Real earnings management of operation before and after the implementation of IFRS using cash flow measurement approach

Tiara Puspita Dewi¹, Nurmala Ahmar²

¹, ² STIE Perbanas Surabaya, Nginden Semolo Street 34-36, Surabaya, 60118, East Java, Indonesia

ABSTRACT
The timeframe of this study is two years, before the implementation of IFRS in 2011 and after the implementation of IFRS in 2013. The population of this study is manufacturing companies listed in Indonesia Stock Exchange. From the existing 179 companies, 92 companies were selected according to the criteria of the sampling method and then determined as the subjects of the study. The data were secondary data obtained in the form of ready-made (provided) through publications and information issued by various organizations or public companies listed in Indonesia Stock Exchange. The focus of this study is to examine the differences in the real earnings management with the measurement of cash flow operation before and after the implementation of IFRS. Roychowdhury (2006) stated that the indication of real earnings management is the interval between -0.075 and 0.075. The results show that there is no difference between real earnings management with the measurement of cash flow operation before the implementation of IFRS and real earnings management with the measurement of cash flow operation after the implementation of IFRS.

1. INTRODUCTION
International Financial Reporting Standard (IFRS) is developed as a solution to the differences in local standards in various countries. IFRS was first applied thoroughly by the European Union countries and then followed by Australia, Brazil, Canada, Singapore, and some other countries in the world, including Indonesia. One of the reasons for Indonesia to apply the International Accounting Standards is because of its commitment with the countries of G-20 members, and IFRS serves as the guidelines for the preparation of financial statements, which are accepted globally.

The implementation of IFRS can facilitate business transactions between countries according to the characteristics of financial reporting, so that the financial statements can be compared in many countries. The implementation of IFRS in Indonesia

* Corresponding author, email address: ¹ tiara_dewi23@yahoo.com, ² nurmala@perbanas.ac.id.
is expected to have an impact on the improvement of the quality of accounting as mostly occur in European countries.

The issue of the adoption of IFRS is used as a standard that can push down the existence of earnings management. Senjani (2012: 5) suspected that there is a change in behavior of earnings management practices in companies after the implementation of IFRS, from accrual basis to real or operational basis, because the change in the standard, which was effective per-2012 may affect the behavior of management. Prior to the adoption of IFRS, companies had a tendency to do accrual earnings management through accounting policies, but after the adoption of IFRS, the companies tend to perform operational or real earnings management.

Earnings management can be done in two ways, accruals manipulation and real earnings management. Most previous studies on earnings management only focused on the accrual-based earnings management technique, but the current studies suggest the importance of understanding on how the company conducts earnings management through real earnings management in addition to accrual-based earnings management (Roychowdhury 2006).

Roychowdhury (2006) stated the manipulation of real activity starts from normal operational practices, which are motivated by managers who wish to mislead some stakeholders to believe that the purpose of certain financial reporting has been met in normal operation. It will not contribute to the value of the company. A certain reporting with real activities manipulation methods, such as price discounts and reductions in discretionary costs, may be optimal actions in certain economic circumstances.

Based on the background of the problem, the analysis in this study is to examine the differences in real earnings management with the measurement of cash flow operation before and after the implementation of IFRS on companies listed in Indonesia Stock Exchange in the period of 2011-2013. The purpose of this study is to determine the differences in the real earnings management, which is done by measuring the cash flow operation before and after the implementation of IFRS on companies listed in Indonesia Stock Exchange.

2. THEORETICAL FRAMEWORK AND HYPOTHESIS

Agency theory describes the relationship between shareholders, as the principal, and management, as the agent. Anthony and Govindarajan (2005) defined that agency theory assumes that all individuals act in their own interests. As an agent, the manager is morally responsible for optimizing the benefit of the principal, and in return, the manager will receive compensation in accordance with the contract. Thus, there are two different interests in the company, in which each party seeks to achieve or maintain a desired level of prosperity (Priantinah 2008: 24).

