Determinant of non-GAAP earnings management practices and its impact on firm value

Ewing Yuvisa Ibrani1,2,*, Faisal Faisal3 and Yenny Dwi Handayani4

Abstract: This study aims to examine the factors that explain the reasons why non-GAAP earnings management is carried out based on the fraud diamond theory (FDT). FDT is a theory widely used in behavioral research to explain the factors that cause fraud in a company. In addition, this study also explains the impact of non-GAAP earnings management practices on firm value. This study investigates 42 non-bank and financial companies listed on Indonesia Stock Exchange (IDX) for the period 2010–2017. The results of the logistic regression analysis founded that opportunity and ability were the most dominant factors causing non-GAAP earnings management. The findings of this study show that in Indonesia, there is need for greater attention from the regulators to the opportunity and capability factors to reduce the occurrence of non-GAAP earnings management.

Subjects: Financial Accounting; Management Accounting; Corporate Governance; Business Ethics

Keywords: non-GAAP earnings management; Fraud Diamond; Pressure; opportunity; rationalization; capability

ABOUT THE AUTHORS

Ewing Yuvisa Ibrani is a lecturer in Department of Accounting, Universitas Sultan Ageng Tirtayasa Banten, Indonesia. At the moment it is still in the final stage as a PhD Student at Universitas Diponegoro, Semarang. His research interests are Corporate Governance, Accounting Information Systems, and Auditing.

Faisal Faisal is an Associate Professor of Accounting at the Department of Accounting, Diponegoro University, Semarang, Indonesia. His research is mainly in the area of sustainability reporting. Some of his articles have been published in Australasian Accounting Business and Finance Journal, Journal of Human Resource Costing and Accounting and The Indonesian Journal of Accounting Research.

Yenny Dwi Handayani is a lecturer in Department of Accounting, Universitas Mercu Buana, Jakarta, Indonesia. His research interests are Corporate Governance, Tax, and Finance.

PUBLIC INTEREST STATEMENT

Most of the previous research on earnings management focused. Unfortunately, they like the types of accrual earnings management and real earnings management. However, not much research is focused on the non-GAAP type earnings management, even though non-GAAP earnings management is the worst type because it can lead to fraud. This study discusses explaining the causal factors for non-GAAP earnings management from the perspective of fraud diamond theory (FDT). FDT is a new view of the phenomenon of fraud that is widely used by researchers in the behavioral field to explain the factors that cause fraud in the company.
1. Introduction

There are many cases of earnings management that arising and the fragility of corporate govern-
ance systems causes doubts on the integrity of information presented to investors (Rezaee, 2002).
Earnings management, as stated in many literatures, can take be of 3 types, namely- accrual earn-
ings management, real earnings management, and non-GAAP earnings management. The
first and second types are earnings management types that are still within the scope of general
acceptable accounting principles (GAAP) because they are carried out by utilizing the flexibility of
accounting rules while the third type has violated GAAP.

Most of the previous research on earnings management focused on the types of accrual earn-
ings management and real earnings management (Cohen, Dey, & Lys, 2008; Cohen & Zarowin,
2010; Roychowdhury, 2006; Skinner & Dechow, 2000; Wardhani, 2007). However, not much
research is focused on the non-GAAP type earnings management, even though non-GAAP earnings
management is the worst type because it can lead to fraud. Some cases of fraudulent financial
statements conducted outside the GAAP boundary can destroy the value of the company
(Badertscher, 2011; Graham, Harvey, & Rajgopal, 2006; Tillman, 2009). Therefore, it is important
to investigate the causes of non-GAAP earnings management.

In Indonesia, many cases of non-GAAP earnings management have occurred. For example, Bakrie
Group in 2010 as reported by Indonesia Corruption Watch allegedly reported a manipulation of three
sales Bakrie Group coal mining companies to the Indonesia Directorate General of Taxes and the
case was sanctioned to four issuers e.g., PT.Bakrie & Brother,Tbk (BNBR), PT.Bakrie Sumatra
Plantations,Tbk (UNSP), PT.Energi Mega Persada,Tbk (ENRG), and PT.Benakat Petroleum Energi,Tbk
(BIPI) by the Indonesia Stock Exchange (IDX). Sanctions were issued in the form of fines of
500 million Rupiah because the four issuers were proven to polish financial statements during the
profit presentation to make the companies look profitable, and with the hope that the public would
be interested in buying their shares to increase stock prices (Kompas, 2012).

Based on fraud diamond theory (FDT), we assume that managers can conduct non GAAP earn-
ings management if there is an opportunity for earnings management, they get pressure and there
is a rationale attitude that encourages non-GAAP earnings management. In such cases, the
managers have a high capability of tinkering with the desired profits, so that the four potential
situations (the opportunity, pressure, rationality and capability) can be used by managers to
pursue their personal interests and if left in the long run will have a detrimental impact on the
company and all users of financial statements.

The purpose of this study is to explain the causal factors for non-GAAP earnings management
from the perspective of fraud diamond theory (FDT). FDT is a new view of the phenomenon of fraud
proposed by Wolfe and Hermanson (2004). Diamonds fraud is a form of refinement of the fraud
triangle theory by Cressey (1953). FDT is a theory that is widely used by researchers in the
behavioral field to explain the factors that cause fraud in the company. FDT consists of four
elements that are always present in corporate fraud activities, namely: pressure/incentives, oppor-
tunities, rationalization, and capability (Wolfe & Hermanson, 2004). In this case, earnings manage-
ment uses a non-GAAP earnings management proxy because non-GAAP earnings management
can be described as a type of earnings management that portrays fraud. In addition, this study
also explains the impact of non-GAAP earnings management practices on firm value.

