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# Impairment Reversals: unbiased reporting or earnings management?

## Abstract

**Purpose** – To provide evidence that will inform the convergence debate regarding accounting standards. We assess the ability of impairment reversals allowed under IAS 36 but disallowed by FASB to provide useful information about a company.

**Design/Methodology/Approach** - We use a sample of 182 Malaysian firms that reversed impairment charges and a matched sample of firms which chose not to reverse their impairments. Further analysis examines if reversing an impairment charge is associated with motivations for and evidence of earnings management.

**Findings** - We find no evidence that the reversal of an impairment charge marks a company out as managing contemporaneous earnings. However, we document evidence that firms with high levels of abnormal accruals and weak corporate governance avoid earnings declines by reversing previously recognized impairments. In addition, companies that have engaged in big baths as evidenced by high accumulated impairment balances and prior changes in top management, use impairment reversals to avoid earnings declines.

**Research Implications** - Our results support both the informative and opportunistic hypotheses of impairment reversal reporting using FRS 136.

**Practical Implications** - The results also demonstrate how companies that use impairment reversals opportunistically can be identified.

**Originality/Value** - The results support IASB's approach to the reversal of impairments. They also provide novel evidence as to how companies exploit a cookie-jar reserve created by a prior big bath opportunistically.

Keywords: Reversal of impairments, big bath, abnormal accruals, earnings management, fair value

## 1. Introduction

The reversal of an impairment of a non-current asset under International Accounting Standard (IAS) 36 is an aspect of fair value accounting that has the effect of increasing current earnings. This study begins by testing if the Malaysian version of IAS 36, Financial Reporting Standard (FRS) 136, is generally applied in an unbiased fashion or if it is used to opportunistically increase earnings. While FRS136, a standard based on fair value accounting, is an improvement in terms of the relevance and timeliness of accounting information relative to the historical cost approach, it also provides managers with opportunities to manage earnings. Such earnings management may cause the reversals not to be a faithful representation of the recovery of the asset values.

It should be noted that the reversal of an impairment charge under IAS 36 is one of the major differences between the two major accounting standard setting bodies in the world: the IASB and FASB. Thus there is no universal agreement on the best way to treat assets which have been impaired and are reckoned to have recovered some or all of their value. FASB prohibit the reversal of an impairment charge made against non-current assets on the grounds that an impaired asset is on a new cost basis. Duh et al. (2009) is the only paper that studies the reversal of impairments under IAS 36. They report evidence that companies in Taiwan that have made larger impairments, use the reversal of such impairments to boost current earnings when the earnings are below the benchmark of the prior year's earnings, the FASB approach is justified. The current paper takes a closer look at the reversal of impairments with a view to providing additional evidence surrounding this question. In addition, the excellent disclosure practices by the vast majority of Malaysian companies with respect to accumulated impairment charges allows us to examine the relation between impairment reversals and prior big baths far more closely. Noting that a prior big bath is an indication of historical earnings management we further extend Duh et al. (2009) by examining the relation between current earnings management, proxied by abnormal working capital accruals (AWCA) and impairment reversals. Firms with high positive values for AWCA, particularly those with weak corporate governance, can be classified as upward managers of current earnings. The relation between an impairment reversal and its real earnings management alternative of an opportunistic asset sale is also discussed.

Our first research question pertains to the overall application of FRS 136 and whether it is used in an unbiased or in an opportunistic fashion. We base our approach on that of Duh et al. (2009). These authors examine if a sample of 55 firms that reverse impairments differ from a sample matched on industry and size in Taiwan. We extend the Duh et al. (2009) analysis by paying particular attention to firms that have taken a prior big bath and those that display a tendency to manage current earnings upward using alternative methods. While Duh et al. (2009) are restricted to considering the reversal of impairments made in within a period of approximately one to two years our Malaysian data allows us consider the reversal an impairment loss regardless of when that impairment was made.

The second part of our study endeavours to distinguish between reversals that are made in order to faithfully represent the true value of assets from those that are done opportunistically. We are again influenced by Duh et al. (2009) here and base our analysis on the relation between the reversal and efforts to avoid an earnings decline. Of particular note in this part of our study is the exploitation of an interesting aspect of the Malaysian reporting regime to undertake a novel test of the big bath hypothesis. The extant literature on the big bath concentrates more or less exclusively on the time of the big bath itself or a comparison with times where a big bath is not employed (e.g. Jordan and Clark, 2004). Noting that a primary objective of a big bath is to shift income to a future period (e.g. Sterling 1974; Levitt, 1998; Fiechter and Meyer, 2010), we concentrate on how firms use the reversal of impairment charges to exploit a prior big bath. The unique aspect of Malaysian financial reporting that is particularly useful in this regard is the disclosure of the accumulated impairment charges in Malaysian balance sheets<sup>1</sup>. Thus we extend the analysis of Duh et al. (2009) by considering the moderating influences of specific motivations for, and evidence of, opportunistic reporting that have been explored in the earnings management literature. While there are many studies on earnings management using accruals most confine their analysis to either benchmark analysis, one specific accrual or a more general estimate of discretionary or abnormal accruals. Notable exceptions are Dechow et al. (2003) and Hansen (2010) which attempt to find a relation between success or failure in achieving an earnings benchmark and discretionary accruals. In addition, Huang (2010) reports that discretionary accruals and asset sales are used as complementary approaches to manage earnings for insider trading

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<sup>1</sup> In the UK, for example, firms aggregate accumulated impairment charges and depreciation. It is important to be able to determine the balance of accumulated impairment charges to assist in the identification of big bathers that have used impairments to create a so-called cookie jar reserve.

purposes. We contribute to the literature by analysing the relations between the specific accrual of reversing an impairment charge, estimated discretionary accruals, earnings benchmarks and big bath behaviour. In particular, we use results from the extant literature to clearly distinguish between reversal firms that are behaving opportunistically and those that are reversing in an unbiased manner.

The primary sample used in the study comprises 182 public companies listed on the Malaysian Stock Exchange that have reversed previously recognized impairments. Each of these 182 firms is matched with a control company which has not reversed any part of their previously recognized impairments during the study period<sup>2</sup>.

The results for our first research question show that reversals are not related to the change in earnings before reversal or the achievement of an earnings benchmark. Thus there are no indications that the reversal firms have a greater need to manage earnings upwards to meet the benchmarks of last year's earnings or zero than the firms in our control sample. We also find that reversal companies' abnormal working capital accruals (AWCA) and corporate governance do not differ from those of our control sample. However, we do find that reversal companies have higher accumulated balances of impairment losses. Further investigation fails to confirm that reversal firms are more likely to be big bathers than the control firms. We infer from the above that reversing an impairment charge is not related to the motivation to or the need to manage earnings.

In the second part of the study we find evidence that companies with high levels of abnormal accruals use the reversals to avoid a decline in current earnings. We also report that a good standard of corporate governance mitigates this earnings management behaviour. Further, companies that have high accumulated impairment balances and have a recent change in CEO have a stronger tendency to reverse the previously recognized impairment to avoid earnings declines. We attribute this to prior big bathers having little hesitation in dipping into the "cookie-jar" reserves that they have available to them from their prior downward earnings management.

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<sup>2</sup> Twenty-seven of the reversal companies combine the accumulated balance of their impairments with depreciation so the sample is reduced to 155 reversal firms and 155 controls for our multivariate analysis.

The rest of the paper is structured as follows: Section 2 explores the extant literature on asset impairment and develops testable hypotheses. Section 3 describes the sample and methodology. Section 4 presents the results. Section 5 summarizes and concludes the study.

## **2. Background and Hypothesis Development**

FRS 136 requires that an impairment test on the value of a non-current asset be made annually and recognition is only made if an indication of impairment exists. Initial research on fair values and impairments comes from a non-IFRS setting: mainly US GAAP. From a fair value accounting perspective, the application of an asset's impairment standard is an improvement of financial reporting that encourages companies to report the "true and fair" value of their non-current assets at the time of the financial statements release (Reinstein and Lander, 2004). However, such standards also give managers substantial flexibility to exercise their judgment in determining and reporting impairment losses (Titard and Pariser, 1996; Healy and Wahlen, 1999; Alciatore et al., 1998; Riedl, 2004). For example, the determination of an appropriate discount rate that reflects appropriate current market conditions and risks associated with an asset is difficult and open to interpretation and manipulation. Accounting standards that rely on fair value measurement also give managers considerable discretion in the timing and the amount of write-downs of impaired assets (Titard and Pariser, 1996). Francis et al. (1996).

Prior studies provide evidence that asset impairment standards have been used to manage earnings. Jordan and Clark (2004) provide evidence that some firms have adopted the "big bath" strategy. On the other hand, Lapointe-Antunes et al. (2009) examines the goodwill impairment recorded by Canadian firms after the adoption of the revised standard on purchased goodwill. They report a negative relationship between reported losses and share prices. They interpret the result as being consistent with investors perceiving goodwill impairments as sufficient and reliable measurements for investment decisions.

