Asset Impairments during the global financial crisis: Was there the efficient disclosure of information, or the management opportunism

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Abstract

The objective of this study is to provide insights into how Australian firms are implementing *AASB 136 Impairments of Assets.* While AASB 136 provides guidance for when impairments should be undertaken, and prescribes how the magnitude of impairments should be determined, managers still have significant discretion in applying the standard. Evidence is provided of the presence of 'indicators of impairment', and in particular stock returns, being positively associated with the recognition of asset impairments. This relation was not impacted by the events of 2009 and is consistent with managers disclose private information through asset impairments. However, there is evidence of opportunism in 2009 with a significantly different relation between leverage and asset impairment which is consistent with opportunism and firms with higher leverage seeking to reduce or minimise asset impairments. Contrary to expectation, there was a negative association between the change in audit fees and asset impairment in 2009. This suggests that in the presence of indicators of impairment, unless auditors were able to perform additional work, a more conservative approach to asset impairment resulted.

JEL Classification:
Keywords: *Asset Impairment*

1. Introduction

The objective of this study is to provide insights into how Australian firms are implementing *AASB 136 Impairments of Assets*.[1] The current economic situation has provided a context where a significant number of firms, confronted by unprecedented market volatility, substantial declines in profitability and sustained falls in stock prices, have needed to determine whether assets should be impaired. While AASB 136 provides guidance for when impairments should be undertaken, and prescribes how the magnitude of impairments should be determined, managers still have significant discretion in applying the standard. Accordingly, this study examines whether management are ostensibly complying with the requirements of AASB 136 and writing down asset values. Alternatively, are managers using discretion in estimating the recoverable amount of assets to opportunistically avoid reductions in asset values. By considering asset impairment generally, this study extends the work of Ramanna and Watts (2008) who focussed more narrowly on goodwill impairment.

A primary motivation for this paper is to avail of the opportunity created by the significant deterioration in global financial markets over 2007 to 2009 to evaluate how AASB 136, a relatively new regulation, is operationalized. The shock to the global economy that was a result of the 'credit crisis' has seen Australia experience its first economic slowdown since transition to International Financial Reporting Standards (IFRS) in 2005. Many listed companies are trading well below their book value, and there has been a sharp decline in profitability. This provides an opportunity to examine the operation of AASB 136, and whether impairments are being recognised efficiently (as standard setters would argue or hope). Alternatively, are managers instead acting opportunistically to avoid the recognition of impairments, and in particular potential breaches of debt contracts. In addition to being of concern to financial statement users generally, impairment recognition is of particular

[1] AASB 136 is the equivalent of IAS 36 Impairment of Assets, issued by the International Accounting Standards Board.

concern to regulatory bodies such as the Australian Securities and Investment Commission (ASIC), which is charged with ensuring transparency within Australian financial markets. It is notable that ASIC recently declared a major focus in the upcoming periods on (amongst other things) the impairment of assets, and expressed the concern that "*there will be more pressure on understanding, measuring and documenting the triggers of impairment"* (Australian Securities and Investment Commission, 2008).

Exacerbating this regulatory concern is the growing pressure on companies to cut costs (and in particular audit fees) in order to minimise the effects of the economic slowdown. In such cases, an important question is whether the accounting data will be reviewed with the same level of rigour and scrutiny as in previous years. A lack of scrutiny may result in auditors relying on management's assumptions in estimating the recoverable amount of assets (Taylor and Wells, 2009).

Based on a sample of 679 firm year observations over the period 2007-2009, there is evidence that the presence of 'indicators of impairment', and in particular stock returns, is positively associated with the recognition of asset impairments. This relation was not impacted by the events of 2009 and managers continue to disclose private information through asset impairments. However, there is evidence that in 2009 the relation between leverage and asset impairment was significantly different from the prior years and is consistent with opportunism and firms with higher leverage seeking to reduce or minimise asset impairments. This likely reflects firms seeking to avoid debt covenant breaches and having to renegotiate debt contracts which would be particularly problematic in 2009. Contrary to expectation, there was a negative association between the change in audit fees and asset impairment in 2009. This suggests that in the presence of indicators of impairment, unless auditors were able to perform additional work, a more conservative approach to asset

impairment resulted. This result was different from prior years when restrictions on audit fees were likely to result in reduced impairments.

This paper contributes to the existing body of literature on the impairment of assets in a number of ways. First, as noted above, whilst previous studies have focused on manager's motivations for making impairments, the current economic climate provides a powerful context to evaluate the claim that managers make asset impairments opportunistically. Second, while Ramanna and Watts (2008) investigated the impact of unverifiable fair value estimates on asset impairment avoidance, their study was restricted to goodwill impairments. This paper examines impairments more generally (including Plant, Property and Equipment, Inventory and Goodwill) and thus extends that paper. Third, this paper contributes to the existing literature by examining impairments within the Australian setting. There has been an extensive body of research that has investigated impairments using US data (Francis et al, 1996; Ramanna and Watts, 2008; Beatty and Weber, 2006; Strong and Meyer, 1987), however there has been only limited study within Australia and no studies conducted within the current regulatory regime. Finally, this study provides evidence of the operation of *AASB 136* in the first economic slowdown subsequent to its adoption.

The remainder of this paper is structured as follows. Section 2 will provide a review the impairments literature in addition to providing a hypothesis and theory development. Section 3 will outline and explain our research design while sample selection and data description is provided in Section 4. The results are presented in Section 5 and finally the conclusions are presented in Section 6.

2. Theory Development & Hypothesis

2.1 Background on AASB 136 Impairment of Assets

Subsequent to the adoption of the equivalent International Accounting Standards in 2005, Australian firms have been required to comply with AASB 136 Impairment of Assets, which prescribes that assets are recorded at no more than their recoverable amounts.[2] The standard provides guidance to entities on the possible indicators of impairments, and outlines procedures and offers direction over determination of the magnitude of impairment losses that should be recognised. Specifically, the standard states that the recoverable amount of an asset is the higher of its 'fair value' or 'value in use'. The 'fair value' for some assets may be observed in active markets and valuation in these circumstances may not be particularly problematic. However, for other assets market values are not readily observable and 'value in use' may need to be estimated. In this situation the entity is required to estimate the future cash flows, discounts rates and growth rates relevant to the assets or groups of assets being valued. While *AASB 136* provides significant guidance over this procedure, the application of this standard aspect of the regulation is largely at the discretion of. Due to such discretion, managers are potentially able to exploit unverifiable estimates of an asset's recoverable amount in order to avoid recognition of impairments. The concern in this paper is with how *AASB 136* is being implemented and how managerial discretion is being exercised.

[2] In the interests of simplicity we describe asset impairment as required under AASB 136, the regulation addressing asset impairment generally. Other standards such as *AASB 139 Financial Instruments: Recognition and Measurement* outline impairment guidelines for specific assets, however, these do not depart materially from the principles outlined in AASB 136 and hence are not detailed here.

2.2 Literature Review & Hypothesis Development

While the issue of the operation of AASB 136 and the impairment of non-current assets in Australia remains relatively unexplored, there has been a significant literature that has discussed the impairment of long-lived assets within the US (based on SFAS 121), as well as in the prior regulatory regime in Australia. This section will provide an overview of this prior literature as well as develop the hypotheses to be tested.

Underpinning AASB 136 and other regulations prescribing asset impairments is the objective of requiring managers to communicate information about future cash flows to financial statement users. This recognises that managers have private information about the firm's future prospects, and prescribing the disclosure of information in financial reporting regulations aids in reducing the information gap between managers and outside stakeholders (Healy and Palepu, 1993). There may also be incentives for managers to provide this information voluntarily to maintain their credibility or reputation (Cotter et al, 1998), and to avoid costly information asymmetries between the firm and external stakeholders (e.g., Skinner, 1994; Cotter et al., 1998). Irrespective of the particular motivation, impairment provides scope for managers to 'efficiently' convey private information regarding the future cash flows of the firm.

Empirically there is support for the proposition that book values can provide value relevant information to financial statement users, particularly in situations where firms are carrying out asset impairments and where current period performance may not be representative of future performance. For example, Collins, Pincus and Xie (1999) found that the book value of a firm could be used to proxy for the expected future earnings of loss-making firms. In these circumstances the declines in the book value of equity through impairments are capturing mangers private information regarding future cash flows, and this is being communicated to financial statement users.

If impairments are being recognised efficiently by firms, then the magnitude of impairment should be reflective of the underlying economic characteristics of the firm. In our first hypothesis, we consider the various firm indicators of impairment. In accordance with paragraphs 7 to 17 of AASB 136, we consider there to be three major indicators of impairments that are readily observable. First, where a firm has a carrying value of net assets that exceeds its market capitalisation over consecutive financial years, we expect impairments to be significantly greater than those firms where the decline in market value is more likely transitory. Second, where a firm has experienced significant negative market returns, we expect the magnitude of impairment to be greater. Finally, where a firm has experienced significant decreases in operating cash flow, we expect there to be a higher level of impairments. Accordingly the first hypothesis is as follows:

H_1: *The magnitude of impairments within a firm is increasing with the (various) indicators of impairment.*

An important question requiring address is whether the association between indicators of impairment and the actual impairments applies generally in the period subsequent to adoption of AASB 136, or whether there are systematic differences in 2009 as firms experienced the economic recession.

Apart from the use of financial reporting to convey managers' private information, Healy & Palepu (1993) also note that certain managerial incentives may cause them to manipulate or manage the financial reports. While standard setters argue that subjective judgements allow managers to convey private information to stakeholders, managers could also use such discretion to advance their own personal interests (Ramanna and Watts, 2008). Quite simply, under an agency theory perspective, managers may seek to opportunistically determine the magnitude and timing of impairments to assets.