This research is important to do because of several things. First, it is expected to show the
reason why managers practice non-GAAP earnings management based on an established theory
and can provide the latest picture of cases of manipulation experienced by public companies in
Indonesia. Therefore, this research is expected to fill the gap in previous research since there are
still not many studies that test and connect FDT with non-GAAP earnings management and their
impact on the value of companies, especially companies in Indonesia. Secondly, it is hoped that
this research can map potential solutions to reduce non-GAAP earnings management, so that the
quality of financial statements can be improved. Thirdly, this study makes an important contribution to earnings management literature by showing that theory originating from other fields (e.g., the auditing field), can be collaborated with the field of financial accounting to obtain an adequate and scientific explanation for why managers behave opportunistically. The study sample comprises of non-bank and financial companies because the regulations of financial statement presentation in the bank sector and finance is very strict as stipulated in Regulations the Bank Central Republik Indonesia/Bank Indonesia, and Financial Services Authority/Otoritas Jasa Keuangan (OJK).

2. Literature review and hypothesis
Non-GAAP earnings management arises because of the motivation to earn in accordance with the statement Scott (2012) so that it can encourage the development of opportunistic behavior in contractual relationships, between the owner and manager and between the management of the company and other parties. The motivation behind earnings management, combined with the concept of FDT, is expected to be able to show what factors are likely to lead to a non-GAAP earnings management practice from the perspective of the FDT.

The first element in FDT, pressure is a situation where management feels an incentive or pressure to manage earnings. Pressure can cover almost anything, including financial and non-financial matters. Moeller (2011) argued that pressure in this situation could potentially arise because of financial obligations that exceed the limits of ability that must be resolved by management, such as a failure of work relations between the company and its employees, compensation that was not in line with expectations, and unclear management career paths.

The second element, opportunity is the availability of chances for conducting earnings management or situations that open loopholes for the management to control earnings. Opportunities will arise when management systems are still fragile in business entities and internal controls in a company are weak, as well as through the use of positions (Gagola, 2011). The third element, rationalization can be interpreted as the presence or emergence of attitudes, characters, or a series of ethical values that allow management or employees to take dishonest actions such as engaging in earnings management practices and assuming things that are usually done.

The fourth element, capability, is how much power and capability a person has to commit fraud in the company environment. Wolfe and Hermanson (2004) stated that many frauds are unlikely to occur if there are certain people with special capabilities within the company.

2.1. Development of hypotheses
Pressure to the management can occur in almost everything, including financial and non-financial matters (Martantya & Daldjono, 2013). Poor corporate performance is also a pressure on management because it will have an impact on the lack of funds flowing into the company, especially funds obtained from potential investors. The more funds flowing into the company, of course, the greater the burden borne by the management to pay off the company’s debt.

Research by Komarudin, Imam, and Atmini (2007) shows that increasing debt covenant motivation promotes earnings management practices. Thus, companies that have high leverage ratios, where the debt is higher than the proportion of their assets, will tend to engage in earnings management outside the GAAP. This is also supported by opinions Skousen, Smith, and Wright (2009), who argue that one of the pressures often experienced by company management is the need to obtain additional debt or external financing sources to remain competitive, including through research funding and development or capital expenditures. Dechow, Sloan, and Sweeney (1996) argue that companies with high leverage have debt requirements that will motivate earnings manipulation. Research conducted Fazli Aghghaleh, Muhammadun Mohamed, and Ahmad (2014) prove that leverage has a positive effect on the occurrence of fraud. Widyaningdyah Agnes (2001) found that leverage has a positive and significant effect on earnings management. Therefore, the first hypothesis for the pressure proxy is:
H$_{1a}$: Leverage has a positive effect on non-GAAP earnings management

Managerial ownership is the ownership of shares by an insider. This shareholding by insiders is considered to be able to curb common agency problems because the presence of share ownership by insiders will align the interests of the management and the shareholders (Martantya & Daldjono, 2013). Ownership by managers can help as the managers will be careful in presenting financial statements and be more enthusiastic in increasing the value of the company. Such ownership can also motivate managers to work in accordance with the interests of the principal. Managers will also feel like owning a company, because all the actions they take in the company in terms of managerial policies will affect the dividends they will receive. In other words, companies with a portion of the shareholders as insiders tend not to practice non-GAAP earnings management because in some cases it can destroy the value of the company (Badertscher, 2011).

Skousen et al. (2009) has proven that the higher the percentage of share ownership by an insider, the more the probability of fraud occurring is minimized. Muh A Ujiyantho and Pramuka (2007) state that managerial ownership has a negative and significant effect on earnings management. Hence, the second hypothesis for the pressure proxy proposed is:

H$_{1b}$: Managerial ownership has a negative effect on non-GAAP earnings management

Company managers are required to give their best performance so that they can achieve the planned financial targets. Comparison of earnings to total assets or Return on Assets (ROA) is a measure of operational performance that shows how efficiently assets have worked (Skousen et al., 2009; Stice, Stice, & Skousen, 2004).