Strong and Meyer (1987) investigate asset write-downs by 120 firms during the period of 1981-1985. They find that the most important determinant of the write-down decision is a change in senior management, especially when the new manager comes from outside. Thus managerial incentives play a large part in impairment decisions. Broberg et al. (2007) find that in publicly listed Swedish companies CEO replacement is positively associated with impairment recognition, and it is negatively associated with corporate profitability. Zucca and

Campbell (1992) study write-down behaviour of 77 firms in comparison with 67 non-write-down firms. The write-down companies perform poorly relative to the control companies. They also find that the majority of the write-downs are recorded when earnings are below expectations and the remaining minority are recorded when earnings exceed expectations, a signal of the employment of both “big bath” and earnings smoothing strategies respectively. Elliot and Shaw (1988) states that a change in senior management may capture new management’s incentives to take all potential charges, attribute them to the preceding management team, and improve future financial performance.

Most studies pertaining to impairment reversals come from Asian countries (e.g. Chen et al. 2009 and Zhang et al. 2010). Ai (2007) finds that impairment and impairment reversals are both positively associated with share prices of Chinese publicly listed companies during the period of 2001 and 2003. The study finds that the reversals are reported on a timely basis as impairment reversals are associated with the stock returns. It also reports that the impairment reversals are positively associated with future operating cash flows more than two years later. It should be noted that there are unusually strong incentives for earnings management in China (Chen et al., 2009). These incentives stem largely from the listing rules which prescribe that a special treatment symbol is inserted before a company’s stock code after two consecutive years of losses and it will face the possibility of de-listing if it incurs losses in a third consecutive year. Therefore, results from research based in mainland China is unlikely to be generalizable. Furthermore, the Chen et al (2009) study does not focus on impairments using an accounting standard based on IAS 36. Rather they address both realised (using disposals) and unrealized reversals and also examine reversals of impairments of current assets which are not dealt with by IAS 36.

Duh et al. (2009) examine impairments of non-current assets under a standard based on IAS 36 and find that Taiwanese companies report impairment reversals when such reversals could assist them in avoiding an earnings decline. Duh et al. (2009) make a number of remarks in their conclusion that suggests additional research on the reversal of impairments is required. First, they point out that their results come from a single (code law) country and further research pertaining to firms in other countries is required. The general level of earnings management is greater in Taiwan than it is in Malaysia. The latter is ranked 20<sup>th</sup> of 31 countries while Taiwan is ranked 6<sup>th</sup> in terms of earnings management according to Leuz et al. (2003). La Porta et al (1997, 1998) and Leuz et al. (2003) show that Malaysia has

stronger outside investor protection, stronger legal enforcement, better disclosure and has a more important equity market than Taiwan. The results from Taiwan may not be applicable in countries which provide better investor protection and it is worth re-examining if Duh et al.'s claim that their results provide a rationale for the prohibition of impairment reversals in a stronger institutional setting. In addition, we exploit the fact that in Malaysia, unlike in Taiwan or in the UK, most firms disclose the accumulated balance of their impairment charges. Thus we do not have to assume that firms reverse their impairments within a couple of years making Malaysia an ideal location for the current study.

In common with many countries ownership is quite concentrated in Malaysia as it is in Taiwan (La Porta et al. (1999); Claessens et al. 2000; Abullah 2002). Companies in Malaysia are often controlled by founding families who have a long-term stable relationship with the company (Claessens et al. 2000). Some studies find that family control mitigates earnings management behaviour (Wang, 2006) and has a positive impact on corporate performance (Cho and Kim, 2007). Other studies find that the proportion of family members on the board is positively associated with discretionary accruals (e.g., Ishak et. al., 2011). In Leuz et al.'s (2003) cluster analysis of countries' institutional characteristics Malaysia is in cluster one (the cluster with the strongest institutions) notwithstanding that this "cluster is characterised by large stock markets, low ownership concentration, extensive outsider rights, high disclosure and strong legal enforcement." Leuz et al. (2003) refer to the countries in cluster one as "outsider economies" and the other countries in cluster one are Singapore, Hong Kong, UK, Norway, Canada, Australia and USA. Thus, while concentrated ownership is prevalent in Malaysia, with different types of owners and concentration in ownership is often a symptom of weak institutions and poor investor protection this is evidently not the case in Malaysia.

Duh et al. (2009) provide evidence that the Taiwanese stock market does not react to the reversal of impairments and infer that it sees through the earnings management behaviour. If a reversal is not done on a timely basis it will be anticipated by the price performance of the company. Accordingly, there will be no price reaction to the delayed reversal of an impairment charge. As pointed out by Aboody et al. (1999) the stock return can be influenced by a firm's financing and other decisions, so stock return only provides indirect evidence of future operating performance and hence the change in asset value. Further Cheng and Lin (2009) provide evidence of conservatism in the revaluation of assets in the



UK since firms do not revalue until after the revaluation has been confirmed by stock price performance<sup>3</sup>. While Duh et al. (2009) undoubtedly find evidence of impairment reversals being used to manage earnings their results do not categorically support the notion that impairment reversals are used primarily for this purpose. For example, they report that reversal firms have pre-reversal earnings that are not significantly different from the control sample.

Finally, permitting the reversal of impairment charges is one of the significant differences between the approaches of the two major standard setting bodies in the world: the IASB and the FASB. The IASB allow the reversal of impairments under IAS 36 but the FASB prohibit them on the basis that when an asset is impaired it is then on a new cost basis which is equivalent to that of assets that are not impaired. Duh et al. (2009) state that their findings provide a rationale for the FASB's prohibition of reversals of impairment charges. Nonetheless firms can sell assets whose carrying amount or book value is less than their market value to earn profits as required, i.e. they can realise unrealised gains from assets held at historical cost. Bartov (1993) provides evidence that asset sales are used for income smoothing and Herrman, Inoue and Thomas (2003) find evidence of asset sales being used to meet an earnings benchmark. Wang, Tung, Chen-Chang, Lan-Fen and Ching-Hui (2010) provide evidence from Taiwan that firms use asset sales to avoid losses. In addition, Black Sellers and Manly (1998) find evidence of asset sales being used in big baths. Huang (2010) reports that assets sales and discretionary accruals are simultaneously used to manage earnings upward for firms before insiders dispose of shares. Thus regardless of whether the reversal of impairments is allowed or not firms can and do exploit unrealised gains in the value of their non-current assets to augment their earnings when necessary. The prohibition of the reversal of impairments may simply force firms to use real earnings management by selling assets as opposed to managing earnings using an accrual. However, in a country where reversals are allowed it would be more convenient to simply reverse an impairment charge. It is clear that research such as Duh et al (2009) and the current study cannot provide an answer to the question as to whether the reversal of the impairment of assets should be allowed or not. However, we conjecture that it would be useful to know if the latitude provided by a standard such as IAS 36 provides so much scope to firms that, on average, reversing an impairment charge marks a firm out as an earnings manager. Regardless of the

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<sup>3</sup> These revaluations have no impact on current income.

rules prescribed by standard setting bodies there will be firms who exploit them opportunistically. Accordingly, the question arises as to how difficult is it for manipulators to obfuscate the firm's performance without attracting attention. If the identification of manipulation proves relatively easy it is not likely to detract materially from the usefulness of accounting earnings to one of the main users identified in the conceptual framework, i.e. investors. The current study aims to address the above two questions.

The study begins by comparing the earnings management motives (enhanced profitability and the achievement of earnings benchmarks) and indications (abnormal working capital accruals; evidence of big bath behaviour) of earnings management for firms that have reversed impairments of their non-current assets with those that have chosen not to make reversals. Thus the first part of our study tests for differences between companies which reverse impairments and those companies that do not reverse their impairments to establish if indicators of opportunistic earnings management distinguish reversers from the control group.

To address our first research question we develop four specific hypotheses. For each hypothesis acceptance of the null will provide evidence of unbiased reporting and the rejection of the null in favour of the alternative provides evidence of an opportunistic reversal<sup>4</sup>. As in prior research (e.g. Lee and Choi, 2016) we pay particular attention to failures to meet earnings benchmarks such as the prior year's earnings or zero earnings. If the reversal of asset impairments is used on average to manage earnings we would expect that our reversal firms would have a greater number and proportion of firms with pre-reversal earnings below notable earnings benchmarks. Firms in such circumstances are motivated to manage earnings upward. A greater proportion of reversal firms than control firms with pre-reversal earnings below an earnings benchmark would lead us to infer that reversals are being undertaken to achieve the benchmark.

H1a: The pre-reversal earnings performance of firms that reverse impairments is inferior to that of control firms, particularly with respect to earnings benchmarks.

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<sup>4</sup> All hypotheses in this paper are outlined in alternative form.

Following Huang (2010), we also posit that firms with a proclivity to manage earnings upward will not confine their earnings management activities to one specific accrual, the reversal of an impairment charge. Accordingly, we test for differences between the AWCA for our reversal and non-reversal firms. If firms use impairments reversals to opportunistically increase earnings they are likely to be using other accounting techniques to increase earnings upward at the same time. Using several smaller accrual adjustments rather than a single large one will reduce the chances that the earnings management is discovered. Furthermore, the management of several different accruals is most likely designed to have the same effect on earnings: it makes little sense to manage earnings upwards using one accrual and manage them downward using another. If reversal firms as a group are managing earnings more than other firms, we would expect that their AWCA would be greater than the AWCA of other firms.

