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Earnings Management and Sale of Assets

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ABSTRACT

The focus of this study is to examine whether firms used income from sale of assets as an instrument to manage earnings. Two aspect of earnings management are examined: earnings smoothing behavior and avoidance of debt covenant activities. A Sample had been taken from firms listed under industrial and consumer product at the main board of Bursa Malaysia from 2000 to 2003. Similar with findings obtained in an environment where current cost are applied in asset reporting, we found that incentive for earnings management is asymmetric: firms with poor economic performances (negative earnings change) have greater incentive to smooth earnings than firm exhibiting good economic performance (positive earning change). This study had also examined whether the asymmetric results holds true for firms selling asset with high impact on net income in comparison with firms selling asset with low impact on net income, an area which had not been explored by previous studies. And within this context we also found asymmetric results. Firms reporting high impact of income from asset sale in relation to net income had shown significant evidence of earnings smoothing patterns. No evidence is found to associate earnings smoothing activities with firms reporting low impact of income from asset sale in relation to net income. However this research had failed to find evidence to associate income from asset sale with debt-equity hypothesis in all sub samples.

Keywords: *Economic performance, earning smoothing patterns, debt-equity hypothesis*

Introduction

Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers (Healy and Wahlen, 1999).

Sale and asset is one of the instruments that can be used by firms to manage their earnings. Jiambalvo (1996) states that if managers want to manipulate earnings, they can choose from a large set of manipulation methods. Smith (1993) reveals that earnings management instruments may include financial reporting decisions such as the choice of accounting methods (example choice accounting methods such as straight-line versus accelerated depreciation; changing the residual value of equipment; operating rather than finance lease; and LIFO or FIFO for inventory valuation) and the timing of expense and revenue recognition (example sale of assets and investments; asset writedown/writeoffs; spending on research and development costs; and making provision for restructuring cost).

The current study will focus on two aspect of earnings management, i.e., income smoothing and debt-equity hypothesis. Smoothing behavior is defined as an effort to reduce fluctuations in reported earnings (Moses, 1987). Smoothing involves the use of some smoothing instruments (example income from sale assets) to reduce the divergence of reported earnings from a target number. To smooth earnings, firms can assets (delay the sale of assets) with unrealized gain when reported earnings are low (high). Other firms could sell assets (delay the sale of assets) with unrealized losses when reported earnings are high (low). The debt-equity hypothesis assets that firms with high debt-equity ratios tend to choose accounting policies that increase current income at the expense of the future income (White, Sondhi and Fried, 2003).

Previous studies associating sale of assets and earnings management had found that differing accounting standards results in different financial reporting behavior. The conclusion is being derived after comparing the results of studies using US and Japan data (Bartov, 1993; and Herrmann et al., 2003), which practice historical cost accounting and studies using UK, Australia, New Zealand and Singapore data (Black, et al., 1998; and Poitras et al., 2002), which allow upward revaluation of assets. The findings revealed that earnings management could be detected in full sample of US and Japans studies. Whereas earnings management was only detected in certain sub sample (non revaluers and low performing firms) of studies using UK, Australia, New Zealand and Singapore data. This suggests that current cost accounting (which allows an upward revaluation of assets) could reduce the distortion of financial reporting by reducing the earnings management through sales of assets.

This proposed study would examine the sale of asset and earnings management within the context of MASB 15, which allows an upward revaluation of property, plant and equipment and investment property, and requires the transfer of revaluation reserves to retain earnings (and not income statement) upon the asset disposal. As Malaysia uses almost similar accounting treatment for fixed asset reporting as Australia, New Zealand, UK and Singapore therefore results similar to studies using these settings are expected in the current study. As a consequence, the motivation, analysis and conclusions provided in this study could be viewed as providing additional insight into whether there is an earnings management aspect to asset sales within an environment, which allow upward revaluation in asset reporting.

The current study had explored a new facet of earnings management and sales of assets, which had not been explored by previous studies. We investigated whether the magnitude of accounting numbers being reported by sales of assets could be used to predict earnings management activities. Hence we sub partition the data into high and low impact firm to see whether these two groups of firms exhibit earnings management behavior in relation with sale of assets.

