



IMPAIRMENT OF ASSETS: AN EMPIRICAL INVESTIGATION

Being a Thesis submitted for the Degree of Doctor of Philosophy

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Abstract

Asset impairment is a relatively new term in the corporate reporting arena. However, the concept of asset impairment relates closely to that of an asset write-down. Asset write-downs historically have been a feature of corporate reporting for many years (Lee, 1975)) due to the principle of conservatism, although largely discretionary in nature in the UK until the introduction of Financial Reporting Standard 11 Impairment of Assets and Goodwill (FRS 11) in 1998. Asset impairment is defined by the Accounting Standards Board (ASB) in FRS 11 as the situation of: A reduction in the recoverable amount of a fixed asset or goodwill below its carrying amount (paragraph 2). Recoverable amount in this context is the higher of net realisable value or value in use.

Prior to the issue of regulations in the area of asset impairment, there was very little guidance for corporations which may have been faced with large impairment losses. This could result in some discretion in terms of the timing and how to account for any asset impairment charge, for example either an adjustment to reserves or an expense in the income statement.

The aim of this thesis is to explore the practice of impairment of assets in UK published financial statements and evaluate the concept and suitability of impairment as a means of recognising and subsequently measuring a decline in the value of a non current asset and the

implications of this process. An assessment of the impact of international standards in relation to asset impairment being operational from January 2005 for UK listed corporations is also undertaken.

The sample consists of those corporations listed on the UK Financial Times 100 Index (FTSE 100) of leading corporations from the period from 2003 to 2007-8.

The thesis evaluates the extent of earnings management associated with asset impairment charges, both before and after the change in the regulatory environment. An assessment of whether an increase or decrease in the earnings characteristics of corporations takes place as a result of a change in the regulatory environment is also evaluated. Additionally the thesis provides a detailed assessment of the extent of disclosure associated with charging an asset impairment loss and whether this is associated with the size of the asset impairment loss. The measurement and valuation methods employed to implement an asset impairment loss are also evaluated. Other key areas of investigation focus on asset impairment losses being associated with a particular category of asset, business sector, indicator of asset impairment and a change of management.

Fair value forms a component of asset impairment loss recognition and this thesis contributes to the debate about the ability of a fair value measurement approach to provide a true and fair view of the corporation.

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Chapter One

1. Introduction

1.1 Background

Asset impairment is a relatively new term in the corporate reporting arena. However, the concept of asset impairment relates closely to that of an asset write-down. Asset write-downs historically have been a feature of corporate reporting for many years (Lee, 1975) due to the principle of conservatism, although largely discretionary in nature in the UK until the introduction of Financial Reporting Standard 11 Impairment of Assets and Goodwill (FRS 11) in 1998. Asset impairment is defined by the Accounting Standards Board (ASB, 1998) in FRS 11 as the situation of: *A reduction in the recoverable amount of a fixed asset or goodwill below its carrying amount* (paragraph 2). Recoverable amount in this context is the higher of net realisable value or value in use¹.

Prior to the issue of regulations in the area of asset impairment, there was very little guidance for corporations which may have been faced with large impairment losses. This could result in some discretion in terms of the timing and how to account for any asset impairment charge, for example either an adjustment to reserves or an expense in the income statement.

¹ Net realisable value and value in use are two valuation techniques that will be explained fully in Chapter Four.

The magnitude of asset impairment can be significant and have severe consequences for the company concerned. The issue of impairment can be critical in terms of the impact upon the corporate report and the information that such impairment communicates to the shareholders. Many authors, such as Elliott and Shaw (1988), Walsh, Craig and Clarke (1991), Elliott and Hanna (1996), Francis, Hanna and Vincent (1996), Rees, Gill and Gore (1996), Vincent (2001), Beatty, Ramesh and Weber (2002), Fields, Lys and Riedl (2004), Jordan and Clarke (2004), Peek (2004), Sevin and Schroeder (2005), Hayn and Hughes (2006), Christensen, Paik and Stice (2008) and Jarva (2009) have investigated the impact of corporations reporting asset impairment charges from the perspective of whether the practice of a write down in asset value constitutes a form of earnings management or is more reflective of the economic reality of the value of the asset.

To illustrate the magnitude of asset impairment, three corporations reporting impairment losses can be considered. Cable and Wireless plc reported a £5,106 million impairment charge in its 2003 corporate report. To put this amount in context to the impact upon the reported information, the impairment charge represented over 200% of fixed assets, over 100% of turnover and represented 80% of the reported loss in the year. Another company, MMO2 plc reported an even larger impairment charge of £9,583 million in its corporate report of 2003. This charge represented over 90% of the reported loss for the year, and was almost equivalent to 200% of turnover. A third company, Vodafone, reported repeated asset

impairment losses in the year 2003 of £485 million, in 2005 of £475 million, in 2006 an astonishing £23,515 million (representing over 80% of turnover) and in 2007 £11,600 million. Vodafone has continued to report significant impairment losses in its annual report of 2012. The driver for all of these impairment losses related to the fact that these corporations had large amounts of goodwill on their balance sheets, relating to acquisition, merger and license payments and it was clear that they had overpaid massively for such intangible assets in the past and had decided to implement an asset impairment charge in order to reflect the decrease in market expectations from the continued use of such intangible assets.

These three examples may be at the extreme end of the spectrum of impairment charges and related to specific industry sector circumstances, however, they do illustrate the importance and potential impact that impairment can have on the corporate report. The implications of reporting such large asset impairment charges are often considered to be a form of 'big bath' accounting where the management attempt to draw a line under previous decisions and this activity is often accompanied with a change in the senior management of the corporation (Trueman and Titman (1988), Walsh *et al* (1991), Bartov (1993), Burgstahler and Dichev (1997), Shaw (2003), Jordan and Clark (2004), Sevin and Schroeder (2005)).

These large asset impairment losses, often relating to goodwill, provided a rationale for further investigation into the circumstances surrounding

such large write-offs. The Association of Chartered Certified Accountants (ACCA) in 2003 were actively seeking calls for research into the area of recognition, measurement and valuation of assets in financial reporting and the author of this thesis obtained a research grant to evaluate the extent of asset impairment amongst Financial Times Stock Exchange (FTSE) top 350 listed corporations. This resulted in the publication of an ACCA research report entitled 'Impairment of Assets: Measurement without Disclosure?' (Andrews, 2006). This early empirical research provided considerable motivation to undertake this thesis and provided an inspiration and interest in the topic of asset impairment.

More recently the financial crisis of 2007-2008 resulted in many banks having large asset impairment charges as a result of a decrease in the value of their financial assets; effectively an impairment charge for many banks had to be recognised, due to the fall in value of their financial assets. Several large UK banks, such as HBOS, Northern Rock and National Westminster had to be bailed out by the government due to the magnitude of the problem during the financial crisis that started in 2008. A contributory factor widely reported in the media at the time relating to these large write offs was the issue of 'mark to market' using fair values, which meant that many banks had loans in their balance sheets that simply were not worth the book value. The repercussions of this are still unfolding and even in 2012, many banks are still facing problems due to this issue and many other issues. The current study relates to the period prior to the financial crisis.

This thesis evaluates the practice of asset impairment in relation to the principle of conservatism, the issue of earnings management and a change in the regulatory environment.

1.2 Asset Impairment

The concept of asset impairment emanates from the practice of an asset write-down. The accounting treatment of an asset write-down may at first sight appear straightforward as a reduction in the carrying amount of an asset being written off through the income statement or an adjustment to reserves. However, as will be seen in the following chapters, how the asset impairment charge is calculated has implications for a wide range of aspects in terms of the information content and utility of the corporate report. This ranges from valuation choice (Beatty and Weber (2006), Francis *et al* (1996), Riedl (2004)), whether to adopt a prudent or opportunistic approach to corporate reporting (Basu (1997) (Watts (2003a), Landsman (2007) and Lapointe-Antunes, Cormier and Magnan (2009)) and the over-arching theoretical perspective of corporate reporting (Laughlin (1977), Peasnell (1982), Whittington (1996), Buckmaster and Jones (1997), Alexander (1999), Quattrone (2000) and Clarke and Dean (2003)). These issues will all be explored and are contemporaneously linked to the question of asset impairment.

1.3 Earnings Management

Earnings management is closely linked to the issue of asset impairment and the question arises of whether corporations use an asset impairment loss to manipulate their earnings or as an attempt to show a true and fair view of the corporation. This aspect has been evaluated by various authors such as Elliot and Shaw (1988), Zucca and Campbell (1992), Francis *et al.*(1996), Rees, Gill and Gore (1996), Bunsis (1997), Cotter, Stokes and Wyatt (1998), Peek (2004), Riedl (2004) and Jarva (2009). Many of the prior reports that are identified here and many more that are identified later in the thesis classify earnings management as falling into one of two broad forms, either a big bath or income smoothing.

Earnings management has been defined by Healy and Wahlen (1999, pp. 368) as occurring;

'when managers use judgement in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contracted outcomes that depend on the accounting numbers'

This definition highlights many of the key issues identified in the prior literature, particularly relating to the discretionary choice available to managers in the determination of any asset impairment loss, the information utility of the corporate reporting numbers as a result of

reporting an asset impairment loss and whether the over-arching objective of the corporate report should be to provide a true and fair view and what this concept means. All of these issues are explored in depth in this thesis.

Dechow and Skinner (2000) further refine the accounting choices available to management into four distinct categories, these are stated as;

- a) *‘Conservative accounting: Overly aggressive recognition of provisions or reserves.*
- b) *Neutral earnings: Earnings that result from a neutral operation of the process.*
- c) *Aggressive accounting: Drawing down provisions or reserves in an overly aggressive manner.*
- d) *Fraudulent accounting: Recording sales before they are “realizable”.*

Source: Dechow and Skinner (2000, p239)

These distinct definitions provide some interesting parallels with respect to asset impairment losses and whether they are neutral, conservative or aggressive. The two latter categories could be synonymous with big bath accounting, depending on how the action of taking a bath is interpreted. Conversely income smoothing could be considered as more neutral than aggressive. The issue of fraudulent accounting is not considered here as

the asset impairment process is considered within the realms of legality. The next section briefly defines a big bath and income smoothing.

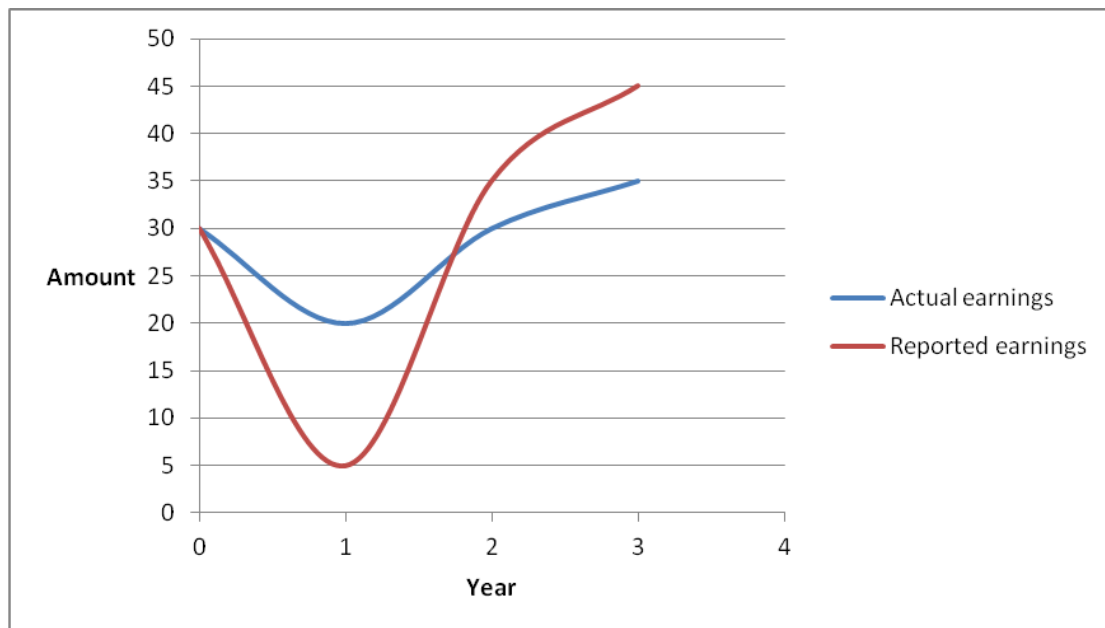
1.3.1 Big Bath Accounting

Big bath accounting is a term that has evolved as a result of the practice of reporting a large loss, or a large write off, through the income statement, such as an asset impairment charge. Big bath accounting is characterised in the literature by authors such as Zucca and Campbell (1992), Strong and Meyer (1987), Elliott and Shaw (1988), Walsh *et al.* (1991), Rees *et al.* (1996), Basu (1997), Riedl (2004), Peek (2004), Christensen *et al.* (2008) and Jarva (2009) as the instance of earnings already being low in the write down year, with the probability of targets being missed and so called 'bad news' already being reported, giving management an opportunity to take an even larger loss, given that the reported accounting numbers are already depressed. Hence the term a 'big bath' has been attached to this process.

Implementing a big bath has also been associated with a change in the senior management, being an opportunity to 'wipe the slate clean' and improve future reported earnings (Copeland and Moore (1972), Strong and Meyer (1987) and Francis *et al* (1996)). The incentives for this process are wide and range from a genuine desire to reflect and report a true and fair view at one end of the spectrum to earnings manipulation in order to enhance reported profits and hence management pay at another.

Whether this process is opportunistic or more in line with a conservative approach to financial reporting will be explored within this thesis. An example of big bath accounting is illustrated in the graph below:

Chart 1.1 Graphical Illustration of a Big Bath



Source: Author

As Chart 1.1 highlights with a simple example, the actual earnings prior to a big bath in year one are lower than the previous year's earnings of 30 in year 0, being one third less at only 20. This means that earnings are already depressed, so the management may have an incentive or desire to take earnings even lower, by implementing a big bath given that earnings are already depressed and possibly the bad news is already in the public domain. In this simple example, the company decides to write off 15, thus taking reported earnings even lower to 5. This would be

representative of a big bath and an asset impairment charge could be used to implement a big bath.

The idea behind a big bath is to take a large one off write down with the intention of improving future performance (Basu, 1997), and as figure 1.1 illustrates, *ceteris paribus*, the following year the company reports earnings 5 higher than actual earnings and in the second year following the big bath, reported earnings are 10 higher than actual. Thus, the company has managed to report higher than actual earnings in the period subsequent to the big bath taking place, thus a shift in the timing of the earnings of the organisation has taken place. Many factors could be taking place here in terms of why a company might implement a big bath and what the intentions of the management are in respect of a big bath.

1.3.2 Income Smoothing

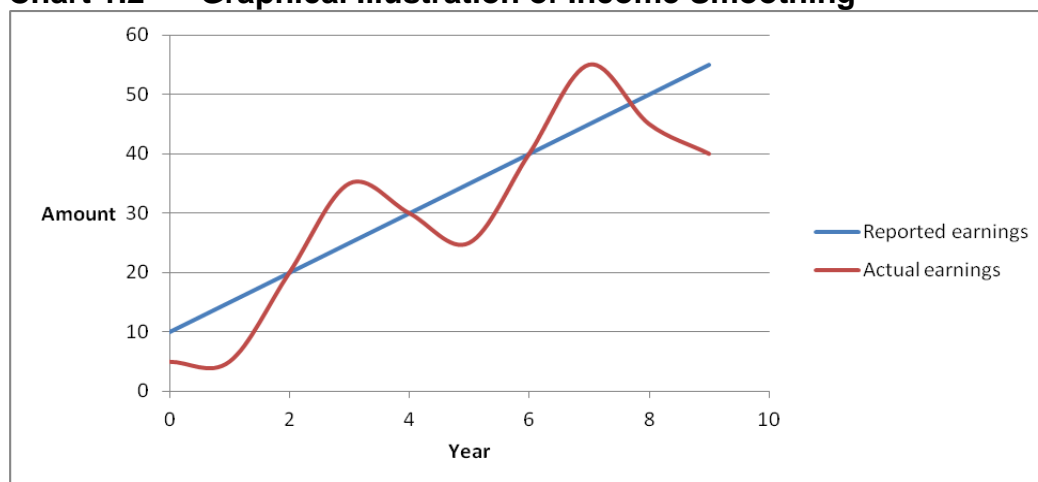
Income smoothing is regarded as another form of earnings management that is different to the idea of big bath accounting. In the case of income smoothing, corporations are considered to try and bring earnings within expectations to a consistent level as opposed to bringing earnings down even further when earnings are below expectations as is the case with a big bath. Income smoothing could take the form of an upward or downward adjustment in line with expectations. In the case of an asset impairment charge, the direction of adjustment would always be downwards. This has the effect of saving income from the current period

that may be abnormally high to future periods, when it may be needed.

This shift in income recognition is the same in principle as a big bath, but the severity of the shift is considered not as great as is the case with a big bath.

Income smoothing has been investigated by authors such as Moses (1987), Beattie *et al* (1994), Cotter *et al* (1998), Riedl (2004), Peek (2004) and Jarva (2009). In the prior research relating to income smoothing earnings are usually considered to be higher than expected and the corporation engages in an adjustment to bring the earnings down to those that would be expected. Asset impairment losses could influence this adjustment and many researchers such as Peek (2004), Riedl (2004) and Strong and Meyer (1987) evaluate the process of asset impairment in terms of whether it constitutes a form of income smoothing or big bath accounting. Chart 1.2 below illustrates an example of income smoothing.

Chart 1.2 Graphical Illustration of Income Smoothing



Source: Author

As Chart 1.2 above illustrates, this organisation has a desire to report a steady increase in earnings over the period, as highlighted with the reported earnings increasing at a consistent rate of 5 per year, starting at 10 in year zero. However, actual earnings are fluctuating around the desired reported earnings, thus creating some peaks and troughs in terms of reported performance. The aim of income smoothing is to report a consistent and less volatile stream of earnings and thus the use of adjusting entries from a wide range of sources might be used to try and smooth the income and eliminate volatility Beattie *et al* (1994), this may be an objective of management in order to convey investor confidence and stability in the company.

In years when earnings might be below expectations, reported earnings may be smoothed upwards, whereas conversely in years when earnings are higher than expectations, earnings may be smoothed downwards. In the case of an asset impairment charge and the concept of income smoothing, the earnings would normally be higher than expectations with the intention that any impairment charge would bring reported earnings down to be more in line with expectations.

Thus as this section highlights, both a big bath and a downward income smoothing adjustment have the same impact of bringing reported earnings lower than would have otherwise been the case, with a big bath

bringing earnings below expectations and income smoothing bringing earnings within expectations (Zucca and Campbell, 1992).

1.4 Aims of the Study

The aim of this thesis is to explore the practice of impairment of assets in UK published financial statements to:

- Evaluate the concept and suitability of impairment as a means of recognising and subsequently measuring a decline in the value of a non current asset and the impact of this process on the financial statements.
- Assess the impact of international standards in relation to asset impairment being operational from January 2005 for UK listed corporations.
- Investigate if corporations' use of the asset impairment process is aligned to the characteristic of big bath accounting and income smoothing.
- Assess the extent of disclosure accompanying the asset impairment loss, asset type and the valuation method.

The research questions are formulated around these aims.

1.5 Research Questions

The thesis has four primary research questions aimed at answering the overall research aim stated in the previous section in the context of large UK corporations. These are;

1. Are earnings management characteristics evident as a result of charging an asset impairment loss?
2. Does the change in the regulatory environment relating to asset impairment testing result in a change in the earnings management characteristics of the published financial information?
3. Is the valuation basis employed to measure the asset impairment loss and the disclosed cause of the asset impairment loss related to the size of the asset impairment loss?
4. Is the extent of disclosure related to the asset impairment loss in the corporate report associated with the amount of the asset impairment loss?

The first and second questions have been studied in the US context by various researchers such as Alciatore, Dee, Easton and Spear (1998), Elliott and Hanna (1996), Riedl (2004), Jordan and Clark (2004), Jones (1991) and Kirschenheiter and Melumad (2002) and are normally evaluated from a quantitative perspective. Many of these prior studies also assess the extent of any change in the senior management of the corporation and reflect upon this as a primary reason for implementing a big bath.

Research questions three and four have been evaluated in a different context to asset impairment studies, using methods such as risk reporting and content analysis (Linsley and Shrives, 2006), overall narrative content of corporate reports (Beattie, McInnes and Fearnley, 2004) and environmental disclosure (Deegan and Rankin (1996), Gray, Kouhy and Lavers (1995)). These content analysis studies evaluate the extent of disclosure within the corporate report and relate this to a particular measurement metric within the annual report, thus combining both qualitative and quantitative analysis. This research aims to provide a rich picture from both a qualitative and quantitative viewpoint of the implications of corporations implementing an asset impairment loss and how they disclose this information in their annual report. Of particular importance is the result of any change in both the practice and disclosure of corporations post the change in the regulatory environment with the introduction of IAS 36 Impairment of Assets in 2005 (IASB, 2004).

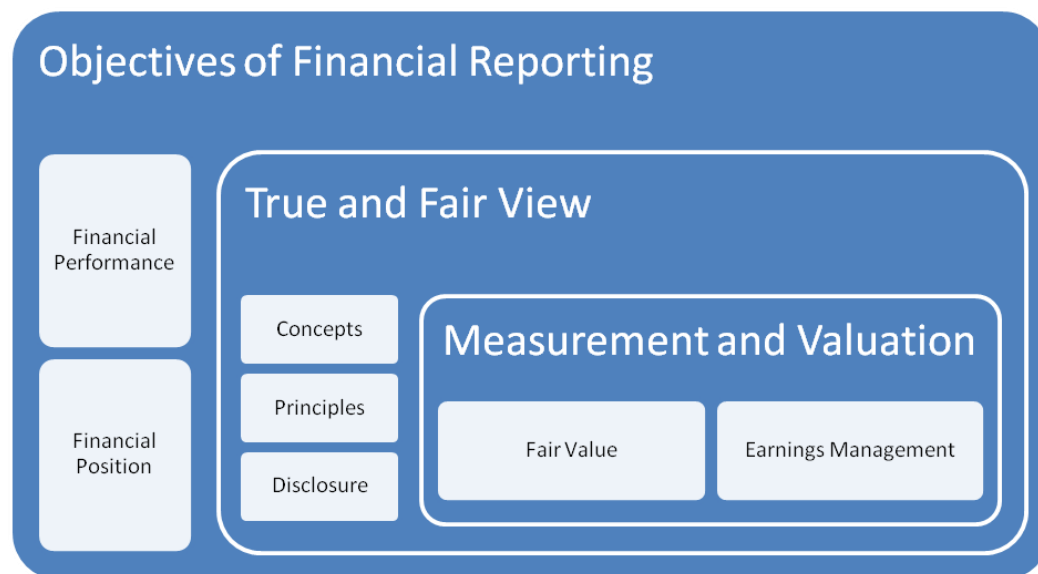
1.6 Theoretical Context of the Study

The thesis focuses on the objectives of financial reporting from a stakeholder perspective in terms of whether the reported financial information faithfully represents the financial position and performance of a company. There is a rich tapestry of theoretical contexts relating to asset impairment along some key themes such as the true and fair view within financial reporting, conservatism within financial reporting, the

recognition, measurement and valuation requirements within financial reporting and the behavioural aspects relating to earnings management within financial reporting. All of these themes provide an inter-related framework in relation to whether asset impairment and the processes used to implement an asset impairment loss are goal congruent to the requirements of stakeholders in the UK financial reporting context.

This theoretical framework can be summarised in the following Figure:

Figure 1.1 The Theoretical Context of the Study



Source: Author

As the above Figure illustrates, the key question of what the objectives of financial reporting are is a central stakeholder question. This question is discussed in Chapter 3. The financial report primarily provides information in the form of the income statement to represent financial

performance and the statement of financial position, formerly the balance sheet, to represent the financial position. How these statements are compiled and whether they represent a true and fair view depends on a wide range of concepts, principles and additional disclosure information and all of these constructs relate directly to the issue of asset impairment.

Another area of theoretical context in relation to asset impairment is the question of measurement and valuation within the financial report and the valuation basis employed to measure the impairment loss determines, to a large extent, the amount of the asset impairment loss. The fair value of an impaired asset is a pivotal issue that has wide ranging implications for the financial report and this also provides a core theme for the thesis.

Finally a key question relating to asset impairment is whether some form of earnings management is taking place as a result of an asset impairment charge, as the previous sections highlighted, typically this may be categorised as a big bath or income smoothing and this behaviour is also evaluated in the thesis.

1.7 Contributions of the Study

The thesis forms a contribution to the field of corporate reporting research consisting of a thorough investigation of the practice of asset impairment. The study considers the theoretical underpinning of such practice in terms of the objectives of corporate reporting and the issue of

measurement and valuation within the corporate report. Additionally, the propensity of a corporation to manage earnings given a change in the regulatory environment will be considered. The thesis will be of use to academics, practitioners, regulators, government, investors, professional bodies and the wider stakeholder community. All of these groups are affected by corporate reporting practices and, as will be highlighted in the following chapters, many of these groups have expressed opinion on the issue. The theoretical underpinnings of financial reporting have an overarching relevance from both an academic and practice perspective and this aspect is also of relevance to a wide range of other users of financial reports, such as regulators, investors, government and the wider stakeholder community. This thesis will consider the theoretical significance of the practice of asset impairment testing within the UK context, with particular emphasis on the question of recognition, measurement and valuation within financial reports.

The fact that accountants prepare the financial reports and auditors provide an opinion on those reports provides a specific area of interest from this particular segment. In addition to the practitioner perspective, the regulatory bodies, such as the IASB and the ASB, will have an interest in terms of the impact of a change in the regulatory environment relating to asset impairment testing. Investors and the wider stakeholder community will also have an interest in this work, as the significance of asset impairment losses is large and has an impact upon reported performance. Additionally investors and other users will be interested

about any earnings management characteristics as a result of an asset impairment charge.

The Association of Chartered Certified Accountants (ACCA) supported a research report by the author of this thesis (Andrews, 2006) that provided a starting point for this thesis and it is hoped that the practical application of any outcomes of the thesis are widely disseminated amongst the accounting profession and wider stakeholder community in the form of a follow up report. In summary, this thesis will provide a balanced review of corporate reporting practice relating to reported asset impairment losses that will provide both theoretical and practical relevance of use to a wide range of users.

1.8 Research Methodology

The thesis has a combination of quantitative and qualitative methods to answer the research questions. Data was collected from the FAME database (Financial Analysis Made Easy) in addition to the published corporate reports of companies listed on the Financial Times Stock Exchange 100. Data from the corporate reports is a mixture of quantitative (financial) and qualitative information (disclosure). A series of statistical analysis has been carried out on the sample corporations' published annual reports in addition to some content analysis and descriptive statistics. The broad approach in terms of the statistical

analysis was to initially identify the earnings management characteristics in terms of a big bath and income smoothing for the sample corporations. Prior research, such as Moses (1987), Strong and Meyer (1987), Elliott and Shaw (1988), Zucca and Campbell (1992), Easton, Edey and Harris (1993), Beattie *et al* (1994), Elliott and Hanna (1996), Francis *et al* (1996), Rees *et al* (1996), Heflin and Warfield (1997), Bunsis (1997), Alciatore *et al.* (1998), Cotter *et al.* (1998), Deng and Lev (1998), Jordan and Clark (2004), Riedl (2004), Peek (2004), Sevin and Schroeder (2005), Andrews (2006), Hayn and Hughes (2006), Christensen, Paik and Stice (2008), Lapointe-Antunes, Cormier and Magnan (2009) and Jarva (2009) have used the expected earnings approach to identify the existence of big bath accounting and income smoothing associated with an asset impairment loss (or asset write off), or some other adjustment, such as a large provision. Initially expected earnings are estimated and this amount is compared with earnings both pre and post the impairment charge or some other adjustment. Depending on the impact of the impairment charge compared to expectations, this will identify the earnings management characteristic. This was illustrated in the earlier Charts 1.1 and 1.2.

The earnings management characteristic of both big bath accounting and income smoothing is identified for the sample as a whole and also for the period both pre and post the change in the regulatory environment in order to identify whether big bath accounting or income smoothing appears to be dominant. Additionally whether the earnings management

characteristic changes post the change in the regulatory environment is also investigated.

In addition to the methods mentioned above, another methodological approach adopted is to test for differences in both the return on assets and return on sales of the sample corporations and where the returns are significantly different; this can also be an indication of identification of the earnings characteristics of big bath accounting and income smoothing. This approach has been adopted by authors such as Elliott and Shaw (1988), Rees *et al* (1996), Francis *et al* (1996), Cotter *et al* (1998) Loh and Tan (2002), Jordan and Clark (2004), Reidl (2004), Sevin and Schroeder (2005), Hayn and Hughes (2006) and Christensen *et al* (2008) in varying forms as part of their models to infer earnings management behaviour of big bath and income smoothing.

Additionally a detailed evaluation of the extent of disclosure relating to the asset impairment charge has also been carried out. This analysis also included determining the types of assets impaired, the type of valuation method employed to determine the asset impairment charge and the indicator of the asset impairment charge across different sectors. This work provides results that help establish if any particular asset is more susceptible to impairment charges, whether any particular valuation method appears to be associated with asset impairment charges, whether any particular indicator of impairment is more associated with the

asset impairment charge and also whether any particular sector appears to be associated with asset impairment charges.

The full details of the methodology are explained in Chapter Six.

1.9 Structure of the Thesis

The thesis commences with a review of literature pertinent to the topic of asset impairment. Chapter Two provides an overview of the historical context of the asset impairment process and the link this has to current day financial reporting. The significance of the historical aspect provides an insight into the development of corporate reporting practices relating to asset impairment and the fact that many historical issues, such as a desire to report a true and fair view of the business in the form of the very earliest annual reports, remain relevant in the current financial reporting context.

Accounting for the diminution in the value of an asset also resulted in several high profile cases relating to the principle of maintaining the capital of a corporation and this is explored in terms of relevance to the current day issue of asset impairment. Additionally literature relating to the early practice of asset valuation and diminution is discussed and as is demonstrated, many issues from the historical perspective are still of relevance in the current financial reporting environment, particularly in terms of the objectives of corporate reporting.

Chapter Three discusses the theoretical developments relating to accounting and corporate reporting in relation to asset impairment and the wider perspective of theory at a meta-level application. The search for a suitable theoretical framework has been discussed in the literature since the 1920s. Authors such as Paton (1922) and Littleton (1933) provided some of the early theoretical thought in this area and this discussion has continued to the present day, as Chapter Three will demonstrate. The issue of having a suitable theory for financial reporting is directly relevant to the asset impairment review process, as several theoretical aspects relating to recognition, measurement and valuation of the assets within the financial report directly impact upon the extent of any asset impairment charge. For example, should financial statements provide a conservative outlook or make more use of forward looking information is a key issue (Watts, 2003a).

Chapter Four deals with the literature in relation to the crucial aspect of recognition, measurement and valuation of assets with particular emphasis on the asset impairment review process. This aspect is directly linked to the theoretical context for financial reporting. The question of whether traditional transaction based historical cost or more future orientated fair value information should be used for the purposes of corporate reporting has been widely debated in the literature for many years.

Chapter Five focuses on earnings management relevant to the asset impairment review process. Prior literature relating to the identification of the earnings management characteristics of big bath accounting and income smoothing is evaluated. In the United States regulatory environment relating to asset impairment, a number of reports assess the impact of a change in the regulations and the effect on earnings management characteristics and a comparison between these studies and the current study can be established in terms of similar circumstances.

Chapter Six provides details of the methodology adopted in providing empirical results to the research questions using a combination of both quantitative and qualitative methods. A range of methodologies is used for the empirical work in this thesis in order to provide both internal and external validity. For the identification of the earnings management characteristics of income smoothing and big bath accounting, four different methodologies using the same data set are used in order to report the findings.

For the results relating to disclosure, a wide range of information is extracted from the annual reports in terms of the types of assets, the valuation method, the indicator of impairment, a change in the management in addition to the actual extent of disclosure relating to the asset impairment charge. All of this information is evaluated statistically in relation to the asset impairment charges to provide a detailed

assessment of the practice of asset impairment charges amongst FTSE 100 corporations.

Chapter Seven contains an overview of the results of the research including identification of the earnings management characteristic associated with an asset impairment charge. The extent of changes in big bath accounting and income smoothing post the change in the regulatory environment in 2005 is also investigated. Additionally a wide range of descriptive statistics are presented in Chapter Seven and this provides a rich picture of the types of assets that are subject to impairment charges, the extent of impairment charges across different business sectors, the types of valuation methods used to implement the impairment loss and a selection of useful contextual information about the sample data.

Chapter Eight explains the disclosure associated with an asset impairment charge, in particular the different types of assets that are reported as impaired, the extent of disclosure relating to the asset impairment charge, the type of valuation method associated with the asset impairment charge and the indicator of the asset impairment charge. The amount of the asset impairment charge is correlated with the extent of the disclosure relating to the asset impairment charge to test whether there is any association between these two variables. Additionally an evaluation of whether a change in the senior management of the corporation is associated with an asset impairment charge.

Chapter Nine discusses these results, their relevance and ties this back to the literature. All of the research questions are discussed in this Chapter Nine with a view to providing an integrated assessment of the results together with a consideration of the limitations of the analysis. Additionally potential areas for future research are considered. The importance of the theoretical context within financial reporting is evaluated within the context of the results obtained.

Finally Chapter Ten concludes the thesis with an evaluation of the results with relevance to the user, regulatory, practice and theoretical perspectives. The contribution of the study to the body of knowledge in this area together is also discussed together with an assessment of the originality of the thesis.

Chapter Two

2. The Historical Significance of Asset Impairment and its Relationship to Corporate Reporting

2.1 Introduction

Asset impairment is a relatively new term in corporate reporting. Despite this new terminology the issue of asset impairment and the underlying concept of writing off or writing down an asset dates back to a time of the earliest corporate reports and corporate legislation. Although the term 'impairment' was not used, the concept of how and when to measure a decline in the reported value of an asset became a critical issue for interested parties, particularly shareholders. This issue became inextricably linked to the maintenance of capital concept. It would therefore seem appropriate to consider the historical background to the issue of asset recognition, measurement and subsequent valuation over time, as this will provide a useful point of reference to evaluate the importance and historical significance of the early corporate reporting environment and how this relates to the issue of asset impairment.

Throughout the 19th century, the importance of asset valuation and any subsequent impairment became a serious issue in several cases appearing before the courts. Reid (1988) identifies 50 cases, many involving accounting issues such as maintenance of capital as opposed to dividend distribution, cash versus accrual accounting and the

objectives of financial statements. These cases are significant in relation to impairment of assets, as several consider the principle of capital maintenance and the consequences of companies not adequately providing for the depreciation or impairment of assets, paying high dividends and ultimately depleting the capital of the company.

This chapter briefly considers the early history of corporate reporting, followed by an assessment of corporate reporting in the 18th century, the chapter then focuses on the impact of early corporate reporting in relation to asset valuation and any subsequent impairment in the 19th century, with particular reference to the early corporate reporting legislative requirements. Finally the 20th century corporate reporting environment to 1970 will be considered. The period post 1970 will be considered in Chapters Three, Four and Five.

2.2 Early History

The history of financial reporting is evident before the 19th century. Double entry bookkeeping and the source of the accounting equation can be traced back to Italy in the 14th century. Napier (1995) points out that Luca Pacioli described the equivalent of the modern day double entry bookkeeping system in *Summa de Arithmetica* in 1494 to keep a record of financial transactions in a country that had seen a large increase in the wealth of traders at that time and hence a large increase in the volume and amount of trade taking place. This was followed by several English

language variants, as cited by Napier (1995), such as Jan Ympyn (1543), Hugh Oldcastle (1543), James Peele (1553), John Weddington (1567) and John Mellis (1588). Littleton (1933) considered the economic conditions in Italy at the time produced the correct environment for the creation of a system of double entry, mainly centered on the free flow of capital in the economy, as opposed to central government control.

Keister (1963) identifies Egypt and China as having systems for recording financial transactions and notes that Greece made a significant contribution to accountancy with the introduction of coined money and a banking system around 600 B.C.

In several parts of Europe and beyond, many versions and copies of Pacioli's double entry system emerged. However, progress was slow in medieval England due to the feudal and manorial system that prevailed in the 14th and 15th centuries. The double entry system is a rule based mechanism governing accounting entries; however, significantly the concept of capital maintenance is enshrined within the basic double entry accounting equation, which equates assets less liabilities to the owners' capital.

Baladouni (1983) identifies the East India Company as an early commercial corporation dating from the 16th century as probable in maintaining a double entry system, however, no records exist. The East India Company kept its financial dealings secretive and a reason for this

identified by Baladouni (1983) is that the company did not want to pay high dividends to the shareholders. This illustrates even at this early stage of corporate reporting the pressure on managers to pay high dividends to shareholders. A parallel can be drawn between this example and (as will be seen later in this chapter) the later revelations that took place in the railway mania era, when dividends were an issue of contention between the various stakeholders. However, the company did introduce some long term capital notes for a term of four years in 1613 and this is regarded to have led to the idea of permanently invested capital aimed at longer term investment rather than short term settlement, which was a feature of trading in those days. This appears to be forerunner to the idea of maintenance of capital.

2.2.1 The Seventeenth Century

Napier (1995) identifies that corporations in the late 17th century were commonly formed under a Royal Charter or Act of Parliament and were often required to report on a periodic basis to shareholders in the form of a balance sheet, detailing the extent of the corporation's assets and liabilities and reckoning this figure to the shareholders capital. This highlights the early significance of assets and their valuation within corporate reporting. Notably, as Napier (1995) points out, incorporation documents may have contained a stipulation that dividends could only be paid out of profits and not out of capital. This underlines the importance

of the principle of capital maintenance at this early stage of corporate reporting.

Mills (1993) identifies several cases that went before the courts and established the principle of capital maintenance, whereby those corporations that were formed by Royal Charter could not make dividend payments out of capital. The main reason for capital maintenance at the time was to give some protection to creditors and to provide a fund for the payment of monies owed to creditors. This notion is identified by Aiken and Ardern (2005). The protection of creditors is underlined by the fact that shareholders funds in the business were equated to the residue of assets less liabilities. Any diminution in the reported value of the assets had a direct impact upon the reported shareholders funds, when this information was communicated to the shareholders it could influence any decision they may take with regard to their investment. This issue is indirectly related to the issue of impairment of assets and the timely recognition of any diminution in the value of an asset and the impact this has on the reported financial information.

2.2.2 The Eighteenth Century

The early 18th century saw the 'South Sea Bubble' of 1719-21 controversy emerge. Dale, Thomson and Tang (2005) point out the 'South Sea Bubble' is significant as it was one of the very earliest reported corporate scandals in which many investors lost money due to

over speculation about the anticipated success of the company, in addition to dubious practices by the directors of the company. The stock price of the South Seas Company rose steeply as a result of investor behaviour, rather than any investment in tangible assets. Investors were buying into pure speculation, essentially relying on the intangible asset of skill of the directors. When profits failed to materialise, the investors were left with worthless shares. Dale *et al* (2005) conclude that investors were irrational in their behaviour. The 'South Sea Bubble' fiasco illustrates that as early as the 18th century investors were buying and subsequently valuing an intangible asset on the basis of speculation.

The problem of valuing intangible assets such as skills and knowledge of people within a corporate reporting framework is a difficult issue due to the volatile nature of intangible assets. Those assets which tend to suffer from impairment most frequently are indeed intangible in nature, as Andrews (2006) highlights. What perhaps is surprising is that this issue was apparent in the early 18th century.

Napier (1995) identified that in 1720 the government limited the creation of 'unofficial' joint stock companies with the introduction of the 'Bubble Act', which restricted companies to a maximum of 6 partners, or required corporations to gain a Royal Charter or parliamentary approval before formation.

2.3 The Nineteenth Century

The repeal of the Bubble Act in 1825 opened up the restrictions previously in place in terms of limiting companies to 6 partners by increasing the limit to 20 partners. The first legislation permitting incorporation of corporations was the 1844 Joint Stock Companies Act. This Act required balancing of the 'books' and presentation to the shareholders of a 'full and fair' balance sheet, duly audited by appointees of the shareholders for certain types of corporations only. A profit and loss account was not required. This was followed in 1845 by the Companies Clauses Consolidation Act, which was aimed at statutory companies. Both these Acts stipulated that companies should declare dividends out of profits, with the 1845 Act going further by stating that the company should not pay a dividend which results in capital depletion. The Acts of 1844 and 1845 were consolidated into the Joint Stock Companies Act of 1856. These early Acts are significant in that they attach primary importance to the balance sheet and the concept of reporting the state of the assets, liabilities and capital of the company. The reported value attached to those assets and any changes from one year to the next clearly would be critical in terms of determining the residue of shareholder funds.

The 1856 Act relaxed the stipulation that profits could not be paid out of capital; however, more emphasis was placed on a model Articles of Association. As Aiken and Ardern (2005) point out, the model Articles of Association did include the capital maintenance concept of only paying

dividends out of profits and that a full and fair balance sheet should be presented to give a true and correct view, however, the fact that this only appeared as guidance in the model Articles of Association, rather than stipulated in the Act, meant that disclosure and capital maintenance requirements became optional. This was largely seen (Crouch, 1967; Holmes, 1976) as a drive towards a laissez faire environment that allowed corporations not to be burdened by bureaucracy, and allow management the freedom to make commercial decisions.