H1b: Firms that reverse impairments of non-current assets under the auspices of FRS 136 are more likely to be earnings managers so will have higher levels of abnormal working capital accruals than firms that do not reverse their impairments.

It is well documented that earnings management is decreasing in the standard of corporate governance (Klein, 2002; Peasnell et al. 2005). Thus the higher that standard of a firm's corporate governance the less likely it is to be managing earnings.

H1c: Firms that reverse impairments have a lower standard of corporate governance than those that do not.

Fourth, impairments have been associated with "big baths". We note a major motivation for big bath accounting is to enable management (particularly new management) to report improved earnings in the future (Sterling, 1974; Fiechter and Meyer, 2010). Prior studies have found that "big baths" are associated with impairment losses and have tended to be made at the time of a change in the CEO (Strong and Meyer, 1987). Accordingly we determine that a firm has taken a big bath when it has a large balance on its accumulated impairment account and has changed CEO in the recent past.

H1d: A greater proportion of reversal firms will have been prior big bathers than non-reversal firms.

Our second research question pertains to the ability to distinguish companies that are exploiting FRS 136 opportunistically from those that are using that standard in an unbiased fashion. Following Duh et al. (2009) we base our investigation of this research question on the relation between impairment reversals and the need to avoid an earnings decline. We posit that a firm uses all available earnings management techniques at its disposal should its managers be minded to artificially increase earnings. Specifically, we test if the use of impairment reversals to avoid earnings declines is associated with other indications of earnings management. Thus in accordance with Huang (2010) we predict that firms will not use any earnings management tool in isolation so the reversal of impairments using FRS 136 will be associated with other forms of earnings management particularly in contexts where the company requires to increase current earnings. Cameran, Campa and Pettinicchio (2014) measure earnings management using AWCA. Accordingly, we examine if firms with high AWCA (i.e. earnings managers) have a greater tendency to use the reversal of impairments to mitigate earnings declines.

H2a: Earnings managers are more likely to use an impairment reversal to avoid an earnings decline than firms which do not manage earnings.

It can be argued that high levels of AWCA can arise from deliberate manipulation of accounts, inadvertent misstatements or unusual events. The extant literature is unequivocal that a high standard of corporate governance is known to mitigate earnings management (Klein, 2002; Peasnell et al., 2005; Xie, 2003; Bradbury et al., 2006). There is evidence of a higher standard of governance being positively associated with the appointment of a big four (six) auditor, (Chen and Rezaee, 2012). It is also found that Big four (six) auditors opportunistic reporting (Francis, Maydew and Sparks, 1999). Consequently, we condition the relation between AWCA and pre-reversal earnings on the firm's standard of corporate governance.

H2b: A good standard of corporate governance mitigates the opportunistic use of impairment reversals by earnings managers to avoid earnings declines.

Finally, prior research has found that impairments have been used by firms to take big baths and create "cookie-jar" reserves. Big bathers include firms that may have previously

exploited FRS 136 to manage earnings downwards. The big bath technique ultimately aims to improve future earnings (Levitt, 1998). This behaviour is associated with changes in CEO (Strong and Meyer, 1987). Thus, we predict that we will observe opportunistic reversals for firms which have large balances of impairments and have changed their CEO in the past two years. This can be viewed as a novel way of testing the big bath hypothesis, where instead of examining the impairment itself we examine the firms' behaviour of dipping into the "cookie-jar" reserve created by the big bath. We therefore predict that firms that have used impairments to take a big bath will be more likely to have a subsequent impairment reversal and have reversals of a greater magnitude than other firms. We identify big bathers as firms which have high accumulated impairments ( $BACC_t$ ) at the beginning of the period and have changed CEO within the past two years ( $CEO_{t-\tau}$ ). Thus we predict that the relation between  $BACC_t * CEO_{t-\tau}$  and the reversal of an impairment charge ( $REV_t$ ) gets stronger when the big bather's pre-reversal earnings are relatively poor i.e. as pre-reversal earnings decline.

H2c: The magnitude of reversals used to mitigate an earnings decline is larger for firms which have taken a big bath in the past.

Evidence in favour of the alternative hypothesis H2a supports the opportunistic reversal of impairments to manage current earnings. Evidence in favour of the alternative of H2b demonstrates the mitigating effect of corporate governance on earnings management. It thus provides confirmatory evidence that the AWCA and reversal of the impairment charge were opportunistic. Evidence in favour of H2c as outlined above is suggestive of prior earnings management influencing the decision to reverse and the size of the reversal.

### 3. Data and methodology

#### *Data and sample selection*

We search for companies that reverse their impairment losses from 2006 to 2009 as FRS 136 Impairment of Assets came into effect for public companies in Malaysia in 2006<sup>5</sup>. These reversal companies are identified through a search for phrases in their annual reports provided on the Bursa Malaysia<sup>6</sup> website. The phrases are 'reversal of impairment loss, 'write

<sup>5</sup> FRS136 replaced FRS136<sub>2004</sub>, the latter standard was very similar to FRS136 so impairments made between 2004 and 2006 were done on the same basis as those from 2006 onwards. Since we wish to have as large a sample as possible and using data from 2006 ought not to affect our analysis we use data from 2006.

<sup>6</sup> Bursa Malaysia (formerly known as Kuala Lumpur Stock Exchange) is a stock exchange company established under Section 15 of the Capital Markets and Services Act 2007.

back of impairment loss', 'impairment loss written back' and 'reversal of diminution in value'. We do not include companies from the financial industries as they operate in a highly regulated environment. We also exclude reversals related to the disposal of fixed assets. The motivation behind the reversals related to the disposal of the fixed assets may be different from the one behind the reversals of other assets. The result of this search process yields an initial sample of 242 reversal observations relating to 151 distinct non-financial firms.

We then match each of the reversal observations with a control firm by industry class and firm size. We choose industry class since the market for a firm's long lived assets is likely to be industry specific and value changes should be associated with the prosperity of the industry. Size is controlled for since the market for a firm's assets is likely to be segmented by size. Also earnings volatility and risk are functions of size. The latter is also related to earnings management (Hribar and Nichols, 2007). The control firms have beginning balances of accumulated impairment in their financial statements but do not reverse the impairment during the period of this study. We note that Duh et al. (2009) employ a similar matching technique in their study of reversal firms. Firm size is based on the total assets of the firms. The size difference between the reversal firm and the matching control firm cannot exceed 30% of the reversal firm's total assets. We are unable to match 60 reversal observations in the initial sample of 242 firm-years with control firms. As a result, the final sample comprises 364 observations including 182 reversal firm-years and 182 control firms-years. There are 151 individual impairment reversers and 141 individual control firms.

Table 1 presents the summary statistics of the matched reversal firm-year observations from 2006 to 2009. The difference between the number of reversal firms and the number of reversal firm-years indicates that some companies reverse more than once during the study period. Panel A of Table 1 summarizes the sample breakdown by accounting year end<sup>7</sup>. The numbers of reversal observations are 31, 43, 39 and 69 in the years of 2006, 2007, 2008 and 2009 respectively generally showing an increasing trend of reversal reporting in Malaysia. Table 1, Panel B shows the distribution of reversal observations classified by the type of

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<sup>7</sup> The control firm is not necessarily the same firm because reversal firms may reverse more than once during the study period and the selected control firm may not recognise impairment every year. Alternatively, if reversal firm reverses more than once during the study period, the matched control firm is not necessarily the same firm on every occurrence either because the control firm may not report accumulated impairment loss in its financial statement every year.

fixed assets. There are a total of 66 (36.26%) observations of reversed impairment losses in Property, Plant and Equipment (PPE) and 78 (42.86%) firm-years of reversal of impairment in Other Investments. PPE and Other Investment reversals represent almost 80% of the total reversal recognition. There are 19 (10.44%) and 11 (6.04%) firm-years of written-back previously recognized impairment losses in Investment in Associates and Investment in Properties respectively.

*Insert Table 1 here*

Panel C of Table 1 shows the breakdown of reversal firm-years by industry based on Datastream 4.0 level 3 sector index. Some industry sectors are merged to increase the number of reversal firms that can be paired with non-reversal firms. The number of sectors is therefore reduced from 16 to 9. Most of the sample observations are in the industries of property (26 or 14.29%), industry products (57 or 31.32%), construction and materials (27 or 14.83%) and consumer products (44 or 24.17%). The four industry sectors with the lowest frequencies are technology and telecommunications (7 or 3.85%), industrial metals, mining, forestry, paper (8 or 4.40%), oil, gas, water and electricity (2 or 1.10%) and media (2 or 1.10%). A comparison between the industry distribution of the sample and the overall industry distribution of the market (Table 1, Panel C) shows that the sample is representative of the Malaysian stock market with respect to the number of firms across different industries.

*Research Methods - comparison of reversal companies with control sample.*

We begin our empirical analyses with tests to establish if firms that reverse impairments using FRS 136 are more likely to be managing earnings upward than other firms. This section also justifies the variables used in the analysis and explains how they are constructed.

The preliminary tests of H1 outlined here involve examining if reversal firms have greater motivations to, or show a greater tendency to, manage earnings than their control firms. We first examine pre-reversal performance around two earnings benchmarks: last year's earnings and zero. We examine if pre-reversal earnings changes of reversal firms differ from those of control firms. Superior (inferior) performance relative to an earnings benchmark on the part of the reversal firms is evidence that the reversal firms have weaker (stronger) motivations to manage earnings upward than the control firms. Our analysis thus compares both the

magnitude and the frequency of earnings declines and pre-reversal losses for reversal firms and their control firms.

