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MOTIVES FOR FIXED ASSET REVALUATIONS: EMPIRICAL STUDY IN INDONESIA STOCK EXCHANGE

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Abstract

This study examines the motives of fixed asset revaluations. The temporary tax cut policy on fixed asset revaluations in Indonesia occurred in 2015 and 2016. Fixed asset revaluation is restatement of fixed asset value according to current value. The motives in this study include firm size, leverage, loss, tax period, and profitability. This study used a sample of Indonesian listed firms during 2012-2017. The sample used in this study was 2753 firm-years. Based on logistic regression analysis, the results indicate that firms with greater firm size and higher leverage are more likely to perform fixed asset revaluations. Conversely, the results show a negative relationship for the variables including tax period and profitability. If there is a temporary tax cut policy of fixed asset revaluations and the lower the profitability, the more likely it is for them to perform fixed asset revaluations. Additional test results for the non-financial industry are consistent.

Keywords: revaluations, firm size, leverage, loss, profitability, tax cut policy

1. Introduction

This study aims to examine the motives of asset revaluation. There are various reasons why firms revalue their assets, one of which is to display the fair value of their assets, a move away from historical cost, so they change from the cost method into the revaluation method. This research is associated with policy changes in Indonesian Financial Accounting Standards (Pernyataan Standar Akuntansi Keuangan/PSAK) No. 16 (Revised in 1994) which did not allow revaluation of fixed assets. PSAK No. 16 (Revised in 2007) required firms to choose between the cost model and the revaluation model as the measurement accounting policy for fixed assets. This version was later revised in 2011 and 2015 (IAI, 2015). Minister of Finance Regulation No. 191/PMK.010/2015 states that the tax rate for asset revaluation, which was originally 10%, is reduced to 3% if the revaluation is done in 2015, 4% if done in the first semester of 2016, and 6% if done in the second semester of 2016 (Kemenkeu RI, 2015).

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Several firms listed on the Indonesia Stock Exchange have revalued their assets. The researcher observed that an increasing number of firms revalued their assets during the tax cut (2015 and 2016). In 2014, only 19 firms revalued their assets but this figure increased dramatically to 62 and 71 firms in 2015 and 2016 respectively (Researcher Data, 2018).

Many studies have examined asset revaluation motives. Some found motives such as funding (Baek & Lee, 2016; Barlev, Fried, Haddad, & Livnat, 2007; Brown, Izan, & Loh, 1992; Choi, Pae, Park, & Song, 2013; Easton, Eddey, & Harris, 1993; Iatridis & Kilirgiotis, 2012; Lin & Peasnell, 2000; Whittred & Chan, 1992) and the level of corporate assets (Choi et al., 2013; Iatridis & Kilirgiotis, 2012; Lopes & Walker, 2012). The funding motive can be seen from leverage, liquidity, funding, and funding requirements while the level of company assets from the intensity of fixed assets and capital expenditure. In addition to these motives, this study examines whether fixed asset revaluation is also motivated by the reduction in revaluation tax rates. This study examines the motivation behind asset revaluation including firm size, leverage, loss, tax cut policy period, and profitability.

2. Hypotheses

2.1 Firm Size and Fixed Asset Revaluations

Large firms tend to decrease their profits when there are changes in accounting standards (Watts & Zimmerman, 1978). The larger the firm size, the more likely the firm to perform fixed asset revaluations because of the increasing magnitude of the revaluation (Brown et al., 1992; Choi et al., 2013; Iatridis & Kilirgiotis, 2012; Lopes & Walker, 2012). The higher the political cost faced by the company, the greater the likelihood that the company chooses accounting procedures that save profits for the future. This political characteristic is usually associated with large firms with higher standards than small firms. So, the larger the firm size, the more likely the company will conduct a fixed asset revaluation because it will increase the asset value and the future depreciation costs will be greater so as to reduce the political attention of the regulator.

H_1: Big firms are likely to perform fixed asset revaluations.