In the prior literature, there is significant support for opportunism in the financial reporting process generally (e.g., Watts and Zimmerman, 1986; Healy, 1986), and in particular regarding asset impairment. This is identified by Alciatore et al., 1998 in their review of the literature on asset write-downs, where they note that many of the early studies focus on the flexibility allowed within accounting standards (GAAP) and how this leads to opportunism by managers. Strong and Meyer (1987) is typical, providing evidence that the strongest determinant of asset write-downs in firms is a change in senior management. Furthermore, where a new CEO is found externally, they are likely to make a higher level of impairments to assets. Similarly, Elliott and Shaw (1988) found that, out of a sample of 240 companies that made write offs during the sample period, 39% had experienced a change in management. Problematically for the firms involved, and relevant in the current economic climate, these firms also experienced reductions in bond ratings. More recently, Francis et al (1996) also find that asset write-downs are likely to be higher in those companies that have experienced a change in management, as well as well as those firms with a history of making impairments to assets.

Within an Australian context, the determinants of asset write-downs were considered by Cotter et al (1998). Consistent with studies undertaken in the US, they find that the magnitude of impairment is positively associated with managers' incentives to make impairments to assets. Specifically, they find that the higher the number of management changes, the higher the magnitude of impairment. Additionally, they find that impairments are likely to be higher when the firm has a higher capacity to write-down assets.

Subsequent to these earlier studies a number of regulatory innovations have occurred. Notwithstanding these regulatory changes, concerns about opportunism in determining the magnitude and timing of impairment are continuing, with Riedl (2004) providing evidence that subsequent to the issuance of SFAS 121 the association between economic factors and

asset impairment has weakened. This leads to the conclusion that the *"the reporting of write-offs under SFAS 121 has decreased in quality"*. Critically, he notes the continued incidence of 'big baths', with this likely reflecting opportunistic behaviour.

Attention has also been directed towards the operation of SFAS 142 and the impairment of goodwill. For example, Beatty and Weber (2006) provide further evidence of opportunism, finding that firms with tighter debt covenants and longer CEO tenures are less likely to take goodwill impairments under the SFAS 142. In addition, they also find that firms are more likely to take goodwill write-offs when they are 'riskier' and when they have a higher Earnings Response Coefficient (ERC). Similarly, Ramanna and Watts (2008) examine whether the non-impairment of goodwill *is "associated with managers' private information about future cash flows and/or with agency based motives"*. Consistent with Beatty and Weber (2006) they find that goodwill impairments are negatively associated with the tightness of debt covenants within a firm.

The incentives created by debt contracts for the opportunistic selection and application of accounting policies have long been recognised (Watts and Zimmerman, 1986), and there is strong empirical evidence to support this (e.g., Press and Weintrop, 1990, Defond and Jiambalvo, 1994*;* Dichev and Skinner, 2002). However, an issue requiring address is whether the guidance in AASB 136 is sufficient to constrain this behaviour, and whether firms with relatively high debt levels are less likely to impair assets. This is reflected in the following hypothesis:

> H_2: *The magnitude of asset impairments is decreasing with leverage and firms being closer to debt covenants.*

Again, an important question is whether this relation is consistent across the sample period, or whether there are systematic differences in 2009. The global recession and the illiquidity in debt markets that occurred will have significantly increased the costs of renegotiating debt

contracts. Accordingly, in response to this is there an increased incentive to limit asset impairments being recognised in 2009.

While the focus above is on efficient and opportunistic motivations for asset impairment, consideration must also be given to the opportunities (or constraints) that may limit the ability of mangers to minimise asset impairments. This would include the nature of the assets on the balance sheet and the influence of auditors.

The scope for managerial opportunism in determining asset impairments is likely to be impacted by the reliance placed on 'value in use' (rather than 'fair value') to establish recoverable amount. Critically 'value in use' requires subjective estimates of cash flows, discount rates and terminal values. Holthausen and Watts (2001) identify the problem that where managers are able to estimate the recoverable amount of an asset that is not based upon a market price, they may act opportunistically in publically disclosing information. Recognising this, Ramanna and Watts (2008) exploit the clearly unverifiable nature of goodwill's recoverable amount estimates to evaluate whether this is associated with increased managerial opportunism. As predicted, they find that goodwill impairments are a decreasing function of the proportion of unverifiable assets within the business.

However, an issue in Ramanna and Watts is that they focussed narrowly on impairments of goodwill in firms generally exhibiting indications of impairment. Implicit in their research design is that firms have only one cash generating unit, or alternatively that goodwill is spread equally across all cash generating units. Accordingly, any impairment will be, in the first instance, of goodwill. To the extent that goodwill relates to cash generating units not suffering impairment, no impairment of goodwill would be necessary. Rather, impairments of assets other than goodwill may be required. To address this concern, this study considers asset impairments generally and how a range of assets that are unverifiable in nature impacts this. This is reflected in the following hypothesis:

H_3: The magnitude of asset impairments is a decreasing function of the proportion of unverifiable assets held on the balance sheet.

As with the previous hypotheses, an important question is whether this relation is consistent across the sample period, or whether there are systematic differences in 2009.

A further constraint on the potentially opportunistic behaviour of management in determining asset impairment is the auditor, who can be reasonably expected to review all asset valuations if there are indications of impairment. The adequacy of this review will be a function of audit quality, where this is defined as the likelihood of the auditor detecting a financial report misstatement (DeAngelo, 1981). A consequence of the global recession is that many firms are seeking to reduce costs, and in particular audit fees. Accordingly, a concern is that pressure on audit fees is leading to a reduction in audit quality through the audit review process being curtailed prematurely. If this is occurring asset impairments may not be subject to appropriate scrutiny, and this concern is reflected in the following hypothesis:

H_4: The magnitude of asset impairment is an increasing function of audit fee changes.

As with the previous hypotheses, an important question is whether this relation is consistent across the sample period, or whether there are systematic differences in 2009.

3. Research Design

In testing the above hypotheses, an approach similar to that used in Ramanna and Watts (2008) is employed. This involves multivariate analysis of the association between asset impairments and the indicators of impairment, the incentives and opportunities for impairment and the necessary controls. This takes the following basic form:

$$Impairment_{it} = \propto_0 + \sum_{j=1}^{3} \propto_j Indicators_{it} + \propto_4 Lev_{it} + \propto_5 Unverifiable_{it} + \propto_6 \Delta Audit\ Fee_{it} + \alpha_j Controls_{it} + \varepsilon_{it}$$

Impairment

Impairments are the primary focus of this paper and this reflects the extent to which the assets of the firm are being reduced due to concerns about future returns. These are mandated disclosures in financial reports and they are presented both in aggregate and by asset category. However, they are considered in aggregate, rather than broken down into the categories of assts to which they relate as separate analysis of the impairments would require assumptions about the distribution of assets which cannot be reasonably made. Accordingly, *Impairment* is in the first instance measured as the disclosed aggregate impairment for the firm in each year, scaled by lagged total assets to minimise potential heteroscedasticity.

Impairment is also measured as a dichotomous variable to reflect whether the firm is undertaking asset impairment, albeit at a level inconsistent with the indictors of impairment. This reflects the possibility that firms exhibiting indicators of impairment are recognising impairments, but managers are able to minimise the amount that is being recognised.

A potential concern arising from the focus on impairments is that there may be reductions in asset value not recognised as impairments through the income statement. This would be possible if firms were adopting the 'valuation' model for valuing property and equipment pursuant to *AASB 116 Property Plant and Equipment*, and some or all of the diminution in the asset value was being recognised as a reversal of a prior increment. This is not considered an issue due to the use of the valuation method being virtually nonexistent by listed Australian firms outside the investment property sector.

A related concern arises for firms in the property investment sector. First, assets in this sector would be accounted for under *AASB 140 Investment Property* and recognised at fair value. Second, the property market may be argued to be providing sufficient information

for the value of such assets at 'fair value' rather than 'value in use'. Accordingly, firms from this sector are deleted from the sample.

Indicators

Asset impairments are necessary where the recoverable amount of assets has declined below cost, and economic factors will indicate when this has occurred. Providing certainty, AASB 136 identifies a range of factors that might be considered 'indicators of impairment', and to the extent that the presence of these indicators leads to actual impairment it can be argued that managers are likely recognising impairments efficiently, and communicating otherwise private information. A number of these indicators of impairment are readily observable, and these will provide the basis for tests relating to H_1.

If the markets assessment of firm value is less than book value, then it is likely that particular assets or groups of assets included in book should be impaired. To the extent that this persists for two years then it is unlikely that the reduction in assets values is transitory. Accordingly, consistent with Ramanna and Watts the fist indicator of impairment considered is *M/B* which is a dichotomous variable assuming the value 1 if the market to book ratio at the end of the financial year is less than 1 for consecutive years. This is expected to be positively associated with *Impairment.*

A significant decline in market values is also likely to be symptomatic of a decline in the value of the firms' assets. Again, consistent with the Ramanna and Watts, the second indicator of impairment considered is *BHR* which is a continuous variable representing the buy and hold returns calculated for the stock for the financial year under review. This is expected to be negatively associated with *Impairment.*

The value of assets is a function of the returns generated and a decline in operating cash flows is potentially indicative of a decline in these returns. Reflecting this, the third

indicator of impairment is *ΔOpCF*, calculated as the change in annual operating cash flows scaled by total assets. The greater the decline in operating cash flows the more likely that asset impairments are necessary, hence a negative relation is expected.

Lev

The closer a firm is to breaching loan covenants, the greater incentive for firms to seek to minimise asset impairments. Closeness to covenants is not readily observable, but it is likely that covenant requirements will reflect industry norms. Accordingly, *Lev* is a continuous variable calculated as the ratio of liabilities to total assets reported at the financial year-end, adjusted for the average within the industry. If managers are behaving opportunistically, there is expected to be a negative association between *Lev* and *Impairment* (H_2).