The Joint Stock Companies Act 1856 was consolidated in the Companies Act of 1862, which widened the scope under which corporations could incorporate and gave greater emphasis to the Articles of Association in determining what should be presented to shareholders along similar lines to the 1856 Act, meaning that recommendations were not obligatory. Interestingly the 1862 Act suggested, but did not require, a reserve fund for repairing or maintaining the works connected with the business, in addition to the maintenance of capital concept (Aiken and Arden, 2005). This legislation set the scene for the corporate reporting environment with the arrival of the separation of ownership from management in the form of shareholders, and eliminated the previous requirement for corporations to seek a Royal Charter by approval in parliament before being allowed to be a limited liability corporation.

Lee (1975) discusses British accounting from 1760 to 1900 and segments this period into four distinct categories, each with their own set of

characteristics and developments. Lee (1975) identifies the pre-industrial era to 1760, the industrial revolution from 1760 to 1830, the railway age from 1830 to 1870 and the late Victorian period from 1870 to 1900, there is however some overlap within these periods. All of these periods had distinct characteristics. As trade in the UK expanded rapidly due to the industrial revolution, this led to increasingly complex accounting issues. Many of these issues related to profit measurement and asset valuation and the inextricable link between the two.

Depreciation of assets was evident in certain sectors, notably in the textile sector. Several examples of methodical depreciation policies within a structured corporate reporting framework have been identified. Pollard (1965) notes that in the early part of the 19th century it became common practice among industrial manufacturers, such as textiles, to capitalise expenditure on plant, machinery, equipment and buildings and write off depreciation at a set rate annually. These rates varied from 2.5% to 33.3% depending on the type of asset employed. Although these businesses were increasingly becoming large through the expansion of the industrial age, they still tended to be family owned or partnerships, not publicly listed companies. Hence accountability to shareholders did not arise in these closed ownership entities, as the main beneficiaries of trading were usually the owners who managed the companies on a day to day basis and took the capital investment decisions. Pressure for high returns on investment rested with the owners and managers, with

prudence being preferable in order to enable future investment and prosperity.

With the separation of ownership from management and the change in company structure to include shareholders that emerged with the introduction of the first legislation allowing incorporation in 1844, this resulted in increased pressure for returns on investment to shareholders in the form of dividends. Other investors, such as those that had provided loans or debentures, required their interest to be paid as soon as possible, often before any revenues had been earned. This problem was identified by Lee (1975) in the Railway era from 1830 to 1870 and also in the Victorian era from 1870 to 1900.

The reporting of high profits to shareholders, both present and potential, in the form of the corporate report, would have an impact on the desirability of that particular stock amongst shareholders; hence the incentive for managers to report a high profit may have been present.

2.4 The Railway Mania and Asset Impairment

Edwards (1986) identifies the problem of not depreciating assets in the railway industry as having a detrimental impact upon those corporations concerned. That ultimately led to capital depletion and subsequently impacted upon the investment required to continue in the railway industry.

Pollins (1969) finds that railway companies almost dispensed with depreciation charges during the railway mania of the 1840s.

Arnold and McCartney (2003) consider the most dramatic period of the railway mania to be from 1845 to 1847, when a significant boom and bust effect took place largely as a result of speculative behaviour and their work supports the view of Pollins (1969). Interestingly Arnold and McCartney (2003) surveyed over 70% of the market capitalisation of railway companies, from their 1838 to 1855 reported financial statements, evaluating their depreciation policies. They find that from 1838 to 1848, a minority (less than a third, often less than a fifth) of railway companies provided some depreciation. From 1849 the number of railway companies providing depreciation increased, though still less than half the number of companies in the sample charged any depreciation. However Arnold and McCartney (2003) argue that despite the lack of provision for depreciation, the actual effect on market returns was minimal and not material. From this work it is not clear what the level of depreciation should have been at the time, therefore it is not possible to predict the impact upon reported profits. Arnold and McCartney (2003) only used disclosed depreciation and compared the total profits before and after charging disclosed depreciation and compared this to market returns.

The issue of not depreciating assets is directly relevant to the issue of asset impairment. If assets were not depreciated, this would often give

rise to a large loss upon disposal; in effect an impairment charge would need to be recognised. Thus a loss on the disposal of an asset that had not been depreciated would have a detrimental impact upon the financial statements, only recognising the loss on disposal when it became unavoidable. This is a similar situation to the current day issue of asset impairment, however, the key difference is that when there are indications of an impaired asset, this should be accounted for as soon as it becomes apparent, rather than potentially putting off or delaying recognising any such loss until such time as it becomes unavoidable.

The profit maximisation demanded by investors led to profits being inflated to pay dividends and interest, at the expense of capital maintenance in the form of provision for depreciation of assets.

Depreciation was often neglected in order to improve reported profits, assets were often not depreciated over their useful lives and hence no maintenance of capital requirements was included in the accounts.

Arnold and McCartney (2003) consider that railway company accounts were often subject to manipulation in order to satisfy investor demands; this indicates the importance of the corporate report as a communication tool to give information to shareholders.

Edwards (1986) also makes the point that investors expected a quick return in the form of dividends, which undoubtedly led to corporations reporting an optimistic profit figure. In the case of railways, as Edwards (1986) illustrates, capital renewals often became charged directly to

revenue or capital reserves, which distorted the reported accounts. A similar situation arose when corporations came to dispose of assets, often for a scrap value, and hence had to record a large loss on disposal, as the assets had not been written down in a systematic manner over their useful lives. These practices ultimately led to an erosion of capital within the corporation. Not providing for depreciation until such a time that it can no longer be avoided resulted in an asset write-off, charged against revenue or capital.

The asset was no longer of use to the corporation, and its value had effectively decreased. This appears to be an early example of accountants trying to recognise a change in the value of an asset and might be seen as an early example of asset impairment rather than depreciation. In effect the asset was impaired and had to be written down to its market value. Conceptually, this is the same scenario as the current day issue of asset impairment.

Bryer (1991) claims the practice of not depreciating assets was as a result of investor pressure that resulted in corporations paying dividends and making interest payments out of inflated profits, which in the absence of any strictly adhered to regulations regarding depreciation, was a contributory factor to the loss of money suffered by some investors. Had the reported profits been lower, perhaps the stock price would not have risen so high and perhaps the investor expectations would not have been so high. This illustrates the information utility of the early corporate

report, and the value that the directors placed on the report as a communication tool to convey a message to the shareholders and how the investors reacted to such information.

In 1868 the Regulation of Railways Act was introduced and required compulsory disclosure and audit requirements for railway companies. Similar Acts were also introduced for other large infrastructure corporations, such as gas and electricity, primarily as an attempt to protect investors and reflected the increasing number of diverse shareholders in society. As Maltby (1998) points out, this diverse range of investors required credible information about the performance of their investment and a set of independently audited financial statements aimed to give some assurance with regard to assets employed and maintenance of capital.

2.5 Legal Precedents for the Maintenance of Capital Concept

The early documented cases of the 19th century in relation to the maintenance of capital concept give a fascinating insight into the key issues that were argued in court at the time. The issue of capital maintenance is directly linked to accounting for the value of assets and any subsequent impairment of assets. A fall in the reported value of an asset, whether through depreciation or impairment, has an impact upon the capital of the corporation.

An important factor in many of these cases was the accounting practice that a particular corporation pursued and the subsequent reaction and impact of that practice upon the investor. User expectations and perceptions of reported financial performance played a critical part in the determination of many of these cases. A central theme in many of the cases was the issue of whether the shareholders had suffered financial loss, either in the form of non-payment of dividends and/or capital depletion. *MacDougall v. Jersey Imperial Hotel* (1864) was an early case upholding the concept of capital maintenance. The judge held payment of dividends out of capital was illegal. Several other cases² implicitly indicated that depreciation should be provided for in order to maintain the capital of the corporation.

Aiken and Ardern (2005) define two approaches of capital maintenance used by the courts in order to determine dividend distribution in a dispute. Both these approaches have a direct link in the determination of reported asset value and any subsequent diminution in those values. The first of these approaches is known as the 'surplus' approach, with profit being determined by the difference in net asset valuations at the start and end of the financial period. This approach was described by Kindersley L. J. in *Binney v. Ince Hall Coal and Cannel Company* (1866). Under this approach the balance sheet is of primary importance, with the profit and loss account taking a secondary role. The approach appears to adopt the

² *Binney v. Ince Hall Coal and Cannel Company* (1866), *Mills v. Northern Railway of Buenos Ayres Company* (1870), *Dent v. London Tramways* (1880), *Davison v. Gillies* (1879), *Leeds Estate, Building and Investment Society Ltd. v. Shepherd* (1887) and others.

proprietary theory of economics identified by Revsine (1981) as implicitly specifying the maintenance of capital for the owners by incorporating changes in asset values.

The second approach used by the courts is the 'profit and loss method' whereby revenue and expenses are matched to the period to which they relate, with any surplus being classified as profit available for distribution. This method could result in capital not being maintained in the same way as the 'surplus' approach, depending on events during the period. The 'profit and loss method' found more favour with the courts at the time than the 'surplus' method, as it appeared to be more acceptable to both management and in line with accounting procedures of the time as Littleton (1933) explained.

Interestingly the 'profit and loss' method usually resulted in unrealised gains on assets not being accounted for, while any losses on assets would normally result in an asset write-off. This could be seen as an early application of the prudence principle and is in line with the current practice of 'lower of cost or market value' and market factors will have a direct influence on any managerial decision to write off an asset.

Accordingly, market events during the period could result in asset impairment and influence management to implement an asset write-off, with the subsequent impact upon profits available for distribution to shareholders.

Lee (1975) goes on to consider that by the end of the 19th century various accounting handbooks had emerged, such as Dicksee's Auditing of 1892, and these set out some principles under which accounts should be prepared and reported upon in the corporate report. The accruals principle of matching revenues to expenditure was recommended with fixed assets valued at historical cost and depreciated over their useful lives. The division of capital and revenue was becoming important; however, the profit and loss account was not a statutory requirement, just the balance sheet. This illustrates the importance throughout the 19th century attached to the balance sheet and its underlying principle of considering the assets, liabilities and equating these to the capital employed within the corporation.

Littleton (1953) considers the practice of the day of reporting the net assets at the start of the period, and the net assets at the end of period, with the difference being measured as profit (or loss) as a scientific product of the double entry system significantly promoting a longer term perspective for financial reporting as opposed to short term market valuations. This draws an interesting comparison to today's financial reporting environment, which is seeing a shift towards market based valuations, in various forms.

Lee (1975) cites records of corporate reports during the 19th century being hard to obtain as a major limitation of research in this area, particularly with regard to depreciation and recording of profit, with many

corporations having hidden reserves and a vested interest to understate profits so as not to pay a high dividend, in effect the emergence of being prudent in financial reporting. This is in direct contrast to the case of reporting an inflated profit figure in order to pay high dividends, as in the case of the railways. Those reports that are available and were disclosed are often very brief in nature, with a minimal amount of information. This results in a lack of information being available in respect of any diminution in asset value and how this was accounted for.

The cases³ that established the principle of capital maintenance and stated that dividends should not be paid out of capital were controversially overturned in a later case in 1889. The implicit doctrine of these earlier cases was that assets should be depreciated over their useful lives.

Lee v. Neuchatel Asphalte Company (1889) put a more strict interpretation³ of this previous case law and defined assets as either fixed or floating and dispensed with the idea of depreciation of fixed assets and opened the way for effectively paying dividends with the result of capital depletion. The Lee case was later followed by several other cases⁴ that confirmed the judiciary as following the 1889 decision. Yamey (1962) sums up the judiciary's view at the time that it is not for the courts to

³ Such as MacDougall v. Jersey Imperial Hotel (1864); Rishton v. Grissell (1869); Mills v. Northern Railway of Buenos Aries Company (1870); Dent v. London Tramways (1880) and others.

⁴ Such as Verner v. General and Commercial Investment Trust (1894), Dovey and the Metropolitan Banks of England and Wales Limited v. John Cory (1901), Bond v. Barrow Haematite Steel co. (1902).

preside over matters that are for business men to decide. As Morris (1986) highlights, the courts were leaving depreciation, and hence the concept of capital maintenance, as a discretionary matter for management to decide the best strategy to adopt in light of commercial factors.

Carlson and Morris (2003) discovered that depreciation charging at the end of the 19th century was inconsistent among corporations, and often related to earnings and profits. Carlson and Morris (2003) found that if the firm could afford to charge depreciation and still report expected profits to shareholders, then often depreciation would be charged. If, on the other hand, profits were insufficient to support a depreciation charge, then corporations were more likely not to depreciate the asset.

This behaviour could also be considered an example of earnings management within the firm, and illustrates that even in the 1800s corporations were striving to ensure that reported earnings were in line with investors' expectations and that only those items which were able to be absorbed by the financial statements financially without adversely affecting reported performance would be included. This draws a parallel to the earnings management issue of today and the subjective nature behind any decision to charge an impairment loss in the corporate report and the subsequent impact this may have on reported performance.

To underline the importance of asset valuation within corporations and how any decline in asset values is accounted for, Feinstein and Pollard (1988) estimate that the total value of depreciable assets in the UK was £3,706 million in 1880, rising to £5,619 million in 1900. Clearly, if a proportion of these assets were stated at more than their recoverable amount and became impaired, then the impact upon reported profits and hence dividend distribution would have been severe.

2.6 The Twentieth Century

The Companies Act of 1900 reintroduced the requirement that compulsory audited financial statements had to be presented by all registered incorporated corporations. The Companies Act of 1907 introduced the distinction between private and public companies, with differing statutory requirements in terms of corporate reporting. Public limited companies were required to file their balance sheet with the Registrar of Companies.

Arnold and Matthews (2001) and Edey (1977) consider that the first quarter of the 20th century saw accounting information becoming less useful due to the wide range of available practices to management and a desire to keep disclosure levels to a minimum in a secretive environment.

The Royal Mail case of 1931 involved the issue of disclosure of reserve accounting and the impact of an adjustment through the reserves that

turned a considerable loss into a profit. This case is relevant to the issue of asset impairment, as prior to the regulations surrounding impairment of assets, potentially a loss on an asset could be adjusted through the reserves of the corporation and in many instances, this is what happened earlier involving the losses on assets in the railway industry. The Royal Mail case caused controversy in terms of corporate reporting practice of the day, and may have caused some companies to voluntarily disclose more information than they were legally obliged to. Edwards (1986) and Walker (2003) certainly consider that the Royal Mail case had an impact on corporate reporting disclosure among some of the larger corporations.

Arnold and Matthews (2001) considered the disclosure in corporate reports for the period 1920, 1935 and 1950. Part of their work related to assessing the extent of disclosure of depreciation of fixed assets. Arnold and Matthews (2001) found that out of a sample of 50 of the largest listed UK corporations in 1920 only 18 stated any depreciation charges in their corporate reports. In 1935 the number of corporations quantifying depreciation had increased to 26, however, the extent and type of disclosure in relation to the diminution in the value of the asset was inconsistent from company to company, with some just having a round sum figure, while others gave more detail on accounting policy. The fact that only just over half of the corporations in the sample actually disclosed any depreciation would appear to indicate the inconsistent practice within corporate reporting.

It was not until the Companies Act of 1929 that corporations were required to present a balance sheet and profit and loss account to the shareholders. However, only the balance sheet had to be filed with the Registrar of Companies.

Edwards (1992) notes the issue of depreciation of assets in published financial reports was still inconsistent among many firms in the first half of the twentieth century, with differing degrees of provision, often depending on the level of profits available. This in turn had an impact on the asset valuation reported in the balance sheet in addition to a lack of capital maintenance required for continued long term trading.

The Institute of Chartered Accountants in England and Wales (ICAEW) started publishing *Recommendations on Accounting Principles* (RoAPs) in 1942 to guide practitioners and corporations on the issues of the day that the Institute considered required addressing. A total of 29 RoAPs were issued between 1942 and 1969. This was the first instance, apart from in textbooks, that any authoritative body had issued any guidance in relation to depreciation of fixed assets. RoAPs 9 was issued in 1945 entitled *Depreciation of Fixed Assets*, and although it was only guidance, the ICAEW was the dominant force in UK accounting and auditing at that time, with considerable influence over the policy and practice of corporate reporting in the UK.

The ICAEW played a role in the development of the 1947 Companies Act (CA47), through input to the Cohen Committee. The government body, The Board of Trade, set up the Cohen Committee to consider amendments to existing company legislation and corporate reporting. The Companies Act of 1947 incorporated many of the ideas of the ICAEW's RoAPs and was the first UK legislation to contain detailed reporting requirements, such as an audited balance sheet and profit and loss account presented to shareholders, duly filed with the Registrar of Companies.

Edwards and Noguchi (2004) consider that the CA47 reforms were important in terms of providing information to investors relevant for decision making. The CA47 required extended disclosure in corporate reports and incorporated many best practice principles advocated by the ICAEW at that time. Significantly, the 1947 Companies Act stipulated that the accounts should show a 'true and fair view' of the corporation and this important concept has wide ranging theoretical implications in relation to the objective of corporate reporting and the process of asset impairment determination, as the later chapters in this thesis will illustrate.

2.6.1 Early Regulatory Guidance

RoAPs 9 Depreciation of Fixed Assets recommended straight line depreciation of fixed assets over their useful lives, while at the same time acknowledged that different types of depreciation (such as reducing

balance) may be more suitable depending on the circumstances of the corporation and the asset in question.

In the same year as the issue of RoAPs 9, the 1945 Income Tax Act granted capital allowances at favourable rates in post-war Britain in order to encourage investment in business assets. Capital allowances are an allowable deduction in the computation of taxable profits and are worked out with reference to the purchase price of the qualifying asset and a pre-defined rate stipulated by the government. Depreciation is not a tax deductible expense in the computation of profits chargeable to corporation tax. Both these significant developments meant that corporate reports would usually include a depreciation charge in the accounts. However, the actual amount of depreciation would not necessarily be disclosed, as this was not required.

The depreciation charged in the accounts to arrive at the reported profit could be different to the capital allowances claimed for an allowable deduction for taxation purposes, as the company policy towards depreciation could be different to that stipulated by the government in the determination of capital allowances.

Fixed assets would now normally be depreciated over their useful lives based on the historical cost convention and the best practice of the day recommended by the ICAEW. This became accepted practice in UK published corporate reports and was in line with the requirements of the

1947 Companies Act. Some corporations also used the reducing balance method of depreciation, as this method allocated a greater depreciation charge early in the life of the asset, and was deemed more suitable for certain types of asset. The guidance outlined in RoAPs 9 was the first specific guidance provided to corporations in respect of accounting for the diminution in the value of an asset. Interestingly, RoAPs 9 specifically mentioned that goodwill would not normally be depreciated (Section 2, para (a)) and also in the final paragraph of RoAPs 9 it mentioned that amounts set aside for the possible replacement of assets were a matter of financial prudence and would not affect the calculation of profit. Baxter (1953) was highly critical of these early principles as he considered that it stifled the thought process behind the theoretical development of accounting and financial reporting.

2.6.2 Price Level Changes

Edwards and Noguchi (2004) consider the RoAPs issued by the ICAEW between 1948 and 1966, in particular RoAP 12 *Rising Price Levels in Relation to Accounts* issued in January 1949 and RoAP 15 *Accounting in Relation to Changes in the Purchasing Power of Money* issued in May 1952. Both these recommendations supported the continued use of historical cost accounting at a time of inflationary pressure within the UK and were met with some criticism from industry and academics alike⁵

⁵ E. H. Davison of the London School of Economics addressed an ICAEW meeting in London, 1947 stating that current HCA and depreciation policies are misleading. Also, P. M. Rees, chief accounting officer of Lever Brothers and Unilever advocated basing depreciation on the replacement cost of assets.

questioning the sustainability of using historical cost for reporting purposes. However, the latter recommendation did suggest that if a workable alternative to historical cost is developed, then this should be considered in due course.

The key issue in terms of both these significant RoAPs was that of capital maintenance and the effect on reported profits in times of rising prices. The issue of what base to use in terms of asset valuation is critical to the debate about impairment, as the event that measures any impairment loss is dependent upon the valuation base used.

As Edwards and Noguchi (2004) point out, corporations such as Industrial Chemical Industries and Guest, Keen and Nettlefolds, among others, in 1952 announced revaluations to current values or costs as opposed to historical or book values of fixed assets, with the depreciation charges calculated on the basis of these revalued amounts. This was clearly in contradiction to the RoAPs of the day and had a considerable impact upon those corporations reported profits. The Board of the Inland Revenue also agreed with the ICAEW and confirmed that the determination of profits should be based on historical cost, not on any revalued basis.

Clearly from the point of view of the Inland Revenue, any revaluation of assets and subsequent depreciation in times of rising prices would result in a decrease in reported profits and hence a fall in the amount of taxes

collected. Maximisation of revenue collection is a primary objective of the Inland Revenue and for a large number of corporations to follow this practice would have resulted in a significant reduction in revenue raised.

Conversely, the ICAEW would have been concerned at the apparent departure from accepted principles enshrined within their RoAPs. The standards of the day were based on prudence and the financial statements were required to reflect a true and fair view of the financial transactions and assets, liabilities and capital based on the historical cost convention. To depart from this convention in favour of volatile market based valuations, with susceptibility to wide fluctuations over short periods of time, would not have been acceptable.

The next guidance in relation to fixed assets and their depreciation did not appear until 1978 and was issued by the then regulatory body for the UK, the Accounting Standards Committee (ASC). The ASC was formed in 1970 and started issuing guidance in the form of Statements of Standard Accounting Practice (SSAPs) soon afterwards. Statement of Standard Accounting Practice 12 Accounting for Depreciation (SSAP 12) became effective in January 1978. The issues around SSAP 12 and subsequent standards post the 1970s will be discussed in the following chapters. Suffice to say, at this point, issues were apparent in relation to the use of historical cost in accounts and the overall concept of what valuation base for assets should be used in corporate reports against the background of inflationary pressures within the UK economy.

2.7 Summary

This concludes the brief historical background to the early issues with regard to corporate reporting, with particular reference to asset valuation and their subsequent diminution in value and how corporations accounted for and reported this in their corporate report. What is clear from this brief assessment is that asset valuation and their subsequent diminution in value is a very critical area within corporate reporting, and it has been so since the very first corporate reports were issued. This in turn makes the issue of asset impairment relevant even in the very earliest stages of corporate reporting.

An implicit common question appears to be emerging when considering the early history of corporate reporting, namely 'what is the purpose of corporate reporting?' One could argue that over time the purpose of corporate reporting may change depending on the users' expectations. The question of purpose is critical to understanding how corporations should be reporting their performance.

The purpose of the earliest corporate report could arguably be considered to be a form of keeping track of income and expenditure in the form of double entry book keeping, with the accounting equation forming a convenient convention to apply in a consistent manner.

When corporations were formed under a Royal Charter or Act of Parliament in the late 17th century they were required to report to the shareholders a basic balance sheet. The purpose of corporate reporting then could be considered to provide information that could be useful and relevant to shareholders. The 'Bubble Act' of the 18th century was aimed at limiting the number of different owners in a corporation by restricting the number of partners to 6. By the time the next raft of legislation was introduced in the 19th century, the purpose of corporate reporting became more defined with the wide scale separation of management and ownership of corporations. The purpose of corporate reporting was considered to produce information for the shareholders and creditors.

The purpose of corporate reporting also became to show a 'full and fair' view of the corporation with the publication of a balance sheet based on accepted principles of the day. This defined requirement of corporate reporting could be seen to be an objective that corporate reports were required to aspire to in terms of meeting investor requirements.

In the 18th and 19th centuries, due to the infancy of the practice of corporate reporting, little guidance was available to corporations in respect of what principles should be adhered to, this resulted in a wide variety of practice, often opportunistic in nature, with the intention of bolstering profits at the expense of maintaining capital. Corporations were more or less free to manipulate the corporate report in order to present a positive outlook to the people that mattered; the shareholders.

This clearly resulted in problems and several high profile cases came before the courts as a direct result of shareholders and creditors losing money invested.

Central to the issue of erosion of capital was the fact that fixed assets were not depreciated on a widespread basis in order to maintain returns to investors. This had a damaging long term effect on the corporation in terms of capital investment and led to capital depletion.

The ensuing conflict of interest between investors eager for a return on their capital and management's ability to be flexible in their implementation towards the objective of producing a 'full and fair' balance sheet resulted in the high profile court cases discussed earlier. A common element of many of these cases was the issue of asset valuation and how those assets should be accounted for over their useful lives.

It was not until the 1940s that corporations were specifically guided to implement depreciation, both in the form of guidance from the ICAEW and the wording of the 1947 Companies Act. The valuation of assets and their subsequent diminution in value within the balance sheet has emerged as a critical area in the determination of the reported corporate results. Conversely the post war period saw discussion of the impact that increasing prices had on corporate reports, and the guidance that was issued from the ICAEW continued to support the historical cost convention. The issue of inflation accounting arose again in the 1970s

and will be discussed in Chapter Five within the context of valuation of assets.

The impairment of assets can therefore be seen as an issue relevant to the very earliest of corporate reports based on the publication of a balance sheet with assets constituting a major element. How changes in the value of assets have been reported in either the form of depreciation or an impairment charge in the form of an asset write-down has consistently been an issue of contention between interested parties in corporate reporting since the 1800s.

What is clear from this brief historical review of corporate reporting is that asset valuation within the corporate report is a critical element in the determination of reported performance. The impact of the reported performance communicated to the stakeholders can result in a wide range of reaction dependent on the content of the corporate report and the message conveyed within.

The purpose of corporate reporting could be defined throughout this period of history as providing information to investors and other interested users, however, exactly how that objective should be attained in terms of what constitutes information that stakeholders would be satisfied with is a difficult question. The next Chapter considers the theoretical development of corporate reporting.

Chapter Three

3 Theoretical Development of Corporate Reporting, Conservatism and its Relevance to Asset Impairment

3.1 Objectives of Corporate Reporting

This chapter evaluates how the objectives of corporate reporting have evolved and considers how the concept of asset impairment relates to those objectives.

The purpose of early corporate reports was to provide information to shareholders and creditors⁶ with the phenomenon of separation of ownership from management of the corporation. However, the objective of these early corporate reports was less well defined. Case law often cited maintenance of capital as an objective for corporations to achieve⁷, and thereby implicitly this became an objective upon which to report.

Importantly these cases were decided on an individual basis and this could lead to inconsistency from one judicial decision to another. A common cause of this contention was the fact that corporations accounted for assets in a variety of forms, often not depreciating assets in order to fund dividend payments, which in turn led to a lack of necessary capital maintenance within the corporation (Lee (1975) and Reid (1988))

⁶ For example this objective was implicitly enshrined within the 1851 Companies Act.

⁷ Binney v. Ince Hall Coal and Cannel Company (1866), Mills v. Northern Railway of Buenos Ayres Company (1870), Dent v. London Tramways (1880), Davison v. Gillies (1879), Leeds Estate, Building and Investment Society Ltd. v. Shepherd (1887) and others.

which effectively resulted in manipulation of the reported financial information and non adherence to the principle of conservatism within corporate reporting.

3.2 Early Theories of Corporate Reporting

The practice of corporate reporting has evolved over time without an over-arching, accepted theoretical foundation. Debate about adopting a meta-level approach to embrace an over-arching theoretical framework for corporate reporting is inevitably linked to the established practice of corporate reporting.

The objective of corporate reporting could arguably have been established by legislation in the 19th century to provide information to shareholders and creditors; however, identifying a theoretical base from which to achieve that objective was not clearly established. In the United States the 1920s and 1930s saw regulation with input from academics such as Paton (1922) and Littleton (1933). Much of this early research took place largely as a result of the 1929 New York stock exchange crash. At that time, accounting was taught as a University subject in the US, but had not yet been established in the UK as a University subject (Beattie *et al*, 1992), hence a wider range of theorising appeared to take place in the US than in the UK.

The discussion of a suitable theory for corporate reporting can be traced directly back to the 1920s and 1930s and indirectly to earlier judicial decisions about the maintenance of capital concept (which implicitly applied the conservatism principle) and the application of the 'surplus' approach to reporting.

Paton (1922) was one of the first accountants to contribute some academic thought the practicalities of a suitable theory for corporate reporting. Paton (1922) advocated the use of the *entity theory* for corporate reports, with a clearly separate identity for the corporation distinctly separate from the ownership of the corporation. This method advocated the use of matching revenues with expenditures and focused attention to the income statement rather than the balance sheet.

Paton (1922) argued that the *proprietary theory* which considered the corporation and its owners as a homogenous combined unit responsible for both the assets and liabilities was not realistic, as ultimately the shareholders were not liable for the liabilities of the firm. The *proprietary theory* evolved from the discipline of income measurement in economics introduced by Fisher in 1906. However its application was apparent in several cases in the late 19th century (Revsine, 1981), when consideration was given to the total net value of assets at the start of the period, and comparing this to the total net value at the end of the period, with any 'surplus' being considered profit. This gives rise to the issue of

unrealised gains being reported within the corporate report and is directly reminiscent to the fair value debate of today⁸.

The type of valuation method used to measure an asset determines the extent of any surplus available. Conversely, if the asset valuation has diminished in value, such as in the case of asset impairment, then a deficit may arise and this could be considered as a loss.

Canning (1929) in the US used the principles of Fisher's income measurement to postulate an ideal measure of 'true' income and contrasted this as a critique of accounting practice. Edwards (1939) was a UK economist who also used micro-economic theory to evaluate accounting practice.

Input from academics such as Paton (1922) and Littleton (1938) led to the development and application of the method known as the income determination model, which shifted focus to the income statement rather than the balance sheet. This model drove the development of accounting practice and thought in the US for the next 30 years (Beattie *et al*, 1992).

The approach to theory development within corporate reporting since these early theoretical thoughts has broadly been divided into what is known as positive and normative streams. The positivist approach has its roots firmly in the discipline of economics and often, though not

⁸ A review of the fair value debate takes place in Chapter Four.

exclusively, attempts to predict and explain reaction to corporate reports. The normative approach tends to focus on current practice and principles in order to consider 'what ought to be' best practice and principles in corporate reporting. The asset impairment review process has evolved as a result of accounting practice in line with the normative approach; however, the basis of valuation used in the impairment review process arguably is closely aligned to the proprietary theory.

Baxter (1953), Littleton (1953), Story (1963), Cowan (1965), Biegler (1965), Alberts (1973), Briloff (1973), Demski (1973) and other prominent academics and commentators have all discussed the issue of the non-existence of an over-arching theoretical framework for corporate reporting as being a major problem in terms of consistency within corporate reporting, while emphasising the need for a decision usefulness focus.

3.3 The Trueblood Report

In 1973 the Trueblood report was published by the American Institute of Certified Public Accountants. This US government commissioned report was one of the first authoritative reports that sought to outline the objectives of corporate reporting. The report confirmed much of what had already been discussed in terms of the objectives of corporate reporting being to provide information to users and still defined the users as investors and creditors, however, it did make some useful

recommendations in terms of informational content of corporate reports based loosely on an evaluation of user needs.

Bloom (1996) provides a very useful summary of the Trueblood report, highlighting the key recommendations of the report as being the need for a much wider range of information, including forward looking estimates of income, cash flow and assets. This included a range of valuation measures such as discounted cash flow, replacement cost, exit value as well as historic cost. The Trueblood report stated that the type of asset would determine the type of valuation measurement to use, and that a mixture of valuation bases would be appropriate. The issue of valuation is significant in relation to this thesis as it determines the extent of any asset impairment charge.

Accountants were, and still are, reluctant to commit themselves to publishing forecasts on the grounds that they are too uncertain and un-auditable, this argument was debated throughout the 1970s, 1980s and 1990s and is still being discussed in terms of fair value and the extent of the use of future discounted cash-flow forecasts being used as a basis for asset valuation within the corporate report. Watts (2003a) argues that this practice as being a gross risk to FASB and at odds with the principle of conservatism enshrined within corporate reporting practice.

3.4 The Corporate Report

The Corporate Report was a mix of views of various organisations and individuals and was the first attempt by the UK accounting profession to conceptualise some theoretical issues relating to accounting and corporate reporting at the time. The Accounting Standards Steering Committee (ASSC, later to become the ASC) published The Corporate Report and in a similar fashion to the Trueblood report in the US, the objectives of corporate reporting were considered.

Many of the ideas in The Corporate Report can be found in the current ASB Statement of Principles, such as objectives, characteristics and users of corporate reports. This illustrates the significant influence of The Corporate Report.

Measurement is also addressed in The Corporate Report, with the evaluation of six measurement techniques against the criteria of theoretical acceptability, utility and practicality. The measurement bases considered are historic cost, current purchasing power, replacement cost, net realisable value, value to the firm and net present value.

The Corporate Report iterated that no one measurement method could serve all the needs of the many different users. This view is reflected by Baxter (1953), Armstrong (1975), Parker (1975), Tweedie (1996), Bloom (1996), Bromwich (2005) and Rosenfield (2005).

Laughlin (1977) is critical of The Corporate Report for its apparent failure to address the accounting issues at a higher Meta-theory level instead of at the specific detailed areas of accounting and considered that until a high level theory of accounting is developed, the same problems and issues will remain.

3.5 The Solomons Report

The Solomons report entitled 'Guidelines for Financial Reporting Standards' was sponsored by the Institute of Chartered Accountants in England and Wales and published in 1989. The Solomons report identified the objectives of corporate reporting, in line with other reports in this area, namely to enable the users of corporate reports to make a decision based on useful information. A primary consideration in terms of usefulness was deemed to be comparability of information, and this therefore would imply that standards should be consistently implemented across corporations and ultimately countries in the context of international harmonisation.

There are some fundamental differences between The Corporate Report and the Solomons report, most notably in the recommendation of using Value to the Business (VTB) as the preferred measurement base. This is an area in which The Corporate Report failed to make a clear recommendation, and has been quoted as a reason for the failure to

implement The Corporate Report due to vagueness about which measurement method should be used (Jones, 1995).

The Solomons report recommended VTB with the justification that financial capital should be maintained in real terms adjusted by a general level price index to show the gains or losses in a period. This could be considered to be similar in principle to the earlier 'surplus' method of performance measurement highlighted in early case law towards the end of the 19th century and in line with the proprietary theory of corporate reporting that emerged in the 1920s.

Whittington (1989) is critical of the simplistic, assumption based approach adopted by Solomons, particularly with regard to the primacy of the balance sheet and the subsequent increase or decrease in net worth. Additionally Whittington (1989) questions the so-called 'representational faithfulness' advocated by Solomons, and argues that representing economic reality within financial statements with solely VTB could be too narrowly defined, due to the subjective nature of the whole measurement and valuation process associated with VTB. However, as Alexander and Archer (2003) note, the term 'representational faithfulness' is significant as a form of adopting a true and fair view and has been introduced into both the Sarbanes Oxley Act (2002) and IASB's amended Framework for the Preparation and Presentation of Financial Statements.

The recognition, measurement and valuation of assets are critical issues pertinent to the concept of asset impairment and this will be evaluated in the thesis in terms of reporting practice of corporations.

3.6 Recent Theoretical Discussion of Corporate Reporting

Tweedie (1996) advocates the use of a consistent approach to corporate reporting and stresses the need for the development of a conceptual framework to be fluid and evolve with time in line with the practice of corporate reporting. This would appear to support Rosenfield's (2005) view that to focus on one theory or another is too narrow for the purposes of corporate reporting. Clarke and Dean (2003) also contend that the search for a conceptual framework has proved fruitless, at the expense of focusing on the practice of corporate reporting.

Many (such as; Laughlin (1977), Peasnell (1982), Whittington (1996), Buckmaster & Jones (1997), Page & Spira (1999), Bryer (1999), Alexander (1999), Macve (1999), Quattrone (2000) and Alexander (2003)) comment that the absence of an over-arching *theory* for corporate reporting in itself leads to inconsistency in the financial reporting and regulatory process, and this causes subjectivity in the reporting process. Subjectivity within corporate reporting is a practical reality. Many areas of the corporate report require a subjective judgement to be made and whether a firm theoretical foundation would reduce the subjectivity is an interesting question. The impairment review process involves a large

degree of subjective estimates and this is just one area of corporate reporting among many that require some form of judgement.

A central theme among proponents of adopting a suitable theory for corporate reporting relates to the hierarchical level within which a theory for corporate reporting exists, and whether a Statement of Principles or a conceptual framework document is able to support theoretical aspirations, or merely act as a set of guidelines or practical rules to regulate the everyday practice of corporate reporting.

Whittington (1996) summarises an early hierarchical structure developed by Edey (1977) which identifies four different classifications in terms of accounting standards and the regulatory recommendations for corporate reporting;

- Type 1: Disclosure of accounting policies
- Type 2: Uniformity of layout and presentation
- Type 3: Disclosure of specific matters
- Type 4: Measurement methods

The Types 1-3 above relate to day to day rules or procedures to follow for the practice of corporate reporting, whereas the Type 4 classification represents a theoretical aspect. Whittington (1996) cites Baxter (1981) as concluding that Type 4 'rules' should be avoided at all costs in corporate reporting, as to include these types of 'principles' would

seriously jeopardise the evolutionary nature of accounting, and impinge upon the practice of corporate reporting and the free thinking associated with this practice. The decision to implement an asset impairment charge depends on the type of measurement method adopted and the subsequent valuation result derived from the measurement base.

Laughlin (1977) identifies a hierarchical structure for the development of a suitable *theory* for corporate reporting, and comments that until the basic definitional problems are described at a higher level in accounting, problems will persist in the prescribed approaches offered in various concept documents, such as The Corporate Report (1975). Laughlin identifies three levels of thought specific to accounting, namely the Higher level (meta-theory), the Intermediate level (principles) and the Specific level (rule based).

Alexander (1999) considers the adequacy of financial statements in the form of a hierarchy in a similar fashion to that of Edey (1977) and Laughlin (1977). Alexander (1999) classifies three types of benchmarks for corporate reporting, being Type A, Type B and Type C. Type A can be defined as an '*all-pervasive fundamental concept*,' Type B as a set of rules or conventions and Type C as the detailed or specific methods. A similarity exists with the previous hierarchical approaches to corporate reporting, although the focus and context relates to the over-arching meta-level true and fair view.

Alexander (1999) identifies a Type A category as being the UK true and fair view concept, overriding all other concepts, being the primary objective of the corporate report. Type B is categorised as a Statement of Principles or some other framework document while Type C is defined as the detailed financial standards or regulation. Alexander (1999) does recognise that there will inevitably be some interaction between these different types of characterisations, however, he argues that Type B criterion are doomed to failure due to their inevitable conflict and lack of consistency with the Type A and Type C criterion. Alexander (1999) draws on the philosophical epistemology of knowing what constitutes a true and fair view as representing a suitable over-arching theoretical context for financial reporting.

This normative approach to accounting theory through practice was challenged by Watts and Zimmerman (1978, 1979) who hypothesised that most of the current normative thinking in corporate reporting and standard setting was due to self interest on the part of corporations and accountants. Watts and Zimmerman (1978) advocated a positive theory of accounting and corporate reporting, largely based on economic concepts, as opposed to the normative approach based on the practice of accounting and corporate reporting.

Positive accounting theory considers different macro-economic and behavioural theories relating to Agency Theory. Factors such as owner/manager contracting, debt contracting, politics and the behavioural

factors surrounding decisions in these areas all contribute to arrive at a perceived valuation for the firm, based on future expectations and information availability.

Quattrone (2000) adopts a similar approach to Laughlin (1977) in setting out a suitable hierarchical theory for corporate reporting. However, he takes this approach one step further by going beyond traditional inter-disciplinary⁹ and intra-disciplinary¹⁰ approaches to accounting theory by considering the development of an accounting theory from a trans-disciplinary constructivist point of view. Quattrone (2000) argues that the epistemology of the constructivist approach brings the differing views of theory development together in an evolutionary and reflexive framework to view accounting as *knowledge of knowledge*. The ontology behind this framework is considered in terms of the meta-theoretical, theoretical and practical levels of accounting development.

Quattrone (2000) views accounting theory as being present at all levels of the hierarchy and concludes that a framework should be reflexive to deal with all levels in a trans-disciplinary approach. This appears to support the view of Tweedie (1996) and Rosenfield (2005) in terms of not adopting exclusively a *theory* for corporate reporting and accounting, but pursuing an evolutionary approach to developing concepts or theories based on a range of theoretical ideals relating to the current commercial

⁹ Inter-disciplinary approach to accounting research views accounting research as a sub-set within the social sciences and embedded within this is a philosophical approach to theory development.

¹⁰ Intra-disciplinary approach considers accounting research as a distinct area, closely linked to other major research fields, such as agency theory and economics.

reality of the corporate reporting environment. This recognises that the objectives of corporate reporting may change over time, depending on the information requirements of users and the economic circumstances at the time. This is an important point in terms of the changing economic circumstances in the timeframe of this thesis.

The impairment of assets is a good example of a process at the regulatory level, a concept at the framework or principles level and at the theoretical level adopting a particular valuation technique. This iterative, integrated approach to the *theory* of corporate reporting appears to be an essential component for the purposes of producing financial statements. This illustrates how adopting a concept has implications at all levels within the theoretical hierarchy and with such a diverse range of activities in different situations, different principles may need to be adopted.

3.7 Agency Theory and the Conservatism Principle

Conservatism can be seen as a constraint to limit the opportunistic behaviour of management and therefore a benefit to the investors due to the characteristic of asymmetrical information content. Watts (2003a) summarises the impact of conservatism in the key contracting areas of debt covenants, compensation contracts and corporate governance as an efficient contracting mechanism that promotes optimal contract behaviour by promoting fiduciary rectitude due to the measure of having more stringent verification requirements for gains than losses. This results in

the asymmetrical timeliness of loss recognition and a greater delay in the recognition of gains resulting in the likelihood that net assets and earnings will have a greater propensity to be understated rather than overstated at any point in time.