ROA is often used in assessing the manager’s performance and in determining bonuses, wage increases, and others. The ROA is used to measure the ability of a company’s management to obtain profits as a whole. The greater the ROA obtained, the greater the level of profits attained by the company and the better the position of the company in terms of asset use (Dendawijaya, 2005). Therefore, the higher the ROA targeted by the company, the more vulnerable the company will be to earnings management; and a greater ROA will also affect investors in predicting profits and predicting risks in investment so that there is an impact on investor confidence in the company. This will motivate the management to practice non-GAAP earnings management in order to attract and increase investor confidence.

Carlson and Bathala (1997) prove that companies that have large profits (measured by profitability or ROA) are more likely to practice earnings management than companies with small profits. Budiasih (2009) states that the profitability proxied by the ROA variable has a positive effect on earnings management. Consequently, the hypothesis proposed is:

H$_{1c}$: ROA has a positive effect on non-GAAP earnings management

Opportunities portray the existence or availability of chances to conduct earnings management or situations that create loopholes for the management to practice earnings management. Opportunities will arise when the company’s internal controls are weak (Gagola, 2011). Companies with weak internal controls will have many loopholes that create an opportunity for the management to manipulate transactions by engaging in non-GAAP earnings management which is fraudulent revenue taking done outside the GAAP limit. The communication that occurs between the owner of the company as the principal and the management as an agent can also be an opportunity to take actions that are only concerned with their own interests. Agents can take actions that do not benefit the principal as a whole, which in the long run can harm the interests of the company. To avoid
factions such as non-GAAP earnings management practices to carry out by management, a supervisory unit is needed that is able to monitor the running of the company.

Pamudji and Trihartati (2010) prove that companies with independent audit committees tend not to commit fraud by practicing earnings management, because the audit committees have a supervisory function to ensure that the management does its job properly. The audit committee is responsible for overseeing financial reports, overseeing external audits, and observing internal control systems (including internal audits) can reduce the opportunistic nature of the management that would perform earnings management by monitoring financial statements and supervising external audits. (Istighfarin, Gusti, & Wirawati, 2015).

The audit committee enhances the integrity and credibility of financial reporting through; (1) supervision of the reporting process including internal control systems and GAAP; (2) overseeing the overall audit process (Wardhani, 2007). The results indicate that the existence of an audit committee has consequences on financial statements, namely: (a) a reduction in inappropriate accounting practices; and (b) reduced management fraud and illegal actions. From this explanation it can be concluded that the audit committee can reduce non-GAAP earnings management activities whose impact in the long term can be detrimental to the company and all users of financial statements. So, as to test the effect of opportunities on non-GAAP earnings management, the opportunity in this study was proxied with the percentage of independent audit committees, the number of audit committees, and the number of meetings of audit committee members (Skousen et al., 2009).

Independence is the most important characteristic that an audit committee must have to fulfill its supervisory role. This explains why the stock exchange issues laws and regulations relating to the independence of the audit committee. Blue Ribbon Committee (BRC) (1999) recommended that the audit committee should only consist of commissioners who have no relationship with the company as that might jeopardize their independence. Research conducted by Skousen et al. (2009) proves that the proportion of independent audit committee members negatively affects fraudulent financial statements. Pamudji and Trihartati (2010) prove that the independence of the audit committee significantly negatively affects the level of earnings management. Hence, the first hypothesis for the opportunity proxy is:

**H2a**: The Independent Audit Committee has a negative effect on non-GAAP Earnings Management

The Indonesian Financial Services Authority/OJK Regulation No.55/POJK.04/2015 concerning the establishment and implementation guidelines of the audit committee recommends that there should be at least one audit committee member who has accounting or financial expertise assuming that the member can improve performance effectiveness. Expertise in finance is equally important for the audit committee because the main function of the audit committee is to oversee the financial reporting process of a company (Rahman & Mohamed Ali, 2006). Financial experts with certain knowledge and expertise are expected to guide other audit committee members in identifying questions that can challenge the management and external audits, and can improve the quality of financial reports so that there will be a negative relationship between the financial expertise of the audit committee and fraudulent financial statements, by practicing non-GAAP earnings management which in some cases can destroy the company’s value and result in the loss of the company’s reputation on a large scale (Badertscher, 2011).

Skousen et al. (2009) succeeded in proving that the financial expertise of the audit committee negatively affected fraudulent financial statements. Xie and DaDalt (2003) and Choi, Jeon, and Park (2005) stated that independent commissioners among the audit committee members who are experts in accounting are effective in reducing earnings management. Consequently, the second hypothesis for the proxy opportunity is:
H$_{2b}$: Audit committee expertise in finance has a negative effect on non-GAAP Earnings Management

Based on the OJK regulation No.55/POJK.04/2015 regarding the establishment and guidelines for the implementation of the audit committee’s work, it was stated that the audit committee members should be at least three people, including the chairman of the audit committee. A bigger number of members of the audit committee will increase the effectiveness of supervision so that management does not have the opportunity to commit fraud by conducting non-GAAP earnings management practices whose impact will destroy the value of the company and in the long run can harm the company and all users of financial statements.

