The Effect of Industrial and Geographic Diversifications on the Earnings Management of the Manufacturing Companies in Indonesia

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Abstract
This research was conducted to address the prevalent issues regarding the effect of industrial diversification and geographic diversification either partially or simultaneously on the practice of earnings management. By utilizing purposive sampling techniques on the secondary data, the total of 80 sample studies were drawn from manufacturing companies listed on Indonesian Stock Exchange for the period of 2011-2014. Multiple linear regression analysis provided by SPSS 21.0 was also employed to test the hypotheses constructed within this research.

The result of the multiple linear regression analysis presents evidence that industrial diversification and geographic diversification simultaneously have a significant effect on the practice of earnings management. Alongside, it also affirms that partially, industrial diversification and geographic diversification have a significance effect on the practice of earnings management. These findings provide scholarly evidence on the implication of diversification strategies on the practice of earnings management to help financial statement users (investors, creditors, stakeholders, etc.), accounting standard setters, and regulators to assess the pervasiveness of earnings management within the company.

1. Introduction

Global volatility of economic condition that often triggers economic crises indeed shakes up the existence (stability) of particular businesses in a country, either directly or indirectly. The 1998 and 2008 economic crises, for instance, substantially exhibit an adverse impact of business climate in Indonesia, paralyzing most of economic activities due to a large number of companies that eventually went to bankruptcy (were gone bankrupt) (Kartono, 2010). Undoubtedly, this impact has drawn the attention of managers to think of sustainability strategies to continuously develop and thrive amidst the unpredicted economic condition as well as emerging business competition. One of the prevalent strategies chosen is diversification, either industrially or geographically, as they are both believed to reduce the risks of the company's business (Harto, 2005).

Rash of literatures demonstrate that diversification strategies can improve the performance of companies' profitability (Farooqi, 2014; Satoto, 2007). However, this diversification, despite its ability to create multi-sources of revenue by expanding the business line, segment, and market share, demands a higher degree of organizational complexity which may create another unfavorable condition (El Mehdi and Sebuoi, 2011). Agency conflict hypothesis argues that the company's degree of organizational complexity influences the ability of managers to alter and modify information as well as manipulate the earnings. Admittedly, this argument is reinforced by unveiling earnings management cases by industrially and geographically diversified companies, such world class company as Enron and Indonesian company PT Kimia Farma (Arfan, 2006). Thus, one might ask, does diversification create a favorable condition for the earnings management?

Considering the prospective unfavorable consequences of diversification strategies, this paper insists on seeking empirical evidence related to the effect of industrial diversification and geographic diversification on the practice of earnings management. The findings of this study are hoped to provide scholarly evidence on the implication of diversification strategies on the practice of earnings management. As such, this study contributes to help financial statement users (investors, creditors, stakeholders, etc.), accounting standard setters, and regulators to assess the pervasiveness of earnings management within the company.

The remainder of this paper is organized as follows. Section 2 provides review of relevant literature. Section 3 presents methodological approach on which the analyses of the study are based. Section 4 discusses the empirical findings and their implications and finally,

section 5 provides the closing remarks of this paper.

2. Review of Selected Literature

According to the agency conflict hypothesis, the ability of managers to distort information and manipulate earnings depends on the company's degree of organizational complexity. Empirical research shows that diversified company is generally larger in more complex organizational structures, their operations are less transparent and that their analyses poses difficulties to investors and analyst alike (Chang and Yu, 2004; Kim and Pantzalis, 2003; Liu and Qi, 2007). Therefore, a company that is industrially and geographically diversified is supposed to have complex organizational structure as it deals with many business segments and divisions. With this regard, the detailed operation of each segment then is only known by the management and is hardly depicted to shareholders.

There have been several studies conducted to examine the effects of industrial and geographical diversification on the practice of earnings management. Rodriguez and Hemmen (2010), who conducted a study in Europe, find that for less diversified companies, discretionary accruals is less pronounced, whereas in relatively more diversified companies, discretionary accruals appears to be more pronounced. Lim et al. (2007), conducted a research in seasoned equity offering setting, also suggest that diversified companies are more aggressive in managing earnings than non-diversified companies. Farooqi et al. (2014) also confirm this view in their research on American companies.