Sulistianto (2008) defined earnings management as an effort of a company manager to influence the information in the financial statements for the purpose of deceiving the stakeholders who want to know the performance and condition of the company. According to Sulistianto, Januarsi, and Alvia (2011: 70), earnings management are generally divided into two categories, namely earnings management through accounting policies and earnings management through real activities. Earnings management through accounting policies refers to the earnings numbers game performed through engineering and accounting policies. Meanwhile, earnings management through real activities refers to the earnings numbers game performed through activities derived from normal business activities or in connection with the operations of the company.

Roychowdhury (2006) explained that earnings management through real activity is defined as the difference in the operational practices, which are performed through the normal operating practices. This is motivated by the desire of the management to provide a misconception to stakeholders so that they believe that certain financial reporting purposes have been achieved through company’s normal operating activities. Brigham and Houston (2001) in Agmarina (2011) stated that cash flow is the cash inflow operation with the expenditure required to maintain the cash flow operation in the future. Cash flow is called positive if the cash inflow is greater than the cash outflow. And vice versa, the cash flow is called negative if the cash outflow is greater than the cash inflow. According to the Decree of the Chairman of the Capital Market Supervisory Agency and Financial Institutions (PAPEPAM-LK) No. Kep-347/BL/2012, cash flow indicates the cash receipts and disbursements in the activities of issuers or public companies during a certain period and is classified based on the operating, investing, and financing activities.

Operating activity is one of the activities contained in the statement of cash flows, generally derived from transactions and other events that affect the determination of net profit or loss. According to the Decision of the Chairman of Capital Market Supervisory Agency and Financial Institu-
tions, (BAPEPAM-LK) No: Kep-347/BL/2012, the cash flow from operating activities is the cash flow derived primarily from the principal revenue-producing activities of the issuer or public company. Therefore, the cash flow is generally derived from transactions and other events that affect the determination of net profit or loss.

IFRS is the international accounting standards issued by the International Accounting Standards Board (IASB). Elhairany (2013: 1) stated "convergence can mean harmonization or standardization, but harmonization in the context of accounting is viewed as a process of improving the appropriateness of accounting practices by setting the limits of the level of diversity". When associated with the IFRS, convergence can be defined as the process of adjusting the Financial Accounting Standards to IFRS.

Nuariyanti & Erawati (2014) conducted a research entitled “Analisis Komparatif Kinerja Perusahaan Sebelum Dan Sesudah Konversi Ke IFRS” (“A Comparative Analysis of Corporate Performance Before and After the Conversion to IFRS”). This study is a comparative study that compares the performance of the company as the dependent variable and the conversion to IFRS as the independent variable. The object of the study is the financial statements of PT Bank Mandiri (Persero) Tbk before the conversion to IFRS in 2002-2006 and after the conversion to IFRS in 2008-2012. This study uses quantitative data in the form of financial statements of PT Bank Mandiri (Persero) Tbk, with the collection of secondary data through the official website of the Indonesian Stock Exchange, www.idx.co.id or non-participant observation method. Based on the results of calculation and the comparison of financial ratios of PT. Bank Mandiri (Persero) Tbk before and after the conversion to IFRS, it can be concluded that there are differences in the performance of PT Bank Mandiri assessed from the Loan to Assets Ratio, Return on Assets and Debt to Equity Ratio between the periods before the conversion to IFRS and after the conversion to IFRS.

Rahman & Hutagaol (2008) conducted a research entitled “Manajemen Laba Akrual dan Aktivitas Real Pada Penawaran Perdana dan Hubungannya Dengan Kinerja Jangka Panjang” (“Accrual Earnings Management and Real Activity in Initial Public Offering and Its Relationship with Long-Term Performance”). The population in this study is all companies that conduct Initial Public Offersings (IPO) in Jakarta Stock Exchange from 1994 to 2003. The samples are selected from the population by using purposive judgmental sampling with certain criteria. This study uses secondary data. The results of this study can detect the motivation of earnings management at the time the company conducts an IPO by using the classical measure of earnings management and discretionary accruals but not using real activities manipulation.