2.2 Leverage and Fixed Asset Revaluations

The decision to perform fixed asset revaluations is positively related to the debt to equity ratio. Firms with high leverage tend to revalue their assets (Baek & Lee, 2016; Barlev et al., 2007; Brown et al., 1992; Choi et al., 2013; Easton et al., 1993; Iatridis & Kilirgiotis, 2012; Lin & Peasnell, 2000; Whittred & Chan, 1992). The higher the leverage, the greater the benefits of the revaluation because it increases the book value of equity and reduces the chances of breaking contracts. This leverage is related to the debt agreement hypothesis. The closer the company to violating the debt contract made, the more likely the manager chooses accounting procedures that can move future earnings to the current period. The higher the company's leverage, the more firms do asset revaluation. Leverage is measured using a debt to equity ratio.

H_2: Firms with high leverage are likely to perform fixed asset revaluations.

2.3 Loss and Fixed Asset Revaluations

Firms perform earnings management to meet one of the three thresholds or benchmarks of profit to avoid loss. Firms usually manage reported earnings to avoid a decrease in profit and loss

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(Burgstahler & Eames, 2003; Burgstahler & Dichev, 1997; Wang, Tung, Chen-Chang, Lan-Fen, & Ching-Hui, 2010). Brown & Caylor (2005) also tests whether the company manages earnings by choosing one of the three threshold hierarchies or benchmarks of earnings: to avoid loss reporting, to report increased profits, or to meet analyst expectations. The results show that most managers choose the third benchmark, i.e. to meet analyst expectations. Loss-making firms tend to perform asset revaluation to make their financial statements look better. When firms are making losses, their managers tend to change the accounting method or policy so that the financial statement remain positive in the eyes of investors. It is therefore common that at the time of loss, managers will do an asset revaluation. Firms that experience losses are more likely to perform fixed asset revaluations (Choi et al., 2013). The more frequent the firms experience losses, the higher possibility the firms do asset revaluation. This net profit is measured using a dummy variable, which is 1 for firms that report losses and 0 for firms that report profits.

H_3: Firms that report losses are likely to perform fixed asset revaluations.

2.4 Tax Period and Fixed Asset Revaluations

Minister of Finance Regulation No. 191/PMK.010/2015 states that the tax rate for asset revaluation, which was originally 10%, is reduced to 3% if the revaluation is done in 2015, 4% if done in the first semester of 2016, and 6% if done in the second semester of 2016 (Kemenkeu RI, 2015). With the tax reduction, managers will be tempted to revalue their assets. The revaluation tax rates on these assets are measured using dummy variables: 0 for the year of decreased revaluation tax rates and 1 for the year of steady revaluation tax rates.

H_4: Firms in the revaluation tax cut period are likely to perform fixed asset revaluations.

2.5 Profitability and Fixed Asset Revaluations

Firms with low profitability are likely to perform fixed asset revaluations (Baek & Lee, 2016; Barlev et al., 2007; Cheng & Lin, 2009). There are three reasons why a company with high profitability does a fixed asset revaluation: to reduce political costs because the high return on assets will attract the regulators' attention, to negotiate labor, and to reduce future earnings by increasing depreciation costs (Barlev et al., 2007). Company's net income is often used by investors to measure the company's performance. Firms with positive performance will rarely perform asset revaluation because their signals are already favorable to investors. The lower the profitability, the higher the probability of asset revaluation. Profitability is measured using return on assets ratio (ROA).

H_5: Firms with low profitability are likely to perform fixed asset revaluations.

(1)

3. Method

3.1 Sample

The sample was selected based on purposive sampling to obtain a representative sample according to the predetermined criteria. The population in this study were firms listed on the Indonesia Stock Exchange (IDX) in 2012-2017. This period was chosen because PSAK 16 of 2011 came into force in 2012 and there was a decrease in revaluation tax rates in both 2015 and 2016.

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Only firms with complete data during 2012-2017 were included. The data used in this study was secondary data in the form of the 2012-2017 published annual financial reports obtained from the IDX website (www.idx.co.id). Data in 2011 is needed for variables that require t-1 data. This study excluded firms that performed downward fixed asset revaluations and negative leverage.