Unverifiable

Management discretion in estimating the recoverable amount of an asset is greatest where asset values are unverifiable. In this context, unverifiable refers to the lack of a reference to a market valuation, and the determination of recoverable amount is based upon estimation of 'value in use'. While Ramanna and Watts focussed on goodwill, property plant and equipment and inventory are also likely subject to considerable managerial discretion in the estimation of asset values. Accordingly, *Unverifiable* is calculated as the ratio of goodwill, property plant and equipment and inventory to total assets at year end. The potential for managers to behave opportunistically is greater the higher the proportion of unverifiable assets, hence there is expected to be a negative association between *Unverifiable* and *Impairment* (H_3).

ΔAudit Fee

Finally, to determine whether firms under pressure to reduce audit fees were less rigorous in the review of asset values, the relation between audit fees, or more precisely change in audit fees, is considered. This is considered the appropriate measure of audit effort being applied in the current period as other measures which identify of audit quality, such as audit specialists, would require firms to switch auditors to generate a change in quality and this fails to recognise that an incumbent auditor may respond to pressure on fees by reducing audit effort. Reflecting this *ΔAudit Fee* was calculated as the change in audit fees from the prior year, relative to the prior year audit fee. If auditors are reducing audit effort in response to fee pressure and this is resulting in less impairments, a positive relation between *ΔAudit Fee* and *Impairment* is expected (H_3).

2009 Effects

While the primary concern is with the determinants of asset impairment under AASB 136 generally, it is recognised that the results may be sensitive to particular time periods, especially 2009. Accordingly, separate analysis of the results across the years will be undertaken, and in the pooled regression, a 2009 year dummy variable and interactions with the above independent variable will be included to determine whether the relation between *Impairment* and the above dependent variables changes in 2009.

Controls

The extant literature notes a number of other factors that are associated with asset impairments. This would include other potential incentives for asset impairment, which may impact the impairment decision and mechanical issues associated with the estimation of impairment. These are outlined below.

Of the other factors potentially impacting the impairment decision, it was discussed above that CEO changes are commonly associated with impairments as incoming mangers take an 'earnings bath'. Recognising this, *ΔMgmt* is included in the analysis. This is a dichotomous variable, which assumes the value 1 if there is CEO change in the period, otherwise 0. Similarly, executive compensation may also influence asset impairment decisions, with concern being directed primarily to situations where the CEO has or receives equity compensation. Accordingly, the variable *Bonus* is included in the analysis, which takes the value of 1 where a firm pays some form of equity based compensation.

Similarly, there may be firm characteristics that influence the level of impairment. This would include firm size, as suggested by Strong and Meyer (1987). Reflecting this *Size*, measured as the log of total assets is included in the analysis. Due to the potential for increments and decrements in cash generating units to be offset, the level of impairment may be impacted by the level of aggregation of units into which the firm analysed. To control for this *CGU* is included in the analysis. The number of cash generating units is not reported, however, the number of business segments are reported and this is used as a proxy. Finally, there may be differences across industries, and for this reason industry controls are also included.

4. Sample and Descriptive Statistics

Sample

Sample firms were selected in the first instance from those listed on the Australian Stock Exchange over the period between 2007 and 2009. This identified a potential sample of 5,884 firm year observations. Observations were deleted where insufficient data was available on the Aspect Huntley financial database (this included the requirement for prior year data) and this reduced the sample to 4,273 firm years. To focus the analysis on firms

where the pressure on management to make impairments is greatest and to avoid problems associated with thinly traded and closely held firms, firms with a Market-to-Book (M/B) ratio greater than 1 (i.e. firms that have a Book Value of Equity that is less than the Market Value) or a market capitalisation of less than $10m were deleted. Finally, entities with trust or fund structures, and firms in the property investment sector were deleted. This provided a final sample of 679 firm year observations (Table 1). After allowing for sectors deleted, the sample firms are representative of firms listed on the Australian Stock Exchange.

Financial data was obtained from the Aspect Huntley Database, whilst changes in senior management, CEO Compensation structure, Cash Generating-Units and impairment data were all hand collected directly from the annual reports. Stock price data was obtained from Comsec's historical price data.

Descriptive Statistics

Descriptive statistics for sample observations are presented in Table 2, with the continuous variables described in Panel A and the dichotomous variables in Panel B.

[INSERT TABLE 2 HERE]

Of the sample firms 61.27% made impairments (i.e., *Impairment* - dichotomous) and the mean impairment is 4.38% of total assets (*Impairment* – continuous). Furthermore, these impairments range up to 21.07% of total assets. Critically this shows that, notwithstanding the sample selection criteria, there is considerable cross sectional variation in firms undertaking impairment of assets, and the magnitude of the impairment.

With respect to the indicators identified there is also considerable variation. Of the sample firms 34.46% reported a market to book value of less than 1 for consecutive years (i.e., *M/B)*. Given the sample selection criteria and the global economic crisis, the mean stock return for the year (*BHR*) of -40.45% is not surprisingly and confirms the appropriateness of

evaluating the operation of AASB 136 in this context. The mean change in operating cash flows (*ΔOpCF*) is minimal at 0.61%, however once again there is considerable variation with minimum and maximum values of -32.48% and 24.99% respectively.

Finally, for the remaining variables relevant to the hypotheses (i.e., Lev, Unverifiable and ΔAudit Fee) the values are reasonable and there significant variation. For example, the mean values of *Lev* and *Unverifiable* are 0.017 and 0.3395 respectively.

A correlation matrix is provided in Table 3.

[INSERT TABLE 3]

It is notable that there is a significant correlation between *M/B* and *BHR* (Pearson Correlation = 0.372), but little relation between these variables and ΔOpCF (Pearson Correlations of 0.028 and 0.017 respectively). This difference may provide insights into how firms are making impairment decisions.

5. Results

In the first instance attention is directed towards tests of the hypotheses based on the full sample of firms across the years 2007-2009, with the results reported in Table 4, Panel A.

[INSERT TABLE 4]

It is notable that of the three indicators of impairment only *BHR* is significant (α_2 = -0.0300, t-stat=-3.3945, p=0.0007). This provides some support for H_1, and suggests that the most credible signal, or the signal difficult for management and auditors to ignore, is a decline in stock prices. Similarly, the co-efficient on *Unverifiable* is negative and significant (α_5 = -0.0267, t-stat=-2.4433, p=0.00148) which is consistent with H_3 and asset impairment being less where there is a higher proportion of assets where valuation is likely more problematic. Furthermore, the co-efficient for *ΔAudit Fee* is positive (α_6 = 0.0115, t-stat=1.7065, p=0.0880), which is consistent with lower asset impairments being associated

with declines in audit fee. However, there is no support for H_2, with the coefficient on *Lev* (α_4 = 0.0144, t-stat=1.3766, p=0.1691) being insignificant. Of the control variables, the coefficients on *ΔMgt* (α_7 = 0.0197, t-stat=3.3575, p=0.0008) and *Size* (α_{10} = -0.0061, t-stat=-3.1629, p=0.0016) are positive and significant and this is consistent with the prior literature on asset write-downs (e.g., Strong and Meyer, (1987).

An analysis of the years separately is presented in Panels B-D. Importantly this shows *BHR* is significant in 2008 (α_2 = -0.0383, t-stat=-2.5405, p=0.0117) and 2009 (α_2 = -0.0257, t-stat=-1.7924, p=0.0741). It is not significant in 2007, while *M/B* is (α_1 = -0.0299, t-stat=-1.9436, p=0.0557). The only co-efficient significant across all three years is the control variable *ΔMgt*. It is notable that there a material differences in the coefficients across the years and this suggests further analysis.

Of particular concern is whether the coefficients are different in 2009, with this addressed in Table 5. The most striking feature of these results is that there is a marked increase in the significance of the dependent variables in all the regressions. This is consistent with there being differences in the factors impacting impairment decisions in 2009.

[INSERT TABLE 5]

Attention is directed in the first instance to the indicators of impairment (Panels A-C). First, it is notable that the co-efficient on *Year* is significant in each of the regressions considering the various indicators of impairment (α = 0.0169, t-stat=2.6676, p=0.0078, α = 0.0282, t-stat=3.3141, p=0.0010 and α =0.0190, t-stat=3.6506, p=0.0003 in Panels A, B and C respectively). This is consistent with a higher level of write-downs in 2009 after controlling for other factors associated with impairment. Furthermore, these coefficients suggest an increased magnitude of write-downs of 2% of total assets in 2009, which is economically significant. This aside, the results are not materially different from those presented in Table 4, with *BHR* continuing to be the dependent variable most associated with asset impairment (α_2

= -0.262, t-stat= -2.9630, p=0.0032, α_2 = -0.0356, t-stat= -3.235, p=0.0013 and α_2 = -0.0267, t-stat= -3.0300, p=0.0025 respectively). Neither of the other indicators' of impairment (*i.e., M/B* and *ΔOpCF)* are however significant. Accordingly, consistent with the results in Table 4, there is support for H_1 and *BHR* being associated with asset impairments, and there is no evidence of this relation being different in 2009.

With respect to differences in the relation between *Lev* and *Impairment* in 2009, captured by the interaction term, there is a significant difference in 2009 (α = -0.0560, t-stat= -2.7572, p=0.0060). This is indicative of firms with higher leverage having less asset impairments in 2009 and offers support for H_2 in 2009. This result is obscured in the full sample analysis by the otherwise positive relation between *Lev* and *Impairment* (α = 0.0390, t-stat= 3.1061, p=0.0020), which probably reflects the characteristics of firms with higher leverage generally.

After controlling for 2009, the co-efficient on *Unverifiable* and the interaction term are both insignificant (α = -0.0131, t-stat= -0.9070, p=0.3648 and α = -0.0267, t-stat= -1.468, p=0.1426 respectively). In conjunction with the results in Table 4, this suggests while there is some evidence consistent with H_3 and firms with higher unverifiable asset values having lower impairments this is limited to 2008, there is no support for this generally, nor in 2009.

