# Comparing Earnings Management in Germany and the USA

[1*]T. Arifin, [2]I . W. Kusuma

[1*] *Department of Economics, Sebelas Maret University, Surakarta, Indonesia*

[2] *Department of Economics and Business, Gadjah Mada University, Yogyakarta, Indonesia*

**ABSTRACT:** This study presents empirical evidence concerning the effect of different accounting standard on earnings management. Prior studies have shown that accounting standards influence earnings management. Tighter accounting standards regime restricts management's descretion to manipulate accruals, and at the same time, induce more costly real earnings management activities.

To investigate this issue, the levels of earnings management in the U.S. are compared with those of Germany. The data are obtained from the Osiris database. The sample comprises of 4,388 firm-year observations for U.S companies and 792 firm-year observations for German companies for the period of 2004-2007. To capture accrual earnings management, we use discretionary accrual, and to capture real earnings management we sum standardized abnormal cash flow from operation (CFO), abnormal production costs, and abnormal discretionary expenses.

The result indicates that German's relatively principle-based GAAP yields higher level of accrual-based earnings management than US's relatively rule-based GAAP. On the other hand, we also document that US GAAP yields higher level real-based earnings management than German's GAAP.

**Keywords:** *Rule-based Accounting standards, Principle-based accounting standards, Accrual earnings management, Real earnings management*

## INTRODUCTION

This study aims at providing the empirical evidence of the influence of accounting standards on earnings management behavior. The main underlying issue in this research is the idea that accounting standards cannot limit earnings management behavior. Tightening accounting standards reduces earnings management through judgments, but increases opportunities for earnings management through transaction structure. On the other hand, a flexible accounting standard reduces earnings management through transaction structuring but increases opportunities for earnings management through judgments (Nelson, 2003).

Researches on different types of accounting standards have been subject of interest to the academia. Nisbet (2007) compared rule-based versus principle-based accounting standards across eight countries that reported accounting scandals. The result shows that during five year period of 2001 to 2005, accounting scandals at 38 companies became public knowledge under the U.S. rules-based GAAP system as compared to only 12 companies under the more principles-based IFRS system. Thus, during the period 2001 to 2005, more than three times as many accounting scandals were reported in the U.S. than in principles-based jurisdictions. Maybe, this is one of accounting standards failures that led the profession to call for a change. This change have centered on a shift from a rule-based accounting to a principle-based accounting system. In addition, Section 108 of the Sarbanes-Oxley Act of 2002 instructed the Securities and Exchange Commission (SEC) to conduct a study on adoption of a principle-based accounting system. As part of this study, the Financial Accounting Standards Board (FASB) developed a "Proposal for a Principle-Based Approach to U.S. Standard Setting."

*Corresponding Author, *Email: taufiqar@uns.ac.id*

Is it the best decision? It is still debatable and it needs further studies. Kusuma (2007) suggests that principle-based approach have difficulties to implement, because it does not have a complete guidance to apply the standards.

Since reported earnings are the results of the underlying business operations and accounting choice that record the transactions, firms may manage earnings through manipulation of the accrual and real activities. The extant literature presents substantial evidence that firms use accruals and real earnings management to manage earnings. Since accruals management is less costly than manipulation of real business activities, accruals manipulation may be a more preferable tool of earnings management than manipulation of real business activities. However, accruals earnings management becomes more difficult when manager faces constraints in their ability to inflate earnings through the use of accruals.

This study contributes to the subject in several ways. First, this study provides the empirical evidence for analytical model developed by Ewert and Wagenhofer (2005). Second, this study enhances the understanding about effectiveness of accounting standards in constrainting earnings management intentional behaviour.

## Literature Review

There are two types of approach in accounting standards setting: rule-based accounting standards and principle-based accounting standards (Psaraos and Trotman, 2004). Nelson (2003) defines "rules" broadly include specific criteria, "bright line" thresholds, examples, scope restrictions, exceptions, subsequent precedents, implementation guide, etc. Rule-based accounting standards provide detail rules for application of standards. It cause foster an alleged current "check-box" or compliance mentality (Schipper, 2003). Tweedie (Head of IASB) calls rule-based standards as "the cookbook approach". This idea is contrasted with principle-based standards that suggest an attempt to tell preparer and auditor not what to do, but how to decide on what needs to be done (Alexander, 2006).

Increasing detail and complexity of the U.S Generally Accepted Accounting Principles (GAAP) have been attributed to a rules-based contrast with International Financial Reporting Standards (IFRS) that reflects principles-based approach to standard setting.

Australia, England, New Zealand and Germany also use principle-based approach in standard setting (Bennet et al., 2006; Benston et al., 2006). This study focuses on The U.S. that represents rule-based accounting standards and Germany that represents principle-based accounting standards.