This in turn reduces the potential of distributions that violate contractual obligations and hence maintains the value of the firm. The principle of conservatism exists as a natural upper boundary limit that curbs managements behaviour and decision making so that dysfunctional behaviour is reduced and firm value is increased (Watts, 2003a).

Many possible reasons for conservatism have been put forward over the years and Watts (2003a) summarises these as falling into four main categories within Agency Theory;

- Contracting explanation for Conservatism
- Litigation explanation for Conservatism
- Income explanation for Conservatism
- Regulatory explanation for Conservatism

3.7.1 Contracting Explanation for Conservatism

Contracting relates to behaviour towards the firm by those parties dispensing their contractual duties and the extent to which this benefits or disadvantages the investors. Contracting can take the form of debt

contracts, compensation contracts and governance related contracts and forms a major basis of Positive Accounting Theory. Extensive research in the area of contracting has been done previously by many researchers such as Smith and Warner (1979), Smith and Watts (1982), Watts and Zimmerman (1986), (1990), Healy (1985), Jones (1991) and Beneish and Press (1993).

3.7.2 Litigation Explanation for Conservatism

Litigation threats from investors and other parties who may have suffered loss as a result of the corporations' financial reporting practices is also seen as another reason for conservatism to exist. Recognising losses while not recognising gains until realisation could be seen as a way to limit potential litigation costs. Conservatism represents an orderly liquidation value of net assets that, argue Holthausen and Watts (2001), represents relevance for the equity investors and has a demand, especially if the abandonment option is being considered. Even if the abandonment option is not being considered by investors, then equity investors would still be 'better off' with a balance sheet based on conservatism principles due to the information quality that the conservatism principle provides when compared to other more market based valuations that are subject to constant fluctuation (Watts, 2003a).

3.7.3 Income Explanation for Conservatism

Taxation and a desire to minimise the tax liabilities of a firm may also lead to conservatism in financial reporting. Shackelford and Shevlin (2001) consider that as long as a firm is profitable there is an incentive to delay income in order to reduce the present tax payable, thus promoting the principle of conservatism.

This is an interesting point in relation to the decision to implement an asset impairment loss and whether this represents a form of earnings management. Whether a change in regulation promotes more or less asset write offs and is associated with an increase or decrease in the perceived level of earnings management and the subsequent impact this may have on the application of the Conservatism principle is something that will be considered empirically in this thesis.

3.7.4 Regulatory Explanation for Conservatism

The regulatory environment has traditionally been conservative and the regulators that set the standards have traditionally been in favour of Conservatism. This can be traced back to early corporate law and the first published accounts, as was discussed earlier in Chapter Two. Additionally the principle of prudence is specifically mentioned in the ASBs Statement of Principles. The desire to understate assets as opposed to overstatement of assets is likely to lead to less criticism from

stakeholders and therefore reduce the political costs imposed on regulators and standards setters (Watts, 2003a).

However, as Watts (2003a) highlights, the shift to discounted future cash flows in financial reporting, such as is the case to determine an asset impairment charge, leads to serious verifiability concerns that could arguably extenuate opportunistic behaviour and reduce conservatism in financial reporting. This shift has largely been seen by the regulators as a desire to reduce the bias and asymmetry in financial reporting and introduce more symmetry and neutrality into financial reporting.

3.7.5 Focus of Conservatism

A key theme emerging from this overview of possible reasons for conservatism is the issue of verifiability of the numbers in terms of reporting financial information to users and a desire to constrain potential adverse contracting costs due to over optimistic financial reporting.

Additionally the question of firm value and separable asset values are also an important issue in assessing the company in a liquidation case and this is also considered as a stewardship function of financial reporting enshrined within the conservatism principle.

Watts (2003a) specifically argues that including managers' estimates of future values within the corporate report¹¹ is a serious error that will lead to further corporate reporting scandals such as Enron and WorldCom. To discard all the associated verification requirements that conservatism requires and that forms a core competence of accounting information that helps users determine their own market valuation based on unverifiable information could, argues Watts (2003a), be fatal to FASB. The focus of conservatism in terms of verifiability concerns can be summarised in the following table:

Table 3.1 The Audit Focus of Conservatism

Assets	Liabilities
Understatement	Understatement
Overstatement	Overstatement

Source: Author

As Table 3.1 above highlights, the audit focus for assets is on overstatement and whether assets are stated at a verifiable amount and not overstated.

¹¹ Such as is used in SFAS 142 and IAS 36.

3.8 Theoretical Model of Conservatism

Roychowdhury and Watts (2007) develop a useful model based on Watts (2003b) to illustrate the components of value and where conservatism fits into these components. This is known as the Watts Theory and this *'attempts to explain why conservatism exists and predicts when it will be observed'* Roychowdhury and Watts (p6 2007).

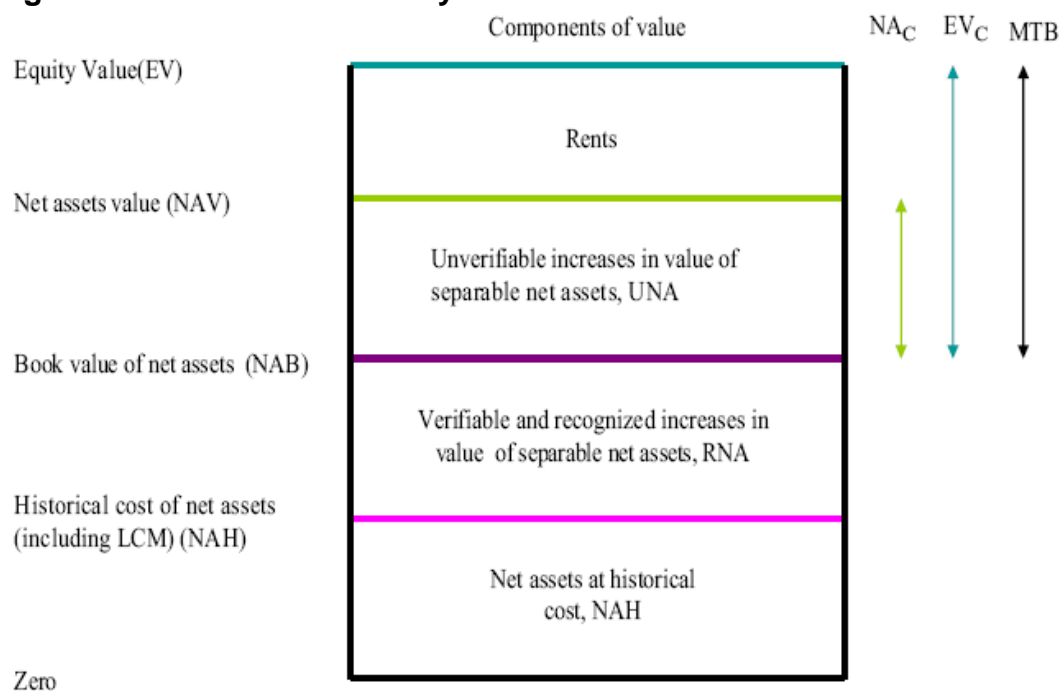
The Watts Theory is based on the understanding that accounting information should not try to report or reflect equity values (EV) and could be considered as an explanation of why financial reporting is consistently conservative in nature due to the demands from the different agents operating within the corporate environment.

The demand for conservatism results in a strong role for accounting information to report the available interim distributions to claimants by reflecting the market value of net assets. The rationale behind this approach is based on the verification requirements of gains versus losses and the potential claims on the corporation from litigation, debt holders, and other contracts with third parties and governance issues, such as regulatory requirements. All these mechanisms exist, as the previous discussion highlighted, to limit the potential distributions available and thereby protect the interests of the corporation in the long term.

The asymmetrical verification requirements provide a lower bound valuation of net assets and serve to limit potential inappropriate

distributions to claimants. The Watts Theory and its components of value are illustrated in the figure below;

Figure 3.1 The Watts Theory of Conservatism



Notes: NA_c is conservatism under the Watts framework - the understatement of net separable assets, EV_c is conservatism when the benchmark is the market value of the firm – the understatement of the market value of equity, MTB is the market to book ratio. NAH represents the lower of cost or market value rule (LCM). NAB is the book value of assets. NAV is the net asset value. Rents represent expected future earnings. UNA represents unverifiable increases in the value of separable net assets. RNA represents the verifiable increases in the value of separable net assets.

Source: Roychowdhury and Watts (2007, p7)

The approach by Watts (2003b) and developed by Roychowdhury and Watts (2007) in the above figure clearly illustrates the fact that unverifiable items such as future cash flows (defined above as future rents) become increasingly problematical to reflect within financial reporting, however, they have a natural representation in terms of the equity value and perceptions about future expectations of corporate

performance. Additionally recognition of unverifiable unrecognised gains in the value of net assets also feature as part of the conservatism principle to delay the recognition of such gains until realisation, as illustrated in the figure above.

Roychowdhury and Watts (2007) empirically evaluated the existence of conservatism. They found strong support for their key prediction that over the longer term there is a positive relationship between MTB and timeliness of earnings, and this reflects both good news and bad news.

Roychowdhury and Watts (2007) used a sample of 45,664 firm years over the period 1972 to 1999 to test whether there is a positive relationship between the market to book ratio (MTB) and the asymmetrical timeliness of earnings and empirically evaluated the existence of conservatism over an extended timeframe. This builds on and supports the view of Basu (1997) and questions the critics of the validity of the conservatism model and the properties of asymmetrical timeliness put forward by Dietrich, Harris and Muller (2000) and Givoly, Hayn and Natarajan (2007).

Roychowdhury and Watts (2007) were also concerned about the impact of reported acquired goodwill in terms of whether goodwill was being written off in a timely manner and the subsequent impact upon the earnings of the corporation and MTB. This is the case with large asset impairment charges relating to goodwill, as Andrews (2006) points out in

his study, a minority of corporations had excessively large goodwill write offs which heavily skewed the data.

Roychowdhury and Watts (2007) controlled for this impact of book value of goodwill within their study and found that the results were not significantly skewed. However, it is interesting to note that this sample selection is prior to the introduction of discounted future cash flows being available for use within the financial report to recognise or not recognise any goodwill impairment. It is interesting to note that Roychowdhury and Watts (2007) specifically mention in their conclusion that future research should investigate this aspect and the notion of whether changes in the impairment regulations impact the asymmetrical timeliness of earnings and the subsequent impact on the conservatism principle, which over the long term has provided security and stewardship within financial reporting to both the corporation and its claimants.

3.8.1 Criticism of the Watts Theory of Conservatism

Beatty (2007) is critical of the approach taken by Roychowdhury and Watts (2007) to measure conservatism and argues that other factors, apart from conservatism and timeliness of earnings could also be at play, especially when using any measurement that involved market to book values, which can be noisy and susceptible to change for a whole variety of reasons. Beatty (2007) also acknowledges that the approach taken by Roychowdhury and Watts (2007) is inconsistent with the approach of the

regulators and highlights that this gives rise to the need for more empirical research to address the demand for conservatism versus market or fair values within financial reporting.

LaFond and Watts (2008) develop further the approach taken by Roychowdhury and Watts (2007) in terms of assessing whether information asymmetry is positively related to conservatism. LaFond and Watts (2008) develop the case that when available unverifiable investment opportunities for the corporation in the form of future positive net present value projects (NPV) are high this leads to an increase in information asymmetry between managers with internal knowledge and external investors without such knowledge.

LaFond and Watts (2008) expect that conservatism will reduce the information asymmetry between inside and outside information holders in a direct positive relation to the extent of available future NPV projects, given that these opportunities are exogenous to the corporation. Therefore LaFond and Watts (2008) argue that the more information asymmetry, in the form of potential investment opportunities, between the inside and outside information holders, the more conservative the financial statements.

3.8.2 Further Empirical Evidence of Conservatism

LaFond and Watts (2008) test this hypothesis using a Basu (1997) cross section coefficient measure and a Fama and MacBeth (1973) regression model using a sample of 20,389 firm year observations from 1983 to 2001. LaFond and Watts (2008) measure information asymmetry between inside and outside investors using the probability of an information based trade (PIN) between the bid and ask spread (Easley and O'Hara, 2002). LaFond and Watts (2008) find strong support for their entire key hypothesis and importantly rebut the assumption of the regulators that conservatism causes information asymmetry and imply that the real situation is actually vice versa; this can be neatly summed up as follows:

'When relatively more of a firm's gains are unverifiable, the application of the asymmetric verifiability standards generates more conservatism. When the information asymmetry between equity investors in a firm increases (decreases), the application of the asymmetric verifiability following that increase (decrease) generates more (less) conservatism.'

LaFond and Watts (p449, 2008).

LaFond and Watts (2008) are stating that with large amounts of information asymmetry between investors and managers, this should increase conservatism and this is important in the context of asset impairment testing, as conservatism could be increased or decreased

depending on the valuation method employed to arrive at the asset impairment test result. For example, if using DCF techniques results in the corporation not implementing an asset impairment charge, this could arguably lead to less conservatism and less information asymmetries between information holders, which in turn could reduce firm value if the investors consider that the information used to produce the expected NPV calculations is an attempt at manipulation on the part of the management, thus ultimately resulting in an increase in agency costs for the corporation.

Barth, Landsman and Lang (2008) argue that the introduction of IASs in a sample of 21 countries improves accounting information quality by reporting more timely loss recognition and value relevance, while reducing the propensity and opportunity for earnings management. However, the specific issue of using DCF techniques within the financial reports is not directly addressed and a more holistic approach to reported information is taken.

3.9 Development of the Statement of Principles

After the Solomon's Report recommendations were digested, the ASB issued several discussion documents and exposure drafts throughout the 1990s prior to the publication of the final Statement of Principles in 1999. These were designed to get feedback from interested parties who might like to have some input in the final content of the Statement of Principles

as well as in line with the various standards that were due to be issued, rather than in their final order of appearance in the Statement of Principles.

The first Discussion Draft (DD) related to presentation of financial information and was issued in April 1991, and was followed by an Exposure Draft (ED) in December 1991 which resulted in the publication of FRS 3 Reporting Financial Performance in October 1992.

An Exposure Draft 'The Objective of Financial Statements and Qualitative Characteristics of Financial Information' was issued in July 1991.

Commentators such as Page (1992), Wilkinson-Riddle and Holland (1997) and others were critical of this original exposure draft. A notable comment that possibly led to a revised exposure draft was that the original lacked sufficient emphasis on the role of stewardship within corporate reporting. The revised exposure draft did indeed have greater emphasis on the role of stewardship.

The Accounting Standards Board then published a further raft of Discussion Drafts entitled 'The Elements of Financial Statements' and 'The Recognition of Items in Financial Statements', both issued in July 1992. In March 1993 'The Role of Valuation in Financial Reporting' and 'Measurement in Financial Statements' Discussion Drafts were published.

The following year, in July 1994, a Discussion Draft entitled 'The Reporting Entity' was issued by the ASB. Each of these drafts was followed by the publication of Financial Reporting Standards in the relevant areas. After the release of all these Discussion Drafts, Exposure Drafts and the significant extension of the regulatory framework, the final draft of the Statement of Principles was published in 1999. However, as was stressed by the ASB at the time, the final draft of the Statement of Principles could of course change in line with the evolution of the practice of corporate reporting, as new developments arise. The status of the Statement of Principles was designed as guidance and not intended to have regulatory status.

The content of the Statement of Principles is very similar to that of other framework documents issued in the United States, Canada, Australia and New Zealand. Importantly the Statement also includes similar content to the IASC's Framework for the Preparation and Presentation of Financial Statements, so this in turn will bring all those countries adopting IFRSs/IASs under the same conceptual umbrella. The IASC's reference document 'Framework for the Preparation of Financial Statements' was published in 1989.

As Tweedie (1996) highlights, the IASC's existing framework document provided a very useful frame of reference for the development of a UK conceptual framework, contextualised to meet UK requirements. However, there are some differences in the various conceptual

frameworks; of relevance for this research are the differences between the IASC's Framework for the Preparation and Presentation of Financial Statements and the ASB's Statement of Principles.

3.10 Standard Setters' Objectives for Corporate Reporting

After having established the historical background to the development of the Statement of Principles for the UK, this section will provide a brief summary of objectives from two important sources that are relevant to this research, namely the ASB and the IASB. There is a lot of common ground and overlap in terms of what the standard setters stated views are with regard to the objectives of financial reporting.

The ASB's Statement of Principles (199) states the following definition in relation to objectives of financial statements:

'The objective of financial statements is to provide information about the reporting entity's financial performance and financial position that is useful to a wide range of users for assessing the stewardship of the entity's management and for making economic decisions.'

(Chapter 1, paragraph 20)

The Statement then goes on to say:

'The objective of financial statements can usually be met by focusing exclusively on the needs of present and potential investors, the defining class of user.

Present and potential investors need information about financial performance and financial position that is useful to them in evaluating the reporting entity's ability to generate cash and in assessing the entity's financial adaptability.'

(Chapter 1, paragraph 21-22)

These objectives do give some consideration to all users, but still focus on the key investor user needs. Also of importance here is the fact that the stated objective should be information about present and future performance. This in some way meets the criticism that financial reporting is not forward looking, however, the practice of whether this objective has been met remains to be seen in financial reporting.

The focus of the Statement of Principles is towards considering what the assets and liabilities of the corporation are as a means of measuring the performance, rather than focusing on earnings. This is outlined in chapter four of the Statement of Principles.

The Statement of Principles then goes on to identify those desirable characteristics of the information. These are considered to be relevance, reliability, comparability and understandability. The Statement of

Principles was amended in 2010 under the convergence project to develop a joint conceptual framework for both the IASB and the US FASB to shift the focus from reliability to representational faithfulness, with an emphasis on completeness, neutrality and freedom from error. The issue of neutrality would appear to be contradictory to the principle of conservatism.

3.11 The IASB and Objectives of Corporate Reporting

The objectives of financial reporting are outlined by the IASB¹² in their Framework document published in 1989. Again, there are many broad similarities between the IASB's viewpoint, and that of the FASB and ASB. The objective featured in all three documents is the fact that the financial information should be aimed at the users' needs, especially the investors and creditors. The Framework states:

'The objective of financial statements is to provide information about the financial position, performance and changes in financial position of an enterprise that is useful to a wide range of users in making economic decisions.'

(Chapter 1, para. 12-14)

¹² The Framework document was originally published by the then International Accounting Standards Committee (IASC) and subsequently adopted by the IASB upon the Boards formation.

The Framework does identify the other users as employees, customers, government and the general public and acknowledges that they also require information. Interestingly, the Framework outlines that the needs of all users could usually be met from meeting the needs of the primary user groups, investors, both present and potential, and creditors.

This implies that the IASB considers that customers or the general public require mostly the same information as, say, a shareholder. It could be argued that this is not necessarily the case. A customer or potential customer among the general public may be interested in knowing the source of a product for example, and not potential for future earnings.

The IASB appears to attach a similar weighting to both financial position in the form of the resources available to the company, and the financial performance in the form of earnings and future earnings. This appears to contrast the ASB's focus on assets and liabilities. However, currently the IASB's Framework document is being revised.

There are many similarities between the standard setters in terms of objectives of financial reporting. In the UK and Europe the importance has shifted to the IASB objectives with the adoption of international accounting standards in those countries, and the IASB will continue to work with FASB in its drive to converge US and international accounting standards.

Walker (2003) praised the IASB and FASB for their work in the area of objectives for corporate reporting, while criticising the Australian profession for not following their example. He also goes on to express the need for a clearly defined, highly focused set of objectives for financial reporting.

The issue of development of an internationally acceptable Conceptual Framework for Corporate Reporting will continue to be a focus of debate with the adoption of IFRSs by many countries in 2005 and the fact that FASB and the IASB are currently working on a new joint project to produce an updated conceptual framework between them as a basis for producing future IFRSs.

FASB and IASB announced in May 2005 a new conceptual framework project designed to update and converge upon the existing concept documents of the FASB and the IASB framework document. The purpose of this exercise will be to enable the United States to use IFRSs, in whatever form they eventually take, in line with a modified conceptual framework. The project is a long term one, split into eight phases A to H with each phase related to the main chapters within the conceptual framework.

Phase A was completed in September 2010 after a lengthy debate and related to the Objectives and the Qualitative Characteristics of Corporate

Reporting, with a significant change in relation to the withdrawal of the key characteristic of 'reliability' with 'faithful representation'.

Phase A of the joint update project of the IASB conceptual framework clarified to a certain extent the objectives of financial reporting with the following statement:

'To provide financial information about the reporting entity that is useful to existing and potential investors, lenders and other creditors in making decisions about providing resources to the entity.'

(IFRS Framework, Chapter 1, para 2, 2010)

The objectives introduced in the new IFRS Framework document are very similar to the objectives stated in the ASB's Statement of Principles in terms of identifying investors, both present and potential, with other lenders and creditors as the primary users and anybody else who requires information as a secondary user. After a considerable feedback exercise by the IASB during which over 120 comment letters were received just in relation to Phase A of the updating process the objective of financial reporting was stated as providing information to users to enable them to make decisions about providing resources to an entity, including accountability of an entity's management.

The qualitative characteristics have also shifted in the latest conceptual framework chapter to a two tier identification of qualitative characteristics

divided into fundamental qualitative characteristics and enhancing qualitative characteristics. Relevance and faithful representation are identified as the fundamental qualitative characteristics, with the characteristic of reliability being replaced with faithful representation.

This move attracted some criticism in the form of comment letters from practitioners (such as the ICAEW), users (such as Corporate Reporting Users Forum), preparers (G100), regulators (ASB) and academics (British Accounting Association) as faithful representation was considered a less widely understood and applicable characteristic than that of reliability. However, the term faithful representation is associated with the over-arching true and fair view requirement as well as being aligned to directors responsibilities in the US via the implementation of the Sarbannes-Oxley Act.

Interestingly the term faithful representation also has its roots firmly planted in the Solomons Report (1989), as was highlighted earlier in this chapter. Another interesting focus embedded into the new conceptual framework document is that the financial reporting context adopts the entity theory perspective, and this clearly has its roots dating back to the early work done by Paton (1922) in this area as was also discussed earlier in this chapter.

The enhancing qualitative characteristics were maintained from the previous Framework document as comparability, timeliness, verifiability and understand ability.

Whether the FASB or the IASB dominate the new joint project or alternatively a consensus approach is adopted in this project will become clear as time progresses, but the clearly this is proving to be a lengthy process at the time of writing. The US has not adopted IFRSs along with Europe and many other countries due to differences in the reporting regulatory environment. This is set to be an evolving, possibly radical process, particularly in terms of the key area of valuation of assets and the subsequent impairment of any such assets.

The FASB and IASB will drive future financial reporting on a harmonised basis, with common objectives for financial reporting on a global wide basis.

3.12 Summary

This Chapter considered the objectives of corporate reporting and how the discussion towards a theoretical framework for corporate reporting has developed. The concept of asset impairment forms a critical component when considering those objectives in terms of maintenance of capital, conservatism and earnings management. The next Chapter

evaluates the literature in relation to asset recognition, measurement and valuation.

Chapter Four

4 Asset Recognition, Measurement, Valuation and the Implications for Impairment Testing

4.1 Introduction

This Chapter evaluates the myriad of measurement and valuation techniques available for assets and how the different methods impact on the corporate report. There has been a large amount of debate about whether historical cost, particularly in respect of reporting asset values in the corporate report, is a suitable measurement and valuation technique. The choice of measurement and valuation methodology in the corporate report determines the extent of any asset impairment charge.

4.2 Measurement and Valuation Choices

As the previous Chapter highlighted, the absence of an over-arching theoretical framework for corporate reporting has led to inconsistency in the practical application of different types of measurement and valuation techniques being used in different types of situations, arguably reducing the information utility of the corporate report due to the different types of measurement and valuation methods available.

The measurement and valuation debate for assets can be seen as an extension of the theoretical debate discussed in the previous Chapter as

each asset measurement and valuation technique has a different conceptual underpinning centred on principles such as income determination (Fisher (1906), Paton (1922), Littleton (1938) and Hicks (1946)) and maintenance of capital (Parker and Harcourt (1969), Revsine (1981), Solomons (1989) and Aiken and Ardern (2005)).

Nobes (2001) provides a useful summary of the available asset measurement and valuation bases categorised by reference to whether the asset is about to be sold (exit value) or acquired (entry value), this distinction is important as will be seen later in this Chapter. Others, such as Edwards and Bell (1961), Alexander (2003), Bromwich (2005), CASB (2005), Cairns (2006), ICAEW (2006) and IASB (2006) have also considered the available measurement bases for assets. The range of available measurement bases are set out in the following figures;

Figure 4.1 Past and Current Bases

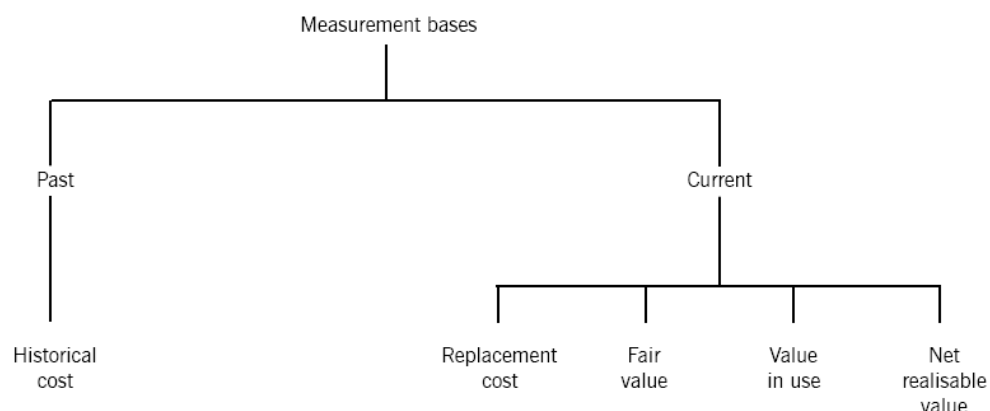


Figure 4.2 Entry and Exit Bases

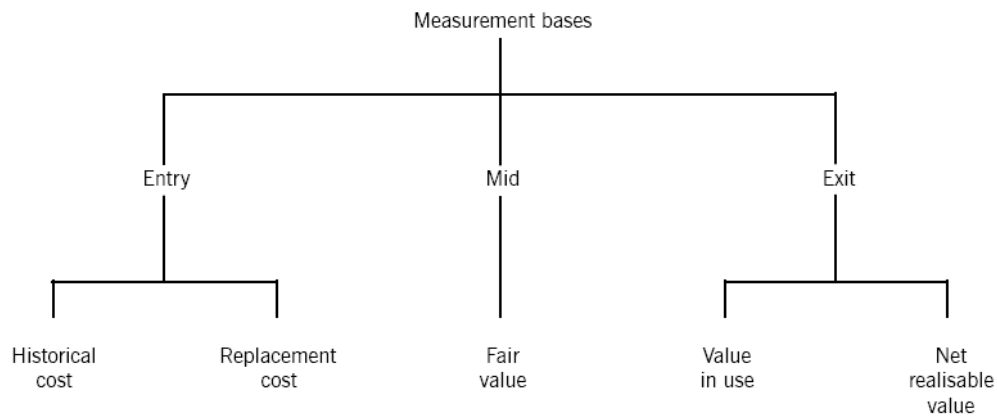
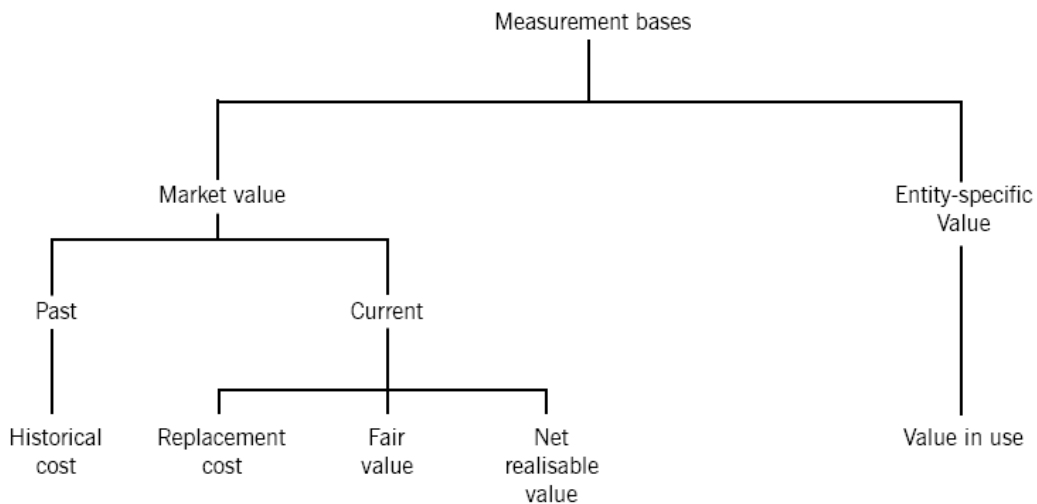


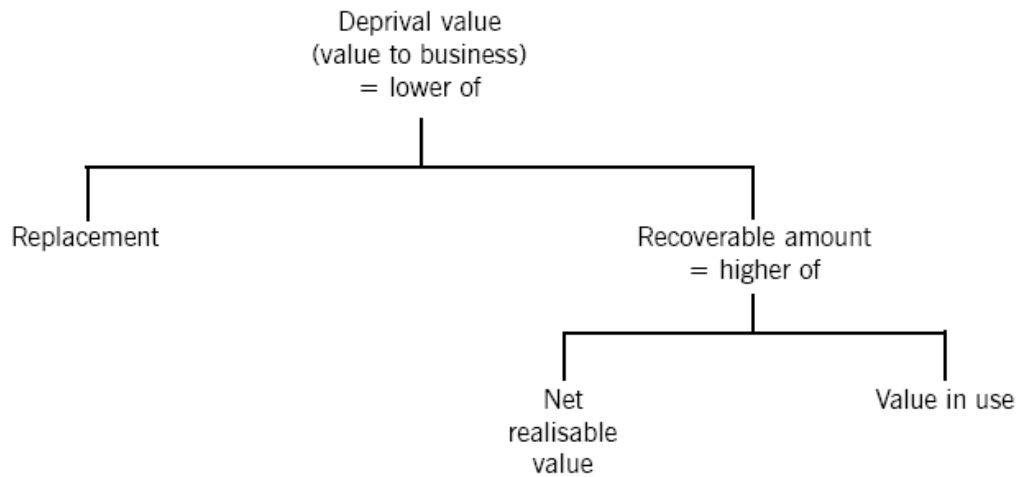
Figure 4.3 Market and Entity-Specific Bases



Source: Figures 4.1 to 4.3; Nobes (2001, p13).

There are various definitions of each of the valuation methods stated in Figures 4.1 to 4.3. A further measurement base is also defined as deprival value. The deprival value can also be defined as value to the business (ICAEW, 2006). This base can be considered to overlap with replacement cost, net realisable value and value in use and was an approach advocated as early as 1937 by Bonbright (1937) and is illustrated by Nobes (2001) as;

Figure 4.4 Deprival Value



Source: Nobes (2001, p15).

From this overview of available measurement bases in different circumstances five different methods can be identified:

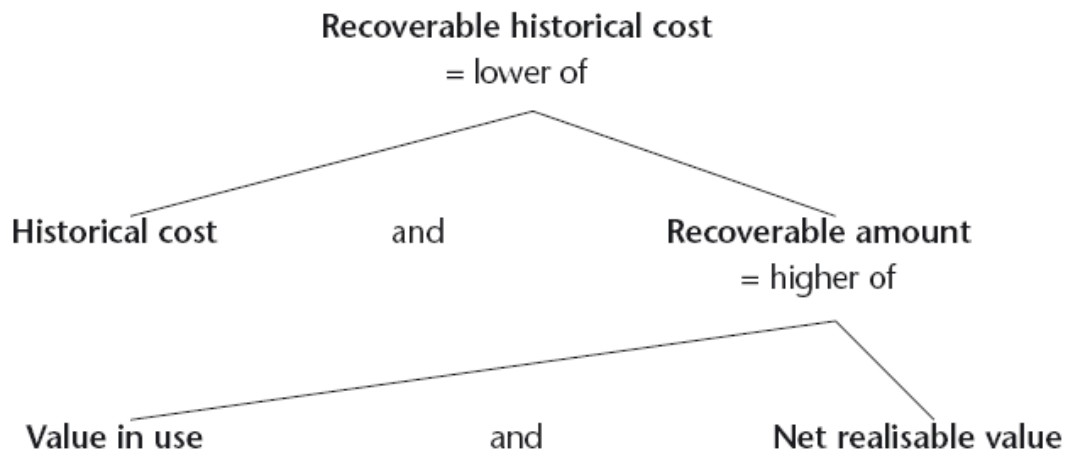
- a) Historical cost (HC)
- b) Replacement cost (RC)
- c) Fair value (FV)
- d) Value in use (ViU)
- e) Net realisable value (NRV)

Significantly, all of the aforementioned measurement bases can influence the determination of an asset impairment charge.

4.2.1 Historical Cost

The historical cost (HC) measurement base was one of the first to be used since the first statutory corporate reports were produced in the 1800s and is still in wide spread use today in many corporations. In its basic form it represents the transaction cost paid for a particular asset. In practice this has also become known as recoverable historic cost (RHC) due to the fact that an asset is not normally stated at more than its recoverable amount. This may arise as the result of depreciation or an asset impairment charge being implemented. This can be illustrated by the following figure:

Figure 4.5 Recoverable Historic Costs



Source: ICAEW (2006, p22)

Figure 4.5 illustrates where value in use and net realisable value fit into the recoverable historical cost paradigm. If an asset is recorded at a

value on the balance sheet at a higher amount than the recoverable amount, conceptually this is considered to be an indication of the need for impairment and the asset would need to be written down to its recoverable amount if the NRV or ViU calculation confirmed this.

4.2.2 Replacement Cost

Replacement cost can be defined, as figures 4.1 to 4.3 illustrate, as the amount it would cost to replace an asset. Replacement cost (RC) can therefore be considered in several contexts. Firstly as a deprival value in terms of how much it would cost to replace the asset if the corporation were *deprived* of its use, this has also been defined as value to the business and is illustrated in figure 4.4.

Secondly RC can be defined as a current cost or market value measurement base in terms of how much the asset would cost to replace, this is illustrated in figures 4.1 and 4.3. Thirdly, RC can be defined as an entry to the market basis of measurement, as illustrated in figure 4.2. In the case of an impairment review replacement cost may, in some instances, be used as the carrying amount and be compared against the recoverable amount.

4.2.3 Fair Value

There is no single definition of fair value. As can be seen in figures 4.1, 4.2 and 4.3 fair value is illustrated as a mid way point between replacement cost (entry value) and net realisable value (exit value). Fair value could also be defined as the current market value and as a measure of value to the business. This difficulty in terms of definitions and application of fair value under different definitions is highlighted by Nobes (2001), Alexander (2003), Bromwich (2005), Cairns (2006), Walton (2006), Zijl and Whittington (2006), Landsman, (2007) and Penman (2007).

The absence of a suitable definition for fair value, particularly in terms of whether fair value should represent an entry or exit price or a hypothetical non existent mid way price has attracted differing views among practitioners, (ICAEW, 2006), academics (Alexander, 2003) and standard setters (ASB, IASB, FASB¹³) as to what should actually constitute a 'fair value' and how this should be defined and measured in the financial statements.

The definition of fair value has been addressed by the FASB with the introduction in 2006 of SFAS 157 Fair Value Measurements which advocated the use of an exit price as the basis for measuring fair value. This approach is supported by the IASB in their discussion paper Fair

¹³ The ASB in FRS 11 prefer the term net realisable value to fair value as an exit price. The IASC use the term fair value in IAS 36 to mean the disposal proceeds of the asset. Both the FASB and IASB more recently have defined fair value as a range of exit price based measures depending on the availability of information.

Value Measurements (2006) as part of the project to converge US and IAS GAAP.

The approach of the IASB to suggest an exit price as a measurement basis for fair value has attracted some criticism in the form of comment letters in response to the discussion paper from Page (2007), ICAEW (2007), BAA (2007), ICAS (2007) and also from the practicing profession such as Ernst and Young (2007), PriceWaterhouseCoopers (2007) and user groups such as the Corporate Reporting Users Forum (2007) who broadly argue that to impose an exit price as a single definition of fair value is not strictly realistic or at times relevant. Clearly the definition of fair value still has to be resolved.

4.2.4 Value in Use

Value in use is defined as the value of the discounted future cash flows from continued use of the asset. This definition is common to the major standard setters, such as the FASB, IASB and ASB and is defined in several standards, such as IAS 36 and FRS 11.

Value in use, as illustrated in figures 4.1 to 4.5, can be considered as a current market value, an exit value, a deprival value and as an entity specific value. ViU has its roots in the classic Hicks (1946) income measurement model and is well accepted in the economics field.

However, its applicability in terms of suitability for the purposes of

corporate reporting have been questioned by commentators such as Peasnell (1977), Bromwich (1977), Watts (2003a), Bromwich (2005) and the ICAEW (2006).

ViU can be used to determine whether an asset is stated at more or less than its carrying amount in the asset impairment review process.

4.2.5 Net Realisable Value

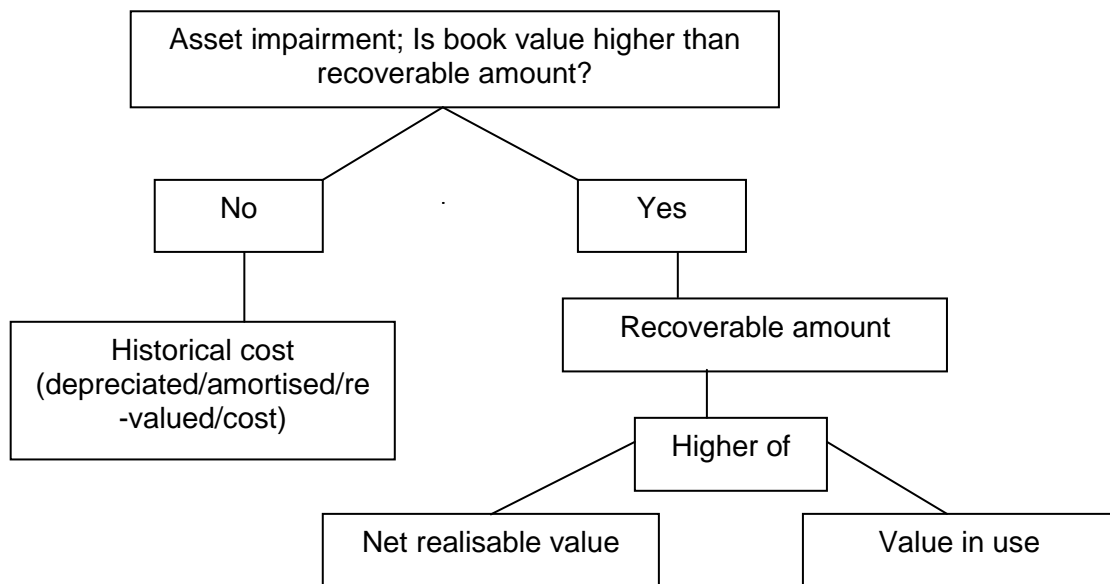
Net realisable value is defined as the amount an asset could be sold for less any disposal costs. As figures 4.1 to 4.5 illustrate NRV is considered to be a market based current value measurement basis, with the emphasis on an exit value, due to the fact that the value considers how much an asset could be sold for. As figure 4.5 illustrates NRV could be defined as a value to the business measurement method (deprival value) and also be viewed as a fair value measurement method when an exit value is being used to determine this amount.

NRV forms an important part of the asset impairment review process, as the NRV is compared to the historical cost and the ViU estimate. If NRV is higher than value in use but lower than HC, then conceptually the asset is impaired and should be written down to this recoverable amount (NRV).

4.3 Impact of Valuation Choice on Asset Impairment

The impact of valuation choice on the asset impairment charge has been threaded throughout this Chapter. Central to the implementation of an asset impairment charge is the question of whether the reported book value is higher than the recoverable amount of the asset, if so, an asset impairment test should be performed to assess if any write off is required. The following diagram illustrates the context of the decision to implement an asset impairment charge;

Figure 4.6 Measurement Bases used in the Asset Impairment Decision



Source: Author

Figure 4.6 illustrates that the asset impairment review process is mechanically similar to the recoverable historical cost concept discussed earlier and defined by the ICAEW (2006). The key consideration in the

asset impairment review process is whether the stated book value is greater than the recoverable amount. If the resultant recoverable amount is lower than the book value, an asset impairment charge should be implemented. Conversely, if as a result of the asset impairment test, the recoverable amount is deemed to be higher than the book value, an asset impairment charge is not needed. Interestingly the asset impairment review process is closely aligned to the concept of deprival value. Table 4.1 below illustrates the information characteristics of these three measurement bases.

Table 4.1 Measurement Bases used in the Asset Impairment Review Process and their Characteristics

Measurement basis	Market metric	Information source	Information type
Historical cost	Past	Actual transaction	Objective
Value in use	Future	Discounted cash flow	Hypothetical Subjective
Net realisable value	Exit	Estimated sale price	Hypothetical Subjective

Source: Author

Andrews (2006) found that of those corporations listed on the FTSE 350 that had charged an impairment loss in their financial statements, 37% implemented a value in use calculation, while the remaining 63% implicitly referred to NRV to arrive at the impairment charge. This raises the question of whether a particular measurement basis offers more or less propensity for managers to manage earnings. A research question

of this thesis is to determine whether any particular measurement basis may be more or less conducive to earnings management.

