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The Impairment of Assets in the Australian Context

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under the supervision of Professor Peter Wells and Doctor Brett Govendir

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CERTIFICATE OF ORIGINAL AUTHORSHIP

I, *Andrew Dymock* declare that this thesis, is submitted in fulfilment of the requirements for the award of *Doctor of Philosophy (Accounting)*, in the *Accounting Discipline Group* at the University of Technology Sydney.

This thesis is wholly my own work unless otherwise referenced or acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

This document has not been submitted for qualifications at any other academic institution.

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Abstract

AASB 136 Impairment of Assets has broad application across firms and is likely to be the most problematic accounting standard currently applying to the preparation of financial reports in Australia. So much so that 'impairment of assets' is identified annually by the Australian Securities and Investments Commission in its listing of financial reporting issues requiring attention (ex-ante) as well as its listing of financial reporting problems identified (ex-post). The persistent concern is asset impairments are not recognised on a timely basis. The focus of this thesis is on three aspects of asset impairment. First, whether there are economic consequences arising from asset impairments not being recognised on a timely basis. Second, determining the extent to which asset impairments contribute to 'conditional conservatism'. Third, whether asset impairments are relevant to the evaluation of firm performance.

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List of Abbreviations

Abbreviations used in Chapter 1:

Label	Definition
IFRS	International Financial Reporting Standards. Developed to ensure the consistent application of accounting standards and practices.
AASB	Australian Accounting Standards Board. They are the standard-setters in the Australian context.
ASIC	Australian Securities and Investments Commission. They are the regulators in Australia and enforce the *Corporations Act 2001 (Cth).*
ASX	Australian Securities Exchange. Where public companies are listed to attract capital from investors. They monitor and oversee compliance with the ASX Listing Rules.
CDR	Continuous Disclosure Regime. *ASX Listing Rule 3.1* requires firms to disclose on a timely basis all information that could have a material effect on the price or value of a company's shares.
M/B	Price per share divided by book-value of equity.
E/P	Earnings per share divided by the share price.
CGU	Cash Generating Unit. The smallest group of assets in the business that independently generates cash flows.

Abbreviations used in Chapter 2:

Label	Definition
Impair-D	A dichotomous measure of impairment based on whether the firm has recognised an impairment during the year. Assigned a value of '1' if impairment was recognised and '0' otherwise.
Impair-C	A continuous measure of impairment based on the size of the asset impairment realised during the year. Measured as impairment per share.
Govern	A dichotomous measure based on the proportion of independent directors to total directors for each year. Assigned a value of '1' if greater than or equal to the median and '0' if below the median.
CD	Continuous disclosure measured as the number of price sensitive announcements each year. A continuous measure.
B/M	Book value of equity per share divided by price per share.
Yrs	A dichotomous measure for firms with a *B/M*>1 for two consecutive years. Assigned a value of '1' if *B/M*> 1 for two consecutive years and '0' otherwise.
BHR	This is the buy-and-hold-return for the firm during the current financial year.
CF	Cash flows from operating activities and investing activities per share.
Earns	Earnings per share with abnormal items other than impairment excluded.
ΔCEO	A dichotomous measure equal to '1' if the Chief Executive Officer had changed during the year and '0' otherwise.

Abbreviations used in Chapter 3:

Label	Definition
$Earn_{it}$	GAAP earnings per share, deflated by the share price at the start of the period.
$Earn_{it}$+$Impair_{it}$	GAAP earnings per share with the value of impairment added back, deflated by the share price at the start of the period.
BHR_{it}	Buy-and-hold-return for period *t* beginning 3 months after year end.
Neg_{it}	A dichotomous variable taking on the value of '1' if the *BHR* in year *t* is negative, '0' otherwise.
Yrs_{it}	A dichotomous variable equal to '1' if the book-to-market is greater than one for two or more consecutive years, '0' otherwise.

Abbreviations used in Chapter 4:

Variable	Definition
$Earn_{it}$	GAAP earnings per share, deflated by the share price at the start of the period.
$Impair_{it}$	Impairment per share, deflated by the share price at the start of the period.
$Earn+Impair_{it}$	GAAP earnings per share with the value of impairment added back, deflated by the share price at the start of the period.
Ret_{it}	Buy-hold-return for period *t* beginning 3-months after year end.
OCI	Other Comprehensive Income. This comprises items of income and expense (including reclassification adjustments) that are not recognised in profit or loss as required or permitted by other Australian Accounting Standards (Australian Accounting Standards Board 2015).

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Chapter 1

Introduction

1.1 Research questions

Asset impairment is one of the most significant accounting issues impacting on businesses and is likely to become even more critical given recent events in Australian and global markets. Following transition to *International Financial Reporting Standards (IFRS)* in 2005, accounting for asset impairments has been dictated in Australia by *AASB 136 Impairment of Assets*. The objective of this Standard is to prescribe the procedures that an entity applies to ensure that the book value of its assets measured using a historic cost measurement model should not exceed the recoverable amount of those assets. For this purpose, the recoverable amount is determined as the higher of the 'value in use' or the 'fair value' of the assets. While conceptually simple, the application of the standard has been, and continues to be, problematic. This is clearly identified by the annual inclusion of asset impairments in the list of financial reporting issues requiring address in the forthcoming reporting season by the Australian Securities and Investments Commission (ASIC). Further, asset impairments also features annually in the financial reporting problems identified by ASIC both at the beginning of reporting season as a guide for businesses and at the end of the reporting season as an area of concern for businesses and auditors.

Reflecting concerns that asset impairments may not be recognised on a timely basis, attention is in the first instance focused on whether this has any economic consequences. This question is driven by claims in a recent court case that Myer Limited's failure to recognise an asset impairment did not have an economic consequence. Such a finding requires that there be alternative mechanisms for information about declines in asset and

firm values to be communicated. An obvious example would be the *Continuous Disclosure Regime* which operates in Australia. In Chapter 2 consideration is given to whether the recognition of asset impairments is pre-empted by firm disclosures made pursuant to the *Continuous Disclosure Regime (CDR).* Such a finding would explain equivocal findings in the literature in relation to stock price reactions to the announcement of asset impairments.

A second concern is the extent to which asset impairments impact financial reports. Conservatism is commonly identified as an attribute of accounting, notwithstanding this representing a bias which is inconsistent with the *Conceptual Framework* used to develop accounting standards. Further, asset impairments are typically used to explain a particular type of conservatism – conditional conservatism. However, the extent to which conditional conservatism is pervasive across accounting policies – other than asset impairments – and is pervasive across firms has not been critically evaluated. In Chapter 3 consideration is given to the extent to which conditional conservatism is a consequence of asset impairments and whether it is pervasive across firms not recognising asset impairments.

A third concern is the extent to which asset impairments are relevant for the evaluation of firm performance. Asset impairments represent a diminution in asset and firm value that has occurred; exclusion from earnings when determining future performance is likely appropriate. This is consistent with a valuation use of financial report information. However, this might not be the case if earnings is used to evaluate past firm performance (the stewardship of firms by Directors). In Chapter 4 this is addressed by evaluating the association between stock price performance with alternate performance measures including and excluding asset impairments.

1.2 Results

In Chapter 2, attention is focused on the extent to which asset impairments are pre-empted by firm disclosures made pursuant to the *Continuous Disclosure Regime (CDR)*. The first finding in Chapter 2 is that most firms recognising asset impairments pre-empt this by making firm disclosures. This result is stronger for material asset impairments. It is likely for this reason that there is only equivocal evidence of stock price reactions to asset impairments in the literature. Second, the majority of firms exhibiting at least one externally observable indicator of impairment (book value of equity exceeding market value of equity) do not recognise an asset impairment. Further, there are scant disclosures in the financial report explaining why an asset impairment is considered unnecessary. Finally, for firms not recognising asset impairments there is no evidence of firm disclosures being made. This suggests non-compliance with both AASB 136 and the *Continuous Disclosure Regime*.

In Chapter 3 an evaluation of conditional conservatism is undertaken. Conditional conservatism suggests a positive association between earnings and positive stock returns, and a stronger association between earnings and negative stock returns (asymmetric). Across some partitions of firms there is evidence of a symmetric association between stock returns and earnings which is inconsistent with expectations. Problematically, there is little evidence of a positive association between stock returns and earnings across other partitions of firms. Further analysis shows this to be a consequence of growth firms (i.e. high market – to – book (M/B) ratios and low earnings – to – price (E/P) ratios). Accordingly, the results suggest conditional conservatism is more likely attributable to issues with the determination of the association between positive stock returns and earnings rather than negative stock returns and earnings. This may potentially be considered model misspecification.

In Chapter 4 the association between stock returns and earnings (inclusive and exclusive of asset impairments) is evaluated. Evidence is provided that earnings including asset impairments have a higher explanatory power for stock returns than earnings exclusive of asset impairments. There is also evidence that asset impairments are significant in regressions on stock returns. These results occur across firms generally, as well as for firms exhibiting externally observable indicators of impairment and firms recognizing asset impairments. Finally, this result is robust to concerns that asset impairments may not be recognized on a timely basis.

1.3 Contribution

This thesis makes a number of contributions to the literature considering asset impairments and to professional practice.

Generally, Chapter 2 raises questions about the application of AASB 136. It provides evidence for regulators about possible non-compliance with AASB 136 and the *CDR.* Specifically, for firms where there are externally observable indicators suggesting the need for asset impairments, there are concerns that a majority of these firms are likely not recognizing asset impairments. Further, to the extent that almost 75% of these firms exhibit an externally observable indicator suggesting the need for asset impairment for two or more years, it is difficult to claim this is a transitory issue. This raises concerns about compliance with the requirements of AASB 136 for a substantial number of firms. To the extent there is no evidence of firm disclosures, either as an alternative to the recognition of asset impairments or seeking to address perceived mispricing on the share market, this suggests non-compliance with the *CDR* also. This suggests a more targeted regime of regulatory enforcement is required.

Insights into the recognition of asset impairments are also provided and this has relevance to the literature. The extent large asset impairments are pre-empted with firm disclosures provides insights into why evidence on share price reactions to asset impairments is equivocal (Bens, Heltzer & Segal 2011). This raises an interesting question about the extent to which there are share price reactions associated with asset impairments that are not pre-empted in this manner – although this is beyond the scope of this thesis. A significant proportion of asset impairments (58%) are recognized by firms when there are no externally observable indicators; this suggests the need for asset impairments and these asset impairments are generally smaller. This likely arises from asset impairments being determined at the level of cash generating units (CGUs), where decisions about impairments are not being made at the firm level. As a consequence, evaluation of asset impairments generally with firm level information will provide relatively weak tests and be susceptible to omitted correlated variable problems. Rather, attention should be focused on firms with only one CGU, with a dominant CGU, or pervasive financial issues across CGUs.[1] This suggests future studies should focus on asset impairments on firms where there are externally observable indicators suggesting the need for asset impairments. A related issue is that only 29% of the impairments recognized include impairment of goodwill. This again identifies an issue with asset impairments being determined at the level of CGUs, and how the assets are allocated across CGUs. This suggests that future studies should consider asset impairments generally, rather than goodwill only, or limit consideration to firms with one CGU, or a dominant CGU where allocation is less problematic.

[1] While disclosures relating to CGUs is limited, these can be no larger than disclosed operating segments and this might be considered a suitable proxy.

Notwithstanding a significant literature considering conditional conservatism, conflicting evidence is provided in this thesis. While there is evidence of differences in the association of returns and earnings across this sample of firms, it is difficult to attribute this to conditional conservatism. There is evidence that asset impairments are a major contributor to an association between negative stock returns and earnings for some firms, and this might suggest that conditional conservatism is limited to asset impairment. However, there is an association between negative stock returns and earnings for some firms not recognizing asset impairments, although this may simply reflect earnings capturing firm performance. For firms with a book-value of equity greater than a market-value of equity there is a consistent association of positive stock returns with positive earnings and negative stock returns with negative earnings. Similarly, for firms with a book-value of equity less than the market-value of equity and high earnings there is a consistent association of positive and negative stock returns with earnings respectively. These results are generally inconsistent with conditional conservatism as it is discussed in the literature, and inconsistent with it being pervasive across accounting practices and firms.

The association between stock returns and earnings is complex, especially for growth firms (i.e. firms with a book-value of equity less than the market-value of equity and a low or negative earnings yield). For these firms, current period earnings will not be reflective of expected future earnings, and this may be impacted by unconditional conservatism. The impact of this study is the simple model typically used to evaluate conditional conservatism may potentially be misspecified; as a consequence, any results will be sensitive to sample composition and in particular the relative number of growth firms in the sample.

Concerns regulators and financial statement users (including investors and lenders) might have about bias (as opposed to neutrality) in regulation dictating the determination of information in financial reports are likely to be overstated. However, while not the focus of the study, the results suggest issues with the timeliness in the recognition of asset impairments. Additionally, for growth firms there are likely to be issues with the ability of earnings to capture firm performance. This may arise from unconditional conservatism.

Concerns that asset impairments would be better included in Other Comprehensive Income rather than the Statement of Profit or Loss are likely misplaced. Earnings *including* asset impairments have more explanatory power for stock returns than earnings *excluding* asset impairments; additionally, asset impairments separately are associated with stock returns. This suggests that asset impairments are relevant to financial report users including shareholders who are concerned with evaluating firm performance and stewardship (Francis, Hanna & Vincent 1996; Kuhner & Pelger 2015; Murphy 2001). Accordingly, the recognition of asset impairments in the Statement of Profit or Loss, rather than in Other Comprehensive Income, may be appropriate. This is relevant to the current deliberations of the IASB as part of its 'Disclosure Initiative' (International Accounting Standards Board 2017).

Consistent with the literature (Bond, Govendir & Wells 2016; Filip, Lobo & Paugam 2020; Francis, Hanna & Vincent 1996; Li & Sloan 2017; Strong & Meyer 1987) evidence is provided of asset impairments not being recognized on a timely basis. Notably, the majority of firms in the sample with at least one externally observable indicator of impairment do not recognize an asset impairment. Further, this persists for two or more years for the majority of these firms. This problem is attenuated when the relevance of asset impairments is evaluated over three-year periods and differences in the

relevance of earnings including and excluding asset impairments is greatest. This suggests that caution should be exercised in any relaxation of the requirements for impairment testing which are being considered as part of the Business Combinations under Common Control Project (International Accounting Standards Board 2020).

Finally, while not specifically considering the use of non-GAAP earnings[2] in management performance evaluation, concerns are identified – for example, if asset impairments are considered representative of the adjustments made to earnings. There is evidence that asset impairments are relevant to the evaluation of firm performance; this suggests the inclusion of asset impairments in earnings in the evaluation of management performance. There may be arguments that the recognized asset impairments are not attributable to current management, but this would suggest exclusion on a situation specific basis rather than exclusion generally.

1.4 Thesis structure

The remainder of the thesis is organized as follows. Chapter 2 evaluates the association between the recognition of asset impairments and firm disclosures pursuant to the *Continuous Disclosure Regime*. Chapter 3 evaluates whether conditional conservatism is pervasive across accounting policies and firms. Chapter 4 considers the relevance of asset impairments for evaluating firm performance. Finally, limitations and suggestions for further study are identified in Chapter 5.

[2] GAAP earnings refers to earnings as defined by following the Generally Accepted Accounting Principles which is now the International Financial Reporting Standards (IFRS). Non- GAAP earnings is calculated by companies not adhering to GAAP conventions in order to determine earnings that the companies better believes reflects underlying firm performance.

Chapter 2

The association of asset impairments with firm disclosures

2.1 Introduction

The objective of this chapter is to evaluate whether asset impairments, recognized in accordance with *AASB 136 Impairment of Assets* (*AASB 136*) which is set by the Australian Accounting Standards Board (AASB), are associated with firm disclosures of price sensitive information that are required under the *Continuous Disclosure Regime* (*CDR*).[3] Asset impairments are potentially significant for the disclosure of 'bad news' and potentially provide relevant information to investors about declines in asset values. However, there is persistent evidence they are not recognized on a timely basis (Collins & Henning 2004; Ji 2013) and that opportunism is a critical determinant of when they are recognized (Bond, Govendir & Wells 2016; Cotter, Stokes & Wyatt 1998; Filip, Lobo & Paugam 2020; Kabir & Rahman 2016). However, evaluation of the economic consequences of this requires consideration of alternative disclosure mechanisms. In particular, the Australian Securities Exchange Listing Rules (Australian Securities Exchange 2013) require firms to disclose on a timely basis all information that could have a material effect on the price or value of a company's shares and the Australian Securities and Investments Commission (ASIC) is responsible for the enforcement of these regulations. This should provide more timely disclosure and brings into question the issue of how investors become aware of firm circumstances; in particular, whether asset

[3] AASB 136 and *CDR* are specific to the Australian context of this chapter, and these are identified for that reason. However, it should be noted that the accounting standard is based on *IAS 36 Impairment of Assets* and that similar disclosure regulations exist in many other jurisdictions (e.g. *Reg FD* in the USA). Further, there is broad consistency in the empirical literature considering asset impairment in a range of jurisdictions. Hence, the findings and conclusions are expected to be more broadly applicable.

impairments are pre-empted by firm disclosures. This could limit the economic consequences of firms not recognizing asset impairments. I evaluate whether asset impairments are pre-empted by firm disclosures by considering the association of asset impairments with price sensitive firm disclosures by Australian listed firms over the period 2007 to 2016.

This chapter is concerned with the interaction of firm accounting and disclosure policies. General purpose financial reports are considered a critical mechanism for informing shareholders about the financial position of the firm. In accordance with AASB 136*,* information is provided about (diminished) future returns through the recognition of asset impairments. Management may also communicate information about expected future returns through earnings forecasts, earnings guidance, direct contact with analysts, and conference calls (Lang & Lundholm 1996; Rogers, Skinner & Van Buskirk 2009). These may complement disclosures in general purpose financial reports, including the recognition of asset impairments, and potentially provide information on a timely basis. It is also possible that where general purpose financial reports are not considered relevant, alternative communication channels such as firm disclosures may be considered as a strategy to resolve uncertainty in the market about firm value. This might provide insights into firm accounting and disclosure choices; in particular, the recognition of asset impairments in accordance with *AASB 136* and price sensitive disclosures made pursuant to the *CDR*.

The primary motivation for this chapter is provided by the Australian Securities and Investments Commission (ASIC) continually identifying issues with the recognition and measurement impairment of assets as a reporting issue (Australian Securities and Investment Commission 2019). Asset impairment is required where the recoverable amount of an asset, which is forward looking and identifying changes in asset values, is

below the book-value of assets. The circumstances giving rise to a decline in the recoverable amount of assets are conceivably the same as those requiring firm disclosures by the *CDR.* However, the association between asset impairments and firm disclosures remains untested in the literature. A further unresolved issue is whether firm disclosures pre-empt asset impairments. Evaluating this association is also suggested by the legal action taken against Myer Holdings Ltd[4] for the delayed recognition of a substantial asset impairment and minimal firm disclosures to the market. This suggests ASIC and market participants believe there should be an association between the recognition of asset impairments and disclosure. While in this case the plaintiff was successful, meaningful penalties were not imposed as it was stated that this information was already reflected in the market price (Main 2019). This case does need to be considered contextually given that Myer had previously issued de facto earnings guidance and failed to issue corrective guidance and so misled the market.

Additionally, consideration of firm disclosures generally may provide insights into issues with the recognition and measurement of asset impairments identified by the Australian Accounting Standards Board (AASB) (Australian Accounting Standards Board 2019). This may be a consequence of differing beliefs in the purpose of the standard by regulators, auditors and Boards of Directors, and whether asset impairment tests assess the effectiveness of past acquisitions, determine the overall reasonableness of the balance sheet, or determine the recoverable amount of specific assets or Cash Generating Units (CGUs). It may also be a consequence of arguments that the use of pre-tax discount rates distorts the determination of the recoverable amount for firms using the

[4] TPT Patrol Pty Ltd as trustee for Amies Superannuation Fund v Myer Holdings Limited [2019] FCA 1747 (24 October 2019).

fair value method where they have no intention of disposing of the assets in the following year (Australian Accounting Standards Board 2019).

A further motivation is to contribute to the literature considering asset impairment. There is some evidence of negative stock returns to the recognition of asset impairments (e.g., Bartov, Lindahl & Ricks 1998; Knauer & Wöhrmann 2016), although this may be conditioned by whether they are (un)expected (Bens, Heltzer & Segal 2011; Knauer & Wöhrmann 2016). However, there is no evidence of the recognition of asset impairments resolving uncertainty about future returns or reducing information asymmetry (Vanza, Wells & Wright 2018). This suggests alternative information channels are being used, which includes firm disclosures such as the *CDR*. This raises the question of whether the recognition of asset impairments is pre-empted by firm disclosures, or whether firm disclosures are seen as an alternative to the recognition of asset impairments or potentially addressing mispricing.

This study uses a sample of 2,493 firm-year observations for firms listed on the Australian Securities Exchange (ASX) over the period 2007 to 2016. This includes a broad sample of firms including a sub-sample where there are externally observable indicators suggesting asset impairments should be recognized. There is evidence of asset impairments being recognized more frequently by firms where there are externally observable indicators of impairment (44% of these firms), but asset impairments are still common across firms where there are no externally observable indicators of impairment (26% of these firms). This divergence is less than expected (i.e. more than 44% and/or less than 26% expected) and suggests that many firms are not likely to be complying with the requirements of AASB 136 due to externally observable indicators suggesting the need for asset impairments. It is notable that for many firm-years where there are no externally observable indicators of impairments, asset impairments are small and that the

firms are otherwise profitable (hence, the unexpected positive association with earnings). This identifies a major challenge in evaluating asset impairments. They are determined at the level of CGUs about which there is often scant information. Hence, many firms may recognize relatively small asset impairments where there is no externally observable evidence suggesting that this is necessary. This reduces the power of any tests evaluating the recognition of asset impairments across broad samples. Further, depending upon the allocation of assets across these CGUs, it is difficult to make assumptions about the assets that will be subject to impairment.

For the full sample of firms there is no evidence of an association between asset impairments generally (i.e. dichotomous) and disclosure. However, where the magnitude of asset impairments is considered (i.e. continuous) there is evidence that firms disclosures pre-empt the recognition of large asset impairments. Further, where there is more effective governance there is evidence of firm disclosures having a greater association with asset impairments. This finding indicates material asset impairments are likely to be pre-empted by firm disclosures, especially where there is effective corporate governance.

The results are problematic for firms where there is an externally observable indicator suggesting an asset impairment night be needed and expected. Critically, there is no evidence of more disclosures by firms with externally observable indicators of asset impairment. There is a positive association of firm disclosures with recognition of asset impairments generally (i.e. dichotomous), as well as when the magnitude of asset impairments is taken into account (i.e. continuous). Additionally, there is again evidence of a stronger association between firm disclosures and asset impairments for firms with more effective governance. Hence, firms with an externally observable indicator suggesting the need to recognize asset impairments in accordance with AASB 136 are

likely pre-empting this with disclosures in accordance with the *CDR*. This likely explains the equivocal results in the prior literature for share price reactions to asset impairments and the possibility this is conditioned by whether they are (un)expected (Bens, Heltzer & Segal 2011; Knauer & Wöhrmann 2016).

However, it is notable that 56% of this sub-sample of firms with an externally observable indicator of impairment are not recognizing asset impairments. This raises concerns about compliance with the requirements of *AASB 136* and is consistent with the results in Bond, Govendir & Wells (2016). Further, firms not recognizing an impairment make fewer disclosures than those recognizing an impairment. To the extent there is evidence of decreased disclosure by these firms it is also unlikely they are complying with the requirements of the *CDR*. This likely explains the results in Vanza, Wells & Wright (2018) where they found greatest uncertainty about share price for firms not recognizing asset impairments, and the recognition of asset impairments not reducing this uncertainty. Further consideration of this is beyond the scope of this thesis.

This chapter makes a number of contributions to the literature. First, I provide evidence for regulators about possible non-compliance with AASB 136 and the *CDR.* In particular, for firms where there are externally observable indicators suggesting the need for asset impairments, there are concerns that a majority of these firms are likely not recognizing asset impairments. Further, almost 75% of these firms exhibit an externally observable indicator of book-value of equity exceeding market-value of equity for two or more years; this suggests the need for asset impairments and it is difficult to claim that this is a transitory issue. This raises concerns about compliance with AASB 136 for a substantial number of firms. To the extent that there is no evidence of firm disclosures, either as an alternative to the recognition of asset impairments or seeking to address

perceived mispricing on the share market, this also suggests non-compliance with the *CDR*. A more targeted regime of regulatory enforcement may be required.

Second, insights into the recognition of asset impairments are provided which are relevant to the literature considering asset impairments. The extent to which large asset impairments are pre-empted by firm disclosures provides insights into why evidence on share price reactions to asset impairments is equivocal (Bens, Heltzer & Segal 2011). An interesting question is the extent to which there are share price reactions associated with asset impairments that are not pre-empted in this manner, which is beyond the scope of this thesis. A significant proportion of asset impairments (58%) are recognized by firms when there are no externally observable indicators; this suggests the need for asset impairments and these asset impairments are generally smaller. This likely arises from the asset impairments not being determined at the firm level (e.g. CGU or segment level). Consequently, evaluation of asset impairments generally with firm level information will provide relatively weak tests and are likely to be susceptible to omitted correlated variable problems. Rather, attention should be focused on firms with only one CGU, with a dominant CGU, or pervasive financial issues across CGUs.[5] This suggests future studies should focus on asset impairments for firms where there are externally observable indicators suggesting the need for asset impairments. A related issue is that only 29% of the impairments recognized included impairment of goodwill. This again identifies an issue with asset impairments being determined at the level of CGUs, and the manner by which assets are required to be allocated across CGUs. This suggests that studies should consider asset impairments generally, rather than goodwill only, or limit consideration to firms with one CGU, or a dominant CGU where allocation is less problematic.

[5] While disclosures relating to CGUs are limited, these can be no larger than disclosed operating segments and this might be considered a suitable proxy.

The remainder of the chapter is organized as follows. Section 2.2 examines the regulatory background and prior research on asset impairment and disclosure. Section 2.3 details the research design and Section 2.4 contains the sample selection and data description. The results are presented in Section 2.5, additional analysis in Section 2.5.1, and the conclusions are presented in Section 2.6.

2.2 Prior research and hypotheses

2.2.1 Regulatory background; AASB 136 Impairment of Assets and the Continuous Disclosure Regime

The requirements for the recognition and measurement of asset impairments in Australia are generally addressed in AASB 136. This requires that where there are indicators suggesting the need for asset impairments, including declines in firm value, technological changes, or changes in economic conditions, firms undertake impairment testing (para 7-17). Impairment testing requires the estimation of the recoverable amount, which is the higher of value in use or fair value (para 6, 18-23). Significant guidance is provided for the estimation of value in use, addressing issues such as constraints on the determination of future cash flows generated and discount rates (para 6, 30-57). Fair value is defined as the price that would be received for an asset in an orderly transaction between market participants (para 6), and detail on how this should be determined is provided in *AASB 13 Fair Value Measurement*. When the carrying amount exceeds the recoverable amount, then an impairment loss is required to be recognized for the excess of carrying amount over the recoverable amount (para 58-64).

At times it will not be possible to determine the recoverable amount for individual assets, and it will be necessary to do this on the basis of groups of assets – CGUs (para 65-108). This has a range of impacts if a firm has more than one CGU. First, the allocation

of impairment to specific assets will be dependent on the allocation of assets across CGUs. Accordingly, attention is focused on asset impairments generally rather than impairment of particular assets (i.e. goodwill) as this will be conditioned by the allocation of assets (i.e. goodwill) across the CGUs. Second, impairment testing is undertaken at the CGU level; indicators suggesting the need for asset impairments at the CGU level may not be apparent at the firm level. Hence, firms may recognize asset impairments in accordance with *AASB 136* where there are no apparent indicators suggesting the need for asset impairments. However, if there are indicators suggesting the need for asset impairments at the firm level, there will be indicators suggesting the need for asset impairments at the CGU level and asset impairments should be expected. Hence, consideration of the application of AASB 136 should be directed at firms generally as well as firms where there are external indicators suggesting the need for asset impairments. There is only mixed evidence of the recognition of asset impairments by these firms (Bond, Govendir & Wells 2016) and this doubtless contributes to ASIC identifying issues with the recognition of asset impairments.

Regardless of how the recoverable amount is determined, it will be underpinned by assumptions about future returns attributable to an asset or a group of assets. To the extent that this impacts stock price, these assumptions, and the information supporting these assumptions will be price sensitive.

The Australian Securities Exchange *Listing Rules* (Australian Securities Exchange 2013) require the disclosure of price sensitive information by Australian listed firms on a timely basis. Specifically, *Listing Rule 3.1* requires timely disclosure of price sensitive information by companies and establishes penalties for companies and directors who contravene these provisions. This is referred to as the *CDR* which is designed to ensure the market is fully informed, to maintain and increase the confidence of investors,

to ensure director accountability, and to avoid market distortions (ASX Guidance Note 8); while there are exceptions, these are limited in scope. The essence of the *CDR* is that when an entity becomes aware of any information about the firm that a reasonable person would expect to have a material effect on the price or value of the entity's shares, the entity must immediately disclose this information to the ASX. Recognizing the importance of disclosure for an informed market, the *Listing Rules* are given legislative backing by the *Corporations Act 2001 (Cth)* (s674), and establishes the possibility of criminal sanctions for breaches (s678).