Finally, focusing on the relation between *ΔAudit Fee* and *Impairment*, there are significant differences across the period. The co-efficient on *ΔAudit Fee* is positive and significant (α = 0.0233, t-stat= 2.6504, p=0.0082), which suggests that prior to 2009, if firms were unable to charge for additional audit tasks or if audit fees were reduced, impairment was likely not made. However, the co-efficient on the interaction term is negative and significant in 2009 (α = -0.0247, t-stat= -1.8414, p=0.0660), which suggests that if audit firms were unable to charge for additional audit tasks or if audit fees were reduced, asset impairment was

likely consequence. Quite simply, auditors were better able to resist fee based constraints on the audit review process and require impairment.

Recognising that there may not be a linear relation between *Lev* and *Impairment*, sample firms are partitioned on the basis of *Lev,* with the results presented in Table 6.

[INSERT TABLE 6]

It is notable that while *BHR* is not significant in the upper and lower quartiles (α = -0.0196, t-stat= -1.1115, p=0.2683 and α = -0.0146, t-stat= -0.0635, p=0.5471 respectively), it is significant in the combined second and third quartiles (α = -0.0403, t-stat= -3.6378, p=0.0003). Furthermore, *ΔOpCF* is significant in the lower quartile (α = -0.1771, t-stat= -2.9994, p=0.0032). *M/B* is not significant in any of the *Lev* partitions. Accordingly, consistent with the results in Table 4 and 5, there is support for H_1 with *BHR* and *ΔOpCF* being associated with asset impairments.

The co-efficient for *Unverifiable* is negative and significant (α = -0.0403, t-stat=-3.6378, p=0.0003) in the second and third quartiles ('Middle' in Table 6) which is consistent with H_3 and asset impairment being less where there is a higher proportion of assets where valuation is likely more problematic. However, the coefficients for *Unverifiable* in the upper and lower quartiles are insignificant (α = -0.0184, t-stat=-0.7959, p=0.4274 & α = -0.0504, t-stat=-1.3182, p=0.1895 respectively). Furthermore, the co-efficient on *ΔAudit Fee* is positive in the higher quartile (α_6 = 0.0229, t-stat=1.7652, p=0.0797), which is consistent with asset impairments being associated with additional testing, and higher audit fees. However, there is no support for H_2, with the co-efficient on *Lev* being insignificant across each quartile.

Of the control variables, the co-efficient on *ΔMgt* is positive and significant in the middle quartiles (α_6 = 0.0147, t-stat=2.0637, p=0.0399) and lower quartile (α_6 = 0.0329, t-stat=2.0398, p=0.0432), while the co-efficient on *Size* is negative and significant in the middle quartiles (α = -0.0077, t-stat=-1.9406, p=0.0543) and lower quartile (α_6 = -0.0043, t-

stat=-1.7847, p=0.0753). In addition, *CGU's* is significant within the middle quartiles (α = 0.0060, t-stat=1.9678, p=0.0500), suggesting that firms with a higher number of CGU's have less flexibility in making impairment decisions.

Recognising that indicators of impairment may simply lead to impairment decisions, and the possibility that this does not extend to the magnitude of impairment, Table 7 presents the results of regressions with *Impairment* measured as a dichotomous variable.

[INSERT TABLE 7]

The concern is that while managers cannot avoid making an impairment, they are able to minimise the amount that is being recognised. Attention is directed towards tests of the hypotheses based on the full sample of firms reported in Panel A. First, of the three indicators of impairment, both *M/B* (α = 0.4170, p=0.0396) and *BHR* (α = -1.2057, p=0.0001) are significant, which provides support for H_1. However, there is no support for H_2, H_3 or H_4, with the coefficients on *Lev*, *Unverifiable* and *ΔAudit Fee* all being insignificant. This suggests that the various indicators, incentives and opportunities for impairment are indicative of the magnitude of impairment, and that managers are not simply able to opportunistically minimise impairments.

An analysis of the years separately is presented in Panels B-D. The results show that *BHR* is significant in 2007 (α = -1.6851, p=0.0668) and 2008 (α = -1.4685, p=0.0097). However, it is not significant in 2009. *M/B* is significant only in 2008 (α = 0.8340, p= 0.0418). With respect to *Lev,* there is a positive relation between *Lev* and *Impairment* in 2008 (α =2.0733, p=0.0021), which as noted, above probably reflects the characteristics of firms with higher leverage generally.

Once again and consistent with prior research, the co-efficient on *ΔMgt* is positive and significant in 2007 (α_6 = 1.8030, p=0.0058). Finally, the coefficient for *CGU's* is positive for

2009 (α_6 = 0.4778, p=0.0050), which reflects the prediction that firms with a higher number of CGU's have lower flexibility in making impairment decisions.

6. Sensitivity Analyses

In addition to the tests above, a variety of additional tests are performed in order to confirm our results. First, since the results of the primary analysis show a significantly higher level of impairment within the Diversified Financials and Energy sectors, Table 8 shows the results of a regression in which firms within these sectors are excluded.

[INSERT TABLE 8]

In the first instance, attention is directed towards the test based on the reduced sample of firms across the years 2007-2009 in Panel A. It is notable that of the three indicators of impairment both *BHR* (α_2 = -0.0292, t-stat=-4.3459, p=0.0000) and Δ*OpCF* (α_2 = -0.0317, t-stat=-1.8209, p=0.0691) are significant. Similar to Table 4, the results show support for H_1. The co-efficient on *Unverifiable* is negative and significant (α_5 = -0.0225, t-stat=-2.5633, p=0.0106) which is consistent with H_3 and asset impairment being less where there is a higher proportion of assets where valuation is likely more problematic. However, Panel A shows no support for H_4 with Δ*Audit Fee* being insignificant. Furthermore, an analysis of the years separately is presented in Panels B-D shows results, which are qualitatively the same as Table 4.

Second, Table 9 shows the results of a regression in which an alternative measure if *Leverage* is used.

[INSERT TABLE 9]

In contrast to Table 4 (where *Lev* is calculated as the ratio of liabilities to total assets , adjusted for the industry average) *Leverage* is calculated simply as the proportion of a firm's total liabilities to total assets. In order to separate certain leverage industry effects, the

regression includes an interaction variable between the industry variable and *Leverage* (dummy variables not reported in Table 9).

Attention is directed in the first instance to Panel A which shows a significant relationship for *BHR* (α_2 = -0.0334, t-stat=-4.9719, p=0.0000), whilst Δ*OpCF* and *M/B* are not significant. Furthermore, similar to Table 4, the coefficient for *Unverifiable* is significant (α_2 = -0.0241, t-stat=-2.8758, p=0.0042) whilst *ΔAudit Fees* and *Lev* are not significant. Overall, the results for the alternative measure of *Leverage* are qualitatively the same as discussed in the Section 5.

Finally, to address the concern that the coefficients in 2009 are significantly different from 2007 and 2008, Table 10 uses the alternative measure of *Leverage*.

[INSERT TABLE 10]

It is notable that that similar to Table 5, of Table 10 shows a significant negative relationship for the interaction variable between *Leverage* and *Year* (α_2=-0.0468, t-stat=-3.6032, p=0.0003). Similar to the results in Table 5, this is indicative of firms with higher leverage having less asset impairments in 2009 and offers support for H_2 in 2009. Accordingly, the results in Section 5 are robust to alternative measures of leverage.

7. Conclusion

Confronted by a situation in which companies have experienced substantial declines in profitability and sustained falls in stock prices, managers have been required to focus their attention on making impairments to assets. While AASB 136 provides guidance for the recognition of impairment, managers still have significant discretion in applying the standard. This study provides empirical evidence as to whether management are complying with the requirements of AASB 136, or alternatively whether managers use discretion in order to opportunistically avoid making impairments to assets.

First, this study demonstrates that there is a positive relationship between the magnitude of impairment and certain 'impairment indicators'. The most credible signal of impairment was *BHR,* which showed a strong significant relationship throughout 2008 and 2009. This is consistent with AASB 136 which identifies a decline in market value as a key indicator of impairment. However, there was no support for $\Delta OpCF$ or *M/B* as indicators of impairment. Accordingly, this study finds that managers are largely complying with the requirements of AASB 136 and further suggests that managers recognise impairments and disclose information about future cash flows efficiently.

Second, whilst impairment indicators suggest the efficient recognition of impairment, this study also investigates motivation-based factors that impact upon a manager's impairment decision. Whilst there was no relationship between impairment and leverage in 2007 and 2008, there is evidence that in 2009 the relation is significantly different from the prior years. This is consistent with opportunism and firms with higher leverage seeking to reduce or minimise asset impairments in order to avoid breaching debt covenants. Whilst the negative relationship is not consistent throughout all sample years, it provides insights into a manager's incentives at the height of 'Global Financial Crisis'. Specifically, difficult conditions for firms within credit markets through 2008 and 2009 provided managers with the incentive to avoid costly breaches in debt covenants and having to renegotiate their debt contracts.

Third, there is a positive relationship between audit fee changes and impairments in 2007 and 2008. This is consistent with the expectation that where a firm decides to lower costs (in particular audit fees), the resulting reduction in audit quality and scrutiny over the financial reporting process provides managers with the ability to avoid making impairments to assets. However, contrary to expectations, there is a significant difference in the relationship between audit fees changes and impairments in 2009. The negative relationship

in 2009 suggests that while auditors were unable to charge for additional audit tasks, they recognised the potential legal liability consequences that would arise from completing an inadequate audit (particularly in an environment where some form of impairment is expected).