4.4 Literature on Measurement and Implications for Asset

Impairment

The concept of impairment, as Cairns (2006) highlights, is one of the oldest accounting principles in most jurisdictions and states that assets must not be carried in the financial statements at more than the amount that the entity expects to recover from their use or sale. The impairment concept is in line with the prudence principle of exercising caution in the preparation of the financial statements. The historical significance of this is highlighted in Chapter Two when considering the historical legal precedents for the maintenance of capital concept. Then, as now, the measurement and subsequent valuation of assets over a time continuum in the balance sheet is a factor that determines whether the corporation is able to maintain a capital base in order to continue operational activities.

Chapter Two illustrated that when assets were disposed of without adequate provision for depreciation, as in the case of the railways, the corporation suffered a depletion of capital as the majority of retained profits had often been paid out as dividends already. This severely affected the long term viability of those corporations and shareholders often ended up losing their investments due to assets being impaired and large amounts written off resulting in depletion of capital in the absence of

enough retained profits. Thus the maintenance of capital concept was not being upheld.

The choice of measurement base impacts upon the capital maintenance concept. When an asset is held at more than the carrying amount and an impairment charge is implemented, the type of measurement base used to determine the impairment charge will impact upon the extent of capital maintained within the corporation, the greater the asset write off then the greater the depletion of shareholders funds.

4.5 Some Arguments in Favour of Historical Cost

The previous section defined the different types of measurement base available and considered the amount of subjectivity and overlap in the application of the different bases. This section assesses the literature in relation to arguments for historical cost.

Historical cost as a measurement base has been supported by standard setters¹⁴, though often as part of a range of mixed approaches to measurement. The convergence project between the IASB and the FASB which commenced in 2006 has seen a shift towards adopting an exit price for the measurement of fair value as the IASB has produced a discussion document¹⁵ based on the FASB SFAS 157 Fair Value

¹⁴ For example by the IASC in their Framework document and the ASB in their Principles document *ibid*.

¹⁵ IASB Fair Value Measurements, November 2006.

Measurements adoption of an exit price basis for defining fair value. This is seen as a shift in the financial reporting paradigm as Barlev and Haddad (2007) and Walton (2006) illustrate.

The historical cost measurement base has been widely criticised by Chambers (1966), Edwards and Bell (1961), Beaver and Demski (1979), Tollington (1998a), Lev and Zarowin (1999), Holthausen and Watts (2001), Horton and Macve (2000), among others, for not reflecting economic reality within the published financial statements.

The economic reality concept has its roots expressed in terms of the classic Fisher (1906) and Hicks (1946) measurement of economic income in terms of being as well off at the end of a period as you were at the start of the period, with any increase being expressed as economic income. Asset measurement and valuation has an important role to play in this economic income concept and use of the historical cost measurement base is seen as not being particularly value relevant for investor needs (Lev and Zarowin (1999), Holthausen and Watts (2001)).

Despite these criticisms of historical cost, it remains the predominant basis of financial reporting globally (ICAEW, 2006). Often this is due to the fact that the historical cost represents the transaction basis of the asset acquired and therefore represents a simple, reliable, straightforward and cost effective measurement base based on monetary units. This approach also supports the legal book-keeping and

transaction recording requirement for the corporation, this is an important point often overlooked.

4.5.1 Historical Cost and Information Relevance

In practice, historical cost can be re-valued upwards, such as the case of long term gains on land and property. The opposite could also be true when an asset is stated at more than recoverable historical cost, as in the case of asset impairment, written down to its recoverable amount when this is less than the book value. The transaction triggers the historical cost recognition, something that is distinctly lacking in the other measurement bases, which tend to use hypothetical estimated measurement bases in an attempt to guess either a current market value or future value.

Several authors such as Mattessich (1957), Iriji (1965), Willett (1987), Whittington (1996) and others have shown support for historical cost either through reasoned opinion or base their conclusion on empirical, normative, philosophical or a priori research findings. Debate about many of the issues as to whether the traditional historical cost model is relevant has been evident since the work by Paton and Littleton in the 1940s considered the income revenue approach to financial reporting incorporating the propriety theory of the firm based on historical cost; this followed the practice of the day.

The economic environment over this extended period has varied from stable to high rates of inflation. Debate was particularly widespread in the 1970s and 1980s due to the inflationary economies of that period and the regulatory response of trying to deal with high inflation. However, even in times of low inflation, the debate is still ongoing as to what type of measurement base should be used for the purpose of asset measurement. Indeed the debate has intensified considerably recently with the discussion document from the IASB on fair value.

4.5.2 Measurement Models for Historical Cost

Mattessich (1957) was one of the first to formalise the process of measurement in financial reporting with the proposal of a matrix measurement structure. This system focused on the arithmetic transactions of the firm and the additive properties of the financial statements with the outcome that the accounts should balance. This was seen as one of the first attempts to provide an axiomatic structure to the transactions based aspect of financial reporting, with historical cost being the implicit measurement base.

Ijiri (1967) in his seminal work considers that historical cost, out of all the available measurement bases, is uniquely practical when compared to replacement cost or future realisable value. Ijiri (1967) goes on to provide a mathematical model to explain an axiomatic historical cost valuation model based on the characteristics of control, quantities and exchange.

This is a similar process to Mattessich (1957). Wells (1971) considers that the approach taken in determining the axioms in the historical cost valuation by Iriji (1967) as being not synonymous with the practice of accounting, however, given that control over an asset is a fundamental recognition criteria based on an exchange (monetary or otherwise) in return for a quantity of assets, this argument would appear to be questionable.

Bedford (1968) and Amey (1969) do consider that the work by Ijiri (1967) is a significant contribution to the measurement debate in accounting. Interestingly the notion of control over, and future benefit from, the asset, as identified by Iriji (1967) is a key determinant in the evaluation of an asset impairment decision.

Vickrey (1970) highlights the importance of reality in financial reporting with the view that the only logical basis for financial reporting is in the form of measurable monetary units based on the transactional reality of a corporation. This view is distinctly against the use of estimated future values in financial reports. An interesting question arises in relation to the concept of asset impairment and the notion of transactional reality.

4.5.3 Asset Impairment and Historical Cost

An asset impairment charge is only implemented upon the expectation or estimate of a potential value, however, several asset impairment

indicators, many of which are non-financial in nature, have been identified to try and establish if an asset is impaired, these are;

1. *an operating loss or expected operating loss in the area where the asset is used*
2. *a significant decline in the market value of the asset*
3. *damage to or obsolescence of the fixed asset*
4. *an adverse change in the market in which the fixed asset operates*
5. *a decrease in any fair value measures used on acquisition of an asset*
6. *re-organisation of the company*
7. *loss of key employees*
8. *an increase in market interest rates that would adversely affect the viability of an asset and hence its recoverable amount.'*

(FRS 11, para. 10)

Clearly none of these indicators of asset impairment as defined by the ASB in FRS 11 represent any form of transactional reality, instead they

relate to asset or industry circumstances. Andrews (2006) found that the reason most commonly quoted for an asset impairment charge was a decline in the market value of an asset, in these circumstances the market was usually an investment in a highly liquid market such as a stock exchange. In the majority of corporations no disclosure was given for the reason to charge an asset impairment loss. An interesting question arises in relation to the types of indicators that drive the decision to implement an asset impairment charge and this question will be considered in the empirical work of this thesis.

Anthony (1976) is strongly in favour of historical cost accounting and argues that using replacement cost can cause an inaccurate picture of the true state of affairs of a corporation in terms of reported profits. He argues that under historical cost, a corporation would naturally price its products and hence increase revenue and investment in assets in line with underlying inflationary indicators. He compares two balance sheets, one using replacement cost and the other using historical cost to prove his point in the form of a comparison of the two methods.

4.5.4 Historical Cost and Changing Prices

Ijiri (1967) went on to consider price level restatement in financial statements and constructed a dual interpretation model that reconciled traditional historical cost statement to price level statements. Ijiri (1967) illustrated that over the lifetime of the business price level adjustments for

earnings and capital gains are merely timing differences. This conclusion appears to be the same as Anthony (1976), though the methods employed are different. Walton (2006) also makes the same point that over the lifetime of a business the net effect is nil and it merely amounts to a shift in the recognition of a transaction.

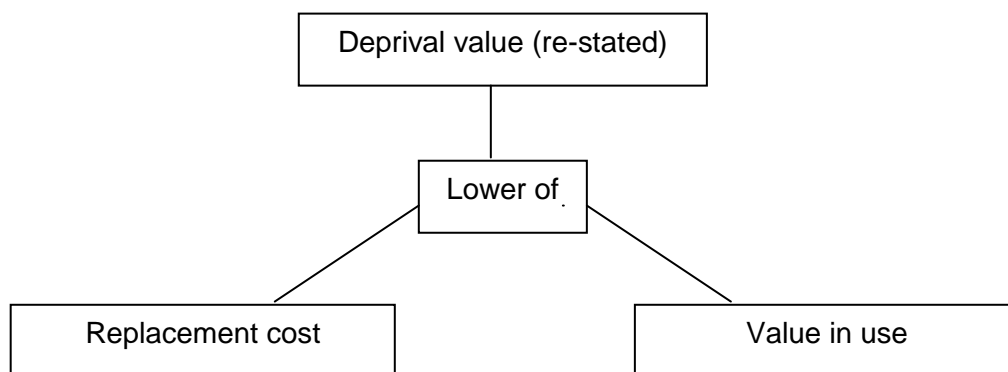
Peasnell (1977) identifies that depreciation under historical cost accounting reduces the potential manipulation of earnings when compared to depreciation under current cost accounting (CCA). While Peasnell is not considered to be a supporter of historical cost, he does concede that using CCA results in an asset valuation that loses the fixed form maximum depreciation of an asset implicit in the historical cost approach. Peasnell argues that more focus should be given to the cash flow statement and that a diluted form of CCA be adopted, known as 'second hand replacement cost', thus reducing the potential for manipulation of earnings through the depreciation charges of non-realised assets stated at a CCA valuation.

4.5.5 Historical Cost and Deprival Value

Peasnell (1977) appears to be advocating a recoverable amount as opposed to a replacement amount in order to reduce the propensity for earnings management. This is exactly the notion employed in the asset impairment decision. If all assets are stated at a replacement valuation this would ultimately eliminate the need for asset impairment testing as

the recoverable amount would never be used until such time as the asset was disposed of, at which point either a loss or profit on disposal could be recognised. If the deprival value was implemented as a concept, then whenever the recoverable amount was lower than the stated replacement cost an asset impairment charge should actually be implemented. Given that in practical reality the NRV of an asset in the vast majority of cases is unlikely to be greater than the replacement cost the only relevant information in the deprival value concept could be re-stated in figure 4.7 below;

Figure 4.7 Restatement of deprival value



Source: Author

On the initial recognition of an asset the following valuation rule can be stated as $HC=RC=FV=VTB > NRV$, based on this it can be implied that an impairment charge should be implemented due to the fact that the asset could not be sold for the amount that has just been paid for it due to the issue of disposal cost, this may or may not be an immaterial amount. The exception here would be when $ViU > NRV$. The use of ViU therefore

increases the discretionary choices available to management in addition to Peasnell's expression of concerns about the use of replacement cost. As figures 4.6 and 4.7 illustrate the use of replacement cost could increase the amount and incidences of an asset impairment charge due to the higher carrying cost under replacement cost when compared to historical cost. This raises the question, which forms part of the empirical work of this thesis, as to whether value in use as a measurement base decreases the extent of asset impairments in published financial statements.

Another report published within the inflationary environment of the 1970s was by Brayshaw and Miro (1985). This report considered whether historical cost accounting was useful and relevant within the context of an inflationary economy and found that the reporting of current costs as opposed to historical costs provided no additional information utility on stock market valuation during the period 1977/78. This report was inconclusive, however, as it was suggested that a possible reason for the lack of additional information utility was due to a lack of investor understanding about what the figures actually mean. This could be due to inadequate disclosure in the corporate report as well as a lack of user knowledge about the concept of current cost.

Another study that considered the information utility of historical cost compared to fair value was Khurana and Kim (2003). This report also found that reporting fair values as opposed to historical cost provided no

explanatory powers for changes in equity values, indeed they actually found in the case for those corporations with no analyst following that historical costs were more informative than fair values. This particular research related to financial instruments in the banking industry and these types of assets are considered to be highly liquid with an active trading market. This is a significant point given that FASB regard this type of asset as a 'type 1'¹⁶ being the most 'easy' to value due to their tradability and relates to the earlier point in relation to the finding by Andrews (2006) that the most frequently quoted reason for an asset impairment charge is a decline in the market value of an investment, with direct reference to a highly tradable share holding.

Willett (1987) extends the transactions based axiomatic approach to measurement taken by Mattessich (1957) and Iriji (1967). Willett (1987) strongly contends that due to the absence of perfect or complete markets for the majority of assets, the measurement of assets at market values becomes entirely subjective. As Willett (1987) highlights, valuation based theories do not seem able to cope with the implicit matching or medium of exchange which is so evident in the financial reporting process and the transactions based theories that have been suggested by Mattessich and Iriji. Willett (1987) identifies the formal properties of the conventional accounting structure and illustrates these in a representational theorem that emphasises the additive nature of the problem of measurement

¹⁶ FASB in SFAS 157 cite 3 different types of exit price level input for the determination of establishing a fair value, ranging from level 1 which is a direct, highly liquid market valuation to level 3 in which the information is estimated by management based on the expectations of market participants.

within financial reporting. Importantly Willett (1987) shows that the transaction based approach to measurement does show changes in 'values' of assets implicitly through the operational activities of the corporation based on realistic transactions in current terms, with re-investment in long term assets an implicit feature of this measurement method. This is illustrated in Figure 4.8 below;

Figure 4.8 Transaction based approach to measurement

Figure 1					
Arithmetic accounting assumptions					
	I		II		III
A	Opening equities	+	Retained profits	=	Closing equities
	+		+		+
B	Opening assets	+	Changes in assets	=	Closing assets
	=		=		=
C	- Opening funds	+ -	Changes in funds	= -	Closing funds

Note: 'Assets' are to be understood as 'non-monetary' accounts before deducting provisions (e.g. the cost of fixed assets); 'equities' include provisions such as accumulated depreciation as well as capital and reserve accounts; 'funds' are composed of 'monetary' accounts, debtors or creditors.

Extract from Willett (1987, p163).

Willett (1987) explains how this model does incorporate the economic capital maintenance concept by showing changes in the opening and closing positions based on the transactions of the entity. Willett (1987) goes on to prove this theorem mathematically and refers to this as the

funds approach to a transaction based theory of measurement in financial reporting. Willett (1987) argues that the concept of a transaction is the result of economic activity supported by observable, objective, real world phenomena and is therefore inescapably economic and a reflection of human behaviour, therefore not only quantitative, but qualitative as well. This qualitative characteristic is important, as it illustrates that financial reporting is not just about pure financial information, but that those figures are the result of behaviour by humans. The qualitative characteristics also form an important consideration in the asset impairment decision and this is an issue that will be addressed in the empirical work of this report. Willett (1987) concludes that 'primitive' concepts of wealth and capital maintenance are not needed to achieve accurate and relevant measurement in financial reports.

4.5.6 Historical Cost and Current Value

Lim and Sunder (1991) find that historical cost is more accurate than extant theories of current value and general price level adjustments when the base data of these adjustments are subject to measurement errors. Rather than general price level adjustments, Lim and Sunder (1991) consider that specific adjustments, based on the entity and its asset type be used. They consider that the type of valuation and measurement base to use should not be based on any particular theory or principle, but on industry and asset specific factors.

Lim and Sunder (1991) also contend that the availability of the market in which an asset is being traded also affects the valuation method to be used. This is something that is captured by the FASB in their determination of fair value and the liquidity and tradability of an asset based on a hierarchical structure tiered by the liquidity properties of an asset. This point appears closely related to the discussion in chapter three in relation to whether an over-arching theory should apply to corporate reporting or an iterative adaptive evolutionary approach driven by circumstances. Certain types of asset are more prone to impairment charges than others (Andrews, 2006) and the extent of the impairment charge will depend on the type of measurement base chosen as the earlier discussion illustrated.

Gutierrez and Whittington (1997) conclude that only one form of accounting, pure historical cost represents a complete form of accounting and measurement. They mathematically illustrate how pure historical cost possesses the essential characteristics of temporal consistency, per-durability and revaluation neutrality essential to reflect the capital maintenance of the corporation.

4.5.7 Historical Cost and Capital Maintenance

Gutierrez and Whittington (1997) draw an important distinction between global and item capital maintenance of the corporation and how this is reflected in the balance sheet. They stress the importance of the global

capital maintenance system over the item capital maintenance system as being fundamental as the former shows the aggregate of the capital of a corporation and must be independent in terms of not reporting any holding gains as profit.

An essential characteristic of the global capital maintenance of the corporation is per-durability. The per-durability of the reported financial information is defined as the measure of global capital maintenance being the same at a particular point in time, irrespective of the time path by which it was attained. The ability of the reported figures should also display the characteristic of revaluation neutrality, which can be defined as the situation that a routine revaluation should not produce any unrealised profit, only result in a similar increase in capital, thus maintaining the capital of the corporation.

Both per-durability and revaluation neutrality are essential components of temporal consistency. However, Gutierrez and Whittington (1997) acknowledge that in practice pure historical cost would result in excluding all revaluations and iterate that their analysis does not mean that other accounting systems should be excluded, but merely highlights the different characteristics and limitations of the five other methods in their study, namely, current value, current purchasing power, current cost accounting, current cost with gearing adjustment and 'real terms' accounting. Notably the use of an upward revaluation of historical cost, for example in the case of land and buildings, would meet the temporal

consistency requirement, even though this is not a 'pure' form of historical cost.

In testing for impairment of assets, historical cost in its various forms acts as an upper boundary in terms of the reported valuation for an asset which maintains the temporal consistency of the financial statements.

4.5.8 Historical Cost, Relevance and Reliability

Reliability of the historical cost reporting system has also been contrasted with the relevance of historical costs. Nichols and Buerger (2002) found that banks in the US were more likely to lend to those corporations that reported historical costs compared to fair value. However, they also found the opposite to be true in Germany. They consider that both methods should be used for reporting purposes, with historical cost as the primary reporting mechanism and fair value disclosed in the notes. Thus fair value could take a secondary role in corporate reporting as an additional source of supplementary information.

Another report considering the endogenous credibility of disclosure of fair values by Lundholm (2003) found that the credibility of disclosing fair values tended to reduce the reliability of the financial information and considered that corporations should be free to decide what to report and let the market take a view on this. Lundholm (2003) concluded that reporting accurately of past information can help lend credibility to timely

discretionary disclosure; he found this association to be strongest for those corporations with the lowest discount rates. The link to timeliness of disclosure is interesting in relation to impairment of assets as Andrews (2006) found that corporations may have a propensity to charge an impairment loss when the corporation was able to afford it, indicating a characteristic of earnings management. This is a point that will be explored empirically in this thesis.

Of significance also is the fact that Lundholm (2003) found a link to discount rates and discretionary disclosure policies. Andrews (2006) found that disclosed discount rates for those corporations reporting an impairment charge ranged from 3% to 32%; clearly this range has significant implications in terms of conveying a message to the shareholders about the associated risk and expected returns of a particular asset or group of assets and the fact that a lower discount rate is associated with a lower risk profile. It would seem logical that those corporations with a lower disclosed discount rate would be perceived to be a lower risk by the shareholders and therefore more credible as an investment to the risk averse investor. This is another aspect that will be explored in detail in this thesis in terms of the relationship between impairment and disclosed level of discount rates.

Another supporter of maintaining historical cost as the primary measurement base is Richard (2004). In this French research report, Richard (2004) identifies that fair value was predominant in France

throughout the nineteenth century and ultimately became unworkable on the premise that 'one cannot distribute expectations'¹⁷.

Richard (2004) notes that many assets in France at the time, particularly intangibles, had to be written off in the nineteenth century as there was no market for them to be sold, this in effect amounted to an impairment of those assets. Richard (2004) considers the shift to fair value to be a dangerous case of history repeating itself and is strongly opposed to the final published financial statements being based on forward looking information. He does however comment that such information could be disclosed in a supplementary manner.

4.5.9 Historical Cost and Mixed Measurement

Staubus (2004) considers the mixed measurement approach to financial reporting, including historical cost, is the most objective based measurement method that befits the reality of the financial reporting environment.

Anagnostopoulos and Buckland (2005) compare the historical cost and fair value measurements in the banking sector and highlight the issue of a trade-off between accuracy, reliability and verifiability and relevance and the needs of the different user groups. They conclude that for the banking sector the principled advantages of fair value are outweighed by

¹⁷ A quote from Dupon the prosecutor in the Mires case of 1862.

the practical difficulties of implementation. This is significant given that banks assets (and liabilities) are usually highly tradable and could be classed as a 'type 1' for the purposes of valuation information.

Nobes (2001) objectively states the advantages of historical cost as being that the figure for assets on the balance sheet has a 'meaning' in the sense that it represents a cost not yet charged to income but still recoverable. Additionally Nobes (2001) states that nominal financial capital maintenance as a concept is coherent through the profit figure. Other advantages such as reliability and cost effectiveness are also cited as advantages by Nobes (2001).

However, Nobes (2001) also highlights the problem of historical cost in terms of not being particularly relevant for the purpose of making economic decisions. Nobes (2001) quotes an extreme example of this lack of economic reality by highlighting the amortised cost of goodwill as having no economic meaning, due to the arbitrary nature of the amortisation process. The disadvantage of this extreme example may now have been addressed under IFRS 3 with the abolition of amortisation of goodwill over an arbitrary period being changed to allow goodwill to have an indefinite useful life and be subject to an annual impairment review test instead. This is significant given that Andrews (2006) found that the majority of assets (57%) that are subject to an impairment charge are intangible in nature and that most of these (49%) are goodwill impairments. A major research output from this thesis is to consider

whether the instances of asset impairment have increased or decreased with the introduction of international standards for UK FTSE 100 listed corporations.

Finally in this section, King (2003) considers that historical cost is preferable to fair value on the basis that the latter lacks precision.

4.6 Criticisms of Historical Cost

Much of the criticism of historical cost accounting can also be tied to the search for a conceptual framework for corporate reporting and the lack of an over-arching theory for corporate reporting that was discussed in Chapter Three, so a discussion about the tenets of developing a meta level theory for corporate reporting will not be repeated here, however, specific aspects of the limitations and some key literature specifically against historical cost will be considered.

4.6.1 Continuously Contemporary Accounting

*'Continuously contemporary accounting is the only complete and legitimate form of historical cost accounting'*¹⁸

Chambers (1966) in his book Accounting, Evaluation and Economic Behaviour considered the various measurement bases available for the

¹⁸ Chambers, R. J. et al, (1971) 'Historical Cost Accounting,' Abacus Vol. 7, Issue 1, p39.

purposes of corporate reporting and advocated the use of what he then called Current Cost Accounting (CCA) which was later changed to Continuously Contemporary Accounting (COCO) as some confusion over the definition arose when the Sandilands Committee in 1975 referred to CCA as being current replacement cost as a measure to reflect the impact of inflation. However Chambers (1966) earlier definition of CCA, now known as COCO, is defined as the current cash equivalent of an asset being the current market price or net realisable price for an asset. This can be equated to net realisable value discussed earlier in this chapter. Throughout Chambers distinguished career he steadfastly pursued his reasoning for the adoption of his COCO measurement approach even in the face of adversity from commentators such as Wright (1967), Sterling (1967) and Staubus (2004).

Chambers (1966, 1967, 1970, 1976, 1996, 2000) consistent view was that reporting of financial information is not concerned with the future, not to engage in expectations, forecasts and speculations but to report objectively on the past and present, and that only one method of measurement, current cash equivalent achieves this and offers a high degree of relevance to users for decision making in terms of assessing the current position of the corporation and the potential opportunities for the future. However, Chambers view does still involve an estimate of a hypothetical valuation based on an event that has not yet taken place in the form of an expected sale price.

Baxter (1967) warmly welcomes the debate put forward by Chambers (1966) however he questions the workability of adopting such an all pervasive measurement approach for all assets. Peasnell (1982) while criticising certain aspects of COCOA concedes that for the purposes of investment appraisal, use of exit prices as advocated by Chambers (1976) has a number of distinct advantages when compared to other measurement techniques.

The net realisable value of an asset is one of the measurement approaches used in the determination of an impairment charge when the NRV is lower than the historical cost but higher than the ViU calculation. This is a clear illustration of the fact that a mixed measurement approach is used in the asset impairment review process depending on the circumstances; the temptation to estimate a ViU figure higher than NRV may be desirable in terms of minimising the impact of any potential impairment charge on reported performance and asset (book) value. This temptation could be considered a form of earnings management.

4.6.2 Current Purchasing Power

Tippett and Whittington (1988) develop an adoption of the Edwards and Bell (1961) price level adjustment to financial accounts as a form of CPP, but rather than using an index factor to adjust all items in the financial statements, they retain the historical cost data and provide a relatively simple to follow two line adjustment to the financial statements to capture

the effects of inflation but emphasise that the user should be aware of the complexities of such an adjustment and be aware of the substance of such an adjustment rather than the seemingly simple form.

Vickrey (1994) firmly rejects historical cost as being obsolete and provides reconciliation between exit value and replacement cost, arguing that in reality there is little difference between these two methods in terms of interpretation of the fundamental concepts of measurement and valuation. Vickrey (1994) does this by claiming that exit value can be equated to purchasing power of the assets of the corporation and in turn that this can be equated to the replacement cost in terms of the amount of purchasing power that would have to be given up to replace the assets. Vickrey (p. 1104, 1994) refers to interpretation of replacement cost as '*the lower bound of the purchasing power that would have to be given up to replace the productive and merchandising capacity of the entity*'. This definition has clear connotations with the deprival value concept introduced by Bonbright (1937) and discussed earlier in this chapter. Interestingly Vickrey uses the term 'lower bound' which is a crucial element of the impairment review decision process in establishing the extent of any impairment charge and linked to the principle of conservatism. This will be looked at in detail in Chapter Five.

While Vickrey (1994) firmly rejects historical cost as failing to meet basic interpretation rules of measurement and valuation, he does acknowledge that through its continued use historical cost must in some way meet

certain decision usefulness information requirements of users but not in terms of information economics, as opposed to use of exit value which does imply relevant measurement/ valuation attributes concurrent with the maintenance of capital concept.

Walker and Jones (2003) also strongly back Chambers (ibid) in their assessment that only exit values represent the criteria for financial position statements. Clearly this assessment of literature is inconclusive, with the limitations of historical cost apparent, however, the acceptance and applicability of a viable alternative basis of measurement not being clearly identified as offering anything better than historical cost and having its own problems. Fair value has in various forms been proposed as an alternative to historical cost.

4.7 The Fair Value Debate

The earlier part of this chapter illustrated the different views in terms of defining fair value and this debate has been gaining momentum due to the discussion document about fair values issued by the IASB in 2006. However the debate about defining fair value pre-dates this move by some time, as this chapter has highlighted, fair value has lacked a consistent definition in terms of whether an entry, exit, mid way or value to the business valuation should be exercised for the purposes of defining fair value. Additionally the term has been labelled as confusing by a number of commentators such as Barth and Landsman, (1995), Horton

and Macve (2000), Nobes (2001) and Alexander (2003). The difficulty in defining fair value can also be related to the difficulty of defining a 'true and fair' view, exactly what 'fair' constitutes is a matter of opinion. Within the context of corporate reporting the question arises of whether the information presented represents a true and fair view of the corporation. This appears to bring the discussion back to the objectives of corporate reporting and the question of what type of over-arching principle or theoretical underpinning should drive the practice of corporate reporting. A question arising from this is whether the principle of asset impairment represents a true and fair view of the corporation and this is something that will be explored in the empirical work of this thesis.

Horton and Macve (2000) relate to this previous point by emphasising that until the objectives of corporate reporting and a suitable conceptual framework based on sound theoretical principles is established, the notion of fair value will continue to be unworkable due to its lack of consistency and the different versions of fair value possessing no firm theoretical foundation. They claim that the erosion of theory in standards for convenience as opposed to strong conceptual underpinnings has led to a decline in the relevance of reported financial information. Horton and Macve (2000) do note however, that one valuation set cannot meet the needs of all users, and this issue clearly needs to be addressed. This point was confirmed earlier by Lim and Sunders (1991). Alexander (1999) also suggests that different valuation bases may have to be used for different types of assets due to the reality of corporate reporting. This

is the case with the practice of asset impairment as Andrews (2006) highlights.

4.7.1 Fair Value Definitions

This confusion has been amplified due to the apparent lack of consistency for the definition of fair value by the standard setters such as the IASB. Nobes (2001) and Alexander (2003) point out that over the years a number of different definitions for fair value have emerged in IASs and IFRSs.

However, Cairns (2006) illustrates that actually the definition of fair value within IFRS has been mostly consistent since its introduction, with only minor differences. The basic premise being defined as;

'the amount for which an asset could be exchanged between a knowledgeable, willing buyer and a knowledgeable, willing seller in an arm's length transaction.'

(IAS 16 para 6)

This explanation of fair value can be defined as an exit price and has remained mostly unchanged in IFRSs since its introduction in IAS 16 in 1982, argues Cairns (2006). Importantly Cairns (2006) highlights the emphasis IASB places first on quoted prices in active markets and secondly on market information and accepted valuation principles.

Cairns (2006) goes on to explain that in the absence of market information the estimation of fair value is likely to be difficult and unreliable and asserts that fair value under IFRS is prohibited in such circumstances. However, this assertion clearly is not the case when one considers that the use of estimated discounted cash flows can be used in the computation to estimate an impairment loss under IAS 36 in the form of a value in use measurement base.

King (2003) points out that an asset can have a number of different values depending on who the valuation is for. Any one of them might be deemed 'fair' depending on the information requirements of the person interested in the valuation and this represents the fact that an asset will have more than one market with a number of different participants all willing to consider a different arms length valuation.

The notion that one fair value can be captured in one set of financial statements is not realistic or objective argues King (2003). Fair value is deemed to be a fuzzy concept, imprecise in nature and historical cost best serves the interests of the primary user, the shareholders, in terms of being precise and relating to economic transactions. Different users require different value information and King (2003) argues that one set of financial statements cannot be useful to all users. Nobes (2001) and Alexander (2003) infer similar arguments due to the fact that whether fair value is *fair* depends on whose point of view one is taking in the valuation.

This notion of knowing which market a fair value relates to is also emphasised by Barth and Landsman (1995) and they highlight the issue of whether fair value should be based on an entry or exit value dependent on the market characteristics of the particular asset. They conclude that a value in use basis of valuation is the most appropriate for a corporation due to its ability to capture total firm value for an asset while acknowledging the problem of estimation error. This last point appears to represent a huge conflict in terms of subjectivity and uncertainty as opposed to objectivity and reliability in relation to the reporting of such information in the corporate report.

4.7.2 Fair Values in Different Sectors

Several authors have considered fair value in relation to specific sectors such as banks or in relation to specific assets, such as investments.

Anagnostopoulos and Buckland (2005) report that the use of fair value as a market based metric is inconclusive and uncertain, with historical cost outweighing the merits of fair value. Another sector specific report by Carroll and Linsmeier (2003) consider a market based valuation for fair value of mutual funds and they consider that the use of fair value in this particular sector is reliable in terms of usefulness to the investors.

Notably mutual funds investments are highly liquid in a tradable market so the information availability for this type of fair value measurement would be relatively straightforward to obtain.

Aboody, Barth & Kasznick (1999) considered tangible fixed asset fair value revaluations in the UK from the period 1983 to 1995 and using statistical analysis found significant information relevance in terms of positive correlation with future firm performance. The fair value of the asset revaluations was based upon the market value or market information available for the assets.

Dietrich, Harris and Muller (2001) investigated the use of fair values of investment property corporations in the UK from 1988 to 1996 and find that fair value appraisal estimates are more reliable than historical costs because they appear to underestimate actual selling prices, however, this would appear to ignore the transaction based approach to financial reporting.

Another report that considered specific assets and fair value was by Herrmann, Saudagaran and Thomas (2006). Herrmann *et al* (2006) evaluated the fair value measurements for property, plant and equipment in the US and argue that fair value is superior to historical cost in terms of predictive value, feedback value, timeliness, neutrality, representational faithfulness, comparability and consistency. This is a comprehensive result and it should be noted that their reasoned argument relates only to property, plant and equipment, with a particular emphasis on the notion that real estate which has increased in value over a period of time should

be re-valued upwards to a fair market value, this is allowable under FRS 15 and IAS 16 but not under US GAAP.

Importantly Herrmann *et al* (2006) also make the point that much of the concern about upward revaluations and their reliability relate to intangible assets, such as goodwill, this is understandable given that the majority of asset impairments appear to be intangible in nature (Andrews, 2006).

Herrmann *et al* (2006) are advocating the use of fair value only in limited circumstances in relation to tangible assets rather than intangible assets.

Dietrich *et al* (2001) also highlight that the reliability of fair value estimates increases with the use of independent expert valuations and decreases with the use of management estimates of fair value and this can lead to a propensity to manage earnings and time asset sales in order to smooth reported earnings over a period of time. This view is confirmed by Martin, Rich and Wilks (2006) who consider that the difficulty in terms of auditability of fair value measurements could cause wide ranging problems for auditors in terms of verifiability.

Clearly a theme appears to be developing here in relation to fair value measurements, Carroll and Linsmeier (2003), Aboody *et al* (1999), Dietrich *et al* (2001) and Herrmann *et al* (2006) do advocate the use of fair values, while Anagnostopoulos and Buckland (2005) are more cautious but do consider fair value relevant at the expense of reliability. The markets within which the fair value is determined in the context of

these reports, such as bank securities, property, plant, equipment and mutual funds are active, observable and trade-able, therefore determination of a fair value based on a market value exit price is used and considered to be reliable due to the fact that the market information is available. This definition of fair value is objective based on the market values.

4.7.3 Fair Value and Market Value

The market from which the fair value emanates is proving to be a critical factor in the fair value debate. As mentioned earlier the IASB introduced a discussion document that seeks to define fair value based on the approach taken by the FASB in SFAS 157. This approach has been the subject of comment by interested parties. The definition of fair value that the IASB via the FASB is advocating is based on the notion of a hierarchical ranking approach to determining the fair value of an asset. The hierarchy is considered in terms of three levels of input to fair value based on the liquidity of the asset and observable or unobservable characteristics of the asset in terms of information availability in relation to value.

The definition of fair value has variously been considered as either value to the business, an entity specific metric or as a market based measurement. In IFRSs either approach has been considered as fair value depending on the measurement basis used. In the case of asset

impairment FRS 11 does not use the term 'fair value' and instead uses NRV. The ASB prefers the use of NRV and believes this gives a clearer definition than fair value (FRS 11, Appendix III, para. 17). In IAS 36 the term fair value is used and is defined as a market based exit value.

4.8 Convergence Developments Relating to Fair Value

In 2006 the fair value debate intensified with the IASB advocating the same approach to FASB in SFAS 157 which defines fair value as a market based exit value with the discussion document Fair Value Measurements issued in November 2006. Many comments were received by the IASB in relation to this document expressing concerns at the market based approach to determining fair value.

FASB in SFAS 157 define fair value as the value that could be obtained for the asset in the principal market if it exists or, if absent, the most advantageous market that maximises the price to be paid. In order to try and address the issue of different market participants using different valuations the notion of 'highest and best use' of the asset by market participants is introduced. The highest and best use of the asset in terms of a valuation by market participants is deemed to be the highest of an 'in use' valuation and an 'in exchange' valuation.

SFAS 157 also introduces the notion of observable and unobservable inputs in the determination of fair value. The use of observable inputs

should be maximised in order to arrive at a fair value for an asset and unobservable inputs (entity assumptions) should be minimised. SFAS 157 also introduces a hierarchy referred to as level inputs to determine the priority for the type of valuation bases to be used for fair value for each particular asset. Highest priority is given to low level valuation inputs in order to determine the fair value of an asset.

A level 1 input is defined as quoted prices in active markets for identical assets and these provide the most reliable evidence for the purposes of valuation. This is also known as the one to one market condition¹⁹ whereby users can relate directly to the value obtained from the market in order to value the asset.

A level 2 input is defined as observable market data other than quoted prices, either directly or indirectly. This could include similar assets in active markets or in markets that are not active or have few transactions. Other corroborating market data such as interest rates, credit risk and other inputs from observable market data can also be used as level 2 inputs.

A level 3 input is unobservable to the extent that observable inputs are not available. Where there is little or no market activity the reporting entities own assumptions about the assumptions of market participants,

¹⁹ By commentators such as Penman (2007) and Broadley (2007).

based on best information available in the circumstances, should be used.

The hierarchy is used to prioritise inputs to the valuation technique, not to determine the valuation technique itself. Thus three possible approaches to the valuation technique to be used in determining fair value based on the information available for the particular type of asset are created under SFAS 157. The market approach is based on market information and is regarded as level 1 or 2 inputs. The income approach based on expected future cash flow or income from the point of view of the entities own assumptions about the assumptions of market participants' attitude to potential income for the asset are regarded as level 2 or level 3 inputs . This is a form of value in use with the emphasis on market valuation of future cash flows as opposed to an entity specific valuation. However, the question must be asked of how this will be differentiated and justified given that both measurements involve the use of future discounted cash flows.

Finally the cost approach based on an exit price can be regarded as level 1 or 2 inputs. This approach clearly presents a wide range of options with regard to which valuation technique to use in the determination of fair value and does not solve the problem of inconsistency in the definition of fair value.

However both FASB and the IASB highlight that using an exit value in all cases together with the hierarchical approach to level inputs should aid the consistent use of applying fair values in the corporate report with a clear international definition of fair value. In terms of asset impairment this would result in the principle of the decision to impair an asset shifting from a valuation focus to an information availability focus.

SFAS 157 implicitly excludes transaction costs in the determination of fair value yet transaction cost is a decisive factor as to which market should be used to arrive at the fair value. This is apparent from the 'highest and best use' approach to valuation in the Standard.

The IASB have introduced IFRS 13 Fair Value Measurements in 2011 and this becomes effective in 2013 and this new standard adopts the US approach of SFAS 157 in respect of fair value.

Zijl and Whittington (2006) highlight the issue of transaction costs and illustrate that deprival value can actually be reconciled with fair value if transaction costs are taken into account. Zijl and Whittington (2006) also illustrate that fair value can be taken as net realisable value if this represents the highest and best use of the asset except when replacement cost and value in use exceed NRV. Fair value can be interpreted as value in use when profit maximisation is assumed as the 'highest and best use' of the asset. This is illustrated by the following extract:

Figure 4.9 Reconciliation of valuation techniques

Selection of alternative values under different measurement systems

<i>Case</i>	<i>Relationship</i>	<i>'Traditional DV'</i>	<i>'Re-stated DV'</i>
1	NRV>VIU>RC	RC	NRV
2	NRV>RC >VIU	RC	NRV
3	VIU>RC >NRV	RC	RC
4	VIU>NRV>RC	RC	NRV
5	RC >VIU>NRV	VIU	VIU
6	RC >NRV>VIU	NRV	NRV

Source: Extract from Zijl and Whittington (2006, p125)

As can be seen from the above table, deprival value and fair value can be represented by NRV when the highest and best use of the asset is to maximise profits, except when both replacement cost and value in use exceed NRV. The implicit assumption is that the NRV represents the price market participants are willing to pay for an asset based on their future expectations of the use of the asset. When NRV represents the recoverable amount which is higher than value in use but lower than book value an asset impairment has taken place.

Zijl and Whittington (2006) also point out that the hierarchical approach to valuation does not solve the question of which market should be used but does assist in the question of determining which information is most reliable, particularly when the notion of 'highest and best use' is used.

4.8.1 Fair Value and Bounded Rationality

Walton (2006) raises an interesting point about the relation of the transaction cycle to the use of fair value for certain types of assets involving executory contracts. Walton (2006) explains that the move to fair value appears to be shifting the boundaries of financial reporting to recognising a transaction before it is completed. Walton (2006) also detects a change in the definition of measurement certainty and reliability with a shift in emphasis to representational faithfulness.

This shift produces a focus on an estimate of economic activity at the expense of reliability and certainty. In the case of an asset impairment charge a readily available market valuation may be a more reliable assessment of the value of a particular asset, however, if the value in use is estimated to be higher than the market value this will reduce or eliminate the impairment charge. A value in use calculation may present the corporation with the most favourable reported performance in the case of asset impairment, however, whether this reflects an accurate assessment of economic activity is less certain. This illustrates how the information availability will drive the decision to impair an asset under the IASB/FASB definition of fair value rather than the deprival value concept of recoverable amount being the higher of NRV and value in use. The question of whether different measurement bases result in differing degrees of impairment charges will be considered in the empirical work of this thesis.

Barth (2006) considers the use of fair value to be a natural measurement basis to consider due to its ability to; reflect economic conditions, display predictive value, faithfully represent the assets of the entity incorporating risk and probability weighted assessments, aid comparability and consistency due to the use of asset specific characteristics, not entity specific characteristics and is unbiased and neutral.