Similar to Moehrle (2002) and Duh et al. (2009) we define pre-reversal net income as  $NI_t - REV_t$  and pre-reversal earnings changes as  $NI_t - REV_t - NI_{t-1}$  or  $\Delta PRNI$ . Pre-reversal earnings declines and pre-reversal losses are consequently:

$$\text{Pre-reversal earnings declines} = NI_t - REV_t - NI_{t-1} (\text{PRNI}) < 0$$

$$\text{Pre-reversal losses} = NI_t - REV < 0$$

As well as considering the motivation for income increasing impairment reversals we also consider evidence of other types of earnings management in both the reversal and control companies. Following Huang (2010) we assume that earnings management techniques are complements. Accordingly, firms that are managing earnings upward will not wish to be identified so are likely to manipulate a wide range of accruals upward so that the magnitude of any one accrual does not seem unusual. We make the standard assumption that aggregate abnormal or discretionary accruals are larger for earnings managers (e.g. Cameran, Campa and Pettinicchio, 2014). However, the reversal of the impairment of non-current assets will be captured by models such as the modified Jones model and the Kothari et al. model (Dechow et al., 1995; Kothari et al., 2005). This precludes the use of such models for our tests. We note however that IAS 36 only deals with impairments of non-current assets. Accordingly, we use a model designed to capture abnormal working capital accruals (AWCA) as our measure of general earnings manipulation for our reversal firms. We classify firms with high positive levels of AWCA as earnings managers.

The model that we choose is the DeFond and Park (2001) model. DeFond and Park defines abnormal accruals as the difference between the current year's realized working capital accruals and the expected level of working capital accruals, where the historical relation between working capital and sales captures the expected working capital. The difference is the portion of working capital accruals that are unlikely to be sustained and is expected to be reversed against future earnings. The empirical model is:

$$AWCA_t = WC_t - [(WC_{t-1}/S_{t-1}) * S_t] \quad (1)$$



where

$AWCA_t$  = abnormal working capital accruals in year  $t$ ;

$WC_t$  = non-cash working capital in year  $t$  that is defined as

(current assets - cash and cash equivalent) – (current liabilities – short-term debt);

$WC_{t-1}$  = non-cash working capital in the previous year;

$S_t$  = sales in year  $t$ ;

$S_{t-1}$  = sales in the previous year.

We use  $AWCA_t$  as an indication of current earnings management (Cameran, et al., 2014). We validate the use of AWCA as a measure of earnings management by examining if the reversal firms that this measure classifies as earnings managers are indeed those companies that are particularly motivated to manage earnings. We classify firms which are above the 70<sup>th</sup> percentile with respect to AWCA as being potential earnings managers. Firms in the mid-range from the 31<sup>st</sup> to the 70<sup>th</sup> percentile inclusive are regarded as non-earnings managers. We discard observations up to and including the 30<sup>th</sup> percentile because the low levels of AWCA could be related to downward earnings management<sup>8</sup>. Table 2 presents the results of the analysis of the frequency and magnitude of the pre-reversal earnings declines for these reversal firms. It shows that 47.3% of firms classified as earnings managers by AWCA report pre-reversal earnings declines and only 26% of non-earnings managers report earnings declines. The difference is significant at the 1% level. Also 25.5% of earnings managers report pre-reversal losses which is significantly higher (at the 10% level) than the proportion (13.6%) of non-earnings managers that report pre-reversal losses. The results suggest that the firms with the highest AWCA are also those with the greatest motivation (pre-reversal earnings declines and losses) to manage earnings. This finding also suggests that reversal firms are not uniformly earnings managers nor are they likely to be uniformly reporting in an unbiased manner.

*Insert Table 2 about here*

We employ  $BACC_t * CEO_{t-\tau}$  as an indication of a prior a big bath. A high level of accumulated impairment ( $BACC_t$ ) may result from excessively conservative accounting in a

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<sup>8</sup> Including firms ranked up to the 30<sup>th</sup> percentile as non-earnings managers makes no difference to our results. Changing the definition of earning managers to those over the 61<sup>st</sup> percentile also does not make any difference to our results.

prior period, a severe dip in asset values, possibly at industry level, or big bath accounting. However high levels of BACC combined with a prior change in top management, particularly the CEO, is expected to be positively related to the reversals of impairment losses. Thus we identify “big bathers” as companies which have large beginning balance of accumulated impairment losses (BACC) and have changed their CEO in the past two years (Strong and Meyer, 1987; Broberg et al., 2007).

Corporate governance (CG) is viewed as an important mechanism to safeguard the interests of shareholders. According to agency theory, the potential opportunistic behaviour of agents can be controlled through the adoption of proper monitoring mechanisms (Jensen and Meckling, 1976). Previous studies document that good governance constrains the opportunistic reporting of managers (Klein, 2002; Peasnell, 2005; Xie, 2003; Bradbury et al., 2006). The quality of the corporate governance of the sample firms is measured in relation to board size and board independence as well as audit committee independence. The Malaysian Code of Corporate Governance requires firms to disclose the details of board members in the annual reports from which the data is manually collected. As defined in the Bursa Malaysia Listing Requirement, an independent director is a director who is independent of the management and free from any business or other relationship which could interfere with the exercise of the independent judgment or the ability to act in the best interest of the shareholders. In addition, the Bursa Malaysia Listing Requirement specifies that the board of directors of public companies must prepare an audit committee report in the annual report which includes the composition of the audit committee. Larger boards are considered less effective and efficient than smaller ones (Yermack, 1996). We also consider five the minimum number of directors for a board to function effectively. We exploit the well-known result that earnings management is declining in the standard of corporate governance as additional reassurance that  $AWCA_t$  is capturing earnings management. Similar to Donnelly (2008) We create an indicator variable based on our corporate governance index which takes the value 1 for well-governed firms (score 2 or 3) and the value 0 (score 0 or 1) for poorly governed firms. This index is intended to reflect how Malaysian companies use corporate governance to mitigate earnings management rather than a comprehensive index of a Malaysian firm’s governance *per se*.

#### *Research Methods – Multivariate Analysis*

In this section we outline the multivariate models used to formally test H1 and H2. Taking the former first we combine all the variables across which we compare reversers and their matched control firms,  $AWCA_t$ ,  $BACC_t$ ,  $DLOSS_t$ ,  $CEO_{t-\tau}$ ,  $BACC_t * CEO_{t-\tau}$  and corporate governance ( $CG_t$ ) into a multivariate model to establish if reversal firms are more likely to be earnings managers (past and present) than non-reversal firms. We also include three control variables, leverage, the market-to-book ratio, and whether the company is audited by a big 4 firm, in this model. We estimate this multivariate model, which is outlined in equation (2) below using Logit to test H1.

$$DREV_t = \alpha + \beta_1 \Delta PRNI + \beta_2 AWCA_t + \beta_3 CG_t + \beta_4 DLOSS_t + \beta_5 CEO_t + \beta_6 BACC_t + \beta_7 BACC_t * CEO_{t-\tau} + \beta_8 LEV_t + \beta_9 MTB_t + \beta_{10} AFRM_t + \varepsilon_t \quad (2)$$

Where:

$DREV_t$  = one for a reversal firm and 0 for a control firm in year t.

$\Delta PRNI$  = change in pre-reversal net income from year t-1 to year t scaled by total assets at end of year t;

$AWCA_t$  = abnormal working capital accruals in year t;

$CG_t$  = the corporate governance index, calculated as board size (one point if number of directors is between 5 and 11, and 0 otherwise) + audit committee independence (one point if the audit committee comprises solely of independent outside director and at least one of whom has financial expertise, and 0 otherwise) + board independence (one point if the proportion of independent non-executive directors is more than 50%, and 0 otherwise).  $CG$  equals 1 if corporate governance index is 2 or 3, and equals 0 if corporate governance index is 0 or 1.

$DLOSS_t$  = 1 if the pre-reversal earnings,  $NI_t - REV_t < 0$ .

$CEO_{t-\tau}$  = equals to one if firm changes its chief executive officer/general manager in year t-1 or year t-2, and zero otherwise.

$BACC_t$  = beginning balance of accumulated impairment loss in year t deflated by total assets at end of year t.

$MTB_t$  = the market to book ratio at end of year t;

$LEV_t$  = total debts scaled by total assets at end of year t;

$AFRM$  = 1 if the company is audited by a big 4 auditor.