An example of rule-based accounting standards on US GAAP is Statement of Financial Accounting Standards (SFAS) 13, Accounting for Lease. This standard provides a detailed list of criteria for lease classification containing several bright-line thresholds. In developing SFAS 13, FASB had hoped that explicit lease classification rules would eliminate individual judgment, resulting consistent application of the standards across firms (Shortridge and Marying, 2004). However, because bright-line tests were established, companies have been able to structure and interpret lease contracts to avoid capitalization, which tends to present a more favorable picture of a company's overall financial condition (Imhoff and Thomas 1988).

In 1988, alleviation law regarding raising of capital was enacted to improve the competitiveness of German companies (Delvaille et al., 2005). This allow companies with listed shares to prepare consolidated statements according to internationally accepted accounting standards, namely IAS or U.S GAAP. However, the option to prepare consolidated reports in conformity with U.S. GAAP or IAS introduced Anglo-American principles into German accounting. these principles differ significantly from Germany's accounting model that focuses on creditor protection and the principle of prudence. In contrast, the Anglo-American standards focus on providing shareholder information with the 'substance over form' approach that requires extensive use of professional judgements (Fischer et al., 2004).

The step towards international convergence was the so-called European IAS regulation, which required capital-market orientated companies to prepare consolidated financial reports consistent with IAS/ IFRS (Council, 2002). This obligation became effective for reports of financial years beginning on or after the 1st of January 2005.

The extant accounting research encompasses both accruals management and manipulation of underlying real business. The most commonly studied method is accrual management (Jones, 1991; Healy and Wahlen, 1999). Accrual earnings management occurs when management manipulates reported earnings by exploiting the accounting discretion allowed under

GAAP (Healy and Wahlen, 1999). In contrast, real earnings management occurs when management changes the timing or structuring of real business transaction to alter earnings, implying that the change of real transactions deviates from optimal plan of action and thus imposes a real cost to the firm (Ewert and Wagenhofer, 2005).

Techniques used in real earnings management are sales manipulation, overproduction, and reduction of discretionary expenditures. (Roychowdhury, 2006). Sales manipulation occurs when managers attempt to temporarily increase sales during the year to beat earnings target. This is done by offering price discounts of more lenient credit terms. One way managers can generate additional sales or accelerate sales from the next fiscal year into the current year is by offering 'limited-time' price discounts. Another way to boost sales volumes temporarily to increase earnings is to offer more lenient credit terms. For example, retailers and automobile manufacturers often offer lower interest rates (zero-percent financing) toward the end of their fiscal years. These are essentially price discounts and lead to lower cash inflow over the life of the sales, as long as suppliers to the firm do not offer matching discounts on firm inputs. This sales manipulation can lead to lower current-period chief financial officer (CFO) and higher production costs than normal sales level.

The other technique is overproduction. Manager in manufacturing firms can produce excessive goods to meet expected demand. Excessive production can reduce fixed cost per unit by spreading fixed overhead cost over large number of units. These implies that cost of good sold is lower and firm reports higher operating margin. Thomas and Zhang (2002) find that firms produce excessive goods to inflate reported earnings.

To inflate earnings or avoid loss, managers can reduce reported discretionary expenditures. These discretionary expenditure are, for example, research and development (R&D), sales, general and administrative (SG&A) expense. Reducing such expense will inflate current period earnings. It could also lead to higher current period cash flows (at the risk of lower future cash flow) if the firm generally paid for such expense in cash (Cohen et al., 2008).

Principle-based accounting standards use broad guidelines that are based on underlying principle. These standards require more professional judgment.

There is still controversial that principle-based accounting standards create greater potential for earnings management. Some fear that if financial statement preparers and auditors feel unconstrained by clearly defined rules, they are unlikely to follow even broader principles (Yu, 2008). Consequently, U.S. GAAP has become much more details-oriented and stringent. However, many of accounting scandals that happen in the US raises big question about rule-based accounting standards. Many professionals feel that standard setter (FASB) or regulator in the US are too confident about the standards. Tightened accounting standards can reduce accrual-based earnings management, but increase earnings management through real activities manipulation. Some studies support this argument.

Demski (2004) models a substitution effect between accrual earnings management and real earnings management. He assumes that tightened accounting standards can reduce accrual-based earnings management, but increase earnings management through real activities manipulation. Ewert and Wagenhofer (2005) model shows the consequences of tighter accounting standards on firms' earnings management activities. They show that in a rational expectation equilibrium, tighter accounting standards restrict management's discretion to manipulate accruals, and at the same time, induce more costly real earnings management activities. As a result, the magnitude of total earnings management does not decrease with the tightening of accounting standards.

Cohen et al. (2008), support these argument. They show that pre-SOX period (more flexible accounting standards) is characterized by high accrual earnings management and low real earnings management. Their findings suggest that after the passage of SOX, firms are likely to have partially switched from accrual earnings management to real earnings management because of increased regulatory scrutiny and litigation risk.