Merits of literatures also suggest that there is a significant effect of geographic diversification to the practice of earnings management. In this regard, El Mehdi and Sebuoi (2011) who conducted a research on U.S. companies find that earnings management increases with the level of geographic diversification. They provide evidence that for multinational companies, regardless of whether they operate in one or more business segments, they find income-increasing accruals. This finding is consistent with the view that the costs of geographic diversification outweigh the benefit. They also suggest that the aggressive manipulation in global diversified companies is motivated by high operating cash-flow volatility, high information asymmetry, and amplified operating risk. Other similar research is conducted by Chin et al. (2009) on Taiwanese company. They also agree that greater corporate internationalization is associated with a higher level of earnings management by way of greater asymmetry information and transparency decrement. On the other hand, a number of studies provide different findings which are

inconsistent with the above mentioned. The work of Jiraporn et al. (2008), for example, provides empirical evidence that geographical diversification alone does not appear to impact earnings management. Some other researchers even reveal that geographic diversification can help in mitigating the practice of earnings management (Farooqi et al., 2014).

Taking the literature review and previous findings as the point of departure, the researcher hypothesizes:

Ha₁: Industrial diversification and geographic diversification simultaneously influence the practice of earnings management.

Ha₂: Industrial diversification positively influences the practice of earnings management.

Ha₃: Geographic diversification positively influences the practice of earnings management.

3. Research Method

3.1 Data

This study employed quantitative approach and was aimed at investigating whether or not there was an effect of industrial diversification and geographic diversification on the practice of earnings management. The data were drawn from IDX website, encompasses all listed manufacturing companies covering the 2011-2014 period.

In this study, the earnings management is treated as the dependent variable, which is measured by discretionary accrual (DA) which is derived from the difference of total accrual (TA) and non-discretionary accrual (NDA). To measure discretionary accrual, the modified jones model is used. The reason why the researcher uses this model is that because this model is assumed to be the best model to investigate the earnings management and also give a strong result (Dechow et al., 1995). Further, this model has also been widely accepted in accounting literature to measure earnings management (Arfan, 2006).

Industrial diversification and geographic diversification are treated as the independent variables. Industrial diversification (IHERF) is translated to the number of industrial segments or business segment owned and reported by company in the financial statement and specifically shown in the notes to the company's financial statement. We use the sales-based Herfindahl index as an alternative proxy for industrial diversification (Farooqi et.al, 2014). The Herfindahl index for the ith company in year t is computed as:

$$\text{IHERFi,t} = \sum \left[\frac{\text{I\_SALES}}{\text{FSALES}}\right]^2$$

where I_SALES denotes the industrial segment sales for *i* company in year *t* and FSALES denotes the company's total sales across all reported industrial segments in that year. Geographical diversification (GHEFR) is translated to the number of geographical segments owned and reported by the company in financial statements that are specifically shown in the notes to the company's financial statements. We also use the sales-based Herfindahl index as an alternative proxy for geographic diversification (Farooqi et al., 2014). The Herfindahl index for the *i*th company in year *t* is computed as:

$$\text{GHERFi,t} = \sum \left[\frac{\text{G\_SALES}}{\text{FSALES}}\right]^2$$

where G_SALES denotes the respective geographical sales for the company in year *t* and FSALES is the company's total sales across all reported geographical segments in that year.

3.2 Model Specification

To investigate the impacts of industrial diversification and geographic diversification on earnings management, this study employs multiple regression models of the panel data, as follows:

$$\text{DA} = a + b_1\text{IHERF} + b_2 \text{ GHERF} + \varepsilon$$

where DA is earnings management, a is constant term, b_1 and b_2 are the estimated parameters for industrial diversification (X_1), geographic diversification (X_2), and ε is the error term.

4. Findings and Discussions

4.1 Descriptive Statistics

Descriptive statistics is the analysis of data that provide a concise description of a given data set. The analysis includes the maximum and minimum values, means and standard deviations. The following table presents the results of descriptive statistics of the data studied.