4.8.2 Fair Value and Verifiability

Despite the advantages, Barth (2006) does identify the significant disadvantages of fair value. The lack of a consistent definition, as this chapter has highlighted, is raised as a concern which may have reduced now that the consultation process is complete and a joint FASB/IASB definition for fair value is in place in the form of IFRS 13. More significantly the problem of verifiability, especially in the absence of observable market inputs, is identified by Barth (2006) as a concern. Closely linked to the issue of verifiability is the fact that management have the ability to affect fair value estimates.

However, Barth (2006) does point out that management have always had the propensity to manage earnings no matter what the accounting regime is and whether the use of fair value estimates encourages earnings management is an open empirical research question. This thesis aims to consider if management make more use of estimated cash flow projections in order to reduce the impact of an asset impairment charge,

partially addressing and contributing to the open research question identified by Barth (2006).

A higher level problem for fair value identified by Barth (2006) is the issue of the circularity of reflecting fair values in the corporate report when the stated objective is to provide the users with information that assists their decision usefulness in making value judgements about the entity. This was a concern identified by PriceWaterhouseCoopers (2007) in their recent survey and confirmed by the views of the CRUF (2007).

Barth (2006) does attempt at mitigating this issue by emphasising the fact that even if all assets and liabilities were recognised at fair value, this would not equal the market value of equity, due to investors' perceptions of management skill and future growth, something that does not meet the recognition criteria in the financial report. However, given that the market valuation of a corporation is continuously in a state of flux due to a wide range of indeterminable factors such as sector specific issues, economic conditions, market conditions, individual perceptions and other market perceptions the argument that fair value, in whatever form, could or should represent a possible market value within such a volatile environment appears to diminish. The reason for this can be seen as no matter which measurement technique is used, unless this is 'the market', the value will never equal 'the market', due to the time frame involved in financial reporting as well as a whole host of other issues, such as those previously mentioned. This relates to the question of whether financial

statements should reflect the market value of a corporation, when in the parallel stock market the equity valuation of a corporation is already performing this task.

Barth (2006) illustrates the lack of equivalence by stating that the fair value market for assets is different to the market for an entity's equity, yet paradoxically, the estimate for fair value is derived from a hypothetical transaction based on observable or unobservable market information, a factor of such information will inevitably emanate from the equity value thus appearing to further compound the circularity problem.

Fair value is seen by Barth (2006) to be preferable to the plethora of inconsistencies²⁰ in relation to the mixed measurement approach currently in use under the existing IASB Framework and present in the range of financial reporting standards. However the predominant feature of these different variants is the consistent use of historical cost as the starting point for measurement. This point appears to have been overlooked by Barth (2006).

Barth (2006) highlights the problem that historical cost is not relevant for users making economic decisions yet also acknowledges that historical cost can be faithfully representative and is a real-world economic phenomenon. This contradiction would again appear to compound the circularity of including fair values based on estimates of market values in

²⁰ For example historical cost, amortised historical cost, impaired amortised historical cost, accumulated amortised and impaired historical cost, fair value and entity specific value.

the financial statements when the stated objective of the financial statement is to assist users in making their own informed decisions about the value they place on their investment.

The lack of neutrality in historical cost with the practice of only adjusting for decreases in value and not increases in value is also considered in a negative manner by Barth (2006) due to the bias inherent in this application. However, this practice is the result of the prudence convention, which is explicit within the ASB's Statement of Principles.

4.8.3 Fair Value and Information Utility

Cooper (2007)²¹ acknowledges Barth (2006) as providing a useful discussion about fair value and its relevance to standard setters, however, while agreeing that fair value has its place in terms of valuing certain assets and liabilities, he contends that historical cost measurement and a focus on transactions may be the best means of measuring performance and hence assist in taking economic decisions based on the assessment of performance.

Cooper (2007) argues that the primary focus should be on performance and not on the accuracy or completeness of the balance sheet, which can be considered as secondary. While Cooper (2007) identifies that performance cannot be measured without reference to the balance sheet,

²¹ Stephen Cooper is Head of Valuation and Accounting Research at UBS, a leading investment bank.

he argues that investors are primarily interested in potential future profits and evaluation of measurement bases should focus on performance measurement rather than completeness or accuracy of the balance sheet. This supports the idea that corporations have a strong desire to manage their earnings and hence performance in line with investors expectations. The question of whether asset impairment charging is a form of earnings management is a consideration in this thesis.

Penman (2007) has extensive reservations about the use of fair value, especially when the definition is restricted to an exit price. On balance, fair value appears to be conceptually desirable, however, upon implementation, unless the one to one market condition is present, fair value can create more problems than it solves. Historical cost is identified as having problems, but again with the emphasis of users on earnings performance, historical cost or fair value asset measurement becomes less of an issue.

Penman (2007) makes the point empirically by comparing two balance sheets for Coca Cola, one constructed using historical cost and the other using fair values. He illustrates that the information usefulness of estimating the fair value of Coke and then realising this through the income statement does not appear to give any more useful information to the user as compared to the traditional historical cost method. Overall Penman (2007) concludes the implementation of fair value based on exit prices to be a minus for corporate reporting.

Broadley (2007) provides powerful comments on Penman's (2007) paper from the point of view of financial statement preparers²², a crucial stakeholder in terms of implementation of financial reporting standards. Broadley (2007) supports Penman (2007) in his assertion that fair value can be useful in certain circumstances with certain types of tradable assets in the one to one market environment that has been labelled as a level one input, but that caution should be exercised with extensive use of estimates in the financial statements, which ultimately will be the case with the higher level inputs.

Broadley (2007) considers that while the historical transactions based approach to corporate reporting may not be ideal, it does report to users what the entity is actually doing in terms of asset conversion. Losing the connection with reality where management are stating opinions and expectations based on hypothetical unrealised transactions rather than providing information would be a dangerous course to plot. He considers that investors really require information and not estimates. These thoughts are strongly echoed in an independent survey of 50 investment professionals conducted by PriceWaterhouseCoopers (2007).

²² Philip Broadley is finance director at Prudential plc and chairman of the Hundred Group of Finance Directors.

4.8.4 Relevance of Fair Value

Landsman (2007) also discusses the relevance and reliability of fair value. In line with the comments from Cooper (2007), Broadley (2007) and Penman (2007), Landsman (2007) considers that fair value in the context of a level one input within a highly tradable market is useful, however, he explains that the level 2 and 3 inputs are prone to estimation error and this creates problems in information asymmetry. Additionally he raises the problem of moral hazard where managers may have an incentive to manipulate, manage or smooth earnings, particularly when fair value measures are being considered for upward revaluation or impairment of assets. This is the so called big bath problem when managers' bonuses may be linked to performance. The 'big bath' phenomenon is explored in greater detail in Chapter Five and forms a part of the findings in relation to whether asset impairment testing could represent a form of earnings management. Landsman (2007) concludes that fair values can be information relevant to investors but stresses that the level of reliability is affected by the unknown amount of measurement error.

Deans (2007) gives a practical response to Landsman's (2007) paper from the perspective of a user of financial reports²³. Deans (2007) considers that fair value may have its place for certain types of assets and in certain types of sectors and cites the fact that analysts already make extensive use of discounted cash flows in order to arrive at a

²³ Sarah Deans is Head of Accounting and Valuation Research at JP Morgan.

valuation for a firm as a matter of routine, but that this information does not originate from any fair values disclosed in the corporate report, but from the analysts perception of the entity and other market and industry specific factors, such as management skill. Overall Deans (2007) would like to see more research on the subject of whether fair value does present better information to users, as to date the argument appears unconvincing to Deans.

Several other constituents have joined the debate about fair value in response to the IASB measurement report and their invitation to comment. These comment letters were received in June 2007 and the process of consultation is now complete with the issue of IFRS 13 Fair Value Measurements. All of the comment letters received by the IASB are negative towards the exclusive use of fair value being defined as an exit price. These responses have been received from professional bodies, academics, user groups, corporate representatives and many others. Despite these very public opposing views to the definition of fair value put forward by the IASB, the body still went ahead and issued IFRS 13 using the exit price based on level inputs. A brief selection of these views is considered in the next section.

The CBI²⁴ does not consider the use of fair value as an exit price to be the only measure of fair value, while acknowledging its usefulness in certain circumstances. Notably the market participant view is restrictive

²⁴ Comment letter to IASB detailing the CBI response to the IASB fair value measurement discussion document.

and unnecessarily complicated. The CBI believes that fair value should also form part of the entity view of the business and not just market participants, this may be more relevant, reliable and useful to users.

The CRUF²⁵ (The Corporate Reporting Users Forum) represents a range of important users of corporate reports and considers the term fair value to be misleading and suggests the name should be changed to 'Current Exit Price' in order to avoid confusing users. The CRUF strongly support the transactional mixed measurement approach to corporate reporting, this is indeed strong evidence about users requirements given that the CRUF represents some of the major institutional investors in the World.

The ICAEW²⁶ again questions the merit of defining fair value exclusively as an exit price and consider that other factors such as the type of asset and circumstances will determine the valuation method and this will not necessarily equate to fair value. Also the US context of fair value is narrowly defined in the US GAAP regime when compared to its use in the IFRS/IAS reporting environment, although this difference is now eliminated with the issue of IFRS 13 in 2011. Importantly the ICAEW consider that transaction costs cannot be ignored in formulating a fair value and this implicitly equates to a value to the business (or deprival

²⁵ Comment letter to IASB detailing the CRUF response to the IASB fair value measurement discussion document.

²⁶ Comment letter to IASB detailing the ICAEW response to the IASB fair value measurement discussion document.

value) scenario. The Institute also consider the reliability of fair value to be a serious concern.

The ICAS²⁷ adopt a similar view to the ICAEW and additionally state that there is no justification for the use of fair value as purely an exit based price. FEE²⁸, the European accounting body also has strong reservations about the potential implication of defining fair value as an exit price. FEE raises many concerns put forward in the other comment letters, in particular the balance between relevance against the lack of reliability and verifiability are highlighted as a concern, especially with the use of hypothetical market prices.

Ernst and Young and PriceWaterhouseCoopers also express similar concerns about adopting an exit price for fair value and specifically state that the US context is different to that of the IFRS GAAP. The BAA²⁹ representing a range of academics is also equally pessimistic about the approach taken by the IASB in its preliminary discussion document. The BAA is puzzled at the lack of justification in the adoption of an exit price fair value. They also point out the problem of transaction costs, the subjectivity in using market assumptions and to which market that fair value should relate to.

²⁷ Comment letter to IASB detailing the ICAS response to the IASB fair value measurement discussion document.

²⁸ Comment letter to IASB detailing the FEE response to the IASB fair value measurement discussion document.

²⁹ Comment letter to IASB detailing the BAA response to the IASB fair value measurement discussion document.

Page (2007) and Benston (2006) also highlight that this type of implementation of fair value based on present values and estimated future hypothetical amounts is exactly the type of problem that led to major corporate scandals such as Enron and Worldcom and a repetition of such a scandal would be inevitable if the fair value approach adopted by FASB became internationally adopted.

All the comment letters are critical of the IASB in releasing a discussion paper that seeks to address measurement before the long awaited discussion document about the conceptual framework and all argue that the conceptual framework debate should take place and be resolved prior to the debate defining fair value. The outcome of the conceptual framework is a long term on-going process with Phase A, the first phase out of eight complete in 2010. Clearly with the issue of IFRS 13 along the same lines of SFAS 157 the IASB has not waited to complete the conceptual framework phase in relation to measurement and valuation before defining fair value in IFRS 13. However, the definition of fair value will be embedded into the new conceptual framework once it is complete; this is clearly a case of practice preceding any theoretical underpinnings and has largely ignored the concerns raised in the comment letters during the consultation process.

4.9 Summary

This Chapter has comprehensively assessed the available measurement and valuation techniques available for representation in the corporate report. The relationship between the decision to implement an asset impairment charge and the chosen measurement technique is intricate. The concept of impairment of assets has its roots embedded in the deprival value methodology in terms of determining how much *worse off* the corporation would be through deprival of the use of the asset, with the upper bound being represented by historical cost rather than replacement cost (as is the case in the deprival value model).

Historical cost has its many proponents and is a highly relevant transaction based method, with adequate modification to include upwards revaluations in certain circumstances and impairment where it is evident that the asset is being carried at higher than recoverable amount; it appears to offer an objective, relevant and realistic option. However, a major limitation is the ability of historical cost to adequately reflect economic reality.

Replacement cost appears to be more suited to a high inflationary environment, although the literature presented here does also infer limitations even in those circumstances. Replacement cost is not particularly relevant when faced with an impairment of assets as the key criteria in this case are to assess the recoverable amount of the asset

based on the higher of NRV and value in use. It is apparent that replacement cost will normally be higher as an entry value than the exit price of NRV, thus limiting the deprival value model to two basic elements, namely lower of value in use and replacement cost.

This in turn leads to the question that has permeated throughout this chapter in relation to asset impairment, namely, does the option to base an impairment decision on value in use increase the ability of management to manage earnings in the published financial statements. Whether recoverable amount is compared to replacement cost or historical cost is of less importance in this question. This thesis aims to investigate this question empirically.

NRV is firmly established and recognised as a current value exit price as this chapter has illustrated. NRV forms a component of assessing when an asset is recorded at less than the recoverable amount. NRV is reasonably accurate and not speculative when readily accessible market information is available, however, as some of the articles have indicated in this chapter, even in highly liquid markets, the information utility of NRV is questionable when compared to historical cost.

Value in use is clearly based on expectations of future cash flows and for that reason, as this chapter has indicated, its application to published financial statements poses difficulties in terms of objectivity, audit-ability, certainty, reliability and is prone to measurement error. Despite these

criticisms value in use based on expected future discounted cash flows is an excellent tool for use by the management in assessing future risk and return and has been used extensively by corporations in assessing the extent of an asset impairment charge.

Finally fair value was initially considered as a measurement technique, but after having assessed the literature in relation to fair value it has become clear that it is not a measurement technique in its own right. Fair value is potentially a mix of all the measurement techniques identified here depending on the definition used for fair value. Traditionally fair value in IAS was considered to be an exit price based on willing market participants in an arm's length transaction. This is clearly the case in IAS 36 Impairment of Assets and fair value is substituted with NRV in the UK equivalent FRS 11. The question of transaction costs may or may not be a material issue depending on the type of asset disposal.

Fair value has been the subject of lively debate the outcome of which has resulted in the issue of IFRS 13 Fair Value Measurements that defines fair value using the three level inputs system based on information availability. This standard aims to consistently define fair value across all IFRS's. This leaves fair value defined as an exit price that could be considered as a number of different measurement bases, such as current market value, estimated market value or use of discounted future cash flows. This results in fair value being consistently defined across the IFRS regulatory regime, while still resulting in a mixed measurement approach.

Interestingly IFRS 13 also includes the term 'cost approach' which it identifies as replacement cost, this is clearly synonymous with an entry value rather than an exit value, but is at odds with the principles laid down in the level input approach to measurement. Clearly in the IASB/FASB context, fair value could also be considered in terms of discounted future cash flows from the point of view of the market participants' value as an exit price, as opposed to the entity specific value in use method. Quite how this will be differentiated is an interesting question that will no doubt raise some lively debate. What is clear from the IASB/FASB convergence on fair value and the ensuing debate and numerous articles reviewed in this chapter, is that the information availability of any estimate of value plays a crucial element in the utility of such reported information. This in turn determines any amount of asset impairment loss.

The next chapter considers the literature in relation to asset impairment.

Chapter Five

5 Asset impairment, Conservatism and Earnings Management

5.1 Introduction

Chapter Five considers the literature in relation to the issue of asymmetrical timeliness of earnings and whether asset impairment constitutes a form of earnings management for the corporation. The asymmetrical timeliness of earnings is an important characteristic of earnings (Basu (1997), Ball and Shivakumar (2005)) and the concept is established on the fact that in the current financial reporting regime, timeliness of earnings tends to be skewed towards loss recognition³⁰ rather than recognition of gains. This results in a bias in the symmetry of the reported financial information towards greater reporting of unrealised losses and not so much reporting of unrealised gains (Basu 1997). The asymmetrical aspect of earnings is enshrined within the principle of conservatism (Watts (2003a), LaFond and Watts (2008)).

Conservatism is based on the principle of prudence in financial reporting and is classically defined as; '*Anticipate no profit, but anticipate all losses*' (Bliss 1924). Conservatism has been identified as existing as early as the 15th century (Pendorff (1930)) and has been widely used in practice

³⁰ For example, regulation in both the US under SFAS 142 and Internationally under IFRS3 and IAS 36 only permit downward valuation adjustments in the form of asset impairment charges and no upward revaluations of intangible assets. However, under IAS 16 Property, Plant and Equipment, periodic upwards revaluations of tangible fixed assets such as land and buildings are allowed.

since the first corporate reports were produced. As a principle, conservatism is considered important and is implicitly referred to in the Statement of Principles (Para 3.4, 3.15 and 3.18) in terms of striking a balance between prudence and neutrality in the information quality of financial reporting.

Asset impairment loss recognition is contemporaneously linked to both the issue of earnings management (Elliott and Shaw (1988), Walsh, Craig and Clarke (1991), Elliott and Hanna (1996), Jordan and Clarke (2004), Sevin and Schroeder (2005) and Andrews (2006)) and the principle of conservatism (Ball and Shivakumar (2005), Watts (2003a), LaFond and Watts (2008)). The question of whether asset impairment constitutes a form of income smoothing in terms of managing the earnings of an entity or whether asset impairment presents the management with the opportunity to take a 'big bath'³¹ (Healy and Wahlen (1999), Jordan and Clark (2004), Sevin and Schroeder (2005)) is an important issue in terms of this thesis.

The principle of conservatism is an important concept and forms a central pillar in the decision to recognise an asset impairment loss. Importantly the fact that potential gains are not recognised in the same way as potential losses results in a direct application of the conservatism principle in financial reporting depending on which valuation basis is used to assess the extent of any asset impairment loss.

³¹ 'Big bath' accounting is the practice of using a large write-off to 'clear the decks'. Healy and Wahlen (1999) provide a comprehensive literature review relating to 'big baths'. This concept will be considered in detail later in this chapter.

The amount of discretionary choice available to management in a decision to charge an impairment loss is also an important point in terms of whether management use this discretion in order to manipulate the published financial results. This aspect has been investigated by researchers such as Beatty, Ramesh and Weber (2002), Elliott and Hanna (1996), Francis, Hanna and Vincent (1996), Rees, Gill and Gore (1996), Fields, Lys and Vincent (2001) and Riedl (2004), these reports are considered in more detail later in this chapter. Additionally discretionary choice, as was seen in Chapter Three, forms an important part of the seminal work by Watts and Zimmerman (1979) in the area of Positive Accounting Theory and management choice in discretionary accounting policy.

The concept of asset impairment traditionally was considered to be asymmetrical and conservative, in terms of if an asset became worth less than the book value, the decision may be taken to write it down to its recoverable amount, thereby recognising the loss. However, with the introduction of future discounted cash flows and fair values playing a pivotal role in the decision to recognise an asset impairment loss, this potentially results in recognition of unrealised gains and is the opposite of conservatism.

This Chapter considers in detail the literature surrounding earnings management and conservatism and consolidates upon the theoretical foundations of the previous Chapters.

A number of important research papers in the area of asset impairment have been produced and these can be summarised in the table below;

Table 5.1 Summary of Research Reports in the Area of Asset Impairment

Author(s)	Sample	Time Period	Write down to total assets	Method	Main result
Andrews (2006)	79 firms	2004	Mean: 14.27% Median: 2.16%	Information content study	Evidence of both income smoothing and big bath accounting
Beatty and Weber (2006)	553 firms both write off and non write off firms	2001	N/A	Association study	Evidence of managerial manipulation post SFAS 142
Sevin and Schroeder (2005)	202 firms both write off and non write off firms	2002	Median: 7.2%	Information content study	Evidence of big bath accounting post SFAS 142
Jordan and Clark (2004)	Fortune 100 companies	2001-2002	Median: 1.01%	Information content study	Evidence of big bath accounting post SFAS 142
Riedl (2004)	2,754 both write off and non write off firms	1992-1998	N/A	Association study	Write off post SFAS 121 have a lower association with economic factors
Deng and Lev (1998)	375 write offs R+D	1985-1996	Mean: 18.7% Median: 7.9%	Association study MTB ratios	Write off increases future reported profits
Alciatore, Easton and	78 firms	1984-1987	Median: 6.6% to 19.6%	Association study	Write down aligned BV to

Spear (1998)			Max: 90.1%		MV. Not timely
Bunsis (1997)	207 write off announcements	1983-1989	Mean: 8.5% Median: 8.5% Max: 57.2%	Information content study	Correlation of write off with cash flow and market reaction
Rees, Gill and Gore (1996)	365 write downs by 277 firms	1987-1992	Mean: 5.5% Median: 2.6% Max: 40.2%	Association study	Association between write down and accruals
Francis, Hanna and Vincent (1996)	674 write off announcements	1989-1992	Mean: 6.7% Median: 3.6%	Information content study	Positive market reaction to restructuring charges
Elliott and Hanna (1996)	6,071 write offs by 2,761 firms	1970-1992	N/A	Association study	Information content of earnings is impaired
Easton, Eddey and Harris (1993)	308 revaluations	1981-1990	N/A	Association study	Association with MTB Revaluations not timely
Zucca and Campbell (1992)	67 firms	1978-1983	Mean: 4% Median: 1.5% Max: 63.6%	Information content	Evidence of big bath and income smoothing, poor performance relative to sector
Elliott and Shaw (1988)	240 firms	1982-1985	Mean: 8.2% Median: 5%	Information content study	Poor performance relative to sector, negative market reaction
Strong and Meyer (1987)	120 firms	1981-1985	N/A	Information content study	Negative market reaction to write down, change of management

From the above table there appears to be a trend towards earnings manipulation as a result of discretionary choices available to management, however, whether this choice results in big bath accounting or income smoothing is not conclusive, as this Chapter will highlight.

5.2 Discussion of Recent Research in Relation to Asset Impairment

Much of the earlier research in this area emanates from the US, there are a small number of UK based research reports. In the US, the Financial Accounting Standards Board (FASB) issued Statement of Financial Accounting Standard 121, Accounting for the Impairment of Long Lived Assets (SFAS 121) in 1995. Prior to the introduction of SFAS 121 there was no specific regulation requiring US companies to write down an asset even though indicators of impairment may have existed. SFAS 5 Accounting for Contingencies did give some general guidance that companies should record impairment losses when this was apparent, and the loss could reasonably be estimated. However, because of the non-specific nature of this guidance many of the research reports discussed here emphasise that in practice, before SFAS121, the decision of whether or when to record an impairment loss was largely discretionary in nature.

There have been a number of studies over the past 20 years into the extent of asset write-downs and their impact on both the financial statements and market reaction. The majority of these studies assess the asset impairment in the form of an analysis of the asset write-down and the subsequent impact on the financial statement and the relation this has on market variables. Additionally, studies have also focused on the reasons behind managers' decisions to apply impairment charges on

earnings. These earlier studies also focus on the notion that many of the write-downs were discretionary in nature. Before the new regulatory requirements were introduced, managers could choose when to implement an impairment charge, and several studies have assessed the extent of the timing and motivation behind such discretionary write-downs and considered if such write-downs constituted a form of earnings management for the firm. The present research builds on these earlier studies in the post-regulatory environment and ascertains the impact on published financial statements of the UK and international regulatory requirement to test for asset impairment. Many of the previous research reports consider the amount of the impairment loss in relation to the reported financial information in order to evaluate the manageability of the impairment loss and this is also an objective of this thesis.

A comprehensive literature review of asset write-downs is provided by Alciatore et al. (1998) and this provides an excellent introduction to the subject and a review of previous studies of asset write-downs. Alciatore *et al.* (1998) gives a detailed assessment of most of the reports discussed below.

5.2.1 Big Bath Accounting and a Change of Management

Strong and Meyer (1987) considered the period from 1981 to 1985 and selected a sample of 120 US companies that had asset write-downs. Their report evaluates the total return to shareholders, market to book

ratio and cash flow per share of these companies, both before and after the write-down, by comparing the performance of companies with write-downs with the performance of those companies that had not written down assets. They find that the companies with asset write-downs tended to perform in the middle 80% range of results. In terms of cash flow per share and total return to shareholders, those companies with write-downs tend to perform worse than those companies without write-downs. Interestingly, they find that the majority of asset write-down decisions are associated with a change in management.

Elliott and Shaw (1988) consider the period from 1982 to 1985 using a sample of 240 US companies that had disclosed an asset write-down. The mean of the write down in the sample expressed as a percentage of total assets was 8.2%, with a median of 5%. Elliot and Shaw measured financial performance in terms of returns on assets and returns on equity. They report that those companies with write-downs perform worse than those without write-downs. In comparison with Strong and Meyer, they find that only 39% of companies with asset write-downs also had a change of management.

Strong and Meyer (1987) and Elliot and Shaw (1988) both concluded that corporations with asset write-downs perform worse than those without asset write-downs. An objective of this thesis is to consider if UK corporations that appear to implement a big bath impairment loss perform

better or worse than those that appear to implement an income smoothing asset impairment loss.

5.2.2 Big Bath Accounting and the Size of Impairment Loss

Zucca and Campbell (1992) consider the period from 1978 to 1983 using a sample of 67 US companies with asset write-downs. This is a long period but only a relatively small sample compared with the other reports. Zucca and Campbell report that the mean of the write down relative to book value of assets was 4%, with a median of 1.5%. The largest value of write-down observed totalled 63%, which underlines the variability of impairment charges among companies. They also report that the mean value of the asset write-down relative to sales was 13%, with a median of 1.6%. Zucca and Campbell concluded that a process of earnings management was a significant reason for companies to implement an asset write-down, particularly when earnings were below expectations.

Easton *et al.* (1993) report is one of only two Australian studies considered here, the others being predominately US based. Easton *et al.* (1993) considered the period from 1981 to 1990 and selected a sample of 72 companies. This report not only considers asset write-downs, but also upward revaluations, which conceptually are similar to asset write-downs but in the opposite direction. Easton *et al.* (1993) report that the revaluation of assets is statistically significant when aligning the book values of assets to their market valuation.

5.2.3 Asset Impairment and Management Incentives

Elliott and Hanna (1996) is by far the largest study of asset write-downs, both in terms of period of study and number of sample companies. The report covers the period from 1970 to 1994, and examines a sample of 2761 US companies with a total of 6073 write-downs. This study looks at the impact of impairment on earnings and the market reaction to asset write-downs.

Elliott and Hanna show that, throughout their period of investigation, the instances and amount of impairment increased considerably. In 1973 only 5% of firms reported write-offs in excess of 1% of total assets, while in 1993 this figure had increased to 21%. Elliott and Hanna (1996) conclude that a company which has consistent write-downs over a sustained period will suffer from a lack of investor confidence and deteriorating economic circumstances.

Francis *et al.* report (1996) covers the period from 1989 to 1992, with a sample of 674 US write-down announcements. This report considers whether the decision to write-down an asset is a manipulation to manage earnings or a genuine impairment to reflect a decline in the asset book value. It also considers the decision to impair assets and the incentives for managers in terms of a change in management, improvement of return on assets and frequency of previous write-down history. Francis *et*

al. (1996) find that the type of asset has a significant influence on the timing and extent of any write-off. In the case of assets such as plant and inventory, Francis *et al.* (1996) find that management has little incentive to manipulate earnings, but in the case of goodwill and restructuring charges the incentive is substantial. They give a mean value of the write-down amount as a percentage of book value of assets of 6.7%, with a median of 3.6%. Francis *et al.* (1996) find that managers often have an incentive to impair assets in order to improve reported financial performance, but that the market does not always react favourably to this notion.

Rees, Gill and Gore (1996) cover the period from 1987 to 1992 using a sample of 277 US companies with a total of 365 asset write-downs. In their report on this sample, Rees *et al.* (1996) give a mean of 5.5% and a median of 2.6% for the write-down as a percentage of book value of total assets, with the largest observed write-down constituting 40.2% of total assets. This again illustrates the variability of the amount of write-down. Rees *et al.* (1996) attempted to find out if management manipulate write-downs in order to manage earnings, and studied in conjunction with write-downs any abnormal accrual adjustments. In their report, Rees *et al.* (1996) conclude 'the write-down and concurrent discretionary operating accruals are an appropriate response by management to changes in the firm's economic environment' (1996: 168). This is in contrast to other reports that show that management actively manage earnings through the use of discretionary write-downs.

5.2.4 Other Research Prior to Regulatory Changes

Bunsis (1997) covers the period from 1983 to 1989, using a sample of 207 US write-down announcements. The primary focus of this study is the assessment of market reaction to the write-down. For the sample investigated the report gives a mean of 8.5% and a median of 4.6% for the asset write-down as a percentage of total assets, and the largest observed write-down represents 57.2%. Additionally, the write down as a percentage of sales has a mean of 10.8% and a median of 4.5%. Zucca and Campbell (1992) and Bunsis (1997) both report asset write-down means, as a percentage of sales for US companies. Bunsis (1997) finds that market reaction to an asset write-down depends on the type of transaction and whether this is expected to improve firm performance or not.

Heflin and Warfield's report (1997) covers the period from 1985 to 1991, using a sample of 845 write downs from 588 US companies. The report shows that companies tend to manage earnings with the use of write-downs and delay such write-downs for as long as possible, up to a total of three years. Other market based studies have included Bartov, Lindahl and Ricks (1998), using a sample selection of 373 US asset write-downs; Deng and Lev (1998), covering a total of 375 US write downs of specific acquired research and development assets; and Chaney, Hogan and Jeter (1998), focusing on a sample of 128 US restructuring charges. All

these studies focus on the market reaction to write-downs, and broadly conclude that investors view such write-downs as unfavourable and factor such write-downs into their valuation of the company. Other reports, such as Alciator *et al.* (2000), focus on specific write-downs in the oil and gas sector, which has a different regulatory regime in the US, and write downs are not discretionary in nature.

Another more recent Australian study, Cotter *et al.* (1998), analyses the factors influencing asset write downs and whether managers have an incentive to impair assets. Cotter *et al.* (1998) find that a determinant of a write-down decision is often whether the reported financial statements are able to absorb such a write-down in addition to the decline in value of the asset being impaired. Cotter *et al.* (1998) find the mean and median of the asset write-down as a percentage of total assets to be 4.4% and 0.3% respectively. The findings are similar to those of Francis *et al.* (1996) in that managements often have an incentive to impair assets when the financial statements are able to absorb an impairment loss and the instance of a write-down is more likely if there has been a change in management.

5.2.5 Research Post the Change in the Regulatory Environment

Since regulation of asset impairment in the 1990s, research reports in this area have declined. Riedl (2004) evaluates the extent and nature of

asset impairment both before and after the changes to the regulatory environment in the US. Riedl (2004) argues that since the introduction of SFAS 121, companies are more likely to manage earnings with the use of impairment charges rather than reflect the economic factors surrounding an asset write-down. The report concludes that regulation of impairment has done little to reduce the subjective, discretionary nature of asset write-downs.

A survey by the Institute of Chartered Accountants in England and Wales (ICAEW 2003) finds that goodwill is the most common type of asset that has had an impairment loss, and that often the impairment loss reported is significant. Andrews (2006) surveyed the UK FTSE 350 market listed corporations and found that impairment losses as a percentage of non-current assets had a mean of 14.27% and a median of 2.16%. In relation to turn-over the impairment loss had a mean of 9.78% and a median of 1.42%, however with both these measures the result for the corporations reporting the highest impairment losses was 300% and 200% respectively. Again this illustrates the massive variation in reported impairment losses. In line with the ICAEW (2003) report, Andrews (2006) also found that goodwill is the most common type of asset to have an impairment loss. Clearly, from this review of research to date in the area of impairment, the impact of impairment is significant.

Many of the previous reports discussed here (Elliot and Shaw (1988), Zucca and Campbell (1992), Francis *et al.* (1996), Rees *et al.* (1996),

Bunsis (1997), Cotter *et al.* (1998) and Andrews (2006)) consider the impairment loss in relation to key reported financial information, such as sales or assets and consider how manageable an asset impairment loss is in relation to the financial statements. This thesis will also consider the impact of asset impairment losses on the reported financial information.

Several of the reports discussed here (Zucca and Campbell (1992), Francis *et al.* (1996), Rees *et al.* (1996), Heflin and Warfield (1997), Cotter *et al.* (1998), Riedl (2004)) consider whether managers are managing earnings through the use of asset impairment and the corporations propensity to absorb any asset impairment loss. This thesis will also consider how manageable the impairment losses are and evaluate the extent that corporations are able to absorb any impairment charge.

An area that is not discussed in any detail in the reports reviewed here (with the exception of Andrews, 2006) is the extent of disclosure given by companies that report asset impairment losses. This is perhaps surprising; given that many of the reports are information content studies and go on to attempt to gauge market reaction to asset write-downs. The extent of information disclosed in relation to an impairment loss may well have an impact on investor perception and subsequent market reaction. This thesis will assess the extent of disclosure given in the annual report by companies that report an impairment loss.

Not much research in the UK context has been carried out in this area after FRS 11, and this study will be a starting point in what is a very important, but so far overlooked, area. This is particularly relevant given that many corporations are using budgeted discounted cash flow techniques in the asset impairment review process. The variability of these disclosed discount rates was found to range from 3% to 32% by Andrews (2006). This wide variability in disclosed discount rates will have a correspondingly similar impact upon the extent of any asset impairment loss and this would also impair the comparability of the reported financial information given such large variations in the use of discounted cash flow calculations. This thesis will expand upon the knowledge in this area in terms of disclosed discount rates and their impact upon the reported financial information.

5.3 Income Smoothing and Asset Impairment

Early research work in the area of earnings management was often referred to as income smoothing. Hepworth (1953) considers the components of why a corporation and its management might wish to smooth income and identifies the mechanisms practiced to achieve income smoothing. Various reasons such as taxation and generally agreed accounting principles are put forward for the existence of income smoothing; however, Hepworth (1953) identifies the management's relationship with the owners and also the workers as a fundamental

motivational factor in the propensity of management to smooth earnings and thus reduce perceived volatility of the corporation.

The methods for the attainment of income smoothing are wide ranging and identified as revenue manipulation, deferred charges and intangible asset recognition, accounting for inventory, fixed asset acquisition and subsequent depreciation policy. All these areas are noted by Hepworth as being open to subjective discretionary choices on the part of management. This early paper sets the scene for much of the literature on earnings management and also interestingly implicitly touches into the area of the management acting as an agent for the firm and the realm of Positive Accounting Theory developed by Watts and Zimmerman (1978).

The decision to recognise an asset impairment loss could be considered to be discretionary in nature prior to the emergence of regulation in this area and even with regulation.³² The fact that the valuation base used in the calculation of the impairment loss determines the amount of any loss, management subjectivity and discretionary choices will ultimately impact upon the extent of any asset impairment loss.

Gordon (1964) presents income smoothing as a desirable objective of a business in order to dampen the fluctuation in reported earnings and thus achieve stability in reported performance. Beidleman (1973) considers

³² See Chapter Four relating to regulation and the earlier Chapter One for a brief overview of the regulatory regime relating to Asset Impairment. Most of the valuation bases used (as identified in Chapter Four) to determine the extent of any impairment loss require some form of subjective judgement on the part of management.

the criteria for income smoothing from a theoretical perspective in terms of capital asset values and the relationship this has with future expectations of discounted cash flows, both in the form of dividends and capital gains. Beidleman (1973) also links the need for income smoothing to the market equilibrium concept and the notion that a steady, smooth stream of earnings is more desirable and sends a positive message to the shareholders thus upholding or minimising undesirable downward fluctuations in the share price.

Beidleman (1973) tests his hypothesis that management succeeds in smoothing income using a model based on the correlation of residuals from a time series regression on reporting income in a linear model using a sample of 900 large firms over the period from 1951 to 1970. The findings of this significant study suggested that firms do employ smoothing techniques on a widespread basis in order to normalise earnings over the time period considered. Shareholder expectations in the form of a fall in the market price of a corporation is one of the key indicators of asset impairment and this early report appears to reach a similar conclusion using significantly different methods to that of Andrews (2006) in which overall firms were found to implement impairment charges when they appeared to be manageable in terms of the impact upon the reported financial statements.

Ronen and Sadan (1980) investigate the issue of whether management take action to deliberately smooth income in order to gain a higher share

price due to the perceived stability of the corporation in the eyes of the shareholders. This analysis involved studying the correlation between a corporations' stock price and the fluctuations in reported earnings. While a relationship was found to exist between these two variables, many other factors, such as economic and sector specific conditions, may also be a possible cause for a fluctuation in the stock price.

An adverse change in the stock price of a firm was found to be the dominant disclosure reason given for an asset impairment charge in the corporate report by Andrews (2006).

The question of why a manager might engage in income smoothing techniques is considered by Lambert (1984), Dye (1988) and Trueman and Titman (1988). Lambert (1984) uses Agency Theory to conceptualise the behavioural incentive of the manager to smooth earnings in relation to the compensation package using a hypothetical analytical modelling technique and concludes that there is inevitably a trade off between the compensation package of a manager and the amount of time they expel in their duties to towards wealth maximisation on behalf of the shareholders, but that ultimately income smoothing can be considered as Pareto optimal behaviour in the long term.

Dye (1988) considers the revelation principle advocated by Meyerson (1979) and Holmstrom (1978) and applies this to the issue of earnings management. The revelation principle in the context of earnings

management takes a similar approach to that of Agency Theory in that the asymmetrical characteristic of information can be used to motivate managers to reveal truthful information and ultimately eliminate earnings management. Dye (1988) then goes on to consider the demand for earnings management by the shareholders. Using a lemma modelling technique Dye (1988) identifies two sources of demand for earnings management, one external and the other internal to the corporation and concludes that both these demands can sustain earnings management in equilibrium and that the determining factor is that of contracting cost.

Trueman and Titman (1988) use an equilibrium modelling technique to prove that managers have a desire to manage earnings to reduce the shareholders perception of the volatility of the corporation's earnings and thus have a positive impact upon the corporation's market value. Clearly these reports by Lambert (1984), Dye (1988) and Trueman and Titman (1988) have a similar theme in terms of trying to demonstrate through hypothetical mathematical modelling techniques that management have a desire to manage earnings and are motivated by this for various reasons, such as compensation schemes and information availability. These models are based on many underlying assumptions, such as management do not have access to capital markets, which, as Dye (1988 p223) points out, is not realistic. This may limit the utility of such reports when compared with empirical studies.

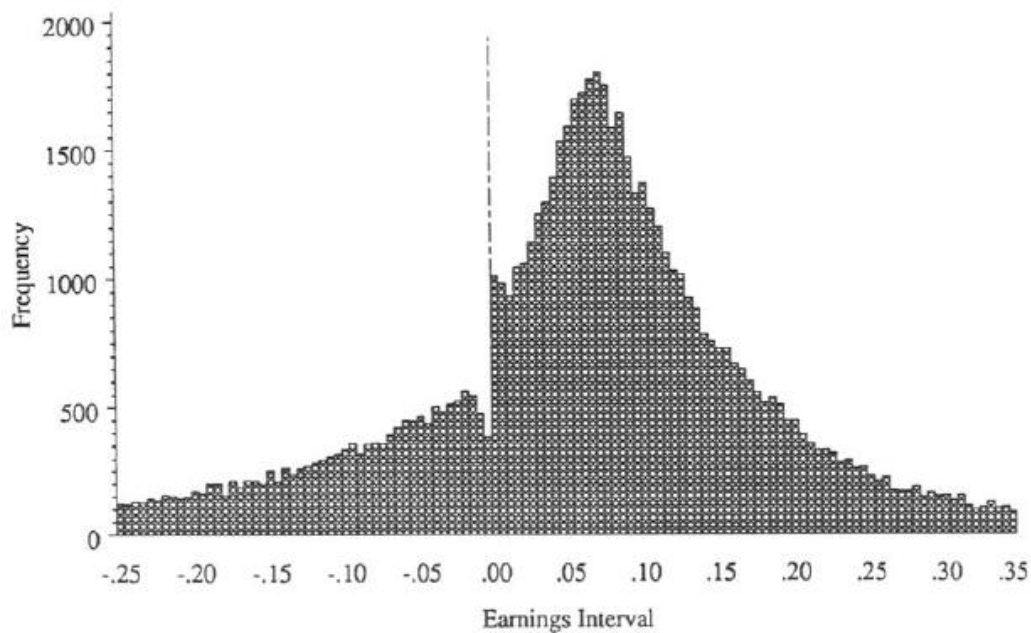
However, these reports have been discussed here as they highlight the importance of earnings management in terms of management motivations and why management may seek to manage earnings in order to influence the perception of shareholders. This links to the issue of whether an asset impairment loss could be considered as a smoothing of earnings or alternatively a 'big bath' which would appear to go against the desire to minimise volatility in reported earnings.

Extensive evidence of earnings management in order to smooth earnings and minimise losses with the use of working capital adjustments and cash flow from operations was found by Burgstahler and Dichev (1997).

Burgstahler and Dichev (1997) analysed the period from 1976 to 1994 using a cross sectional distribution time series analysis measuring the change in earnings with the market value of the firms. Burgstahler and Dichev (1997) found strong evidence that firms manage earnings to avoid reporting decreases in earnings, especially losses. Burgstahler and Dichev (1997) estimated that 30% to 44% of firms in the sample actively managed earnings to turn small losses into reported profits.

This is illustrated in the distribution of the data in the figure below:

Chart 5.1 Example of Income Smoothing



Source: Burgstahler and Dichev (1997, p105)

As can be seen from the chart above small losses occur much less frequently than would otherwise be expected given the smoothness of the distribution of the rest of the data. Given the long time frame and extensive number of observations in the research this would appear to confirm Burgstahler and Dichev (1997) key hypothesis that firms consistently manage earnings to avoid small losses and actively engage in income smoothing.

