất nhập khẩu Thiên Nam (HOSE)	TNA	-60624885241,2090	1,7%
169	Công ty Cổ phần Thương mại - Xuất nhập khẩu Thủ Đức (HNX)	TMC	-214387754775,8050	10,6%
170	Công ty Cổ phần Xuất nhập khẩu Tổng hợp I Việt Nam (HNX)	THI	987211672307,4660	-316,8%
171	Công ty cổ phần Đầu tư Dịch vụ Tài chính Hoàng Huy (HOSE)	TCH	388513955498,9180	-23,4%
172	Công ty Cổ phần Cáp treo Núi Bà Tây Ninh (HOSE)	TCT	83192611273,6706	-130,6%
173	Công ty Cổ phần Thế giới số Trần Anh (HNX)	TAG	-304785954906,4070	7,3%
174	Công ty Cổ phần Khách sạn Sài Gòn (HNX)	SGH	25602649394,1650	-86,1%
175	Công ty Cổ phần Xuất nhập khẩu Petrolimex (HOSE)	PIT	100878107161,9870	-3,9%
176	CTCP Dịch vụ Du lịch Mỹ Trà (UpCOM)	MTC	19606452464,3426	-63,4%
177	Công ty Cổ phần Dịch vụ Ô tô Hàng Xanh (HOSE)	HAX	-379159400890,9660	12,7%
178	Công ty Cổ phần Liên doanh Đầu tư Quốc tế KLF (HNX)	KLF	570445774408,1480	-63,0%
179	Công ty cổ phần Thương mại Phú Nhuận (UpCOM)	PNG	77336573497,4570	-33,8%
180	Công ty cổ phần vận tải thủy - Vinacomin (UpCOM)	WTC	-29585145823,0443	5,1%