Table 1
Descriptive Statistics Test Result

	N	Minimum	Maximum	Mean	Std. Deviation
IHERF	80	0.0000	1.0000	0.6434	0.2559
GHERF	80	0.1684	1.0000	0.5807	0.2515
DA	80	-0.0207	1.2648	0.3953	0.2554
Valid N (listwise)	80				

Source: Output SPSS 21.0 (2016)

Table 1 display the descriptive statistics for the variable of industrial diversification (IHERF), geographic diversification (GHERF) and earnings management (EM) of the total 80 sample studies. The maximum values of both diversifications, either IHERF or GHERF is 1.0000, which means that there are companies that do not diversified at all or only have one single segment, either industrially or geographically. The minimum value of IHERF is 0.000 while GHERF is 0.1684. On average, the value of IHERF and GHERF is 0.6434 and 0.5807 with standard deviation of 0.2559 and 0.2515, respectively. In regards to earnings management, the maximum value is 1.2648 while the minimum is -0.0207. On average, the value of EM is 0.3953 with standard deviation of 0.2554.

4.2 Hypothesis Testing

4.2.1 F-Statistical Test

F-statistical test is undertaken to examine how strong the effects of all independent variables simultaneously are on the dependent variable. Table 2 provides the result of F-statistical test of these research variables.

Table 2
F-Statistical Test
ANOVA[b]

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	1.400	2	0.700	14.367	.000[a]
Residual	3.751	77	0.049		
Total	5.151	79			

Source: Output SPSS 21.0 (2016)

a. Predictors: (Constant), IHERF, GHERF

b. Dependent Variable: DA

Table 2 above reveals that the level of significance is 0.000 which is obviously less than 0.05 (5%). It suggests that all the independent variables affect the dependent variable simultaneously. Thus, it can be concluded that the first hypothesis (Ha1) stated that industrial diversification and geographic diversification simultaneously affect the practice of earnings management is not rejected.

4.2.3 T- Statistical Test

T-statistical test is performed to see how strong the partial effect of each of independent variable on the dependent variable (Ghozali, 2013:98). Table 3 reports the results of t-statistical test of these research variables:

Table 3
T-Statistical Test
Coefficients[a]

Model	Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	T	Sig.
1 (Constant)	-0.01	0.086		-0.117	-0.907
IHERF	0.203	0.097	0.204	2.091	0.040
GHERF	0.474	0.099	0.466	4.786	0.000

Source: Output SPSS 21.0 (2016)

Based on table 3, industrial diversification variable (X_1) has a significance level of 0.040. As the level of significance is less than 0.05, and the regression coefficient is positive, i.e.

0.203, thus it infers that (X_1) has a positive significance influence on the dependent variable. Therefore, it can be concluded that the second hypothesis (Ha_2) stated that industrial diversification has a positive significance influence on the earnings management is not rejected.

Geographic diversification variable (X_2) has a significance level of 0.000. As the level of significance is less than 0.05 and the regression coefficient is positive, i.e. 0.474, so it means that (X_2) has a positive significance influence on the dependent variable. Hence, it can be concluded that the third hypothesis (Ha_3) stated that geographic diversification has a positive significance influence on earnings management is not rejected.

4.2.4 Coefficient of Determination Test

Coefficient of determination test is used to examine how substantial the independent variable is at explaining the dependent variable. The coefficient of determination can be seen from the value of R Square in table 4 below:

Table 4
Coefficient of Determination Test
Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.601[a]	.272	.253	0.2207

a. Predictors: (Constant): IHERF, GHERF
b. Dependent Variable: DA
Source: Output SPSS 21.0 (2016)

Table 4 displays the result of R Square, i.e. 0.253. It means that 25.3% of the variance of earnings management can be explained by the independent variables of industrial diversification and geographic diversification. However, the rest (100%-25.3% =74.7%) is explained by another variables which are not included within this research.

4.3 Discussion

Based on the results of F-test in table 2, the derived significance value is 0.000, which is smaller than 0.05 (5%). This means that all the independent variable within this research (industrial diversification and geographic diversification) simultaneously influence the dependent variable (earnings management). The value of R square, 0.253, in table 4 shows

that the independent variables in the model can explain 25.3% of the dependent variable. Thus, to sum up, the first hypothesis (Ha_1), which stated that industrial diversification and geographic diversification simultaneously affect the practice of earnings management is not rejected while $H0_1$ is rejected.