Research conducted by Fazli Aghghaleh et al. (2014) and Skousen et al. (2009) prove that the number of audit committee members has a negative effect on the occurrence of fraudulent financial statements. Based on the above arguments, the third hypothesis for the proposed opportunity proxy is:

H$_{2c}$: The number of audit committee members has a negative effect on non-GAAP Earnings Management

Bapepam No IX.I.5 (2012) requires that the audit committee should convene at least the same number of times as the minimum provisions of board of commissioners meetings stipulated in the Articles of Association. Similarly, the Indonesian Financial Services Authority/OJK Regulation No.55/POJK.04/2015 regarding the establishment and implementation guidelines for the audit committee states that the audit committee must hold regular meetings at least once in three months, which means that in a year the audit committee must hold a minimum of four meetings. The more meetings conducted by the audit committees, the more effective the supervision will be, so that the opportunity for the management to practice non-GAAP earnings management can be minimized. Abbott, Parker, Peters, and Raghunandan (2003) prove that companies with audit committees that meet at least four times a year tend not to do restatement (a proxy for non-GAAP earnings management) financial statements so that there will be a negative relationship between the number of audit committee annual meetings and fraudulent financial statements.

Research conducted by Skousen et al. (2009) and Xie and DaDalt (2003) succeeded in proving that the number of audit committee annual meetings negatively affects fraudulent financial statements. Hence, the fourth hypothesis for the opportunity proxy is:

H$_{2d}$: The number of meetings between audit committee members negatively affects non-GAAP Earnings Management

Rationalization can be interpreted as the presence or appearance of attitudes, characters, or a set of ethical values that allow management or employees to take dishonest actions. Cressey (1953) explain rationalization as a thought that justifies its actions as a reasonable behavior, which can be morally acceptable in a normal society. Rationalization is more often associated with the attitude and character of someone who justifies unethical values (Rustendi, 2018). The low integrity of a person creates a mindset where the person feels himself right when committing fraud, where the management justifies the practice of non-GAAP earnings management. Deviations made by the management are also called moral hazard problems. Moeller (2011) states that the number of fraudulent practices that occur in a company is one of the triggers for management to do the same, for example, to practice non-GAAP earnings management and consider it a common practice.

The relationship between management integrity and audit risk as disclosed Turner, Mock, and Srivastava (2003) is an inverse relationship. Management that has high integrity will have an impact...
on the small audit risk. If the integrity possessed by the management is low, the audit risk will be large. The smaller the management integrity, the greater the level of rationalization that management has. Francis and Krishnan (1999) concluded that the advantages of using accrual discretion from earnings management practices is that they will cause audit opinions to be unnatural. The practice of earnings management is certainly because the management rationalizes its actions.

Skousen et al. (2009) also succeeded in proving that the audit opinion has a negative effect on fraudulent financial statements. Thus, to test the effect of rationalization on non-GAAP earnings management, the hypothesis proposed is:

\[ H_3: \text{The audit report negatively affects non-GAAP earnings management} \]

Capability is a qualitative factor that obeys the Wolfe and Hermanson (2004), which is one of the complementary models of the fraud triangle proposed by Cressey (1953). Capability is how much power and ability a person has to commit fraud in the company environment. Components of capability include: position/function, brains, confidence/ego, coercion skills, effective lying, dan immunity to stress. Wolfe and Hermanson (2004) states that people who commit fraud must have the capability to realize the door that is open (opportunity) as a golden opportunity and to use it not only once but many times. For example, managers can practice non-GAAP earnings management if they have the capability, for their personal interests even if it will have a detrimental impact on the company and all users of financial statements in the long term. In this study, changes in the directors were used as a proxy for capability.

Wolfe and Hermanson (2004) found capability as one of the fraud risk factors underlying the occurrence of fraud and concluded that changes in directors can indicate fraud. Changes in directors generally comprise of political content and the interests of certain parties that trigger the emergence of conflicts of interest (Kennedy & Shiddiq, 2014). Changes in directors are not always good for the company. Change of directors can also be an attempt by the company to improve the performance of the previous directors by making changes to the composition of the board of directors or through the recruitment of new directors who are considered more competent than the previous directors. At the same time, the change of directors could be an attempt by the company to get rid of directors who are considered aware of fraud committed by the company and is considered to require adaptation time as the initial performance is not optimal.

Complexity and instability of a company’s organizational structure is characterized by high turnaround of senior managers, consultants, and directors (Stice et al., 2004). The change in the structure of the board of directors is usually followed by the practice of earnings management because while approaching their tenure, the management will be likely to maximize their year-end bonus (Rama, 2016). Earnings management, especially non-GAAP earnings management, is the final method by management when the management cannot reach the company’s targets which have an impact on shifting positions.

Wolfe and Hermanson (2004) states that changes in directors can indicate the occurrence of fraud. Skousen et al. (2009) succeeded in proving that changes in directors have a positive effect on fraudulent financial statements such as through practicing earnings management. Based on the arguments, capability in this study uses a proxy namely change of directors, so the hypothesis is:

\[ H_4: \text{Change of directors has a positive effect on non-GAAP Earnings Management} \]

Managers of a company know more about internal information and prospects for the company in the future compared to the owners (shareholders), giving rise to information asymmetry.
Managers are required to give a signal about the condition of the company to the owner. The signal provided is a reflection of the value of the company through the disclosure of accounting information such as financial statements. These financial statements are important for external users of the company because the group has the least level of certainty. Asymmetry between the management and company owners provides an opportunity for managers to practice earnings management in order to increase company value at a given moment. At first the value of the company does increase within a certain period, but actually reduces in the future.