Healy and Wahlen (1999) provide a comprehensive review of the earnings management literature and usefully classify the literature into four areas of whether earnings management occurs for stock market reasons, the influence of accruals on earnings management, frequency of stock market motivated earnings management and earnings

management affects on resource allocation. Healy and Wahlen (1999) conclude that overwhelmingly the research consensus suggests that earnings management does exist and the research offers many reasons as to why managers engage in this behaviour.

However, Healy and Wahlen (1999) comment that most of the literature does not provide evidence on its extent and scope and that more research could be undertaken to consider the implication of different accounting standards and how they may or may not influence earnings management. This thesis seeks to investigate empirically if asset impairment loss recognition could be a form of earnings management and also evaluate the effect that changes in the regulatory regime has in terms of reported asset impairments.

Shaw (2003) found that firms with higher quality disclosures were more likely to aggressively manage earnings with the use of discretionary accruals than those firms with lower quality disclosures. Shaw (2003) used a cross section Jones (1991) correlation and multivariate regression model to evaluate the data from a sample of 1,113 firm year observations over the period from 1985 to 1989. The relationship between financial analysts' disclosure quality ratings and the level of discretionary accruals was assessed using the sample data. The results supported Shaw's (2003) hypothesis that disclosure quality ratings are inversely related to discretionary accruals. However, upon further analysis Shaw (2003) found that this finding related mainly to good news years and that in bad

news years the opposite became true, with a positive relationship between disclosure quality ratings and discretionary accruals.

Andrews (2006) assessed the disclosure level of firms with reported asset impairment losses and found that the higher an asset impairment loss the greater the level of disclosure in the annual report. Bad news in this context can be seen as a high asset impairment loss, with firms giving higher levels of disclosure the higher the level of bad news in the form of an asset impairment charge. This result would also appear to support Shaw's (2003) view that firms disclose more information in a bad news year.

Andrews (2006) found that a majority of reported asset impairment losses appeared to be manageable in terms of the magnitude of the impact on earnings, however, he also found that a minority appeared to record massive impairment losses which could be indicative of a 'big bath'. The question of which is the most prevalent form of asset impairment loss recognition, earnings smoothing or taking a 'big bath' will be empirically investigated in this thesis.

Beatty and Weber (2006) carried out an empirical study of 553 US corporations and used a linear modelling technique in conjunction with probit analysis and censored regression to test certain variables in relation to the incidence of reported asset impairment losses. The research conducted a time series analysis over 3 years to coincide with

the introduction of SFAS 142 in 2001 which prompted a change in the regulatory regime in the US in relation to goodwill asset impairment that took effect from 2002. Beatty and Weber (2006) found correlation in managements' discretionary choice of whether to delay or accelerate an impairment charge in relation to debt contracting, bonus, turnover and stock exchange de-listing threats. The more sensitive the impairment charge was to any of these characteristics, then the more likely was the decision to delay an impairment charge upon the introduction of SFAS 142, with the possibility of indefinite delay.

SFAS 142 allows goodwill to be capitalised indefinitely, subject to an annual impairment test. Prior to the introduction of SFAS 142 goodwill had to be arbitrarily amortised over a maximum period of 40 years. Bens (2006) acknowledges the important contribution made to the literature by Beatty and Weber (2006); however he is critical of the fact that other issues could be at play, particularly market influences in terms of the noise within the data used by Beatty and Weber (2006).

The fact that Beatty and Weber (2006) used a change in the regulatory environment to test their hypothesis in terms of managements' discretionary choices being increased as a result of the introduction of SFAS 142 is significant for this thesis. The major change to take place in the UK with the introduction of IFRS 3 and IAS 36 in 2005 was the fact that goodwill no longer needs to be arbitrarily amortised over a maximum

useful life of 20³³ years, instead goodwill can be capitalised indefinitely and subject to an annual impairment test.

The next section contrasts the phenomenon of income smoothing with another component identified as a form of earnings management, the reporting of a so called 'big bath' in the financial statements.

5.4 Big Baths and Asset Impairment

A 'big bath' is the process of deliberately recording a large write-off that will have a significant impact upon the reported financial information. A 'big bath' would have the opposite effect of income smoothing and can be considered a form of earnings management.

The process of big bath accounting has been identified by researchers such as Healy (1985), Watts and Zimmerman (1986), DeAngelo (1988) and Walsh *et al* (1991). Many of the research reports on big bath accounting highlight the fact that often a big bath is associated with a change of management (Copeland and Moore (1972), Strong and Meyer (1987) and Francis *et al* (1996)). Another reason for a corporation to take a 'big bath' can be seen as an opportunity to 'wipe the slate clean' and improve future reported earnings with a one-off large asset write down, this has been illustrated by researchers such as Weberman (1986), Drummond (1981),

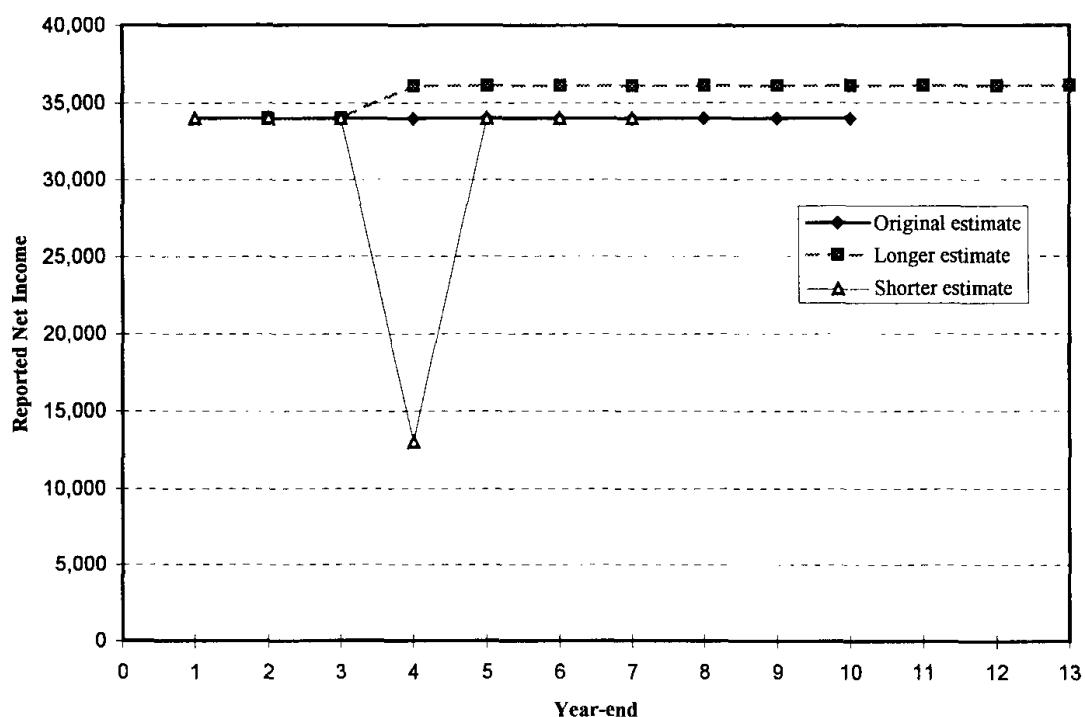
³³ Exceptionally 40 years with justification.

Walsh *et al* (1991), Jordan and Clark (2004) and Sevin and Schroeder (2005).

Kirschenheiter and Melumad (2002) considered both earnings smoothing and big bath accounting using an equilibrium optimisation investor model. The approach was to demonstrate mathematically a financial reporting theorem. Kirschenheiter and Melumad (2002) found that corporations in times of bad news are more likely to implement a big bath charge whereas in times of unexpected good news in terms of earnings, they are more likely to dampen down earnings and smooth them in line with expectations. Kirschenheiter and Melumad (2002) found that their results were robust irrespective of whether the investor was 'naïve' and unaware of this practice or 'sophisticated' and able to infer such behaviour. Under both types of investor, the model appeared to prove that investors set prices and hence corporate value correctly based on management inferences.

Basu (1997) considers a firm reporting a 'bad news' event, such as an asset impairment charge, and practically illustrates the effect on income after the write down. The asset impairment charge results in a large decrease in current year income (the 'big bath' phenomenon) but no impact on subsequent income. Conversely if the asset life is increased by three years the net effect on income is an increase due to the reduced depreciation charges per annum over the extended timeframe. Basu (1997) usefully provides a graphical representation of this effect as:

Chart 5.2 Example of a Big Bath



Source: Basu (1997, p5)

The graph above shows the effect of a change in the anticipated use and expected life of an asset. Assuming the asset life is either extended or decreased by three years this results in a long and short estimate of the remaining useful life. In the case of the asset impairment charge, this does not reduce the expected future income if the asset had continued to be in use when compared to the original estimate. This illustrates the asymmetrical timeliness of earnings and that 'bad news' in the form of a big bath tends to be more timely than good news in line with the conservatism principle. This aspect will be considered in more detail in the section on conservatism in this chapter. Congruent with Basu (1997),

Watts and Zimmerman (1986) find a stronger incentive in the form of a positive impact on future earnings subsequent to a big bath.

Traditionally a big bath has been defined as a unidirectional event (Elliott and Shaw (1988)), however, Walsh *et al* (1991) in their Australian study also argue that the big bath metaphor is not constrained directionally and could also be in an upwards direction. Another Australian study by Easton *et al* (1993) also considered both upward and downward asset revaluations in their research, however, notably this only related to tangible assets and not intangible assets, which can account for a large proportion of a corporations write offs as Andrews (2006) illustrates.

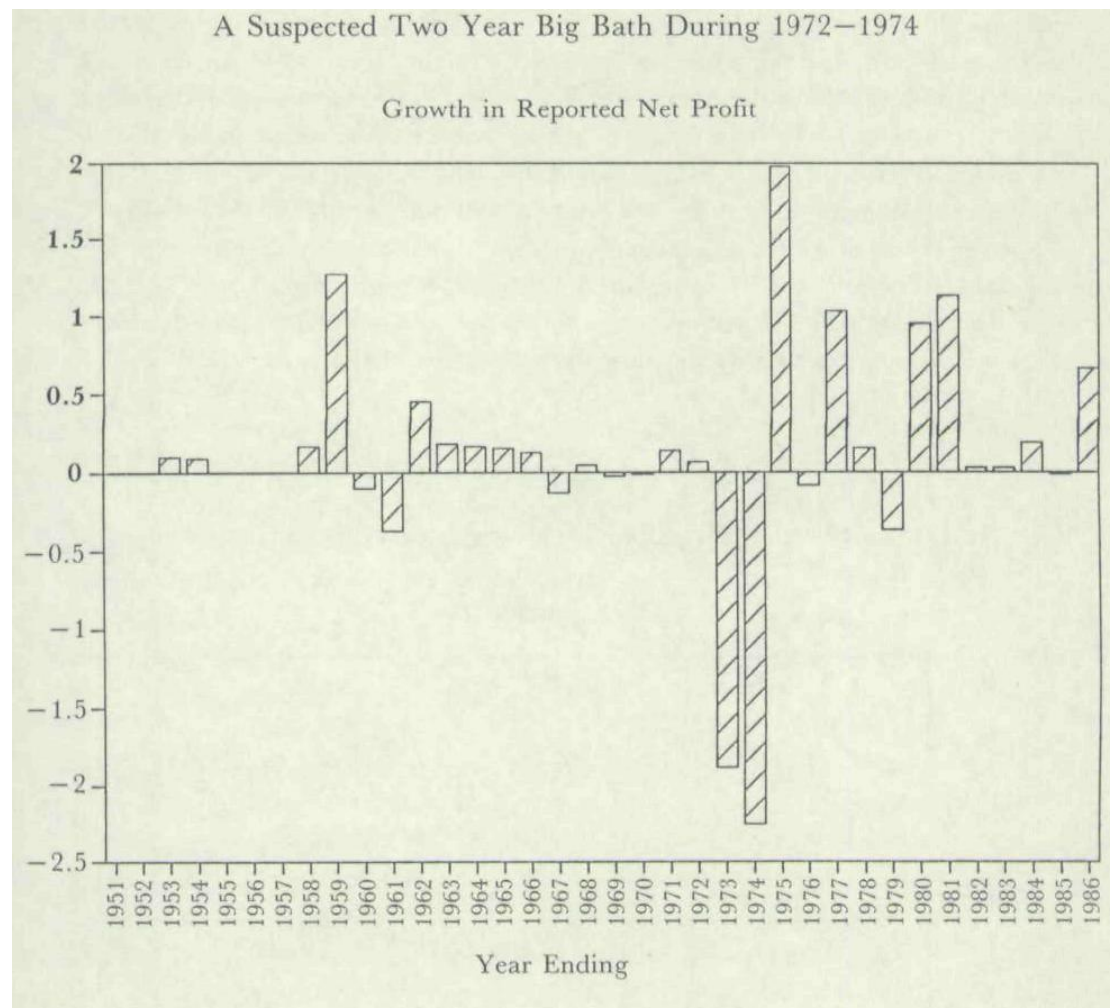
5.5 Big Bath Accounting and Extraordinary Items

Walsh *et al* (1991) focus on the discretionary use of extraordinary item (EI) adjustments, both positive and negative to assess the extent of big bath accounting. Walsh *et al* (1991) assess the impact of extraordinary items on the growth in reported net profit (GRNP) by testing for outliers in the corporations profit stream, this can be either positive or negative.

Using a sample of 96 Australian listed companies over the period from 1950 to 1989 Walsh *et al* (1991) tested for the significance of any outliers in the GRNP using a Grubbs *T* test. The results of this research found that 24% of the sample had engaged in big bath accounting. Out of the 23 companies in the sample, 10 were identified as having a positive profit

growth aberration (PPGA) while the remaining 13 were identified as having a negative profit growth aberration (NPGA). Walsh *et al* (1991) illustrate an example of a big bath in terms of GRNP in the figure below:

Chart 5.3 Example of Repeated Big Bath



Source: Walsh *et al* (1991, p183).

For all 23 companies identified in the sample Walsh *et al* (1991) hypothesise that a PPGA was associated with a positive EI adjustment and that a NPGA was associated with a negative EI. Walsh *et al* (1991) identified that 52% of the companies disclosed that the EI was for the

'capital profit or loss on the sale or disposal of a capital asset'. An asset could be considered either intangible or tangible, a detailed breakdown in terms of disclosure was not provided. Using two case studies, Walsh *et al* (1991) go on to provide some useful descriptive insight into the developments that led up to the EI and interestingly both these corporations had written off large amounts of intangible assets and a change of management was also associated with these case study corporations. Overall the sample size used by Walsh *et al* (1991) can be considered small when compared to other reports, so possibly this may be a limitation of this study; however the results are interesting. This thesis will consider the extent of asset impairment being used as a 'big bath' opportunity and also evaluate the indicators disclosed for asset impairment.

5.6 The Impact of a Change in the Regulatory Environment

The previous section discussed how Beatty and Weber (2006) considered a change in the US regulatory environment in terms of incentives for managers' to either accelerate or delay an asset impairment charge. This section reviews the literature that evaluates the impact of a change in regulation on big bath earnings management. Specifically the selection of reports reviewed here relate to the introduction of SFAS 142 Goodwill and Other Intangible Assets in the US as this represents a parallel setting to the UK in terms of a change in the regulatory environment and impairment testing.

Jordan and Clark (2004) highlight that while many reports evaluate the reasons for big baths (Dye (1988), Trueman and Titman (1988)); few have empirically tested the presence of big bath accounting in terms of evaluating the charges made in the accounts. Some reports have considered the charges in the accounts, such as Strong and Meyer (1987), Elliott and Shaw (1988) and Walsh *et al* (1991). Elliott and Shaw (1988) found that companies taking a big bath tend to be larger than those that do not, while Walsh *et al* (1991) found a strong correlation between those firms with already poor earnings being more likely to take a big bath than those firms with unusually higher earnings. This finding was supported hypothetically and mathematically by Kirschenheiter and Melumad (2002).

Jordan and Clark (2004) postulate that SFAS 142 opens the door to management in terms of discretionary choices and the decision of whether to implement a 'big bath' charge. Jordan and Clark (2004) selected the Fortune 100 corporations for 2001 and 2002 in order to compare the extent of big bath accounting both pre and post the introduction of SFAS 142. Jordan and Clark (2004) split their sample into those corporations that recorded an asset impairment charge in 2002 and those that did not.

Based on the assertion that corporations are more likely to take a big bath if they already have lower or depressed earnings, then the

impairment group sample for 2002 should have had considerably lower earnings in the year of impairment than those corporations that did not take a big bath. Secondly the earnings in 2001 for the whole sample were evaluated as there should have been no discernible difference during this year as no impairment was allowed. The big bath theory suggests that asset write downs are recorded only in years of depressed earnings.

The results were assessed using return on assets (ROA) and return on sales (ROS) as a measure to evaluate the extent of the impairment loss relative to earnings. The sample of Fortune 100 corporations returned a total of 29 (36%) firms reporting an impairment loss and 51 (64%) that had no impairment loss, the remaining 20 firms had no reported goodwill. Jordan and Clarke (2004) found the existence of big bath accounting to be strong amongst those firms that had reported goodwill impairment. The median showed the impairment loss represented 20% of the 2001 recorded goodwill while the 75th percentile showed a significant 72.45% of recorded goodwill being written off in the year of adoption of SFAS 142. Elliott and Shaw (1988) define a big bath as 1% or more of total assets and Jordan and Clark found that over 50% of the firms had an impairment loss of more than this benchmark figure, while 25% had an impairment loss of 4.6% or more. This, argue Jordan and Clark (2004) proves that big bath accounting is not just a theory based on intuitive behaviour but actually exists in practice.

Other researchers, such as Elliott and Shaw (1988), Francis *et al* (1996), Rees *et al* (1996), Cotter *et al* (1998) and Loh and Tan (2002) have used the measurement metric return on assets as a key indicator in assessing the impact of an asset impairment in various elements of their research. Riedl (2004) also used return on sales as a key measurement metric to determine the extent of impact of an asset impairment charge.

Jordan and Clark (2004) went on to assess the changes in ROA and ROS between the impairment and non impairment group and found statistically strong negative differences in the year of the write down for the impairment group of companies when compared to the previous year (2001) where no statistically strong differences existed. Jordan and Clark (2004) claim that this confirms the existence of big bath accounting and corroborates the theory that firms with depressed earnings are more likely to engage in big bath accounting, as these comparisons appear to reveal.

A further test was carried out by Jordan and Clark (2004) to assess the incidence of negative earnings for those firms with impairment losses and the results showed a statistically strong significance of extremely poor results (adjusted before the asset impairment charge) for those firms with asset impairment charges than those with none in the year of adoption of SFAS 142. In the year before adoption of SFAS 142 the same sample did not show a statistically strong difference between the firms in terms of negative and positive earnings. This further corroborated the likelihood that firms with poor or depressed earnings are more likely to engage in

big bath accounting write offs in the face of what is an already bad year, with the additional bad news being easier to manage in light of already depressed earnings.

A further important aspect to the studies by Jordan and Clark (2004) and Beatty and Weber (2006) is the fact that during the year of implementation of SFAS 142 corporations could report an impairment loss as a change in accounting policy for that year only and not impact upon operating profits, whereas in subsequent years any impairment charge would have to be written off against operating profits.

Sevin and Schroeder (2005) built upon a suggestion by Jordan and Clark (2004) to extend future research and test whether the assertion by Elliott and Shaw (1988) that larger firm's are more likely to implement a large write off than smaller ones. In order to test this Sevin and Schroeder (2005) did a similar analysis to Jordan and Clark (2004) on a random sample of 202 firms with accounting years ending 31st December 2002. Sevin and Schroeder (2005) found that 120 (59%) of their sample reported goodwill impairments while the remaining 82 (41%) did not. Sevin and Schroeder (2005) went on to split their sample firms into large and small corporations. Those corporations that were defined as large had total assets of \$450 million or more, while those corporations with total assets of less than \$450 million were defined as small for the purposes of the research.

Sevin and Schroeder (2005) found that small firms appeared more likely to engage in big bath accounting than large firms, contrary to the finding of Elliott and Shaw (1988); this can be seen from an extract of their findings in the table below:

Table 5.2 Impairment Losses to Sales and Income

Ratio (median results)	Impaired sample		Large firms		Small firms		α level
	%	<i>n</i> = 120	%	<i>n</i> = 60	%	<i>n</i> = 60	
Impairment loss to 2001 goodwill*	56.8	76	27.5	37	73.0	39	0.0339
Impairment loss to 2002 total assets	7.2	120	1.7	60	17.9	60	0.0001
Impairment loss to 2002 sales	8.9	120	2.4	60	16.4	60	0.0001
Impairment loss to 2002 operating income (loss)**	0.1	118	5.2	59	-47.6	59	0.0036

Notes: α level is the significance level for a test of differences between the large firm median and the small firm median results; *Results based on sample firms that reported goodwill separately on their 2001 balance-sheet; **Results based on sample firms for which operating income could be determined

Source: Sevin and Schroeder (2005, p51)

As can be seen from the table above, small firms appear to record a significantly larger proportion of their goodwill as impaired over the sample period than large firms. In the case of the impairment loss to operating income/loss the difference between large and small firms is strongly inversely related to firm size, being 5.2% for large firms and -47.6% for small firms. For the sample overall this ratio is immaterial at 0.1%, however, when firm size is taken into account the results reveal the greater impact that impairment losses have on small firms compared to large firms and would appear to indicate that small firms are taking big baths to a larger extent and impact than large firms.

The effect on reported income is considered to be one of the most important factors in terms of materiality by Holstrum and Messier (1982) and they found that anything of 10% or more is regarded as material. This result raises a finding that is not mentioned by Sevin and Schroeder (2005) but which can be inferred is that large firms appear more likely to engage in earnings smoothing rather than big bath accounting, this was a result that emerged from a report by Andrews (2006) who surveyed corporations registered on the FTSE 100 and FTSE 250, this represents the UK's largest listed corporations. Andrews (2006) found that impairment charges tended to be manageable in terms of impact upon the reported performance.

Sevin and Schroeder (2005) also assessed the key ratios such as ROA, ROS and goodwill to total assets and in the overall sample found similar results to Jordan and Clark (2004) in terms of the differences between the impaired and non impaired sample corporations in the year of adoption of SFAS 142 and the prior year. They also found significant differences and a strong indication of big bath accounting. Breaking the sample into large and small firms the analysis revealed a much higher impact on results in the year of the impairment charge for small firms when compared to larger firms. This again appears to support their argument that small firms appear more likely or are more affected by the practice of big bath accounting. This result can be seen in the table below:

Table 5.3 Impairment Losses, Return on Sales and Return on Assets

Median	2001			2002		
	Impaired (%)	Non-impaired (%)	α level	Impaired (%)	Non-impaired (%)	α level
<i>Panel A: total sample</i>						
Goodwill to total assets	6.1	8.9	0.2295	3.3	8.1	0.0868
Return on assets	0.1	1.2	0.4725	-10.0	-0.6	0.0122
Return on sales	0.0	1.9	0.6664	-11.3	-0.6	0.0052
<i>Panel B: large firms (total assets greater than or equal to \$450 million)</i>						
Goodwill to total assets	2.6	18.3	0.0087	2.0	10.9	0.0012
Return on assets	2.2	4.3	0.1428	-0.5	1.7	0.1236
Return on sales	2.5	6.3	0.0776	-0.7	3.5	0.0890
<i>Panel C: small firms (total assets less than \$450 million)</i>						
Goodwill to total assets	12.0	8.8	0.6397	4.8	4.8	0.3199
Return on assets	-10.5	-11.1	0.7063	-36.9	-10.7	0.0080
Return on sales	-14.5	-10.8	0.7847	-32.4	-10.3	0.0446

Note: α level is the significance level for a test of differences between the impairment group median and the non-impairment group median within the same year

Source: Sevin and Schroeder (2005, p53)

In the case of small firms the differences between all the big bath indicators are significantly different among the impaired sample. Sevin and Schroeder (2005) went on to also assess the proportion of firms with negative earnings and an impairment charge compared to the year prior to the adoption of SFAS 142, again they found the incidence of negative earnings significantly increased among those firms that reported an asset impairment charge. This provided further evidence of the existence of big bath accounting.

Interestingly Andrews (2006) found that the proportion of FTSE 250 firms reporting asset impairment losses was 18% compared to FTSE 100 firms 34%. However no further statistical analysis of the type discussed here is available to evaluate if large UK firms are more or less impacted than

small firms. Defining a large or small firm in terms of value or listing criteria could lead to arbitrarily classifying firms whereas arguably the actual impact of impairment on the reported results is the critical factor in any analysis of impairment loss. However by splitting their sample into small and large firms Sevin and Schroeder (2005) have produced some very interesting results in terms of firm size.

Andrews (2006) also found a similar finding to Jordan and Clark (2004) and Sevin and Schroeder (2005) in terms of the impact of impairment losses on those corporations with negative earnings when compared to those corporations with positive earnings. Those corporations that were making losses were more impacted by an asset impairment charge. This is illustrated in the table below:

Table 5.5 Impairment Loss as a % of Reported Profit/Loss

ALL %	High	Low	Mean	Median	1 st quartile	3 rd quartile
Profitable companies	924.09	0.05	90.69	29.00	6.10	79.94
Loss-making companies	-6271	-5.29	-409.98	-94.43	-30.85	-146.40

Source: Andrews (2006, p43)

This analysis did not differentiate between firm size; however the results reveal that clearly loss making firms are more impacted by impairment losses than profit making firms. Walsh *et al* (1991) also assessed the impact of big bath accounting by splitting their sample between positive growth and negative growth in profits and they found that negative

corporations are more likely to take a big bath that have a greater impact on reported earnings than those that have positive growth profits.

Riedl (2004) considered a change in the regulatory regime with the introduction of SFAS 121 Accounting for the Impairment of Long Lived Assets in 1995. Riedl (2004) assessed the extent of asset impairments both pre and post the introduction of SFAS 121 to evaluate if the incidence of big bath accounting and hence the extent of earnings management by corporations had increased or decreased as a result of the apparent increased discretionary choices in terms of when and how to account for an asset impairment charge. SFAS 121 was replaced by SFAS 144 Accounting for the Impairment or Disposal of Long Lived Assets in 2001 and SFAS 142 in 2002. However, as Riedl (2004) points out, the essence of SFAS 121 and the subsequent standards that replaced it are the same in terms of recognition and measurement of an asset impairment charge.

Riedl (2004) tested his general hypothesis that post the introduction of SFAS 121 the association between impairment charges, economic factors and reporting incentives differs to that of pre SFAS 121 using a tobit regression analysis. Riedl (2004) points out that rule based standards (such as SFAS 121) are contradictory to a conceptual framework, especially when subjectivity exists within a rules based standard. This argues Riedl (2004) actually results in management finding it easier to justify reporting decisions and thus increase flexibility

when in actual fact the purpose of the standard was actually intended to have the opposite effect and reduce the subjectivity within financial reporting.

Riedl (2004) considers the period 1992 to 1998 and using various sample selection criteria evaluates 2,754 firm years comprising 455 with asset write offs and 2,299 without asset write offs. Riedl (2004) found that within the sample of 455 firms with asset write downs, 265 were post SFAS 121 and the remaining 190 were pre SFAS 121. Using statistical analysis Riedl (2004) found strong evidence of an increase in big bath accounting practice after the introduction of SFAS 121 which would indicate that managers were employing greater flexibility in their decision to implement an asset impairment charge. Riedl (2004) also tested for economic factors, such as macro economic, industry and firm level proxies and found that write off had a lower association with economic factors post SFAS 121 than prior to its introduction.

Riedl (2004) asserts that this led to a decrease in the quality of published financial information and criticises the use of fair value in the determination of a decision to implement an asset impairment charge. Additionally Riedl (2004) also considers that value in use, as used in IAS 36, may be a more realistic measure for a firm. Clearly, as the previous Chapter about measurement and valuation discussed, the use of a fair value or value in use is a critical factor in the determination of an asset impairment loss and can be subjective in nature.

Jordan and Clark (2004), Riedl (2004), Sevin and Schroeder (2005) and Andrews (2006) all point out that the use of subjective estimates in order to determine an asset impairment charge can lead to manipulation within financial reports. Subjectivity in this sense is considered to be present if a high degree of estimation is required and typically these estimates relate to perceived unrealised market valuations, often based on future cash flows. This appears to contrast directly with the principle of conservatism which is based around the fact that unrealised profits or income, such as projected future cash flows for several years into the future, should not be recognised. The Conservatism Principle is the focus of the next section.

5.7 The Asymmetrical Timeliness of Earnings and the Conservatism Principle

Basu (1997) uses a cross sectional time series regression analysis of earnings from firms accounting data listed on the COMPUSTAT Annual and Industrial Research files from 1963 to 1990 to test for the persistence of conservatism as a theoretical underpinning to his work. Basu (1997) found that earnings are more sensitive in reflecting 'bad news' than 'good news' and attributes this to the principle of conservatism within financial reporting. Basu (1997) also tested his data in relation to cash flows and their sensitivity to returns and also found that earnings were more

associated and stronger at reflecting 'bad news' as opposed to 'good news'.

The example of an asset impairment charge reflected in earnings but not in cash flows is an illustration of a 'bad news' event that incorporates the timeliness and asymmetrical properties of conservatism within reported earnings but not within reported cash flows. This results in 'bad news' being more timely but less persistent than 'good news', which tends to be less timely but more persistent.

Basu (1997) investigated the stronger persistence of 'good news' relative to 'bad news' and found that unexpected earnings increases are likely to be more persistent than unexpected earnings decreases which are more likely to be temporary in nature. The persistence phenomena can again be illustrated with the use of an asset impairment charge and the affect on earnings. In the year of the impairment charge earnings are lower; however, in future years earnings will be unaffected, therefore the effect on earnings is only temporary but more timely and less persistent when compared to 'good news'.

In the case of an asset life being extended (good news) and the subsequent depreciation amount being reduced the result is an increase in earnings over subsequent years and this can be regarded as more persistent. Basu (1997) tested all these hypotheses using a time series regression analysis of data over the extended timeframe and found

strong evidence to support his theory that conservatism results in earnings that contemporaneously reflect bad news more quickly than good news and this results in an important visceral stewardship function for financial reporting.

Other researchers such as Brooks and Buckmaster (1976), Dechow (1994), Elgers and Lo (1994) and Hayn (1995) have tested various elements of the persistence of gains versus losses and the relationship with earnings or cash flow but have not, like Basu (1997), linked this to an accounting theory based on conservatism, this, as Ball and Shivakumar (2005) point out, makes Basu's (1997) work to be considered as seminal.

5.8 Timely Loss Recognition

Ball and Shivakumar (2005) follow Basu's (1997) work in a different setting but still within the theoretical context of conservatism. Ball and Shivakumar (2005) test the hypothesis that small firms have a lower quality of earnings when compared to large firms within the UK, with the timeliness and comparative transitory loss recognition of these two sets of firms being tested. Timeliness of accounting income is considered to fall into two broad categories for the purposes of reflecting economic income³⁴ within the financial report in the form of accounting income and this concept is developed by Ball and Shivakumar (2005). These two

³⁴ Economic income is based on the well known principle of being as well off at the end of a period as you are at the start of a period, as discussed in Chapter Three, and is largely attributable to the work of Hicks (1946).

models are defined as deferred recognition and timely recognition of accounting income.

Deferred recognition focuses on the properties of future cash flow and their expected realisation, so that over an entity's entire life accounting income, gains and losses reflects economic income. Timely recognition is defined as incorporating unrealised gains or losses on an accrued basis, for example in the case of an asset impairment loss. Ball and Shivakumar (2005) tested which of these two models are most prevalent within the UK and assessed any significant difference between firm size and financial reporting characteristics.

Ball and Shivakumar (2005) emphasise the asymmetrical properties of financial reporting with the example of an asset impairment charge being taken through the income statement whereas conversely any upward revaluation of assets is not taken through the income statement.

5.9 Conditional and Unconditional Conservatism

Ball and Shivakumar (2005) discuss two interesting forms of conservatism that relate to the value relevance of financial reporting. Unconditional conservatism can be considered as the type referred to at the beginning of this chapter and can be generalised as the principle of not overstating assets and income while at the same time ensuring that all expenses and liabilities are not understated. Watts and Zimmerman

(1986) define conservatism as attaching the highest value for liabilities while attaching the lowest possible value for assets, while recognising expenses sooner and revenues later. This is a contemporaneous feature of conservatism within financial reporting. This type of definition falls within unconditional conservatism due to the arbitrary nature of the bias in reporting low book values and income and the subsequent reporting of low equity values for the investor *unconditionally*.

Conditional conservatism, in contrast to unconditional conservatism, is defined by Ball and Shivakumar (2005) as conservatism *conditional* on corporations encountering contemporaneous economic losses. This definition brings in the aspect of timely loss recognition developed by Basu (1997). The timeliness of recognising a loss under conditional conservatism is different to that of unconditional conservatism.

Contemporaneous economic losses are not arbitrarily reflected unconditionally by under reporting of assets, recognition of expenses early or postponement of revenues. This distinction, argues Ball and Shivakumar (2005), has a significant impact upon the contracting role of conservatism in financial reporting given the difference between conditional and unconditional conservatism. The traditional contracting role of (unconditional) conservatism is extended with the introduction of conditional conservatism. If an unconditional accounting bias is already known by the user, then rational users would simply ignore the bias, this argues Ball and Shivakumar (2005), has a negative impact on contracting

efficiency. Conversely the timely loss recognition property of conditional conservatism should improve contracting efficiency as it results in a more timely recognition of economic losses when compared to the arbitrariness of unconditional conservatism.

Andrews (2006) found that a number of corporations that had arbitrary amortisation of goodwill and other intangible assets published results both with and without the amortisation charge as part of their annual report, this would appear to support the Ball and Shivakumar (2005) view that arbitrary bias in the form of unconditional conservatism is prone to be reversed or factored into any decision about the information utility of the report by the user. This illustrates the issue in relation to the change in the regulatory environment relating to asset impairment testing and whether this change encourages a greater degree of conditional conservatism.

Arbitrary amortisation of intangible assets up to a maximum life of 20³⁵ years, as was the case prior to the adoption of international standards in the UK, could therefore be considered a form of conditional conservatism and not related to any real economic loss and the use of an arbitrary amortisation charge is not timely in terms of actual economic loss recognition.

³⁵ Exceptionally 40 years with justification.

With the introduction of IFRS 3 and IAS 36 the requirement to arbitrarily amortise intangibles over a maximum life of 20 years was replaced with an annual impairment test and indefinite capitalisation. This could therefore be considered as conditional conservatism, as a number of factors largely based on economic indicators, known as indicators of impairment³⁶, are used to assess whether a fall in the value of an asset has happened. This loss recognition can be considered timelier and more relevant to economic circumstances as it is conditional on some type of event or impact upon the reported financial information rather than an arbitrary unconditional allocation.

The timelier loss recognition could increase the information quality of the published report as the property of conditional conservatism is present as opposed to unconditional conservatism. This point is made by Ball and Shivakumar (2005), though not in the context of the asset impairment testing environment. The timeliness of any economic loss reported arguably has a direct impact upon the quality of the financial information presented and conditional conservatism as defined by Ball and Shivakumar (2005) appears to indicate timelier loss recognition than unconditional conservatism, thus increasing the demand for such information.

³⁶ For example a decline in the market value of an asset. These indicators of impairment are explained fully in Chapter Six.

5.10 Disclosure within Corporate Reporting

Corporate reporting and the content of corporate reports represent a complex communication exercise for the firm. There have been many studies analysing the corporate report and the message that is portrayed in terms of disclosure within the corporate report. Hopwood (1996) considers that the corporate report has become increasingly sophisticated as a communication tool. The whole annual report has been assessed by researchers such as Lang and Lundholm (1993), Jones and Shoemaker (1994), Stocks (1995), Milne and Adler (1999) and Beattie, McInnes and Fearnley (2004) in the form of content analysis studies.

Other researchers focus on a specific element of the corporate report and consider the disclosure relative to that particular area in the form of a content analysis study. For example Bekey (1990), Rezaee and Porter (1993), Holliday (1994), Herremans and Ryan (1995) and Mitchell (1998) all focus on the marketing perspective and consider the extent of disclosure of marketing information within the corporate report.

Another area that has been the subject of content analysis research is corporate social responsibility (CSR). CSR disclosures have been considered by researchers such as Neu and Wright (1992), Gray, Kouhy and Lavers (1995), Deegan and Rankin (1996), Adams, Hill and Roberts (1998) and Beattie and Jones (1999). Other studies have focused on

areas such as political economy (Adams and Harte, 1998) and accountability (Cooke (1992), Adams and Hossain (1998)). This brief overview of research in the area of content of corporate reports is not comprehensive and a detailed review of these studies is provided by Stanton and Stanton (2002). Other studies, such as Hodder, Koonce and McAnally (2001), Berratta and Bozzolan (2004) and Linsley and Shrivess (2006) have assessed the extent of risk disclosure within the corporate report.

Riedl (2004) and Andrews (2006) both consider the extent of disclosed asset impairment charges in the corporate report in the US and UK regulatory environment respectively and conclude that reporting practices of asset impairments is inconsistent and lacks objectivity due to the regulatory environment in relation to asset impairment.

A common theme emerging amongst these reports is the importance of disclosure within the corporate report and what type of information is being portrayed to the users of the corporate report.

Beattie *et al* (2004) identifies a range of content analysis studies and categorises these as subjective analyst ratings, disclosure index studies, content studies, readability studies and linguistic analysis. Beattie *et al* (2004) have developed a methodology for evaluating the narratives in the entire annual report using a four dimensional framework. The content analysis of this important piece of work is based on the well established

principles of content analysis in the social sciences developed by researchers such as Holsti (1969), Krippendorff (1980) and Boyatzis (1998).

Andrews (2006) found a positive relationship between the amount of asset impairment charge and the extent of disclosure. This thesis will extend upon this previous work by providing a content analysis approach to disclosure and asset impairment charges.

5.11 Summary

This chapter has covered a wide range of aspects in relation to the issue of earnings management, timely loss recognition, big bath accounting and conservatism and has contextualised these financial reporting phenomena to asset impairment testing. This chapter has presented differing and inconclusive views of whether an asset impairment loss results in a form of earnings smoothing or a big bath. The dissemination of the various literatures in this chapter is that an asset impairment loss is likely to be either a form of income smoothing or a big bath.

This Chapter highlighted the issue of big bath accounting and the role that asset impairment plays within this and it is a noticeable fact that while the big bath accounting phenomena does undoubtedly exist, the majority of the prior literature does not underpin this finding within a suitable theoretical context of explanation.

Additionally this Chapter found considerable evidence in prior literatures of a change in the regulatory environment being contemporaneous with an increase in the extent of big bath accounting.

Lastly and arguably most significantly is the role that conservatism plays within financial reporting and in particular the characteristic of information asymmetry and timely loss recognition and the relationship this has on the decision to recognise an asset impairment loss. The Watts Theory of Conservatism suggests timely loss recognition and the property of information asymmetry engender conservatism. Relating this to the decision to implement an asset impairment loss leads to the question of whether impairment losses increase or decrease the extent of conservatism within financial reporting. This question is contemporaneously linked to the valuation basis used in order to measure any impairment loss.

Conditional and unconditional conservatism (Ball and Shivakumar (2005)) is also considered to be relevant in terms of the timeliness of any loss recognition. Unconditional conservatism could arguably reduce the information quality of reported information, however, if under conditional conservatism any economic loss is calculated with reference to discounted future cash flows, this too could arguably diminish the quality of reported information due to verifiability concerns at the expense of perceived value relevance.

Watts (2003a) argues that the use of DCF within financial reporting, such as that used in IAS36 and SFAS 142 results in unverifiable gains being reported within financial statements and therefore reduces the desirable characteristic of conservatism within financial reporting. Consequently any change in the timeliness of loss recognition may lead to a change in the information asymmetry of the reported financial information and subsequently have an impact upon the measure of conservatism within the financial report.

The next Chapter explains the methodology adopted for the empirical work of the thesis in order to answer the research questions.

Chapter Six

6 Research Methodology

6.1 Introduction

This chapter explains the methods employed in the thesis and how these methods have been employed for knowledge acquisition in order to address the research aims and specific research questions. The Chapter commences with an overview of the different corporate reporting research methodologies and then goes on to explain the specific techniques used in order to arrive at the data findings in Chapter Seven and Eight.

6.2 Corporate Reporting Research Methods

The key to determine what type of method to use in any research design is determined by the philosophy of the subject matter with reference to the theoretical context. Deeply rooted in the philosophy of any subject are the fundamental assumptions which form the foundation of the research. In accounting and finance for example, there are several different philosophies that result in a wide range of possible methodological approaches, both quantitative and qualitative.

Russell (1961) identifies the duality within western thought as something either being right or wrong, or true or false. With the perceived wisdom of objectivity in terms of right or wrong, many research questions can

apparently be answered through the application of quantitative techniques using logic and mathematical models, this is a major attraction of such techniques when ambiguity is low and can be defined as a positivist approach to research.

However, in the wider social/real world context, theories are often not as straightforward as the objective inferences of mathematics first appear. Research methodology is concerned with adopting a technique in order to answer a given question that results in gaining knowledge. White (2007, p.20) defines methodology as the '*philosophical basis on which the research is founded*'.