Joint evaluation of the application of AASB 136 and the *CDR* is suggested by both, addressing situations where the circumstances of the firm have changed materially. The recognition of asset impairments is limited to reporting periods and this constrains when information is disclosed, whereas firm disclosures may be made at any time. For this reason, it is expected a disclosure will pre-empt the recognition of asset impairments. To date, this remains untested in the literature.

2.2.2 Empirical research and hypothesis development

There is an extensive literature evaluating the recognition of asset impairments (e.g., AbuGhazaleh, Al-Hares & Roberts 2011; Bond, Govendir & Wells 2016; Cotter, Stokes & Wyatt 1998; Strong & Meyer 1987). This literature considers the motivations for recognizing asset impairments, including whether the recognition of asset impairments is efficient and reflects expected firm performance (Cotter, Stokes & Wyatt 1998) or whether they are opportunistically motivated (Christensen, Paik & Stice 2008; Cotter, Stokes & Wyatt 1998; Elliott & Shaw 1988; Francis, Hanna & Vincent 1996;

Riedl 2004). Consideration has also been given to the role of effective governance mechanisms in constraining opportunism (AbuGhazaleh, Al-Hares & Roberts 2011).

Despite there being persistent evidence that asset impairments are not recognized on a timely basis (Collins & Henning 2004; Ji 2013), with opportunism being a critical determinant of when they are recognized (Bond, Govendir & Wells 2016; Cotter, Stokes & Wyatt 1998; Filip, Lobo & Paugam 2020; Kabir & Rahman 2016), the economic consequences, if any, of asset impairments not being recognized on a timely basis is seldom considered. In addressing this it is notable that there is some evidence of negative stock returns associated with the recognition of asset impairments (e.g., Bartov, Lindahl & Ricks 1998; Knauer & Wöhrmann 2016). However, this may be conditioned by whether they are (un)expected (Bens, Heltzer & Segal 2011; Knauer & Wöhrmann 2016); there is no evidence the recognition of asset impairments resolves uncertainty about future returns or information asymmetry (Vanza, Wells & Wright 2018). These results are consistent with there being alternative mechanisms to communicate 'bad news' for the recognition of asset impairments being communicated. This would include disclosures made by firms in accordance with the *CDR*.

Information identifying declines in asset values and relevant to the determination of recoverable amount for assets, or groups of assets, would doubtless be considered price sensitive and trigger the requirements for firm disclosures to the Australian Securities Exchange and investors. Such disclosures are required by *Listing Rule 3.1* (Australian Securities Exchange 2013) and s674 of the *Corporations Act 2001 (Cth)*. To the extent that disclosures are not limited to financial reporting periods, these firm disclosures would be expected to pre-empt the recognition of asset impairments, and this is consistent with the results above. However, it is also possible that firm disclosures are made as

alternatives to the recognition of asset impairments where financial statements are not considered relevant.

It is generally assumed that externally observable indicators of impairments identify the need for the recognition of asset impairments. However, it is also possible that firm disclosures are intended to address what management might consider mispricing. Hence, in addition to these regulatory requirements to disclose information there may also be economic incentives to disclose information. The costs and benefits of disclosure generally were considered by Verecchia, 1983, who identifies the impact of disclosure on the price of assets in a context where there is proprietary information. Evaluation of this is the subject of a substantial empirical literature including Leuz and Verecchia (2000). They focused on German firms changing their reporting regime and found increased disclosure reduced the information asymmetry component of firms' cost of capital. It is not necessary for the purpose of this chapter to consider this literature extensively as the concern here is whether disclosure is associated with recognition of asset impairments. However, this does potentially identify firm disclosures where asset impairments are not recognized.

Accordingly, while it might be assumed that the firms making disclosures in accordance with the *CDR* relate to bad news associated with asset impairment, this is not necessarily the case. This requires empirical evaluation and consideration of the following hypothesis:

H_1: There is an association between firm disclosures and the recognition of asset impairment.

There is evidence of effective governance mechanisms impacting the recognition of asset impairments (AbuGhazaleh, Al-Hares & Roberts 2011). These mechanisms include a higher proportion of independent directors and effective governance mechanisms may result in the timely recognition of asset impairments as well as constraining 'earnings baths' through the recognition of asset impairments. There is also evidence that effective governance leads to better disclosure quality, resulting in more value relevant information (Beekes & Brown 2006; Buskirk 2012; Collett & Hrasky 2005; Core 2001; Healy & Palepu 2001). An unresolved issue in the literature is whether disclosures made are pre-empting the recognition of asset impairments generally, or mainly for firms where there is more effective governance.

H_2: There is an association between firm disclosures and the recognition of asset impairments for firms with more effective governance.

There are challenges in evaluating these hypotheses which require address. There is considerable diversity across firms recognizing asset impairments; this includes a significant number of firms recognizing asset impairments where there are not externally observable indicators of impairment. The circumstances, incentives and consequences of recognizing an asset impairment or making a disclosure may differ between firms with externally observable indicators of impairment and there is the expectation of asset impairments and those firms without externally observable indicators of impairment. There is also consistent evidence that asset impairments may not be recognized on a

timely basis where there are externally observable indicators of impairment (Bond, Govendir & Wells 2016). As this may also impact firm disclosures, this raises the issue of whether there is an association between the recognition of asset impairments and disclosures generally, or whether it is limited to subsets of firms. Hence, consideration is given to firms generally, as well as those where there are externally observable indicators of impairment.

2.3 Research design

The focus of this chapter is whether there is an association between the recognition of asset impairments and firm disclosures. Of particular concern is whether firms pre-empt the recognition of asset impairments with disclosures, that may provide insights into inconsistent findings on stock price reactions to asset impairments. Further, whether this occurs generally, or whether it occurs for firms with more effective governance. Ordinary Least Squares regression will be used in both of the models below; logistic in the first model to examine the impact of continuous disclosure, firm governance and indicators of impairment on the recognition of impairment and continuous in the second model to examine these impacts on the magnitude of asset impairment. These are examined with the following models, initially as a dichotomous logistic regression and subsequently as a continuous OLS regression:

$$Impair_{it} = \alpha_0 + \alpha_1 CD_{it} + \alpha_2 Govern_{it} + \alpha_3 Govern_{it} * CD_{it} + \sum_{k=4}^{8} \alpha_k \, Indicators_{it} + \sum_{l=9}^{m} \alpha_l \, Controls_{it} + \varepsilon_{it} \quad (1)$$

Where the variables are determined as follows:

Asset Impairments (Impair)

To the extent that asset impairments qualify for recognition in financial reports, this suggests that they are material. Accordingly, asset impairments are in the first instance measured as a dichotomous variable (*Impair-D*) assuming the value of '1' if the firm recognizes an asset impairment in the Income Statement, otherwise '0'.

Although the magnitude of asset impairments is likely to indicate the extent to which the conditions requiring firm disclosures are met, it is also likely that the circumstances surrounding large asset impairments will emerge over a longer period and be the subject of more firm disclosures. Reflecting this, asset impairments are also measured as a continuous variable (*Impair-C*) calculated as the asset impairment recognized in the Income Statement, scaled by the number of shares on issue. I report on the asset impairments in aggregate rather than disaggregating into impairment of goodwill, impairment of identifiable intangible assets and impairment of tangible assets since impairment of goodwill is present in only 27% of the sample.

Continuous disclosures (CD)

It is assumed that firms having price sensitive information will make firm disclosures, and that these disclosures will pre-empt the recognition of asset impairments (H_1). Further, there is the expectation that firms with more price sensitive information will make more firm disclosures. Hence, continuous disclosure (*CD*) is a continuous measure of the number of price sensitive disclosures made to the ASX during the financial

year. *CD* is included as an independent variable since I am assessing whether firm disclosures pre-empt the recognition and measurement of asset impairments. [6]

Governance (Govern)

Corporate governance is included to determine whether this is associated with the recognition of asset impairments generally. Corporate governance is interacted with continuous disclosures to determine whether the association of firm disclosures with asset impairments is attributable to firms with more effective corporate governance (H_2). Effective corporate governance is known to limit opportunism for both impairment and disclosure (AbuGhazaleh, Al-Hares & Roberts 2011). Consistent with prior studies, corporate governance is measured as the proportion of independent directors on the Board of Directors for each firm-year (Beekes, Pope & Young 2004). A dichotomous variable (*Govern*) is then determined and assumes the value '1' if the proportion of independent directors for the firm is above the median for that year, and '0' otherwise.

[6] I use the number of price sensitive disclosures in aggregate rather than the number of disclosures that refer to an asset impairment since disclosures that don't contain a reference to an impairment of assets may still signal to the market a need to impair assets. Further, directors may communicate their private information through trading of shares in the company (Noe,1999) and so examining the number of price sensitive disclosures referring to an asset impairment will likely understate the number of disclosures.

Indicators and determinants of impairment (B/M, BHR, Earns and Yrs)

Indicators and determinants of asset impairment are suggestive of the recognition of asset impairments, and are likely to reflect the same information addressed in disclosures or other additional information provided. If asset impairments and continuous disclosure simply reflect the same information, it is still possible that disclosures pre-empt the recognition of asset impairments and evaluation of the association between asset impairments and continuous disclosure will be difficult due to collinearity. However, firm disclosures are likely to detail the circumstances of the asset impairments and while there are limitations in the indicators of asset impairments that are externally observable. Hence, the analysis is undertaken both with and without externally observable indicators of impairment identified in *AASB 136* as controls.

The indicators of impairment included as controls are consistent with those in prior studies (Barth, Landsman & Lang 2008). Some of these are reflective of market expectations, and this includes the book-to-market ratio (*B/M*) which is calculated as the ratio of book-value of equity to market-value of equity at year end with adjustment made to book-value for any asset impairments. A B/M ratio of greater than one does present an imperative for firms to undertake asset impairment given the market assesses the value of the business to be less than the aggregate book value of its net assets. A limitation of this, however, is private information that managers may have about future prospects that has not yet been disclosed to the market. Supplementing this with earnings and cash flow information is useful, given that professionally, impairment assets are based on the determination of the sum of all future discounted cash flows, which equates to earnings over the life of the asset and these measures are included below, *Yrs* is a dichotomous variable and assumes the value '1' if the firm has had a *B/M* ratio of greater than one for the past two years, and the buy-and-hold-return (*BHR*) for the financial year. Other

indicators are reflective of reported firm performance and this includes *Earns* which represents earnings before interest and taxation adjusted for the impact of the impairment per share. *Earns* is used in the main analysis as earnings is more stable; the literature shows using earnings and the accrual process better mitigates timing and matching problems associated with cash flows (Dechow 1994). Similarly, the use of accrual earnings yields lower valuation errors than those based on forecasting cash flows (Penman & Sougiannis 1998). As additional analysis, consideration is given to aggregate cash flows from operating and investing activities per share (*CF*). Using cash flow can mitigate problems where management uses earnings opportunistically (Dechow 1994). Cash flow is also useful when determining valuations for firms with high price-to-earnings and low book-to-market ratios where earnings models are known to perform poorly (Penman & Sougiannis 1998).

Controls

There are likely to be significant differences in the recognition of impairment and disclosure across firm-years. These may reflect a range of factors including the size of firms, the scrutiny firms are subject to, and changes in enforcement. To the extent that the phenomena being considered may be firm specific, this would preclude the inclusion of firm-effects and suggests the inclusion of industry and year fixed-effects. Recognizing the potential sensitivity of the results to this design choice, the analysis is undertaken with and without these controls.

2.4 Sample selection and data description

2.4.1 Sample selection

The sample in this chapter is based on ASX200 firms from the period 2007 to 2016, a period where asset impairments were determined in accordance with *AASB 136.* The commencement date is chosen to avoid issues of inconsistency which may have arisen in initial application of this regulation on transition to *IFRS*. Financial data is obtained in the first instance from the Morningstar DatAnalysis database. This is supplemented with hand collection of impairment and other data as required. Hand collection of asset impairment data is required as these items are often not disclosed separately in the database, rather they are included under the label 'Abnormal Items'. Problematically, and in addition to the aforementioned database issues, some firms have asset impairments included in earnings, while other firms have impairment excluded from earnings. Each earnings value is adjusted to ensure that asset impairments are excluded from earnings and adjusted consistently for each company. Announcements to the ASX are obtained from the SIRCA database of company announcements; this included identification of whether the disclosures were identified as price sensitive.

The incidence of CEO changes is potentially problematic and there is a significant literature considering the association between CEO changes and the recognition of asset impairments. This likely extends to disclosures, and this may occur due to the circumstances surrounding the CEO change, the circumstances surrounding the asset impairment, or a combination of the two. As it is difficult to distinguish these impacts, firm-years with a CEO change are excluded from the sample.[7]

[7] Recognising that CEO change is the most commonly identified opportunistic motivation for an asset impairment the analysis was also undertaken with these firms included and controls included (dichotomous variable for CEO change and interaction with CD). Untabulated results are not materially different.

Firm-years with missing data are excluded. In several sectors, *AASB 136* may have limited application and this arises from the application of measurement models other than historic cost, or conditions placed upon the application of *AASB 136.* Accordingly, firms in the following sectors are excluded; agriculture (*AASB 141 Agriculture*), financial services (*AASB 9 Financial Instruments*), real estate (*AASB 140 Investment Property*), and mining (*AASB 6 Exploration and Evaluation*). This provides a final sample of 2,493 firm-years. These are excluded as the main method of accounting for and impairing assets in each of these sectors differs from *AASB 136 Impairment of Assets, which would result in combining different methods for measuring impairments, thus potentially creating misleading results which could limit the validity of the findings.*

The main analysis in the paper does not winsorize any variables given that the extreme observations include asset impairments for large companies such as Fairfax Ltd, Myer Holdings Ltd and Qantas Ltd, which is the focus of the study.

2.4.2 Descriptive statistics

Of the final general sample (2,493 firm-years)[8], for 758 firm-years the *B/M* ratio is greater than one at year end, an externally observable indicator suggesting the need for impairment. There are 793 firm-years of the general sample where an impairment is recognized; however, consistent with prior studies (Bond, Govendir & Wells 2016), this includes a number of firm-years where there are not any externally observable indicators suggesting the need for impairment. Specifically, 26% of these firm-years recognize an asset impairment and they account for 58% of firm-years where an asset impairment is recognized. In contrast, for firms with an externally observable indicator of impairment, only 44% of firm-years recognize any asset impairment.

The descriptive statistics for the sample-firms are presented in Table 2.2b, for both the full sample (Panel A) and the sub-sample where the *B/M* ratio is greater than one and impairment is most likely necessary (Panel B). For the full sample, the mean (median) *B/M* ratio is 0.968 (0.617), indicating that the sample includes a substantial number of firm-years where impairment may not be necessary; focusing on such a broad sample of firms will potentially weaken the power of tests and increase the risk of omitted correlated variables impacting the results. However, there are also some firms with *B/M* ratios significantly greater than one. There are 758 firm-years with a *B/M* ratio of greater than one; the mean (median) *B/M* for this sample is 2.130 (1.574), suggesting the firms need to recognize significant asset impairments. Further, within this sample of firm-years, almost 75% have a *B/M* ratio of greater than one for at least two years. There is also evidence of poor stock market performance and a mean (median) buy-hold-return of –12.5% (–19.3%). Finally, financial performance is also poor and 50% of firm-years are

[8] 2.493 firm-years are in the sample over a ten- year period, since the ASX200 has 200 firms commencing each year but additional firms list throughout the year. My data was collected at year-end, hence resulting in an average of 249 firms each year.

either loss-making or marginally profitable (i.e. median of *Earns* = 0.046). Given these circumstances it is perhaps surprising that only 44% of this sample of firm-years recognize any asset impairment, even though this figure is similar to results from prior studies (Bond, Govendir & Wells 2016). This compares to 26% for the sample where the *B/M ratio* is less than one. It is also of note that the mean value of *Govern* for the full sample of firms (0.627) was only marginally higher than for those firms with a B/M ratio of greater than one (0.612), demonstrating only a very limited difference in the composition of firm governance between the two samples. Interestingly, when *Govern* is interacted with *Disclosure* and controlled for by firm and industry controls (in Section 2.5), there are differences in results suggesting large impairments are more likely to be pre-empted (i.e. signalled) by firm disclosures – especially when there is effective corporate governance. This may be suggestive of other characteristics of firm governance such as experience playing a role. Further analysis of these characteristics are outside the scope of this study.

This identifies a challenge in undertaking this research. First, firms determining impairments on the basis of CGUs and externally observable indicators of impairment may not be discernible at the firm level. Second, the majority of firm-years where there is at least one observable external indicator of impairment do not recognize an impairment. This is consistent with the results in Bond et. al. (2016) and confirms the need to undertake separate analysis of firms where there is an external visible indicator of impairment.

There is considerable variation in price sensitive disclosures across sample firm-years, although perhaps surprisingly there does not seem to be a greater number of disclosures for firm-years where *B/M* is greater than one and arguably there is more to

disclose. Interestingly, pairwise comparison (unreported) tests of means reveal that firms with a *B/M* greater than one in the general sample have a lower mean number of disclosures (8.92) than firms with a *B/M* less than one (10.06). This difference is significant at the 1% level with a *t*-stat.=4.12. Further, within the *B/M* greater than one sub-sample, there is evidence of more disclosures by firms recognizing asset impairments, and this difference is significant at the 1% level with a *t*-stat.=4.30.

There is evidence of outliers in the descriptive statistics and the analysis was initially undertaken with data winsorized at 5% and 95% levels (Appendix 2B). This is problematic as this predominantly impacts many firm-years where large impairments are recognized. To limit this impact, winsorization at the 1% and 99% levels is considered (Appendix 2A). While this excludes less impairment firms, it still excludes firm-years recognizing the largest impairments of assets (e.g. Fairfax Media Ltd and Seven West Media Ltd) and these firms are very much the concern of this study. Accordingly, the final analysis is undertaken on the sample without firm-years being winsorized. However, to provide insights into the impact of this choice, as additional analysis, consideration is given to the impact of winsorizing the sample data at the 1% and 99% levels.

Tests are also completed using year fixed-effects to control for differences in years, particularly given the impact of the Global Financial Crisis in 2008/09 and its aftermath. Industry fixed-effects are used to determine if the results are pervasive across all industries, or whether they result from a disproportionately large impact from one industry. Robust standard errors are used to ensure that unbiased OLS estimators are obtained for each of the coefficients, given the potential for the presence of heteroskedasticity.

2.5 Results

Attention is initially focused on the association between the recognition of an asset impairment (*Impair-D)* and firm disclosures. The results are presented in Table 2.4 and the initial focus is on the full sample of firm-years (Panel A). A consideration in evaluating this is whether continuous disclosure pre-empts the recognition of asset impairments generally, as well as whether it pre-empts the recognition of asset impairments beyond other factors traditionally associated with their recognition. Accordingly, in Column 1 consideration is given to the association between the recognition of an asset impairment and continuous disclosure (and governance) only. Critically, none of the coefficients on the variables of interest are significant and hence there is little evidence of there being any association between recognition of asset impairments and firm disclosures, either generally or for firms with more effective governance. Additionally, the model lacks explanatory power. When controls are included for indicators and determinants of impairment (Column 2) none of the coefficients on the variables of interest are significant. However, the coefficients on the controls for indicators and determinants of impairment (i.e. *B/M*, *Yrs*, *BHR* and *Earns*) are all significant. Interestingly, the coefficient on *Earns* is positive and significant (α_7=0.451, *z*-stat.=2.389) rather than negative, and this suggests that some firms are more inclined to recognize impairments, and quite small impairments, if they are otherwise profitable. This is consistent with the prior literature. The results are not substantively different when industry and year fixed-effects are included. [9]

Accordingly, for the full sample there is little evidence of an association between the recognition of an asset impairment and continuous disclosure generally (H_1). This

[9] Unreported analysis has shown similar results when using earnings deflated by assets as a supplementary test, with similar results.

association is stronger for firms with more effective corporate governance, but it is still not significant (H_2).

The results are presented in Panel B for sample firms with a *B/M* greater than one. The results for the model without controls (Column 1) show the coefficient on continuous disclosure is positive and significant (α_1=0.053, *z*-stat.=1.869).[10] This is consistent with firm-years where impairments are recognized and pre-empted by with continuous disclosures. However, it is notable that when controls for indicators of impairment are included (Column 2) the coefficient is no longer significant. This is likely to be a consequence of continuous disclosure having limited information beyond that which is provided to users of financial statements beyond the indicators of impairment (or vice versa). Interestingly, when industry and year fixed-effects are included, the coefficient on continuous disclosure is again positive and significant (α_1=0.057, *z*-stat.=1.820), suggesting that there is a variation in firm disclosures across years and industries which is likely greater than that which is associated with the recognition of asset impairments. It is also of note that there are nine fewer observations provided for the sample with fixed effects. This is owing to fixed effects excluding observations from each sector to calculate the change, resulting in the difference. Finally, it is also notable that the coefficients on *Earns* are no longer significant. This confirms the recognition of what are likely small impairments by firms that are otherwise profitable, and a limitation of evaluating asset impairments across firms generally.

Hence, for the sample of firms with a *B/M* greater than one there is some evidence of an association between the recognition of an asset impairment and continuous disclosure generally (H_1). However, there is no evidence of more effective corporate

[10] A logistic regression model is used in the above analysis, meaning that results reported have a *z*-stat. rather than a *t*-stat.

governance contributing to any differences in the association between the recognition of asset impairments and continuous disclosure (H_2).

In Table 2.5 consideration is given to a continuous measure of impairment, *Impair-C*. While this weights large impairments more heavily, they are few in number. The results for the full sample are presented in Panel A. A continuous regression model is used, meaning that results reported have a *t*-stat rather than a *z*-stat; when disclosure is considered in isolation (Column 1) there is an insignificant coefficient on disclosure (α_1=0.000, *t*-stat.=0.382). When controls are added for indicators and determinants of impairment (Column 2) the coefficient on disclosure remains insignificant (α_1=0.001, *t*-stat.=1.461); however, the interaction term is positive and significant (α_3=0.002, *t*-stat.=1.763). Finally, with controls included for year and industry (column 3) the coefficient on disclosure is positive and significant (α_1=0.001, *t*-stat.=2.478); when disclosure is interacted with governance (Column 2), the coefficient is positive and significant (α_3=0.002, *t*-stat.=2.142). In combination with the above results, this suggests large impairments are more likely to be pre-empted (i.e. signalled) by firm disclosures – especially when there is effective corporate governance. The coefficients on the indicators and determinants of impairment (i.e, *B/M, Yrs, BHR* and *Earns*) are generally significant except for *Yrs* and have the expected sign, with the exception of *Earns*.

In Panel B, consideration is given to the sample of firms with a *B/M* ratio of greater than one. It is notable that the coefficient on disclosure is insignificant (α_1=0.003, *t*-stat.=1.610), but disclosure is positive and significant in Column 3 (α_1=0.003, *t*-stat.=1.746) when controls and year and industry fixed-effects are included. The coefficient on the interaction of disclosure and governance is positive and significant, when year and industry controls are included (α_1=0.005, *t*-stat.=1.855). Additionally,

Earns is statistically insignificant, demonstrating no causal relation between earnings and the realization of asset impairments. The other coefficients are consistent with those reported above.

Accordingly, when a continuous measure of impairment is used, there is evidence of an association between asset impairments and continuous disclosure (H_1). There is also evidence of disclosure being impacted by governance for the full sample and the sample of firms with a book-to-market ratio greater than one (H_2).

2.5.1 Additional analysis

According to AASB 136*,* the recoverable amount should be determined on the basis of estimated future cash flows. However, these are subject to volatility and are biased downwards for growth firms. Accordingly, an earnings-based determinant of future cash flows is used in the primary analysis. To evaluate whether this impacted the results, consideration is also given to cash flows as an alternative; the results presented in Tables 2.6 and 2.7. Critically, there is little change in the results.

In Table 2.6, when consideration is given to a dichotomous measure of impairment (i.e. *Impair-D*) for the full sample (Panel A) there is not a significant association between firm disclosures and asset impairments in any column. For the sample with a *B/M* greater than one there is still a positive and significant association between disclosure and the recognition of impairment for both Columns 1 and 3 (α_1=0.053, *z*-stat.=1.869; and α_1=0.059, *z*-stat.=1.874 respectively).

In Table 2.7 a continuous measure of impairment is considered (i.e. *Impair-C*). For the full sample (Panel A) there are again positive and significant coefficients on continuous disclosure when year and industry controls are included (Column 3) (α_1=0.001, *t*-stat.=1.783), and for all columns when disclosure is interacted with

governance (α_3=0.002, *t*-stat.=1.763; α_3=0.002, *t*-stat.=2.206; and α_3=0.002, *t*-stat.=2.274 respectively). Further, when attention is focused on the sample of firms with a *B/M ratio of* greater than one (Panel B) for the model with industry and year controls (column 3), the coefficients on continuous disclosure and the governance interaction are positive and significant (α_1=0.003, *t*-stat.=1.724 and α_3=0.005, *t*-stat.=1.852 respectively). Accordingly, whether there is a more appropriate indicator of impairment or determinant of recoverable amount, the alternative measures do not substantively alter the results.

An issue in undertaking studies of this type is the extent to which controls should be included for year, industry, and firm effects. This is especially problematic in this context and to the extent that economic conditions vary across years and impacting firm performance, then this would be expected to impact the recognition of asset impairments. This suggests inclusion of year controls. Similarly, industry factors may impact firm performance and the recognition of asset impairments, and this suggests inclusion of controls for industry effects. However, the inclusion of firm controls is more problematic as firm performance is likely to be persistent, especially if there is evidence of poor performance in the years preceding the recognition of asset impairments. In the current sample, 75% of firm-years with a *B/M* ratio greater than one have a ratio greater than one for at least one-year prior. Accordingly, inclusion of firm controls is considered inappropriate as the recognition of an asset impairment is effectively an individual firm phenomenon. Reflecting concerns about these choices, the sensitivity of the results to alternative controls was considered in additional analysis. This includes the impact on the results of not including controls, and with controls for years, industry, year and industries, and firms.

The results of this analysis are presented in Table 2.8 where a dichotomous measure of an asset impairments is used. For the full sample (Panel A), there is no

substantive change in the results for the association between the recognition of asset impairments and continuous disclosure. In comparison, for the sample of firms with a *B/M* ratio greater than one (Panel B), the results are variable and sensitive to the inclusion of year and industry controls. When firm controls are included *CD* is no longer significant. This is most likely a consequence of consistency in firm disclosures, asset impairments not being recognized on a timely basis, and disclosures not varying with the recognition of an asset impairment.

The results when a continuous measure of asset impairments (*Impair-C*) is considered are presented in Table 2.9. Again, these results are broadly similar to those reported above. For the full sample, when firm controls are included there is generally a positive and significant coefficient on firm disclosures. There is also evidence of a positive and significant coefficient on the interaction between effective governance and continuous disclosure. This is consistent with disclosures being more likely to be associated with asset impairments for firms with effective governance. For the sample of firms with a *B/M* ratio of greater than one, the results are again broadly consistent when controls are included with the exception of firm controls. Specifically, the coefficient on continuous disclosure is negative and significant (α_1=–0.007, *t*-stat.=–2.432) while the coefficient on the interaction with governance is positive and significant (α_3=0.007, *t*-stat.=2.261). This is likely to be a reflection of firms with less effective governance making less disclosures in the year they recognize asset impairments.

Consideration is given to extending the analysis to address concerns with endogeneity. The challenge in undertaking this is the distribution of firms recognizing an asset impairment. Specifically, less than 50% of firm-years with an externally observable indicator of impairment recognize an asset impairment, and more than 50% of firm-years recognizing an asset impairment do not have an externally observable indicator of

impairment. As a consequence, models to predict asset impairment lacked explanatory power. Endogeneity may potentially be due to an omitted variable relating to financial information at the CGU level, and as a result, *Earns* or *CF* not fully capturing the financial position of different CGUs within the business.

2.6 Conclusion

The objective of this chapter is to evaluate whether asset impairments recognized in accordance with AASB 136 are associated with firm disclosures of price sensitive information required under the *CDR*. Of particular concern is whether asset impairments are pre-empted by firm disclosures, with this providing a potential explanation for equivocal evidence of share price reaction to an asset impairment. Further, is whether there is evidence of disclosures being made generally for firms where an asset impairment is expected, or whether is it restricted to firms recognizing an asset impairment.

This is evaluated for a sample of ASX firms over the period 2007 to 2016; this includes a broad sample of firms as well as a sub-sample of firms where there are external indicators of impairment. There is evidence of asset impairments being recognized more frequently by firms where there are externally observable indicators of impairment (44%), but they are still pervasive across firms where there are no externally observable indicators (26%). This divergence is less than expected and suggests that firms are likely not complying with the requirements of AASB 136 to impair assets where there are externally observable indicators of impairment. It might be expected that there would be more disclosures for firms where there are externally observable indicators of impairment, but there is no evidence of this.