Problem Statements

The primary focus of EM research to date has been on detecting whether and when EM takes place (example Healy, 1985; DeAngelo, 1986; Jones, 1991; Dechow et al., 1995). This type of research did not answer the question how firms managed their earnings. In order to assist the standard setters and regulators to identify which standards are potential candidates for review more research need to be done to find evidence on which specific items or specific accruals are used by firms to manage their earnings. This type of research would be able to answer the research question how firms manage earnings. The significant of this type of research could be seen when Helay & Wahlen (1999), McNichols (2000), and Beneish (2001) had unanimously call for more research to be conducted on specific accruals.

A number of research had investigated single specific accrual and earnings management [for example: provision of bad debts (e.g. McNichols and Wilson, 1988), asset write-offs (e.g. Elliott and Shaw 1988; Francis et al., 1996), depreciation estimate and bad debt provisions surrounding initial public offers (Teoh et al., 1998), bank loan provisions (e.g. Beaver et al. 1989, Liu et al., 1997)]

Previous studies that look at sale of asset as a tool to manage earnings include Bartov, 1993; Black et al., 1998; Poitras et al., 2002; and Herrmann et al., 2003. These studies were conducted using data from US, UK, Australia, New Zealand, Singapore and Japan, which operated under different financial reporting environment. Since Malaysia's reporting regime for fixed asset allowed current-

cost to be used hence the motivation, analysis and conclusion provided in this study could be viewed as providing additional insight into whether is an earnings management aspect to asset sales within this environment. Furthermore, so research investigating earnings management using specific accruals in a Malaysian setting is limited and none had investigated the relationship between sales of assets and earnings management.

Objectives

The objective of this study is to examine whether managers manage earnings through the timing of income recognition from disposal of property, plant and equipment (PPE) and investments (hereafter assets). Specifically the objectives are to study whether firms used sales of asset to manage earnings by smoothing their income and to study whether debt-equity hypothesis would influence sale of assets.

Hypotheses Development

Smoothing involves the use of some smoothing device to reduce the divergence of reported earnings from an earnings number that is 'normal' or 'expected' for the firm. Empirical studies dealing with income smoothing show that the concept of the earnings number had been interpreted in different ways: net income, earnings per share (in various forms: EPS less preferred dividends, before extraordinary items, fully diluted, etc.), ordinary income, extraordinary income, operating income, etc. As being used by Bartov (1993) and; Poitras, Wilkins and Kwan (2002), the current study would adopt previous year's EPS as the target number to smooth earnings.

Studies by Bartov (1993) and Herrmann, Inoue and Thomas (2203) had shown that when current performance is below expectations, firms have an incentive to recognize gains on sale of assets in the current period and save holding losses for recognition in future periods. On the other hand, when current performance is significantly above expectations, firms can recognize loss on sale of asset in the current period and save profit on sale of asset in future periods. Hence the following hypothesis is drawn:

H₁: Income from sale of assets is negatively related to earnings changes before asset sale income.

Firms with higher debt-equity ratios are motivated to engage in activities such as timing asset sales, to reduce the restrictions imposed by debt covenants and minimize the probability of covenant default. Empirical result by Bartov (1993) indicated that firms with higher ratios of debt to equity tend to report higher

income from asset sales, presumably to avoid potential debt covenant violations. Black, Sellers and Manly (1998) reported similar finding for non-revaluers sub sample with below average earnings changes. The results of the studies imply a positive relationship between the debt-equity ratio and asset sales. Hence the following hypothesis is drawn:

H₂: Income from sale of assets is positively related to debt-equity ratio.

Sample Selection and Data Partitioning

Since this study involved a detailed securitization of the annual reports for data collection purposes therefore the sample selection is restricted to companies listed under the two industries at the main board of Bursa Malaysia. The two industries are, industrial product and consumer product. Sample, which includes all companies listed under main board of Bursa Malaysia, is too large for a detailed evaluation of the annual report disclosures to be done in a cost-effective manner. The list of companies listed under the two sectors had been obtained from DataStream on 14 April 2005. The list would be regarded as the population of firms listed under the two counters. Available annual reports of these companies were then downloaded from the Bursa Malaysia website. Data obtained from the annual reports are the profit or loss on disposal of asset. This website provided negligible annual report prior to financial year 2000. hence data collection had been restricted to year 2000 until the most recent year 2003. As at 14 April 2005, when the data collection commenced, many companies' annual report with financial year ending 31 December 2004 have yet to be posted on the website.