Finally, consistent with Ramanna and Watts (2008), there is some evidence that suggests that firms with a higher proportion of unverifiable assets recognise a lower level of impairment, albeit limited to 2008. Furthermore, consistent with an extensive body of prior literature, the results suggest that impairments are an increasing function of a change in senior management. This result persists throughout the sample period and is consistent with opportunism and 'big bath' behaviours, whereby managers recognise impairment early in order to improve profitability in future periods.

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APPENDIX

TABLE 1

Sample Selection	
Initial Sample (all firm year observations from 2007-2009)	**5,884**
FIRST DELETION: Lack of Market Information	1,611
SECOND DELETION: MTB<1 and Market Cap.>$10m	3,357
THIRD DELETION: Fund Structures Financial Services, Trusts	237
Final Sample	**679**

TABLE 2 - DESCRIPTIVE STATISTICS

Panel A - Continous

	Mean	Median	S.D.	Minimum	Maximum
Impairment - Continuous	0.0438	0.0052	0.0701	0.0000	0.2107
ΔOpCF	-0.0061	-0.0043	0.1127	-0.3248	0.2499
BHR	-0.4045	-0.4529	0.3239	-0.9551	0.4000
Leverage	0.3986	0.3970	0.3157	0.0026	1.8011
Lev	0.0173	-0.0341	0.2621	-0.6177	0.7431
Unverifiable	0.3395	0.3116	0.2751	0.0000	0.9465
ΔAudit Fee	0.1533	0.0719	0.3784	-0.5840	1.0652
CGU's	1.8498	1.0000	1.1201	1.0000	6.0000

Panel B - Dichotomous

	Mean
Impairment - Dichotomous	0.6127
M/B	0.3446
Lev - Dichotomous	0.4462
ΔMgt	0.2651
Bonus	0.4934

Where Impairment - Continuous is the Total impairments made divided by Total Assets, ΔOpCF is the change in Net Operating Cash Flows to Total Assets, BHR are the buy and hold returns of them firm, Leverage is the proportion of Total Liabilities to Total Assets, Lev is the is the proportion of Total Liabilities to Total Assets less the industry average, Unverifiable is the propotion of PP&E, Goodwill and Inventories to Total Assets, ΔAudit Fee is the percentage change in audit fee of the current year compare to the prior year, CGU's are the number of cash generating units with a firm (as proxied by the number of reporting segments, Size is the natural log of a firms Total Assets, *Impairment - Dichotomous* is a dummy variable that takes the value of 1 where a firm makes an impairment, *M/B* is a dummy variable that takes the value of 1 where a firm has had a Market-to-Book ratio<1 in two consecutive years, Δ*Mgt* is a dummy variable that takes the value of 1 where a firm has experienced a change in CEO/Managing Director during the year and *Bonus* is a dummy variable that takes the value of 1 where a firm pays its CEO/Managing Director equity based compensation,

TABLE 3

Correlation Matrix

	Impairment - Continuous	M/B	BHR	∆OpCF	Leverage	Lev	Unverifiable	∆Audit Fee	∆Mgt	Bonus	CGUs
Impairment - Continuous		-0.039	-.242**	-0.018	-0.058	0.032	-.125**	0.047	.110**	0.000	-0.051
M/B	-.076*		.372**	0.028	.106**	0.058	0.041	-.127**	0.042	-0.015	.078*
BHR	-.181**	.388**		0.017	-0.008	-0.060	-0.001	-.106**	-.082*	-0.058	.112**
∆OpCF	-0.036	0.029	0.008		0.049	0.008	0.038	0.025	-.109**	0.031	0.007
Leverage	-.095*	.116**	0.016	0.051		.751**	.466**	0.020	.093*	.089*	.298**
Lev	0.015	0.072	-0.029	0.018	.744**		.338**	0.028	0.059	0.035	.148**
Unverifiable	-.182**	0.038	-0.020	0.037	.328**	.266**		0.057	0.000	0.067	.206**
∆Audit Fee	0.075	-.120**	-.098*	0.017	0.013	0.028	0.053		-0.023	0.016	-.087*
∆Mgt	.107**	0.042	-0.071	-.081*	.079*	0.058	0.002	-0.020		0.055	0.051
Bonus	-0.026	-0.015	-0.065	-0.002	.078*	0.022	0.057	-0.001	0.055		.105**
CGUs	-.121**	0.070	.075*	-0.005	.203**	.095*	.165**	-.083*	0.054	.132**	

Where *Impairment - Continuous* is the Total impairments made divided by Total Assets, *M/B* is a dummy variable that takes the value of 1 where a firm has had a Market-to-Book ratio<1 in two consecutive years, *BHR* are the buy and hold returns of them firm, ∆*OpCF* is the change in Net Operating Cash Flows to Total *Assets*,*Leverage* is the proportion of Total Liabilities to Total Assets, *Lev* is the is the proportion of Total Liabilities to Total Assets less the industry average, *Unverifiable* is the propotion of PP&E, Goodwill and Inventories to Total Assets, ∆*Audit Fee i*s the percentage change in audit fee of the current year compare to the prior year, ∆*Mgt* is a dummy variable that takes the value of 1 where a firm has experienced a change in CEO/Managing Director during the year and *Bonus* is a dummy variable that takes the value of 1 where a firm pays its CEO/Managing Director equity based compensation, *CGU's* are the number of cash generating units with a firm (as proxied by the number of reporting segments) and Size is the natural log of a firms Total Assets.

Table 4 – The determinants of Asset Impairments under AASB 136

$$Impairment_{it} = \propto_0 + \sum_{j=1}^{3} \propto_j Indicators_{it} + \propto_4 Lev_{it} + \propto_5 Unverifiable_{it} + \propto_6 \Delta Audit\ Fee_{it} + \sum_{j=7}^{10} \propto_j Controls_{it} + \varepsilon_{it}$$

Panel A - Full Sample	Co-efficient		T-Stat	Prob
Constant	0.1150	***	(3.2897)	0.0011
M/B	0.0038		(0.6469)	0.5179
BHR	-0.0300	***	(-3.3945)	0.0007
ΔOpCF	-0.0191		(-0.8492)	0.3961
Lev	0.0144		(1.3766)	0.1691
Unverifiable	-0.0267	**	(-2.4433)	0.0148
ΔAudit Fee	0.0115	*	(1.7085)	0.0880
ΔMgt	0.0197	***	(3.3575)	0.0008
eComp	0.0023		(0.4393)	0.6606
CGU's	0.0036		(1.3136)	0.1894
Size	-0.0061	***	(-3.1629)	0.0016
Industry Dummy Variables are not reported				
Adjusted R Square	0.1531			
F Statistic	4.9550	***		

Panel B - 2007	Co-efficient		T-Stat	Prob
Constant	0.1082		(1.1769)	0.2430
M/B	-0.0299	*	(-1.9436)	0.0557
BHR	-0.0130		(-0.5680)	0.5718
ΔOpCF	-0.0446		(-0.8026)	0.4248
Lev	-0.0054		(-0.2261)	0.8217
Unverifiable	0.0185		(0.5446)	0.5876
ΔAudit Fee	-0.0038		(-0.1944)	0.8464
ΔMgt	0.0322	**	(2.0549)	0.0434
eComp	-0.0183		(-1.1548)	0.2519
CGU's	-0.0117		(-1.4699)	0.1458
Size	0.0026		(0.4850)	0.6291
Industry Dummy Variables are not reported				
Adjusted R Square	0.0715			
F Statistic	1.2736			

Panel C - 2008	Co-efficient		T-Stat	Prob
Constant	0.0469		(0.8942)	0.3722
M/B	0.0043		(0.4064)	0.6848
BHR	-0.0383	**	(-2.5405)	0.0117
ΔOpCF	-0.0403		(-1.1505)	0.2512
Lev	0.0690	***	(4.0744)	0.0001
Unverifiable	-0.0512	***	(-2.9558)	0.0035
ΔAudit Fee	0.0218	**	(2.1823)	0.0301
ΔMgt	0.0206	**	(2.3123)	0.0217
eComp	-0.0020		(-0.2345)	0.8148
CGU's	0.0007		(0.1739)	0.8621
Size	-0.0038		(-1.3638)	0.1740
Industry Dummy Variables are not reported				
Adjusted R Square	0.2047			
F Statistic	3.1177	***		

Panel D - 2009	Co-efficient		T-Stat	Prob
Constant	0.2153	***	(3.7586)	0.0002
M/B	0.0072		(0.8066)	0.4206
BHR	-0.0257	*	(-1.7924)	0.0741
ΔOpCF	-0.0086		(-0.2343)	0.8150
Lev	-0.0093		(-0.4740)	0.6359
Unverifiable	-0.0176		(-1.0898)	0.2767
ΔAudit Fee	0.0025		(0.2279)	0.8199
ΔMgt	0.0240	**	(2.5450)	0.0115
eComp	0.0136	*	(1.6933)	0.0915
CGU's	0.0079	*	(1.8814)	0.0609
Size	-0.0124	***	(-3.9191)	0.0001
Industry Dummy Variables are not reported				
Adjusted R Square	0.1852			
F Statistic	3.3318	***		

*** Significant at the 1% level (2-tailed)
** Significant at the 5% level (2-tailed)
* Significant at the 10% level (2-tailed)

Where Impairment - Continuous is the Total impairments made divided by Total Assets, M/B is a dummy variable that takes the value of 1 where a firm has had a Market-to-Book ratio<1 in two consecutive years, BHR are the buy and hold returns of them firm, ΔOpCF is the change in Net Operating Cash Flows to Total Assets,Leverage is the proportion of Total Liabilities to Total Assets, Lev is the is the proportion of Total Liabilities to Total Assets less the industry average, Unverifiable is the propotion of PP&E, Goodwill and Inventories to Total Assets, ΔAudit Fee is the percentage change in audit fee of the current year compare to the prior year, ΔMgt is a dummy variable that takes the value of 1 where a firm has experienced a change in CEO/Managing Director during the year and eComp is a dummy variable that takes the value of 1 where a firm pays its CEO/Managing Director equity based compensation, CGU's are the number of cash generating units with a firm (as proxied by the number of reporting segments) and Size is the natural log of a firms Total Assets.