For the full sample of firm-years there is no evidence of an association between asset impairments and firm disclosures generally (i.e. dichotomous). However, when the

magnitude of asset impairments is considered (i.e. continuous) there is evidence that firm disclosures pre-empt the recognition of large asset impairments. Similarly, where there is more effective governance there is evidence of firm disclosures having a greater association with recognizing asset impairments. Clearly, significant asset impairments are more likely to be pre-empted by corporate disclosures, especially where effective corporate governance is present.

The results are more problematic for firms where there is an externally observable indicator of impairment, and asset impairment is more likely be expected. Critically, there is no evidence of more disclosures by these firms. There is a positive association of firm disclosures with recognition of an asset impairment generally (i.e. dichotomous), and when the magnitude of the asset impairment is taken into account (i.e. continuous) this association is stronger. Further, there is again evidence of a stronger association between firm disclosures and asset impairment for firms with more effective governance. Hence, firms with an externally observable indicator of impairment that recognize asset impairments in accordance with *AASB 136* are likely pre-empting this with disclosures in accordance with the *CDR*. This likely explains the varied results in the prior literature for share price reactions to impairments of assets (e.g., Francis, Hanna & Vincent 1996; Jarva 2009).

What is notable is that 56% of this sub-sample of firms are not recognizing asset impairments and they are making less disclosures. This raises concerns about compliance with the requirements of AASB 136 by many firms, consistent with the results of prior studies (Bond, Govendir & Wells 2016). Further, to the extent there is no disclosure by these firms it is unlikely they are complying with the requirements of the *CDR*. This likely explains the results in Vanza, Wells & Wright (2018) where they found greatest uncertainty about share price for firms not recognizing an asset impairment and when firms recognized an asset impairment, this did not reduce the share price uncertainty.

This chapter makes several contributions to the literature and to professional practice. First, I provide evidence for regulators on possible non-compliance with AASB 136 and the *CDR*. Particularly for firms where there are externally observable indicators of impairment, there are concerns that a majority of firms are unlikely to be complying with the requirements of either AASB 136 or the *CDR*. This supports a targeted regime of regulatory enforcement.

Second, insights into the recognition of asset impairments are provided which have relevance to the literature considering asset impairments. A significant proportion of asset impairments (58%) are recognized by firms when there are no other indicators of impairment. In these cases, impairments are generally smaller. This appears to arise as a consequence of an asset impairment being determined at the level of CGUs, rather than the firm level. Evaluation of an asset impairment generally, with firm level information, will provide relatively weak tests and be susceptible to omitted correlated variable problems. Rather, attention should be focused on firms with only one cash generating unit, with a dominant cash generating unit, or pervasive performance issues across CGUs. This suggests future research should focus on firms where there are externally observable indicators of impairment. A related issue is that only 29% of impairments recognized

included impairment of goodwill. This again identifies an issue with asset impairments being determined at the level of CGUs, and particularly how assets are required to be allocated across CGUs. This suggests that studies should consider asset impairments generally, rather than goodwill only, or limit consideration to firms with one cash generating unit, or a dominant cash generating unit where allocation is less problematic.

Finally, evidence is provided of the relation between corporate governance, and disclosure policies and the recognition of asset impairments. It can be seen that for firms with effective corporate governance there is a stronger positive association between firm disclosures and the recognition of an asset impairment.

Table 2.1
Definitions of variables

Definitions of variables used in the analysis in this chapter.

Label	Definition
Impair-D	A dichotomous measure of impairment based on whether the firm has recognised an impairment during the year. Assigned a value of '1' if impairment was recognised and '0' otherwise.
Impair-C	A continuous measure of impairment based on the size of the asset impairment realised during the year. Measured as impairment per share.
Govern	A dichotomous measure based on the proportion of independent directors to total directors for each year. Assigned a value of '1' if greater than or equal to the median and '0' if below the median.
CD	Continuous disclosure measured as the number of price sensitive announcements each year. A continuous measure.
B/M	Book value of equity per share divided by price per share.
Yrs	A dichotomous measure for firms with a *B/M*>1 for two consecutive years. Assigned a value of '1' if *B/M*> 1 for two consecutive years and '0' otherwise.
BHR	This is the buy-hold-return for the firm during the current financial year.
CF	Cash flows from operating activities and investing activities per share.
Earns	Earnings per share with abnormal items other than impairment excluded.
ΔCEO	A dichotomous measure equal to '1' if the Chief Executive Officer had changed during the year and '0' otherwise.

Table 2.2a

Sample	**Number of firm-years**
Initial sample (firms on ASX at any time between 2006 – 2016)	17,985
Financials, mining and overseas based	(11,110)
Unreliable data	(1)
Negative B/M	(322)
Missing data or Share Price < $0.10	(4,059)
Final sample	2,493

Table 2.2b
Descriptive statistics

Descriptive statistics for variables used in this chapter. These are presented for the full sample of firm years in Panel A, and for firm years where there are externally observable indicators of impairment in Panel B (B/M>1).

Panel A: Full sample (n=2,493)							
	Mean	SD	Min	p25	Median	p75	Max
Impair-D	0.318	0.466	0.000	0.000	0.000	1.000	1.000
Impair-C	0.035	0.157	0.000	0.000	0.000	0.003	2.499
Govern	0.627	0.484	0.000	0.000	1.000	1.000	1.000
CD	9.716	6.366	2.000	5.000	8.000	13.000	65.000
B/M	0.968	1.240	0.000	0.321	0.617	1.176	18.224
Yrs	0.228	0.420	0.000	0.000	0.000	0.000	1.000
BHR	0.129	0.594	–0.967	–0.261	0.024	0.358	3.000
Earns	0.196	0.430	–1.663	0.010	0.077	0.220	7.164

Panel B: B/M>1 Sample (n=758)							
	Mean	SD	Min	p25	Median	p75	Max
Impair-D	0.442	0.497	0.000	0.000	0.000	1.000	1.000
Impair-C	0.081	0.235	0.000	0.000	0.000	0.028	2.499
Govern	0.612	0.488	0.000	0.000	1.000	1.000	1.000
CD	8.925	6.218	2.000	5.000	7.000	11.000	43.000
B/M	2.130	1.724	1.001	1.244	1.574	2.302	18.224
Yrs	0.749	0.434	0.000	0.000	1.000	1.000	1.000
BHR	–0.125	0.475	–0.967	–0.444	–0.193	0.089	2.394
Earns	0.101	0.340	–0.583	0.008	0.046	0.121	7.164

Table 2.3
Correlation Matrix

Correlation matrices for variables used in this chapter (Pearson above diagonal / Spearman below diagonal). These are presented for the full sample of firm years in Panel A, and for firm years where there are externally observable indicators of impairment in Panel B.

Panel A: Full sample (n=2,493)

	Impair-C	*Govern*	*CD*	*B/M*	*Yrs*	*BHR*	*Earns*
Impair-C	1.000	0.034	0.052	0.310	0.200	–0.131	0.089
Govern	0.047	1.000	–0.004	–0.026	–0.003	0.012	0.060
CD	0.030	0.007	1.000	–0.014	–0.113	–0.002	–0.135
B/M	0.269	–0.029	–0.114	1.000	0.600	–0.280	–0.133
Yrs	0.201	–0.003	–0.132	0.684	1.000	–0.135	–0.125
BHR	–0.150	0.016	–0.050	–0.381	–0.131	1.000	0.039
Earns	0.121	0.026	–0.292	–0.142	–0.157	0.145	1.000

Panel B: B/M>1 Sample (n=758)

	Impair-C	*Govern*	*CD*	*B/M*	*Yrs*	*BHR*	*Earns*
Impair-C	1.000	0.040	0.189	0.291	0.086	–0.194	0.055
Govern	0.040	1.000	–0.012	–0.023	0.046	–0.041	0.041
CD	0.189	–0.012	1.000	0.114	–0.150	–0.153	–0.035
B/M	0.291	–0.023	0.114	1.000	0.208	–0.217	–0.050
Yrs	0.086	0.046	–0.150	0.208	1.000	0.386	–0.019
BHR	–0.194	–0.041	–0.153	–0.217	0.386	1.000	0.088
Earns	0.055	0.041	–0.035	–0.050	–0.019	0.088	1.000

Table 2.4
Recognition of asset impairment – *Impair-D*

Evaluation of the association between the recognition of asset impairments and firm disclosures. Results are presented for the full sample of firm years in Panel A, and for firm years where there are externally observable indicators of impairment in Panel B (B/M>1). Each variable is defined in Table 2.1.

Panel A: Full sample (n=2,493)						
Variables	Coef.	*z*-stat.	Coef.	*z*-stat.	Coef.	*z*-stat.
CD	–0.002	–0.128	0.000	–0.042	0.007	0.421
Govern	–0.025	–0.116	–0.065	–0.286	–0.104	–0.454
*CD*Govern*	0.016	0.851	0.021	1.081	0.024	1.207
B/M			0.532	5.971***	0.472	5.356***
Yrs			0.610	3.042***	0.568	2.800***
BHR			–0.249	–2.248**	–0.255	–2.114
Earns			0.451	2.389**	0.390	2.058**
Constant	–1.283	–6.282***	–2.085	–8.803***	–4.751	–3.693***
Log Likelihood	–1369.309		–1295.411		–1275.573	
LR chi-squared	2.34		150.14		189.81	
Prob > chi-squared	0.505		0.000		0.000	
Fixed effects	No		No		Yes	

Panel B: B/M>1 Sample (n=758)						
Variables	Coef.	*z*-stat.	Coef.	*z*-stat.	Coef.	*z*-stat.
CD	0.053	1.869*	0.049	1.585	0.057	1.820*
Govern	0.077	0.207	0.044	0.111	–0.117	–0.295
*CD*Govern*	0.005	0.156	0.005	0.151	0.019	0.514
B/M			0.399	3.996***	0.403	3.976***
Yrs			0.741	2.488**	0.679	2.248**
BHR			–0.523	–1.882*	–0.628	–2.148**
Earns			0.431	1.333	0.488	1.490
Constant	–0.991	–2.944***	–2.424	–5.319***	–4.663	–3.920***
Log Likelihood	–464.562		–440.090		–426.387	
LR chi-squared	8.07		57.01		77.65	
Prob > chi-squared	0.045		0.000		0.000	
Fixed effects	No		No		Yes	
Fixed effects	758		758		749	

$$Impair_{it} = \alpha_0 + \alpha_1 CD_{it} + \alpha_2 Govern_{it} + \alpha_3 Govern_{it} * CD_{it} + \sum_{k=4}^{8} \alpha_k \, Indicators_{it} + \sum_{l=9}^{m} \alpha_l \, Controls_{it} + \varepsilon_{it}$$

*All variables are as previously defined in Table 2.1. p-values are one-tailed: *=<0.10; ** =<0.05; *** =<0.01. No variables are winsorized.*

Table 2.5
Recognition of asset impairments – *Impair-C*

Evaluation of the association between the recognition of asset impairments and firm disclosures. Results are presented for the full sample of firm years in Panel A, and for firm years where there are externally observable indicators of impairment in Panel B (B/M>1). Each variable is defined in Table 2.1.

Panel A: Full sample (n=2,493)						
Variables	Coef.	*t*-stat.	Coef.	*t*-stat.	Coef.	*t*-stat.
CD	0.000	0.382	0.001	1.461	0.001	2.478**
Govern	–0.005	–0.562	–0.007	–0.789	–0.011	–1.228
*CD*Govern*	0.002	1.763*	0.002	2.142**	0.002	2.252**
B/M			0.037	3.495***	0.038	3.621***
Yrs			0.017	1.026	0.015	0.920
BHR			–0.013	–2.748***	–0.016	–3.415***
Earns			0.052	4.266***	0.051	4.152***
Constant	0.026	3.653***	–0.027	–2.553	–0.087	–4.517***
Adjusted R^2	0.004		0.123		0.141	
F-stat.	2.490		10.470		4.861	
Fixed effects	No		No		Yes	

Panel B: B/M>1 Sample (n=758)						
Variables	Coef.	*t*-stat.	Coef.	*t*-stat.	Coef.	*t*-stat.
CD	0.003	1.610	0.002	1.054	0.003	1.746*
Govern	–0.018	–0.667	–0.025	–1.030	–0.039	–1.629
*CD*Govern*	0.004	1.438	0.004	1.643	0.005	1.855*
B/M			0.031	2.766***	0.034	3.122***
Yrs			0.068	3.477***	0.053	2.906***
BHR			–0.079	–4.048***	–0.080	–4.362***
Earns			0.114	1.623	0.111	1.619
Constant	0.043	2.327**	–0.081	–3.025***	–0.245	–4.778***
Adjusted R^2	0.022		0.138		0.198	
F-stat.	3.549		6.037		3.031	
Fixed effects	No		No		Yes	

$$Impair_{it} = \alpha_0 + \alpha_1 CD_{it} + \alpha_2 Govern_{it} + \alpha_3 Govern_{it} * CD_{it} + \sum_{k=4}^{8} \alpha_k \, Indicators_{it} + \sum_{l=9}^{m} \alpha_l \, Controls_{it} + \varepsilon_{it}$$

*All variables are as previously defined in Table 2.1. p-values are one-tailed: *=<0.10; ** =<0.05; *** =<0.01. No variables are winsorized.*

Table 2.6
Recognition of asset impairment – *Impair-D* – Additional Analysis *CF*

Evaluation of the association between the recognition of asset impairments and firm disclosures, with cash flows rather than earnings as an indicator or determinant of recoverable amount. Results are presented for the full sample of firm years in Panel A, and for firm years where there are externally observable indicators of impairment (B/M>1) in Panel B.

Panel A: Full sample (n=2,493)						
Variables	Coef.	*z*-stat.	Coef.	*z*-stat.	Coef.	*z*-stat.
CD	–0.002	–0.128	–0.002	–0.140	0.006	0.346
Govern	–0.025	–0.116	–0.057	–0.250	–0.098	–0.427
*CD*Govern*	0.016	0.851	0.021	1.075	0.024	1.195
B/M			0.521	5.881***	0.461	5.271***
Yrs			0.591	2.943***	0.549	2.706***
BHR			–0.244	–2.210**	–0.249	–2.071**
CF			0.085	0.985	0.069	0.802
Constant	–1.283	–6.282***	–1.995	–8.542***	–4.713	–3.646***
Log Likelihood	–1369.309		–1297.686		–1277.290	
LR chi-squared	2.34		145.59		186.38	
Prob > chi – squared	0.505		0.000		0.000	
Fixed effects	No		No		Yes	

Panel B: B/M>1 Sample						
Variables	Coef.	*z*-stat.	Coef.	*z*-stat.	Coef.	*z*-stat.
CD	0.053	1.869*	0.050	1.626	0.059	1.874*
Govern	0.077	0.207	0.047	0.121	–0.107	–0.270
*CD*Govern*	0.005	0.156	0.005	0.137	0.018	0.490
B/M			0.394	3.968***	0.400	3.954***
Yrs			0.707	2.383***	0.641	2.132**
BHR			–0.525	–1.895*	–0.618	–2.129**
CF			0.260	1.594	0.258	1.588
Constant	–0.991	–2.944***	–2.367	–5.259***	–4.565	–3.866***
Log Likelihood	–464.562		–439.645		–426.195	
LR chi-squared	8.07		57.90		78.04	
Prob > chi-squared	0.045		0.000		0.000	
Observations	758		758		749	
Fixed effects	No		No		Yes	

$$Impair_{it} = \alpha_0 + \alpha_1 CD_{it} + \alpha_2 Govern_{it} + \alpha_3 Govern_{it} * CD_{it} + \sum_{k=4}^{8} \alpha_k \, Indicators_{it} + \sum_{l=9}^{m} \alpha_l \, Controls_{it} + \varepsilon_{it}$$

*All variables are as previously defined in Table 2.1. p-values are one-tailed: *=<0.10; ** =<0.05; *** =<0.01. No variables are winsorized.*

Table 2.7
Recognition of asset impairment – *Impair-C* – Additional Analysis *CF*

Evaluation of the association between the recognition of asset impairments and firm disclosures, with cash flows rather than earnings as an indicator or determinant of recoverable amount. Results are presented for the full sample of firm years in Panel A, and for firm years where there are externally observable indicators of impairment (B/M>1) in Panel B.

Panel A: Full sample (n=2,493)						
Variables	Coef.	*t*-stat.	Coef.	*t*-stat.	Coef.	*t*-stat.
CD	0.000	0.382	0.000	0.593	0.001	1.783*
Govern	–0.005	–0.562	–0.006	–0.624	–0.010	–1.068
*CD*Govern*	0.002	1.763*	0.002	2.206**	0.002	2.274**
B/M			0.036	3.428***	0.036	3.537***
Yrs			0.012	0.701	0.009	0.565
BHR			–0.013	–2.788***	–0.016	–3.465***
CF			0.008	1.312	0.007	1.203
Constant	0.026	3.653***	–0.012	–1.139	–0.077	–4.092***
Adjusted R^2	0.004		0.104		4.720	
F-stat.	2.490		9.237		4.720	
Fixed effects	No		No		Yes	

Panel B: B/M>1 Sample (n=758)						
Variables	Coef.	*t*-stat.	Coef.	*t*-stat.	Coef.	*t*-stat.
CD	0.003	1.610	0.002	0.951	0.003	1.724*
Govern	–0.018	–0.667	–0.024	–0.982	–0.037	–1.523
*CD*Govern*	0.004	1.438	0.005	1.686*	0.005	1.852*
B/M			0.031	2.800***	0.034	3.184***
Yrs			0.061	3.136***	0.046	2.510**
BHR			–0.072	–3.558***	–0.071	–3.631***
CF			0.016	0.993	0.012	0.768
Constant	0.043	2.327**	–0.064	–2.420**	–0.218	–4.206***
Adjusted R^2	0.022		0.114		0.174	
F-stat.	3.549		5.249		2.974	
Fixed effects	No		No		Yes	

$$Impair_{it} = \alpha_0 + \alpha_1 CD_{it} + \alpha_2 Govern_{it} + \alpha_3 Govern_{it} * CD_{it} + \sum_{k=4}^{8} \alpha_k \, Indicators_{it} + \sum_{l=9}^{m} \alpha_l \, Controls_{it} + \varepsilon_{it}$$

*All variables are as previously defined in Table 2.1. p-values are one-tailed: *=<0.10; ** =<0.05; *** =<0.01. No variables are winsorized.*

Table 2.8

Recognition of asset impairments – *Impair-D* – Additional analysis – Inclusion of year, industry, industry and year, and firm fixed-effects

Evaluation of the association between the recognition of asset impairments and firm disclosures with no winsorizing. This is presented for the full sample of firm years in Panel A, and for firm years where there are externally observable indicators of impairment in Panel B (B/M>1). No variables are winsorized.

Panel A: Full Sample										
Variables	Coef.	*z*-stat.	Coef.	*z*-stat.	Coef.	*z*-stat.	Coef.	*z*-stat.	Coef.	*z*-stat.
CD	–0.001	–0.042	–0.001	–0.038	0.007	0.410	0.007	0.421	–0.019	–0.868
Govern	–0.065	–0.286	–0.090	–0.393	–0.074	–0.328	–0.104	–0.454	–0.227	–0.843
*CD*Govern*	0.021	1.081	0.023	1.166	0.022	1.104	0.024	1.207	0.035	1.494
B/M	0.532	5.971***	0.498	5.592***	0.509	5.761***	0.472	5.356***	0.846	5.832***
Yrs	0.610	3.042***	0.605	2.967***	0.579	2.898***	0.568	2.800***	0.879	3.363***
BHR	–0.249	–2.248**	–0.243	–2.015**	–0.258	–2.332**	–0.255	–2.114**	–0.132	–1.000
Earns	0.451	2.389**	0.453	2.376**	0.392	2.085**	0.390	2.058**	0.057	0.172
Constant	–2.085	–8.803***	–2.560	–8.497***	–4.206	–3.342***	–4.751	–3.693***	–0.250	–0.172
Log likelihood	–1295.411		–1282.859		–1288.822		–1275.573		–800.757	
LR chi-squared	150.14		175.24		163.31		189.81		485.64	
Prob > chi-squared	0.000		0.000		0.000		0.000		0.000	
Fixed effects	No		Yes		Yes		Yes		Yes	
FE type			Year		Industry		Year, Ind		Firm	
Observations	2493		2493		2493		2493		1590	

Panel B: B/M > 1 sample										
Variables	Coef.	*z*-stat.	Coef.	*z*-stat.	Coef.	*z*-stat.	Coef.	*z*-stat.	Coef.	*z*-stat.
CD	0.049	1.585	0.049	1.570	0.058	1.867*	0.057	1.82*	0.058	1.184
Govern	0.044	0.111	–0.036	–0.089	–0.022	–0.057	–0.117	–0.30	0.067	0.134
*CD*Govern*	0.005	0.151	0.012	0.318	0.012	0.320	0.019	0.51	–0.029	–0.636
B/M	0.399	3.996***	0.394	3.847***	0.409	4.137***	0.403	3.98***	0.627	3.981***
Yrs	0.741	2.488**	0.660	2.168**	0.748	2.530**	0.679	2.25**	1.032	2.444**
BHR	–0.523	–1.882*	–0.562	–1.908*	–0.557	–2.028**	–0.628	–2.15**	–0.183	–0.516
Earns	0.431	1.333	0.488	1.460	0.424	1.334	0.488	1.49	1.141	1.438
Constant	–2.424	–5.319***	–2.701	–4.074***	–4.419	–4.067***	–4.663	–3.92***	–3.784	–3.004***
Log likelihood	–440.090		–435.390		–431.411		–426.387		–212.087	
LR chi-squared	57.01		66.41		67.60		77.65		134.56	
Prob > chi-squared	0.000		0.000		0.000		0.000		0.007	
Fixed effects	No		Yes		Yes		Yes		Yes	
FE type			Year		Industry		Year, ind		Firm	
Observations	758		758		749		749		405	

$$Impair_{it} = \alpha_0 + \alpha_1 CD_{it} + \alpha_2 Govern_{it} + \alpha_3 Govern_{it} * CD_{it} + \sum_{k=4}^{8} \alpha_k \, Indicators_{it} + \sum_{l=9}^{m} \alpha_l$$

*All variables are as previously defined in Table 2.1. p-values are one-tailed: *=<0.10; ** =<0.05; *** =<0.01.*
No variables are winsorized.

Table 2.9

Recognition of asset impairments – *Impair-C* – Additional analysis – Inclusion of year, industry, industry and year and firm fixed-effects

Evaluation of the association between the recognition of asset impairments and firm disclosures, with no winsorizing. This is presented for the full sample of firm years in Panel A, and for firm years where there are externally observable indicators of impairment in Panel B (B/M>1).

Panel A: Full Sample (n=2,493)										
Variables	Coef.	*t*-stat.	Coef.	*t*-stat.	Coef.	*t*-stat.	Coef.	*t*-stat.	Coef.	*t*-stat.
CD	0.001	1.461	0.001	1.513	0.001	2.443**	0.001	2.478**	–0.001	–0.582
Govern	–0.007	–0.789	–0.010	–1.111	–0.008	–0.907	–0.011	–1.228	–0.012	–0.964
*CD*Govern*	0.002	2.142**	0.002	2.209**	0.002	2.191**	0.002	2.252**	0.002	1.768*
B/M	0.037	3.495***	0.037	3.554***	0.037	3.580***	0.038	3.621***	0.063	14.180***
Yrs	0.017	1.026	0.016	0.975	0.016	0.991	0.015		0.024	1.967**
BHR	–0.013	–2.748***	–0.016	–3.401***	–0.013	–2.777***	–0.016	–3.415***	0.001	0.243
Earns	0.052	4.266***	0.052	4.217***	0.051	4.195***	0.051	4.152***	0.029	2.133***
Constant	–0.027	–2.553**	–0.028	–2.881***	–0.087	–4.555***	–0.087	–4.517***	–0.035	–2.815***
Adjusted R^2	0.123		0.133		0.131		0.141		0.222	
F-stat.	10.470		6.085		6.372		4.861		51.61	
Fixed effects	No		Yes		Yes		Yes		Yes	
FE type			Year		Industry		Year, ind		Firm	
Observations	2493		2493		2493		2493		2365	

Panel B: B/M>1 Sample (n=758)										
Variables	Coef.	*t*-stat.	Coef.	*t*-stat.	Coef.	*t*-stat.	Coef.	*t*-stat.	Coef.	*t*-stat.
CD	0.002	1.054	0.002	1.040	0.003	1.645	0.003	1.746*	–0.007	–2.432**
Govern	–0.025	–1.030	–0.040	–1.615	–0.026	–1.070	–0.039	–1.629	–0.047	–1.477
*CD*Govern*	0.004	1.643	0.005	1.903*	0.004	1.659*	0.005	1.855*	0.007	2.261**
B/M	0.031	2.766***	0.031	2.850***	0.034	3.111***	0.034	3.122***	0.044	5.779***
Yrs	0.068	3.477***	0.055	2.981***	0.064	3.387***	0.053	2.906***	0.050	2.015**
BHR	–0.079	–4.048***	–0.079	–4.246***	–0.076	–3.988***	–0.080	–4.362***	–0.026	– 1.229
Earns	0.114	1.623	0.120	1.718*	0.104	1.512	0.111	1.619	0.068	2.188***
Constant	–0.081	–3.025***	–0.107	–3.909***	–0.177	–4.319***	–0.245	–4.778***	–0.002	–0.052
Adj. R^2	0.138		0.179		0.159		0.198		0.406	
F-stat.	6.037		4.075		3.605		3.031		13.23	
Fixed effects	No		Yes		Yes		Yes		Yes	
FE Type			Year		Industry		Year, ind		Firm	
Observations	758		758		758		758		676	

$$Impair_{it} = \alpha_0 + \alpha_1 CD_{it} + \alpha_2 Govern_{it} + \alpha_3 Govern_{it} * CD_{it} + \sum_{k=4}^{8} \alpha_k \, Indicators_{it} + \sum_{l=9}^{m} \alpha_l$$

*All variables are as previously defined in Table 2.1. p-values are one-tailed: *=<0.10; ** =<0.05; *** =<0.01.*
No variables are winsorized.

Appendix 2A - Sample winsorized at 1st and 99th percentiles

To evaluate the potential impact of extreme observations, additional analysis was undertaken with the sample winsorized at the 1st and 99th percentiles. The results with a dichotomous measure of impairment (*Impair-D*) are presented in Table 2.A.1 and are similar to those reported above. This is not surprising as the impact of large impairments on the results was ameliorated by the dichotomous measure. The results when a continuous measure of impairment (*Impair-C*) is used are presented in Table 2.A.2. Notwithstanding the winsorization of the largest asset impairments, the results are again consistent with those reported above. Hence, the results are solely not attributable to firms recognizing large asset impairments and 'earnings baths.'

Table 2.A.1

Recognition of asset impairment – *Impair-D* – Additional analysis 1% and 99%

Evaluation of the association between the recognition of asset impairments and firm disclosures, with sample winsorized at 1% and 99%. This is presented for the full sample of firm years in Panel A, and for firm years where there are externally observable indicatorss of impairment (B/M>1) in Panel B.

Panel A: Full Sample (n=2,493)						
Variables	Coef.	*z*-stat.	Coef.	*z*-stat.	Coef.	*z*-stat.
CD	–0.002	–0.15	0.001	0.08	0.009	0.51
Govern	–0.022	–0.10	–0.059	–0.25	–0.100	–0.43
*CD*Govern*	0.016	0.82	0.020	0.99	0.023	1.15
B/M			0.732	7.21***	0.663	6.53***
Yrs			0.409	1.99**	0.383	1.84*
BHR			–0.181	–1.62	–0.189	–1.56
Earns			0.749	3.18***	0.671	2.82***
Constant	–1.279	–6.25***	–2.299	–9.38***	–4.940	–3.79***
Log Likelihood	–1369.388		–1285.364		–1267.067	
LR chi-squared	2.18		170.23		206.82	
Prob > chi-squared	0.535		0.000		0.000	
Fixed effects	No		No		Yes	

Panel B – B/M >1 Sample						
Variables	Coef.	*z*-stat.	Coef.	*z*-stat.	Coef.	*z*-stat.
CD	0.053	1.87*	0.057	1.79*	0.065	2.02**
Govern	0.077	0.21	0.083	0.21	–0.095	–0.23
*CD*Govern*	0.005	0.16	0.000	–0.01	0.015	0.39
B/M			0.645	5.00***	0.660	4.97***
Yrs			0.587	1.92*	0.526	1.68*
BHR			–0.350	–1.23	–0.461	–1.53
Earns			1.146	2.10**	1.299	2.27**
Constant	–0.991	–2.94***	–2.902	–5.88***	–5.080	–4.09***
Log Likelihood	–464.562		–432.666		–418.577	
LR chi-squared	8.07		71.86		93.27	
Prob > chi-squared	0.045		0.000		0.000	
Fixed effects	No		No		Yes	
Observations	758		758		749	

$$Impair_{it} = \alpha_0 + \alpha_1 CD_{it} + \alpha_2 Govern_{it} + \alpha_3 Govern_{it} * CD_{it} + \sum_{k=4}^{8} \alpha_k \, Indicators_{it} + \sum_{l=9}^{m} \alpha_l \, Controls_{it} + \varepsilon_{it}$$

*All variables are as previously defined in Table 2.1. p-values are one-tailed: *= < 0.10; ** = < 0.05; *** = < 0.01. No variables are winsorized.*

Table 2.A.2

Recognition of asset impairments – *Impair-C* – Additional analysis 1% and 99%

Evaluation of the association between the recognition of asset impairments and firm disclosures, with sample winsorized at 1% and 99%. This is presented for the full sample of firm years in Panel A, and for firm years where there are externally observable indicators of impairment (B/M>1) in Panel B.