In order to operationalise the measurement for the dependent and independent variables the following data had been obtain from the DataStream: opening price, pretax income, long term debt, and equity. The firms' years' of observation without complete data would be eliminated. The final samples of companies were filtered as follows:

Industrial Product		
Initial full sample base on Datastream listing	560	
Unavailability of relevant data Final sample	(222)	338
Consumer Product		
Initial full sample base on Datastream listing	316	
Unavailability of relevant data Final sample	(134)	182
Total firm years under study		520

Findings and Analysis

a. Univariate T Test For The Earnings-Smoothing Hypothesis And Debt Equity Hypothesis

Table 1 below provide the result of univariate statistic using independent t test of income from assets sales scaled by marked value of equity at the beginning of the event year for various sub samples. The first test was related to earnings-smoothing hypothesis and the second test was related to debt-equity hypothesis. The earnings-smoothing hypothesis implies that firms that exhibit a negative earnings change before asset sale income ($\text{ChangeEPS} < 0$) should report higher income from asset sales than firms that experienced a positive change ($\text{ChangeEPS} > 0$). The debt-equity hypothesis implies that income from asset sales by higher-leverage firms exceeded that for lower-leverage firms. Partitioning for high and low leverage firms had been based on the median debt-equity ratio of the sample.

Table 1: Income from Assets Sales Scaled by Market Value of Equity at the beginning of the Event Year for Various Sub Samples

	Mean of Respective Groups	Mean of Respective Groups	Sig. (2-tailed)
First Sub Sample: Negative Earning Change and Positive Earning Change group	Negative ChangeEPS (n = 250) 0.0154	Positive ChangeEPS (n = 270) 0.009	0.376
Second Sub Sample: High Leverage and Low Leverage group	High Leverage (n = 125) 0.0175	Low Leverage (n = 395) 0.0103	0.397

Note: When data are further sub partition into low and high impact firm, similar insignificant results (not reported) had been obtained.

i. Univariate test For Earnings-Smoothing Hypothesis

Results in Table 1 shows that the mean income from asset sales (scaled by market value of common equity) for the Negative ChangeEPS firms (0.15) is higher than the Positive ChangeEPS (0.009). However p value of 0.376 signifies that the difference between the mean is not significant. Hence there is insignificant evidence that firms had used income from asset to smooth earnings. As a comparison Bartov (1993) had found significance different between the mean of the two groups using US data.

ii. Univariate test For Debt-Equity Hypothesis

Table 1 shows that the mean income from asset sales (scaled by market value of common equity) for the High Leverage firms (0.17) is higher than the Low

Leverage firms (0.10). The higher difference experienced by high leverage firms compared to low leverage firms is according to prediction. However p value of 0.397 signifies that the difference between the mean is not significant. Hence it can be said that there is insignificant evidence to show that firms had used income from asset sale to enhance earnings when debt-equity ratio is high. Bartov (1993) which had made similar studies in an environment where upward revaluation is disallowed had found significant difference between the mean hence provided evidence to support the debt-equity hypothesis.

b. Results of Correlation Analysis

Table 2 summarized the results of correlation between income from asset sales, change in earnings and leverage in order to test for income smoothing and debt-equity hypothesis. In order to test the smoothing hypothesis it was predicted that there would exist a negative relationship between income from asset sales (ASSIN) and earnings changes (ChangeEPS). And to test for debt-equity hypothesis it was predicted that there would exist a positive relationship between income from asset sales (ASSIN) and debt-equity ratio (DETEQ).

In order to test whether income from asset sales are used to smooth income or to avoid debt covenant violation using correlation analysis, investigation on the data was conducted in three segments. First using full sample, second the data were partitioned into positive and negative earnings change group (exclusive of asset sale effects), and third the data were partitioned into high and low impact group (based on the median of the income from asset sale-net income ratio of the sample).