Ratmono (2010) conducted a research entitled “Manajemen Laba Riil Dan Berbasis Akrual: Dapatkah Auditor Yang Berkualitas Mendeteksinya?” (“Real Earnings Management and Accrual Based: Can Qualified Auditors Detect It?”) The population in this study is all public companies listed in Indonesia Stock Exchange in 2001-2008. The data used are obtained from each company’s annual report, Indonesian Capital Market Directory (ICMD), and IDX Fact Book 2000-2008. The variables used in the study are a proxy for accrual earnings management (discretionary accruals), a proxy for the real earnings management (abnormal CFO, abnormal discretionary expenses, and abnormal production costs). The test tool used is the regression test. The findings show that there is empirical evidence of the real earnings management practices carried out by public companies in Indonesia with poor performance.

Based on the logic of the previous researches results, the discussions, and the existing theoretical basis in this study, the research framework is shown in Figure 1 and the hypothesis is:

Ha: There are differences in the real earnings management with the measurement of cash flow operation before and after the implementation of IFRS.

3. RESEARCH METHOD

This research is a quantitative research that examines the differences in real earnings management between before and after the implementation of IFRS. The research variables are real earnings management with cash flow approach measured using the following steps:

1. The data tabulation, that becomes the components of real earnings management, is using the measurement of cash flow operation, ie the cash flow operation (CFO) with its components such as the sales in year t (S_t), changes in sales in year t (ΔS_t), and assets in year t (A_t), each component is weighed by t-1 (A_t-1).

2. Calculations are using formulas replicated from Roychowdhury (2006) as follows:

\[
CFO_i/A_{t-1} = a_0 + a_1(I/A_{t-1}) + β_1(S_t/A_{t-1}) + β_2(ΔS_t/A_{t-1}) + \varepsilon_t
\]

(1)

Description:

\(CFO_i\) = Cash flow operation of company \(i\) in year \(t\)

\(A_{t-1}\) = Total assets of company \(i\) in year \(t-1\)
$S_t$ = Total sales of company $i$ in year $t-1$
$\Delta S_t$ = Sales of company $i$ in year $t$ minus sales in year $t-1$
$\varepsilon_t$ = *Error term*, where *error term* / residual value of the estimated results is abnormal CFO of company $i$ in year $t$.

3. Based on the above regression test results, it is taken the value of $\varepsilon$ (error), in which the value reflects abnormal CFO indicating the existence of real earnings management by the measurement of cash flow operation. If the residual value is high, the real earnings management is also high. It is due to an error rate of explanatory power of sales ($sales$), changes in sales ($\Delta sales$) to CFO. If the residual value close to zero, the company is not identified to perform real earnings management by the measurement of cash flow operation.

4. Making group and classification of real earnings management.

5. Analyzing the research results and comparing between real earnings management in a company.

6. Making a resume to know the real earnings management that has been done by the measurement of cash flow operation before and after the implementation of IFRS on manufacturing companies listed in Indonesia Stock Exchange from 2011 to 2013.

The samples are manufacturing companies that meet the following criteria:

1. Having complete data of manufacturing companies for the period of the study, from 2011 to 2013.
2. Using Indonesian Rupiah (IDR) in the financial reporting.
3. Having an accounting period ending on December 31, and do not move to industrial sector.

The data used in this research are secondary data which are obtained in the form of ready-made (provided) through publications and information issued by various organizations or public companies listed in Indonesia Stock Exchange. These data include the components of real earnings management using measurements of cash flow operation (CFO) such as sales ($S$), changes in sales ($\Delta S$), and assets ($A$).

The sources of data in this study are obtained through the website owned by the Indonesia Stock Exchange (IDX), namely www.idx.co.id and from Indonesian Capital Market Directory (ICMD). The data collection method is using the method of documentation, a method of collecting data obtained by the researcher with the direct view from the annual financial statements of the companies listed in Indonesia Stock Exchange (IDX) that become the objects of this research.