Table 5 –The determinants of Impairments in 2009 compared to 2007 and 2008

$$Impairment_{it} = \propto_0 + \propto_1 MB + \propto_2 Year + \propto_3 MB \times Year + \propto_4 BHR + \propto_5 \Delta OpCF + \propto_6 Lev_{it} + \propto_7 Unverifiable_{it} + \propto_8 \Delta Audit\ Fee_{it} + \sum_{j=9}^{12} \propto_j Controls_{it} + \varepsilon_{it}$$

Panel A - MTB Interaction	Co-efficient		T-Stat	Prob
Constant	0.1180	***	(3.3908)	0.0007
M/B	-0.0028		(-0.3427)	0.7320
Year	0.0169	***	(2.6676)	0.0078
M/B x Year	0.0068		(0.6220)	0.5341
BHR	-0.0262	***	(-2.9630)	0.0032
ΔOpCF	-0.0187		(-0.8386)	0.4020
Lev	0.0201	*	(1.9166)	0.0557
Unverifiable	-0.0267	**	(-2.4615)	0.0141
ΔAudit Fee	0.0129	*	(1.9289)	0.0542
ΔMgt	0.0210	***	(3.5963)	0.0003
eComp	0.0040		(0.7611)	0.4469
CGU's	0.0032		(1.1826)	0.2374
Size	-0.0067	***	(-3.5032)	0.0005
Industry Dummy Variables are not reported				
Adjusted R Square	0.1684			
F Statistic	5.1592	***		

$$Impairment_{it} = \propto_0 + \propto_1 MB + \propto_2 BHR + \propto_3 Year + \propto_4 BHR \times Year + \propto_5 \Delta OpCF + \propto_6 Lev_{it} + \propto_7 Unverifiable_{it} + \propto_8 \Delta Audit\ Fee_{it} + \sum_{j=9}^{12} \propto_j Controls_{it} + \varepsilon_{it}$$

Panel B- Buy & Hold Returns (Difference)	Co-efficient		T-Stat	Prob
Constant	0.1126	***	(3.2455)	0.0012
M/B	0.0007		(0.1216)	0.9033
BHR	-0.0356	***	(-3.2325)	0.0013
Year	0.0282	***	(3.3141)	0.0010
BHR x Year	0.0217		(1.3530)	0.1765
ΔOpCF	-0.0197		(-0.8843)	0.3769
Lev	0.0212	**	(2.0203)	0.0438
Unverifiable	-0.0268	**	(-2.4775)	0.0135
ΔAudit Fee	0.0125	*	(1.8651)	0.0626
ΔMgt	0.0210	***	(3.6086)	0.0003
eComp	0.0037		(0.7024)	0.4827
CGU's	0.0034		(1.2491)	0.2121
Size	-0.0067	***	(-3.5055)	0.0005
Industry Dummy Variables are not reported				
Adjusted R Square	0.1702			
F Statistic	5.2145	***		

$$Impairment_{it} = \propto_0 + \propto_1 MB + \propto_2 BHR + \propto_3 \Delta OpCF \propto_4 + Year + \propto_5 \Delta OpCF \times Year + \propto_6 Lev_{it} + \propto_7 Unverifiable_{it} + \propto_8 \Delta Audit\ Fee_{it} + \sum_{j=9}^{12} \propto_j Controls_{it} + \varepsilon_{it}$$

Panel C -Net Operating Cash Flow (Difference)	Co-efficient		T-Stat	Prob
Constant	0.1148	***	(3.2998)	0.0010
M/B	0.0008		(0.1308)	0.8960
BHR	-0.0267	***	(-3.0300)	0.0025
ΔOpCF	-0.0127		(-0.4740)	0.6357
Year	0.0190	***	(3.6506)	0.0003
ΔOpCF x Year	-0.0092		(-0.3894)	0.6971
Lev	0.0193	*	(1.8466)	0.0653
Unverifiable	-0.0269	**	(-2.4812)	0.0133
ΔAudit Fee	0.0126	*	(1.8862)	0.0597
ΔMgt	0.0214	***	(3.6799)	0.0003
eComp	0.0036		(0.6850)	0.4936
CGU's	0.0032		(1.1810)	0.2381
Size	-0.0066	***	(-3.4460)	0.0006
Industry Dummy Variables are not reported				
Adjusted R Square	0.1681			
F Statistic	5.1502	***		

$$Impairment_{it} = \propto_0 + \propto_1 MB + \propto_2 BHR + \propto_3 \Delta OpCF + \propto_4 Lev_{it} + \propto_5 Year + \propto_6 Lev_{it} \times Year + \propto_7 Unverifiable_{it} + \propto_8 \Delta Audit\ Fee_{it} + \sum_{j=9}^{12} \propto_j Controls_{it} + \varepsilon_{it}$$

Panel D - Leverage (Difference)	Co-efficient		T-Stat	Prob
Constant	0.1071	***	(3.0960)	0.0020
M/B	0.0008		(0.1303)	0.8964
BHR	-0.0288	***	(-3.2707)	0.0011
ΔOpCF	-0.0211		(-0.9483)	0.3433
Lev	0.0390	***	(3.1061)	0.0020
Year	0.0193	***	(3.7365)	0.0002
Lev x Year	-0.0560	***	(-2.7572)	0.0060
Unverifiable	-0.0241	**	(-2.2213)	0.0267
ΔAudit Fee	0.0120	*	(1.8011)	0.0722
ΔMgt	0.0222	***	(3.8286)	0.0001
eComp	0.0032		(0.6125)	0.5404
CGU's	0.0032		(1.1869)	0.2357
Size	-0.0063	***	(-3.3114)	0.0010
Industry Dummy Variables are not reported				
Adjusted R Square	0.1776			
F Statistic	5.4354	***		

$$Impairment_{it} = \propto_0 + \propto_1 MB + \propto_2 BHR + \propto_3 \Delta OpCF + \propto_4 Lev_{it} + \propto_5 Unverifiable_{it} + \propto_6 Year + \propto_7 Unverifiable_{it} \times Year + \propto_8 \Delta Audit\ Fee_{it} + \sum_{j=9}^{12} \propto_j Controls_{it} + \varepsilon_{it}$$

Panel E - Unverifiable Assets (Difference)	Co-efficient		T-Stat	Prob
Constant	0.1124	***	(3.2416)	0.0012
M/B	0.0003		(0.0516)	0.9588
BHR	-0.0272	***	(-3.0935)	0.0021
ΔOpCF	-0.0168		(-0.7511)	0.4529
Lev	0.0202	*	(1.9321)	0.0538
Unverifiable	-0.0131		(-0.9070)	0.3648
Year	0.0281	***	(3.4933)	0.0005
Unverifiable x Year	-0.0267		(-1.4680)	0.1426
ΔAudit Fee	0.0124	*	(1.8555)	0.0640
ΔMgt	0.0216	***	(3.7046)	0.0002
eComp	0.0037		(0.7074)	0.4796
CGU's	0.0035		(1.2807)	0.2007
Size	-0.0068	***	(-3.5465)	0.0004
Industry Dummy Variables are not reported				
Adjusted R Square	0.1706			
F Statistic	5.2269	***		

$$Impairment_{it} = \propto_0 + \propto_1 MB + \propto_2 BHR + \propto_3 \Delta OpCF + \propto_4 Lev_{it} + \propto_5 Unverifiable_{it} + \propto_6 \Delta Audit\ Fee_{it} + \propto_7 Year + \propto_8 \Delta Audit\ Fee_{it} \times Year + \sum_{j=9}^{12} \propto_j Controls_{it} + \varepsilon_{it}$$

Panel F - Audit Fees (Difference)	Co-efficient		T-Stat	Prob
Constant	0.1189	***	(3.4358)	0.0006
M/B	0.0001		(0.0171)	0.9863
BHR	-0.0259	***	(-2.9443)	0.0034
ΔOpCF	-0.0194		(-0.8691)	0.3851
Lev	0.0196	*	(1.8792)	0.0607
Unverifiable	-0.0270	**	(-2.5007)	0.0126
ΔAudit Fee	0.0233	***	(2.6504)	0.0082
Year	0.0229	***	(4.0963)	0.0000
ΔAudit Fee x Year	-0.0247	*	(-1.8414)	0.0660
ΔMgt	0.0205	***	(3.5067)	0.0005
eComp	0.0041		(0.7828)	0.4340
CGU's	0.0030		(1.1037)	0.2701
Size	-0.0068	***	(-3.5486)	0.0004
Industry Dummy Variables are not reported				
Adjusted R Square	0.1722			
F Statistic	5.2742	***		

*** Significant at the 1% level (2-tailed)
** Significant at the 5% level (2-tailed)
* Significant at the 10% level (2-tailed)

Where Impairment - Continuous is the Total impairments made divided by Total Assets, M/B is a dummy variable that takes the value of 1 where a firm has had a Market-to-Book ratio<1 in two consecutive years, BHR are the buy and hold returns of them firm, ΔOpCF is the change in Net Operating Cash Flows to Total Assets,Leverage is the proportion of Total Liabilities to Total Assets, Lev is the is the proportion of Total Liabilities to Total Assets less the industry average, Unverifiable is the propotion of PP&E, Goodwill and Inventories to Total Assets, ΔAudit Fee is the percentage change in audit fee of the current year compare to the prior year, ΔMgt is a dummy variable that takes the value of 1 where a firm has experienced a change in CEO/Managing Director during the year and eComp is a dummy variable that takes the value of 1 where a firm pays its CEO/Managing Director equity based compensation, CGU's are the number of cash generating units with a firm (as proxied by the number of reporting segments),Size is the natural log of a firms Total Assets and Year is a dummy variable that takes the value of 1 where the observation was in 2009 and 0 where the observation was in 2007 or 2008.