Table 2: Correlation between Income from Asset Sales, Change in Earnings and Leverage

	ASSIN				
	Positive Earning Changes Group (n = 270)	Negative Earning Change Group (n = 250)	High Impact Group (n = 62)	Low Impact Group (n = 458)	Full Sample (n = 520)
ChangeEPS	0.255** (0.000)	-0.359** (0.000)	-0.693** (0.000)	0.390** (0.000)	-0.206** (0.000)
DETEQ	-0.179** (0.002)	-0.006 (0.464)	(-0.196) (0.127)	-0.020 (0.630)	-0.39 (0.185)

Note:** denotes correlation is significant at the 0.01 level

* denotes correlation is significant at the 0.05 level

The variables are defined as follows:

- ASSIN_{*i*} = income from asset sales per share of the *i*,th firm–year observation for the event year, deflated by the stock price at the beginning of the year.
- ChangeEPS_{*i*} = change in pre-tax annual ordinary income per share, exclusive of income from asset sales, of the *i*,th firm-year observation for the event year, scaled by the stock price at the beginning of the year.
- DETEQ_{*i*} = ratio of the book value of long term debt to the book value of owners' equity of the *i*,th firm-year observation at the beginning of the event year.

i. Income Smoothing Hypothesis

The full sample in this study had shown that there is a negative and significant relationship between ASSIN and ChangeEPS. This lends support to the income-smoothing hypothesis. Further investigation however revealed that the negative and significant relationship only holds true for negative ChangeEPS group. However the positive ChangeEPS group had shown a reverse but also significant relationship. The positive relationship obtained in this study is similar with the findings made by Poitras, Wilkins and Kwan (2002). Their explanation for this scenario is that firms with positive earnings change have less economic incentive to smooth earnings using income from asset sales. An economic consideration is actually the factor that drives asset sales for firms with positive earnings change and for earnings management consideration.

The negative and significant relationship between ASSIN and ChangeEPS had also been observed in High Impact sub sample. However, the Low Impact sub sample had exhibited a reverse but significant relationship. The explanation for these results is that firms, which sold their asset with high margin, actually had an ulterior motive. The firms had used the high income from asset sale as an instrument to smooth their income upwards and downwards.

ii. Debt-Equity Hypothesis

Income from asset sales is shown to be negatively correlated with leverage under all situations. The negative relationship found in this study did not support the debt-equity hypothesis, which suggests a positive relationship between a firm's debt-equity ratio and managers' choice of earnings-enhancing activities. Similar negative relationship had been obtained by studies conducted by Black, Sellers and Manly (1998) and Poitras, Wilkins and Kwan (2002). These results are in direct contrast with the findings obtained by an earlier study conducted by Bartov (1993). The negative correlation between leverage and income from asset sale seem to appear in research environment that allowed upward revaluation of asset.

The explanation for this negative correlation that had been provided by these researchers is that firms operating in an environment, which allowed upward revaluation of asset, can decrease their debt-equity ratios by the less costly method of revaluing instead of selling an asset. Another explanation is that since asset had been revalued upwards therefore firms have very few assets to sell for gains. The current study did not differentiate the sample into revaluers and non revaluers hence there is no opportunity to support these explanation with empirical results.

Table 3: Multiple Regression Tests of Debt-Equity and Earnings-Smoothing Hypothesis

Model: $ASSIN_i = a_0 + a_1 \text{ChangesEPS}_i + a_2 \text{DETEQ}_i + \varepsilon_i$ *						
Expected sign:						
Sample		a0	a1	a2	Model p-value	Adj R ²
Full sample	(n = 520)	0.013 (0.026)	0.039 (0.000)	-0.001 (0.660)	0.000	0.039
Positive Earning Change	(n = 270)	0.001 (0.896)	0.031 (0.000)	-0.006 (0.002)	0.000	0.090
Negative Earning Change	(n = 250)	0.001 (0.944)	-0.089 (0.000)	0.002 (0.415)	0.000	0.124
High Impact	(n = 62)	0.094 (0.010)	-0.308 (0.000)	-0.012 (0.562)	0.000	0.465
Low Impact	(n = 458)	0.004 (0.000)	0.015 (0.000)	0.000 (0.172)	0.000	0.152