Research carried out by Herawaty (2008) on the effect of earnings management on the value of the company found that earnings management has a positive influence on firm value. Dechow et al. (1996) examined the nature of the content of the accrual components and the cash flow component, and whether they were reflected in the stock price. It is evident that earnings performance derived from accrual components as earnings management activities have lower persistence than cash flow. The reported profit is greater than the operating cash flow which can increase the company’s current value. Therefore, the hypothesis proposed is:

**H5: Non-GAAP earnings management negatively affects company value**

3. Research method

This study retrieves the company’s annual financial report data on sectors outside the Bank and financial sector companies listed on the Indonesia Stock Exchange (IDX) during the period 2010–2017 (8 years) because in that period there was an increase in various scandals and accounting frauds related to non-GAAP earnings management manipulation, and also to provide the latest overview of cases of manipulation experienced by public companies in Indonesia.

The sampling method used is based on the criteria of companies that submitted a restatement of their financial positions due to fundamental errors as a proxy for the indication of the occurrence of non-GAAP earnings management during the observation period. This study also included companies that did not restore financial statements due to basic errors as a comparison

3.1. Measurement

The dependent variable in this study is non-GAAP earnings management. In this study, non-GAAP earnings management was measured using dummy variables with category 1 for companies that restated financial statements (restatement), and category 0 if otherwise (Badertscher, 2011). Companies categorized as having a restatement of financial statements are companies had fundamental errors in their financial statements, not due to business mergers (or acquisitions), changes in accounting estimates and changes in accounting policies due to convergence or application of Indonesian Statement of Financial Accounting Standards (PSAK) or International Financial Reporting Standard. Restatement is the result of earnings management where there is an increase in income due to accounting reporting errors (Badertscher, 2011).
The independent variable in this study is a component of diamond fraud that was developed from a component of fraud triangle. Where, according to Skousen et al. (2009) pressure proxied by leverage (LEV), managerial ownership (Man_Own) and Return on Asset (ROA). Leverage (LEV) is a ratio used to measure how far the company's assets are financed by debt or financed by outside parties. The ability to obtain loans from outside the company as well as the ability to repay loans is considered a pressure that comes from external factors (Skousen et al., 2009).

Managerial Ownership (Man_Own) is the composition of shares owned by management within the company. Skousen et al. (2009) indicate that when executives have a portion of ownership in the company, their personal financial situation will also be affected by the company's financial position. Man_Own is calculated by dividing the total shares held by management with the total outstanding common shares (Skousen et al., 2009). ROA is a ratio used to measure the ability of a company's management to obtain overall profits. ROA is often used in assessing a manager's performance and in determining bonuses, wage increases, and others. Large profits will attract investors because the company has an increasingly high rate of return. Carlson and Bathala (1997) proved that companies that have large profits (measured by profitability or ROA) are more likely to do earnings management than companies that have small profits. ROA is calculated by dividing the net income by the total assets (Skousen et al., 2009).

Opportunity is the availability of chance to conduct earnings management or situations that open opportunities for management to conduct earnings management. Refer to Skousen et al. (2009) opportunities are proxied by an independent audit committee (AuC_Ind), category 1 if all members of the audit committee are from outside the company and category 0 if otherwise; expertise of financial audit committee members (AuC_Exp) with category 1 if at least one of the audit committee members is someone who has an educational background and experience in finance and category 0 if otherwise; the number of audit committee members (AuC_Size) is measured using category 1 if the audit committee members number at least 3 (three) people or more and category 0 if less than 3 people; the number of meetings between audit committee members (AuC_Meet) is measured by Category 1 if the audit committee members hold meetings at least 4 (four) times a year and category 0 if otherwise (Otoritas Jasa Keuangan, 2015).

Cressey (1953) describes rationalization as a thought that justifies actions as a reasonable behavior, which can be morally acceptable in a normal society. Rationalization is proxied by audit opinion (Au_Rep) category 1 if the company accepts an unqualified opinion and category 0 if the company receives another opinion (Skousen et al., 2009). Thus, capability means how much power a person engages in fraud in the company environment. It is proxied by the change of directors (Dir_Ch), meaning that there is a change in the structure of the board of directors followed by the practice of earnings management. It is assigned the value of 1 if there is a change in company directors, and category 0 if otherwise (Skousen et al., 2009).

Finally, the firm value is the price that potential buyers are willing to pay if the company is sold. One alternative used in assessing the value of a company is to use Tobin's Q. This ratio is a valuable concept because it shows the current financial market estimate of the return on every dollar of incremental investment. If the q-ratio is above one, this shows that investment in assets produces a profit that gives a higher value than investment expenditure, this will stimulate new investment. Conversely, if the q-ratio is below one, investing in assets is not attractive. Thus, the q-ratio is a more precise measure of how effectively management utilizes the company's economic resources. According to (Bai, Liu, Lu, Song, & Zhang, 2004; Bronwyn H. Hall, 1999) tobins' q can be used as a good measure in determining the value of the company. So, we can form the regression equation for model 1 as follows:

\[
\text{Ear}_\text{Man} = \alpha + \beta_1 \text{Lev} + \beta_2 \text{Man}_\text{Own} + \beta_3 \text{ROA} + \beta_4 \text{AuC}_\text{Ind} + \beta_5 \text{AuC}_\text{Exp} + \beta_6 \text{AuC}_\text{Size} + \beta_7 \text{AuC}_\text{Meet} + \beta_8 \text{Au_Rep} + \beta_9 \text{Dir}_\text{Ch} + e
\]
4. Results and discussion

From the results of the screening and observations, it is known that companies other than banks/financial institutions during the observation period of 21 companies in which restatement financial statements were caused by fundamental errors. Then, 21 similar companies were added as comparison companies. Our final sample contains 336 firm years observations were compiled in panel data consist of 42 cross sectional units x 8 time series units (Table 1).