Panel A: Full Sample (n=2,493)						
Variables	Coef.	*t*-stat.	Coef.	*t*-stat.	Coef.	*t*-stat.
CD	0.000	0.38	0.001	2.10**	0.002	3.11***
Govern	–0.007	–0.68	–0.008	–0.90	–0.013	–1.38
*CD*Govern*	0.002	1.85*	0.002	2.21**	0.002	2.37**
B/M			0.048	4.41***	0.049	4.49***
Yrs			0.005	0.29	0.003	0.17
BHR			–0.009	–2.16**	–0.012	–2.93***
Earns			0.067	5.55***	0.067	5.54***
Constant	0.026	3.64***	–0.040	–3.83***	–0.099	–4.87
Adj. R^2	0.004		0.134		0.152	
F-stat.	2.586		11.48		4.975	
Fixed effects	No		No		Yes	

Panel B: B/M > 1 Sample (n=758)						
Variables	Coef.	*t*-stat.	Coef.	*t*-stat.	Coef.	*t*-stat.
CD	0.003	1.61	0.002	1.53	0.003	2.28**
Govern	–0.018	–0.67	–0.021	–0.85	–0.035	–1.48
*CD*Govern*	0.004	1.44	0.004	1.43	0.004	1.66*
B/M			0.043	3.44***	0.045	3.67***
Yrs			0.062	3.30***	0.049	2.73***
BHR			–0.072	–4.13***	–0.075	–4.41***
Earns			0.226	3.33***	0.219	3.06***
Constant	0.043	2.33**	–0.114	–4.25***	–0.261	–4.89***
Adj. R^2	0.022		0.171		0.228	
F-stat.	3.549		7.485		3.192	
Fixed effects	No		No		Yes	

$$Impair_{it} = \alpha_0 + \alpha_1 CD_{it} + \alpha_2 Govern_{it} + \alpha_3 Govern_{it} * CD_{it} + \sum_{k=4}^{8} \alpha_k \, Indicators_{it} + \sum_{l=9}^{m} \alpha_l$$

*All variables are as previously defined in Table 2.1. p-values are one-tailed: *=<0.10; ** =<0.05; *** =<0.01. Variables are winsorized at the 1st and 99th percentiles.*

Appendix 2B – Sample winsorized at 5th and 95th percentiles

Additional analysis was conducted by winsorizing all independent variables (except *BHR* which is already restricted to plus and minus three as previously explained) to the 5th and 95th percentiles to reduce the impact of extreme observations or outliers. The results for the logistic and continuous regressions for this sample are included below and are similar to the results for the non-winsorized sample.

Table 2.B.1

Recognition of asset impairment – *Impair-D* – Additional analysis 5% and 95%

Evaluation of the association between the recognition of asset impairments and firm disclosures, with sample winsorized at 5% and 95%. This is presented for the full sample of firm years in Panel A, and for firm years where there are externally observable indicators of impairment (B/M>1) in Panel B. All variables are defined in Table 1.

Panel A: Full Sample (n=2,493)						
Variables	Coef.	*z*-stat.	Coef.	*z*-stat.	Coef.	*z*-stat.
CD	–0.003	–0.15	0.012	0.68	0.018	0.98
Govern	–0.017	–0.08	–0.027	–0.12	–0.068	–0.28
*CD*Govern*	0.015	0.77	0.017	0.80	0.020	0.96
B/M			1.145	8.28***	1.061	7.51***
Yrs			0.143	0.64	0.154	0.69
BHR			–0.096	–0.84	–0.118	–0.95
Earns			2.287	5.24***	2.155	4.79***
Constant	–1.278	–6.08***	–2.848	–10.48***	–5.513	–4.16***
Log likelihood	–1369.461		–1274.486		–1258.258	
LR chi-sq	2.04		191.99		224.44	
Prob > chi-sq	0.565		0.000		0.000	
Fixed effects	No		No		Yes	

Panel B – B/M >1 Sample						
Variables	Coef.	*z*-stat.	Coef.	*z*-stat.	Coef.	*z*-stat.
CD	0.052	1.82*	0.063	1.97**	0.072	2.17**
Govern	0.050	0.13	0.115	0.28	–0.048	–0.12
*CD*Govern*	0.008	0.24	–0.004	–0.09	0.010	0.27
B/M			1.115	5.36***	1.162	5.38***
Yrs			0.476	1.52	0.413	1.28
BHR			–0.252	–0.87	–0.348	–1.13
Earns			2.438	2.76***	2.727	3.01***
Constant	–0.984	–2.90***	–3.714	–6.59***	–5.461	–4.46***
Log likelihood	–464.593		–431.343		–416.822	
LR chi-sq	8.00		74.50		96.78	
Prob > chi-sq	0.046		0.000		0.000	
Fixed effects	No		Yes		Yes	
Observations	758		758		749	

$$Impair_{it} = \alpha_0 + \alpha_1 CD_{it} + \alpha_2 Govern_{it} + \alpha_3 Govern_{it} * CD_{it} + \sum_{k=4}^{8} \alpha_k \, Indicators_{it} + \sum_{l=9}^{m} \alpha_l \, Controls_{it} + \varepsilon_{it}$$

*All variables are as previously defined in Table 2.1. p-values are one-tailed: *=<0.10; ** =<0.05; *** =<0.01. Variables are winsorized at the 5th and 95th percentiles.*

Table 2.B.2

Recognition of asset impairment – *Impair-C* – Additional Analysis 5% and 95%

Evaluation of the association between the recognition of asset impairments and firm disclosures. Results are presented for the full sample of firm years in Panel A, and for firm years where there are externally observable indicators of impairment (B/M>1) in Panel B.

Panel A: Full Sample (n=2,493)						
Variables	Coef.	*t*-stat.	Coef.	*t*-stat.	Coef.	*t*-stat.
CD	0.000	0.42	0.002	3.46***	0.002	4.17***
Govern	–0.008	–0.79	–0.008	–0.85	–0.012	–1.21
*CD*Govern*	0.002	1.87*	0.002	2.04**	0.002	2.10**
B/M			0.062	6.19***	0.066	6.26***
Yrs			0.002	0.17	0.001	0.04
BHR			–0.008	–1.89*	–0.011	–2.58***
Earns			0.153	6.55***	0.156	6.52***
Constant	0.026	3.46***	–0.068	–5.91***	–0.126	–5.45***
Adj. R^2	0.005		0.127		0.145	
F-stat.	2.646		12.69		4.920	
Fixed effects	No		No		Yes	

Panel B: B/M > 1 Sample (n=758)						
Variables	Coef.	*t*-stat.	Coef.	*t*-stat.	Coef.	*t*-stat.
CD	0.003	1.64	0.003	2.06**	0.004	2.88***
Govern	–0.024	–0.88	–0.023	–0.91	–0.037	–1.47
*CD*Govern*	0.005	1.60	0.004	1.40	0.004	1.58
B/M			0.064	4.94***	0.066	5.10***
Yrs			0.069	3.49***	0.057	2.91***
BHR			–0.074	–3.95***	–0.078	–4.04***
Earns			0.379	4.19***	0.371	4.12***
Constant	0.042	2.24**	–0.168	–5.58***	–0.306	–4.98***
Adj. R^2	0.025		0.163		0.216	
F-stat.	3.823		8.555		3.431	
Fixed effects	No		No		Yes	

$$Impair_{it} = \alpha_0 + \alpha_1 CD_{it} + \alpha_2 Govern_{it} + \alpha_3 Govern_{it} * CD_{it} + \sum_{k=4}^{8} \alpha_k \, Indicators_{it} + \sum_{l=9}^{m} \alpha_l$$

*All variables are as previously defined in Table 2.1. p-values are one-tailed: *=<0.10; ** =<0.05; *** =<0.01. Variables are winsorized at the 5th and 95th percentiles.*

Chapter 3

An evaluation of conditional conservatism and the extent to which this is attributable to the recognition of asset impairments

3.1 Introduction

The objective of this chapter is to critically evaluate the phenomenon of conditional conservatism, to determine the extent it is a consequence of the recognition of asset impairments, and to identify whether this is widespread across firms. There is a significant literature evaluating accounting conservatism and many reviews have been undertaken (e.g., Ruch & Taylor 2015; Xie 2015; Zhong & Li 2017). Scholars have focused on whether conservatism has been increasing over time (e.g., Givoly & Hayn 2000), whether it differs by jurisdiction (Pope & Walker 1999), and whether it is sensitive to changes in accounting standards such as the adoption of the *International Financial Reporting Standards* (Lai, Lu & Shan 2013). Conservatism has also been categorized on the basis of whether it is unconditional or conditional (Beaver & Ryan 2005). The former includes accounting practices that prohibits the recognition of assets through the capitalization of research and development expenditures. The latter includes practices that recognize losses when asset values decrease, but not gains when asset values increase, such as asset impairment. However, relatively little attention has been focused on particular accounting standards that might contribute to conditional conservatism, and whether the impacts are widespread across firms. This may provide significant insights into the phenomenon of conservatism. Accordingly, the focus in this chapter is on 'conditional conservatism' and the accounting standard requiring asset impairment. Of

concern is the extent to which conditional conservatism is attributable to the recognition of asset impairments and, given the variability in the recognition of asset impairments, whether it is pervasive across firms or limited to those where asset impairments are recognized or more likely. This chapter could provide additional insights into conditional conservatism.

There is a significant literature addressing accounting conservatism. Consideration has been given to fundamental issues such as why conservative accounting practices might be adopted and whether conservative accounting practices might represent efficient contracting choices (Watts 2003a, 2003b; Watts & Zuo 2016). There is also a significant empirical literature that provides evidence of conservatism; this includes Basu (1997) which is cited over 1,400 times. However, in this literature attention is focused on conservatism generally, categorized as unconditional and conditional, and it is assumed that accounting practices are consistent and cohesive in their impact on financial statements. Hence, the first motivation for this chapter is to consider the extent to which one type of conservatism, conditional conservatism, is attributable to the application of *AASB 136 Impairment of Assets* and specifically, whether there is evidence of conditional conservatism beyond that which is attributable to asset impairment decisions, whether there is evidence of conditional conservatism for firms not recognizing asset impairments, and whether evidence of conditional conservatism is widespread across firms.

Notwithstanding the significant empirical literature considering conservatism inherent in accounting practices and suggestions that it is widespread, conservatism is not identified as a qualitative characteristic in the frameworks used by accounting standard setters. For example, the *Conceptual Framework for Financial Reporting* issued by the IASB in 2018 (and the AASB in 2019) identifies a range of qualitative characteristics

required for financial information. These include the requirement for there to be a 'faithful representation' of economic phenomena, and this requiring 'neutrality'. Neutrality dictates that the information be presented 'without bias' and that while 'prudence' might be exercised, it is applied symmetrically. In contrast, conservatism implies understatement of asset values in the balance sheet, and an asymmetric treatment of gains and losses. As such it constitutes a bias. Hence, conservatism is inconsistent with the frameworks used by standard setters. Accordingly, a second motivation for this chapter is to provide insights into the extent that accounting standards as they are applied by accountants, contribute to conservatism, and conditional conservatism in particular; and whether this extends beyond asset impairment.

The results for a sample of 2,488 Australian firm-years over the period 2007 to 2016[11] are generally inconsistent with conditional conservatism as it has been considered in the literature to date. The model is estimated initially consistently with Basu (1997); while there is evidence of an association between negative stock returns and the level of earnings, I find that there is no association for positive stock returns.

When the model is estimated with earnings adjusted for asset impairments, I find that there is no association of stock returns (positive or negative) with earnings. This suggests that asset impairments are a contributor to low earnings for firms with negative stock returns. When the model is estimated for firms not recognizing impairments, there is again evidence of an association between negative stock returns and low earnings. However, there is no association of positive stock returns with earnings. These results may appear contradictory if the association between returns and earnings is attributed to

[11] The slightly smaller sample compared to the previous chapter is due to the need for lagged assets in some of the analysis (untabulated). Given some companies become publicly listed during any given year, the lagged assets figure from when they were a proprietary company is not available. Moreover, [11] 2.488 firm-years are in the sample over a ten- year period, since the ASX200 has 200 firms commencing each year but additional firms list throughout the year. My data was collected at year-end, hence resulting in an average of 249 firms each year.

conditional conservatism arising from the recognition of asset impairments. Further, while I find an association between negative stock returns and the level of earnings, the inability to find an association between positive returns and earnings is problematic. In combination with the low explanatory power of the models, this may suggest model misspecification. This may also suggest a shift in value-relevance from earnings to book values similar to prior studies (Collins, Maydew & Weiss 1997), owing largely to the increasing intangible intensity across time and changes in firm size.

When attention is focused on firms with a book-value of equity less than the market-value of equity (and less likely to be recognizing asset impairments) there is evidence of an association between negative stock returns and low earnings. Due to shielding, asset impairments are unlikely to be contributing materially to this. However, there is no association of positive stock returns with high earnings and consequently, there is likely to be a significant variation in earnings for firms with positive stock returns. The inability to find a statistically significant association may arise from model misspecification, this impedes the ability find an asymmetric relation between positive and negative stock returns and earnings.

For firms with a book-value of equity greater than the market-value of equity, signally they are more likely to recognize asset impairments, I find that there is no evidence of an asymmetric relation between returns and earnings. While there is a positive association between stock returns and earnings, there is not a significant difference in this association for positive and negative stock returns. Accordingly, rather than an asymmetric association I find a symmetric association. This result might seem surprising but is likely a consequence of concerns with the timeliness of the recognition of asset impairments (Bond, Govendir & Wells 2016) and reflect the large proportion of firms in this partition not recognizing asset impairments.

A feature of these results is the absence of a positive association between positive stock returns and earnings, especially for firms with a book-value of equity less than the market-value of equity. To provide insights into this, further analysis is undertaken for a sub-sample of firms with a book-value of equity less than the market-value of equity and partitioned on the basis of earnings yield. Unsurprisingly, I find that there is an association of returns with earnings for firms with relatively high earnings yields, and there is difference in the association for positive and negative stock returns. In these circumstances current period earnings might be reflective of expected future period earnings. However, for firms with relatively low earnings yield there is a significant negative (not positive) association between stock returns and earnings generally, and this is attributable to firms with positive stock returns. For these firms, current period earnings are unlikely reflective of expected future period earnings and this might be attributable to unconditional conservatism and the treatment afforded to particular types of expenditures or limits on the recognition of certain types of assets. These results make several contributions to the literature.

First, while I find evidence of differences in the association of returns and earnings across the full sample of firms, it is difficult to attribute this to conditional conservatism. There is evidence that where asset impairments are recognized, these are a major contributor to an association between negative stock returns and earnings for some firms, suggesting conditional conservatism may be limited to asset impairment. However, there is an association between negative stock returns and earnings for some firms not recognizing asset impairments, although this may simply reflect earnings capturing firm performance. For firms with a book-value of equity greater than a market-value of equity there is a consistent association of positive stock returns with positive earnings and negative stock returns with negative earnings. Similarly, for firms with a book-value of

equity less than the market-value equity and a high earnings yield, there is a consistent association of positive and negative stock returns with earnings. These results are generally inconsistent with conditional conservatism as it is discussed in the literature (Basu 1997; Beaver & Ryan 2005), and definitely inconsistent with it being widespread across accounting practices and firms.

Second, the association between stock returns and earnings is complex, especially for growth firms (i.e. firms with a book-value of equity less than the market-value of equity and a low or negative earnings yield). For these firms, current period earnings will not be reflective of expected future earnings, and this may be impacted by unconditional conservatism, such as the expensing of research and development costs intended to generate future earnings. This suggests the simple model typically used in the literature to evaluate conditional conservatism may potentially be misspecified and a consequence of this is that any results will be sensitive to sample composition, and in particular the relative number of growth firms in the sample.

Third, concerns that regulators and users might have about bias (as opposed to neutrality) in the regulations dictating the determination of information financial reports is likely overstated. However, while not the focus of the study, the results likely identify issues with the timeliness of the recognition of asset impairments. Additionally, for growth firms there are likely to be issues with the ability of earnings to capture firm performance. This may arise from unconditional conservatism.

The remainder of the chapter is organized as follows. Section 3.2 examines the prior research on conservatism and asset impairment. Section 3.3 describes the research design and Section 3.4 contains the sample selection and data description. The results and additional analysis are presented in Section 3.5, and the conclusions are presented in Section 3.6.

3.2 Prior research and hypotheses

Conservatism has long been considered an essential characteristic of accounting information, and it was described long ago as the requirement for accounting to "anticipate no profits but anticipate all losses" (Bliss 1924). However, the most recent *Conceptual Framework* does not include conservatism, and instead includes neutrality (International Accounting Standards Board 2018). The nature of conservatism and its role in determining accounting practices has been considered extensively over a prolonged period (e.g., Devine 1963; Sterling 1970; Watts 2003a, 2003b) and is the subject of an extensive empirical literature that has been reviewed extensively (e.g., Ruch & Taylor 2015; Xie 2015; Zhong & Li 2017). Further, a range of measures of conservatism have been identified and reviewed in terms of their efficacy (e.g., Wang, Hógartaigh & van Zijl 2009; Xie 2015). It is beyond the scope of this chapter to provide a comprehensive review of this literature. In this literature, however, a distinction is made between conditional and unconditional conservatism (Beaver & Ryan 2005) and this identifies important differences in the manner in which conservatism arises. This is salient to any evaluation of conservatism, as well as the *Conceptual Framework* (International Accounting Standards Board 2010) that was in operation during the sample period that required neutrality rather than conservatism in financial reporting.

In this literature, unconditional conservatism has been characterized as arising from the application of inherently conservative accounting practices not necessarily conditioned by the economic circumstances of the firm. The expenditures typically identified to explain unconditional conservatism are expenditures on research and development and/or advertising. Both are immediately expensed notwithstanding the potential for them to create intangible assets and provide benefits in future periods. This

non-recognition of assets leads to the market-value of total assets exceeding the book-value of total assets; hence the label unconditional conservatism. However, a challenge in evaluating unconditional conservatism is that the impacts on the income statement can be varied for different types of firms. In the case of firms that are growing and where the expenditures being immediately expensed are increasing, the increasing non-recognition of assets will lead to an understatement of earnings. In contrast, for firms where the expenditures being immediately expensed are decreasing, then the decline in unrecognized assets will not be recognized in the income statement and earnings will be overstated. This consequence of the 'reversal' of conservatism is considered extensively in Penman (2010). It is explained by the truism that over the life of the firm earnings equals cash flow, and that accruals always reverse – eventually. (Penman 2010)

In comparison, conditional conservatism arises in circumstances where the application of conservative accounting practices is dictated by the economic context of the firm. In particular, accounting practices involving a differential treatment of gains and losses, whereby losses are recognized immediately and gains deferred until they are realized. Hence, the model used by Basu (1997) to evaluate conditional conservatism is sometimes labelled a 'differential timeliness' model.

Notwithstanding the very specific and limited examples of accounting practices used to explain how conservatism arises, a feature of this literature is that conservatism is considered equally pervasive across accounting practices and firms, and it is evaluated generally using financial statements. For example, Basu (1997) describes conditional conservatism as arising from the accounting standard requiring asset impairment. The decline in asset value arising from a decline in expected future returns necessitates the immediate recognition of an asset impairment. However, this is then evaluated generally with high level accounting information using a number of assumptions.

First, by focusing on the magnitude (level) of earnings in the research design, rather than the impact of impairments, there is the presumption there are other accounting practices contributing to conditional conservatism and that low earnings and possibly losses are attributable to these practices collectively. This is problematic as impairments, or conditional conservatism more generally, may not be of sufficient magnitude or there may be other factors impacting the magnitude of earnings. It is doubtless that asset impairments (or conditional conservatism generally) may contribute to the recognition of losses (Hayn 1995), and there is evidence of an increasing incidence of losses (Givoly & Hayn 2000); however, whether low earnings or losses are a consequence of the recognition of asset impairments has not been established. This is problematic given longstanding concerns about the timeliness for the recognition of asset impairments (Bond, Govendir & Wells 2016; Riedl 2004) and these are reinforced where scholars provide mixed evidence of stock price reactions to recognitions of asset impairments (Collins & Henning 2004; Francis, Hanna & Vincent 1996; Jarva 2009). It also needs to be recognized that losses are less likely to be persistent (Nissim & Penman 2001) and reversal may simply be a consequence of management decision-making (i.e. survival).

Second, there is a presumption that a reduction in expected returns leads to the recognition of an asset impairment, but this has not been examined. The recognition of asset impairments in Australia is dictated by *AASB 136 Impairment of Assets (AASB 136)* and this is applied to assets either individually, or in aggregate (i.e. cash generating units; CGUs), depending on the characteristics of how they generate cash flows.[12]

[12] *AASB 136* is specific to the Australian context of this chapter and is identified for solely this reason. However, it should be noted that the accounting standard is based on *IAS 36 Impairment of Assets*. Further, there is broad consistency in the empirical literature considering asset impairment in a range of jurisdictions. Hence, the findings and conclusions are expected to be more broadly applicable.

Attention is focused in the first instance on impairment of individual assets. Where the recoverable amount of an asset is less than its carrying amount there is the requirement to reduce the carrying amount of the asset to its recoverable amount (AASB 136; para 59). The carrying amount is generally the acquisition cost, less any depreciation and impairment previously recognized.[13] If subsequent to acquisition there is an increase in the value of the asset, this would not be recognized; to the extent that any decline in value is a reversal, this would not lead to recognition of an asset impairment. Hence, increases in asset value subsequent to acquisition may 'shield' the subsequent recognition of an asset impairment. A further issue is that the recoverable amount is the higher of fair-value less costs of disposal or value in use (para 6); while a reduction in expected returns might lead to a reduction in value in use, this would not necessarily be the case for fair-value where there may be an alternative use of the asset. Critically, this would again preclude recognition of an asset impairment.

Impairment of aggregate assets, or assets within CGUs, is undertaken where impairment is not possible for assets individually (AASB 136; para 66). A similar process is followed for determining aggregate asset impairments; however, an added complication for CGUs is that unrecognized assets, or undervalued assets within a CGU, may 'shield' the recognition of an asset impairment. These concerns have featured prominently in discussions of goodwill recognition, amortization and impairment.[14] Critically, this would again preclude recognition of an asset impairment.

[13] For example, while there is provision for the recognition of property plant and equipment using the revaluation model in *AASB 116 Property Plant and Equipment*, there is little evidence of this in practice. Further, a subsequent decline in value would be recognized as either a revaluation decrement or a reversal of a revaluation increment rather than an impairment.

[14] For example, IFRS Standards Discussion Chapter DP/2020/1 Business Combinations – Disclosures, Goodwill and Impairment.

In combination, this identifies several issues with the characterization and evaluation of conditional conservatism. First, conditional conservatism is evaluated as though it is equally widespread across accounting standards. This has not been considered empirically to date. Hence, the following hypothesis is evaluated:

H_1: Conditional conservatism is widespread across accounting standards and extends beyond the recognition of asset impairments.

Second, it is presumed that conditional conservatism impacts all firms equally, including those where there is likely to be little requirement for the recognition of asset impairments. Again, this has not been evaluated empirically. Hence, the following hypothesis is evaluated:

H_2: Conditional conservatism is widespread for firms, including those where there is less likelihood of recognizing an asset impairment due to shielding.

3.3 Research design

The focus in this chapter is on conditional conservatism and determining the extent to which it is attributable to recognition of asset impairments and its pervasiveness across firms. This requires a model for the evaluation of conditional conservatism; the model used in Basu (1997) is adopted. This is often labelled a 'reverse regression' to reflect its consideration of how stock price movements lead accounting measures, or alternatively a 'differential timeliness model' as it captures the extent to which accounting measures capture bad news on a more timelier basis than good news. This takes the

following forms for the initial regression of earnings on returns *(2a)* and then the full differential timeliness model *(2b)*:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_1 Ret_{it} + \varepsilon_{it} \qquad (2a)$$

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_1 Neg_{it} + \alpha_2 Ret_{it} + \alpha_3 Neg_{it} * Ret_{it} + \varepsilon_{it} \qquad (2b)$$

In this model the variables are consistent with those used in Basu (1997). *Earn* is earnings per share deflated by price for firm *i* in period *t*. *Price* is the price per share for firm *i* at the beginning of period *t*. *Ret* is the buy-hold-return for firm *i* for the 12-month period ending 3-months after year end. *Neg* is an indicator variable adopting the value '1' if *Ret* is negative for the period, and '0' otherwise.

Is conditional conservatism just asset impairment or does it extend beyond the recognition of asset impairments?

I undertake evaluation of the extent to which conditional conservatism is associated with the recognition of asset impairments, or whether there are other accounting practices that also contribute to it in the analysis below.

First, earnings is adjusted for the impact of asset impairments by adding the amount of any asset impairment per share back to earnings per share. If conditional conservatism extends beyond recognition of an asset impairment it is expected that the coefficient on the interaction term will continue to be positive.

Second, the sample is limited to firms not recognizing an asset impairment in the current period. Again, if conditional conservatism extends beyond asset impairment it is expected that the coefficient on the interaction term will continue to be positive.

Is conditional conservatism pervasive (H_2)?

A further issue requiring consideration is whether conditional conservatism is widespread across firms, or whether it is contingent on the requirement to recognize asset impairments and the absence of 'shielding'. However, determining the extent of 'shielding' is problematic, especially where asset impairments are not being assessed at the firm level because *AASB 136* requires their assessment on the basis of CGUs.

In some instances, the 'shielding', or lack of, will be easy to determine. For firms where there are externally observable indicators of impairment it is likely there will be least one material CGU where the recoverable amount is less than the carrying amount and there is insufficient 'shielding' to avoid the recognition of asset impairments. In these circumstances, evidence of conditional conservatism is likely strong (if it is attributable to recognition of an asset impairment).

However, for firms where there are no externally observable indicators of impairment, determination of whether negative returns will manifest in the recognition of an asset impairment is more problematic. While there may have been a negative return and a decline in recoverable amount, there may be 'shielding' which avoids the requirement to recognize an asset impairment. Confounding this, an asset impairment may be recognized due to a decline in recoverable amount in a CGU, and while shielding may exist within the firm generally, it does not occur within the relevant CGU. This may or may not be associated with a negative stock return and is consistent with evidence of the incidence of asset impairments in such firms (e.g., Bond, Govendir & Wells 2016). However, these asset impairments are generally relatively small and are unlikely to result in the reporting of low earnings, or in the extreme, a loss. To the extent that asset impairments are avoided by 'shielding', this suggests evidence of conditional conservatism will be weak (if it is attributable to asset impairments).

The most appropriate externally observable indicator of impairment is the ratio of book-value of equity to market-value of equity, with this also providing a measure of potential 'shielding'. Accordingly, to evaluate the degree to which conditional conservatism is widespread, separate analysis is undertaken of firms on the basis of the ratio of book-value of equity to market-value of equity. Firms are further partitioned on the basis of whether an asset impairment is recognized with this indicating the extent of actual 'shielding'.

In combination this provides insights into whether conditional conservatism is equally widespread across firms, rather than firms where asset impairments are more likely to be recognized.

3.4 Sample selection and descriptive statistics

3.4.1 Sample selection

The sample in this chapter is based on ASX200 firms from the period 2007 and 2016. During this period asset impairments are determined in accordance with *AASB 136* and the commencement date of the study is chosen to avoid issues of inconsistency which may have arisen in initial application of this regulation on transition to *IFRS*. Financial data is obtained in the first instance from the Morningstar DatAnalysis database. This is supplemented with hand collection of impairment and other data as required from financial reports. There is extensive hand collection of asset impairment data as these are often not disclosed separately in the database but included under the label 'Abnormal Items'. Stock returns are obtained from the SIRCA database.

As the concern is with recognition of asset impairments, attention is focused on firms with assets generally measured at historic cost. Accordingly, firms in sectors predominantly governed by other Accounting Standards are excluded from the sample,

including in the financial services (*AASB 9 Financial instruments*), mining (*AASB 6 Exploration for and evaluation of natural resources*), agricultural (*AASB 141 Agriculture*), and property investment sectors (*AASB 140 Investment property*). Firms years are also excluded where data is not available. This results in a final sample of 2,488 firm-years.

To address concerns about the influence of extreme observations I winsorize all data at the 1/99% levels. Additionally, I report the results with no winsorization for transparency in the appendices.