Next we turn to H2 which requires us to take cognisance of the size of the reversal since we need to distinguish between reversal firms that are reversing for opportunistic and unbiased reasons. We estimate the following equation using Tobit regression for the full sample of 310 (155 reversal firms) observations to control for industry and size effects.

$$\begin{aligned}
 REV_t = & \alpha + \beta_1 \Delta PRNI + \beta_2 AWCA_t + \beta_3 \Delta PRNI * AWCA_t + \\
 & \beta_4 (NI_t - REV_t - NI_{t-1}) * CG_t + \beta_5 AWCA_t * CG_t + \beta_6 \Delta PRNI * AWCA_t * CG_t + \beta_7 CG_t + \beta_8 CEO_{t-\tau} \\
 & + \beta_9 BACC_t + \beta_{10} BACC_t * CEO_{t-\tau} + \beta_{11} \Delta PRNI * BACC_t + \beta_{12} \Delta PRNI * CEO_{t-\tau} + \\
 & \beta_{13} \Delta PRNI * BACC_t * CEO_{t-\tau} + \beta_{14} LEV_t + \beta_{15} MTB_t + \beta_{16} SIZE_t + \beta_{17} AFRM_t + \varepsilon_t
 \end{aligned}
 \tag{3}$$

A positive estimate of  $\beta_1$  is evidence of the reversal of impairments being associated with positive pre-reversal earnings changes and an unbiased approach to the reversal accrual when the moderating variables are 0. However, if  $\beta_1$  is negative the reversal is more likely to be an attempt of upward earnings manipulation to compensate for poor current operating performance relative to that of the prior year. However, a significantly negative  $\beta_1$  is not definitive evidence of earnings management using reversals: Duh et al (2009). We introduce AWCA as a moderating variable and the interaction term of  $\Delta PRNI * AWCA$  to examine the presence of opportunistic reporting. We predict that firms with high levels of AWCA are earnings managers and are therefore more likely to report the reversals opportunistically to avoid earnings declines (Cameran et al, 2014). The coefficient on the interaction term of  $\Delta PRNI * AWCA$  is expected to be negative if firms with high AWCA are using impairment reversals opportunistically. We test for the potential mitigating effect of corporate governance on impairment reversals by interacting corporate governance ( $CG_t$ ), with  $\Delta PRNI * AWCA_t$ . The coefficient on  $\Delta PRNI * AWCA_t * CG_t$ , is expected to be positive.

We predict that prior big baths,  $BACC_t * CEO_{t-\tau}$ , is positively related to  $REV_t$ . However, given that taking a big bath is a type of earnings management we also predict that the coefficient on  $\Delta PRNI * BACC_t * CEO_{t-\tau}$  is negative. Firms which have changed their CEOs in the recent past are more likely to reverse impairments in order to compensate for poor current performance. In other words, managing earnings downward using impairment charges to take big bath is really just part of an overall scheme to manage earnings upward later and reversing impairment charges will facilitate this. We also control for size and the status of the company's auditor. We do not include DLOSS in equation (3) since we do not expect it to have any incremental explanatory power for  $REV_t$  over and above pre-reversal earnings

changes. The market to book ratio,  $MTB_t$ , controls for risk and growth. The leverage ratio,  $LEV_t$ , is included as prior studies find that the larger the debt ratio the more likely managers engage in earnings management and Duh et al. (2009) find that it related to impairment reversal in Taiwan.

#### 4. Results

##### *Differences between Reversal Firms and Control Firms*

To assess the motives that a company's management might have for reversing an impairment charge we need to analyse what its earnings and earnings change would be without the reversal. Panel A of Table 3 shows that the magnitude of pre-reversal earnings and earnings changes relative to the prior year of the reversal firms are significantly higher than those of the control firms. This superior performance of the reversal firms suggests that there is an association between contemporaneous earnings performance and impairment reversals. However, this association is the opposite of what one would expect if reversal firms in general were earnings managers: this is preliminary evidence in favour of the null hypothesis of H1a.

The mean and median accumulated impairment balances (BACC) among reversal firms are also significantly larger than the control firms. As discussed earlier, a higher level of accumulated impairment among reversal firms may result from excessively conservative accounting in a prior period, a severe dip in asset values, possibly at industry level, or big bath accounting. This may be important for the interpretation of the superior performance of outlined in the previous paragraph. It suggests the possibility that the current performance of reversal firms may be influenced by past impairments. For example, a desired outcome of big bath behaviour is improved subsequent performance so we predict that big bath behaviour is associated with above-average subsequent pre-reversal performance. Thus the possibility that the superior performance of the reversal firms is an outcome of past earnings management cannot be discounted without further analysis.

Panel B of Table 3 presents the frequency of pre-reversal earnings declines and pre-reversal losses of reversals firms and control firms. It shows that 63 (34.6%) of firms that have reversed an impairment would have reported earnings declines without the reversals whereas 78 (42.9%) non-reversal firms have earnings declines, but the difference is not significant. The number (percentage) of reversal firms that have a pre-reversal loss is 36 (19.8%). The

corresponding number (percentage) for the control sample is 50 (27.5%). The difference is significant at the 10% level. In other words, the control firms are more likely to have incurred losses than reversal firms even after the reversal amounts are removed from the earnings. This result does not support the hypothesis that the reversals, on average, are made to avoid loss making. The panel also shows that there is no significant difference in the standard of corporate governance between reversal firms and the control firms. More reversal firms have had recent CEO changes than the control firms. In addition, among the firms that have recent CEO changes, more reversal firms belong to the top quartile of sample firms (including both the reversal and control firms) that have the highest balances of accumulated impairments (BACC). The differences are statistically significant. This result indicates that there is a link between prior big bath accounting and impairment reversal and we suspect that some reversals are an unwinding of prior big baths. The evidence suggests that our reversal sample certainly contains more extreme big bathers than the control sample. However, these extreme companies only comprise 8.4% of the reversal sample and approximately 2% of the control sample. Thus we require further analysis of the relation between our reversal firms and prior big baths before we draw definitive inferences regarding big baths.

*Insert Table 3 here*

Some inferences that we can draw from Table 3 are that the pre-reversal earnings of reversal firms are better than that of the control firms. Thus, reversal firms generally have no more motivation to manage earnings upwards (by reversing impairments) than the control firms. Further, Panel A shows that the average (median) level of AWCA of the reversal firms is indistinguishable from that of the control firms. This means that reversal firms on average do not use accruals to manage earnings more than the control firms. These results are inconsistent with the notion that reversal firms as a group have stronger motives to manage earnings or engaging in more earnings management than the control firms. Thus it is impossible to argue that an impairment reversal is necessarily an indication of opportunistic earnings manipulation. However, there are also results which show that a greater portion of reversal firms demonstrates evidence of prior earnings management behaviour. In particular, reversal firms tend to have more recent changes of top management and higher level of accumulated impairments relative to control firms: taken together these characteristics are indicative of big bath accounting. Overall, the preliminary results in Table 3 suggest that the decision to reverse impairments is likely to be based on an economic rationale. Some

indications that the reversals are associated with prior big baths remain. This issue will be revisited in the multivariate analysis.

#### *Results from Multivariate Models*

Before addressing our first hypothesis more formally in a multivariate context we outline the descriptive statistics and the correlation matrix of the variables used in the multivariate analysis in Table 4. The descriptive statistics in Panel A of Table 4 are for a sample size of 364 comprised of 182 reversal firms and their matches. However, 27 reversal firms do not disclose BACC separately so these firms and their controls are omitted from analyses containing BACC. The correlation matrix of the independent variables in panel B contains generally low and insignificant correlations. However, there are 8 individual correlation terms that are higher in absolute terms than 0.5. These high correlations pertain to variables and moderating variables constructed from the same variables. It may be feared that such high correlations will induce multicollinearity. However, Brambor, Clarke and Golder (2006) state that it should be remembered that while interaction terms will often induce multicollinearity the standard errors are not incorrect. They just reflect the fact that data does not contain enough information to estimate the parameters accurately and that the standard errors reflect this: but they are the correct standard errors. The acid test of whether a model should include a moderating variable or not is that the interaction term in the model is significant. Multicollinearity will clearly work against finding this significance.

*Insert Table 4 here*

The first of our multivariate analyses, a test of H1a to H1d are outlined in Table 5. The table shows that the pre-reversal earnings change is not significantly negatively related to the propensity to make a reversal. This result suggests that companies that make reversals have current pre-reversal earnings performance that is superior to that of the control firms. This result would not suggest any motivation on the part of reversal firms to manage earnings upwards: we must accept the null of hypothesis H1a. The level of AWCA is not related to the likelihood of the sample firms reversing impairments: we must accept the null of hypothesis H1b. We find that  $CG_t$  is not significantly related to the propensity to reverse an impairment so we accept the null of hypothesis H1c. The overall result from the estimation of equation 2 is that it provides no support for the hypothesis that reversals are undertaken to

manage earnings upwards and is consistent with the preliminary findings that the sample firms have no more motivations to manage current earnings upward than the control firms.

*Insert Table 5 here*

Importantly, Table 5 shows that firms that have higher accumulated balances of impairment losses are significantly more likely to reverse impairments, but those that have CEO changes in the recent past are not. It is possible that reversal firms have engaged in big-bath accounting in the recent past since BACC is significantly positive. However, the insignificant coefficients on  $CEO_{t-\tau}$  and  $BACC * CEO_{t-\tau}$  do not support the big-bath story: we have to accept the null of H1d for the likelihood of reversing an impairment charge. Alternative explanations such as prior conservatism, volatility in asset values and the beneficial impact of new management cannot be discounted. Thus the evidence regarding prior big bath behaviour on the propensity to reverse an impairment charge remains inconclusive.