* $ASSIN_i$ is the income from asset sales per share of the i th firm-year observation for the event year, deflated by the stock price at the beginning of the year; ChangesEPS_i is the changes in pre-tax annual ordinary income per share, exclusive of income from asset sales, of the i th firm-year observation for the event year, scaled by the stock price at the beginning of the year; DETEQ_i is the ratio of the book value of long term debt to the book value of owners' equity of the i th firm-year observation at the beginning of the event year; and ε_i is an error term.

c. Results of Regression Analysis

Results of the regression analysis are being tabulated in Table 3 below. The smoothing and debt-equity hypothesis are tested simultaneously using the estimated regression equation. Regression analysis would be able to determine the incremental effect of each variable and the overall significance of the variable. The earnings-smoothing hypothesis predicts that the coefficient estimate of ChangeEPS_i , a_1 , is negative, and the debt-equity hypothesis predicts that the coefficient estimate of DETEQ_i , a_2 , is positive (Bartov, 1992, page 853).

In order to test whether income from asset sales are used to smooth income or to avoid debt covenant violation using regression analysis investigation on the data are conducted in three segments. First using full sample, second the

data were partitioned into positive and negative earnings change group (exclusive of asset sale effects), and third the data were partitioned into high and low impact group (based on the median of the income from asset sale-net income ration of the sample).

i. Results of Full Sample

The results indicated that both the independent variables, earnings change scaled by opening price (ChangeEPS) and debt-equity ratio (DETEQ) together could explain 4.3% of the variation in income from asset disposal (ASSIN) being reported by sample firms. Whilst the negative direction of association between ASSIN and ChangeEPS is as predicted and significant the direction of association ASSIN and DETEQ is not as predicted and furthermore not significant. Hence, the full sample provides evidence that the firms smooth their earnings using income from asset sale but it does not support debt equity hypothesis.

ii. Results of Sub Samples-Positive and Negative Earnings Change Firms

The regression analysis on these sub samples had shown an interesting result. For the high impact group ChangeEPS and DETEQ are found to be able to explain 48% of the variation in income from asset sale. Of the two variables ChangeEPS (proxy for smoothing hypotheses) had made a statistically significant contribution to the equation. The same cannot be said for the low impact group. Even though ChangeEPS shows that it is a significant contributor to variation in income from asset sales, but the direction of the relationship does not support income-smoothing hypothesis. One possible explanation for this is that firms, which sell assets with low impact on net income do not timed asset sales to impact earnings. These assets sale are being motivated by real economic decisions unrelated to earnings management considerations. Whereas firms, which sell assets resulting in high impact on, net income had done so with an ulterior motive to manage earnings by smoothing it upwards or downwards.

Again in these two sub samples the debt-equity hypothesis fail to show any association or significant association with income from asset sale.

Conclusion and Suggestion for Future Research

The main aim of the study is to investigate whether firms used income from asset sales as an instrument to smooth earnings and to avoid violation of debt covenant.

The full sample of this study provides statistical evidence that firms timed their asset sales to smooth earnings. Further investigation however, indicated

that firms with positive earnings change did not take advantage of accounting procedures to smooth earnings streams downwards. On the other hand the results of this research had provided evidence that financially problematic firms (with negative earnings change) boost up their earnings by selling asset at a profit when the current year profit (excluding income from asset sales) is lower than previous year profits. Similar earnings management behavior cannot be observed in positive earnings change sub sample.

The current study had also examined sales of asset and earnings management within a new facet, which had not been explored by previous studies. We found that firms reporting high impact of income from asset sale in relation to net income had significant association with earnings smoothing patterns. But no evidence is found to associate earnings smoothing activities with firms reporting low impact of income from asset sale in relation to net income.

With regards to asset sales and debt-equity hypothesis the study fail to find any significant positive association as predicted between income from asset sale and debt-equity ratio.

For future research the following suggestions are put forward: Since the study had found that income from asset sales had been used to manage earnings in the sample firms from Industrial and Consumer Product sector therefore, it would be interesting to know whether the same result holds true if the sample is extended to other sectors listed in the Bursa Malaysia. It is also recommended that future research study the earnings management activity with sales of asset under two settings, i.e., revaluers and non revaluers. The result would provide additional evidence as to the earnings management capability under two different financial reporting regimes.

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