3.4.2 Descriptive statistics

Descriptive statistics for the full sample of firms are presented in Table 3.2b, Panel A. The mean (median) value of *Earn* is 0.021 (0.060) and there is significant variation with minimum and maximum values of –3.556 and 3.413 respectively. Of the sample firms, 32.1% are recognizing asset impairments; when impairments are added back to *Earn (Earn+Impair),* the adjusted mean (median) is 0.054 (0.067). While the impact of adding back asset impairments has little impact on the median, the incidence of large impairments is pronounced and evidenced by the change in mean. Of the sample firm-years, 48.8% have negative stock returns and the mean (median) *BHR* is 0.113 (0.00). There is considerable skewness in the variables.

Descriptive statistics for the partition of firms where the book-value of equity is greater than the market-value of equity (31.7% of firms), where the incidence of conditional conservativism is expected to be greatest, are presented in Panel B. Of these firms, 75.7% record a book-value of equity greater than the market-value of equity for two or more years, suggesting externally observable indicators of impairment are not transitory, and impairments may not be recognized on a timely basis. For this partition of

firms, the mean (median) value of *Earn* is –0.003 (0.058). When impairments are added back to *Earn (Earn+Impair)* the adjusted mean (median) is 0.089 (0.078). Consistent with prior literature (Bond, Govendir & Wells 2016), only 44.5% of these firms recognize an asset impairment despite having an externally observable indicator of impairment. This suggests that asset impairments have a material impact on reported performance and are a contributor to the recognition of losses. The mean (median) *BHR* is –0.113 (–0.179), which is materially different from that of the full sample.

3.5 Results

Evidence of conditional conservatism: Replication

The objective of this chapter is to critically evaluate the phenomenon of conditional conservatism, to determine the extent to which this is attributable to asset impairment, and to understand whether this is pervasive across firms generally or whether it is confined to specific contexts. Accordingly, it is first necessary to identify conditional conservatism as it has historically been considered with the current sample. The results are shown in Table 3.3, replicating the main results reported in Basu (1997).

For the model estimated with returns only, the coefficient on *Ret* is positive and significant (α_2=0.068, *t*-stat.=4.327), and the explanatory power of the model is 2.4%. This expected sign is consistent with expectation, but the explanatory power is weaker. In Basu (1997) the coefficient on *Ret* is greater (α_2=0.113, *t*-stat.=47.40), and the explanatory power of the model is greater at 7.99%. This may be a consequence of the increased incidence of loss-making firms in more recent periods and nuances of the Australian market compared with Basu's study using the US market.

When the full model is estimated, the coefficient on the interaction term (i.e. *Neg.*Ret.)* is positive and significant (α_3=0.199, *t*-stat.=4.501). This results have

some similarities with that reported in Basu (1997); however, the coefficient on *Ret* is not significant. It is probably a consequence of a smaller sample size, resulting in the explanatory power of the model in this study is only 3.8%. This contrasts with the results in Basu (1997) where the coefficient on *Ret* was positive and significant (α_2=0.059, *t*-stat.=18.34) and the explanatory power was 10.09%.

Consequently, while there is a significant association between negative returns and low earnings, which is as expected, firms with positive stock returns do not consistently report high earnings. This raises concerns about the pervasiveness of conditional conservatism as it has been considered in the literature in this sample.

Is conditional conservatism just impairment (H_1)?

Attention is then directed at evaluating the extent to which conditional conservatism is associated with the recognition of asset impairments, or whether it is pervasive and there are other accounting practices that materially and systematically contribute to conditional conservatism. In the first instance, this is evaluated by adjusting earnings for the impact of asset impairments (*Earn+Impair*); the results are reported in Table 3.4. For the model estimated with returns only, the coefficient on *Ret* is positive and significant (α_2=0.044, *t*-stat.=2.483), but the explanatory power of the model is only 1.0%. When the full model is estimated, the coefficient on *Ret* is no longer significant (α_2=0.025, *t*-stat.=0.816). Further, the coefficient on the interaction term *Neg*Ret* is insignificant (α_3=0.054, *t*-stat.=1.508) and the explanatory power of the model is weak (1.1%).

This result suggests asset impairments contribute to low earnings for firms with negative returns. Accordingly, after this is controlled for (Table 3.4), there is no longer an association between negative returns and low earnings. Hence, there is little evidence

of other accounting standards further contributing to an association between negative returns and low earnings and no support for H_1. However, it is problematic there is no significant association between positive stock returns and high earnings.

I then focus on firms not recognizing asset impairments to determine if conditional conservatism extends beyond asset impairments, with the results presented in Table 3.5. For the model estimated with returns, only the coefficient on *Ret* is positive and significant (α_2=0.034, *t*-stat.=2.110), and the explanatory power of the model is poor (1.0%). When the full model is estimated the coefficient on *Ret* is no longer significant (α_2=0.002, *t*-stat.=0.074), and the coefficient on the interaction term *Neg * Ret* is positive and significant (α_3=0.095, *t*-stat.=2.819). The explanatory power of the model is again poor (1.8%).

These results suggest that firms with negative stock returns report systematically low earnings. However, whether this is a consequence of conservatism, or simply poor performance, cannot be established. Problematically, these results do not show an association between positive stock returns and high earnings.

Accordingly, for these firms there is little support for H_1 that conditional conservatism extends beyond asset impairment. Rather, the inability to find an association between positive stock returns and earnings, together with poor explanatory power of the model, either suggests model misspecification or findings consistent with prior literature (Collins, Maydew & Weiss 1997), that there has been a shift from the value-relevance of earnings to an increase in the value-relevance of book values and an impact from increasing intangible asset intensity. Critically, a number of recent studies find either a decline in the association between returns and positive economic news, or a negative relation between earnings and positive returns owing to "traditional accounting being

unable to capture the underlying business economics" (Banker et al. 2016; Jackson 2020; Jackson 2017).

Is conditional conservatism widespread (H_2)?

If conditional conservatism is attributable to the recognition of asset impairments, it is likely stronger (weaker) for firms where asset impairments are more (less) likely to be recognized. Accordingly, attention is focused on evaluating whether conditional conservatism is equally widespread across firms, and in particular whether it is contingent on the requirement to recognize asset impairments and the presence (absence) of 'shielding'.

This is addressed in the first instance by focusing on firms with a book-value of equity less than the market-value of equity, with the results provided in Table 3.6. These represent firms where there is likely to be 'shielding', consisting of 68.3% of the sample firms. Of these firms, 26.3% recognize an asset impairment. In Panel A, attention is focused on earnings as reported (*Earn)*. For the model estimated with returns only, the coefficient on *Ret* is insignificant (α_2=0.014, *t*-stat.=0.88) and the explanatory power of the model is only 0.2%. When the full model is estimated, the coefficient on *Ret* is again insignificant (α_2=–0.025, *t*-stat.=–0.995). However, the coefficient on the interaction term *Neg*Ret* is positive and significant (α_3=0.164, *t*-stat.=5.098) and the explanatory power of the model is modest (2.9%). In Panel B, attention is focused on firms without an externally observable indicator of impairment that do not recognize asset impairments. Again, for the model estimated with returns only the coefficient on *Ret* is insignificant (α_2=0.016, *t*-stat.=0.935), and the explanatory power of the model is only 0.3%. When the full model is estimated the coefficient on *Ret* is again insignificant (α_2=–0.020, *t*-stat.=–0.747). However, the coefficient on the interaction term *Neg*Ret* is

positive and significant (α_3=0.134, *t*-stat=3.619) inferring a significant relation between earnings and returns only when the returns are negative. The explanatory power of the model is again modest (2.5%). The implication of this being that conditional conservatism is not present in these samples as there is no significant relation between earnings and returns when returns are positive.

In combination these results suggest that firms with negative stock returns are likely to report low earnings, and recognition of asset impairments are likely to contribute to this. Critically, the association between positive stock returns and earnings is not significant.

For firms where the book-value of equity is greater than the market-value of equity, the absence of shielding and the regulatory requirement to recognize asset impairments suggests that any evidence of conditional conservatism arising from asset impairments is strong. The results for these firms are provided in Table 3.7. These firms represented 31.7% of all sample firms and while it might seem surprising that 55.5% of these firms did not recognize an asset impairment, this is consistent with the prior literature (Bond, Govendir & Wells 2016). Hence, concerns about timeliness in the recognition of asset impairments bias against finding conditional conservatism. In Panel A, consideration is on earnings as reported (*Earn*). For the model estimated with returns only, the coefficient on *Ret* is significant (α_2=0.239, *t*-stat.=5.772), and the explanatory power of the model is 8.6%. When the full model is estimated the coefficient on *Ret* remains significant (α_2=0.289, *t*-stat.=3.652). However, the coefficient on the interaction term *Neg*Ret* is insignificant (α_3=–0.042, *t*-stat.=–0.410) and the model has an equivalent explanatory power (8.6%). In Panel B, consideration is limited to firms not recognizing asset impairments, and the results are similar. For the model estimated with returns only, the coefficient on *Ret* is significant (α_2=0.165, *t*-stat.=4.017) and the explanatory power

of the model is 8.3%. When the full model is estimated, the coefficient on *Ret* remains significant (α_2=0.184, *t*-stat.=2.593). However, the coefficient on the interaction term *Neg*Ret* remains insignificant (α_3=–0.067, *t*-stat.=–0.826) and the model has a similar explanatory power (8.0%).

Accordingly, for a sub-sample of firms where asset impairments are most likely, in this sample there is a symmetric association between returns and earnings, and there is no evidence of conditional conservatism. Critically, these are the firms where the impacts of conditional conservatism are considered greatest. This applies equally for firms not recognizing asset impairments.

In summary, there is little evidence of conditional conservatism being widespread across firms and there is little support for H_2.

3.5.1 Additional analysis

An issue in the above analysis is the absence of a significant association between positive stock returns and the level of earnings, and the poor explanatory power of most models. The exception being Table 3.7 where sample firms have a book-value of equity greater than the market-value of equity; for these firms there is no evidence of an asymmetric association between returns and earnings. This suggests additional analysis focusing on the sample of firms where the book-value of equity is less than the market value of equity.

A challenge in evaluating earnings levels, which is implicit in this analysis, is that it assumes that earnings are equally relevant (albeit with a single inflection) to predicting future earnings and for valuation. This is inconsistent with a substantial literature on equity that considers changes in earnings, its implications for future earnings, and its relevance for valuation (e.g., Barth, Elliott & Finn 1999). This would be most problematic

for high growth firms, typically characterized as having high market-to-book ratios and low earnings yields. Reflecting this, firms with a book-value of equity less than the market-value of equity are partitioned on this basis. This distinguishes firms where current period earnings are likely to be less reflective of expected future earnings and less relevant. Additional analysis is undertaken, and the results are reported in Table 3.8.

The results are presented in Panel A for the partition of firms with a relatively high earnings yield (i.e. not growth firms). For the model with returns only, the coefficient on *Ret* is significant (α_2=0.066, *t*-stat.=7.256) and the explanatory power of the model is 23.9%. When the full model is estimated, the coefficient on *Ret* remains significant (α_2=0.078, *t*-stat.=6.186). However, the coefficient on the interaction term *Neg*Ret* is negative and significant (α_3=–0.041, *t*-stat.=–2.424) and the model has a slightly lower explanatory power than for the full sample (19.6%). It is notable that the explanatory power in this model is much higher than any of those reported above.

The results are presented in Panel B for the partition of firms with a relatively low earnings yield (i.e. growth firms). For the model with returns only, the coefficient on *Ret* is negative (not positive) and significant (α_2=–0.089, *t*-stat.=–3.728), and the explanatory power of the model is 10.2%. Critically this suggests, for at least some firms, a strong negative association between returns and earnings; this is confirmed when the full model is estimated. The coefficient on *Ret* remains negative and significant (α_2=–0.144, *t*-stat.=–3.627); however, the coefficient on the interaction term *Neg*Ret* is positive and significant (α_3=0.181, *t*-stat.=3.806), and again the model has a sound explanatory power of 13.8%.

This shows a negative stock return predicts low earnings for these firms, and the likelihood that future earnings will not be as previously expected. This result is consistent with earnings capturing performance. However, some firms with positive stock returns

also reported low earnings, with the positive return reflecting future potential that is not captured in current period low earnings. This might arise because the future prospects and the strong stock price performance impacts the ability of the firm to raise capital, and unconditional conservatism would dictate material expenses and low profitability or losses.

Accordingly, rather than finding evidence of conditional conservatism, or evidence that it is attributable to accounting practices generally or widespread across firms, I find evidence of a more complex relation between returns and earnings. This identifies the possibility of model misspecification, demonstrating that the results will be entirely dependent upon sample composition, and in particular, the model is affected by the incidence of firms with both high book value and low earnings. This will bias the coefficient of *Ret* down in the full model and create the appearance of conditional conservatism.

3.6 Conclusion

The objectives of this chapter are to evaluate the phenomenon of conditional conservatism, the extent to which conditional conservatism documented in the empirical literature (e.g., Basu 1997) is attributable to the recognition of asset impairments, and whether it is pervasive across firms.

The results for a sample of 2,488 Australian firm-years over the period 2007 to 2016 are generally inconsistent with conditional conservatism as it has been considered in the literature. In the first instance the model is estimated in a manner consistent with Basu (1997); while there is evidence of an association between negative stock returns and the level of earnings, there is no association for positive stock returns. This made further evaluation of whether conditional conservatism is widespread across accounting policies

and firms potentially problematic, but it was nonetheless undertaken as it might provide insights into this result.

When the model is estimated with earnings adjusted for asset impairments there is no association between stock returns (positive or negative) and earnings. This suggests that asset impairments are a contributor to low earnings for firms with negative stock returns. However, the absence of an association between positive stock returns and the level of earnings is problematic. When the model is estimated for firms not recognizing impairments, there is again evidence of an association between negative stock returns and low earnings, but no association of positive stock returns with earnings. Critically, these results are contradictory if the association between returns and earnings is attributed to conditional conservatism arising from the recognition of asset impairments. While there is an association between negative stock returns and the level of earnings, the inability to find an association between positive returns and earnings is an issue. Combined with the low explanatory power of the models, these may suggest model misspecification.

When attention is focused on firms with a book-value of equity less than the market-value of equity (firms less likely to be recognizing asset impairments) there is evidence of an association between negative stock returns and low earnings. Recognition of asset impairments are unlikely to be contributing substantially to this. However, there is no association of positive stock returns with high earnings. Consequently, there is likely to be a significant variation in earnings for firms with positive stock returns; the inability to find a significant association may arise from model misspecification.

Firms with a book-value of equity greater than the market-value of equity are more likely to be recognizing asset impairments; however, there is no evidence of an asymmetric relation between returns and earnings. While there is a positive association between stock returns and earnings, there is not a significant difference in the association

for positive and negative stock returns. Rather than an asymmetric association, I find a symmetric association. This result might seem surprising but is likely a consequence of concerns with timeliness in the recognition of asset impairments (Bond, Govendir & Wells 2016) and the proportion of firms in this partition not recognizing asset impairments.

The above analysis identifies difficulties in finding a positive association between positive stock returns and earnings, especially for firms with a book-value of equity less than the market-value of equity. This is problematic as it may suggest model misspecification and might lead to conclusions of an asymmetric association of returns with earnings. Further analysis is undertaken of firms with a book-value of equity less than the market-value of equity, further partitioned on the basis of earnings yield. Unsurprisingly, there is an association of returns with earnings for firms with relatively high earnings yield, and this association is the same for both positive and negative stock returns. In these circumstances, current period earnings might be reflective of expected future period earnings. However, for firms with relatively low earnings yield there is a significant negative association between stock returns and earnings generally, and this is attributable to firms with positive stock returns. For these firms, current period earnings are unlikely to be reflective of expected future period earnings and this might be attributable to conditional conservatism. These results make a number of contributions to the literature.

First, while I find evidence of differences in the association of returns and earnings across our sample of firms, it is difficult to attribute this to conditional conservatism. There is evidence that recognition of asset impairments is a major contributor to an association between negative stock returns and earnings for some firms, and this might suggest that conditional conservatism is limited to asset impairment. However, there is

an association between negative stock returns and earnings for some firms not recognizing asset impairments, although this may simply reflect earnings capturing firm performance. For firms with a book-value of equity greater than a market-value of equity there is a consistent association between positive returns and positive earnings and negative stock returns and negative earnings. Similarly, for firms with a book-value of equity less than the market-value equity, and high earnings, there is a consistent association between positive stock returns and positive earnings and negative stock returns and negative earnings. These results are generally inconsistent with conditional conservatism as it is discussed in the literature, and inconsistent with conditional conservatism being widespread across accounting practices and firms.

Second, the association between stock returns and earnings is complex, especially for firms with a book-value of equity less than the market-value of equity and a low earnings yield. For these firms, current period earnings are not reflective of expected future earnings, and this may be impacted by unconditional conservatism. As a result, the simple model typically used to evaluate conditional conservatism is potentially misspecified. Consequently, any results will be sensitive to sample composition, and in particular the relative number of high market-value, low earnings firms in the sample.

Third, concerns that standard-setters such as the Australian Accounting Standards Board and regulators such as the Australian Securities and Investments Commission (ASIC) and users might have about bias (as opposed to neutrality) in regulation dictating the determination of information financial reports is likely overstated. However, while not the focus of the study, the results identify potential issues with the recognition of asset impairments. Additionally, for some firms there are likely to be issues with the ability of earnings to capture firm performance, particularly for ‘growth’ firms.

Table 3.1
Definitions of variables

Definition of the variables used in this chapter.

Label	Definition
$Earn_{it}$	GAAP earnings per share, deflated by the share price at the start of the period.
$Earn+Impair_{it}$	GAAP earnings per share with the value of impairment added back, deflated by the share price at the start of the period.
BHR_{it}	Buy-hold-return for period *t* beginning 3 months after year end.
Neg_{it}	A dichotomous variable taking on the value of '1' if the *BHR* in year *t* is negative, '0' otherwise.
Yrs_{it}	A dichotomous variable equal to '1' if the book-to-market is greater than one for two or more consecutive years, '0' otherwise.

Table 3.2a

Sample	**Number of firm-years**
Initial sample (firms on ASX at any time between 2006 – 2016)	15,749
Financials, mining and overseas based	(9,673)
Unreliable data	(1)
Negative B/M	(272)
Missing data	(3,315)
Final sample	2,488

Table 3.2b

Descriptive statistics – Full sample

Descriptive statistics for variables used in this chapter. These are presented for the full sample of firm years in Panel A, and for firm years where there are externally observable indicators of impairment in Panel B (i.e. B/M>1). Independent variables are winsorized at the 1st and 99th percentile. This has been conducted to prevent small numbers of outliers of BHR driving the results of the model.

Panel A: Full sample

	Obs.	Mean	SD	Min	p5	p25	Median	p75	p95	Max
$Earn+Impair_{it}$	2488	0.054	0.251	–3.556	–0.209	0.019	0.067	0.110	0.232	6.866
$Earn_{it}$	2488	0.021	0.258	–3.556	–0.300	–0.006	0.060	0.103	0.212	3.413
BHR_{it}	2488	0.113	0.593	–0.967	–0.615	–0.273	0.000	0.335	1.326	2.803
Neg_{it}	2488	0.488	0.500	0.000	0.000	0.000	0.000	1.000	1.000	1.000
$BHR_{it} * Neg_{it}$	2488	–0.154	0.216	–0.967	–0.615	–0.273	0.000	0.000	0.000	0.000
Yrs_{it}	2488	0.240	0.427	0.000	0.000	0.000	0.000	0.000	1.000	1.000

Panel B: Sample firms with external indicator of impairment (i.e. B/M>1)

	Obs.	Mean	SD	Min	p5	p25	Median	p75	p95	Max
$Earn+Impair_{it}$	789	0.089	0.381	–3.556	–0.234	0.019	0.078	0.138	0.393	6.866
$Earn_{it}$	789	–0.003	0.395	–3.556	–0.595	–0.052	0.058	0.124	0.320	3.413
BHR_{it}	789	–0.113	0.488	–0.967	–0.730	–0.439	–0.179	0.102	0.739	2.735
Neg_{it}	789	0.655	0.476	0.000	0.000	0.000	1.000	1.000	1.000	1.000
$BHR_{it} * Neg_{it}$	789	–0.245	0.253	–0.967	–0.730	–0.439	–0.179	0.000	0.000	0.000
Yrs_{it}	789	0.757	0.429	0.000	0.000	1.000	1.000	1.000	1.000	1.000

Table 3.3

Evidence of conditional conservatism – Replication

Replication of the initial analysis undertaken by Basu (1997) using the full sample for this chapter, regressing earnings on returns and the use of the interaction terms for the full equation.

α_0 (Constant)	α_1 (*Neg.*)	α_2 (*Ret.*)	α_3 (*Neg.* * *Ret.*)	Adjusted R^2 (%)
0.013 (2.640)***		0.068 (4.327)***		2.4
0.048 (4.359)***	0.001 (0.088)	0.019 (0.742)	0.199 (4.501)***	3.8

	Positive returns sample	Negative returns Sample
Adjusted R^2 (%)	0.1	3.3
No. of observations	1275	1213

The first equation takes the form:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_2 Ret_{it} + \varepsilon_{it} \qquad (2a)$$

The full form of the equation is then considered:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_1 Neg_{it} + \alpha_2 Ret_{it} + \alpha_3 Neg_{it} * Ret_{it} + \varepsilon_{it} \qquad (2b)$$

*All variables are as previously defined in Table 3.1. p-values are two tailed: *=<0.10; ** =<0.05; *** =<0.01. All independent variables are winsorized at the 1st and 99th percentiles .*

Table 3.4
Evidence of conditional conservatism with asset impairments added back

Evaluation of whether there is evidence of conditional conservatism beyond that attributable to asset impairments (*Earn+Impair*).

α_0 (Constant)	α_1 (*Neg.*)	α_2 (*Ret.*)	α_3 (*Neg.* * *Ret.*)	Adjusted R^2 (%)
0.049 (11.778)***		0.044 (2.483)**		1.0
0.064 (5.973)***	–0.010 (–0.746)	0.025 (0.816)	0.054 (1.508)	1.1

	Positive returns sample	Negative returns sample
Adjusted R^2 (%)	0.1	0.6
No. of observations	1275	1213

The first equation takes the form:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_2 Ret_{it} + \varepsilon_{it} \qquad (2a)$$

The full form of the equation is then considered:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_1 Neg_{it} + \alpha_2 Ret_{it} + \alpha_3 Neg_{it} * Ret_{it} + \varepsilon_{it} \qquad (2b)$$

*All variables are as previously defined in Table 3.1. p values are two tailed: *=<0.10; ** =<0.05; *** =<0.01. All independent variables are winsorized at the 1st and 99th percentiles.*

Table 3.5
Evidence of conditional conservatism for firms not recognising an asset impairment

Evaluation of whether there is evidence of conditional conservatism for firms not recognising asset impairments.

α_0 (Constant)	α_1 (*Neg.*)	α_2 (*Ret.*)	α_3 (*Neg.* * *Ret.*)	Adjusted R^2 (%)
0.041 (9.539)***		0.034 (2.110)**		1.0
0.069 (6.032)***	–0.021 (–1.447)	0.002 (0.074)	0.095 (2.819)***	1.8

	Positive returns sample	Negative returns sample
Adjusted R^2 (%)	–0.1	0.9
No. of observations	914	776

The first equation takes the form:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_2 Ret_{it} + \varepsilon_{it} \qquad (2a)$$

The full form of the equation is then considered:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_1 Neg_{it} + \alpha_2 Ret_{it} + \alpha_3 Neg_{it} * Ret_{it} + \varepsilon_{it} \qquad (2b)$$

*All variables are as previously defined in Table 3.1. p values are two tailed: *=<0.10; ** =<0.05; *** =<0.01. All independent variables are winsorized at the 1st and 99th percentiles.*

Table 3.6
Evidence of conditional conservatism for firms without observable external indicators of impairment

Evaluation of whether there is evidence of conditional conservatism for firms with a book value of equity less than market value of equity.

Panel A: Sample firms without external indicator of impairment (i.e. B/M<1)				
α_0 (Constant)	α_1 (*Neg.*)	α_2 (*Ret.*)	α_3 (*Neg.* * *Ret.*)	Adjusted R^2 (%)
0.029 (9.516)***		0.014 (0.884)		0.2
0.061 (5.739)***	–0.015 (–1.159)	–0.025 (–0.995)	0.164 (5.098)***	2.9

	Positive returns sample	Negative returns sample
Adj. R^2 (%)	0.5	5.9
No. of observations	1003	696

Panel B: Sample firms without external indicator of impairment (i.e. B/M<1) and not recognising an asset impairment				
α_0 (Constant)	α_1 (*Neg.*)	α_2 (*Ret.*)	α_3 (*Neg.* * *Ret.*)	Adjusted R^2 (%)
0.029 (8.026)***		0.016 (0.935)		0.3
0.062 (5.066)***	–0.023 (–1.534)	–0.020 (–0.747)	0.134 (3.619)***	2.5

	Positive returns sample	Negative returns sample
Adjusted R^2 (%)	0.3	3.4
No. of observations	746	506

The first equation takes the form:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_2 Ret_{it} + \varepsilon_{it} \qquad (2a)$$

The full form of the equation is then considered:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_1 Neg_{it} + \alpha_2 Ret_{it} + \alpha_3 Neg_{it} * Ret_{it} + \varepsilon_{it} \qquad (2b)$$

*All variables are as previously defined in Table 3.1. p values are two tailed: *=<0.10; ** =<0.05; *** =<0.01. All independent variables are winsorized at the 1st and 99th percentiles.*

Table 3.7
Evidence of conditional conservatism for firms with observable external indicators of impairment

Evaluation of whether there is evidence of conditional conservatism for firms with a book value of equity greater than market value of equity.

Panel A: Sample firms with an external indicator of impairment (i.e. B/M>1)				
α_0 (Constant)	α_1 (*Neg.*)	α_2 (*Ret.*)	α_3 (*Neg.* * *Ret.*)	Adjusted R^2 (%)
0.024 (1.591)		0.239 (5.772)***		8.6
–0.011 (–0.386)	0.046 (1.246)	0.289 (3.652)***	–0.042 (–0.410)	8.6

	Positive returns sample	Negative returns sample
Adjusted R^2 (%)	9.5	2.1
No. of observations	272	517

Panel B: Sample firms with an external indicator of impairment (i.e. B/M>1) and not recognising an impairment				
α_0 (Constant)	α_1 (*Neg.*)	α_2 (*Ret.*)	α_3 (*Neg.* * *Ret.*)	Adjusted R^2 (%)
0.095 (6.663)***		0.165 (4.017)***		8.3
0.085 (3.835)***	–0.005 (–0.139)	0.184 (2.593)***	–0.067 (–0.826)	8.0

	Positive returns sample	Negative returns sample
Adjusted R^2 (%)	9.1	0.4
No. of observations	168	270

The first equation takes the form:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_2 Ret_{it} + \varepsilon_{it} \qquad (2a)$$

The full form of the equation is then considered:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_1 Neg_{it} + \alpha_2 Ret_{it} + \alpha_3 Neg_{it} * Ret_{it} + \varepsilon_{it} \qquad (2b)$$

*All variables are as previously defined in Table 3.1. p values are two tailed: *=<0.10; ** =<0.05; *** =<0.01. All independent variables are winsorized at the 1st and 99th percentiles.*

Table 3.8
Evidence of conditional conservatism for firms without observable external indicators of impairment split by earnings yield

Evaluation of whether there is evidence of conditional conservatism for firms with a market value of equity greater than book value of equity (i.e. B/M<1). In Panel A, consideration is given to firms with earnings yield above the median, while in Panel B consideration is given to firms with earnings yield below the median.

Panel A: Firms with above median earnings yield				
α_0 (Constant)	α_1 (*Neg.*)	α_2 (*Ret.*)	α_3 (*Neg.* * *Ret.*)	Adjusted R^2 (%)
0.092 (44.017)***		0.066 (7.256)***		23.9
0.082 (15.801)***	0.015 (2.494)***	0.078 (6.186)***	–0.041 (–2.424)	19.6

	Positive returns sample	Negative returns sample
Adjusted R^2 (%)	22.5	2.8
No. of observations	613	236

Panel B: Firms with below median earnings yield				
α_0 (Constant)	α_1 (*Neg.*)	α_2 (*Ret.*)	α_3 (*Neg.* * *Ret.*)	Adjusted R^2 (%)
–0.046 (–9.935)***		–0.089 (–3.728)***		10.2
0.003 (0.158)	–0.024 (–1.236)	–0.144 (–3.627)***	0.181 (3.806)***	13.8

	Positive returns sample	Negative returns sample
Adjusted R^2 (%)	16.3	0.2
No. of observations	389	460

The first equation takes the form:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_2 Ret_{it} + \varepsilon_{it} \qquad (2a)$$

The full form of the equation is then considered:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_1 Neg_{it} + \alpha_2 Ret_{it} + \alpha_3 Neg_{it} * Ret_{it} + \varepsilon_{it} \qquad (2b)$$

*All variables are as previously defined in Table 3.1. p values are two tailed: *=<0.10; ** =<0.05; *** =<0.01. All independent variables are winsorized at the 1st and 99th percentiles.*

Appendix 3A

Sensitivity analysis is conducted using non-winsorized data for the independent variables to examine any potential impacts of winsorizing extreme observations on the results of the multivariate regressions. Analysis of each of the tables shows the results are very similar to winsorizing the data at the 1st and 99th percentiles. This may be due to the winsorizing not affecting the extreme impairment and earnings observations, given these are included in the dependent variable and hence not winsorized.