Table 6 –The determinants of Impairments under AASB 136 (Quartile Split)

$$Impairment_{it} = \propto_0 + \sum_{j=1}^{3} \propto_j Indicators_{it} + \propto_4 Lev_{it} + \propto_5 Unverifiable_{it} + \propto_6 \Delta Audit\ Fee_{it} + \sum_{j=7}^{10} \propto_j Controls_{it} + \varepsilon_{it}$$

	High			Middle			Low		
	Co-efficient	T-Stat	Prob	Co-efficient	T-Stat	Prob	Co-efficient	T-Stat	Prob
Constant	0.1498 *	(1.8257)	0.0700	0.0999 **	(2.3299)	0.0205	0.1980	(1.4866)	0.1393
M/B	-0.0085	(-0.7673)	0.4442	0.0059	(0.8011)	0.4237	0.0147	(0.8620)	0.3901
BHR	-0.0196	(-1.1115)	0.2683	-0.0403 ***	(-3.6378)	0.0003	-0.0146	(-0.6035)	0.5471
ΔOpCF	0.0153	(0.3504)	0.7266	0.0440	(1.5061)	0.1331	-0.1771 ***	(-2.9994)	0.0032
Lev	0.0269	(0.8398)	0.4025	-0.0070	(-0.4088)	0.6830	0.0449	(0.6460)	0.5193
Unverifiable	-0.0184	(-0.7959)	0.4274	-0.0569 ***	(-4.2067)	0.0000	0.0504	(1.3182)	0.1895
ΔAudit Fee	0.0229 *	(1.7652)	0.0797	0.0134	(1.5166)	0.1304	-0.0204	(-1.1666)	0.2453
ΔMgt	0.0191	(1.6400)	0.1033	0.0147 **	(2.0637)	0.0399	0.0329 **	(2.0398)	0.0432
eComp	-0.0166	(-1.4166)	0.1588	0.0031	(0.4681)	0.6400	0.0048	(0.3479)	0.7285
CGU's	0.0048	(0.9310)	0.3535	0.0060 **	(1.9678)	0.0500	-0.0176	(-1.3992)	0.1639
Size	-0.0077 *	(-1.9406)	0.0543	-0.0043 *	(-1.7847)	0.0753	-0.0103	(-1.5037)	0.1348
Industry Dummy Variables are not reported									
Adjusted R Square	0.0272			0.2383			0.0905		
F Statistic	1.1622 **			4.5350 ***			1.7006		

*** Significant at the 1% level (2-tailed)
** Significant at the 5% level (2-tailed)
* Significant at the 10% level (2-tailed)

Where Impairment - Continuous is the Total impairments made divided by Total Assets, M/B is a dummy variable that takes the value of 1 where a firm has had a Market-to-Book ratio<1 in two consecutive years, BHR are the buy and hold returns of them firm, ΔOpCF is the change in Net Operating Cash Flows to Total Assets,Leverage is the proportion of Total Liabilities to Total Assets, Lev is the is the proportion of Total Liabilities to Total Assets less the industry average, Unverifiable is the propotion of PP&E, Goodwill and Inventories to Total Assets, ΔAudit Fee is the percentage change in audit fee of the current year compare to the prior year, ΔMgt is a dummy variable that takes the value of 1 where a firm has experienced a change in CEO/Managing Director during the year and eComp is a dummy variable that takes the value of 1 where a firm pays its CEO/Managing Director equity based compensation, CGU's are the number of cash generating units with a firm (as proxied by the number of reporting segments) and Size is the natural log of a firms Total Assets.

Table 7 – Determinants of Assets Impairment (Impairment as a Dummy Variable)

$$ImpDummy_{it} = \sum_{j=1}^{3} \propto_j Indicators_{it} + \propto_4 Lev_{it} + \propto_5 Unverifiable_{it} + \propto_6 \Delta Audit\ Fee_{it} + \sum_{j=7}^{10} \propto_j Controls_{it} + \varepsilon_{it}$$

Panel A - Full Sample	Co-efficient		Prob
M/B	0.4170	**	0.0396
BHR	-1.2057	***	0.0001
ΔOpCF	0.0773		0.9186
Lev	0.2153		0.5377
Unverifiable	-0.4367		0.2375
ΔAudit Fee	0.0483		0.8314
ΔMgt	0.3284		0.1028
eComp	0.0213		0.9046
CGU's	0.1939	**	0.0396
Size	0.0775		0.2343
Industry Dummy Variables are not reported			
Nagelkerke R Square	0.1365		

Panel B - 2007	Co-efficient		Prob
M/B	0.0778		0.9000
BHR	-1.6851	*	0.0668
ΔOpCF	-1.7175		0.4374
Lev	-0.4871		0.6161
Unverifiable	1.3446		0.3107
ΔAudit Fee	-1.2437		0.1498
ΔMgt	1.8030	***	0.0058
eComp	-0.0241		0.9702
CGU's	0.1348		0.6770
Size	0.1547		0.4741
Industry Dummy Variables are not reported			
Nagelkerke R Square	0.4259		

Panel C - 2008	Co-efficient		Prob
M/B	0.8340	**	0.0418
BHR	-1.4685	***	0.0097
ΔOpCF	-0.0228		0.9857
Lev	2.0733	***	0.0021
Unverifiable	-1.0350		0.1162
ΔAudit Fee	0.3610		0.3372
ΔMgt	0.1352		0.6857
eComp	-0.1973		0.5186
CGU's	0.0249		0.8774
Size	0.1914		0.0819
Industry Dummy Variables are not reported			
Nagelkerke R Square	0.2327		

Panel D -2009	Co-efficient		Prob
M/B	-0.1079		0.7369
BHR	-0.6884		0.1748
∆OpCF	-0.2341		0.8632
Lev	-0.3521		0.6086
Unverifiable	-0.8043		0.1645
∆Audit Fee	0.0933		0.8075
∆Mgt	0.5586		0.1160
eComp	0.2436		0.4024
CGU's	0.4778	***	0.0050
Size	-0.0287		0.8025
Industry Dummy Variables are not reported			
Nagelkerke R Square	0.2402		

*** Significant at the 1% level (2-tailed)
** Significant at the 5% level (2-tailed)
* Significant at the 10% level (2-tailed)

Where Impairment - Dichotomous is the Total impairments made divided by Total Assets, M/B is a dummy variable that takes the value of 1 where a firm has had a Market-to-Book ratio<1 in two consecutive years, BHR are the buy and hold returns of them firm, ∆OpCF is the change in Net Operating Cash Flows to Total Assets, Leverage is the proportion of Total Liabilities to Total Assets, Lev is the is the proportion of Total Liabilities to Total Assets less the industry average, Unverifiable is the propotion of PP&E, Goodwill and Inventories to Total Assets, ∆Audit Fee is the percentage change in audit fee of the current year compare to the prior year, ∆Mgt is a dummy variable that takes the value of 1 where a firm has experienced a change in CEO/Managing Director during the year and eComp is a dummy variable that takes the value of 1 where a firm pays its CEO/Managing Director equity based compensation, CGU's are the number of cash generating units with a firm (as proxied by the number of reporting segments) and Size is the natural log of a firms Total Assets.

Table 8 –The determinants of Impairments under AASB 136 (excluding Diversified Financials and Energy)

$$Impairment_{it} = \propto_0 + \sum_{j=1}^{3} \propto_j Indicators_{it} + \propto_4 Lev_{it} + \propto_5 Unverifiable_{it} + \propto_6 \Delta Audit\ Fee_{it} + \sum_{j=7}^{10} \propto_j Controls_{it} + \varepsilon_{it}$$

Panel A - Full Sample	Co-efficient		T-Stat	Prob
Constant	0.0837	***	(2.9568)	0.0032
M/B	0.0056		(1.2366)	0.2168
BHR	-0.0292	***	(-4.3459)	0.0000
ΔOpCF	-0.0317	*	(-1.8209)	0.0691
Lev	0.0085		(1.0743)	0.2832
Unverifiable	-0.0225	**	(-2.5633)	0.0106
ΔAudit Fee	0.0025		(0.4840)	0.6286
ΔMgt	0.0136	***	(2.9825)	0.0030
eComp	0.0020		(0.4942)	0.6214
CGU's	0.0031		(1.5305)	0.1265
Size	-0.0037	***	(-2.4858)	0.0132
Industry Dummy Variables are not reported				
Adjusted R Square	0.1000			
F Statistic	3.2863	***		

Panel B - 2007	Co-efficient		T-Stat	Prob
Constant	0.0335		(0.4120)	0.6816
M/B	-0.0116		(-0.9435)	0.3487
BHR	-0.0117		(-0.6705)	0.5048
ΔOpCF	-0.0527		(-1.2074)	0.2314
Lev	-0.0058		(-0.3139)	0.7545
Unverifiable	0.0062		(0.2158)	0.8298
ΔAudit Fee	-0.0117		(-0.7733)	0.442
ΔMgt	0.0247	**	(2.0017)	0.0493
eComp	-0.0132		(-1.0573)	0.2941
CGU's	-0.0076		(-1.2509)	0.2152
Size	0.0027		(0.6343)	0.528
Industry Dummy Variables are not reported				
Adjusted R Square	-0.0262			
F Statistic	0.9094			