3.2 Variable Definition and Measurement

Fixed asset revaluations are measured with a dummy variable: 1 if the firm revalued its fixed asset in year t and 0 if otherwise. The definitions of the independent variables and their expected sign relationships with the fixed asset revaluations are given in Table 1.

Table 1. Variable Definitions

Variable	Measured as	Represented by	Expected sign
Size	Natural log of total assets	SIZE	+
Leverage	Debt to equity ratio = debt/total equity before the revaluation increment	DE	+
Loss	A dummy variable which equals to 1 if the firm reported profits in year t and 0 if otherwise	LOSS	-
Tax	A dummy variable which equals to 1 if there is no revaluation tax cut policy and 0 if otherwise	TAX	-
Profitability	Return on total assets = net income in year t/total assets in year t-1	ROA	-

3.3 Hypothesis Testing

The motivation of asset revaluation was tested with logistic regression models to examine the effect of several variables which may become motives. The hypothesis was tested using the following model 1.

Model 1:

$$\mathbf{REVAL_{it} = \beta_0 + \beta_1 SIZE_{it} + \beta_2 DE_{it} + \beta_3 LOSS_{it} + \beta_4 TAX_t + \beta_5 ROA_{it}} \ldots\ldots\ldots\ldots\ldots\ldots (1)$$

where: $REVAL_{it}$ is a dummy variable which equals to 1 if the firm revalues its fixed asset in year t and 0 if otherwise; $SIZE_{it}$ = natural log total assets; DE_{it} = debt to equity ratio (debt/total equity before the revaluation increment); $LOSS_{it}$ = a dummy variable which equals to 1 if the firm

reports losses in year t and 0 if otherwise; TAX_t = a dummy variable which equals to 1 if there is no revaluation tax cut policy and 0 if otherwise; ROA_{it} = return on total assets.

The model 1 expects positive direction on β_1 dan β_2, whereas the model 1 expects negative direction on β_3, β_4, and β_5. Additional testing is also carried out in the study by separating the sample into the non-financial and financial industries.

4. Results and Discussion

4.1 Descriptive Statistics

This study used a sample of firms listed on the Indonesia Stock Exchange (IDX) over the 2012-2017 period. Table 2 shows that this study started with 3186 firm-year observations (531 distinct firms), but not all firms had complete data because some were newly registered in 2013, 2014, or 2015 and some were delisted resulting in only 2981 firm-year observations. This study excluded firms that performed downward fixed asset revaluations (22 firm-year observation) and negative leverage (206 firm-year observations) resulting in a final sample of 2753 firm-year observations.

Table 2. Total Samples

Description	**Observations (Firm-year)**
Listed firms in IDX for 2012-2017 (531 firms x 6)	3186
Incomplete data (firm-years)	(205)
Complete data (firm-years)	**2981**
Downward fixed asset revaluations (firm-years)	(22)
Negative leverage (firm-years)	(206)
Final observations (firm-years)	**2753**

Tables 3 and 4 show the descriptive statistics of the variables used in this study. There are five fixed asset revaluation motives: firm size (SIZE), leverage (debt to equity ratio-DE), indicator variables for firms that report losses (LOSS), a period of fixed asset revaluation tax cut policy (TAX), and profitability (ROA). Table 3 shows that the average of firm size (SIZE), leverage (DE), and return on assets (ROA) was 28.6365, 1.9486, and 0.0877 respectively.

Table 3. Descriptive Statistics

	Minimum	**Maximum**	**Mean**	**Std. Deviation**
SIZE	22.7577	34.6577	28.6365	1.8049
DE	0.0001	30.8806	1.9486	2.7812
ROA	-1.9210	74.9967	0.0877	1.4636
N	2753			

Where: SIZE = natural log of total assets; DE = debt to equity ratio (debt/total equity before the revaluation increment); ROA = return on total assets.

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Table 4 shows the frequency of categorical variables: indicator variable for firms that report losses (LOSS), a period of fixed asset revaluation tax cut policy (TAX), categorical variable for leverage (DElevel), and fixed asset revaluation (REVAL).