Table 3.A.1
Evidence of conditional conservatism – Replication

Replication of the initial analysis undertaken by Basu (1997) using the full sample for this chapter – not winsorized.

α_0 (Constant)	α_1 (*Neg.*)	α_2 (*Ret.*)	α_3 (*Neg.* * *Ret.*)	Adjusted R^2 (%)
0.013 (2.640)***		0.068 (4.327)***		2.4
0.048 (4.359)***	0.001 (0.088)	0.019 (0.742)	0.199 (4.501)***	3.8

	Positive returns sample	
Adjusted R^2 (%)	0.1	3.3
No. of observations	1275	1213

The first equation takes the form:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_2 Ret_{it} + \varepsilon_{it} \qquad (2a)$$

The full form of the equation is then considered:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_1 Neg_{it} + \alpha_2 Ret_{it} + \alpha_3 Neg_{it} * Ret_{it} + \varepsilon_{it} \qquad (2b)$$

*All variables are as previously defined in Table 3.1. p-values are two tailed: *=<0.10; ** =<0.05; *** =<0.01. No variables are winsorized.*

Table 3.A.2
Evidence of conditional conservatism with asset impairments added back

Evaluation of whether there is evidence of conditional conservatism beyond that attributable to asset impairments (*Earn+Impair*) – not winsorized.

α_0 (Constant)	α_1 (*Neg.*)	α_2 (*Ret.*)	α_3 (*Neg.* * *Ret.*)	Adjusted R^2 (%)
0.049 (11.778)***		0.044 (2.483)**		1.0
0.064 (5.973)***	–0.010 (–0.746)	0.025 (0.816)	0.054 (1.508)	1.1

	Positive returns sample	Negative returns sample
Adjusted R^2 (%)	0.1	0.6
No. of observations	1275	1213

The first equation takes the form:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_2 Ret_{it} + \varepsilon_{it} \qquad (2a)$$

The full form of the equation is then considered:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_1 Neg_{it} + \alpha_2 Ret_{it} + \alpha_3 Neg_{it} * Ret_{it} + \varepsilon_{it} \qquad (2b)$$

*All variables are as previously defined in Table 3.1. p values are two tailed: *=<0.10; ** =<0.05; *** =<0.01. No variables are winsorized.*

Table 3.A.3
Evidence of conditional conservatism for firms not recognising an asset impairment

Evaluation of whether there is evidence of conditional conservatism for firms not recognising asset impairments – not winsorized.

α_0 (Constant)	α_1 (*Neg.*)	α_2 (*Ret.*)	α_3 (*Neg.* * *Ret.*)	Adjusted R^2 (%)
0.041 (9.539)***		0.034 (2.110)**		1.0
0.069 (6.032)***	–0.021 (–1.447)	0.002 (0.074)	0.095 (2.819)***	1.8

	Positive returns sample	Negative returns sample
Adjusted R^2 (%)	–0.1	0.9
No. of observations	914	776

The first equation takes the form:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_2 Ret_{it} + \varepsilon_{it} \qquad (2a)$$

The full form of the equation is then considered:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_1 Neg_{it} + \alpha_2 Ret_{it} + \alpha_3 Neg_{it} * Ret_{it} + \varepsilon_{it} \qquad (2b)$$

*All variables are as previously defined in Table 3.1. p values are two tailed: *=<0.10; ** =<0.05; *** =<0.01. No variables are winsorized.*

Table 3.A.4
Evidence of conditional conservatism for firms without observable external indicators of impairment

Evaluation of whether there is evidence of conditional conservatism for firms with a book value of equity less than market value of equity – not winsorized.

Panel A: Sample firms without external indicator of impairment (i.e. B/M<1)				
α_0 (Constant)	α_1 (*Neg.*)	α_2 (*Ret.*)	α_3 (*Neg.* * *Ret.*)	Adjusted R^2 (%)
0.029 (9.516)***		0.014 (0.884)		0.2
0.061 (5.739)***	–0.015 (–1.159)	–0.025 (–0.995)	0.164 (5.098)***	2.9

	Positive returns sample	Negative returns sample
Adjusted R^2 (%)	0.5	5.9
No. of observations	1003	696

Panel B: Sample firms without external indicator of impairment (i.e. B/M<1) and not recognising an asset impairment				
α_0 (Constant)	α_1 (*Neg.*)	α_2 (*Ret.*)	α_3 (*Neg.* * *Ret.*)	Adjusted R^2 (%)
0.029 (8.026)***		0.016 (0.935)		0.3
0.062 (5.066)***	–0.023 (–1.534)	–0.020 (–0.747)	0.134 (3.619)***	2.5

	Positive returns sample	Negative returns sample
Adjusted R^2 (%)	0.3	3.4
No. of observations	746	506

The first equation takes the form:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_2 Ret_{it} + \varepsilon_{it} \qquad (2a)$$

The full form of the equation is then considered:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_1 Neg_{it} + \alpha_2 Ret_{it} + \alpha_3 Neg_{it} * Ret_{it} + \varepsilon_{it} \qquad (2b)$$

*All variables are as previously defined in Table 3.1. p values are two tailed: *=<0.10; ** =<0.05; *** =<0.01. No variables are winsorized.*

Table 3.A.5
Evidence of conditional conservatism for firms with observable external indicators of impairment

Evaluation of whether there is evidence of conditional conservatism for firms with a book value of equity greater than market value of equity – not winsorized.

Panel A: Sample firms with an external indicator of impairment (i.e. B/M>1)				
α_0 (Constant)	α_1 (*Neg.*)	α_2 (*Ret.*)	α_3 (*Neg.* * *Ret.*)	Adjusted R^2 (%)
0.024 (1.591)		0.239 (5.772)***		8.6
–0.011 (–0.386)	0.046 (1.246)	0.289 (3.652)***	–0.042 (–0.410)	8.6

	Positive returns sample	Negative returns sample
Adjusted R^2 (%)	9.5	2.1
No. of observations	272	517

Panel B: Sample firms with an external indicator of impairment (i.e. B/M>1) and not recognising an impairment				
α_0 (Constant)	α_1 (*Neg.*)	α_2 (*Ret.*)	α_3 (*Neg.* * *Ret.*)	Adjusted R^2 (%)
0.095 (6.663)***		0.165 (4.017)***		8.3
0.085 (3.835)***	–0.005 (–0.139)	0.184 (2.593)***	–0.067 (–0.826)	8.0

	Positive returns sample	Negative returns sample
Adjusted R^2 (%)	9.1	0.4
No. of observations	168	270

The first equation takes the form:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_2 Ret_{it} + \varepsilon_{it} \qquad (2a)$$

The full form of the equation is then considered:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_1 Neg_{it} + \alpha_2 Ret_{it} + \alpha_3 Neg_{it} * Ret_{it} + \varepsilon_{it} \qquad (2b)$$

*All variables are as previously defined in Table 3.1. p values are two tailed: *=<0.10; ** =<0.05; *** =<0.01. No variables are winsorized.*

Table 3.A.6
Evidence of conditional conservatism for firms without observable external indicators of impairment split by earnings yield

Evaluation of whether there is evidence of conditional conservatism for firms with a market value of equity greater than book value of equity (i.e. B/M<1). In Panel A, consideration is given to firms with earnings yield above the median, while in Panel B consideration is given to firms with earnings yield below the median. Not winsorized.

Panel A: Firms with above median earnings yield				
α_0 (Constant)	α_1 (*Neg.*)	α_2 (*Ret.*)	α_3 (*Neg.* * *Ret.*)	Adjusted R^2 (%)
0.094 (43.709)***		0.069 (7.397)***		24.6
0.084 (15.828)***	0.015 (2.595)***	0.080 (6.304)***	–0.039 (–2.240)	25.6

	Positive returns sample	Negative returns sample
Adjusted R^2 (%)	22.5	2.8
No. of observations	613	236

Panel B: Firms with below median earnings yield				
α_0 (Constant)	α_1 (*Neg.*)	α_2 (*Ret.*)	α_3 (*Neg.* * *Ret.*)	Adjusted R^2 (%)
–0.046 (–9.935)***		–0.089 (–3.728)***		10.1
0.003 (0.158)	–0.024 (–1.236)	–0.144 (–3.627)***	0.181 (3.806)***	13.8

	Positive returns sample	Negative returns sample
Adjusted R^2 (%)	16.1	0.2
No. of observations	389	460

The first equation takes the form:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_2 Ret_{it} + \varepsilon_{it} \qquad (2a)$$

The full form of the equation is then considered:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_1 Neg_{it} + \alpha_2 Ret_{it} + \alpha_3 Neg_{it} * Ret_{it} + \varepsilon_{it} \qquad (2b)$$

*All variables are as previously defined in Table 3.1. p values are two tailed: *=<0.10; ** =<0.05; *** =<0.01. No variables are winsorized.*

Appendix 3.B

Sensitivity analysis has been conducted using a book-to-market ratio of 0.9 as the threshold for determining impairment. This value has been used as it is not an externally observable indicator of impairment, but is approaching the value where decisions about the recoverable amount of assets of the business may need to be made. The results of this analysis are contained in the following tables. The independent variables are winsorized in this Appendix at the 1st and 99th percentiles. The main tenor of the results are very similar to using a book-to-market ratio of 1 as the threshold for determining impairment.

Table 3.B.1
Evidence of conditional conservatism – Replication

Replication of the initial analysis undertaken by Basu (1997) using the full sample for this chapter using a book-to-market ratio of 0.9 as the impairment threshold – winsorized at the 1st and 99th percentiles.

α_0 (Constant)	α_1 (*Neg.*)	α_2 (*Ret.*)	α_3 (*Neg.* * *Ret.*)	Adjusted R^2 (%)
0.013 (2.640)***		0.068 (4.327)***		2.4
0.048 (4.359)***	0.001 (0.088)	0.019 (0.742)	0.199 (4.501)***	3.8

	Positive returns sample	Negative returns sample
Adjusted R^2 (%)	0.1	3.3
No. of observations	1275	1213

The first equation takes the form:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_2 Ret_{it} + \varepsilon_{it} \qquad (2a)$$

The full form of the equation is then considered:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_1 Neg_{it} + \alpha_2 Ret_{it} + \alpha_3 Neg_{it} * Ret_{it} + \varepsilon_{it} \qquad (2b)$$

*All variables are as previously defined in Table 3.1. p-values are two tailed: *=<0.10; ** =<0.05; *** =<0.01. All independent variables are winsorized at the 1st and 99th percentiles.*

Table 3.B.2
Evidence of conditional conservatism with asset impairments added back

Evaluation of whether there is evidence of conditional conservatism beyond that attributable to asset impairments (*Earn+Impair*) using a book-to-market ratio of 0.9 as the impairment threshold – winsorized at the 1st and 99th percentiles.

α_0 (Constant)	α_1 (*Neg.*)	α_2 (*Ret.*)	α_3 (*Neg.* * *Ret.*)	Adjusted R^2 (%)
0.049 (11.778)***		0.044 (2.483)***		1.0
0.064 (5.973)***	–0.010 (–0.746)	0.025 (0.816)	0.054 (1.508)	1.1

	Positive returns sample	Negative returns sample
Adjusted R^2 (%)	0.1	0.6
No. of observations	1275	1213

The first equation takes the form:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_2 Ret_{it} + \varepsilon_{it} \text{ (2a)}$$

The full form of the equation is then considered:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_1 Neg_{it} + \alpha_2 Ret_{it} + \alpha_3 Neg_{it} * Ret_{it} + \varepsilon_{it} \text{ (2b)}$$

*All variables are as previously defined in Table 3.1. p values are two tailed: *=<0.10; ** =<0.05; *** =<0.01. All independent variables are winsorized at the 1st and 99th percentiles.*

Table 3.B.3
Evidence of conditional conservatism for firms not recognising an asset impairment

Evaluation of whether there is evidence of conditional conservatism for firms not recognising asset impairments using a book-to-market ratio of 0.9 as the impairment threshold – winsorized at the 1st and 99th percentiles.

α_0 (Constant)	α_1 (*Neg.*)	α_2 (*Ret.*)	α_3 (*Neg.* * *Ret.*)	Adjusted R^2 (%)
0.041 (9.539)***		0.034 (2.110)***		1.0
0.069 (6.032)***	–0.021 (–1.447)	0.002 (0.074)	0.095 (2.819)***	1.8

	Positive returns sample	Negative returns sample
Adjusted R^2 (%)	0.0	0.9
No. of observations	914	776

The first equation takes the form:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_2 Ret_{it} + \varepsilon_{it} \qquad (2a)$$

The full form of the equation is then considered:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_1 Neg_{it} + \alpha_2 Ret_{it} + \alpha_3 Neg_{it} * Ret_{it} + \varepsilon_{it} \qquad (2b)$$

*All variables are as previously defined in Table 3.1. p values are two tailed: *=<0.10; ** =<0.05; *** =<0.01. All independent variables are winsorized at the 1st and 99th percentiles.*

Table 3.B.4
Evidence of conditional conservatism for firms without observable external indicators of impairment

Evaluation of whether there is evidence of conditional conservatism for firms with a book-to-market value lower than 0.9 – winsorized at the 1st and 99th percentiles.

Panel A: Sample firms not approaching an external indicator of impairment (i.e. B/M<0.9)				
α_0 (Constant)	α_1 (*Neg.*)	α_2 (*Ret.*)	α_3 (*Neg.* * *Ret.*)	Adjusted R^2 (%)
0.028 (9.334)***		0.022 (1.618)		0.7
0.056 (6.247)***	–0.013 (–1.109)	–0.012 (–0.586)	0.144 (4.922)***	3.1

	Positive returns sample	Negative returns sample
Adjusted R^2 (%)	0.1	5.3
No. of observations	949	647

Panel B: Sample firms not approaching an external indicator of impairment (i.e. B/M<0.9) and not recognising an asset impairment				
α_0 (Constant)	α_1 (*Neg.*)	α_2 (*Ret.*)	α_3 (*Neg.* * *Ret.*)	Adjusted R^2 (%)
0.027 (7.680)***		0.028 (2.204)**		1.5
0.054 (5.814)***	–0.016 (–1.242)	–0.002 (–0.090)	0.118 (3.597)***	3.3

	Positive returns sample	Negative returns sample
Adjusted R^2 (%)	–0.1	3.5
No. of observations	708	477

The first equation takes the form:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_2 Ret_{it} + \varepsilon_{it} \qquad (2a)$$

The full form of the equation is then considered:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_1 Neg_{it} + \alpha_2 Ret_{it} + \alpha_3 Neg_{it} * Ret_{it} + \varepsilon_{it} \quad (2b)$$

*All variables are as previously defined in Table 3.1. p values are two tailed: *=<0.10; ** =<0.05; *** =<0.01. All independent variables are winsorized at the 1st and 99th percentiles.*

Table 3.B.5
Evidence of conditional conservatism for firms approaching observable external indicators of impairment

Evaluation of whether there is evidence of conditional conservatism for firms with a book-to-market value exceeding 0.9 – winsorized at the 1st and 99th percentiles.

Panel A: Sample firms approaching an external indicator of impairment (i.e. B/M>0.9)				
α_0 (Constant)	α_1 (*Neg.*)	α_2 (*Ret.*)	α_3 (*Neg.* * *Ret.*)	Adjusted R^2 (%)
0.015 (1.033)		0.180 (3.665)***		5.5
0.021 (0.608)	0.022 (0.554)	0.161 (1.548)	0.092 (0.769)	5.5

	Positive returns sample	Negative returns sample
Adjusted R^2 (%)	3.1	2.4
No. of observations	326	566

Panel B: Sample firms approaching an external indicator of impairment (i.e. B/M>0.9) and not recognising an impairment				
α_0 (Constant)	α_1 (*Neg.*)	α_2 (*Ret.*)	α_3 (*Neg.* * *Ret.*)	Adjusted R^2 (%)
0.079 (5.588)***		0.090 (1.448)		2.4
0.108 (3.036)***	–0.030 (–0.717)	0.051 (0.433)	0.063 (0.512)	2.3

	Positive returns sample	Negative returns sample
Adjusted R^2 (%)	0.2	0.4
No. of observations	206	299

The first equation takes the form:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_2 Ret_{it} + \varepsilon_{it} \qquad (2a)$$

The full form of the equation is then considered:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_1 Neg_{it} + \alpha_2 Ret_{it} + \alpha_3 Neg_{it} * Ret_{it} + \varepsilon_{it} \qquad (2b)$$

*All variables are as previously defined in Table 3.1. p values are two tailed: *=<0.10; ** =<0.05; *** =<0.01. All independent variables are winsorized at the 1st and 99th percentiles.*

Table 3.B.6
Evidence of conditional conservatism for firms not approaching observable external indicators of impairment

Evaluation of whether there is evidence of conditional conservatism for firms with a market value of equity approaching the book value of equity (i.e. B/M<0.9). In Panel A, consideration is given to firms with earnings yield above the median, while in Panel B consideration is given to firms with earnings yield below the median – winsorized at the 1st and 99th percentiles.

Panel A: Firms with above median earnings yield				
α_0 (Constant)	α_1 (*Neg.*)	α_2 (*Ret.*)	α_3 (*Neg.* * *Ret.*)	Adjusted R^2 (%)
0.090 (40.970)***		0.068 (7.020)***		24.2
0.079 (14.401)***	0.016 (2.599)***	0.080 (6.040)***	–0.045 (2.561)**	25.4

	Positive returns sample	Negative returns sample
Adjusted R^2 (%)	23.0	3.1
No. of observations	579	219

Panel B: Firms with below median earnings yield				
α_0 (Constant)	α_1 (*Neg.*)	α_2 (*Ret.*)	α_3 (*Neg.* * *Ret.*)	Adjusted R^2 (%)
–0.043 (–9.750)***		–0.073 (–3.957)***		8.7
–0.002 (–0.198)	–0.022 (–1.290)	–0.119 (–3.960)***	0.148 (3.677)***	12.0

	Positive returns sample	Negative returns sample
Adjusted R^2 (%)	15.3	0.0
No. of observations	370	428

The first equation takes the form:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_2 Ret_{it} + \varepsilon_{it} \qquad (2a)$$

The full form of the equation is then considered:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_1 Neg_{it} + \alpha_2 Ret_{it} + \alpha_3 Neg_{it} * Ret_{it} + \varepsilon_{it} \qquad (2b)$$

*All variables are as previously defined in Table 3.1. p values are two tailed: *=<0.10; ** =<0.05; *** =<0.01. All independent variables are winsorized at the 1st and 99th percentiles.*

Appendix 3.C

Sensitivity analysis has been conducted using a book-to-market ratio of 0.9 as the threshold for determining impairment, analogous to Appendix 3.B. No variables are winsorized in this Appendix and the results in each of the tables are similar to the results in Chapter 3. In Table 3.C.6 there is a strong negative association between earnings and returns for firms with relatively low earnings yield, once again demonstrating that present earnings are not indicative of future prospects for these firms.

Table 3.C.1
Evidence of conditional conservatism – Replication

Replication of the initial analysis undertaken by Basu (1997) using the full sample for this chapter using a book-to-market ratio of 0.9 as the impairment threshold – not winsorized.

α_0 (Constant)	α_1 (*Neg.*)	α_2 (*Ret.*)	α_3 (*Neg.* * *Ret.*)	Adjusted R^2 (%)
0.013 (2.640)***		0.068 (4.327)***		2.4
0.048 (4.359)***	0.001 (0.088)	0.019 (0.742)	0.199 (4.501)***	3.8

	Positive returns sample	Negative returns sample
Adjusted R^2 (%)	0.1	3.3
No. of observations	1275	1213

The first equation takes the form:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_2 Ret_{it} + \varepsilon_{it} \qquad (2a)$$

The full form of the equation is then considered:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_1 Neg_{it} + \alpha_2 Ret_{it} + \alpha_3 Neg_{it} * Ret_{it} + \varepsilon_{it} \qquad (2b)$$

*All variables are as previously defined in Table 3.1. p-values are two tailed: *=<0.10; ** =<0.05; *** =<0.01. No variables are winsorized.*

Table 3.C.2
Evidence of conditional conservatism with asset impairments added back

Evaluation of whether there is evidence of conditional conservatism beyond that attributable to asset impairments (*Earn+Impair*) using a book-to-market ratio of 0.9 as the impairment threshold – not winsorized.

α_0 (Constant)	α_1 (*Neg.*)	α_2 (*Ret.*)	α_3 (*Neg.* * *Ret.*)	Adjusted R^2 (%)
0.049 (11.778)***		0.044 (2.483)***		1.0
0.064 (5.973)***	–0.010 (–0.746)	0.025 (0.816)	0.054 (1.508)	1.1

	Positive returns sample	Negative returns sample
Adjusted R^2 (%)	0.1	0.6
No. of observations	1275	1213

The first equation takes the form:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_2 Ret_{it} + \varepsilon_{it} \qquad (2a)$$

The full form of the equation is then considered:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_1 Neg_{it} + \alpha_2 Ret_{it} + \alpha_3 Neg_{it} * Ret_{it} + \varepsilon_{it} \qquad (2b)$$

*All variables are as previously defined in Table 3.1. p values are two tailed: *=<0.10; ** =<0.05; *** =<0.01. No variables are winsorized.*

Table 3.C.3
Evidence of conditional conservatism for firms not recognising an asset impairment

Evaluation of whether there is evidence of conditional conservatism for firms not recognising asset impairments using a book-to-market ratio of 0.9 as the impairment threshold – not winsorized.

α_0 (Constant)	α_1 (*Neg.*)	α_2 (*Ret.*)	α_3 (*Neg.* * *Ret.*)	Adjusted R^2 (%)
0.041 (9.539)***		0.034 (2.110)**		1.0
0.069 (6.032)***	–0.021 (–1.447)	0.002 (0.074)	0.095 (2.819)***	1.8

	Positive returns sample	Negative returns sample
Adjusted R^2 (%)	–0.1	0.9
No. of observations	914	776

The first equation takes the form:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_2 Ret_{it} + \varepsilon_{it} \qquad (2a)$$

The full form of the equation is then considered:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_1 Neg_{it} + \alpha_2 Ret_{it} + \alpha_3 Neg_{it} * Ret_{it} + \varepsilon_{it} \qquad (2b)$$

*All variables are as previously defined in Table 3.1. p values are two tailed: *=<0.10; ** =<0.05; *** =<0.01. No variables are winsorized.*

Table 3.C.4
Evidence of conditional conservatism for firms without observable external indicators of impairment

Evaluation of whether there is evidence of conditional conservatism for firms with a book-to-market value lower than 0.9 – not winsorized.

Panel A: Sample firms not approaching an external indicator of impairment (i.e. B/M<0.9)				
α_0 (Constant)	α_1 (*Neg.*)	α_2 (*Ret.*)	α_3 (*Neg.* * *Ret.*)	Adjusted R^2 (%)
0.028 (9.334)***		0.022 (1.618)		0.7
0.056 6.247)***	–0.013 (–1.109)	–0.012 (–0.586)	0.144 (4.922)***	3.1

	Positive returns sample	Negative returns sample
Adjusted R^2 (%)	0.1	5.4
No. of observations	949	647

Panel B: Sample firms not approaching an external indicator of impairment (i.e. B/M<0.9) and not recognising an asset impairment				
α_0 (Constant)	α_1 (*Neg.*)	α_2 (*Ret.*)	α_3 (*Neg.* * *Ret.*)	Adjusted R^2 (%)
0.027 (7.680)***		0.028 (2.204)***		1.5
0.054 (5.816)***	–0.016 (–1.242)	–0.002 (–0.090)	0.118 (3.597)***	3.3

	Positive returns sample	Negative returns sample
Adjusted R^2 (%)	0.0	3.5
No. of observations	708	477

The first equation takes the form:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_2 Ret_{it} + \varepsilon_{it} \qquad (2a)$$

The full form of the equation is then considered)

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_1 Neg_{it} + \alpha_2 Ret_{it} + \alpha_3 Neg_{it} * Ret_{it} + \varepsilon_{it} \qquad (2b)$$

*All variables are as previously defined in Table 3.1. p values are two tailed: *=<0.10; ** =<0.05; *** =<0.01. No variables are winsorized.*

Table 3.C.5
Evidence of conditional conservatism for firms approaching observable external indicators of impairment

Evaluation of whether there is evidence of conditional conservatism for firms with a book-to-market value exceeding 0.9 – not winsorized.

Panel A: Sample firms approaching an external indicator of impairment (i.e. B/M>0.9)				
α_0 (Constant)	α_1 (*Neg.*)	α_2 (*Ret.*)	α_3 (*Neg.* * *Ret.*)	Adjusted R^2 (%)
0.015 (1.033)		–0.180 (3.665)***		5.5
0.021 (0.608)	0.022 (0.554)	0.161 (1.548)	0.092 (0.769)	5.5

	Positive returns sample	Negative returns sample
Adjusted R^2 (%)	3.1	2.4
No. of observations	326	566

Panel B: Sample firms approaching an external indicator of impairment (i.e. B/M>0.9) and not recognising an impairment				
α_0 (Constant)	α_1 (*Neg.*)	α_2 (*Ret.*)	α_3 (*Neg.* * *Ret.*)	Adjusted R^2 (%)
0.079 (5.588)***		0.090 (1.448)		2.4
0.108 (3.036)***	–0.030 (–0.717)	0.051 (0.433)	0.063 (0.512)	2.3

	Positive returns sample	Negative returns sample
Adjusted R^2 (%)	0.6	0.4
No. of observations	206	299

The first equation takes the form:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_2 Ret_{it} + \varepsilon_{it} \qquad (2a)$$

The full form of the equation is then considered:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_1 Neg_{it} + \alpha_2 Ret_{it} + \alpha_3 Neg_{it} * Ret_{it} + \varepsilon_{it} \qquad (2b)$$

*All variables are as previously defined in Table 3.1. p values are two tailed: *=<0.10; ** =<0.05; *** =<0.01. No variables are winsorized.*

Table 3.C.6
Evidence of conditional conservatism for firms not approaching observable external indicators of impairment

Evaluation of whether there is evidence of conditional conservatism for firms with a market value of equity approaching the book value of equity (i.e. B/M<0.9). In Panel A, consideration is given to firms with earnings yield above the median, while in Panel B consideration is given to firms with earnings yield below the median – not winsorized.

Panel A: Firms with above median earnings yield				
α_0 (Constant)	α_1 (*Neg.*)	α_2 (*Ret.*)	α_3 (*Neg.* * *Ret.*)	Adjusted R^2 (%)
0.090 (40.970)***		0.068 (7.020)***		24.2
0.079 (14.401)***	0.016 (2.599)**	0.080 (6.040)***	–0.045 (–2.561)**	25.7
		Positive returns sample	Negative returns sample	
Adjusted R^2 (%)		23.0	3.1	
No. of observations		579	219	
Panel B: Firms with below median earnings yield				
α_0 (Constant)	α_1 (*Neg.*)	α_2 (*Ret.*)	α_3 (*Neg.* * *Ret.*)	Adjusted R^2 (%)
–0.043 (–9.750)***		–0.073 (–3.957)***		8.7
–0.002 (–0.198)	–0.022 (–1.290)	–0.119 (–3.960)***	0.148 (3.677)***	12.0
		Positive returns sample	Negative returns sample	
Adjusted R^2 (%)		15.3	0.0	
No. of observations		370	428	

The first equation takes the form:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_2 Ret_{it} + \varepsilon_{it} \qquad (2a)$$

The full form of the equation is then considered:

$$\frac{Earn_{it}}{Price_{it-1}} = \alpha_0 + \alpha_1 Neg_{it} + \alpha_2 Ret_{it} + \alpha_3 Neg_{it} * Ret_{it} + \varepsilon_{it} \qquad (2b)$$

*All variables are as previously defined in Table 3.1. p values are two tailed: *=<0.10; ** =<0.05; *** =<0.01. No variables are winsorized.*

Chapter 4

The relevance of asset impairment for evaluating firm performance

4.1 Introduction

The objective of this chapter is to evaluate the relevance of asset impairments in evaluating firm performance and considering the potential implications this may have for how they are presented in the Statement of Profit or Loss.[15] This is of concern given the attention that has been focused on the recognition of asset impairments in the Statement of Profit or Loss by both standard setters such as the Australian Accounting Standards Board (AASB) and the International Accounting Standards Board (IASB), and regulators including the Australian Securities and Investments Commission (ASIC).[16] Additionally, emphasis is often given to non-GAAP earnings as a measure of firm performance, with recognized asset impairments being the largest and most persistent exclusion in the determination of these adjusted earnings.[17] There is also anecdotal evidence of management compensation contracts using non-GAAP earnings (or non-*IFRS* earnings)[18], as well as empirical evidence of management compensation being shielded from the impacts of 'unusual items' (e.g. asset impairments) on performance measures (Dechow, Huson & Sloan 1994). Hence, this chapter addresses whether there is evidence of recognized asset impairments being relevant for the evaluation of firm performance. An issue in examining this is that there are concerns that asset impairments are not being

[15] Currently under *AASB 101 Presentation of Financial Statements*, asset impairments are required to be included in the Statement of Profit and Loss.
[16] https://www.ifrs.org/projects/2019/principles-of-disclosure/
[17] Qantas Financial Report 2019 - https://investor.qantas.com/investors/?page=annual-reports
[18] Qantas Financial Report 2019 - https://investor.qantas.com/investors/?page=annual-reports

recognized on a timely basis (e.g., Bond, Govendir & Wells 2016; Collins & Henning 2004; Francis, Hanna & Vincent 1996; Jarva 2009; Ji 2013).