The results thus far suggest that reversal firms are not more likely than other firms to be managing current earnings upward. With the exception of extreme prior big-bathers we have no support for the proposition that the reversal of an impairment charge marks a firm out as an earnings manager. Nonetheless, we cannot state that reversals are universally undertaken by firms in our sample to faithfully represent their true financial positions. Given the plethora of empirical research that confirms that firms manage earnings it is not realistic to assume that all firms apply FRS 136 in an unbiased manner (see Walker, 2012 for a review of the earnings management literature). Therefore, we endeavour to establish if those that exploit FRS 136 opportunistically can be identified. We do this by testing if the magnitude of a firm's impairment reversal is associated with its motivation (based on current performance) or indications that it is currently managing earnings upward or it has taken a big bath in the past. We use the  $AWCA_t$  as an indicator of current earnings management and the concomitance of a high level of  $BACC_t$  with a recent CEO change as an indication of prior big bath accounting. We estimate equation (3) which conditions the relation between  $REV_t$  and the change in pre-reversal earnings on the level of  $AWCA$  and indicators of prior big bath accounting. Since  $REV$  is a left-truncated variable — i.e. the  $REV$  of control firms is zero whereas the  $REV$  of reversal firms are greater than 0, we use Tobit regressions instead



of OLS regressions because the latter may produce biased estimates of parameters (Kennedy, 2003).

*Insert Table 6 here*

Table 6 presents the Tobit regression results from estimating Equation (3). The coefficients on both  $\Delta PRNI$  and  $AWCA_t$  are positive but neither is significant. These results do not support the notion that impairments are being reversed to manage earnings upwards. Importantly, the coefficient on the interaction term,  $\Delta PRNI * AWCA_t$ , is negative and significant. This suggests that when a firm has poor level of governance and a high level of abnormal accruals (i.e. it displays tendencies of being an earnings manager) it is likely to use reverse an impairment to mitigate a pre-reversal earnings decline. Accordingly, we can reject the null hypothesis of H2a. An important aspect of this finding is that the specific accrual pertaining to the reversals of impairment losses in non-current assets is related to the aggregate measure of earnings management using current accruals (the latter includes reversals of impairments of current assets). Interestingly, the coefficient on  $\Delta PRNI * AWCA_t * CG_{t-\tau}$  is positive and significant demonstrating that the sensitivity of reversals to pre-reversal earnings changes conditioned on AWCA is moderated by the standard of corporate governance. While firms with high AWCA are more likely to reverse the impairment to avoid earnings declines this relation is weaker for firms with strong corporate governance. We therefore reject the null hypothesis of H2b. A joint test reveals that  $\beta_1 + \beta_4 + \beta_7$  is significantly positive at the 5% level indicating that firms with a good standard of governance do not reverse impairments to compensate for a reduction in earnings. On the contrary they reverse impairments when profitability improves. Thus poorly governed firms with high AWCA are the most likely to exploit impairment reversals. We also do a joint test for firms have high abnormal working capital accruals and have a good standard of governance that is we test for the significance of  $\beta_1 + \beta_2 + \beta_3 + \beta_4 + \beta_5 + \beta_6 + \beta_7$  and we find this sum to be significantly positive at the 10% level. Thus, even when they have high abnormal accruals well governed firms reverse impairments in line with increases in profitability. Overall our findings support the opportunistic use of an impairment reversal, but only by poorly governed firms, to avoid an earnings decline.

Consistent with the result in Table 3, the coefficient on BACC is positive and significant indicating that if the moderating variables are zero then firms that have larger impairments

also have larger reversals. The coefficient on CEO is positive but not significant. It was pointed out in the univariate analysis above that further evidence was required pertaining to the association between big baths and subsequent impairment reversals. The coefficient on  $BACC*CEO_{t-\tau}$  provides this additional evidence. The coefficient is significantly positive indicating that “big bathers” have larger reversals. The coefficient on  $\Delta PRNI*BACC_t*CEO_{t-\tau}$  tests if a prior big bath and the use of reversals to mitigate a decline in current earnings are related. If firms with high impairments that have also changed CEO in the past are reversing unnecessary impairments to avoid an earnings decline we would expect that the coefficient is negative. Our results show that it is significantly negative and the null of hypothesis H2c is rejected. The negative coefficient indicates that reversals increase as pre-reversal earnings decline for big bathers. It may be more intuitive, however, to think of the negative  $\beta_{13}$  as testing how current pre-reversal earnings changes influence the ability of big baths ( $BACC*CEO_{t-\tau}$ ) to predict reversals. The negative coefficient suggests that the relation between big baths and REV becomes more positive as pre-reversal earnings decline. In any event, firms that have taken a big bath to manage earnings in the recent past are more likely to reverse their impairments for opportunistic reasons (i.e. to mitigate negative changes in pre-reversal earnings).<sup>9</sup>

#### *Robustness checks*

We perform two additional tests to check the robustness of the results in relation to the measurement of accruals and pre-reversal earnings declines. The abnormal accrual variable, AWCA, is replaced with a dummy variable. The variable takes the value of 0 if the firm is among the top 30% of the reversal firms in terms of the level of AWCA. The middle 40% of the reversal firms are regarded as non-earnings managers. In addition, we dichotomize the pre-reversal earnings decline variable,  $\Delta PRNI$ , with a dummy variable, which is equal to zero if  $\Delta PRNI < 0$ , and zero otherwise. The results are consistent with the ones presented above and are not tabulated here. In relation to the role of corporate governance, we replace the governance index variable with the three separate governance characteristics variables. The results are consistent with the ones reported in Table 5 and Table 6, especially the moderating effects of board independence and audit committee independence on the sensitivity of reversals to pre-reversal earnings changes conditioned on AWCA. We also re-estimate the regression equations using clustered standard errors and the results are confirmed.

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<sup>9</sup> Joint tests confirm that firms' which have changed CEO are likely to reverse an impairment. This is significant at the 1% level.

## 5. Discussion and Conclusion

Fair value accounting has been claimed to provide the users of financial information with more relevant and up to date information. However, it is also claimed that the estimations implicit in arriving at fair values facilitate the manipulation of earnings which will hinder their faithful representation of the company's performance and financial position and make them less useful. The study evaluates the use of fair value accounting by examining the application of fair value principles in the context of the reversal of impairments by Malaysian companies.

We first compare our reversal companies with a matched sample of companies that did not reverse their impairments. The empirical evidence presented here shows that firms that reverse their impairments using FRS 136 in Malaysia have no greater motivations to manage current earnings upwards than a sample of control firms based on industry class and size. Furthermore, their average level of AWCA and their standard of corporate governance are no different to those of the control sample. Thus firms that reverse impairments do not display any increased proclivity to manage earnings relative to companies that do not make such reversals. The contemporaneous earnings performance of reversal firms is significantly superior to that of the control firms. This indicates that the reversal is associated with improved performance and it would not be unreasonable to infer that Malaysian companies generally reverse impairments for unbiased reasons. However, results from a multivariate logit model also provides strong evidence that a major difference between reversal companies and companies that do not reverse their impairments is the level of the prior balance of impairment losses. This suggests that past impairment decisions impact strongly on current impairment reversals. This result may stem from the high volatility in the asset prices of some firms, conservative accounting or even big bath accounting. While it is clear that there are more extreme big bathers in the reversal firm sample than the control sample we are not able to provide conclusive evidence that the reversal of an impairment charge distinguishes big bathers from other companies. It is also unlikely, given the relation between their reversals and contemporaneous pre-reversal net income, that our reversal companies are excellent performers that are smoothing their income. Overall, with the important exception of those companies that have engaged in a big bath in a prior period, we infer that impairment reversers in Malaysia are no more likely and probably less likely to be using their reversals to manage current earnings upwards than other companies.

The second part of our study tests if the monetary amount of the impairment is related to other indications earnings management, past or present. The finding that the main difference between reversal and control firms is the level of the accumulated impairment balance gives rise to the suspicion that some of our reversal sample firms may have used impairments to manage earnings downwards in the past. Furthermore, just because their current earnings performance, abnormal accruals and corporate governance suggest that reversal companies, on average, are not earnings managers does not imply that all impairment reversals are being used as a faithful representation of asset values. The second part of our study endeavours to establish the relation between past and present earnings management and the reversal of impairments. We identify companies that use impairment reversals to manage earnings in a number of ways. First, we note that there is a stronger motivation to manage earnings upward when they fail to achieve a benchmark such as zero or the prior year's earnings. We note from the literature that earnings managers tend to have high levels of AWCA and have relatively weak corporate governance. We are also cognisant of the empirical evidence that impairments are used to engage in big bath accounting. Taking these three indicators of earnings management and combining them with the motivation to avoid a pre-reversal earnings decline readily identifies the earnings managers. Specifically we find that firms with high AWCA have a negative relation between reversals and current pre-reversal earnings changes. This relation is mitigated as predicted by good corporate governance. The relation between prior big baths and reversals is complex. First big bathers tend to reverse a greater amount of impairments in monetary terms than other firms regardless of current performance:  $BACC_t * CEO_{t-\tau}$  is positively related to  $REV_t$ . There is also evidence that when the earnings of big bathers are poor relative to the prior period's earnings they exploit their cookie jar reserves:  $\Delta PRNI * BACC_t * CEO_{t-\tau}$  is negatively related to  $REV_t$ . In other words the positive relation between big bathers and  $REV_t$  is increasing as pre-reversal performance relative to the prior year's earnings worsens. Thus prior big-bathers have no hesitation in dipping into the cookie-jar reserve created by their over-impairment of assets in the past.