4.1. Descriptive statistics

The dependent variable is dichotomous. The hypothesis tested using logistic regression (Ghozali, 2018). This study uses binary logistic analysis with a stepwise method consisting of three parts, i.e., testing the goodness of fit, overall fit model, and the regression coefficient.

The basis for decision making is if the significance value is > 0.05 then it is rejected while if the significance value is < 0.05 then it is accepted (Ghozali, 2018). The test results can be seen in Table 5.

Table 2 shows the results of descriptive statistics on non-GAAP earnings management variables. Out of the total of 336 companies, 20% of the companies performed a restatement of financial statements due to fundamental errors. The mean leverage value is closer to the minimum value; this indicates that the sampled companies that restored their financial statements have relatively

---

**Table 1. Criteria sample selection**

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Bank/financial companies</td>
<td>428</td>
</tr>
<tr>
<td>The company dropped because it was not included in the sample criteria i.e., do not restatement financial statements; use dollar currency; and incomplete data</td>
<td>(407)</td>
</tr>
<tr>
<td>The number of companies sampled as a comparison</td>
<td></td>
</tr>
<tr>
<td>Number of companies sampled</td>
<td></td>
</tr>
<tr>
<td>Observation year (2010 to 2017)</td>
<td>8</td>
</tr>
<tr>
<td>Final Sample</td>
<td>336</td>
</tr>
</tbody>
</table>

**Table 2. Descriptive statistics**

<table>
<thead>
<tr>
<th></th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Std. Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>N = 336</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TobQ</td>
<td>0.000</td>
<td>11.356</td>
<td>1.59727</td>
<td>1.163811</td>
</tr>
<tr>
<td>Ear_Man</td>
<td>0</td>
<td>1</td>
<td>0.20</td>
<td>0.398</td>
</tr>
<tr>
<td>Lev</td>
<td>0.006</td>
<td>4.318</td>
<td>0.51449</td>
<td>0.429928</td>
</tr>
<tr>
<td>Man_Own</td>
<td>0.00</td>
<td>64.60</td>
<td>1.9259</td>
<td>6.35747</td>
</tr>
<tr>
<td>ROA</td>
<td>−69.380</td>
<td>206.940</td>
<td>6.91307</td>
<td>19.978919</td>
</tr>
<tr>
<td>AuC_Ind</td>
<td>0.00</td>
<td>1.00</td>
<td>0.5417</td>
<td>0.49900</td>
</tr>
<tr>
<td>AuC_exp</td>
<td>0.00</td>
<td>1.00</td>
<td>0.8542</td>
<td>0.35347</td>
</tr>
<tr>
<td>AuC_Size</td>
<td>0.00</td>
<td>1.00</td>
<td>0.9643</td>
<td>0.18585</td>
</tr>
<tr>
<td>AuC_Meet</td>
<td>0.00</td>
<td>1.00</td>
<td>0.6131</td>
<td>0.48777</td>
</tr>
<tr>
<td>Au_Rep</td>
<td>0.00</td>
<td>1.00</td>
<td>0.9583</td>
<td>0.20012</td>
</tr>
<tr>
<td>Dir_Ch</td>
<td>0.00</td>
<td>1.00</td>
<td>0.3512</td>
<td>0.47805</td>
</tr>
<tr>
<td>BTD</td>
<td>−0.145</td>
<td>0.512</td>
<td>0.01480</td>
<td>0.034794</td>
</tr>
<tr>
<td>BIG4</td>
<td>0.00</td>
<td>1.00</td>
<td>0.5208</td>
<td>0.50031</td>
</tr>
<tr>
<td>Ln_TA</td>
<td>23.387</td>
<td>33.320</td>
<td>28.74454</td>
<td>2.000557</td>
</tr>
</tbody>
</table>
low leverage. Likewise, for managerial ownership and ROA, this means that on average the companies that restructured their financial statements have a relatively low proportion of managerial ownership and annual ROA.

All proxies of the audit committee are on average close to the maximum value which means that they are in accordance with applicable regulations. Rationalization proxied by audit opinion shows that on average, 95% of the companies that restore financial statements have received an unqualified opinion annually. Capability in this study was measured by proxy changes in directors; on average companies that had restatement financial statements make changes to the board of directors as much as 35% per year.

4.2. Measuring the goodness of fit
The results of the Hosmer and Lemeshow test as shown in Table 3 obtained a significant value of 0.178 > 0.05, in this case there is no significant difference between the observed classification and the predicted classification or in other words the binary logistic model is suitable for use in subsequent analyses which means that the model can be said to be fit and able to predict the value of his observations.