Prior studies (Demski, 2004; Ewert and Wagenhofer, 2005; Cohen et al., 2008; Yu, 2008) show that accounting standards have implication on earnings management behaviour. Principle-based system creates greater potential for earnings management because it gives preparer broder room to exercise professional judgment in areas involving accounting estimates, uncertainties, and inherent subjectivity. As long as managers can use these discretion, they will choose accrual earnings management rather than real earnings management. Real earnings management is costly for firms because it has

real economic impact. Germany uses principle-based approach in accounting standard-setting, while The U.S. uses rule-based approach. Thus, the following hypothesis regarding the relation between the accounting standard and earnings management stated as follows:

*H1: Accrual earnings management in Germany is higher than in the U.S.*

The first hypothesis predicts that as long as principle-based accounting standards provide broader room for manager to use accounting discretion, manager will choose accrual earnings management rather than real earnings management. The SEC study recognizes that a rule-based approach intentionally minimizes accounting judgment by establishing fine, articulated rules that attempt to anticipate all possible application. Rules-based accounting standards provide more precise accounting standards, resulting in less room to manipulate financial numbers through accounting treatment. In a rational expectation equilibrium, precise accounting standards restricts management's discretion to manipulate accruals, and at the same time, induces more costly real earnings management activities. Therefore, the second hypothesis is as follows:

*H2: Real earnings management in the U.S. is higher than in Germany*

## Research Objectives

Research objectives in this paper are as follow:

1- To find out whether the accrual earnings management in Germany is higher than the U.S?

2- To find out whether the real earnings management in the U.S is higher than Germany?

## Research Questions

Research questions in this paper are as follow:

1- Is the accrual earnings management in Germany higher than the U.S?

2- Is the real earnings management in the U.S higher than Germany?

## RESEARCH METHOD

Consistent with observations made in Schipper (2003), we chose a U.S. standard to represent the purported rules-based approach to standard setting and a Germany standard (HGB) and IFRS to represent a principles-based approach (We choose Germany firms because the raw data section of OSIRIS contain detailed data, which is taken directly from the companies' annual reports. The data is as reported in annual reports and has not been standardized, adjusted, or rounded (Glaum et al., 2004)).

Our data is obtained from the OSIRIS financial database for the period 2004-2007. We restrict our sample to all manufacturing firms (2-digit NAICS 2007 Primary Code: 31-33) with available data, and require at least 4 observations in each 2-digit SIC grouping per year. Further, we require that each firm-year observation has the data necessary to calculate the discretionary accruals metrics and real earnings management proxies we use in our analysis.

Osiris database consists of 9,158 and 887 firms for the U.S. and Germany. Requiring data for manufacturing firms reduces the sample to 1,107 and 213 firms for the U.S. and Germany. We eliminated 13 German firms that use the U.S. GAAP. Outlier data also excluded from the sample. Imposing all the data-availability requirements yields 1,097 and 198 firm-years for the U.S. and Germany (including 13 industries and 1,295 firms). Table 1 provide sample selection process. Table 2 provides sample distribution according to country and industry.

## Measures of Earnings Management
### A. Accrual-based Earnings Management

We used modified Jones model to separate discretionary and non-discretionary earnings component (Dechow et al., 1995). The modified Jones model is estimated for each two-digit SIC-year grouping. Total accruals (TACC) are measured as the difference between net income before extraordinary item and cash flows from operating activities for current period in year *t*; that is,

$$TACC_{it} = EBXT_{it} - CFO_{it} \dots \dots \dots \dots (1)$$

To estimated discretionary accruals from firm *i* in year *t*, we first estimate parameter for each two-digit SIC-year grouping as follows,

$$\frac{TACC_{it}}{TA_{i,t-1}} = \alpha_1 \left(\frac{1}{TA_{i,t-1}}\right) + \alpha_2 \left(\frac{\Delta REV_{it}}{TA_{i,t-1}}\right) + \alpha_3 \left(\frac{PPE_{it}}{TA_{i,t-1}}\right) + e \dots \dots \dots \dots (2)$$

The coefficient estimates from equation (2) are used to estimate firm-specific normal accruals (NDACC) for our sample firms:

$$NDACC_{it} = \alpha_1 \left(\frac{1}{TA_{i,t-1}}\right) + \alpha_2 \left(\frac{\Delta REV_{it} - \Delta REC_{it}}{TA_{i,t-1}}\right) + \alpha_3 \left(\frac{PPE_{it}}{TA_{i,t-1}}\right) \dots \dots \dots \dots (3)$$