Intrinsically related to this acquisition of knowledge is the epistemology of the set of beliefs that the research is based upon and the challenge this presents in terms of the truth, belief and justification of the nature and scope of knowledge and how this can be justified in the face of scepticism. Many of these issues arise within the corporate reporting paradigm in the context of presenting information that purports to be true and fair but is open to criticism from different empiricists with different beliefs. Beliefs tend to be bounded by rationalism (Audi, 2002) and can be based on induction, perception, testimonial, memorial and introspection.

Empiricism is the observation of phenomena based on experience (Markie, 2004) in pursuit of the acquisition of knowledge. Essentially

knowledge based on empiricism is gained through evidence that is sensory and testable through experimentation and observation.

Empiricism has evolved through the ages with different views from Aristotle, Machiavelli, da Vinci and branched out to include British empiricism (Francis Bacon) and Logical empiricism (Markie, 2004).

However the empirical viewpoint can be contrasted with the views of early rationalists such as Socrates, Descartes and Kant who tend to theorise that truth can be justified upon the basis of deductive reasoning and not necessarily purely as a result of observation and experimentation (Markie, 2004). The basic differences between empiricism and rationalism provide an ongoing debate in terms of the methodological choices available in the pursuit of the answers to any research question (Audi, 2002).

Sir Isaac Newton adopted the scientific method form of empiricism through his expertise in observational theory development supported by mathematical hypothesising. A set of beliefs based on empiricism can be perception based upon the evidence available; however, they should be justified based on logic or mathematic derivation, the latter being proven by use of quantitative techniques.

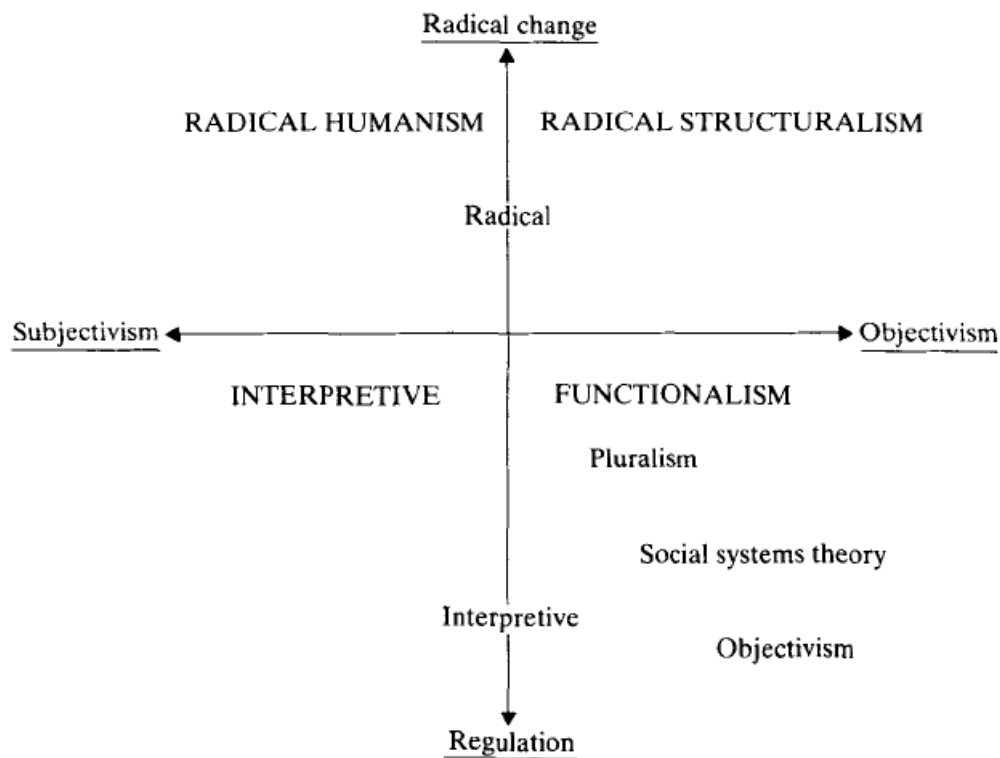
This is a classical distinction in terms of the ontology behind what is known and whether the source of the knowledge is based on realism or idealism. This view was dissected by Kantian philosophy based on rationalism. Kant (1724-1804) attempted to resolve these opposing views

towards theory development with the notion of 'transcendental idealism'; this idea has impacted many philosophers since. Central to this thought process is the issue of whether reality is constructed (idealism) or discovered (realism). This in many ways forms the basis of many of the debates within the accounting and finance arena, especially when comparing the epistemology of the subject in terms of 'what is' and 'what ought to be' (Alexander, 1999).

Positivism is a subset of empiricism and although based on beliefs and perceptions, the ontology of those beliefs and perceptions are based on truth and reality. Friedman (1953) produced an essay that has been very instrumental in the theory of finance; although primarily this was an economics based piece of work.

Taking this a stage further, Burrell and Morgan (1979) use the term 'functionalism' to describe the case of accounting and finance research based on practice, this is illustrated below.

Figure 6.1 Burrell and Morgan Framework



Source: Hopper and Powell (1985, p432)

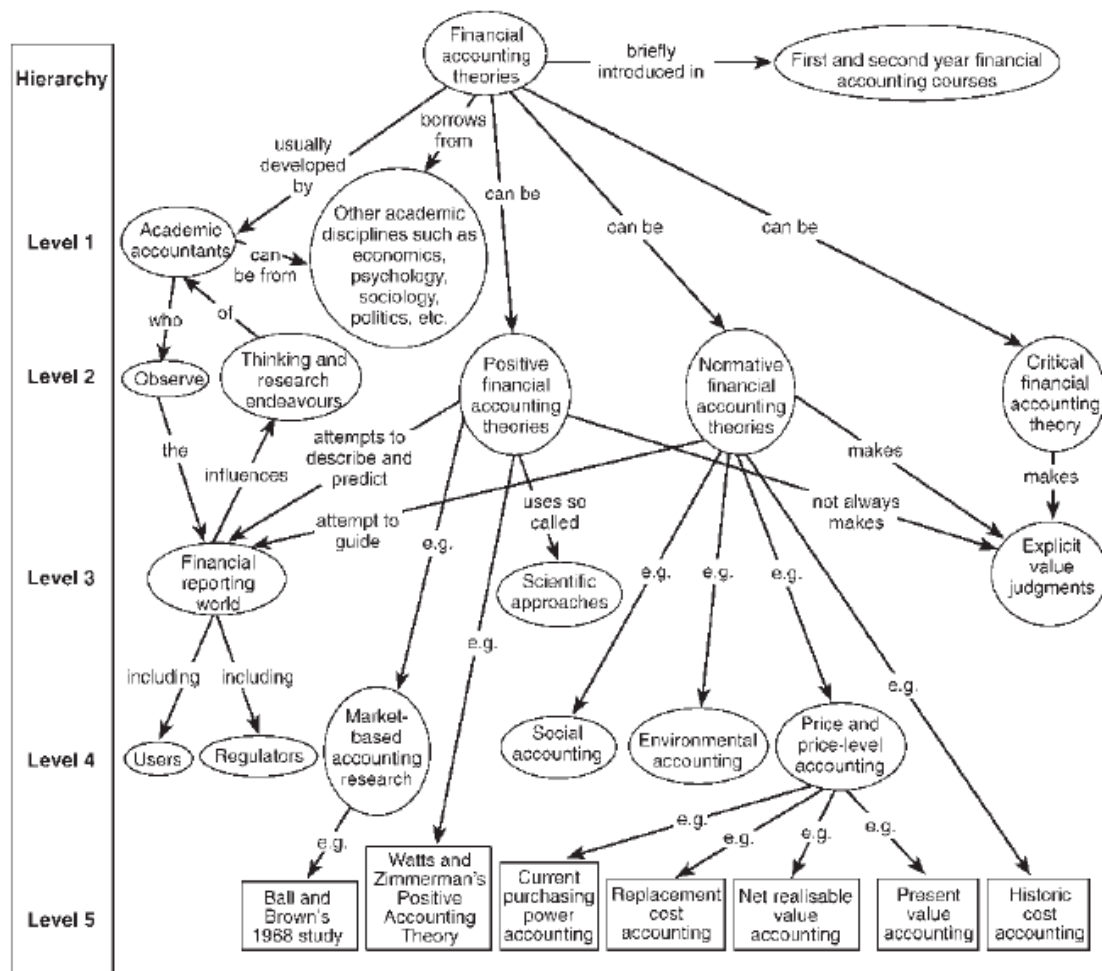
As Figure 6.1 illustrates and as interpreted by Hopper and Powell (1985), accounting research within the Burrell and Morgan (1979) framework tends to fit into the functional segment between objectivism and regulation. Although this illustration by Hopper and Powell (1985) is in the context of management accounting research, financial accounting research would also fit within this same segment, given that the regulation of corporate reporting is greater than that of management accounting, although it is clearly open to debate, as the literature review has demonstrated, the balance between objectivity and subjectivity within corporate reporting is not clearly defined.

Mainstream research methods in accounting and finance have traditionally been quantitative, based on mathematical deduction and empiricist in nature while adopting the positivist view within the taxonomy of functionalism. Although it is important to realise that mathematics does not strictly equate to quantitative techniques because the end result needs interpretation based on intuition and experience.

Financial reporting research has been broadly divided by Ryan *et al* (2002) into categories of a priori, decision usefulness (incorporating behavioural accounting and market based accounting research), positive accounting theory and a range of other miscellaneous inter-disciplinary perspectives on accounting research, including areas such as critical accounting and international accounting.

A useful overview of financial accounting theories and research methods is provided by Simon (2007) and this is illustrated in figure 6.2 below. While this is not an exhaustive map of possible financial accounting theories, it clearly illustrates the range and breadth of different theoretical approaches within the financial accounting arena and provides a clear picture of both the topics and thought processes involved in identifying a theoretical context for a particular area of financial accounting.

Figure 6.2 Concept Map of Financial Accounting Theories



Source: Simon (2007, p275)

As Figure 6.2 illustrates, the issue of asset impairment would be considered a normative investigation based upon the wide range of available measurement and valuation methods within the context of information usefulness of the corporate report. A central theme of these types of research approaches invariably centres around the reporting of the corporation's performance and how this is communicated to the stakeholders, with primarily the shareholders of the corporation being identified as the main user of the corporate report.

Accounting and finance would appear to lend itself particularly well to quantitative techniques. Often the research is based on numbers and the hypothesis development is concerned with 'proving' certain types of behaviour or activity based on the properties, association, correlation or regression characteristics within the data set. However, that is not to exclude qualitative methods from research evaluating the decision usefulness of the corporate report. The next section assesses the appropriateness of different types of quantitative and qualitative methods relevant to this thesis.

6.3 Quantitative and Qualitative Methods

The two basic approaches or techniques that researchers' utilise in their investigation consist of quantitative and qualitative approaches.

In highlighting the strategies associated with quantitative research Creswell (2002, p.13) noted that '*more recently quantitative strategies involved complex experiments and many variables and treatment*'.

Echoing a similar comment, White (2007, p.24) shared the view '*that scientists carry out experiments using the quantitative approach*'.

Interestingly, White (2007, p.24) stated that surveys by marketing people using questionnaires and interview where responses are given numerical values, would also be described as quantitative research.

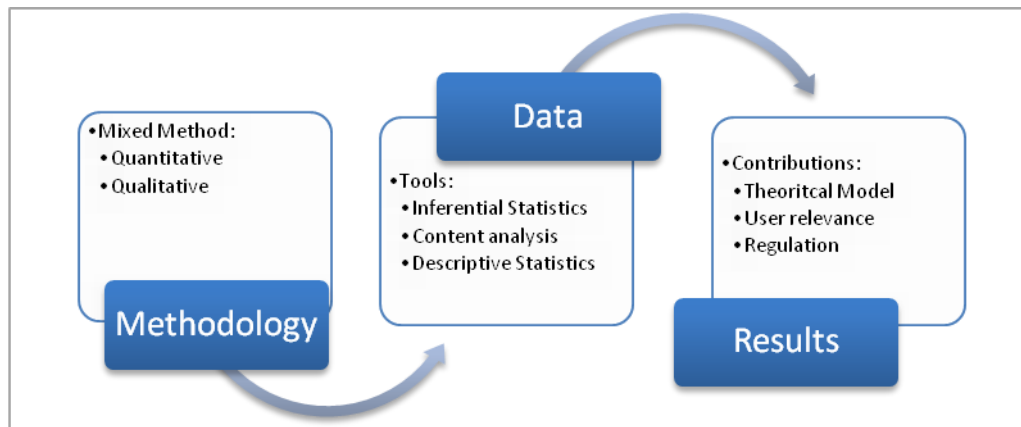
Regarding the qualitative approach Roberts (2004, p.111) states that *'qualitative approach is based on the philosophical orientation called phenomenology which focuses on peoples experience from their perspectives'*. Roberts (2004, p.111) continues his description and analysis of the qualitative approach by implying that *'rather than numbers, the data are words that describe people knowledge, opinion, actions, behaviour, activities and interpersonal interactions'*. White (2007, p.39) identified that *'many case studies include quantitative questionnaires, although they tend to make descriptive evidence such as interviews and observations'*.

This thesis uses a combination of both qualitative and quantitative methods in order to address the research aims and questions. Primarily a quantitative approach with some descriptive data analysis is employed to answer the questions relating to the issue of whether a company instigates a big bath or an income smoothing technique in the implementation of an asset impairment charge both pre and post the change in the regulatory environment.

A qualitative approach with some quantitative correlation of the information obtained is carried out in order to answer the questions relating to the extent of disclosure with regard to asset impairment in the corporate report and the type of measurement and valuation method employed in order to arrive at the asset impairment charge. This combination of qualitative and quantitative analysis provides a balanced

and robust approach in the attainment of answering the research questions. The mixed approach to the methodology applied in this thesis is outlined in figure 6.3 below.

Figure 6.3 Overview of Methodology Approach



As figure 6.3 illustrates, data analysis of both the quantitative and qualitative elements of the sample aim to produce some results that provide answers to the research questions posed based upon the sample corporations. The aim is to contribute to the development of financial accounting theory, evaluation of the user relevance of the corporate report and the regulatory impact and future development in regulations relating to asset impairment testing.

The following sections explain how each of the research questions outlined in Chapter One will be addressed.

6.4 Identification of Income Smoothing and Big Bath Accounting

Prior research, such as Moses (1987), Strong and Meyer (1987), Elliott and Shaw (1988), Zucca and Campbell (1992), Easton *et al* (1993), Beattie *et al* (1994), Elliott and Hanna (1996), Francis *et al* (1996), Rees *et al* (1996), Heflin and Warfield (1997), Bunsis (1997), Alciatore *et al* (1998), Cotter *et al.* (1998), Deng and Lev (1998), Jordan and Clark (2004), Riedl (2004), Peek (2004), Sevin and Schroeder (2005), Andrews (2006), Hayn and Hughes (2006), Christensen, Paik and Stice (2008), Lapointe-Antunes, Cormier and Magnan (2009) and Jarva (2009) have evaluated the extent of big bath accounting or income smoothing within corporate reporting.

To identify the characteristic of a big bath or income smoothing in the corporate report, expected earnings for the relevant period must be estimated to compare what the earnings might have been without the asset impairment charge. This is the approach employed by researchers such as Moses (1987), Zucca and Campbell (1992), Beattie *et al* (1994), Jordan and Clark (2004), Peek (2004) and Riedl (2004). Once the expected earnings have been estimated the prior research compares the actual pre impairment earnings of the corporation in the asset impairment year with expected earnings and if the impairment charge results in earnings closer to expected earnings, this characteristic can be associated with the practice of income smoothing. Conversely, if the

actual earnings are considerably lower than expected earnings, the characteristic of a big bath occurrence is associated with this result.

The next section explains in detail the approach adopted in this thesis in order to estimate expected earnings and subsequently the characteristic of a big bath or income smoothing in the corporate report.

6.4.1 Estimation of Expected Earnings

Some studies use profit before tax as the starting point for earnings (Moses, 1987) while other reports appear to use profit after tax as earnings (Walsh *et al* (1991), Elliott and Shaw (1988), Beatty *et al* (1994)). In several of the reports, earnings have not been clearly defined (Zucca and Campbell (1992), Rees *et al* (1996), Riedl (2004), Peek (2004)) although implicitly this appears to be earnings after all other deductions. This thesis uses profit after tax as earnings in line with the majority of the studies in this area and additionally profit after tax is widely seen as a benchmark reporting figure when one considers the reported earnings in publications such as the Financial Times.

The expected earnings estimated by Moses (1987) uses a simple random walk model whereby predicted earnings in any year are equal to reported earnings in the previous year, this method being the most frequently used in estimating expected earnings in prior studies (Zucca and Campbell (1992), Beattie *et al* (1994), Jordan and Clark (2004) and Riedl (2004)).

The majority of prior reports use a simple random walk method to estimate expected earnings on the basis of the premise that the previous year's earnings are as good a predictor of expected earnings in the absence of other information.

Zucca and Campbell (1992) use a similar approach to Moses (1987) in estimating the expected earnings by utilising five different models that use a random walk approach, some of the models used a random walk with drift. The final results were published using a simple random walk model based on the previous year's earnings to predict expected earnings for the write off year and the result of all five different models yielded similar results.

Beattie *et al* (1994) use the same approach as Zucca and Campbell (1992) and Moses (1987) to estimate expected earnings. The two models used by Beattie *et al* (1994) are the simple random walk where last year's earnings are estimated as the expected earnings for the year under investigation. Similarly, a random walk with drift that uses last year's earnings plus the average growth in earnings over the previous three years in order to arrive at the expected earnings. Both a random walk and a random walk with drift are used in this thesis.

Jordan and Clark (2004) evaluate the pre write down return on assets and return on sales and compare this to the post write down return on assets and return on sales of their sample corporations in order to infer

expectations of returns amongst those corporations that appear to have engaged in big bath accounting compared to those that have not. This thesis adopts a similar approach to developing expectations based upon return on assets and return on sales percentages. Many other authors, such as Elliott and Shaw (1988), Rees *et al* (1996), Francis *et al* (1996), Cotter *et al* (1998) Loh and Tan (2002), Sevin and Schroeder (2005), Hayn and Hughes (2006) and Christensen *et al* (2008) have also used the measurement metric of return on assets as an evaluation tool in the determination of the magnitude of asset impairment charges. Reidl (2004) used return on sales as a measurement metric in his regression model to determine the impact of asset impairment charges.

Riedl (2004) does not explicitly use the term expected earnings however, he does implicitly use expected earnings by extracting the previous year's earnings and comparing this to the current year's pre write off earnings, so effectively the approach is to use a simple random walk to establish expected earnings prior to any asset impairment charge.

Together, using these different approaches in the determination of expected earnings adds to the robustness of the methodology and the results obtained.

6.4.2 Identification of Income Smoothing and Big Bath accounting

Once the expected earnings figures have been estimated the process of evaluating whether the corporation appears to have engaged in big bath accounting or income smoothing in the implementation of the asset impairment charge can be modelled. This thesis uses the approach adopted by Moses (1987), Zucca and Campbell (1992), Jordan and Clark (2004), Riedl (2004) and Sevin and Schroeder (2005).

Riedl (2004) considers the extent of the asset impairment charge both pre and post the change in the regulatory environment and identifies the reporting characteristic of income smoothing or big bath accounting by evaluating the change in pre impairment charge earnings with the earnings of the previous year³⁷ and divides this by opening year total assets.

A big bath is characterised by any result that is below the median of non-zero negative values, while income smoothing is characterised by any result that is above the median of positive values. Assets are used as a deflator to provide relativity to the absolute numbers, given that earnings can vary largely, even amongst FTSE 100 corporations.

³⁷ Earnings of the previous year is implicitly the same as a simple random walk estimate of expected earnings used in the other models, however, Riedl (2004) does not refer to this as expected earnings.

Thus the model used to predict the characteristic of reporting behaviour is;

$$\frac{\text{PWE} - \text{EPY}}{\text{Total assets}} = \begin{matrix} \text{If above median of positive values} \\ \text{If below median of negative values} \end{matrix} = \begin{matrix} \text{IS} \\ \text{BB} \end{matrix}$$

Where:

EPY	=	Earnings prior year
PWE	=	Pre write down earnings
BB	=	Big bath accounting
IS	=	Income smoothing

The values once calculated using this model are separated into positive and negative values. The median³⁸ of each of these two sets of data is then calculated. Any result that is below the median of the positive values and any result that is above the median of the negative values are both characterised as inconclusive with respect to income smoothing or big bath accounting, as opposed to the results that appear above the median of positive values and below the median of negative values respectively.

This method can be illustrated by using a simple example, to illustrate the identification of a big bath and of income smoothing. Assuming that in both cases, expected earnings (earnings in the prior year) are 100. If the pre write down earnings are 140 and the value of assets is 10,000, using the equation would produce the following:

$$\frac{140 - 100}{10,000} = 0.004, \text{ if above median of positive values} = \text{IS}$$

EPY	=	100
PWE	=	150

³⁸ The median is used throughout in order to take account of the non parametric characteristics of the data in terms of using the full sample including the outliers.

This produces an absolute positive value of 0.004. This process is repeated for all the sample corporations and then the median figure is calculated. Given that in this case, reported earnings before the write down are 140, which is above expected earnings of 100, any impairment charge would bring this figure down to a level more in line with expectations, thus being associated with the practice of income smoothing. Implicitly, given that earnings are already above expectations, this produces a positive figure and any impairment charge is considered to smooth income downwards. Using the Riedl (2004) approach, any figure above the median of positive values is identified as income smoothing.

Conversely, to identify the practice of a big bath, if the same expected earnings figure of 100 and the same asset value of 10,000 are used, but this time, pre write down earnings are already below expectations at 80, using the equation this would produce the following result:

$$\frac{80 - 100}{10,000} = -0.002, \text{ if below median of negative values} = \text{BB}$$

$$\begin{array}{l} \text{EPY} = 100 \\ \text{PWE} = 80 \end{array}$$

This produces an absolute negative figure of -0.002 and this is repeated for all the corporations in the sample. Given that pre write down earnings of 80 are already below expected earnings of 100, any impairment charge will take this figure even lower and this will always produce a negative

result. This characteristic is associated with the practice of big bath accounting. The Riedl (2004) approach then calculates the median of all the sample corporations and considers that the magnitude of a big bath can be determined by considering if the figure is below the median of the negative values. A critical evaluation of this model will be provided in the final chapter of the thesis.

Zucca and Campbell (1992) compare expected earnings to reported earnings in the write down year. The expected earnings are also compared with the pre write down earnings. In the case of pre write down earnings being higher than expected earnings and by implementing the write down the reported earnings become closer to the level expected, but not less than expected earnings, this characteristic is associated with income smoothing. Conversely if pre write down earnings are already below expected earnings thus the write down takes this figure even lower, this characteristic is associated with big bath accounting.

This can be modelled using the following formula;

Where	$[PWE < EE]$ and $[RE < EE]$	=	BB	or
Where	$[PWE > EE]$ and $[RE > EE]$	=	IS	
Where:	PWE =	Pre write down earnings		
	EE =	Expected earnings		
	RE =	Reported earnings		
	BB =	Big bath accounting		
	IS =	Income smoothing		

In this thesis two figures are used for the purposes of expected earnings using the Zucca and Campbell (1992) approach, one using a simple random walk and the other using a random walk with drift using the previous three years growth figures added to the prior year's earnings. However, the final results published by Zucca and Campbell (1992) only used the simple random walk model.

A simple numerical example can be used to illustrate the operational effectiveness of this model, using similar data to the previous model. If expected earnings are 100 and pre write down earnings are 80, this produces the situation of earnings already being depressed and below expectations. An impairment charge of 30 would bring reported earnings, post the impairment charge, down even further to 50. This would be associated with the practice of a big bath as it meets the conditions expressed in the formula derivation as both pre write down earnings and post write down earnings are below expectations.

Implicitly, if pre write down earnings are already below expectations, then post write down earnings will also be below expectations. However, in the case of pre write down earnings being above expected earnings, but post write down earnings being below expected earnings, this would not meet the definition of a big bath in this model.

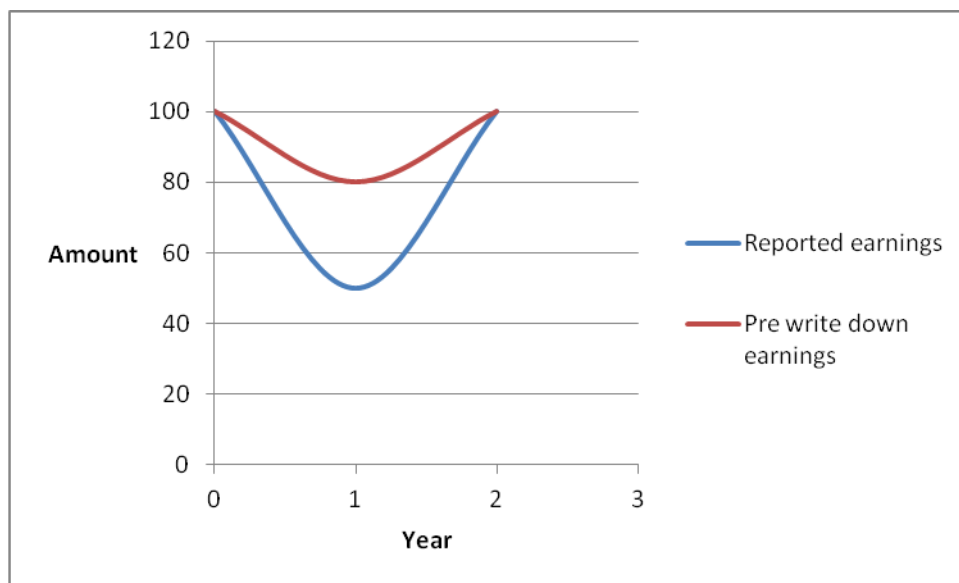
This can be illustrated in the equation as follows:

$$[80 < 100] \text{ and } [50 < 100] = \text{BB}$$

$$\begin{aligned} \text{PWE} &= 80 \\ \text{EE} &= 100 \\ \text{RE} &= 50 \end{aligned}$$

This data can be modelled into a graph to illustrate the effect of this earnings behaviour and this is shown in Chart 6.1 below:

Chart 6.1 Graphical Illustration of a Big Bath Using Method Two



As can be seen in Chart 6.1 above, reported earnings have dropped considerably below expected earnings as a result of the asset impairment charge. Given that pre write down earnings of 80 are already below expected earnings of 100 and that the effect of the asset impairment charge of 30 is to bring this figure even lower down to 50, this is considered to be associated with the practice of big bath accounting. For illustration purposes, in the year after the big bath, earnings have been shown to return to expected earnings.

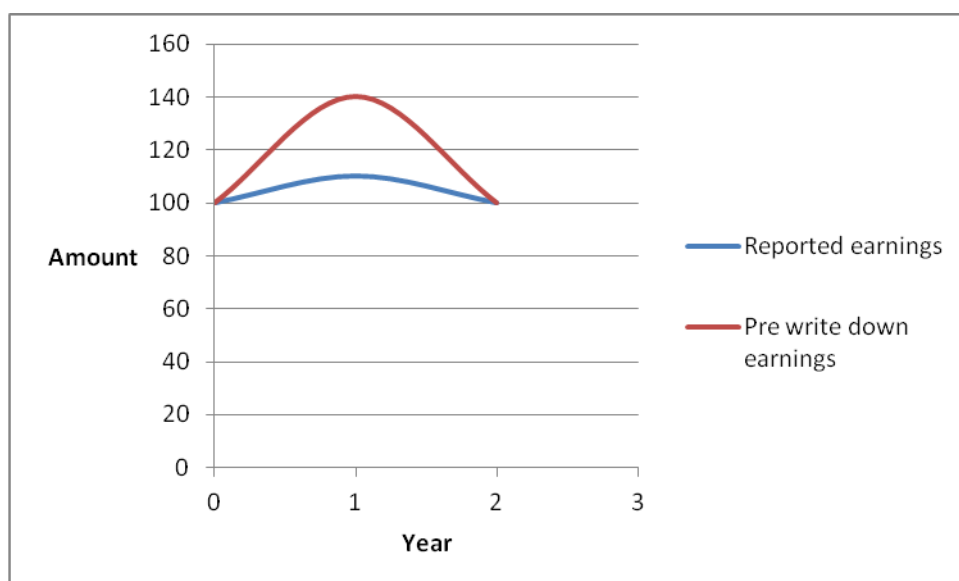
A similar example can be used to illustrate the identification of income smoothing, using similar data to Method One, with expected earnings remaining at 100, pre write down earnings of 140 and reported earnings of 110, after an impairment charge of 30. Applying this data to the equation produces the following:

$$\begin{array}{l} \text{Where} \quad [140 > 100] \text{ and } [110 > 100] \quad = \quad \text{IS} \\ \text{Where:} \quad \text{PWE} = \quad 140 \\ \quad \quad \quad \text{EE} = \quad 100 \\ \quad \quad \quad \text{RE} = \quad 110 \end{array}$$

Using this data meets the conditions of both pre write down earnings of 140 and reported earnings of 110 post the impairment charge of 30 being above the expected earnings of 100, hence this would be identified as income smoothing. Notably, if the impairment charge brings the reported earnings below expected earnings, this would not be classed as income smoothing or big bath accounting, but rather it would be inconclusive.

This data can be modelled into a graph and this is shown below:

Chart 6.2 Graphical Illustration of Income Smoothing Using Method Two



As Chart 6.2 above illustrates, with earnings before the asset impairment charge already above expectations, implementing the asset impairment charge brings reported earnings more into line with expected earnings. This method will be critically evaluated in the final chapter of the thesis.

Moses (1987) modelled a smoothing behaviour index that measures the extent to which an accounting change shifts actual earnings towards expected earnings (EE). For each corporation the earnings that would have been reported without the impairment charge are termed pre write down earnings (PE)³⁹. A measure of earnings behaviour is calculated by comparing the differences of pre write down earnings and actual reported earnings (RE). Positive values are associated with income smoothing.

³⁹ Moses (1987) uses the term PE in his formulation, this equates to PWE as used by Zucca and Campbell (1992) and Riedl (2004).

Thus the model used to predict the characteristic of reporting behaviour is;

$$\text{Behaviour} = \frac{[\text{PE} - \text{EE}] - [\text{RE} - \text{EE}]}{\text{Sales}^{40}}$$

Where: PE = Pre write down earnings

EE = Expected earnings

RE = Reported earnings

Moses (1987) further refines this model by identifying the extent to which earnings diverge from expectations, this is termed Pre-change Earnings Deviation or PED for short and is expressed as;

$$\text{PED} = \frac{[\text{PE} - \text{EE}]}{\text{Sales}}$$

Where: PE = Pre write down earnings

EE = Expected earnings

Moses (1987) hypothesises that income smoothing is characterised by pre write down earnings that are higher than expected earnings and any impairment charge brings the earnings closer to expectations, positive values of PED indicate the activity of income smoothing. Conversely if

⁴⁰ Sales is used as a deflator to account for the fact the earnings figures are dependent on firm size, other measures, such as assets or equity value can be used to assess the impact of the asset impairment charge. For example, Riedl (2004) uses total assets prior to the write down as a deflator.

pre write down earnings are already below expected earnings and the asset impairment charge takes actual earnings even further below expected earnings, this would indicate the activity of a big bath. Therefore positive values of PED are associated with income smoothing and negative values of PED are associated with big bath accounting. This is the same approach adopted by Riedl (2004) with the main difference that sales is used as a deflator rather than assets and the above or below the median of results condition is relaxed. This has the effect capturing the behaviour of the reported earnings when compared with expectations and focusing on this aspect rather than evaluating the extent of whether something is above or below the median of results.

The PED method can be illustrated using the same data as the earlier examples inserted into the equation with expected earnings of 100, pre write down earnings of 80 and sales of 10,000, the equation would appear:

$$\text{PED} = \frac{[80 - 100]}{10,000} = -0.002$$

Where: PE = 80

EE = 100

Sales = 10,000

As can be seen from the result above, whenever earnings prior to the write down are already below expectations, an asset impairment charge

would have the effect of bringing down earnings even further and this characteristic is associated with a big bath.

Conversely, if pre write down earnings are higher than expected earnings at 140 compared to 100, the equation would produce the following result:

$$\text{PED} = \frac{[140 - 100]}{10,000} = 0.004$$

Where: PE = 140

EE = 100

As can be seen from the example above, this produces the same result as the Reidl (2004) approach, although clearly if a different figure for sales and assets is used, the result would be different. However, the principle is exactly the same in terms of the identification of the earnings characteristic relative to expected earnings. The impact of whether the median should also be used as a condition will be critically evaluated in the final chapter of this thesis.

Moses (1987) also assesses the directional impact of the change in earnings (DIR) to further corroborate the existence of income smoothing.

This is expressed as;

$$\text{DIR} = \frac{[\text{RE} - \text{EE}]}{\text{Sales}}$$

Where: EE = Expected earnings

RE = Reported earnings

As would be expected with the above equation, if reported earnings are less than expected earnings this would produce a negative value and when reported earnings are greater than expected earnings, a positive value is produced. Taken together, the DIR and PED approach is very similar to the approach used by Zucca and Campbell (1992), with the main difference that both signs of the outcome of PED and DIR should be the same in order for an earnings characteristic to be identified as opposed to a condition to be met using the Moses (1987) approach. Additionally, Zucca and Campbell (1992) do not use sales as a deflator. This thesis uses the PED approach to assess the earnings behaviour as the model takes into account the expected earnings and the pre write down earnings in order to identify the earnings characteristic. This is a similar approach in principle to that of Beattie *et al* (1994), Riedl (2004) and Zucca and Campbell (1992).

Using the Moses (1987), Zucca and Campbell (1992) and Riedl (2004) methods as a degree of robustness to assess the susceptibility of the two methods to a change in the way the same data is analysed.

Jordan and Clark (2004) and Sevin and Schroeder (2005) both use the technique of assessing the return on sales (ROS) and return on assets (ROA) to evaluate the presence of big bath accounting. Both these research reports assess the return on sales and return on assets of those corporations that have implemented an asset impairment charge with those that have not. This is compared with both pre and post the change in the regulatory environment. The ROS and ROA of the asset impairment corporations in the year of impairment is calculated pre impairment and compared to those corporations that have not implemented an asset impairment charge.

The characteristic of big bath accounting is identified by significantly lower returns, even before the asset impairment has taken place, when compared to the non impairment corporations. The method adopted for this thesis splits the asset impairment sample into those identified as having implemented a big bath and those that are engaged in income smoothing and evaluates the extent of the differences between the two sets of corporations in terms of reported performance to identify the presence of big bath accounting. Median returns are used to measure differences between the two sets of data as the data is not normally distributed.

Subsequent performance of corporations that have engaged in big bath accounting and income smoothing is compared with the pre write down impairment year performance to assess if the difference between the

median ROA and ROS of these two types of corporations is significantly different post the asset impairment charge. Other authors such as Elliott and Shaw (1988), Rees *et al* (1996), Francis *et al* (1996), Cotter *et al* (1998) Loh and Tan (2002), Sevin and Schroeder (2005), Hayn and Hughes (2006) and Christensen *et al* (2008) have also used ROA in varying forms as part of their models to infer earnings management behaviour as either a big bath or income smoothing. Reidl (2004) used return on sales as a measurement metric in his regression model to determine the extent of big bath behaviour as a result of asset impairment charges.

6.4.3 Evaluation of the Different Techniques in Order to Answer the Research Questions

The methods employed above are used to comprehensively assess the question of whether asset impairment charges are used more as a tool for income smoothing or big bath accounting under the ASB's FRS 11 reporting regime. Similarly, with the transition to international standards and the introduction of IAS 36 the question is assessed of whether big bath accounting or income smoothing is more prevalent post the change in the regulatory environment in 2005 when compared to the UK standard.

Once the characteristic of either big bath accounting or income smoothing is identified from the data using the previously explained techniques a

series of statistical tests⁴¹ using the statistical package SPSS is computed in order to establish the significance of the differences. In the case of the extent of either big bath accounting or income smoothing the Mann Whitney test was carried out to ascertain the differences in the extent of each reported characteristic. In the case of the ROS and ROA figures Mann Whitney test was carried out to identify significant differences in the median returns. The limitations of the techniques used by Moses (1987), Zucca and Campbell (1992), Beattie *et al* (1994) and Riedl (2004) could be considered to be the limited accuracy of the estimated earnings figure , with most of the reports using the previous year's earnings as a proxy for expected earnings. This is one reason why this thesis uses a wide range of different methods using the same data in order to try and increase the robustness of the results, in addition to qualitative techniques in relation to disclosure. This is particularly the case when the results are assessed using both an expected earnings approach that is supplemented by evaluation of both the return on sales and return on assets for the sample corporations. Using this wide range of different approaches hopefully increases the reliability of the results.

⁴¹ Non parametric statistical tests were used when appropriate, due to the nature of the data set, this point will be fully explained later in this chapter.

6.5 Sample Selection

Corporations listed on the Financial Times 100 Index (FTSE 100) for the years 2003 to early 2008⁴² were selected on the basis of whether they had charged an impairment loss in those years. The FTSE 100 represents the largest listed corporations in the UK and provides a wide source of material in terms of the annual report and is representative of mainstream financial reporting in the UK. From a practitioner and user perspective, the FTSE 100 is reported frequently as providing a headline trend in terms of the underlying business performance in the UK and therefore this sample was chosen for its representative nature of the UK financial reporting environment.

Given the fact that the FTSE 100 represents around 80% of stock the market capitalisation value of the whole London Stock Exchange⁴³ this also confirms the view that the FTSE 100 is a representative sample of economic activity and mainstream financial reporting in the UK. Other US based studies such as Elliott and Shaw (1988), Rees *et al* (1996), Francis *et al* (1996) and Reidl (2004) have used the COMPUSTAT database for sample selection, while others such as Jordan and Clark (2004) and Sevin and Schroeder (2005) have used the Fortune 100, which similarly represents large US corporations in the same way . Beattie *et al* (1994)

⁴² Due to the financial crisis having an impact on published financial reports in respect of impairment charges, only those reports with a year end to 30th September 2008 were included in the sample. The impact of this is explained fully in the results section.

⁴³ Source: London Stock Exchange:
www.londonstockexchange.com/...and.../constituents-indices.html?... (accessed 25th September 2012)

is one of the few UK studies to use a sample of 300 listed UK companies in terms of assessing the reporting behaviour of UK corporations. Linsley and Shrives (2006) used the FTSE 100 as a sample in terms of assessing the disclosure of corporations. The database Financial Accounting Made Easy (FAME) was used to identify those corporations that had charged an asset impairment loss, with the exception of the years 2003-2004, when the data was not available as at that time, FAME did not show asset impairment charges as a separate line item. For these two early years, a manual check of the annual reports was carried out.

6.6 Descriptive Statistics

Descriptive statistics will be assessed on the sample for all years as this will provide a rich picture of the characteristics of the corporations that have implemented an asset impairment loss and all of the prior research reports produce some sort of descriptive statistical output in order to evaluate the characteristics of the sample and provide a rich picture of the sample data from a wide range of perspectives.

In line with Zucca and Campbell (1992), Francis *et al* (1996) Cotter *et al* (1998), Loh and Tan (2002), Riedl (2004), Hayn and Hughes (2006), Christensen *et al* (2008) and Jarva (2009) identification of the number of corporations reporting asset impairment charges for each year will be extracted. This provides a useful assessment of the instances of asset

impairment charges in each year relative to the pre and post regulatory changes.

Additionally the extent of asset impairment charges in each sector will also be presented. This provides some very useful information in terms of whether any particular sector appears to be more or less susceptible to asset impairment charges. These types of descriptive statistics were also presented by Zucca and Campbell (1992), Cotter *et al* (1998), Riedl (2004), Christensen *et al* (2008) and Jarva (2009).

Additionally the descriptive statistics will highlight if any particular asset is susceptible to asset impairment charges when compared to other assets, this is important in the case of intangible assets, which as the literature review highlighted, tend to be associated with asset impairment charges (Beatty and Weber, 2006). Presenting descriptive statistics to identify the asset type is also followed by authors such as Cotter *et al* (1998), Francis *et al* (1996) and Riedl (2004).

None of the reports identify the specific valuation basis used to implement the asset impairment charge and this thesis presents a rich assessment of sector and asset type relative to the type of valuation method used to implement the asset impairment charge. Jarva (2009) does assess the extent of earnings management by corporations using fair value; however, this is not broken down into the specific valuation bases used in order to arrive at the fair value. The empirical work identifies whether fair

value is calculated on the basis of market based values or on the basis of hypothetical discounted future cash flows. When a value in use calculation has been used, corporations are required to disclose the discount rate employed for this calculation. This is an important evaluation from a theoretical viewpoint in terms of the different valuation methods available and has been discussed at length by several authors, such as Watts (2003a) from a theoretical perspective but to date it would appear that the type of valuation basis employed has not been investigated in detail empirically. This point is highly relevant to the regulatory context, as was highlighted in the literature review, as IAS 36 allows a range of different valuation bases to be considered dependent on the end result when compared with the book value of the asset, broadly in line with the deprival value concept (Bonbright, 1937).