The level of significance of industrial diversification variable (X_1) is 0.04 and its regression coefficient is 0.203 as shown in table 3. As the level of significance is less than 0.05 (5%), and the regression coefficient is positive, it indicates that industrial diversification has a positive significant influence on the dependent variable of earnings management. This result contradicts the work of Lupitasari and Marsono (2014) which stated that industrial diversification does not have a significant effect on the practice of earnings management. This contradiction might be caused by different objects and proxies used in the study. Lupitasari and Marsono (2014) conducted a study on mining and banking companies and measured the industrial segment by how many segments the company reported, while this current research is focused on the manufacturing companies and uses Herfindahl index to measure the industrial diversification.

On the other hand, the result of this research is supported by the work of Rodriguez and Hemmen (2010), Lim et al. (2007) and Farooqi et al. (2014). They all found that for less diversified companies, discretionary accruals are less pronounced, whereas in relatively more diversified companies, discretionary accruals appear to be more pronounced.

Finally, the result of this research also confirms the agency conflict hypothesis which stated that the ability of managers to distort information and manipulate earnings depends on the company's degree of organizational complexity as caused by industrial diversification (Chang and Yu, 2004; Kim and Pantzalis, 2003; Liu and Qi, 2007). Thus, the higher the level of industrial diversification is carried by the company, the more likely the company to experience earnings management problem.

To sum up, multiple regression analysis of this study reveals that industrial diversification has a positive significant influence on earnings management. Within this regards, it means that Ha_2 is not rejected while $H0_2$ is rejected.

Geographic diversification variable (X_2) has regression coefficient value of 0.474 at the significance level of 0.000 as shown in Table 3. As the level of significance is less than 0.05 (5%), and the regression coefficient is positive, it infers that geographic diversification has a positive significance influence on the dependent variable of earnings management. This result is conflicted with the study conducted by Jiraporn et al. (2008) who provides

empirical evidence that geographical diversification alone does not appear to impact earnings management practices. This conflicted result might be raised because of the difference of sample studies and year of observation between the two. Jirapon et al. (2008) conducted a study on American companies for the period of 1994-1998, while this current research was conducted on companies listed on Indonesian Stock Exchange for the period of 2011-2014.

On the other hand, the output of this research is line with the research conducted by El Mehdi and Sebuoi (2011) who finds that earnings management increases with the level of geographic diversification. This finding is also consistent with the work of Chin et al. (2009) which states that greater corporate internationalization is associated with a higher level of earnings management.

Thus, it is inferred that again this current research agrees to accept the information asymmetry problem under agency conflict hypothesis proposed. Deployment of company's asset and operations across different geographical region increases the level of organizational complexity. This organizational complexity will in turn increase the level of information asymmetry between the managers and the shareholders (Lupitasari and Marsono, 2014) and at the same time this also leads to transparency decrement (Chin et. al, 2009) which opens the door to the practice of earnings management.

There is, therefore, multiple regressions analysis of this study agrees that geographic diversification has a positive significant influence on earnings management. Within this contention, it means that H_3 is not rejected while $H0_3$ is rejected.

5. Conclusion

This study is aimed at seeking the empirical evidence of the effect of industrial diversification and geographic diversification on the practice of earnings management in manufacturing companies in Indonesia. The results suggest that industrial diversification and geographic diversification simultaneously and partially have a significant positive effect on the practice of earnings management on manufacturing companies in Indonesia. This evidence provides a new insight for the financial statement users, such as stockholders, potential investors and creditors for the sake of their decision-making process. In determining the performance of the company, they should take into account the more risk of earnings management practice that bears from an industrially and geographically diversified companies.

However, one shall also note that the assosiation between diversification and earnings

management may not hold in other sectors and countries. Different behaviors in different sectors and countries may reflect different pressure towards the practice of earnings management. In this regards, there is a need to conduct more examination of this effects to other sectors or countries.

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