**Table 1: Sample selection process**

| No | Criteria | Total firms | |
|---|---|---|---|
| | | U.S. | Germany |
| 1 | Total Public Firms | 18,309 | 1,349 |
| 2 | Public firms that available in OSIRIS database | 9,158 | 887 |
| 3 | Manufacturing firms according to NAICS 2007 (Primary Code: 31-33) | 2,912 | 341 |
| 4 | Exclude from the sample because:<br>a. Data uncomplete<br>b. Germanys' firms that use U.S. GAAP<br>c. Outlier Data | (1,805)<br><br>(10) | (128)<br>(13)<br>(2) |
| 5 | Final Sample | 1,097 | 198 |

**Tabel 2: Sample distribution according to country and industries**

Panel A: Sample distribution according to country

| Country | Firms | Observations |
|---|---|---|
| United States (US) | 1,097 | 4,388 |
| Germany (DE) | 198 | 792 |
| Total | 1,295 | 5,180 |

Panel B: Sample distribution according to industry[a]

| Industry | US | Germany | Total |
|---|---|---|---|
| Food and Kindred Products | 62 | 17 | 79 |
| Textile Mill Products | 28 | 17 | 45 |
| Wood and Furniture | 25 | 0 | 25 |
| Paper and Printing | 28 | 0 | 28 |
| Chemicals and Allied Products | 138 | 27 | 165 |
| Rubber, Plastics and Glass Product | 25 | 16 | 42 |
| Leather Products | 27 | 0 | 27 |
| Primary Metal Industry | 69 | 49 | 118 |
| Machinery and Computer Equipment | 150 | 0 | 150 |
| Electric and Other Electrical Equipment | 252 | 31 | 284 |
| Transportation Equipment | 62 | 19 | 81 |
| Laboratory, Photographic and Medical | 203 | 22 | 227 |
| Miscellaneous Manufacturing Industry | 28 | 0 | 29 |
| Total | 1,097 | 198 | 1,295 |

[a] Based on *two-digit SIC Primary Code*

Discretionary accruals (DACC) for firm *i* year *t* equal:

$$DACC_{it} = TACC_{it} - NDACC_{it} \dots \dots \dots (4)$$

where :
DACC = Discretionary Accruals
NDACC = Non Discretionary Accruals
TACC = Total Accruals

EBXT = Earnings before extraordinary item and tax
CFO = Operating cash flow (from continuing operations)
TA = Total Assets
$\Delta$REV = Change in revenue from preceding year
PPE = Gross value of property, plant, and equipment
$\Delta$REC = Change in account receivable

## B. Real-based Earnings Management

Following the prior studies on real activities manipulation (e.g., Roychowdhury, 2006; Cohen et al., 2008), we consider the abnormal levels of cash flow from operations (CFO), discretionary expenses and production costs to study the level real activities manipulation.

First, we use Roychowdhury's (2006) model to estimate the normal level of CFO. The normal level of CFO is expressed as a linear function of sales and change in sales. To estimate this model, we run the following cross-sectional regression for each industry and year (5):

$$\frac{CFO_{it}}{Assets_{i,t-1}} = k_1 \frac{1}{Assets_{i,t-1}} + k_2 \frac{Sales_{it}}{Assets_{i,t-1}} + k_3 \frac{\Delta Sales_{it}}{Assets_{i,t-1}} + \beta_{it}$$

For every firm-year, abnormal cash flow from operations (R_CFO) is the difference between the actual CFO and the expected CFO calculated using the corresponding industry-year model.

For another type of real activities manipulation is overproduction. We use Roychowdhury's (2006) model to estimate the normal level of production costs (6):

$$\frac{Prod_{it}}{Assets_{i,t-1}} = k_1 \frac{1}{Assets_{i,t-1}} + k_2 \frac{Sales_{it}}{Assets_{i,t-1}} + k_3 \frac{\Delta Sales_{it}}{Assets_{i,t-1}} + k_3 \frac{\Delta Sales_{it-1}}{Assets_{i,t-1}} + \beta_{it}$$

Production costs (Prod) are defined as the sum of COGS and change in inventory during the year. For every firm-year, abnormal production (R_Prod) cost is the difference between the actual production costs and the expected production costs calculated using the corresponding industry-year model.

The third type of real activities manipulation is the reduction of discretionary expenses. If managers reduce discretionary expenditures (e.g., R&D expenses) to boost earnings to the targets, abnormally low discretionary expenses are expected. Following Roychowdhury (2006), we estimate the normal level of discretionary expenses (DiscExp) using the equation below:

$$\frac{DiscExp_{it}}{Assets_{i,t-1}} = k_{1t} \frac{1}{Assets_{i,t-1}} + k_2 \frac{Sales_{it}}{Assets_{i,t-1}} + \varepsilon_{it} \ldots \ldots \ldots (7)$$

For every firm-year, abnormal discretionary (R_DEX) expenditure is the difference between the actual discretionary expenses and the expected discretionary expenses calculated using the corresponding industry-year model.