The motivation for this chapter is to provide empirical evidence on whether recognized asset impairments are relevant for the evaluation of firm performance. The issue of where asset impairments should be presented in financial reports has been raised in the 'Disclosure Initiative'[19] and there have been suggestions asset impairments be recognized as part of 'Other Comprehensive Income' rather than in the 'Statement of Profit or Loss'. Supporting this alternative presentation of how recognized asset impairments are presented in financial statements is found in papers such as Ribeiro, Shan & Taylor (2019) who find that non-GAAP earnings (which typically exclude asset impairments) are 'more persistent, smoother, more value relevant and have higher predictive power' than GAAP or IFRS earnings. If valuation is emphasized as the function of financial reporting, this suggests presenting asset impairments under Other Comprehensive Income rather than under the Statement of Profit and Loss. However, stewardship is also a function of financial reporting; if there is evidence of asset impairments being relevant for assessing firm performance this would support the status quo. Hence, motivation for this chapter is to provide evidence in support of whether to include asset impairments in the Statement of Profit or Loss or in Other Comprehensive Income.

A further motivation is to provide empirical evidence of the relevance of asset impairments for evaluating firm performance to standard setters such as the IASB and AASB who are concerned with their recognition. There is a significant literature suggesting asset impairments are not being recognized on a timely basis (e.g., Collins & Henning 2004; Francis, Hanna & Vincent 1996; Jarva 2009; Ji 2013);

[19] https://www.ifrs.org/projects/2019/principles-of-disclosure/

consistent with this, there is evidence of firms exhibiting externally observable indicators suggesting impairment is required, but not recognizing asset impairments (Bond, Govendir & Wells 2016). This suggests the need for more prescriptive regulation for impairment testing. The IASB, in its project addressing *Business Combinations under Common Control*[20]*,* is considering changing the requirement for impairment of goodwill and identifiable intangible assets with an infinite life from an annual basis to an 'indicator basis'. This would likely exacerbate problems with the timeliness of recognizing asset impairments. Hence, a motivation for this paper is to provide empirical evidence of the relevance of recognizing asset impairments.

For a sample of 2,488 firm-years over the period 2007 to 2016, the relevance of earnings including and excluding asset impairments is evaluated by considering the relative explanatory power of models based on these alternate performance measures. There is consistent evidence that earnings including asset impairments has a higher explanatory power in capturing firm performance. This applies equally across the full sample of firms, a sub-sample of firms with a book-value of equity greater than the market-value of equity where asset impairments might be expected, and a sub-sample of firms where asset impairments are recognized. This is also the case where earnings and returns are considered over one- and three-year periods. The three-year period is addressing the likelihood that asset impairments are not recognized on a timely basis.

Consistent results are obtained for the relevance of recognizing asset impairments when consideration is given to earnings excluding asset impairments, and asset impairments separately. There is evidence of asset impairments being associated with stock returns for the full sample of firms, a sub-sample of firms with a book-value of equity greater than the market-value of equity where impairments might be expected, and

[20] https://www.ifrs.org/projects/work-plan/business-combinations-under-common-control/

a sub-sample of firms where asset impairments are recognized. This is also the case over one- and three-year periods.

These results make several contributions to the literature. First, earnings including asset impairments have more explanatory power for stock returns than earnings excluding asset impairments. Additionally, asset impairments separately are associated with stock returns. This suggests that asset impairments are relevant to financial report users, including shareholders who are concerned with evaluating firm performance and stewardship (Francis, Hanna & Vincent 1996; Kuhner & Pelger 2015; Murphy 2001). Accordingly, the recognition of asset impairments in the Statement of Profit or Loss, rather than in Other Comprehensive Income, may be appropriate and this is relevant to the current deliberations of the IASB as part of its 'Disclosure Initiative' (International Accounting Standards Board 2017).

Second, consistent with the literature (Bond, Govendir & Wells 2016; Filip, Lobo & Paugam 2020; Francis, Hanna & Vincent 1996; Li & Sloan 2017; Strong & Meyer 1987), evidence is provided of asset impairments not being recognized on a timely basis. It is notable that the majority of firms in the sample with at least one indicator of impairment (book-value of equity exceeding market-value of equity) do not recognize an asset impairment. Further, this persisted for two or more years for the majority of these firms. This problem is attenuated when the relevance of asset impairments is evaluated over a three-year period, and differences in the relevance of earnings including and excluding asset impairments is greatest (Tables 4.3, 4.4 and 4.5). This suggests that caution should be exercised in any relaxation of the requirements for impairment testing which are being considered as part of the *Business Combinations under Common Control* project (International Accounting Standards Board 2020).

Finally, while not specifically considering the use of non-IFRS earnings in management performance evaluation, there are concerns if recognizing asset impairments are considered representative of the adjustments made to earnings. There is evidence that recognizing asset impairments is relevant to the evaluation of firm performance, suggesting the inclusion of asset impairments in earnings in the evaluation of management performance. There may be valid claims that asset impairments are not attributable to current management, but this would suggest exclusion on a situation specific basis rather than exclusion generally.

The remainder of this chapter is arranged as follows: Section 4.2 reviews the literature and develops the hypotheses. Section 4.3 outlines the research design, Section 4.4 describes the sample and Section 5 presents the results of the tests. Section 4.6 concludes.

4.2 Prior research and hypotheses

It has long been recognized that the function of financial reporting is to provide information that is useful for decision-making; this is reflected in the *Conceptual Framework for Financial Reporting* issued by the IASB in 2018 (International Accounting Standards Board 2018). Further, there is a substantial literature considering whether financial reporting information, and in particular earnings, is relevant for decision-making. Much of this literature can be traced back to Ball & Brown (1968) and Beaver (1968), and they are perhaps the most cited papers across accounting literature. Subsequent researchers have considered whether it is the level of earnings as well as the change in earnings that are more relevant for decision-making (e.g., Easton & Harris 1991), and whether the relevance of financial report information, including earnings, is changing over time (Collins, Maydew & Weiss 1997). Attention has also been directed

at whether the relevance of earnings is impacted by the timing of earnings announcements , and whether the relevance of earnings increases over longer time periods (e.g., Easton, Harris & Ohlson 1992). The latter identifies issues with timeliness in regard to earnings recognition, and these are of particular concern if attention is being focused on asset impairments.

A feature of this literature is that it relies on stock prices as an indicator or measure of relevance, and this has implicitly emphasized the valuation role of information in financial reports for equity investors. This, in combination with the influence of capital market participants on the standard setting process, likely contributed to the emphasis placed on providing information relevant to valuation by investors in the 2010 version of the *Conceptual Framework* (International Accounting Standards Board 2010).

Further evidence of an emphasis on the valuation role of earnings (or variations of earnings) for equity investors is apparent in the development of 'street earnings' (Bradshaw & Sloan 2002), an emphasis on non-IFRS earnings in firm announcements (Qantas 2019), and proposals for their inclusion in financial reports. Supporting an increased prominence for non-IFRS earnings (Ribeiro, Shan & Taylor 2019) found that non-GAAP earnings are 'more persistent, smoother, more value relevant and have higher predictive power' than GAAP earnings. A potentially significant contribution of my research to the standard setting process is that it might identify a theoretical basis for identifying items more appropriately disclosed as part of 'Other Comprehensive Income' rather than in the 'Statement of Profit or Loss'. This would also be relevant to discussions about the presentation of recognized asset impairments which are the material item most persistently excluded in determining non-IFRS earnings. This is also the subject of discussion by standard setters (International Accounting Standards Board 2017).

However, evaluation of earnings on this basis is conditional on acceptance of a valuation role by equity investors as the function of financial reporting. This is problematic as stewardship has also historically been recognized as a function of financial reporting (Jensen & Meckling 1976; Kuhner & Pelger 2015), and it is again included as a function of financial reporting in the *Conceptual Framework for Financial Reporting* (Chapter 2) issued by the IASB in 2018 (International Accounting Standards Board 2018). Stewardship as a function of financial reporting dictates that information be provided about the discharge of responsibilities; this includes providing information relevant for the evaluation of management performance. These different functions of financial reporting create potentially competing demands on information contained within financial reports.

Whether earnings are appropriate or relevant for determining management performance has been considered in the literature, albeit to a lesser extent than for determining valuation. There is evidence that poor performance is a catalyst for CEO turnover (e.g., Coughlan & Schmidt 1985) and that earnings is considered relevant as a measure of performance for this purpose (e.g., Weisbach 1988). This use of earnings to capture management performance was reinforced in studies that considered the use and management of earnings in control contests (e.g., DeAngelo 1988), and in periods surrounding CEO turnover (e.g., Murphy & Zimmerman 1993; Wells 2002). This is further supported by the use of earnings in management compensation contracts as a performance benchmark (e.g., Murphy 2001). However, there may be concerns that the design of management compensation contracts, and in particular the use of earnings as a performance benchmark, may contribute to agency problems (e.g., Bebchuk & Fried 2003). Critically, this would undermine the relevance of earnings in evaluating

management performance. In the current circumstance, it would create incentives for not recognizing asset impairments (on a timely basis).

There is also evidence of adjustments being made to earnings in management compensation contracts, suggesting that alternative measures may be more relevant than earnings for the evaluation of management performance. One such adjustment that represents a significant and systematic adjustment of earnings is the use of before-tax earnings in management compensation contracts (Newman 1989). This is surprising as an after tax earnings benchmark would align management and shareholder interests on the critical issue of corporate tax avoidance (Crocker & Slemrod 2005). Consistent with this there is evidence of increased tax aggressiveness by firms adopting after tax earnings benchmarks (Gaertner 2014; Powers, Robinson & Stomberg 2016). Notwithstanding the above, the use of before-tax earnings persists. Similarly, there is evidence of management compensation being sheltered from the impacts of restructuring charges (Dechow, Huson & Sloan 1994).

There is anecdotal evidence of non-IFRS earnings being referenced in management compensation contracts. For example, in the *Remuneration Report* included in its 2019 *Financial Report*, Qantas Airways Ltd identified 'Group Profitability' being evaluated with 'Underlying Profit Before Tax' (Qantas 2019). Implicit in the selection of this measure is that it is more relevant than earnings for evaluating management performance. This has not been empirically addressed, and there would be numerous challenges in attempting to do so. First, there are issues with only some firms reporting non-IFRS earnings numbers (i.e. endogeneity). Second, there is inconsistency in the determination of non-IFRS earnings and this is necessary for a meaningful evaluation (i.e. ensuring a 'fair horse race').

Asset impairments are the material item most persistently excluded in determining non-GAAP earnings (Ribeiro, Shan & Taylor 2019), and adjustment of earnings for asset impairments would provide insights into whether non-IFRS earnings are likely to be more relevant for evaluating management performance. Adjusting earnings for asset impairments would allow the determination of an alternative earnings number for all firms and ensure that they are determined on a consistent basis. This is consistent with current discussions by the AASB and IASB concerning the presentation of asset impairments in the Statement of Profit or Loss or in Other Comprehensive Income (International Accounting Standards Board 2017). It also recognizes the regulatory constraint and that consistency in application across firms is necessary.

Accordingly, the following hypothesis is evaluated to determine whether adjustment of earnings for asset impairments provides a relevant measure of firm performance:

H_1: *Earnings excluding the impairment of assets (adding back impairment) are more relevant for evaluating firm performance than GAAP earnings.*

Evaluating asset impairments is not without its difficulties. Problematically, there is evidence that they are not recognized on a timely basis (e.g., Collins & Henning 2004; Francis, Hanna & Vincent 1996; Jarva 2009; Ji 2013) and evidence of opportunism in when asset impairments are recognized (Bond, Govendir & Wells 2016; Cotter, Stokes & Wyatt 1998; Filip, Lobo & Paugam 2020; Kabir & Rahman 2016). Consequently, over short windows (annual) there may be limited differences in the relevance of earnings – including or excluding asset impairments – for evaluating firm performance (i.e. they may both be equally poor in evaluating firm performance). This suggests testing this

hypothesis over one-year and three-years to reduce the sensitivity of the tests to management decisions on the timing of recognition of asset impairments.

4.3 Research design

Evaluation of the relevance of earnings for assessing firm performance requires an appropriate benchmark. Firm performance is reflected in stock price changes and is of concern to investors and so this suggests evaluation of the association between earnings including and excluding asset impairments and historic stock returns. Accordingly, the basic model used to estimate the relevance of earnings follows that used in Easton, Harris & Ohlson (1992) which takes the following form:

$$Ret_{it} = \alpha_0 + \alpha_1 Earn_{it} + \varepsilon_{it} \qquad (3a)$$

This is also considered by adding back the value of impairments previously subtracted under GAAP earnings in the following form"

$$Ret_{it} = \alpha_0 + \alpha_{1(} Earn + Impair_{it}) + \varepsilon_{it} \qquad (3b)$$

Where *Ret* is the '1' year buy-hold-return for firm *i* in year *t*. The variable *Earn* is in the first instance measured as reported operating profit after tax for firm *i* in year *t* (i.e. GAAP earnings) and is scaled by beginning of period stock price. This is then adjusted to exclude the impact of the impairment of assets by adding back asset impairments *(Earn + Impair)*. Accordingly, hereafter earnings including asset impairments is referred to as *Earn* and earnings excluding asset impairment as (*Earn+(Impair))* since excluding impairment results in a higher value of earnings. The explanatory power of the two models is then considered to determine which measure is more relevant in capturing firm performance.

Recognizing that asset impairments may not be recognized on a timely basis (Bond, Govendir & Wells 2016), consideration is also given to accounting variables and stock returns aggregated over three-year periods. This follows a process similar to that in Easton, Harris & Ohlson (1992) who considered the association between stock returns and earnings over longer windows and hence the focus on returns as the independent variable .

Finally, to address the issue of the statistical significance of recognizing asset impairments in explaining stock returns, a model is estimated which disaggregates the components of earnings relevant to H_1. This takes the following form:

$$Ret_{it} = \beta_0 + \beta_1(Earn + (Impair_{it})) + \beta_2(-Impair_{it}) + \varepsilon_{it} \qquad (4)$$

Where Earns = Earnings per share, deflated by the share price at the start of the period. The earnings value of this variable has asset impairment subtracted from earnings. Impair = Impairment per share, deflated by the share price at the start of the period. Ret_{it} *= Buy-hold-return for period t beginning 3-months after year end.*

Where *Impair* is the asset impairment per share, scaled by beginning of period stock price for firm *i* in period *t*. Again, there are issues with timeliness in recognizing asset impairment and this is estimated over one-year and three-year windows.

4.4 Sample selection and data description

4.4.1 Sample selection

The sample in this chapter is based on ASX200 firms from the period 2007 and 2016. During this period asset impairments were determined in accordance with *AASB 136* and the commencement date of the study is chosen to avoid issues of inconsistency which may have arisen in initial application of this regulation on transition to *IFRS.* This ensures consistency in the determination of asset impairments. Financial data is obtained in the first instance from the Morningstar DatAnalysis database. This is supplemented with hand collection of impairment and other data as required from financial reports. There is extensive hand collection of impairment data as these are often not disclosed separately in the database but aggregated and included under the label 'Abnormal Items'. Stock returns are obtained from the SIRCA database.

As the concern is with adjustments to earnings for impairment of assets, attention is focused on firms with assets generally measured at historic cost. Accordingly, firms in the financial services (*AASB 9 Financial Instruments*), agricultural (*AASB 141 Agriculture*) and property investment (*AASB 140 Investment Property*) sectors are excluded from the sample due to fair value measurement and asset impairment being less relevant. The mining sector (*AASB 6 Exploration for and evaluation of natural resources*) is also excluded from the sample due to limitations in the application of *AASB 136*. After removing firm-years where data is not available or are excluded, this results in a final sample of 2,488 firm-years.

To address concerns about the influence of extreme observations *Impair* and *Earn* are winsorized at the 1% and 99% levels. Additional testing is presented in the appendices to examine the differences in the results from not winsorizing the data.

4.4.2 Descriptive statistics

Descriptive statistics for the full sample of firms are presented in Table 4.2b (Panel A). The mean (median) value of *Earn* is 0.021 (0.060) and there is material variation with minimum and maximum values of –0.549 and 0.569 respectively. The mean (median) asset impairment (*Impair)* recognized is 0.035 (0.000), indicating that while the majority of firms do not recognize asset impairments (median = 0.000), there is evidence of some firms recognizing relatively small asset impairments (p75=0.003) and material asset impairments (max=2.499). This pattern of asset impairments is consistent with prior literature (Bond, Govendir & Wells 2016). When earnings excluding asset impairments are considered *(Earn+(Impair)),* the mean (median) is 0.052 (0.067); this is consistent with only some firms recognizing material asset impairments. A consequence of limited observations with material asset impairments is that tests based on the full sample of firms may suffer from a lack of power. Of the sample firms, 52.0% have negative stock returns and the mean (median) *Ret* is 0.113 (0.00). There is considerable skewness in the variables.

Of the full sample of firms, 789 (31.8%) are exhibiting an externally observable indicator of impairment with descriptive statistics for these firms presented in Table 4.2 (Panel B). These are firms where impairment testing is likely necessary, and an asset impairment might be expected. While this includes firms not recognizing asset impairments, in the evaluation of the relevance of asset impairments it also captures firms that determined an asset impairment to be unnecessary (i.e. zero not missing). Features of this sub-sample are that the mean of *Earn* is –0.004 which suggests poorer performance. However, this is largely attributable to material asset impairments with the mean of *Impair* being 0.078 and the mean of *(Earn+(Impair))* being 0.076. This is higher than the mean of *(Earn+(Impair))* for the full sample (Panel A) and is reflective of a

material number of firms with the market-value of equity being greater than the book-value of equity (excluded in this partition) having low or negative earnings.[21] For these firms, 80.0% have a book-value of equity greater than market-value of equity for two or more years, but only 44.5% of these firms recognize an asset impairment. These are indicative of the factors requiring asset impairment not being transitory and suggests asset impairments are not being recognized on a timely basis. This is problematic for evaluating the association between annual earnings and returns, but may be alleviated by evaluating over longer periods.

Finally, of the sample firms 798 (32.1%) are recognizing asset impairments and descriptive statistics for these firms are presented in Table 4.2 (Panel C). Unsurprisingly, the mean value of asset impairments (*Impair)* in this sub-sample is greatest at 0.111. However, the mean value of returns is positive (0.010); this is consistent with a material number of firms reporting positive earnings (median =0.048) and recognizing immaterial asset impairments. This identifies a challenge in evaluating the relevance of asset impairments for this sample of firms.

4.5 Results

Main results

Attention is first focused on the evaluation of the association between earnings, and earnings excluding asset impairments, and stock returns to determine the relevance (measured by adjusted R^2) of alternative measures of performance. This is undertaken using Models (3a) and (3b).

[21] These observations are problematic for the evaluation of earnings returns relations as current period earnings are likely not considered indicative of expected future earnings.

The relevance of recognizing asset impairments is first considered for the full sample, with the results presented in Table 4.3. Over a one-year period, the coefficient on earnings including asset impairments (*Earn)* is positive and significant (α_1=0.581, *t*-stat.=5.693) and the explanatory power of the model is 15.9%. In comparison, for earnings excluding asset impairments ((*Earn + (Impair*) the coefficient is positive and significant (α_1=0.612, *t*-stat.=4.534) and the explanatory power of the model is sound but slightly lower at 14.8%. Critically, when results are estimated over three-years, the coefficient on earnings including asset impairments (*Earn)* is positive and significant (α_1=0.975, *t*-stat.=7.888) and the explanatory power of the model is 9.3%. In comparison, the coefficient on earnings excluding impairments ((*Earn+(Impair*) is positive and significant (α_1=0.776, *t*-stat.=5.029) but the explanatory power of the model is lower again at 6.0%. The differences in the explanatory power of the models are stronger at three-years rather than one-year, consistent with concerns about the timeliness of recognizing asset impairments. The implications of models using *Earn* having a greater explanatory power is that this variable reflects, to a greater extent, firm performance.

These results provide several insights. First, there is no evidence supporting H_1 of earnings excluding impairments being a measure with higher explanatory power in capturing firm performance than earnings including impairments, thus demonstrating that earnings including impairment are stronger in assessing firm performance than earnings excluding impairment. This result is perhaps unsurprising as asset impairments represent a diminution of asset values; perhaps the only issue in determining whether this should be considered in assessing current firm performance is whether this is attributable to decisions of current or previous management. Previous management may have made poor acquisitions or delayed the decision to recognize asset impairments because of the impact on earnings under their tenure. This would be less problematic if asset

impairments are recognized on a timely basis. Second, this result is stronger over three-years. This result should also be expected given concerns with the timeliness of recognition of asset impairments. The lower explanatory power of the model over three-years is unexpected; and this is provides an opportunity for further study, however, evaluation of this result is beyond the scope of this chapter. [22]

Attention is then focused on firms where the book-value of equity exceeds the market-value of equity. These firms have an externally observable indicator of impairment and are more likely to recognize an asset impairment, with the result that differences between the earnings measures are likely to be more pronounced. The results are presented in Table 4.4. Over a one-year period, the coefficient on earnings including asset impairment (*Earn*) is positive and significant (α_1=0.563, *t*-stat.=6.863) and the explanatory power of the model is 20.1%. In comparison, for earnings excluding asset impairment *(Earn+(Impair))* the coefficient is positive and significant (α_1=0.771, *t*-stat.=4.911), and the explanatory power of the model is slightly less at 19.1%. When the results are estimated over a three-year period the coefficient on earnings including asset impairments (*Earn*) is positive and significant (α_1=0.578, *t*-stat.=7.467) and the explanatory power of the model is slightly higher at 20.5%. In comparison, for earnings excluding asset impairments *((Earn+(Impair)* the coefficient is positive and significant (α_1=0.629, *t*-stat.=5.366), and the explanatory power of the model is lower at 16.9%.

These results reinforce the findings above and provide some additional insights. First, there is again no evidence in support of H_1 that earnings excluding impairments are more strongly associated with management performance than earnings including impairments. Second, issues with the timeliness in the recognition of asset impairments

[22] Tests of comparing R^2 show that model 4 is a better fit than model 3b.

are highlighted by the relative strength of results over one- and three-years. Third, the increase in the explanatory power of the model highlights challenges in evaluating earnings returns relations for firms with a book-value of equity less than the market-value of equity (excluded in this sub-sample). The firms with a book-value less than the market-value of equity include a number with low or negative earnings which are not representative of expected future earnings; this makes evaluating earnings returns relations problematic.

Finally, attention is focused on firms recognizing asset impairments with the results presented in Table 4.5. These are firms where the differences between earnings including and excluding asset impairments are maximized; this provides potentially the most powerful test of the hypothesis. However, the exclusion of firms not recognizing asset impairments is problematic if these firms are not required to recognize asset impairments (i.e. zero not missing). Over a one-year period, the coefficient on earnings including asset impairment (*Earn*) is positive and significant (α_1=0.587, *t*-stat.=5.394) and the explanatory power of the model is 19.2%. In comparison, for earnings excluding asset impairment *(Earn+(Impair))* the coefficient is positive and significant (α_1=0.605, *t*-stat=2.943), and the explanatory power of the model is only 15.5%. When the results are estimated over a three-year period, the coefficient on earnings including asset impairments (*Earn*) is positive and significant (α_1=0.770, *t*-stat.=9.180) and the explanatory power of the model is 11.0%. In contrast, for earnings excluding asset impairments *(Earn+(Impair))* the coefficient is positive and significant (α_1=0.565, *t*-stat.=4.298), but the explanatory power of the model is only 4.4%, demonstrating that earnings including asset impairments (*Earn)* has a stronger association in modelling and better reflects the performance of firms in the sample than earnings excluding asset impairments *(Earn+(Impair))*.

As before, these results support the earlier findings and provide some useful insights. First, there is again no evidence in support of H_1 and earnings excluding impairments having a stronger association with management performance than earnings including impairments. Second, due to the evaluation being focused on firms recognizing asset impairments, and differences between earnings and earnings excluding asset impairments being pronounced, the differences in the relevance are greatest over the three- year period.

Attention is then shifted to the evaluation of whether there is a significant association between asset impairments and stock returns. This identifies whether the difference in explanatory power of earnings (including and excluding asset impairments) is attributable to the recognition or inclusion of asset impairments. This is tested using Model (4).

This is first estimated for the full sample with the results presented in Table 4.6. Over a one-year period, the coefficient on earnings excluding asset impairment *(Earn+(Impair))* is positive and significant (β_1=0.648, *t*-stat.=4.864) and the coefficient on *Impair,* which is positively signed, is negative and significant (β_1=–0.916, *t*-stat.=–10.131). Over a three-year period, the coefficient on earnings excluding asset impairment *(Earn+(Impair))* is positive and significant (β_1=0.810, *t*-stat.=5.279) and the coefficient on *Impair* is, as expected, negative and significant (β_1=–0.413, *t*-stat.=–6.384).

These results suggest that asset impairments are associated with stock returns and as such there is no support for H_1. These results are consistent with asset impairments capturing a diminution in asset values which is relevant for assessing firm performance.

The model is then tested for firms where the book-value of equity exceeds the market-value of equity, with the results presented in Table 4.7. The results are similar.

Over a one-year period, the coefficient on earnings excluding asset impairment *(Earn+(Impair))* is positive and significant (β_1=0.786, *t*-stat.=5.111) and the coefficient on *Impair* is negative and significant (β_1=–0.594, *t*-stat.=–5.990). Over a three-year period, the coefficient on earnings excluding asset impairment *(Earn+(Impair))* is positive and significant (β_1=0.653, *t*-stat.=5.569) and the coefficient on *Impair* is as expected negative and significant (β_1=–0.388, *t*-stat.=–6.237).

These results reinforce those above and identify asset impairments as being associated with stock returns. As such there is again no support for H_1; these results are consistent with asset impairments capturing a diminution in asset values which is relevant for assessing firm performance. It is interesting that the explanatory power of the models in Table 4.7 is considerably greater than in Table 4.6; this again identifies issues with evaluating earnings returns relations for firms with a market-value of equity greater than book-value of equity where there is considerable divergence in earnings.

Finally, attention is focused on only those firms recognizing asset impairments; the results presented in Table 4.8. The results are again similar, and over one-year the coefficient on earnings excluding asset impairment *(Earn+(Impair))* is positive and significant (β_1=0.663, *t*-stat.=3.323) and the coefficient on *Impair* is negative and significant (β_1=–0.777, *t*-stat.=–7.822). Over a three-year period, the coefficient on earnings excluding asset impairment (*Earn+(Impair))* is positive and significant (β_1=0.567, *t*-stat.=4.417) and the coefficient on *Impair* is as expected negative and significant (β_1=–0.389, *t*-stat.=–1.693).

Unsurprisingly, these results are consistent with those reported above and there is still no support for H_1 and there is evidence of asset impairments capturing a diminution in asset values which is relevant for assessing firm performance.

4.5.2 Additional analysis

In Table 4.9 for the full, non-winsorized sample, it can be seen that earnings including impairment has a higher explanatory power than earnings excluding impairment for both the one- and three-year periods. Earnings including impairment has an adjusted R^2 of 15.0% compared with 13.5% for earnings excluding impairment. Over three-years, the explanatory power (adjusted R^2) for earnings including impairment is 6.0% compared with 4.3% for earnings excluding impairment. This effectively reinforces the association between earnings including impairment and firm performance, and suggests asset impairment is important in assessing firm performance.

In Table 4.10, for the sub-sample of firms with book-value of equity exceeding market-value of equity, once again earnings including impairment has a higher explanatory power than when earnings excluding impairment is considered. It can also be seen that the model better captures firm performance for this sub-sample, with higher explanatory power than for the full sample. This is due to firms with at least one externally observable indicator of impairment being in this sub-sample, making earnings including impairment more strongly associated with firm performance.

Table 4.11 shows that earnings including impairments better captures firm performance both over one- and three-year periods than earnings excluding asset impairments. This is shown by the higher explanatory power over both one- and three-year periods (17.4% compared to 13.9% over one-year and 5.8% to 1.8% over three-years). Moreover, the coefficients are of a larger magnitude for *Earn* both over one- and three-year periods (α_1=0.352, *t*-stat.=3.892 α_1=0.340, *t*-stat.=2.893) compared to (*Earn+(Impair))* which has smaller coefficients *of* (α_1=0.191, *t*-stat.=2.361 and α_1=0.067, *t*-stat. = 1.059); this means *Earn* has more of an impact on stock returns than (*Earn+(Impair))*.