Panel C - 2008	Co-efficient		T-Stat	Prob
Constant	0.0720		(1.8457)	0.0664
M/B	-0.0034		(-0.4410)	0.6597
BHR	-0.0244	**	(-2.2147)	0.0279
ΔOpCF	-0.0441	*	(-1.7412)	0.0832
Lev	0.0533	***	(4.2509)	0.0000
Unverifiable	-0.0344	***	(-2.6605)	0.0084
ΔAudit Fee	0.0136	*	(1.8340)	0.0682
ΔMgt	0.0140	**	(2.0901)	0.0379
eComp	0.0000		(0.0050)	0.9960
CGU's	0.0006		(0.1865)	0.8522
Size	-0.0030		(-1.4579)	0.1465
Industry Dummy Variables are not reported				
Adjusted R Square	0.1913			
F Statistic	2.8429	***		

Panel D - 2009	Co-efficient		T-Stat	Prob
Constant	0.1528	***	(3.1015)	0.0022
M/B	0.0086		(1.2420)	0.2154
BHR	-0.0330	***	(-2.9316)	0.0037
ΔOpCF	-0.0331		(-1.1087)	0.2686
Lev	-0.0134		(-0.8650)	0.3879
Unverifiable	-0.0134		(-0.9988)	0.3189
ΔAudit Fee	-0.0019		(-0.2182)	0.8275
ΔMgt	0.0154	**	(2.0678)	0.0397
eComp	0.0103		(1.5972)	0.1115
CGU's	0.0059	*	(1.7847)	0.0756
Size	-0.0078	***	(-3.0974)	0.0022
Industry Dummy Variables are not reported				
Adjusted R Square	0.1189			
F Statistic	2.2708	***		

*** Significant at the 1% level (2-tailed)
** Significant at the 5% level (2-tailed)
* Significant at the 10% level (2-tailed)

Where Impairment - Continuous is the Total impairments made divided by Total Assets, M/B is a dummy variable that takes the value of 1 where a firm has had a Market-to-Book ratio<1 in two consecutive years, BHR are the buy and hold returns of them firm, ΔOpCF is the change in Net Operating Cash Flows to Total Assets,Leverage is the proportion of Total Liabilities to Total Assets, Lev is the is the proportion of Total Liabilities to Total Assets less the industry average, Unverifiable is the propotion of PP&E, Goodwill and Inventories to Total Assets, ΔAudit Fee is the percentage change in audit fee of the current year compare to the prior year, ΔMgt is a dummy variable that takes the value of 1 where a firm has experienced a change in CEO/Managing Director during the year and eComp is a dummy variable that takes the value of 1 where a firm pays its CEO/Managing Director equity based compensation, CGU's are the number of cash generating units with a firm (as proxied by the number of reporting segments) and Size is the natural log of a firms Total Assets.

Table 9 –The determinants of Impairments under AASB 136 using an alternate leverage measure

$$Impairment_{it} = \propto_0 + \sum_{j=1}^{3} \propto_j Indicators_{it} + \propto_4 Lev_{it} + \propto_5 Unverifiable_{it} + \propto_6 \Delta Audit\ Fee_{it} + \sum_{j=7}^{10} \propto_j Controls_{it} + \varepsilon_{it}$$

Panel A - Full Sample	Co-efficient		T-Stat	Prob
Constant	0.1061	***	(4.3006)	0.0000
M/B	0.0049		(1.0651)	0.2872
BHR	-0.0334	***	(-4.9719)	0.0000
ΔOpCF	-0.0120		(-0.6935)	0.4882
Lev	-0.0194		(-1.1380)	0.2556
Unverifiable	-0.0241	***	(-2.8758)	0.0042
ΔAudit Fee	0.0026		(0.4942)	0.6213
ΔMgt	0.0138	***	(3.0770)	0.0022
eComp	0.0035		(0.8640)	0.3879
CGU's	0.0019		(0.9230)	0.3563
Size	-0.0045	***	(-3.0380)	0.0025
Industry Dummy Variables are not reported				
Adjusted R Square	0.1107			
F Statistic	3.7213	***		

Panel B - 2007	Co-efficient		T-Stat	Prob
Constant	0.0159		(0.2132)	0.8318
M/B	-0.0170		(-1.4860)	0.1415
BHR	-0.0084		(-0.4991)	0.6192
ΔOpCF	-0.0213		(-0.4820)	0.6313
Lev	0.0163		(0.3453)	0.7308
Unverifiable	-0.0073		(-0.2475)	0.8052
ΔAudit Fee	-0.0043		(-0.2798)	0.7804
ΔMgt	0.0280	**	(2.1843)	0.0321
eComp	-0.0054		(-0.4370)	0.6634
CGU's	-0.0067		(-1.1319)	0.2613
Size	0.0015		(0.3158)	0.753
Industry Dummy Variables are not reported				
Adjusted R Square	-0.0015			
F Statistic	0.9948			

Panel C - 2008	Co-efficient		T-Stat	Prob
Constant	0.0985	***	(2.7854)	0.0058
M/B	0.0044		(0.5519)	0.5816
BHR	-0.0304	***	(-2.7761)	0.0060
ΔOpCF	-0.0558	**	(-2.1078)	0.0362
Lev	0.0122	***	(0.4265)	0.6701
Unverifiable	-0.0433	***	(-3.5185)	0.0005
ΔAudit Fee	0.0174	**	(2.3383)	0.0203
ΔMgt	0.0125	**	(1.9371)	0.0540
eComp	0.0034		(0.5402)	0.5896
CGU's	0.0001		(0.0351)	0.9720
Size	-0.0051		(-2.4114)	0.0167
Industry Dummy Variables are not reported				
Adjusted R Square	0.1974			
F Statistic	3.0228	***		

Panel D - 2009	Co-efficient		T-Stat	Prob
Constant	0.1492	***	(3.5615)	0.0004
M/B	0.0066		(0.9467)	0.3446
BHR	-0.0405	***	(-3.6254)	0.0003
ΔOpCF	0.0159		(0.5659)	0.5719
Lev	-0.0384		(-1.3543)	0.1767
Unverifiable	-0.0111		(-0.8930)	0.3726
ΔAudit Fee	-0.0090		(-1.0522)	0.2936
ΔMgt	0.0179	**	(2.4342)	0.0155
eComp	0.0111	*	(1.7773)	0.0766
CGU's	0.0039		(1.2048)	0.2293
Size	-0.0064	***	(-2.5307)	0.0119
Industry Dummy Variables are not reported				
Adjusted R Square	0.1393			
F Statistic	2.6605	***		

*** Significant at the 1% level (2-tailed)
** Significant at the 5% level (2-tailed)
* Significant at the 10% level (2-tailed)

Where Impairment - Continuous is the Total impairments made divided by Total Assets, M/B is a dummy variable that takes the value of 1 where a firm has had a Market-to-Book ratio<1 in two consecutive years, BHR are the buy and hold returns of them firm, ΔOpCF is the change in Net Operating Cash Flows to Total Assets,Leverage is the proportion of Total Liabilities to Total Assets, Lev is the is the proportion of Total Liabilities to Total Assets less the industry average, Unverifiable is the propotion of PP&E, Goodwill and Inventories to Total Assets, ΔAudit Fee is the percentage change in audit fee of the current year compare to the prior year, ΔMgt is a dummy variable that takes the value of 1 where a firm has experienced a change in CEO/Managing Director during the year and eComp is a dummy variable that takes the value of 1 where a firm pays its CEO/Managing Director equity based compensation, CGU's are the number of cash generating units with a firm (as proxied by the number of reporting segments) and Size is the natural log of a firms Total Assets.

Table 10 –The determinants of Impairments in 2009 compared to 2007 and 2008 using an alternate leverage measure

$$Impairment_{it} = \propto_0 + \propto_1 MB + \propto_2 BHR + \propto_3 \Delta OpCF + \propto_4 Leverage_{it} + \propto_5 Year + \propto_6 Lev_{it} \times Year + \propto_7 Unverifiable_{it} + \propto_8 \Delta Audit\ Fee_{it} + \sum_{j=9}^{12} \propto_j Controls_{it} + \varepsilon_{it}$$

Leverage (Difference)	Co-efficient		T-Stat	Prob
Constant	0.0889	***	(3.6207)	0.0003
M/B	0.0022		(0.4874)	0.6262
BHR	-0.0307	***	(-4.6534)	0.0000
ΔOpCF	-0.0171		(-1.0058)	0.3149
Leverage	-0.0055		(-0.3266)	0.7440
Year	0.0362	***	(5.7882)	0.0000
Leverage x Year	-0.0468	***	(-3.6032)	0.0003
Unverifiable	-0.0227	***	(-2.7834)	0.0055
ΔAudit Fee	0.0027		(0.5248)	0.5999
ΔMgt	0.0166	***	(3.7583)	0.0002
eComp	0.0040		(1.0072)	0.3142
CGU's	0.0018		(0.9129)	0.3616
Size	-0.0045	***	(-3.0538)	0.0024
Industry Dummy Variables are not reported				
Adjusted R Square	0.1547			
F Statistic	4.7609	***		

Where Impairment - Continuous is the Total impairments made divided by Total Assets, M/B is a dummy variable that takes the value of 1 where a firm has had a Market-to-Book ratio<1 in two consecutive years, BHR are the buy and hold returns of them firm, ΔOpCF is the change in Net Operating Cash Flows to Total Assets,Leverage is the proportion of Total Liabilities to Total Assets, Lev is the is the proportion of Total Liabilities to Total Assets less the industry average, Unverifiable is the propotion of PP&E, Goodwill and Inventories to Total Assets, ΔAudit Fee is the percentage change in audit fee of the current year compare to the prior year, ΔMgt is a dummy variable that takes the value of 1 where a firm has experienced a change in CEO/Managing Director during the year and eComp is a dummy variable that takes the value of 1 where a firm pays its CEO/Managing Director equity based compensation, CGU's are the number of cash generating units with a firm (as proxied by the number of reporting segments),Size is the natural log of a firms Total Assets and Year is a dummy variable that takes the value of 1 where the observation was in 2009 and 0 where the observation was in 2007 or 2008.