In order to capture the effect of real earnings management through all these three variables in a comprehensive measure, we combine the three individual real earnings management variables.

Consistent with Cohen and Zarowin (2008), we multiply R_CFO and R_DEX by negative one (-1) so the higher the amount of R_CFO and R_DEX, the more likely it is that the firm is engaging in sales manipulations through price discounts and cutting discretionary expenses. We do not multiply R_PROD by negative one since higher production costs, as noted earlier, is indicative of overproduction to reduce cost of goods sold. Our combined measure, RM_PROXY is the sum of the above standardized variables, R_CFO, R_PROD and R_DEX.

## RESULTS AND DISSCUSSION

Table 3 shows descriptive statistic of companies from the U.S. and Germany in overall (*pooled data*) at 2004-2007 periods. Table 3 shows that the average mean value of accrual earnings management in Germany (0.49969) is higher than earnings management in The U.S (0.10842). This view showed by average mean values of accrual earnings management in Germany and The U.S. are 0.49969 and 0.10842. The absolute median of earnings management in Germany is also higher than the median in The U.S, which is 0.1654 for Germany and 0.06323 for The U.S. This study use absolute value of accrual earnings management since there is neither sight of direction nor earnings management motive to formulate the hypothesis.

Each of three proxies of real earnings management (abnormal cash flow operation, abnormal production cost, and abnormal *discretionary expenses*) has different direction. The proxies of R_CFO and R_DEX have negative direction. It shows that the lower of its value (the more negative), the higher earnings management is conducted. Proxy of R_Prod has positive direction, which means that the higher of its value (the more positive), the higher earnings management is conducted. From Table 3, it is obvious that the average mean value of those three proxies of real earnings management in The U.S. is higher than that of Germany.

In order to obtain sufficient and comprehensive measurement concerning those three proxies of real earnings management, hence, this study uses REM variable that formed as the amount of *standardized* variable of R_CFO, R_Prod, and R_DEX. Before those three of them counted as total, particularly for R_CFO and R_DEX variables must be times with -1 since these two variables have negative directions (Cohen et al., 2008).

**Table 3: Descriptive statistics**

| The US: Full Sample, 2004-2007 (n = 4.388) | | | | | |
|---|---|---|---|---|---|
| | Mean | Median | Std. Dev | Min. | Max. |
| AM_Abs | 0.10842 | 0.06323 | 0.17479 | 0.00001 | 4.02255 |
| R_CFO | -0.23598 | -0.17789 | 0.42421 | -7.32870 | 2.45865 |
| R_Prod | -0.13005 | -0.13990 | 0.37895 | -2.69586 | 7.98527 |
| R_DEX | -0.05935 | -0.0556 | 0.44132 | -1.72764 | 1.36100 |
| REM | 0.16527 | 0.0854 | 0.77175 | -1.21275 | 1.53068 |

| Germany: Full Sample, 2004-2007 (n = 792) | | | | | |
|---|---|---|---|---|---|
| | Mean | Median | Std. Dev | Min. | Max. |
| AM_Abs | 0.49969 | 0.1654 | 0.7863 | 0.0005 | 6.8351 |
| R_CFO | -0.00814 | -0.0264 | 0.5506 | -5.5191 | 3.8711 |
| R_Prod | -0.41733 | -0.3822 | 0.3503 | -3.2921 | 2.6933 |
| R_DEX | 0.09359 | 0.0873 | 0.3067 | -1.4399 | 2.5323 |
| REM | -0.50279 | -0.4562 | 0.8542 | -9.6956 | 8.4239 |

**Variable Definitions**

AM_Abs = the absolute value ofdiscretionary accruals computed using Modified Jones Model

R_CFO = the level of abnormal cash flow from operation

R_Prod = the level of abnormal production cost, where production costs are defined as the sum of cost of goods sold and the change in inventories

R_DEX = the level of abnormaldiscretionary expenses (R&D expenses)

REM = the sum of standardized three real earnings management proxies, i.e., R_CFO, R_Prod, R_DEX

## Result of First Hypothesis Test

Test of the first hypothesis intends to answer the question whether accrual earnings management conducted by companies in Germany is higher than accrual earnings management conducted by companies in the U.S. Test of the first hypothesis is carried out by comparing mean value of discretionary accrual (proxy of accrual earnings management) between companies in Germany with companies cited in the U.S.

Table 4 shows that discretionary accrual in Germany (0.4887) is higher than discretionary accrual in the U.S. (0.1084). The t-test result showed the t value is -13,942 with value of p=0.000. This indicates that in the periods of 2004-2007, accrual earnings management between companies in Germany is different than companies in The U.S. The discretionary accrual in Germany is higher than discretionary accrual in The U.S. Therefore, the first hypothesis which states that accrual earnings management on companies in Germany is higher than accrual earnings management in the US is supported at the conventional level (1 %).