Table 4. Frequency of Categorical Variables

Variable	Category	Frequency
LOSS	Loss	543
	Profit	2210
TAX	No tax cut policy period	1799
	Tax cut policy period	954
REVAL	Revaluer	181
	Non-revaluer	2572

where: LOSS = a dummy variable which equals to 1 if the firm reports losses in year t and 0 if otherwise; TAX = a dummy variable which equals to 1 if there is no revaluation tax cut policy and 0 if otherwise; REVAL is a dummy variable which equals to 1 if the firm revalues its fixed asset in year t and 0 if otherwise.

Based on Table 4, there were 2210 firm-year observations who reported profits while the other 543 reported losses. For TAX variables, the periods that experienced tax cut on asset revaluation were 2015 and 2016 (954 firm-year observations) while the periods without tax cut were 2012, 2013, 2014 and 2017 (1799 firm-year observations). For the REVAL variable, firms that performed fixed asset revaluations were 181 firm-year observations while those that did not were 2572 firm-year observations.

4.2. Results

This study examined the motives of fixed asset revaluation based on firm size, loss, leverage, period of tax rates, and profitability. Because the dependent variable is a dummy variable, this study was tested using logistic regression and the result is shown in Table 5.

Table 5. Hypothesis Testing Results

Model 1: $REVAL_{it} = \beta_0 + \beta_1 SIZE_{it} + \beta_2 DE_{it} + \beta_3 LOSS_{it} + \beta_5 TAX_t + \beta_6 ROA_{it}$

Variables	Hypothesis	Expected Sign	Model 1
SIZE	H_1	+	0.186***
DE	H_2	+	0.115***
LOSS	H_3	-	0.624**
TAX	H_4	-	-1.204***
ROA	H_5	-	-1.791**
McFadden R^2			0.096
Sig. of Hosmer & Lemeshow Test			0.05
Sample size			2753

*Significance level at 0.10; **Significance level at 0.05; ***Significance level at 0.01

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where: Dependent variable is a dummy variable which equals to 1 if the firm revalues its fixed asset in year t and 0 if otherwise; SIZE = natural log of total assets; DE = debt to equity ratio (debt/total equity before the revaluation increment); LOSS = a dummy variable which equals to 1 if the firm reports losses in year t and 0 if otherwise; TAX = a dummy variable which equals to 1 if there is no revaluations tax cut policy and 0 if otherwise; ROA = return on total assets.

Model 1 is the result of hypotheses testing using logistic regression while Model 2 is the result of additional testing in which the leverage was measured using DElevel. This additional testing will be discussed more fully in the additional subtest. Table 5 shows that McFadden R^2 value was 0.096 which means that the variability of the dependent variable can be explained by the variability of the independent variables of 9.6%. Then, the significance value of Hosmer and Lemeshow Test was 0.05, which means that the model is able to predict the value of its observations or the model is deemed fit.

The logistic regression results in Table 5 in model 1 indicate that the larger the firm size (the regression coefficient of SIZE 0.186 and significance level at 0.01) and the leverage (the regression coefficient of DE 0.115 and significance level at 0.01), they are more likely to perform fixed asset revaluations. Furthermore, model 1 also shows that if there is a decrease in the fixed asset revaluation tax rate (the regression coefficient of TAX -1.204 and significance level at 0.01) and the lower the company's profitability (the regression coefficient of ROA -1.791 and significance level at 0.05), then the company tends to revalue its fixed assets. However, the test results show that the regression coefficient of the LOSS variable was positive (0.624 and significance level at 0.05) and hence did not match its expected sign.

4.3. Discussion

The results show that the larger the firm size, the more likely it is that the company performs fixed asset revaluations. These results support hypothesis 1, meaning that larger firms are more likely to perform revaluation to increase assets and the future cost of depreciation and thereby reducing the political attention from the regulator. These results are consistent with those of Brown et al. (1992), Choi et al. (2013), Iatridis & Kilirgiotis (2012), and Lopes & Walker (2012).