The next logistic regression test uses the test $-2\log \text{Likelihood}$. This test is used to assess whether the logistic regression model is feasible or not. Display of SPSS output gives two values $-2\log \text{Likelihood}$, which include a model that only includes constants and models with constants. The SPSS output test results $-2\log \text{Likelihood}$ can be seen in Tables 4 and 5. This test consists of two stages, namely stage 0 in which the independent variable is not included in the regression model and stage 1, in which the independent variable is included in the regression model. A good result is if there is a decrease in value $-2\log \text{Likelihood}$ from stage 0 to stage 1 (Ghozali, 2018). The results $-2 \log \text{Likelihood}$ in Table 3 is 332,916 while that in Table 4 is equal to 147,050, indicating a decrease in value $-2\log \text{Likelihood}$ and thus confirming that the model is fit, hence is a good regression model.

The next step was to assess how much of the variation in the dependent variable can be explained by the independent variable (Ghozali, 2018). The basis for taking the results in the test Nagelkerke $R$ Square can be seen in Table 5 which is 0.676 which means that the dependent variable (non-GAAP
earnings management) in this study can be explained by the independent variable while the rest is explained by other variables outside the research model.

4.3. Hypothesis testing
Testing the hypothesis in logistic regression is done by entering all variables. This test aims to see the effect of leverage, managerial ownership, ROA, independent audit committee, audit committee expertise in finance, number of audit committee members, number of meetings between audit committee members, audit opinion, and changes to directors on non-GAAP earnings management. The test results in Table 6 below:

4.4. Pressure/incentive and non-GAAP earning management
The pressure factor in this study is proxied by leverage, managerial ownership and ROA on non-GAAP earnings management. In Table 6 the leverage coefficient value is 4.537 with sig 0.000, which means that the leverage is very significant in influencing non-GAAP earnings management or hypothesis 1a has been successfully supported.

One of the pressures often experienced by the management is the need to obtain additional debt or external financing sources to remain competitive, therefore a higher level of leverage will encourage the management to carry out non-GAAP earnings management engineering or practices. In line with research by Komarudin et al. (2007) which shows that the increase in debt covenant motivation enhances earnings management practices. Thus, companies that have high leverage ratios will tend to manipulate non-GAAP earnings management.

ROA in this case proved to influence managers in practicing non-GAAP earnings management at a significance level of 0.048, meaning that a greater ROA will also affect investors in predicting profits and predicting risks in investment, thus giving an impact on investor confidence in the company. This will motivate the management to practice non-GAAP earnings management in order to attract and increase investor confidence. ROA is also often used in assessing manager’s performance and in determining bonuses, wage increases, and others.

Management share ownership (Man_Own) is often regarded as a solution to frequent agency problems, because the presence of share ownership by insiders will align the interests of management and shareholders. But it was not proven in this study because it obtained a sig value of 0.183. Company share ownership by management tends to make managers take policies for profit management in alignment with the wishes of the owner (investor). In other words, the manager does not feel that he owns the company, so the manager is not under pressure to always be

<table>
<thead>
<tr>
<th>Table 6. The results of hypothesis testing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variabel</td>
</tr>
<tr>
<td>----------</td>
</tr>
<tr>
<td>Lev</td>
</tr>
<tr>
<td>Man_Own</td>
</tr>
<tr>
<td>ROA</td>
</tr>
<tr>
<td>AuC_Ind</td>
</tr>
<tr>
<td>AuC_exp</td>
</tr>
<tr>
<td>AuC_Size</td>
</tr>
<tr>
<td>AuC_Meet</td>
</tr>
<tr>
<td>Au_Rep</td>
</tr>
<tr>
<td>Dir_Ch</td>
</tr>
<tr>
<td>BIG4</td>
</tr>
<tr>
<td>Ln_TA</td>
</tr>
<tr>
<td>Constant</td>
</tr>
</tbody>
</table>
cautious in presenting the financial statements and is not pressured to make the company look good to reflect the company’s image.

4.5. Opportunity and non-GAAP earnings management

This study successfully proved that independent audit committees have a negative and significant effect on non-GAAP earnings management, meaning that an independent audit committee can reduce the occurrence of non-GAAP earnings management. Independence of the audit committee is the most important thing that must be owned by the audit committee members. This is consistent with the premise of agency theory which argues that an independent audit committee provides effective supervision of the management. Audit committee performance becomes effective if its members have independence in expressing their attitudes and opinions.

However, the different results indicated for the size of the independent audit committee (AuC_Size) were not successfully supported. This seems to be caused only by need to fulfill the regulatory requirements from the Indonesian Financial Services Authority (OJK), which state that companies should have at least 3 members, but not to enforce corporate governance in order to prevent fraud (Istighfarin et al., 2015). Similarly, the expertise of the audit committee obtained a coefficient of −0.298 with a significance level of 0.641, which is far above 0.05, so that **there is not enough evidence to accept hypothesis 1b**. Audit committees with expertise in finance are expected to reduce opportunistic earnings management actions. But the results of this study contradict this statement. It seems that the OJK regulations have not explained what characteristics an audit committee must have in order to be declared to have expertise in the financial sector (Pamudji & Trihartati, 2010).

Table 6 shows that the number of audit committee meetings obtained a coefficient of −1.336 and sig level of 0.029. Thus, it can be said that this study was successful in proving that the number of meetings between audit committee members had a significant effect on the non-GAAP earnings management in other words, H2d is successfully supported.

In accordance with the regulations, having audit committee meetings at least four times a year can reduce the occurrence of fraud such as the practice of non-GAAP earnings management. The more meetings conducted by the audit committees, the more effective the supervision that will be carried out. Therefore, opportunities for non-GAAP earnings management can be minimized.