The result from the first hypothesis probably indicates that approach of the *rule-based accounting standards* used by the US is capable of reducing the practices of accrual earnings management. This matter is reflected from the lower value of companies' accrual discretionary in The U.S. as compared to companies in Germany that used the *principle-based accounting standards* approach. The approach of *rule-based accounting standards* has made accounting standards in the U.S. structured strictly and decreases opportunities of companies to conduct accrual earnings management. This supports the first hypothesis and is consistent with the results by Demski (2004), Ewert and Wagenhofer (2005), Cohen et al. (2008) and Yu (2008).

## Result of Second Hypothesis Test

The second hypothesis intends to examine whether real earnings management in the US is higher than those in Germany. The second hypothesis test was performed by conducting comparison of the average mean value

**Table 4: Independent sample T-test for first hypothesis test**

| Explanation | Value |
|---|---|
| Mean for absolute value of discretionary accruals: Germany | 0.4887 |
| Mean for absolute value of discretionary accruals: U.S. | 0.1084 |
| T test for difference | -13.942 |
| Probability of T-test(*1-tailed*) | 0.000 |

**Table 5: Independent sample T-test for second hypothesis test**

| Explanation | Value |
|---|---|
| Mean for absolute value of real earnings management: U.S. | 0.1653 |
| Mean for absolute value of real earnings management: Germany | -0.5028 |
| T test | 22.046 |
| Probability of T-test(*1-tailed*) | 0.000 |

of real earnings management between companies in the US and companies located in Germany. Table 5 presents summary result of the second hypothesis test.

Table 5 shows that the rate of companies' real earnings management in the US is 0.1653 higher than companies' real earnings management in Germany that is -0.5028. The result of t-test showed that t value is 22.046 (p=0.00). This finding indicates that the real earnings management happened in the U.S. at 2004-2007 periods are different from the companies in Germany. This difference is concerning to the manipulation over real activity performed by companies in the U.S. is higher than manipulation over real activity in Germany companies. Hence, the second hypothesis stated that real earnings management of companies in the U.S. is higher than real earnings management of companies in Germany is supported at 1% level.

The result of second hypothesis probably indicate that the tight accounting standards through *rule-based accounting standards* approach used by the US causes higher real earnings management practices as compared to the level of earnings management exposures in Germany, which use s*principle-based accounting standards* approach. The result of second hypothesis is consistent with results by Demski (2004), Ewert and Wagenhofer (2005), Cohen et al. (2008) and Yu (2008).

The tests of each proxy of real earnings management also demonstrate a consistent result with the test of REM variable, thus, the results showed that t-test result

**Table 6: Results for each proxy of real earnings management**

| REM proxy | Mean | | T test for difference | T test probability |
|---|---|---|---|---|
| | U.S | Germany | | (*1-tailed*) |
| R_CFO | -0.2359 | 0.0081 | -11.067 | 0.000 |
| R_Prod | -0.1300 | -0.4173 | 19.858 | 0.000 |
| R_DEX | -0.0593 | 0.0936 | -11.974 | 0.000 |

values are -11,461 for R_CFO, 3.563 for R_Prod, and -7.686 for R_DEX with probability of 0.000. See table 6.

The test towards each proxies of real earnings management showed a consistent result with the test of REM proxy. The mean of R_CFO proxy in the US (-0.2359) is lower than in Germany (0.0081). The lower (negative) value of R_CFO indicates that the higher companies conducted earnings management through sales manipulation. The test of *independent-samples t test* by assumption of different population variance showed the mean difference of R_CFO in The U.S. and Germany is significant at the 1% level. This is showing that the level of real earnings management through sales manipulation in the U.S. is higher than real earnings management via sales manipulation in Germany.

The average mean for R_Prod proxy in the U.S. is also higher than Germany that is -0.1300 for The U.S. and -0.4173 for Germany. The higher (positive) value of R_Prod indicates the higher companies conducted earnings management through overproduction. The test of *independent-samples t test* showed the mean difference of R_Prod in the U.S. and Germany is significant at the level of á=1%. This demonstrates that the level of real earnings management through overproduction in the the U.S. is higher than what happened in Germany.

The average mean of R_DEX proxy in The U.S. is also lower than Germany that is -0.0593 for the U.S. and 0.0936 for Germany. The lower (negative) value of R_DEX indicates the higher companies conducted earnings management by means of cutting off *discretionary expenses* (SG&A and R&D). The test of *independent-samples t test(1-tailed)* by assumption of equal population variance showed the mean difference R_DEX in the U.S. and Germany is significant at the 1% level. This is showing that the level of real earnings management by means of cutting off *discretionary expenses* (SG&A and R&D) in the U.S. is higher than in Germany.