By simultaneously testing for the influence of both current and past earnings management on the decision to reverse an impairment charge and its relation with current pre-reversal earnings changes in a common law country we extend Duh et al. (2009). Our results for Malaysia contrast with those of the aforementioned authors for Taiwan. Duh et al. (2009)

claim that their results provide a rationale for FASB's decision to forbid the reversal of impairment charges in the US. As many accruals are discretionary if we were to extend their logic to all accruals we would ultimately revert to accounting based on cash flows. As pointed out above, the prohibition of impairment reversals will leave an asset sale as the alternative method to manage earnings upward. The results reported here suggest that in general firms in Malaysia reverse impairments in an unbiased manner. However, the results also suggest that some Malaysian firms use the reversal to opportunistically manage earnings upward. These firms tend to fall into two categories (a) firms that are already displaying characteristics of managing current earnings as evidenced by their AWCA or (b) firms have been involved a big bath in a prior year. From the perspective of the International Accounting Standards Board and the Malaysian Accounting Standards Board it is encouraging that the evidence presented here suggests that reversing the impairment of non-current assets does not necessarily mark a firm out as an earnings manager: current or past. It would appear that on average Malaysian firms are using the IAS 36 (FRS 136) to provide unbiased information. Nonetheless there is also clear evidence that, like any accounting accrual where judgement is required, that IAS 36 can and is exploited opportunistically by some companies. It may be worth formal investigation as to the extent analysts and ordinary investors do appreciate the exploitation of FRS 136. This issue is beyond the scope of the current study so is recommended as a possible avenue for future research.

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**Table 1 Summary statistics of matched reversal firm-years during 2006-2009**

	Number of matched firm- years		Percentage of matched firm-years (%)	
<b>Panel A: Year breakdown</b>				
2006	31		17.03	
2007	43		23.63	
2008	39		21.43	
2009	69		37.91	
<b>Total</b>	<b>182</b>		<b>100.00</b>	
<b>Panel B: Type of assets breakdown</b>				
Property, plant and equipment (PPE)	66		36.26	
Investment in associates	19		10.44	
Other investments	78		42.86	
Investment properties	11		6.04	
Multiple	8		4.40	
<b>Total</b>	<b>182</b>		<b>100.00</b>	
<b>Panel C: Industry breakdown*</b>				
Technology and telecommunications	7	(37)	3.85	(4.45)
Industrial metals, mining, forestry, paper	8	(52)	4.40	(6.25)
Oil, gas, water and electricity	2	(38)	1.10	(4.57)
Media	2	(7)	1.10	(0.84)
Property	26	(100)	14.29	(12.02)
Industry products	57	(222)	31.32	(26.68)
Construction and materials	27	(112)	14.83	(13.46)
Travel and leisure	9	(29)	4.94	(3.48)
Consumer products	44	(235)	24.17	(28.25)
<b>Total</b>	<b>182</b>	<b>(832)</b>	<b>100.00</b>	<b>(100.00)</b>

\* Figures in the parentheses in Panel C refer to the overall industry distribution in Malaysian stock market 2006-2009

**Table 2: Reversal earnings managers, reversal non-earnings managers, earnings declines and pre-reversal losses**

	Reversal earnings managers		Reversal non-earnings managers		p-value
	Number	%	Number	%	Diff in proportion
<i>Frequency analysis of pre-reversal earnings declines and losses</i>					
Number of firm-years examined	55	100.0	73	100.0	
Numbers and percentage of firm-years in which a pre-reversal earnings decline occur	26	47.3	19	26.0	0.01
Numbers and percentage of firm-years with pre-reversal loss	14	25.5	10	13.6	0.09

Differences in proportion are tested using a two-tailed test.

Reversal earnings managers are reversal firms at the top 30% in terms of AWCA.

Reversal non-earnings managers are reversal firms at the middle 40% in terms of AWCA.

**Table 3: Descriptive statistics of Reversal Firms and Control Sample**

	Reversal firms		Control firms		p-value
<i>Panel A: Magnitude of pre-reversal earnings, pre-reversal earnings changes, abnormal working capital accruals and accumulated impairment</i>					
	Mean (Median)		Mean (Median)		Diff in mean (Diff in median)
NI <sub>t</sub> -REV	0.0413 (0.0422)		0.0189 (0.0293)		0.00 (0.023)
NI <sub>t</sub> -REV-NI <sub>t-1</sub>	0.0148 (0.0128)		-0.0027 (0.0052)		0.01 (0.024)
AWCA	0.0007 (-0.0009)		-0.0041 (0.0011)		(0.64) (0.968)
BACC	0.0176 (0.0058)		0.0087 (0.0011)		0.00 (0.000)
<i>Panel B: Frequency analysis of earnings declines, losses, accumulated impairment, CEO change and corporate governance</i>					
	Number	%	Number	%	P-value for test of difference in proportion
Number of firm-years examined	182	100.0	182	100.0	
Numbers and percentage of firm-years in which a pre-reversal earnings decline occur	63	34.6	78	42.9	0.12
Numbers and percentage of firm-years with pre-reversal net loss	36	19.8	50	27.5	0.08
Number and percentage of firm-years with CEO change in year t-1 or t-2.	43	23.6	23	12.6	0.00
Number and percentage of firm-years in the top 25% of BACC and change of CEO in year t-1 or t-2.	13	8.39 <sup>a</sup>	3	1.94 <sup>a</sup>	0.01
Number and percentage of firm-years with good corporate governance <sup>b</sup>	97	53.3	92	50.5	0.60

<sup>a</sup>Number of firm-years examined is 155 for BACC. The difference (27 reversal observations and their controls) is not traceable as the 27 reversal firms combined accumulated impairment and accumulated depreciation into one account.

<sup>b</sup>Firm-years with good corporate governance are firms with CG index of 3 or 2.

Differences in proportion, mean and median are tested using two-tailed proportion test, t-test and Mann Whitney test, respectively.

NI<sub>t</sub> – REV = pre-reversal net income in year t scaled by total assets at the end of year t;

ΔPRNI = change in pre-reversal net income from year t-1 to year t scaled by total assets at end of year t;

AWCA<sub>t</sub> = abnormal working capital accrual (DeFond and Park, 2001) deflated by total assets at end of year t;

BACC<sub>t</sub> = beginning balance of accumulated impairment loss in year t deflated by total assets at end of year t.

**Table 4: Descriptive statistics and the correlation matrix for the regression variables, n=364.**

*Panel A: Descriptive statistics*

Variables	Mean	Median	SD	Min	Max	Skew	Kurtosis
<b>Dependent variables</b>							
REV	0.0037	0.0012	0.0057	0.0000	0.0271	2.7461	7.8388
<b>Independent variables</b>							
$\Delta$ PRNI	0.0059	0.0067	0.0653	-0.1844	0.1988	-0.0867	2.3290
AWCA <sub>t</sub>	-0.0011	0.0002	0.0969	-0.2660	0.2616	-0.1055	1.5585
BACC <sub>t</sub>	0.0196	0.0059	0.0299	0.0000	0.1066	1.9203	5.4382
CG <sub>t</sub>	1.7127	2.0000	0.8223	0.0000	3.0000	0.3355	-1.0319
MTB <sub>t</sub>	0.9680	0.6800	0.9503	0.1100	5.8900	3.1793	12.329
LEV <sub>t</sub>	0.4403	0.4510	0.1835	0.0656	0.8186	0.0365	-0.6950
CEO <sub>t-t</sub>	0.1823	0.0000	0.3866	0.0000	1.0000	1.6524	0.7345

**Panel B** Correlation matrix

	$\Delta$ PRNI	AWCA	$\Delta$ PRNI *AWC A	$\Delta$ PRNI *CG	AWCA *CG	$\Delta$ PRNI *AWCA *CG	CG	CEO	BACC	BACC *CEO	$\Delta$ PRNI *BACC C	$\Delta$ PRNI *CEO	$\Delta$ PRNI *BACC *CEO	LEV	MTB	SIZE	AFRM
$\Delta$ PRNI	1.000																
AWCA	-0.008	1.000															
$\Delta$ PRNI*	-0.122	-0.079	1.000														
AWCA	0.748	-0.018	-0.164	1.000													
CG	-0.015	0.757	-0.104	-0.025	1.000												
$\Delta$ PRNI*	-0.129	0.055	0.779	-0.128	-0.081	1.000											
AWCA*	-0.047	-0.019	-0.014	0.042	-0.047	-0.012	1.000										
CG	0.010	0.061	-0.112	-0.022	0.071	-0.099	0.099	1.000									
BACC	0.226	0.063	-0.060	0.180	-0.004	0.070	0.047	0.051	1.000								
BACC*	0.160	0.035	-0.090	0.224	0.037	-0.076	0.150	0.510	0.398	1.000							
CEO	0.657	0.057	-0.1137	0.470	-0.045	0.030	0.001	0.069	0.473	0.384	1.000						

$\Delta$ PRNI* CEO	0.511 0	-0.097	0.110	0.532	-0.115	0.084	-0.046	0.093	0.156	0.349	0.357	1.000					
$\Delta$ PRNI* BACC* CEO	0.323	-0.047	-0.025	0.429	-0.060	-0.024	0.077	0.208	0.323	0.727	0.552	0.643	1.000				
LEV	-0.002	0.053	-0.021	0.051	0.022	0.107	0.061	-0.021	0.164	0.052	0.063	-0.044	0.021	1.000			
MTB	0.111	0.043	0.049	0.0793	0.033	0.084	-0.043	0.093	0.077	0.096	0.119	0.068	0.051	0.155	1.000		
SIZE	-0.049	-0.077	-0.018	-0.053	-0.134	0.006	-0.002	-0.059	-0.152	-0.063	-0.043	0.018	-0.058	0.131	0.229	1.000	
AFRM	-0.086	0.072	0.0073	-0.0097	0.075	0.028	-0.112	-0.022	-0.001	0.009	-0.083	-0.030	-0.070	-0.065	0.090	0.134	1.000

<sup>a</sup>The sample size for BACC is 155 reversal observations and 155 control firms. The difference (27 reversal observations and their controls) is not traceable as the firms combined accumulated impairment and accumulated depreciation into one account. All data are winsorized at three standard deviations from the mean.