4.6. Rationalization and non-GAAP earnings management

Rationalization proxied by the audit opinion obtained a coefficient of 1.269 with level sig 0.417. This study failed to prove that the audit opinion has a significant effect on non-GAAP earnings management because the significance value is far above the acceptable limit; hence the audit opinion hypothesis (H3) is rejected. This shows that there is in fact no relationship between unqualified opinions and earnings management practices, furthermore frauds. Unqualified opinion indicates that the financial statements presented fulfill the element of reasonableness in all aspects of materiality, but are not statements of free from fraud.

4.7. Capability and non-GAAP earnings management

Capability is proxied by changes in directors. Based on Table 6, the coefficient value is 2.486 and sig 0.000. This study successfully proved that changes in directors have a significant effect on non-GAAP earnings management. Every change in directors is generally loaded with political content and the interests of certain parties that trigger the emergence of conflicts of interest (Kennedy & Shiddiq, 2014). Conflict of interest occurs because of asymmetric information. Higher information asymmetry between agents and principals has led to increased of non-GAAP earnings management by the management.

4.8. Non-GAAP earnings management and firm value

To test hypothesis 5 which states that non-GAAP earnings management has a negative effect on firm value, the regression equation is:
\[ FV = \alpha + \beta \text{Ear}_\text{Man} + e \]  

Note:

FV: Firm Value (dependent Variable), is the price a prospective buyer is willing to pay if the company is sold. If the q-ratio is above one, this shows that investment in assets is very attractive. Conversely, if the q-ratio is below one, investing in assets is not attractive.

\text{Ear}_\text{Man}: \text{Non-GAAP Earnings Management} (\text{independent variable}). Measured using a dummy variable with category 1 for companies that restate financial statements (restatement), and category 0 for the opposite.

The determination coefficient is 0.138 or in other words the ability of non-GAAP earnings management to explain the company value is 13.8%, where the remainder is not explained in this study (Table 7). While F-statistics obtained a value of 54.52 with a significance of 0.000 as shown in Table 8, which means the model is very fit and can be used to predict the value of the company.

Non-GAAP earnings management is proven to significantly reduce the value of the company. This result is shown in Table 9, the t-statistic value is −7.384 with a significance level of 0.000. Earnings management is often carried out by the management (agent) in order to increase the value of the company so that it looks appealing to investors. Earnings management is also considered as a strategy to increase company value.

5. Conclusions and suggestions

This study aims to explain the causal factors for non-GAAP earnings management is based on the perspective of FDT. The results showed that pressure was the most dominant factor as a cause of fraud. Pressure often makes people look for opportunities for personal gain. Likewise, capability is proven to be one of the factors that causes a person to commit fraud. While rationalization does not have a statistically significant effect.

<table>
<thead>
<tr>
<th>Table 7. Determination coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>R Square</td>
</tr>
<tr>
<td>0.140</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 8. Fit model test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sum of Squares</td>
</tr>
<tr>
<td>Regression</td>
</tr>
<tr>
<td>Residual</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 9. Result Hypothesis 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unstandardized Coefficients</td>
</tr>
<tr>
<td>B</td>
</tr>
<tr>
<td>(Constant)</td>
</tr>
<tr>
<td>TobQ</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Ear_Man
Only two proxies of opportunity namely, independent audit committee and the number of audit committee meetings have been proven to prevent non-GAAP earnings management from occurring. Whereas the competence and size of the audit committee were not successfully supported in this study. Independence of the audit committee is the most important thing that must be owned by the audit committee members. However, the size and understanding of the audit committee over the financial sector have not been proven to minimize earnings management practices. This is because both are regulatory requirements, while the roles and functions of the audit committee have not been optimized.

The influence of opportunities and capabilities shows the importance of the role of an independent audit committee in ensuring that internal controls in the company run well so that non-GAAP earnings management can be minimized. Therefore, opportunities in the form of changes in directors must be watched out by all parties and regulators. Strict regulation of changes in the composition of the board of directors in a perilu company was made to prevent the emergence of opportunities for opportunistic behavior.

Non-GAAP earnings management is proven to significantly reduce the value of the company. Earnings management is often carried out by the management (agent) in order to increase the value of the company so that the company appeals to investors. Earnings management is considered to be a manager’s strategy that aims to increase company value. Future research is expected to be able to find and add the right proxy for pressure and rationalization on the diamond fraud theory, which can cause non-GAAP earnings management.

Funding
The authors received no direct funding for this research.

Author details
Ewing Yuvisa Ibrani1,2
E-mail: ewing_ibrani@untirta.ac.id
ORCID ID: http://orcid.org/0000-0001-6956-4021
Faisal Faisal3
E-mail: fe_faisal@yahoo.co.id
Yenny Dwi Handayani4
E-mail: yennydwih@yahoo.co.id
1 Student at Doctoral Program of Economics, Diponegoro University, Semarang, Indonesia.
2 Accounting Department, Sultan Ageng Tirtayasa University, Serang-Banten, Indonesia.
3 Accounting Department, Diponegoro University, Semarang, Indonesia.
4 Accounting Department, Mercu Buana University, Jakarta, Indonesia.

Citation information
Cite this article as: Determinant of non-GAAP earnings management practices and its impact on firm value, Ewing Yuvisa Ibrani, Faisal Faisal & Yenny Dwi Handayani, Cogent Business & Management (2019), 6: 1666642.

References