**Sensitivity Analysis**

Sensitivity analysis is conducted in order to emphasize the research result conducted before. The linear regression used in order to re-examine both research hypothesis. Leverage and size of the company are used as the controlling variables. Linear regression used is Weighted Least-Square (WLS) model since this model accelerates solutions for the occurrence of *heteroscedasticity*. The model will divides all data by prediction value of Y (Gujarati, 1995).

The test result on the hypothesis concerning the influence of accounting standards towards accrual earnings management by company's leverage and size as controlling variables was shown in Table 7.

Table 7 shows the coefficient of country variable is statistically significant at the 1% level. This probably implies that a country's accounting standards statistically affects the level of accrual earnings management. The country variable is a form of dummy variable that is valued as 1 for the U.S. companies with more firmly accounting standards (*rule-based*) and valued as 0 for Germany's companies with more loosen accounting standards (*principle-based*). Table 7 is also showing that the regression coefficient of country variable is negative, which it means that the more firm of its accounting standards the lower conduction of accrual earnings management. On the contrary, the more loosen of its accounting standards the higher conduction of accrual earnings management. The test result using WLS emphasized previous test conducted with the *independent-samples t test.*

**Table 7: Result of WLS test for first hypothesis**

| Variabel | Coefisient | Std. Error | t-test | Sig |
|---|---|---|---|---|
| (Constant) | 0.455 | 0.018 | 25.803 | 0.000 |
| Country | -0.413 | 0.017 | -24.927 | 0.000 |
| Lev | 0.135 | 0.015 | 9.187 | 0.000 |
| Size | -3.382 | 0.783 | -4.315 | 0.000 |

Dependent variable: AM_abs

**Table 8: Result of WLS test for second hypothesis**

| Variabel | Coefisient | Std. Error | t-test | Sig |
|---|---|---|---|---|
| (Constant) | -0.652 | 0.034 | -19.153 | 0.000 |
| Country | 0.735 | 0.032 | 23.006 | 0.000 |
| Lev | 0.165 | 0.028 | 5.807 | 0.000 |
| Size | 4.034 | 1.511 | 2.669 | 0.008 |

Dependent variable: REM

The test of linear regression with REM as dependent variable uses WLS towards Hypothesis of the influence of accounting standards on real earnings management with leverage and size of the company as controlling variable is presented in Table 8.

Table 8 suggests that the country variable is statistically significant. It means that a country's accounting standards is affecting real earnings management level statistically. Table 8 is also figuring out that the regression coefficient of country variable is positive, which mean that the more firmly of its accounting standards the higher conduction of real earnings management, and just the opposite. The WLS emphasized previous test with the *independent-samples t test).*

The WLS emphasizes assumption that the accounting standards approach in one country, either with rule-based or principle-based approaches, may affect earnings management practices. The tighter of accounting standards, thus, manager will have preference of choosing earnings management action through real activity manipulation even though this intentional selection will cause higher expense for company. On the contrary, the loose of the accounting standards, thus, company will prefer to use accrual earnings management.

**CONCLUSION**

This study provides appropriate evidence that accrual earnings management in Germany is much higher than accrual earnings management in the US. This result probably indicates that tighter accounting standards *(rule-based)* can reduce accrual earnings management practices. This supported hypothesis is consistent with the studies conducted by Demski (2004), Ewert and Wagenhofer (2005), Cohen et al. (2008) and Yu (2008).

This study also suggests that real earnings management conducted by companies in the US is higher as compared with real earnings management conducted by companies in Germany. This probably occur since firm accounting standards will cut down space of companies' intentions in conducting accrual earnings management, so that companies in the US will conducts earnings management by manipulation of real activity even if it costs higher expenses for the companies.

Finally, it can be concluded that as long as accounting standards provides spaces for companies to perform judgment, thus, companies will prefer to practice earnings management by using accrual manipulation. The rule-based accounting standards will restrict companies to

perform accrual earnings management; so that the selection for companies to perform earnings management will shift to earnings management via real activity manipulation even if it costs higher expenses for the companies itself.

First, this research use sample from two different countries. Thus, there are possibilities that there are a lot of other influencing factors, besides accounting standards differences, which may affects earnings management practices. Second, the limited data that available for processing in this research may have affected the result so that the researcher addresses assumption that the result of this research should be interpreted carefully.

This study does not examine other factors that probably affect the earnings management intentional behavior. The future research may include other factors having possibilities of affecting earnings management behavior. Because of the small number of sample and limitation of data in this study, thus, the researchers suggest re-examining the issue in the future with larger sample and longer observation periods. The future study is suggested to have comprehensive view the influence of the firm or loose concerning the accounting standards by conducting experimental study. The experimental study is expected to have fervent and forceful impact to limit the influence of other factors affecting earnings management practices. The next study is also suggested to have larger view of whether if there is a trade-off underlies between accrual earnings management and real earnings management.