Firms with more leverage are more likely to perform fixed asset revaluations. These results support hypothesis 2, meaning that firms with higher leverage tend to revalue their assets to strengthen the company's financial position and obtain capital to fund the firms' investment plan. These results are consistent with those of Baek & Lee (2016), Barlev et al. (2007), Brown et al. (1992), Choi et al. (2013), Easton et al. (1993), Iatridis & Kilirgiotis (2012), Lin & Peasnell (2000), and Whittred & Chan (1992). There is a negative relationship between loss and fixed assets revaluation and hence does not match its expected sign. Firms that experience losses tend to not revaluate fixed assets. The result is inconsistent with that of Choi et al. (2013).

Firms are likely to perform fixed asset revaluations during the tax cut and hence support hypothesis 4, which means that if there is a tax reduction policy, firms are likely to revalue their fixed assets. The results show that the lower the profitability, the more likely it is for firms to perform fixed asset revaluations and hence support hypothesis 5. The revaluation is performed to reduce political fees and future earnings so that it will not become a concern for regulators and any interested parties. These results are consistent with those of Baek & Lee (2016), Barlev et al.

(2007), and Cheng & Lin (2009). Based on the decision usefulness theory, firms that perform fixed asset revaluations aim to provide useful information to users of financial statements.

4.4. Additional Test

This study also conducted tests in testing the fixed asset revaluation motive by grouping firms into non-financial and financial industry groups. Following are the results of testing the fixed asset revaluation motive after being separated into the non-financial and financial industry groups.

Table 6. Additional Test Results

Model 1: $REVAL_{it} = \beta_0 + \beta_1 SIZE_{it} + \beta_2 DE_{it} + \beta_3 LOSS_{it} + \beta_5 TAX_t + \beta_6 ROA_{it}$

Variables	Hypothesis	Expected Sign	Non-Financial	Financial
SIZE	H_1	+	0.139***	0.340***
DE	H_2	+	0.121***	0.040
LOSS	H_3	-	0.817**	-0.091
TAX	H_4	-	-0.866***	-2.162***
ROA	H_5	-	-2.829**	0.472
McFadden R^2			0.057	0.212
Sig. of Hosmer & Lemeshow Test			0.108	0.555
Sample size			2280	473

*Significance level at 0.10; **Significance level at 0.05; ***Significance level at 0.01

where: Dependent variable is a dummy variable which equals to 1 if the firm revalues its fixed asset in year t and 0 if otherwise; SIZE = natural log of total assets; DE = debt to equity ratio (debt/total equity before the revaluation increment); LOSS = a dummy variable which equals to 1 if the firm reports losses in year t and 0 if otherwise; TAX = a dummy variable which equals to 1 if there is no revaluations tax cut policy and 0 if otherwise; ROA = return on total assets.

Table 6 shows the results of logistic regression testing to test the motives for revaluation of fixed assets in firms that are included in the non-financial and financial industries. In the non-financial group of firms, the test results are consistent with the test results of all industries. DE, LOSS, TAX, and ROA variables affect the revaluation of fixed assets. However, in the financial company group, only the variables DE and TAX have an effect on fixed asset revaluation.

5. Conclusion

This study aims to examine fixed asset revaluation motives in relation with the tax cut on fixed asset revaluation in Indonesia that occurred in 2015 and 2016. The results of this study indicate that firms with greater firm size and higher leverage are more likely to perform fixed asset revaluations. Firms that do not experience losses, are in the period of revaluation tax cut, and have low profitability are more likely to revalue their fixed assets. This implies that fixed asset revaluation is done to increase the book value of equity and reduce political costs, opportunities to violate contracts, and future earnings.

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The results of this study can help investors make decisions. Fixed asset revaluation is carried out by firms to provide useful information for investors, who can then make decisions based on the revalued assets. In addition, the results can be used by the government when determining the fixed asset revaluation tax rate. With a reduction in the tax rates, firms are more likely to perform fixed asset revaluations. However, this study is limited in its use of indicator variables: only revaluer and non-revaluer. Subsequent research can use revaluation measurements by looking at the motives of asset revaluation when first performed. For example, it can be used to indicate if the company revalues its fixed assets for the first time and 0 if the company does not conduct asset revaluation for the first time. This has been done by Lopes & Walker (2012).

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