Data analysis is a way to process collected data that can provide interpretation. The results of the data processing are used to address the problems that have been formulated. The data that have been collected are analyzed using the following steps:

1. Performing the calculation of real earnings management with the measurement of cash flow operation before and after the implementation of IFRS on manufacturing companies listed in Indonesia Stock Exchange that will be made as the research samples.
2. Performing Normality Test. This test aims to test whether or not a variable has normal distribution. The normality test is using One-Sample Kolmogorov-Smirnov Test. The data are said normally distributed if sig $K-S > 0.05$. Otherwise, if sig $K-S < 0.05$, the data are said not normally distributed.
3. The steps of hypothesis testing are as follows:

---

**Figure 1**
Research Framework

1. Before the Implementation of IFRS
2. After the Implementation of IFRS
3. Real earnings Management with the Measurement of Operating Cash Flow
4. Difference Test
The instruments of difference test used in this research depend on the normality of the data. If the data are normally distributed, the instrument used is paired sample t-test. In addition, if the data are not normally distributed, the instrument used is Wilcoxon signed rank test.

4. DATA ANALYSIS AND DISCUSSION

Real Earnings Management and the Measurement of Cash Flow Operation

Real earnings management through the measurement of cash flow operation is obtained from the results of data processing using SPSS during the period of observation from 2011 to 2013 to get the value of a standard deviation. Standard deviation value is the value of real earnings management through cash flow operation. Here is the output of descriptive test conducted on the variable of real earnings management with the measurement of cash flow operation that includes the minimum value, maximum value, mean, and standard deviation.

In Table 1, it can be seen that the mean value of real earnings management before the implementation of IFRS in 2011 is 0.019626, with the standard deviation of 0.1652404. In this study, the results can be interpreted that the distance of the value of real earnings management after the implementation of IFRS in 2013 is 0.008096, with the standard deviation of 0.1660636. This means that in the period after the implementation of IFRS, there is no indication to perform real earnings management with the measurement of cash flow operation because the minimum and maximum values of the mean value of real earnings management with the measurement of cash flow operation is in the interval of real earnings management figures, from 0.075 to 0.075 (Roychowdhury 2006).

And for the mean value of real earnings management after the implementation of IFRS in 2013 is 0.019626, with the standard deviation of 0.1660636. In this study, the results can be interpreted that the distance of the value of real earnings management after the implementation of IFRS in 2013 is 0.1660636, which is above the mean value. In which it shows that the data variation is getting more different and also shows the value of real earnings management with the minimum value of -0.4377 and the maximum value of 0.5162. This means that in the period after the implementation of IFRS, there is no indication to perform real earnings management with the measurement of cash flow operation because the minimum and maximum values of the mean value of real earnings management with the measurement of cash flow operation is in the interval of real earnings management figures, from -0.075 to 0.075 (Roychowdhury 2006).

Based on the results of SPSS processing, it classifies which companies that are indicated to perform real earnings management with the measurement of cash flow operation and those that are not indicated to perform real earnings management with the measurement of cash flow operation. The classification of real earnings management with cash flow operation using the value of earnings management obtained by performing regression test of the sales in year t which is weighted by assets of the previous year, change in sales in year t which is weighted by assets of the previous year against the CFO in year t which is weighted by assets of the previous year. From the results of these tests, it is obtained residual value. The residual value indicates whether or not the subjects of this research perform real earnings management. The classification is made by making the interval of the real earnings management figures, from -0.075 to

### Table 1

**Descriptive Statistics**

<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Earnings Management Before</td>
<td>92</td>
<td>-0.4377</td>
<td>.5162</td>
<td>0.019626</td>
<td>0.1652404</td>
</tr>
<tr>
<td>Real Earnings Management After</td>
<td>92</td>
<td>-0.4254</td>
<td>0.7092</td>
<td>0.008096</td>
<td>0.1660636</td>
</tr>
</tbody>
</table>

Source: Processed data of SPSS.