All subscripts have been removed.

REV = reversal amount scaled by total assets at end of year t;

$\Delta$ PRNI = change in pre-reversal net income from year t-1 to year t scaled by total assets at end of year t;

AWCA = abnormal working capital accrual (DeFond and Park, 2001) deflated by total assets at end of year t;

BACC = beginning balance of accumulated impairment loss in year t deflated by total assets at end of year t;

CG = corporate governance index calculated as the board size (one point if number of directors is between 5 and 11, and 0 otherwise) + audit committee independence (one point if the audit committee comprises solely of independent outside director and at least one of whom has financial expertise, and 0 otherwise) + board independence (one point if the proportion of independent non-executive directors is more than 50%, and 0 otherwise);

SIZE = the natural log of total sales at end of year t;

MTB = the market to book ratio at end of year t;

LEV = total debts scaled by total assets at end of year t;

CEO = equals to 1 if firms change their chief executive officer/managing director in year t-1 or t-2.

**Table 5 Logistic regression testing the relationship between impairment loss reversal and incentives to avoid earnings declines**

Equation 2

$$DREV_t = \alpha + \beta_1 \Delta PRNI + \beta_2 AWCA_t + \beta_3 CG_t + \beta_4 DLOSS_t + \beta_5 CEO_t + \beta_6 BACC_t + \beta_7 BACC_t * CEO_{t-\tau} + \beta_8 LEV_t + \beta_9 MTB_t + \beta_{10} AFIRM_t \varepsilon_t$$

	Coefficient	Hypothesis	Pred. Sign	z-Statistic	p-value
Intercept	-0.5382			-1.30	0.19
$\Delta PRNI$	4.3878	H1a	-	2.02	0.04
$AWCA_t$	-0.0649	H1b	+	-0.05	0.96
$CG_t$	0.2084	H1c	-	0.82	0.41
$DLOSS_t$	-0.4964		+	-1.50	0.13
$CEO_{t-\tau}$	0.3587		+	0.67	0.50
$BACC_t$	18.8565		+	3.33	0.00
$BACC_t * CEO_{t-\tau}$	83.3716	H1d	+	1.56	0.11
$LEV$	-1.1095		+	-1.59	0.11
$MTB$	0.2994		+	1.78	0.07
$AFIRM$	0.4512		-	1.60	0.10
N	310				
Wald $\chi^2$	32.96				
p-value ( $\chi^2$ )	0.000				

*Z-statistics are based on robust standard errors*

*The equation is estimated by controlling for year differences.*

*The predicted signs of the coefficients are prepared on the basis that earnings are being managed opportunistically and this opportunism is mitigated by good corporate governance.*

*The highest Variance Inflation factor is 1.71 and the average VIF is 1.21.*

$DREV_t$  = one for a reversal firm and 0 for a control firm in year t;

$\Delta PRNI$  = change in pre-reversal net income from year t-1 to year t scaled by total assets at end of year t;

$AWCA_t$  = abnormal working capital accrual (DeFond and Park, 2001) deflated by total assets at end of year t;

$CG_t$  = Corporate governance index calculated as the board size (one point if number of directors is between 5 and 11, and 0 otherwise) + audit committee independence (one point if the audit committee comprises solely of independent outside director and at least one of whom has financial expertise, and 0 otherwise) + board independence (one point if the proportion of independent non-executive directors is more than 50%, and 0 otherwise).  $CG$  equals 1 if corporate governance index is 2 or 3, and equals 0 if corporate governance index is 0 or 1.

$DLOSS_t$  = 1 if the pre-reversal earnings,  $NI_t - REV_t < 0$ ;

$CEO_{t-\tau}$  = equals to one if firm changes its chief executive officer/general manager in year t-1 or t-2, and zero otherwise:  $\tau = 1$  or 2;

$BACC_t$  = beginning balance of accumulated impairment loss in year t deflated by total assets at end of year t;

$LEV_t$  = total debts scaled by total assets at end of year t;

$MTB_t$  = the market to book ratio at end of year t;

$AFIRM$  = equals 1 for big 4 audit firm and 0 for non-big 4 audit firm.

**Table 6: Tobit regression testing the relationship between impairment loss reversal, AWCA, BACC, CEO change and incentives to avoid earnings declines**

$$REV_t = \alpha + \beta_1 \Delta PRNI + \beta_2 AWCA_t + \beta_3 \Delta PRNI * AWCA_t + \beta_4 (NI_t - REV_t - NI_{t-1}) * CG_t + \beta_5 AWCA_t * CG_t + \beta_6 \Delta PRNI * AWCA_t * CG_t + \beta_7 CG_t + \beta_8 CEO_{t-\tau} + \beta_9 BACC_t + \beta_{10} BACC_t * CEO_{t-\tau} + \beta_{11} \Delta PRNI * BACC_t + \beta_{12} \Delta PRNI * CEO_{t-\tau} + \beta_{13} \Delta PRNI * BACC_t * CEO_{t-\tau} + \beta_{14} LEV_t + \beta_{15} MTB_t + \beta_{16} SIZE_t + \beta_{17} AFRM_t \varepsilon_t$$

	Coefficient	Hypothesis	Pred. Sign	t-Statistic	p-value
Intercept	-0.0034			-0.64	0.52
$\Delta PRNI$	0.0093		-	0.7	0.48
$AWCA_t$	0.0018		+	0.27	0.78
$\Delta PRNI * AWCA_t$	-0.2069	H2a	-	-1.81	0.07
$\Delta PRNI * CG_t$	0.0259		+	1.87	0.06
$AWCA * CG_t$	-0.0019		-	-0.22	0.82
$\Delta PRNI * AWCA * CG_t$	0.1904	H2b	+	2.21	0.02
$CG_t$	0.0000		-	0.02	0.98
$CEO_{t-\tau}$	0.0015		+	1.25	0.21
$BACC_t$	0.1100		+	5.78	0.00
$BACC * CEO_{t-\tau}$	0.1333		+	2.46	0.01
$\Delta PRNI * BACC_t$	0.0169		-	0.06	0.94
$\Delta PRNI * CEO_{t-\tau}$	0.0006		-	0.03	0.97
$\Delta PRNI * BACC_t * CEO_{t-\tau}$	-1.1917	H2c	-	-2.35	0.02
$LEV_t$	-0.0041		+	-1.8	0.07
$MTB_t$	0.0004		+	0.96	0.34
$SIZE$	0.0000		-	0.31	0.75
$AFRM$	0.0000		-	0.01	0.99
N	310				
LR $\chi^2$	101.99				
p-value ( $\chi^2$ )	0.000				

*t*-statistics are based on robust standard errors

The equation is estimated controlling for year differences.

The predicted signs of the coefficients are prepared on the basis that earnings are being managed opportunistically and this opportunism is mitigated by good corporate governance.

The highest VIF is 4.59 and the average is 2.52

$REV_t$  = reversal amount scaled by total assets at end of year t;

$\Delta PRNI$  = change in pre-reversal net income from year t-1 to year t scaled by total assets at end of year t;

$AWCA_t$  = abnormal working capital accrual (DeFond and Park, 2001) deflated by total assets at end of year t;

$CG_t$  = corporate governance index calculated as the board size (one point if number of directors is between 5 and 11, and 0 otherwise) + audit committee independence (one point if the audit committee comprises solely of independent outside director and at least one of whom has financial expertise, and 0 otherwise) + board independence (one point if the proportion of independent non-executive directors is more than 50%, and 0 otherwise).  $CG$



equals 1 if corporate governance index is 2 or 3, and equals 0 if corporate governance index is 0 or 1.

$CEO_{t-t}$  = equals to one if firm changes its chief executive officer/general manager in year t-1 or t-2, and zero otherwise;

$BACC_t$  = beginning balance of accumulated impairment loss in year t deflated by total assets at end of year t;

$LEV_t$  = total debts scaled by total assets at end of year t;

$MTB_t$  = the market to book ratio at end of year t.

$AFRM$  = equals 1 for big 4 audit firm and 0 for non-big 4 audit firm