In Table 4.12, the economic significance of impairment is clearly seen once again with negative and highly significant coefficients over both one- and three-year periods (β_1=–0.503, *t*-stat.=–6.502 and β_1=–0.624, *t*-stat.=–3.86 respectively), showing that impairment is significantly and negatively associated with stock returns. Table 4.13 is for the sub-sample of book-value of equity greater than market-value of equity; this shows once again a significantly positive association between earnings and stock returns over both one- and three-year periods (α_1=0.308, *t*-stat.=4.418 and α_1=0.653, *t*-stat.=5.569 respectively). There is also a highly significant and negative association between asset impairments and stock returns over both one- and three-year periods (β_1=–0.366, *t*-stat.=–5.740 and β_1=–0.388, *t*-stat.=–6.237 respectively), with the coefficients showing an economically significant negative impact on stock returns.

Finally, for firms that impaired assets (Table 4.14) there is a strong and significant and positive association between earnings with impairments added back and stock returns over a one-year period, but not over a three-year period (α_1=0.210, *t*-stat.=2.610; and α_1=0.073, *t*-stat.=1.213 respectively). Moreover, impairment of assets has a strong negative association with stock returns over a one-year period (β_1=–0.395, *t*-stat.=–5.143), but a much weaker association with stock returns over a three-year period (β_1=–0.323, *t*-stat.=–1.695).

4.6 Conclusions

The objective of this chapter is to evaluate the relevance of the impairment of assets in evaluating firm performance and to consider the implications this has for how they are presented in the Statement of Profit or Loss. This is undertaken over the period 2007 to 2016 for a sample of 2,488 Australian Securities Exchange listed firm-years.

When the relevance of the models for earnings and earnings excluding asset impairments is evaluated, by considering the relative explanatory power of models using alternate performance measures with earnings excluding impairment *(Earn + Impair)*, there is consistent evidence that earnings including asset impairments is more representative of firm performance. This applies equally across the full sample of firms, a sub-sample of firms with a book-value of equity greater than the market-value of equity where impairments would be expected, and a sub-sample of firms where asset impairments are recognized. This is also the case where earnings and returns are considered over one- and three-year periods. The latter is accommodating the concern that asset impairments are not being recognized on a timely basis.

Consistent results are obtained when the relevance of asset impairments is evaluated and consideration is given to earnings excluding asset impairments and asset impairments separately. There is evidence of asset impairments being associated with stock returns for the full sample of firms, a sub-sample of firms with a book-value of equity greater than the market-value of equity where impairments might be expected, and a sub-sample of firms where asset impairments are recognized. This is also the case over one- and three-year periods.

These results make a number of contributions. First, and most importantly, earnings including asset impairments have more explanatory power for stock returns than earnings excluding asset impairments, and asset impairments are associated with stock

returns. Hence, asset impairments are relevant for the evaluation of firm performance and demonstrating stewardship. This suggests asset impairments should be recognized in the Statement of Profit or Loss, rather than in Other Comprehensive Income; this is relevant to the current deliberation of the IASB as part of its 'Disclosure Initiative'.

Second, there is further evidence of asset impairments not being recognized on a timely basis. In particular, it is notable that the majority of firms exhibiting externally observable indicators of impairment are not recognizing asset impairments. This doubtless contributes to the understatement of impairments over short periods. When examining three-year periods, there is a greater divergence between earnings including or excluding asset impairments and the results considering the relevance of asset impairments *(Earn)* are stronger. This is relevant for auditors and regulators concerned with compliance with accounting standards.

Finally, while not specifically considering the use of non-IFRS earnings in management performance evaluation, concerns are identified with this if asset impairments are considered representative of the adjustments made to earnings and effectively excluded from the evaluation of firm performance. There is evidence that the impairment of assets is relevant to the evaluation of firm performance; this suggests including asset impairments in earnings when evaluating management performance. There may be claims that the impairment of assets is not attributable to current management; however, this should be considered on a case-by-case basis rather than excluded generally.

Table 4.1
Definitions of variables

Definition of variables used in this chapter.

Variable	Definition
$Earn_{it}$	GAAP earnings per share, deflated by the share price at the start of the period.
$Impair_{it}$	Impairment per share, deflated by the share price at the start of the period.
$Earn+Impair_{it}$	GAAP earnings per share with the value of impairment added back, deflated by the share price at the start of the period.
Ret_{it}	Buy-hold-return for period *t* beginning 3-months after year end.

Table 4.2a

Sample	**Number of firm-years**
Initial sample (firms on ASX at any time between 2006 – 2016)	15,749
Financials, mining and overseas based	(9,673)
Unreliable data	(1)
Negative B/M	(272)
Missing data	(3,315)
Final sample	2,488

Table 4.2b
Descriptive statistics

Descriptive statistics for variables used in this paper. These are presented for the full sample of firm years in Panel A, for firm years where there are externally observable indicators of impairment in Panel B (i.e B/M>1), and for firms recognising asset impairments in Panel C. Variables are winsorized at the 1st and 99th percentile.

Panel A – Full sample

	Obs.	Mean	SD	Min	p5	p25	Median	p75	p95	Max
$(Earn_{it}+Impair_{it})$	2488	0.052	0.145	–0.549	–0.209	0.019	0.067	0.110	0.232	0.569
$Impair_{it}$	2488	0.035	0.157	0.000	0.000	0.000	0.000	0.003	0.175	2.499
$Earn_{it}$	2488	0.021	0.187	–0.922	–0.300	–0.006	0.060	0.103	0.212	0.449
Ret_{it}	2488	0.113	0.593	–0.967	–0.615	–0.273	0.000	0.335	1.326	2.803

Panel B – Sample firms with an external indicator of impairment (i.e. B/M>1)

	Obs.	Mean	SD	Min	p5	p25	Median	p75	p95	Max
$(Earn_{it}+Impair_{it})$	789	0.076	0.178	–0.549	–0.234	0.019	0.078	0.138	0.393	0.569
$Impair_{it}$	789	0.078	0.231	0.000	0.000	0.000	0.000	0.027	0.469	2.499
$Earn_{it}$	789	–0.004	0.262	–0.922	–0.595	–0.052	0.058	0.124	0.320	0.449
Ret_{it}	789	–0.113	0.488	–0.967	–0.730	–0.439	–0.179	0.102	0.739	2.735

Panel C – Firms recognising asset impairments

	Obs.	Mean	SD	Min	p5	p25	Median	p75	p95	Max
$(Earn_{it}+Impair_{it})$	798	0.060	0.157	–0.549	–0.223	0.032	0.072	0.117	0.287	0.569
$Impair_{it}$	798	0.111	0.261	0.000	0.000	0.004	0.018	0.082	0.540	2.499
$Earn_{it}$	798	–0.031	0.244	–0.922	–0.595	–0.086	0.048	0.090	0.194	0.449
Ret_{it}	798	0.010	0.545	–0.967	–0.700	–0.356	–0.057	0.250	1.065	2.803

*All variables are as previously defined in Table 4.1. p values are two tailed: *=<0.10; ** =<0.05; *** =<0.01. All independent variables are winsorized at the 1st and 99th percentiles.*

Table 4.3
Evaluation of the relevance of asset impairments – Full sample

Evaluation of relevance of earnings including and excluding asset impairments for evaluating firm performance, based on the full sample of firms from 2007 to 2016.

	1 year						3 year					
	Coef.	*t*-stat.		Coef.	*t*-stat.		Coef.	*t*-stat.		Coef.	*t*-stat.	
$Earn_{it}$	0.581	5.693	***				0.975	7.888	***			
$(Earn_{it}+(Impair_{it}))$				0.612	4.534	***				0.773	5.029	**
Constant	0.486	8.858	***	0.481	8.697	***	–0.449	–7.933	***	–0.461	–7.065	***
Observations	2488			2488			1145			1145		
R^2	0.162			0.151			0.098			0.065		
Adjusted R^2	0.159			0.148			0.093			0.060		
F-Stat.	62.26			59.81			26.81			21.45		

$$Ret_{it} = \alpha_0 + \alpha_1 Earn_{it} + \varepsilon_{it} \qquad (3a)$$

$$Ret_{it} = \alpha_0 + \alpha_1 (Earn_{it} + (Impair_{it})) + \varepsilon_{it} \qquad (3b)$$

*p values are two tailed: *=<0.10; ** =<0.05; *** =<0.01. All independent variables are winsorized at the 1st and 99th percentiles.*

Where Ret_{it} = Buy-hold-return for period *t* beginning 3-months after year end, *Earn* = Earnings per share amended for impairment not being subtracted, deflated by the share price at the start of the period. *Earn + Impair* = Earnings per share, deflated by the share price at the start of the period. The earnings value of this variable has asset impairment subtracted from earnings.

Vuong tests of the difference in explanatory power have also been run and these confirm that the Sum of Squared Residuals are significantly different from each other for both Earn and Earn + Impair for both one year and three years.

Tests of differences in R^2 reveal that model 3b is a better fit than model 3a.

Table 4.4

Evaluation of the relevance of asset impairments – B/M>1

Evaluation of relevance of earnings including and excluding asset impairments for evaluating firm performance, based on the sub-sample of firms with at least one indicator of impairment (i.e. B/M>1) for the period 2007 to 2016.

	1 year						3 year					
	Coef.	*t*-stat.		Coef.	*t*-stat.		Coef.	*t*-stat.		Coef.	*t*-stat.	
$Earn_{it}$	0.563	6.863	***				0.578	7.467	***			
$(Earn_{it}+(Impair_{it}))$				0.771	4.911	***				0.629	5.366	***
Constant	0.026	0.322		–0.017	–0.219		–0.685	–16.417	***	–0.787	–13.157	***
Observations	789			789			371			371		
R^2	0.211			0.201			0.220			0.185		
Adjusted R^2	0.201			0.191			0.205			0.169		
F-Stat.	18.45			16.92			14.22			10.59		

$$Ret_{it} = \alpha_0 + \alpha_1 Earn_{it} + \varepsilon_{it} \qquad (3a)$$

$$Ret_{it} = \alpha_0 + \alpha_1 (Earn_{it} + (Impair_{it})) + \varepsilon_{it} \qquad (3b)$$

*p values are two tailed: *=<0.10; ** =<0.05; *** =<0.01. All independent variables are winsorized at the 1st and 99th percentiles.*

Where Ret_{it} = Buy-hold-return for period *t* beginning 3-months after year end, *Earn* = Earnings per share amended for impairment not being subtracted, deflated by the share price at the start of the period. *Earn + Impair* = Earnings per share, deflated by the share price at the start of the period. The earnings value of this variable has asset impairment subtracted from earnings.

Vuong tests of the difference in explanatory power have also been run and these confirm that the Sum of Squared Residuals are not significantly different from each other, implying that the three year models are not a better fit than the one year models.

Table 4.5
Evaluation of the relevance of asset impairments – Firms recognising asset impairments

Evaluation of relevance of earnings including and excluding asset impairments for evaluating firm performance, based on the sub-sample of firms recognizing asset impairments for the period 2007 to 2016.

	1 year						3 year					
	Coef.	*t*-stat.		Coef.	*t*-stat.		Coef.	*t*-stat.		Coef.	*t*-stat.	
$Earn_{it}$	0.587	5.394	***				0.770	9.180	***			
$(Earn_{it}+(Impair_{it}))$				0.605	2.943	***				0.565	4.298	***
Constant	0.192	1.887	*	0.175	1.707	*	–0.453	–6.460	***	–0.495	–6.220	***
Observations	798			798			405			405		
R^2	0.202			0.166			0.125			0.061		
Adjusted R^2	0.192			0.155			0.110			0.044		
F-Stat.	25.41			20.34			15.96			6.632		

$$Ret_{it} = \alpha_0 + \alpha_1 Earn_{it} + \varepsilon_{it} \qquad (3a)$$

$$Ret_{it} = \alpha_0 + \alpha_1 (Earn_{it} + (Impair_{it})) + \varepsilon_{it} \qquad (3b)$$

*p values are two tailed: *= < 0.10; ** = < 0.05; *** = < 0.01. All independent variables are winsorized at the 1st and 99th percentiles.*

Where Ret_{it} = Buy-hold-return for period *t* beginning 3-months after year end, *Earn* = Earnings per share amended for impairment not being subtracted, deflated by the share price at the start of the period. *Earn + Impair* = Earnings per share, deflated by the share price at the start of the period. The earnings value of this variable has asset impairment subtracted from earnings.

Vuong tests of the difference in explanatory power have also been run and these confirm that the Sum of Squared Residuals are significantly different from each other, implying that the three year models are a better fit than the other models.

Table 4.6
Evaluation of the relevance of asset impairments – Full sample

Evaluation of relevance of earnings and asset impairments separately, based on the full sample of firms for the period 2007 to 2016.

	1 year			3 year		
	Coef.	*t*-stat.		Coef.	*t*-stat.	
$(Earn_{it}+(Impair_{it}))$	0.648	4.864	***	0.810	5.279	***
$Impair_{it}$	–0.916	–10.131	***	–0.754	–4.075	***
Constant	0.486	8.834	***	–0.413	–6.384	***
Observations	2488			1145		
R^2	0.18			0.089		
Adjusted R^2	0.17			0.083		
F-Stat.	65.31			21.36		

$Ret_{it} = \beta_0 + \beta_1 (Earn_{it} + (Impair_{it})) + \beta_2(-Impair_{it}) + \varepsilon_{it}$ *(4)*

*p values are two tailed: *=<0.10; ** =<0.05; *** =<0.01. All independent variables are winsorized at the 1st and 99th percentiles.*

Earn = Earnings per share amended for impairment not being subtracted, deflated by the share price at the start of the period. *Earn + Impair* = Earnings per share, deflated by the share price at the start of the period. The earnings value of this variable has asset impairment subtracted from earnings. *Impair= Impairment per share during the period.*

Tests of differences in R^2 reveal that model 4 is a better fit than model 3b.

Table 4.7
Evaluation of the relevance of asset impairments – B/M>1

Evaluation of relevance of earnings and asset impairments separately, based on the subsample of firms with at least one indicator of impairment (i.e. B/M>1) for the period 2007 to 2016.

	1 year			3 year		
	Coef.	*t*-stat.		Coef.	*t*-stat.	
$(Earn_{it}+(Impair_{it}))$	0.786	5.111	***	0.653	5.569	***
$Impair_{it}$	–0.594	–5.990	***	–0.388	–6.237	***
Constant	0.006	0.071		–0.760	–13.153	***
Observations	789			371		
R^2	0.236			0.235		
Adjusted R^2	0.225			0.218		
F-Stat.	20.85			14.54		

$Ret_{it} = \beta_0 + \beta_1 (Earn_{it} + Impair_{it})) + \beta_2(-Impair_{it}) + \varepsilon_{it}$ (4)

*p values are two tailed: *=<0.10; ** =<0.05; *** =<0.01. All independent variables are winsorized at the 1st and 99th percentiles.*

Earn = Earnings per share amended for impairment not being subtracted, deflated by the share price at the start of the period. *Earns + Impair* = Earnings per share, deflated by the share price at the start of the period. The earnings value of this variable has asset impairment subtracted from earnings. *Impair= Impairment per share during the period.*

Table 4.8
Evaluation of the relevance of asset impairments for firms recognising an asset impairment

Evaluation of relevance of earnings and asset impairments separately, based on the sub-sample of firms recognizing an asset impairment for the period 2007 to 2016.

	1 year			3 year		
	Coef.	*t*-stat.		Coef.	*t*-stat.	
$(Earn_{it}+(Impair_{it}))$	0.663	3.323	***	0.567	4.417	***
Impair	–0.777	–7.822	***	–0.389	–1.693	*
Constant	0.201	1.975	***	–0.443	–5.211	***
Observations	798			405		
R^2	0.221			0.084		
Adjusted R^2	0.210			0.065		
F-Stat.	26.51			8.305		

$$Ret_{it} = \beta_0 + \beta_1 (Earn_{it} + (Impair_{it})) + \beta_2 (-Impair_{it}) + \varepsilon_{it} \quad (4)$$

*p values are two tailed: *=<0.10; ** =<0.05; *** =<0.01. All independent variables are winsorized at the 1st and 99th percentiles.*

Earn = Earnings per share amended for impairment not being subtracted, deflated by the share price at the start of the period. *Earn + Impair* = Earnings per share, deflated by the share price at the start of the period. The earnings value of this variable has asset impairment subtracted from earnings. *Impair= Impairment per share during the period.*

Additional Analysis

Table 4.9
Evaluation of the relevance of asset impairments – Full sample and no winsorizing

Evaluation of relevance of earnings including and excluding asset impairments for evaluating firm performance, based on the full sample of firms.

	1 year						3 year					
	Coef.	*t*-stat.		Coef.	*t*-stat.		Coef.	*t*-stat.		Coef.	*t*-stat.	
$Earn_{it}$	0.362	4.175	***				0.478	4.193	***			
$(Earn_{it}+(Impair_{it}))$				0.232	2.755	***				0.200	2.348	**
Constant	0.493	8.935	***	0.498	8.980	***	–0.357	–6.185	***	–0.313	–5.296	***
Observations	2488			2488			1145			1145		
R^2	0.154			0.139			0.069			0.045		
Adjusted R^2	0.150			0.135			0.063			0.040		
F-Stat.	58.85			55.11			20.72			18.70		

$$Ret_{it} = \alpha_0 + \alpha_1 Earn_{it} + \varepsilon_{it} \qquad (3a)$$

$$Ret_{it} = \alpha_0 + \alpha_1 (Earn_{it} + (Impair_{it})) + \varepsilon_{it} \qquad (3b)$$

*p values are two tailed: *= < 0.10; ** = < 0.05; *** = < 0.01. No variables are winsorized.*

Where *Earn* = Earnings per share amended for impairment not being subtracted, deflated by the share price at the start of the period. *Earn* + *Impair* = Earnings per share, deflated by the share price at the start of the period. The earnings value of this variable has asset impairment subtracted from earnings.

Table 4.10

Evaluation of the relevance of asset impairments – B/M>1 and no winsorizing

Evaluation of relevance of earnings including and excluding asset impairments for evaluating firm performance, based on the sub-sample of firms with at least one indicator of impairment (i.e. B/M>1).

	1 year				3 year			
	Coef.	*t*-stat.	Coef.	*t*-stat.	Coef.	*t*-stat.	Coef.	*t*-stat.
$Earn_{it}$	0.359	4.983 ***			0.286	4.130 ***		
$(Earn_{it}+(Impair_{it}))$			0.297	4.718 ***			0.156	2.620 ***
Constant	0.022	0.271	0.020	0.243	–0.627	–14.744 ***	–0.787	–13.228 ***
Observations	789		789		371		371	
R^2	0.206		0.178		0.178		0.125	
Adjusted R^2	0.196		0.167		0.162		0.108	
F-Stat.	16.49		14.82		10.52		8.733	

$$Ret_{it} = \alpha_0 + \alpha_1 Earn_{it} + \varepsilon_{it} \quad (3a)$$

$$Ret_{it} = \alpha_0 + \alpha_1 (Earn_{it} + (Impair_{it})) + \varepsilon_{it} \quad (3b)$$

*p values are two tailed: *= < 0.10; ** = < 0.05; *** = < 0.01. No variables are winsorized.*

Where *Earn* = Earnings per share amended for impairment not being subtracted, deflated by the share price at the start of the period. *Earn + Impair* = Earnings per share, deflated by the share price at the start of the period. The earnings value of this variable has asset impairment subtracted from earnings.

Table 4.11

Evaluation of the relevance of asset impairments – Asset impairments

Evaluation of relevance of earnings including and excluding asset impairments for evaluating firm performance, based on the sub-sample of firms recognizing asset impairments for the period 2007 to 2016.

	1 year						3 year					
	Coef.	*t*-stat.		Coef.	*t*-stat.		Coef.	*t*-stat.		Coef.	*t*-stat.	
$Earn_{it}$	0.352	3.892	***				0.340	2.823	***			
$(Earn_{it}+(Impair_{it}))$				0.191	2.361	**				0.067	1.059	
Constant	0.196	1.896	*	0.192	1.845	*	–0.393	–5.339	***	–0.364	–4.685	***
Observations	798			798			405			405		
R^2	0.184			0.149			0.074			0.035		
Adjusted R^2	0.174			0.139			0.058			0.018		
F-Stat.	22.04			19.04			5.395			4.392		

$$Ret_{it} = \alpha_0 + \alpha_1 Earn_{it} + \varepsilon_{it} \quad (3a)$$

$$Ret_{it} = \alpha_0 + \alpha_1 (Earn_{it} + (Impair_{it})) + \varepsilon_{it} \quad (3b)$$

*All variables are as previously defined in Table 4.1. p values are two tailed: *=<0.10; ** =<0.05; *** =<0.01. No variables are winsorized.*

Where *Earn* = Earnings per share amended for impairment not being subtracted, deflated by the share price at the start of the period. *Earn + Impair* = Earnings per share, deflated by the share price at the start of the period. The earnings value of this variable has asset impairment subtracted from earnings.

Table 4.12
Evaluation of the relevance of asset impairments – Full sample and no winsorizing

Evaluation of relevance of earnings and asset impairments separately, based on the full sample of firms for the period 2007 to 2016.

	1 year			3 year		
	Coef.	*t*-stat.		Coef.	*t*-stat.	
$(Earn_{it}+(Impair_{it}))$	0.250	2.982	***	0.224	2.652	***
$Impair_{it}$	–0.503	–6.502	***	–0.624	–3.860	***
Constant	0.501	9.057	***	–0.272	–4.616	***
Observations	2488			1145		
R^2	0.16			0.07		
Adjusted R^2	0.15			0.06		
F-Stat.	54.71			19.03		

$Ret_{it} = \beta_0 + \beta_1 ((Earn_{it} + (Impair_{it}) + \beta_2 (-Impair_{it}) + \varepsilon_{it}$ *(4)*

Where *Earn + Impair* = Earnings per share, deflated by the share price at the start of the period. The earnings value of this variable has asset impairment subtracted from earnings. $Impair_{it}$ = *Impairment per share during the period.*

*p values are two tailed: *=<0.10; ** =<0.05; *** =<0.01. No variables are winsorized.*

Table 4.13

Evaluation of the relevance of asset impairments – B/M>1 and no winsorizing

Evaluation of relevance of earnings and asset impairments separately, based on the sub-sample of firms with at least one indicator of impairment (i.e. B/M>1) for the period 2007 to 2016.

	1 year			3 year		
	Coef.	*t*-stat.		Coef.	*t*-stat.	
$(Earn_{it}+(Impair_{it}))$	0.308	4.418	***	0.653	5.569	***
$Impair_{it}$	–0.366	–5.740	***	–0.388	–6.237	***
Constant	0.006	0.408		–0.760	–13.153	***
Observations	789			371		
R^2	0.207			0.174		
Adjusted R^2	0.195			0.156		
F-Stat.	17.59			12.36		

$Ret_{it} = \beta_0 + \beta_1 (Earn_{it} + (Impair_{it})) + \beta_2 (-Impair_{it}) + \varepsilon_{it}$ *(4)*

Where *Earn + Impair* = Earnings per share, deflated by the share price at the start of the period. The earnings value of this variable has asset impairment subtracted from earnings. $Impair_{it}$ = *Impairment per share during the period.*

*p values are two tailed: *=<0.10; ** =<0.05; *** =<0.01. No variables are winsorized.*

Table 4.14

Evaluation of the relevance of asset impairments and no winsorizing

Evaluation of relevance of earnings and asset impairments separately, based on the sub-sample of firms recognizing an asset impairment for the period 2007 to 2016.

	1 year			3 year		
	Coef.	*t*-stat.		Coef.	*t*-stat.	
$(Earn_{it}+(Impair_{it}))$	*0.210*	2.610	***	*0.073*	1.213	
$Impair_{it}$	*–0.395*	–5.143	***	*–0.323*	–1.695	*
Constant	*0.206*	1.981	**	*–0.323*	–4.007	***
Observations	798			405		
R^2	0.184			0.058		
Adjusted R^2	0.172			0.038		
F-Stat.	20.93			6.087		

$Ret_{it} = \beta_0 + \beta_1 (Earn_{it} + (Impair_{it})) + \beta_2 (-Impair_{it}) + \varepsilon_{it}$ *(4)*

Where *Earn + Impair* = Earnings per share, deflated by the share price at the start of the period. The earnings value of this variable has asset impairment subtracted from earnings. $Impair_{it}$ = *Impairment per share during the period.*

*p values are two tailed: *=<0.10; ** =<0.05; *** =<0.01. No variables are winsorized.*

Chapter 5 - Conclusions

Limitations and suggestions for further study

There are invariably time and other constraints that limit the work undertaken in this thesis. Manifestations of this are limitations and suggestions for further study.

In Chapter 2, I use indicators of impairment by applying the model of impairment in (Bond, Govendir & Wells 2016). I include the continuous disclosure variable to determine the relation between asset impairment and the disclosure of price sensitive information to the Australian Securities Exchange. I find that firms with persistent indicators of impairment, such as a book value of equity exceeding a market value of equity for at least two years, may not be applying *AASB 136* as intended; they may not be making appropriate levels of disclosure to the market as to why they are not impairing assets and the assumptions underpinning their decisions not to impair assets. This raises the distinct possibility that firms not complying with AASB 136 may also not be complying with the *Continuous Disclosure Regime* mandated by the Australian Securities Exchange. Moreover, I find evidence of firms making asset impairments which are pre-empted by price sensitive announcements to the market. This is particularly the case for firms with strong corporate governance.

In relation to Chapter 2, the most significant limitation was focusing on the number of firm disclosures identified as price sensitive. Text analysis could be undertaken of these disclosures to determine the extent to which they specifically identified asset impairments, or poor performance more generally. This was beyond the scope of this thesis and likely merits separate consideration. Additionally, a problem with identifying disclosures that distinctly identify asset impairments or poor performance is that prior literature identifies other price sensitive disclosures can also signal to the market, including directors' buying and selling of shares (Lang & Lundholm 1996; Noe 1999).

Additional analysis could be undertaken examining stock price reactions to asset impairments where they were (were not) pre-empted by firm disclosures. This would provide more certainty of the varied results in the literature relating to stock price reactions to asset impairments.

Additionally, asset impairment is undertaken at the Cash Generating Unit level. This means numerous firms may not impair individual assets where the carrying amount exceeds their recoverable amount if other assets in the cash generating unit are highly profitable, resulting in 'shielding'. Further analysis could examine the composition of the Boards of Directors with financial qualifications and whether this impacts how likely they are to impair assets that have been carried at more than their recoverable amount for more than just a transitory period.

In relation to Chapter 3, I apply the Basu (1997) reverse regression model to examine the phenomenon of conditional conservatism, to test for conditional conservatism among Australian firms and determine whether it extends beyond asset impairment and whether conditional conservatism is widespread across these firms. I find evidence inconsistent with conditional conservatism and find that conditional conservatism is not widespread across all firms in this study. There is an association between positive (negative) earnings and positive (negative) stock returns for firms whose book value of equity exceeds their market value of equity, and for firms with high earnings whose market values of equity exceed book values of equity. The relation is much more complex for firms with negative earnings who still achieve a positive return, and many of these are classed as growth firms.

One of the limitations of using the Basu reverse regression model in studying conditional conservatism is the increasingly complex relation between earnings and returns for growth firms, and particularly those with a high proportion of intangible assets

such as the increasing incidence of technology firms. Future opportunities for research could include examining this subsample of the firms and determining why this complex relation exists. There are numerous firms in the sample that are consistently loss-making but still have a high earnings yield, either indicating the future earnings potential of the firm or potentially market irrationality. In addition, the application of additional models of conservatism and conditional conservatism could be used to examine this relation more closely; the application of earnings changes rather than price deflated earnings to measure the level of conditional conservatism is already considered by Easton and Harris (1991). Moreover, examining a multi-period model to obtain comparisons of the degrees of conservatism, such as Roychowdhury (2007), may also be beneficial.

Additionally, examining factors such as leverage may also be beneficial for future studies to determine whether this has a significant impact on the value relevance of firms both over a one-year period and over longer time periods.

In Chapter 4 I use the model developed by Easton, Harris and Ohlson (1992) to model firm performance, both including and excluding impairment over both one- and three-year periods. I find that modelling firm performance including asset impairment provides a better explanatory power of the relation between returns and earnings than excluding asset impairments from earnings and so is relevant for assessing managerial performance. The limitations involved in Chapter 4 and determining the value relevance of earnings including and excluding impairment includes the survivorship bias of firms over a longer time frame. Firms in the three-year sample may have characteristics firms absent from the three-year model do not exhibit, particularly given the Global Financial Crisis occurred during this period. Opportunities for future research could include why the explanatory power of these models decreased over a three-year period, given that over a longer time period earnings and cash flows even out, and that Easton, Harris and Ohlson

(1992) had a higher explanatory power for the five- and ten-year models than they did with the one- and three-year models.

It would also be of interest to examine earnings changes and determine whether they have better explanatory power than earnings levels over a longer time period. In addition, future research could involve dividing the sample into those firms who made a profit each year over the period and those that made a loss each year over several years and determine whether these firms are weakening the power of tests, particularly given the literature on profit-making firms disclosures being far more informative than loss-making firms for investors (He, Tan & Wong 2020).

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