### Table 2

**Status of Real Earnings Management**

<table>
<thead>
<tr>
<th>Period</th>
<th>Indicated</th>
<th>Not Indicated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before IFRS</td>
<td>44 (52.2%)</td>
<td>48 (47.8%)</td>
</tr>
<tr>
<td>After IFRS</td>
<td>49 (53.3%)</td>
<td>43 (46.7%)</td>
</tr>
</tbody>
</table>
0.075, where it is said that there is no indication to perform real earnings management when the real earnings management figures are from -0.075 to 0.075. And it is said to perform real earnings management when the real earnings management figures are out of the figures from -0.075 to 0.075. The status of the companies which are indicated or not indicated to perform real earnings management activity with the measurement of cash flow operation before and after the implementation of IFRS in the period 2011-2013 are as in Table 2.

In Table 2, it can be seen that there are 48 companies that are not indicated to perform real earnings management with the measurement of cash flow operation before the implementation of IFRS in the period 2011-2013 as in Table 2.

In Table 2, it can be seen that there are 48 companies that are not indicated to perform real earnings management with the measurement of cash flow operation before the implementation of IFRS in the period 2011 with a percentage of 52.2%, and there are 43 companies that are not indicated to perform real earnings management with the measurement of cash flow operation after the implementation of IFRS in the period 2013 with the percentage of 46.7%. While there are 44 companies that are indicated to perform real earnings management with the measurement of cash flow operation before the implementation of IFRS in the period of 2011 with the percentage of 47.8%, and there are 49 companies that are indicated to perform real earnings management with the measurement of cash flow operation after the implementation of IFRS in the period of 2013, with percentage of 53.3%.

From these results it can be concluded that there is a decrease in the number of companies that are not indicated to perform real earnings management with the measurement of cash flow operation before the implementation of IFRS. Yet conversely, there is an increase in the number of companies that are indicated to perform real earnings management with the measurement of cash flow operation after the implementation of IFRS. These results may indicate that there is indeed no difference between the management before the implementation of IFRS and the management after the implementation of IFRS, this is because cash flows are the real or tangible accounts, which are not easy to be managed or manipulated by management.

Normality Test

Data normality test is done to see if the data are normally distributed or not. Normality test in this study is using the Kolmogorov-Smirnov (KS). Data are said normally distributed if the significance level of the Kolmogorov-Smirnov (KS) > 0.05, otherwise the data are said not normally distributed if the significance level of the Kolmogorov-Smirnov (KS) < 0.05. The results of the data normality test in this study can be seen in Table 3.

Table 3 shows the results of Kolmogorov-Smirnov test which is performed on the real earnings management with the measurement of cash flow operation before and after the implementation of IFRS in the period 2011-2013. In Table 3, it can be seen that for the variable of real earnings management with the measurement of cash flow operation before the implementation of IFRS in the period 2011 has the value of Kolmogorov-Smirnov of 1.114 with a significance value of 0.167. From these results, it can be concluded that the distribution of the data of real earnings management with the measurement of cash flow operation before the implementation of IFRS in the period 2011 can be considered normal because it has a probability value ≥ 0.05. As for the variable of real earnings management with the measurement of cash flow operation after the implementation of IFRS in the period 2013 has the value of Kolmogorov-Smirnov of 0.802 with a significance value of 0.541. From these results, it can be
concluded that the distribution of the data of real earnings management with the measurement of cash flow operation after the implementation of IFRS in the period of 2013 can be considered normal because it has a probability value $\geq 0.05$.

**Hypothesis Testing**

The hypothesis testing in this research is using t-test by conducting difference test of the average pairs of data, i.e. the average ratio of real earnings management before and after the implementation of IFRS. Difference test is performed using the model of analysis of paired sample t-test. The hypothesis testing using a paired sample t-test is a difference test of the average pairs of data using the research data, which are normally distributed.

In Table 2, it can be seen that the mean value of real earnings management with the measurement of cash flow operation before the implementation of IFRS is 0.019626, and after the implementation of IFRS is 0.1652404. This means that the mean value of real earnings management with the measurement of cash flow operation after the implementation of IFRS is lower than the mean value of real earnings management with the measurement of cash flow operation after the implementation of IFRS, by generating the difference in the mean value of real earnings management before and after the implementation of 0.1456144 with the standard deviation of -0.0008232.