## REFERENCES

Alexander, D. and Jermakowicz, E. (2006). A True and Fair View of the Principles/Rules Debate. *Abacus*, 42 (2), pp. 132-164.

Bennet, B., Bradbury, M. and Prangnell, H. (2006). Rules, Principles and Judgments in Accounting Standards. *Abacus*, 42 (2), pp. 189-204.

Benston, G. J., Bromwich M. and Wagenhofer, A. (2006). Principles-Versus Rules-Based Accounting Standards: The FASB's Standard Setting Strategy. *Abacus*, 42 (2), pp. 165-188.

Cohen, D. A., Dey A., and Lys, T. Z. (2008). Real- and Accrual-based Earnings Management in the Pre- and Post- Sarbanes Oxley Periods. *The Accounting Review,* 83 (3), pp. 757-787.

Cohen, D. A. and Zarowin, P. (2008). Accrual-Based and Real Earnings Management Activities around Seasoned Equity Offerings. Finance Working Paper. Available: http://papers.ssrn.com/ (February 12, 2009).

Council, E. P. A. (2002). Regulation (EC) No 1606/2002 of the European Parliament and of the Council of 19 July 2002 on the application of international accounting standards.

Dechow, P.M., Sloan, R. and Sweeney, A.P. (1995). Detecting Earnings Management. *The Accounting Review,* 70 (2), pp. 193-225.

Delvaille, P., Ebbers, G. and Saccon, C. (2005). International Financial Reporting Convergence: Evidence from Three Continental European Countries. *Accounting in Europe,* 2 (1), pp. 137-164.

Demski, J. (2004). Endogenous expectations. *The Accounting Review,* 79 (2), pp. 519-539.

Ewert, R. and Wagenhofer, A. (2005). Economic Effects of Tightening Accounting Standards to Restrict EarningsManagement. *The Accounting Review,* 80 (4), pp. 1101-1124.

Fischer, T. M., Kopfer, E. and Sterzenbach, S. (2004). Beurteilung der Rechnungslegung nach IAS. *Wirtschaftsprüfung*, pp. 694-708.

Glaum, M., K. Lichblau., and J. Lindemann. 2004. The Extent of *Earnings* Management in the U.S. and Germany. *Journal of International Accounting Research,* 3 (2), p. 45.

Gujarati, D. N. (1995). *Basic Econometrics.* Singapore: Mc Graw Hill, Inc.

Healy, P. and Wahlen, J. (1999). A Review of the Earnings Management Literature and Its Implications for Standard Setting. *Accounting Horizons,* 13 (4), pp. 365-83.

Imhoff, E., and Thomas, J. (1988). Economic Consequences of Accounting Standards: The Lease Disclosure Rule Change. *Journal of Accounting and Economics,* 10 (December), pp. 277-310.

Jones, J. J. (1991). Earnings Management During Import Relief Investigations. *Journal of Accounting Research*, 29 (2), pp. 193-228.

Kusuma, I. W. (2007). Adopting International Financial Reporting Standards: Implicationfor Indonesia. Speech for the Professorship. Gadjah Mada University.

Nisbett, A. V. and Aamer, S. (2007). Accounting Scandals: Does Rules vs. Principles matter? *CPA Journal*, November, pp. 91-104.

Nelson, M. W. (2003). Behavioral Evidence on the Effects of Principles-and Rules-Based Standards. *Accounting Horizons,* 17 (1), pp. 91-104.

Psaraos, J., Trotman, and Kent T,. (2004). The Impact of The type of Accounting Standards on Prepares' Judgments. *Abacus*, 40 (1), pp. 76-93.

Roychowdhury, S. (2006). Management of Earnings through Real Activities Manipulation. *Journal of Accounting and Economics,* 42 (3), pp. 335-370.

Schipper, K. (2003). Principles-Based Accounting Standards. *Accounting Horizons,* 17 (1), pp. 61-72.

Securities and Exchange Commission. (2003). Study Pursuant to Section 108(d) of the Sarbanes-Oxley Act of 2002 on the Adoption by the U.S. Financial Reporting System of a Principles-Based Accounting System. SEC The U.S. July 2003.

Shortridge, R. T., and Myring, M. (2004). Defining Principles-based Accounting Standards. *TheCPA Journal Online*, August.

Thomas, J. K. and Zhang, H. (2002). Inventory Changes and Future Returns. *Review of Accounting Studies*, 7 (1), pp. 163 – 187.

Yu, Wei. Accounting-Based Earnings Management and Real Activities Manipulation, Ph.D. dissertation, Georgia Institute of Technology, 2008, pp. 10-125.