Viewed from the paired sample test in Table 4, the value of tcount is 0.703, in which the positive sign indicating that the value of real earnings management after the implementation of IFRS is greater than the value of real earnings management after the implementation of IFRS. In Table 4, the value of t for df = 91, and the value of tcount is 0.703, in which the positive sign indicating that the value of real earnings management after the implementation of IFRS is greater than the value of real earnings management after the implementation of IFRS. In Table 4, the value of t for df = 91 and uses a significance level $\alpha = 0.05$, in which the calculation of tcount is to obtain the results of the hypothesis. In the output results, in addition to using the tcount which is compared with table, the hypothesis testing can also be shown through the level of significance of the mean value of real earnings management before and after the implementation of IFRS, i.e. 0.484 (above $\alpha = 0.05$) which means that $H_0$ is accepted or $H_1$ is rejected. This means that there is no difference between the real earnings management with the measurement of cash flows operation before and after the implementation of IFRS.

This study focuses on examining the differences in the real earnings management with the measurement of cash flow operation before and after the implementation of IFRS. This study is using 92 companies as the research subjects during the study period of 2011-2013. From the test results of paired samples t-tests that have been done indicate the results of hypothesis that $H_0$ is accepted or $H_1$ is rejected, with the significance level is 0.484, which means that there is no difference between real earnings management with the measurement of cash flow operation before and after the implementation of IFRS. This can be seen in Table 1 on descriptive statistics, which indicates that the minimum value and the maximum value of real earnings management with the measurement of cash flow operation before and after the implementation of IFRS are in the interval criteria of the number of real earnings management value from -0.075 to 0.075. In addition, the cash flow operation is the real accounts which are not easy to be managed or manipulated by management.

5. CONCLUSION, IMPLICATION, SUGGESTION, AND LIMITATIONS

This study aims to analyze the differences in real earnings management with the measurement of cash flow operation in the manufacturing companies listed in Indonesia Stock Exchange in the period of 2011-2013. Real earnings management is one form of earnings management, in which in this study is using the measurement of cash flow operation. The components of real earnings management with the measurement of cash flow operation consist of cash flows of the current year weighted by total assets of the previous year, one per assets of the previous year, sales in the current year weighted by total assets of the previous year, and the difference in sales between the current year and the previous year weighted by total assets of the previous year. The result of the real earnings management is the residual value of the real earnings management, where the residual value is the value of real earnings management with the measurement of cash flow operation.

The testing, which is conducted in this study, is the difference test using paired sample t-test, a difference test of the average paired data, using the research data which are normally distributed. Based on the analysis of difference test, it shows that there is no difference between real earnings management with the measurement of cash flows operation before and after the implementation of
IFRS. This can be seen in Table 1 on descriptive statistics, which indicates that the minimum value and the maximum value of real earnings management with the measurement of cash flow operation before and after the implementation of IFRS are in the interval criteria of the number of real earnings management value from -0.075 to 0.075. In addition, the cash flow operation is the real accounts, which are not easy to be managed or manipulated by management because cash flows operation is a real activity conducted by the company and which is very difficult for the management to perform manipulation for a particular purpose.

The researcher realizes that from the results presented above, there are still many shortcomings and rudimentary. Therefore, the researcher would like to put forward some suggestions that are expected to be useful for further research. The suggestions are:

1. It is recommended for further researches to look for other data sources in addition to www.idx.co.id or Indonesian Capital Market Directory (ICMD) so that the data obtained will be more complete.
2. It is recommended for further research that they extend the study period in order to obtain an idea of the more accurate difference regarding real earnings management with the measurement of cash flows operation with the implementation of IFRS in a longer period of time.

This study still has some weaknesses and limitations that need to be improved and require more attention, such as:

1. The data of this study are only obtained from www.idx.co.id and completed by Indonesian Capital Market Directory (ICMD), so that there is a reduction of the subject caused by the criteria of the research subjects that have been determined.
2. This research is only taken in two years from 2011 to 2013, so that the results are possibly less reflective of the actual phenomenon.

REFERENCES


Sulistiawan, D, Januarsi, Y, and Alvia, L 2011, Creative Accounting, Jakarta: Salemba Empat.