6.7 Mann Whitney Test

The Mann Whitney Test is a non parametric statistical test that is used to assess the significance of differences between two samples. Non parametric techniques were selected, as the data sample selected included some very large outlier results that to have excluded would have resulted in a significant loss of valuable information. This is in line with other reports in this area, such as Deng and Lev (1998), Alciatore *et al.* (1998), Cotter *et al.* (1998), Bunsis (1997), Rees *et al.* (1996), Francis *et al.* (1996), Zucca and Campbell (1992) and Elliott and Shaw (1988) that have used non parametric techniques in order to include the full range of

data when the sample set does not possess parametric characteristics. This test assists in answering question one of the thesis which is: '*Are earnings management characteristics evident as a result of charging an asset impairment loss?*' and question two: '*Does the change in the regulatory environment relating to asset impairment testing result in a change in the earnings management characteristics of the published financial information?*'

6.7.1 Mann Whitney Test of Proportions between Income Smoothers and Big Bathers

Wilcoxon (1945) developed a non parametric test to establish differences between two paired population samples when inferences about the normal distribution of the data could not be made. This was later extended to include arbitrary sample sizes by Mann and Whitney (1947) and is also known as the Mann-Whitney-Wilcoxon test.

The Mann Whitney test involves assigning a rank to each value in the two samples and then calculating a deviance from the central point. Each sample is then assessed in terms of the differences of the results and from this a '*p*' value is calculated to infer if the differences are significant or not. This test is processed through the SPSS software. The Mann Whitney test has the following formulaic basis:

$$U_1 = R_1 - \frac{n_1(n_1 + 1)}{2}$$

Source: Mann and Whitney (1947)

Where: n_1 is the sample size for sample 1
 R_1 is the sum of the ranks in sample 1

For the second sample, a similar formula can be derived:

$$U_2 = R_2 - \frac{n_2(n_2 + 1)}{2}.$$

Source: Mann and Whitney (1947)

Where: n_2 is the sample size for sample 2
 R_2 is the sum of the ranks in sample 2

By combining the two formulae for each sample, the following formula is derived:

$$U_1 + U_2 = R_1 - \frac{n_1(n_1 + 1)}{2} + R_2 - \frac{n_2(n_2 + 1)}{2}.$$

Source: Mann and Whitney (1947)

In the context of the thesis, the sum of the ranks for those corporations identified as having the characteristic of income smoothing or big bath accounting using the random walk method adopted by Moses (1987), Zucca and Campbell (1992), Beattie *et al* (1994) and Riedl (2004) is determined for each sample period, being pre the change in the regulatory environment and post the change in the regulatory environment. The Mann Whitney test processed through the SPSS

software then assesses the significance of the differences between the two samples in the form of a p value. Commonly the p value is assessed as significant where $p = < 0.05$. (Newbold, Carlson and Thorne, 2010).

6.7.2 Mann Whitney Test, Return on Assets and Return on Sales

The Mann Whitney test is a suitable test to perform in the case of the ROA and ROS data, as the returns do not follow a normal distribution⁴⁴ and it was important to also include outliers in the data set, as this adds evidence to the assumptions of the data, hence the data can be considered as non parametric. Under a normal distribution, outliers would have to be excluded as they unduly skew the results, which would essentially reduce the completeness of the data set, especially with regard to those corporations that had implemented a very large asset impairment charge where its impact on the reported results would also be large.

In the case of both the ROA and ROS results the sample is split between those that are identified as income smoothers and those that are identified as big bathers according to the classification system used by Moses (1987). The test is processed for the sample as a whole from 2003 to 2008 and then the data is split into the pre and post the regulatory change, being 2003-2004 and 2005-2008. The Mann Whitney

⁴⁴ As will be seen in Chapter Seven of the results.

test of differences in the ROA and ROS percentages are then evaluated to assess the extent of the difference in reported performance both for the sample as a whole and also both pre and post the change in the regulatory environment (Riedl (2004), Jordan and Clark (2004) and Sevin and Schroeder (2005)). By assessing the differences in reported performance between those corporations identified as big bathers and those identified as income smoothers, inferences can be made about which corporations appear to be engaging in big bath accounting and which corporations appear to be engaging in income smoothing and the extent of differences in the reported ROA and ROS results. This provides additional robustness to the earlier methodologies, given that these tests are performed on the same data set.

6.8 Valuation Basis, Indicator and the Size of the Asset

Impairment Loss

In order to ascertain the disclosed valuation basis employed in the asset impairment decision and the disclosed indicator of impairment the annual reports of the sample corporations are read for content and an appropriate classification system using a numbered scale for both valuation method and indicator of impairment is employed for the purposes of analysis (Linsley and Shrives, 2006). This will provide an element of qualitative collection of information which can be assessed quantitatively for the sample corporations.

Research question three is stated as:

'Is the valuation basis employed to measure the asset impairment loss and the disclosed cause of the asset impairment loss related to the size of the asset impairment loss?'

Given the extensive debate about the issue of different valuation bases used within financial reporting and specifically in relation to asset impairment charges this question aims to test if there is any significant differences between the size of the asset impairment loss, the disclosed cause of the impairment loss and the valuation basis. The size of the asset impairment loss is measured as a percentage of both sales and total beginning of year assets. The valuation basis is defined in relation to the available methods within the impairment review process as prescribed in IAS 36, namely;

- i) Historical cost
- ii) Recoverable amount
- iii) Net realisable value
- iv) Value in use

The annual report is read and the valuation method determined and allocated a number of 1 to 4 on the basis of the above classification. Corporations that disclose an asset impairment charge are required to disclose the valuation method as per IAS 36. Using the impairment loss

as both a percentage of sales and total beginning of year assets the size of the impairment loss is grouped according to the valuation basis employed and a Kruskal Wallis⁴⁵ (1952) test is performed to assess the extent of significance of any differences in the size of the impairment loss between the different valuation bases.

The result of this test will indicate if any particular valuation base results in a relatively higher or lower asset impairment charge based on the differences in the median results. This may indicate if a particular valuation base is consistently being associated with high or low asset impairment charges and would add further to the key research aim of assessing the extent of earnings management associated with asset impairment charges and if this is linked in any way to the valuation basis employed to determine the amount of the asset impairment charge. The issue of whether using projected future discounted cash flows as a basis for measurement of the impairment loss and whether this produces a significant result will be an interesting outcome given the extensive debate in the literature on this topic. As far as the author is aware, this level of detailed empirical investigation is not evident in the literature, although Song and Yi (2010) have recently assessed the use of fair value level inputs in relation to the corporate governance of corporations in the banking sector.

⁴⁵ The Kruskal Wallis test is a non parametric test that is an extension of the Mann Whitney test, but is designed to test the significance of 3 or more grouping variables, so is a suitable test in this instance, given the number of valuation bases.

Research question 3 will also assess the different disclosed indicators of impairment in the annual report in line with the indicators provided by IAS 36. These indicators are explained in IAS 36 as:

‘External sources of information

- 1. during the period, an asset’s market value has declined significantly more than would be expected as a result of the passage of time or normal use.*
- 2. significant changes with an adverse effect on the entity have taken place during the period, or will take place in the near future, in the technological, market, economic or legal environment in which the entity operates or in the market to which an asset is dedicated.*
- 3. market interest rates or other market rates of return on investments have increased during the period, and those increases are likely to affect the discount rate used in calculating an asset’s value in use and decrease the asset’s recoverable amount materially.*
- 4. the carrying amount of the net assets of the entity is more than its market capitalisation.*

Internal sources of information

- 5. evidence is available of obsolescence or physical damage of an*

asset.

6. *significant changes with an adverse effect on the entity have taken place during the period, or are expected to take place in the near future, in the extent to which, or manner in which, an asset is used or is expected to be used. These changes include the asset becoming idle, plans to discontinue or restructure the operation to which an asset belongs, plans to dispose of an asset before the previously expected date, and reassessing the useful life of an asset as finite rather than indefinite.*

7. *evidence is available from internal reporting that indicates that the economic performance of an asset is, or will be, worse than expected.'*

Source: IAS 36 para 12

While this list is not stated as being exhaustive, it does present a broad range of possible indicators of asset impairment and these indicators have been used to classify the reasons for impairment based on the information available on a scale of 1 to 7 based on the above indicators as defined in IAS 36. It should be noted that the first four indicators identified above are defined as being causes that are external to the corporation, while the last three are defined as being causes that are internal to the corporation.

The result of this analysis will provide an indication in terms of whether corporations are more inclined to disclose the causes of the impairment charge as internal or external to the organisation, in addition to the actual cause. Linsley and Shrives (2006) classify disclosures in relation to risk reporting using a classification system based on an established risk reporting framework employing a similar principle to the one used in this thesis. For the sample in this study the author read the individual annual reports to ascertain both the valuation method employed, discount rate used (where applicable) and the disclosed indicator of impairment. This was then coded using a numbered scale. A sample of ten reports were also read by a colleague in order to determine that the same results were obtained from the sample as the author using the pre determined coding system. The results for both samples read by the author and the research colleague proved to be the same. This is the approach adopted by Linsley and Shrives (2006) in their content analysis relating to risk reporting disclosures.

A test of significance using the Kruskal Wallis test is performed to assess if any particular indicator of impairment is more prevalent than the others.

A wide range of further analysis is also carried out to provide a rich picture of the different types of assets that are reported as having impairment losses, the valuation basis used and the sectors in which these asset impairments occur. A detailed set of cross tabulations are

evaluated in order to determine if any patterns exist in relation to the type of asset being reported as impaired, the indicator of impairment, the valuation basis employed, the earnings characteristic and the extent of disclosure. This analysis provides a comprehensive assessment of the type and extent of disclosure in relation to asset impairment charges. This analysis provides some context to the data analysis in terms of providing additional background information surrounding the asset impairment charges (Riedl, 2004).

6.9 Disclosure and the Amount of the Asset Impairment Loss

Content analysis will be the main method employed to address research question four of the thesis. Content analysis is a process of classifying text units into different meaningful categories using a reliable classification and coding system. Reliability can be assessed by the extent of agreement in the interpretation of the meaning of the text units between different coders; this is known as inter-rater reliability. Other measures of reliability are identified by Krippendorff (1980) as stability and accuracy. The actual process of content analysis involves reading the annual report (or using some form of automated reading software) and identifying relevant key words or sentences in order to determine the information required.

Many research reports involving content analysis have made use of the Krippendorff (1980) methodology to infer a wide range of findings using a

structured approach to analysing the disclosure content within corporate reports. Several studies, such as Hussainey, Schleicher and Walker (2003), Linsley and Shrives (2006), Camfferman (1997), Schleicher (1998), Botosan (1997), Robb, Single and Zarkesi (2001) and Vanstraelen, Zarkesi and Robb (2003) all use the Krippendorf (1980) methodology to focus on a particular aspect of disclosure within the corporate report, such as voluntary disclosures, risk disclosures, qualitative disclosures, longitudinal studies and cross- country comparisons.

Content analysis has also been used extensively to assess different levels of environmental and social reporting, by authors such as Deegan and Rankin (1996), Gray, Kouhy and Lavers (1995), Guthrie and Abseysekera (2006) and Zehgal and Ahmed (1990), Hooks and Van Staden (2011) and many others.

6.9.1 Methodological Approaches to Content Analysis

Content analysis studies have been broadly divided into extent based and quality based (Hooks and Van Staden, 2011). Extent content analysis evaluates reporting of a specific issue using key words, sentences or pages and tends to focus on the amount of disclosure of a particular topic. Quality based content analysis commonly uses some sort of measure of quality, such as an index, and attempts to evaluate the quality of the disclosure within the annual report. Both these methods have

subjective elements in terms of identification of the content to include among different readers (Beattie and Thomson, 2007) and attempting to use a quality index measure may increase this subjectivity further (Van Staden and Hooks, 2007). In terms of how to classify the content using an extent basis, different authors use different methods, such as sentences (Tilt and Symes (1999), Bozzolan, Favotto and Ricceri (2003), Milne and Adler (1999)), others have used pages or proportions of pages (Guthrie (1982), Trotman (1979) and Unerman (2000)) while Deegan and Gordon (1996), Zeghal and Ahmed (1990) and Hussainey, Schleicher and Walker (2003) have counted key words as a major part of their content analysis studies.

Hackston and Milne (1996) consider that counting sentences is more accurate than counting pages due to the differences in page size, font, margins and other format issues, while those that prefer to count the pages consider this to be a more accurate reflection of importance in terms of total space dedicated to a particular topic.

While use of a quality index is unquestionably more sophisticated than an extent method of content analysis, several authors, such as Hooks and Van Staden (2011), Deegan and Gordon (1996), Beattie and Thomson (2007) and Nielsen (2008) argue that empirically, extent of disclosure can serve as a proxy for quality of disclosure in the majority of cases. Other researchers prefer to use key words, as both sentences and pages can be more prone to subjectivity, whereas a key word search can be

considered more objective as it has less propensity for interpretation errors (Deegan and Rankin, 1996) and can give a greater amount of detailed analysis (Zeghal and Ahmed, 1990).

Question four is stated as:

'Is the extent of disclosure related to the asset impairment loss in the corporate report associated with the amount of the asset impairment loss?'

Many of the prior reports focus on either the use of key words, sentences or page proportions as a frame of reference to the extent of disclosure of the particular topic. The use of a key word search as opposed to sentences or proportions will be employed as this reduces considerably the ambiguity involved in interpretation of sentences or page proportions in terms of relevance and objectivity due to the fact that key words can be counted with a high degree of accuracy (Unerman, 2000).

Many of the reports, such as Beattie *et al* (2004), Linsley and Shrives (2006), Vanstraelen, Zarkesi and Robb (2003), Beretta and Bozzolan (2003) and Botosan (1997) go on to use summary statistical measures such as the Pearson or Spearman Rank correlation models or various regression models to further substantiate their findings and support inferences about the characteristics of the disclosure relative to some other metric, such as financial information in the corporate report.

The method adopted in this thesis counts the number of times the word 'impairment' appears in the annual report as a measure of disclosure of the key word as this reduces the interpretation errors and potential for bias (Deegan and Rankin, 1996) and can give a greater amount of detailed analysis (Zeghal and Ahmed, 1990) in addition to being less ambiguous and more objective than some of the other methods (Unerman, 2000).

This will complement the earlier research investigating the discount rate used, indicator of impairment and valuation basis to provide a full picture of both the causes and extent of disclosure of the asset impairment relative to the size and impact of the asset impairment loss. The level of disclosure will then be correlated, using the Spearman Rank non-parametric correlation test, relative to the impact of the asset impairment charge as a percentage of both sales and beginning of year total assets. A non-parametric test is used in order to include the large outliers in the sample, given the impact these have on the normal distribution of the data.

This thesis will distinguish between the extent of mandatory and voluntary disclosure in relation to the asset impairment charges of FTSE 100 firms and correlate the extent of disclosure with the size of the asset impairment charge to ascertain whether those corporations that have the highest asset impairment charge disclose the most in terms of information

in relation to the word 'impairment'. This method has been carried out by researchers such as Bushee and Noe (2000), Beattie *et al* (2004), Beretta and Bozzolan (2004), and Linsley and Shrives (2006) who find different associations between corporate reporting practice and disclosure levels.

Additionally prior research by Moore (1973), Strong and Meyer (1987), Francis *et al* (1996) and Cotter *et al* (1998) found that asset write offs were often associated with a change in the senior management of the corporation and this important factor is very relevant to the current research and provides an interesting qualitative perspective to the other findings in the thesis with respect to the causes of impairment charges. Conversely Elliott and Shaw (1988) found asset write offs not to be as strongly associated with a change in the senior management as some of the prior reports. This thesis assesses the existence of a change in the senior management of the corporation for the sample and also assesses if the size of the asset impairment charge is associated with the extent of a change in the senior management of the corporation.

The prior literature, such as Moore (1973), Strong and Meyer (1987), Elliott and Shaw (1988), Francis *et al* (1996) and Cotter *et al* (1998) considered whether a change of management had taken place in the year of impairment or the preceding year. This thesis adopts the same approach by reviewing the annual reports in both the current year and

prior year in order to assess if a change in the senior management has taken place for those corporations with an asset impairment charge.

6.10 Credibility of Research Findings

Reliability and validity of any research design is of paramount importance in order for the result to be credible (Saunders, Lewis and Thornhill, 2007). Reliability is concerned with the ability of the research design to replicate results from the same set of phenomena in different circumstances (Weber, 1990). Validity can be split into two categories, namely internal validity and external validity.

Internal validity relates to the extent to which the research method appears to realistically measure the construct it was intended to measure (Weber, 1990). External validity relates to the extent that the results can be subject to external scrutiny in terms of generalisation of the results to other contexts outside of the internal research model (Weber, 1990).

The external validity of the research design can be considered in terms of the previous work being undertaken in different settings. For example, work by Moses (1987), Zucca and Campbell (1992), Riedl (2004), Beattie *et al.* (1994), Jordan and Clark (2004) and Sevin and Schroeder (2005) took place in the US context and their research design will be replicated in this study in the UK context.

In relation to the content analysis association of a metric relative to disclosure using correlation has been widely used by authors such as Beattie *et al* (2004), Linsley and Shrivess (2006), Vanstraelen, Zarkesi and Robb (2003), Beretta and Bozzolan (2003) and Botosan (1997) and this provides a degree of robustness in terms of the external validity in relation to the content analysis section of the empirical work.

The internal validity of the work can be considered to be robust in terms of the fact that different methodological approaches, such as Moses (1987), Zucca and Campbell (1992) and Reidl (2004) are being used with the same data set in order to determine association of the earnings characteristics of the sample corporations with reference to both timing (in terms of the change in the regulatory environment) and relatedness (in terms of identification of the earnings characteristic).

In relation to the internal validity of the content analysis section of the empirical work, the independent variables relative to the dependent variables use a wide range of different measurement metrics in order to draw inferences about any possible cause and effect in relation to the size of the asset impairment charge, asset type, valuation method, indicator of the asset impairment charge and the extent of any disclosure. The statistical analysis employing the correlation technique provides a sound measure of internal validity (Weber, 1990).

The reliability of the research is dependent on firstly the statistical inferences from the empirical analysis of the reported financial information and secondly the basis upon which conclusions are made from the content analysis.

The greater the number of similar statistical results using the same data set with different methods obtained, the higher the reliability of the inferences based on the statistical data (Zucca and Campbell, 2002).

The limitations of the research methodology are inherited from the earlier research reports that this methodology is based upon. Two notable limitations could be considered to be the estimation of expected earnings and the significance of the result being above or below the median. The prior research methodologies (Moses (1987), Zucca and Campbell (2002), Riedl (2004) and Beatty and Weber (2006)) arbitrarily use an estimate of expected earnings based on previous year(s) data, this is arguably crude; however, many reports adopt this basic random walk method to determine this data. A critical evaluation of this approach will be discussed in the final chapter of the thesis.

Given that three similar methods with slightly different formulaic bases have been used based on these earlier established research methodologies, the robustness of the results should be intact, rather than just relying on one method. The robustness is further corroborated by the use of the overall differences between the median return on assets and

return on sales (Rees *et al* (1996) Cotter *et al* (1998) Jordan and Clark (2004) and Sevin and Schroeder (2005)). Together, these different methodologies employed in order to ascertain the level of big bath accounting or income smoothing behaviour will provide a comprehensive combined result that will be far more robust than if just one or two methods were employed to ascertain the earnings management behaviour.

A limitation may also exist in terms of evaluating the disclosure in relation to asset impairment losses. A degree of subjectivity is inherent in any content analysis research however, with the use of a key word search this reduces the subjectivity considerably (Deegan and Gordon (1996)). Additionally the use of a case study approach to contextualise the disclosure behaviour will also add a useful qualitative characteristic to the results that will serve to corroborate the quantitative analysis.

6.11 Summary

This Chapter has highlighted the proposed methodology to be adopted in order to answer the questions set out in the thesis. The earlier work conducted by Andrews (2006) produced some tentative indicative directions and many of the results of this earlier study have evolved to form the detailed research questions set out in this thesis, using a different time period, methodology and data sample. By using a combination of qualitative and quantitative research methods a rich

picture of the practice of asset impairment in relation to the higher level theoretical implications of corporate reporting practice should emerge and provide some interesting findings of use to a wide range of users, for example the academic community, regulatory bodies, practitioners and the wider investment and other stakeholder groups.

Chapter Seven

7 Results: Identification of Big Bath Accounting and Income Smoothing

7.1 Introduction

This chapter presents the results of the analysis based on the methodology presented in Chapter Six and the research questions introduced at the start of the thesis. The chapter commences with an overview of the sample properties in the form of descriptive statistics in order to establish any particular trends or characteristics within the sample, it then goes on to set out the results of the analysis for the first two research questions investigating the extent of earnings management in the form of either a big bath or income smoothing as a result of an asset impairment charge. A discussion of the results and its relationship with prior literature is evaluated.

7.2 Descriptive Statistics

This section identifies the characteristics of the sample in terms of the extent of reported impairment losses in each industry sector both in number of corporations and value of the impairment loss in total for each sector and the sector mean. This descriptive analysis will establish which sectors have a greater proportion of asset impairment charges and

identify those sectors that appear more likely to implement an asset impairment charge. In addition, this section will also identify the impairment by asset category, which will be useful to establish any particular types of assets that are more prone to asset impairment charges than others.

7.2.1 Extent of Asset Impairment in FTSE 100 Corporations

Table 7.1 below identifies the number of corporations on the FTSE 100 index to have reported asset impairment losses over the sample period. As can be seen, a total of 37 corporations relate to the pre change in the regulation for years 2003 and 2004 while 57 corporations relate to the post change in the regulation transferring to IAS 36. Given that the post change years span a longer period than the pre change years, the increase in the sample corporations could be expected.

Table 7.1 Number of Corporations Reporting Asset Impairment Losses from 2003 to 2008

Year ending	Frequency	Valid Percent
2003	23	24.5
2004	14	14.9
Regulation change		
2005	18	19.1
2006	15	16.0
2007	14	14.9
2008	10	10.6
Total	94	100.0

As table 7.1 illustrates a total of 94 corporations were identified as reporting an asset impairment loss between the years 2003 to 2008. In 2008 a cut off date of 30th September was adopted, in order to minimise the impact of the financial crisis that started to affect financial reports during this period. Initially a total of 23 corporations were identified as having asset impairment charges in 2008 however with a cut off for this year of 30th September this excluded 13 corporations from the sample. The final sample of 10 corporations for 2008 included 5 with year ends in September 2008 and a further 5 corporations with year ends in February, March (2), June and July.

Another option would have been to limit the sample to 2007, however, given the small number of impairments selected for 2008 on the basis of the early year ends; this was considered not to affect the results unduly and the sample excluded banks for this year; thus the impact of the financial crisis, which could arguably have led to an increase in impairments, was avoided in order to focus on the key objective of assessing the impact of asset impairment charges in a relatively stable economic cycle.

7.2.2 Sectors and Asset Impairment Charges

Table 7.2 below illustrates the widespread presence of asset impairment losses across many sectors. Metals, mining and oil is by far the largest sector reporting asset impairment charges with a total of 16 (17%) asset impairment losses across the sample period and this sector has been the subject of specific research in relation to asset impairment, given the susceptibility of the types of assets employed in this sector to impairment (Alciatore *et al.*, 2000).

The support services (9 or 9.6%), chemicals/pharmaceutical and media sectors (both have 8 or 8.5%) are the next highest reporters of asset impairment losses. Metals, mining and oil and the chemical/pharmaceutical sectors have significant specific development assets that are subject to impairment while the support services sector and media sector that rank highly have a relatively high amount of intangible assets and these can be inevitably subject to asset impairment charges given the uncertainty upon which their valuation is based (Wyatt, 2005). This point will be examined in more detail later in the next table and later in the chapter.

Table 7.2 below shows the number of corporations in each sector reporting asset impairment losses:

Table 7.2 Number of Corporations in Each Sector Reporting Asset Impairment Losses from 2003 to 2008

Sector	Corporations in Sector	Frequency	Valid Percent
Aerospace & Auto	4	7	7.4
Financial Services	18	2	2.1
Beverage, Food, Tobacco	4	7	7.4
Chemicals, Pharmaceutical	5	8	8.5
Construction	1	2	2.1
Electricity, Electronics	3	3	3.2
Engineering, Industrial	5	6	6.4
Retailers	6	5	5.3
Health, Household	6	4	4.3
IT	2	1	1.1
Leisure, Hotels	5	6	6.4
Media	5	8	8.5
Metals, Mining, Oil	21	16	17.0
Support Services	9	9	9.6
Telecoms	2	7	7.4
Transport	1	1	1.1
Utilities, Other	3	2	2.1
Total	100	94	100.0

The widespread instances of asset impairment losses across a broad base of sectors highlights that while the metals, mining and oil sector has considerably more impairments than the other sectors the sample would appear to be representative of the FTSE 100 corporations with most sectors being represented within the sample identified. This would appear to illustrate that asset impairment charges are not necessarily sector specific, but as will be seen later in this chapter, when repeated asset impairment charges are taken into account, some sectors appear to be more susceptible to asset impairment charges than others, for reasons

often relating to the types of assets employed in that sector, for example whether the assets tend to be tangible or intangible in nature.

7.2.3 Asset Classification and Impairment

From the sample of 93 corporations a total of 158 asset impairments were identified (one corporation was excluded due to non disclosure of this information). A total of 40 corporations reported one type of asset as impaired; while 41 corporations reported two different types of assets as impaired and a further 12 corporations reported three different types of assets as impaired. Table 7.3 below identifies the different types of assets that are subject to asset impairment losses during the sample period. These are divided into the main categories of property, plant and equipment, goodwill, other intangible assets and investment.

As can be seen from Table 7.3 below, the asset that is most frequently subject to impairment losses is property plant and equipment, representing 39.2% of the sample. Goodwill is slightly less at 34.2% of the sample, with other intangibles representing 19.6% of the sample. This result may at first appear surprising, a large proportion of prior literature focuses on the fact that goodwill appears to be the asset most likely to be subject to impairment losses (Alciatore *et al*, 1998), however, when both categories of intangibles are added together they become the predominant asset most frequently subject to impairment. This observation is perhaps not surprising given the extensive debate in the

literature about if and how intangible assets should be measured and valued given the subjectivity inherent in such valuations (Penman, 2007).

Table 7.3 Classification of Assets Subject to Impairment Losses 2003 to 2008

Asset	Frequency	Valid Percent
Property Plant Equipment	62	39.2
Goodwill	54	34.2
Intangible Other	31	19.6
Investment	11	7.0
Total	158	100

This may appear to contradict the view that the asset most frequently impaired is goodwill, given that many impairment investigations appear to focus on goodwill rather than other tangible assets (Hayn and Hughes (2006), Beatty and Weber (2006), Lapoint-Antunes *et al* (2009), Jarva (2009)), on the basis of this finding in the UK context, given that the majority of prior studies tend to be US based. This could be due to a number of different reasons both at the operational level in terms of measurement and valuation, at the conceptual level in terms of conservatism and at the overarching theoretical level of a true and fair view. These important principles, concepts and theoretical developments are all factors that may be unique to the UK financial reporting environment and this is something that will be discussed in detail in Chapter Nine and Ten.

7.2.4 Sectors and Asset Types Disclosed as Impaired

The different assets can also be cross tabulated with the different sectors to reveal whether any particular sectors stand out as being particularly susceptible to certain types of assets being impaired. This presents a rich picture of the types of assets impaired in each sector and the wide spread nature of the assets impaired is similar with earlier non sector specific research (Zucca and Campbell (1992), Francis *et al* (1996) and Cotter *et al* (1998)) that also found the practice of asset impairment affecting a range of assets. This information is displayed in Table 7.4 below:

Table 7.4 Sector and Type of Asset Disclosed Impairment Losses 2003 to 2008

Sector	Asset Type				
	Prop. Plant Equipment	Goodwill	Intangible Other	Investment	Total
Aerospace & Auto	4	5	1	0	10
Financial Services	0	1	1	1	3
Beverage, Food, Tobacco	7	2	0	0	9
Chemicals, Pharmaceutical	9	5	7	1	22
Construction	0	2	0	1	3
Electricity, Electronics	1	0	1	0	2
Engineering, Industrial	3	5	2	1	11
Retailers	2	2	2	2	8
Health, Household	0	3	2	1	6
IT	1	0	1	0	2
Leisure, Hotels	6	1	1	0	8
Media	3	7	3	3	16
Metals, Mining, Oil	13	7	5	1	26
Support Services	7	5	4	0	16
Telecoms	4	7	1	0	12
Transport	1	0	0	0	1
Utilities, Other	1	2	0	0	3
Total	62	54	31	11	158

As can be seen from table 7.4 the metals, mining and oil sector reports 26 different types of impairments, with property, plant and equipment (PPE) as the most frequently impaired with 13 impairments. Given that the metals, mining and oil sector tends to employ large scale speculative assets in the form of exploration this result could be expected. Goodwill accounts for 7 of the impairments while other intangibles account for 5 and investments 1 impairment.

The second highest number of impairments occurs in the pharmaceutical and chemicals sector with 22 different asset impairments, again the asset most frequently impaired in this sector is PPE with 9 impairments followed by other intangibles with 7 impairments and goodwill with 5. Given that this sector tends to be quite intensive in internal research and development costs this result could indicate that PPE and other intangibles become impaired during the research and development process, with not so many goodwill impairments.

Joint third in terms of number of impairments are the support services and media sectors. The results for both these sectors indicate a higher amount of intangible assets subject to impairment losses than tangibles. This again might be expected given that both these sectors tend to have engaged in consolidation activities over the years and have considerable amounts of intangibles within their financial reports, although this applies to a greater degree to the media sector rather than the support sector.

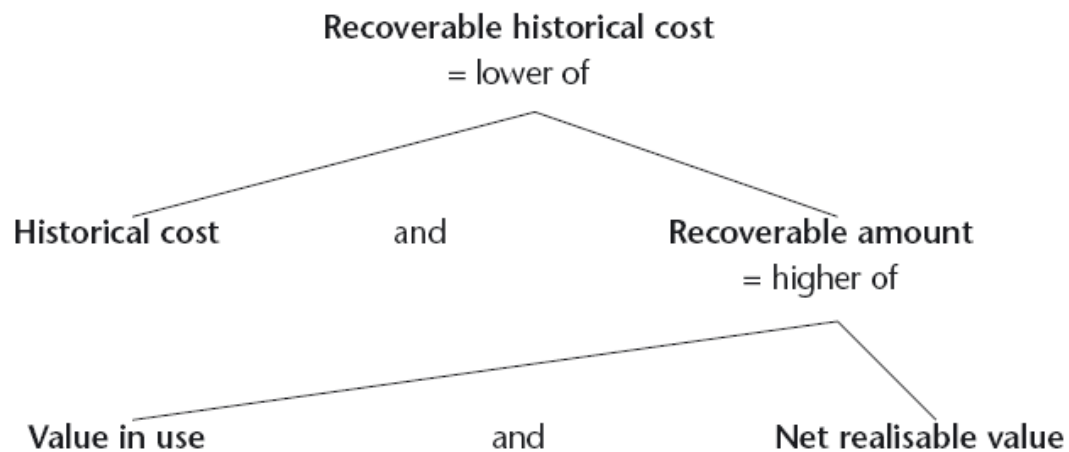
As can be seen from the rest of the data in Table 7.4 the remaining sectors have a wide spread of impairments across many different asset types. As will be seen later in this chapter, the Telecoms sector presents a very unusual case in terms of the magnitude of asset impairment losses.

7.2.5 Asset Impairment and Disclosed Valuation Method

Another critical area discussed in the literature relates to the valuation method employed in the asset impairment review process and this forms the basis of research question three in this thesis. Upon investigation of the sample of 94 corporations, many corporations used more than one valuation method depending on the type(s) of asset reported as impaired. In the absence of further disclosure, recoverable amount could be either 'net realisable value' or 'value in use', as the decision tree in the impairment review process is that recoverable amount is equal to the higher of net realisable value and value in use.

This was outlined fully in Chapter Four and is illustrated in Figure 7.1 below.

Figure 7.1 Impairment review process



Source: ICAEW (2006, p22)

As Figure 7.1 illustrates recoverable amount can be defined as the higher of value in use and net realisable value. However in terms of disclosure requirements an implicit assumption can be made about the recoverable amount, as IAS 36 states that if value in use has been employed in the asset impairment decision, the discount rate used and the basis of the discounted cash flow projections should be disclosed. On this basis, assuming that the corporations that employed value in use disclosed the discount rate as required, an implicit assumption can be made that when the corporations state recoverable amount without specifically stating value in use or net realisable value, in the absence of a disclosed discount rate, the method employed must have been net realisable value.

A total of 92 corporations disclosed a valuation method, with two corporations not disclosing any valuation method in relation to the determination of the asset impairment loss. Out of the 92 corporations, 51 disclosed a single valuation method, 30 disclosed two valuation

methods while 11 corporations disclosed all three possible valuation methods, this gives a total of 144 valuation disclosures from the sample of 92 corporations that disclosed a valuation method.

The results of the different disclosed valuation methods are presented in the following Table 7.5 and this illustrates the predominant method used in the determination of measuring an asset impairment loss is value in use (48.6%) followed by recoverable amount (30%) and net realisable value (21.4%).

Table 7.5 Disclosed Valuation Method from 2003 to 2008

Disclosed Valuation Method	Frequency	Valid Percent
Recoverable Amount	43	30.0
Net Realisable Value	31	21.4
Value in Use	70	48.6
Total	144	100.0

For those corporations that only disclosed recoverable amount as the valuation method, given that this figure will be lower than the historical cost and given the fact that no discount rate was disclosed, these corporations must have therefore used net realisable value to determine the extent of their asset impairment loss, this leads to the data in Table 7.5 being simplified to infer that a total of 51.4% of asset impairments are measured using net realisable value and 48.6% are measured using value in use. Chapter Eight will explore this important finding in relation

to the issue of whether a particular valuation measure can be associated with a particular type of earnings behaviour.

In the context of the current descriptive analysis this fairly even split between valuation methods employed to measure the impairment loss provides an interesting picture of the UK context for measuring asset impairment losses and the fact that value in use forms a level 3 input⁴⁶ while net realisable value forms a level 2 input in the fair value hierarchy of information availability. Concerns about the verifiability of fair value based on level 3 inputs have been raised by commentators such as Benston (2006), Landsman (2007), Cooper (2007), Broadley (2007), Page (2007), Penman (2007) and Watts (2003a) and this issue will be discussed with respect to the regulatory context in Chapter Nine.

The disclosed valuation methods can be split into the different sectors to give an overview of the types of valuation methods used in each sector. Table 7.6 below splits the disclosed valuation method employed into sectors and this appears to show an even spread of valuation methods across sectors.

⁴⁶ Level inputs relate to the information availability that determines the valuation method employed as per the fair value definition provided by the IASB, this was fully explained in Chapter Four.

Table 7.6 Disclosed Valuation Method in Sectors 2003 to 2008

Sector	Valuation Method			
	Recoverable Amount	Net Realisable Value	Value in Use	Total
Aerospace & Auto	2	1	7	10
Financial Services	0	1	2	3
Beverage, Food, Tobacco	4	2	3	9
Chemicals, Pharmaceutical	9	1	7	17
Construction	1	0	2	3
Electricity, Electronics	0	0	2	2
Engineering, Industrial	2	3	3	8
Retailers	3	2	3	8
Health, Household	1	1	4	6
IT	0	2	0	2
Leisure, Hotels	2	3	3	8
Media	8	0	8	16
Metals, Mining, Oil	4	7	13	24
Support Services	5	4	4	13
Telecoms	1	3	7	11
Transport	1	0	0	1
Utilities, Other	0	1	2	3
Total	43	31	70	144

The descriptive data in Table 7.6 follows a similar pattern to the disclosed asset types shown in Table 7.4 earlier. This is due to the fact that those sectors with a higher degree of different assets reporting impairments will also use a wider range of valuation methods. Again Table 7.6 highlights that the metals, mining and oil sector has the greatest number of valuation methods followed by the pharmaceutical and chemical sector, media and support services, with the other sectors having a broad spectrum of valuation methods.

In terms of relevance to the prior literature, assessing the extent of different valuation methods employed in the determination of an asset impairment loss does not appear to have been carried out previously. This is apparent upon review of the prior literature in the area of asset impairment. In this respect the findings presented here appear to be unique in terms of analysing the specific valuation method employed and disclosed in the annual report in order to arrive at the asset impairment loss.

A considerable amount of the literature in this area does make generic reference to the fact that fair value estimates are in use (such as Riedl (2004), Beatty and Weber (2006), Landsman (2007), Penman (2007), Jarva (2009) and Lapointe-Antunes *et al* (2009)), but nothing in the prior literature appears to attempt at identification of which level input fair value is being used to implement the asset impairment loss. This is a crucial piece of information, given that fair value could be represented by a level one input such as market data, a level two input such as parallel market data or finally and perhaps most critically, a level three input such as expected discounted future cash flows in the form of a value in use calculation.

This lack of identification of which level input is being employed could severely limit the generic criticism of fair value being used as a tool to manipulate earnings if the actual valuation method is not known, as by definition, fair value does not necessarily mean a value in use calculation.

Table 7.7 below cross tabulates the valuation method employed to the types of asset impaired and this produces some very interesting and unique information. For tangible assets, in particular PPE, the predominant valuation method is net realisable value, with 39 out of 57 asset impairments being measured using this valuation technique, again, using the implicit assumption that where recoverable amount has only been disclosed and in the absence of a disclosed discount rate, this must mean that net realisable value has in fact been used but only recoverable amount has been disclosed.

Table 7.7 Asset Type and Valuation Method Employed

		Valuation Method			
		Recoverable Amount	Net Realisable Value	Value in Use	Total
Asset Type	Property Plant Equipment	22	17	18	57
	Goodwill	7	6	35	48
	Intangible Other	7	5	16	28
	Investment	7	3	1	11
	Total	43	31	70	144

This finding relates to a wide range of issues identified in the literature with respect to valuation methods, information availability and conservatism within financial reporting. Notably Table 7.7 highlights that intangible assets tend to be valued using subjective value in use estimates while tangible assets tend to be valued using net realisable value market based estimates. This point will be critically appraised in

Chapter Nine that discusses the results in relation to the literature, regulatory, practical and theoretical context.

The corporations that disclose recoverable amount as their valuation method in the three previous tables are actually using net realisable value or value in use as their valuation method, but not specifically disclosing which one for that particular asset category. However, given that corporations should disclose the discount rate when value in use has been used; implicitly those corporations that do not report a discount rate must have used net realisable value while those corporations that do disclose a discount rate have used value in use.

A total of 49 in the sample corporations disclose a discount rate for the purposes of the estimate of the discounted future cash flows used to calculate the asset impairment charge. Several corporations disclose different discount rates depending on the type of asset, where this is the case, an average discount rate has been compiled. The disclosed discount rates range from a maximum of 23.7% to a low of 6%, with a mean of 10.6%. The highest disclosed discount rate relates to the retail sector, while the lowest disclosed discount rate relates to the mining sector. The use of discount rates can provide users with an important insight into managements view of the risk and return available from continued use of an asset.

This concludes the initial exploratory descriptive analysis of the characteristics of the data in terms of the types of assets that are impaired, the sectors to which the impairment relates and the valuation method employed to assess the extent of asset impairment. A rich picture has been developed here and it is clear that asset impairment losses are widespread across all sectors and across all years in the sample period. Upon initial investigation it also appears that intangible assets are those most likely to be subject to impairment losses, but upon more in depth analysis of those corporations reporting more than one asset category as impaired, a similar number of both tangible and intangible assets are reported as having an impairment loss with a wide range of different valuation methods being used. The next section evaluates some statistical properties of the sample.

7.3 Impairment by Sector, Sector Total and Sector Mean

This section assesses the size of the asset impairment charges in the sample of corporations. The size of impairment is reported in terms of the amount in absolute terms for each sector and also in frequency percentage terms. As will become apparent in this section, the issue of outliers in respect of the absolute value of the reported asset impairment charges is significant for the purposes of this analysis, so the data is presented both including and excluding the outliers. To totally exclude outliers in this analysis would result in an inaccurate interpretation of the data, given the impact of the outliers on the data.

As identified in Chapter One, the telecoms sector had some extraordinarily large asset impairment losses during the sample period and these losses represented a very high proportion of the total value of all asset impairment charges during the sample period. This resulted in the telecoms data heavily skewing some of the descriptive results used here. However, to merely exclude these as outliers would not have presented a full picture of the practice of asset impairment during the sample period, so the data is presented here including and excluding the outliers for context. Importantly, in terms of the statistical data analysis carried out later in this Chapter, non parametric techniques were used, as discussed in the methodology Chapter Six, in order to ensure that the very large impact of the telecoms impairment losses did not unduly influence the results of the data analysis.

Table 7.8 illustrates the size of the impairment loss for each sector in total together with the number of corporations reporting asset impairment losses over the sample period from 2003 to 2008. It then identifies how many annual reports relate to repeat corporations and the number of repeat corporations.

For example, in the instance of the first sector identified in Table 7.8, the automotive and aerospace sector, a total of seven annual reports are identified as reporting asset impairment losses (Denoted 'Firm Years' in Table 7.8). Out of these seven reports, six of the reports relate to

corporations that have reported asset impairment losses in more than one year (Denoted 'Repeat Firms' in Table 7.8). These six reports are represented by two firms (Denoted 'Repeat No' in Table 7.8). The total asset impairment losses disclosed and the mean asset impairment loss for each sector is then provided in the final two columns.

This is summarised in Table 7.8 below:

Table 7.8 Impairment by sector, sector total and sector mean

	Sector	Report Years⁴⁷	Repeat Firms⁴⁸	Repeat No.⁴⁹	Sector total £ms	Sector mean £ms
1	Aerospace & auto.	7	6	2	391	55.86
2	Banks, finance	2	2	1	11	5.50
3	Beverages, tobacco & food	7	4	1	131	18.71
4	Chemicals & pharmaceuticals	8	8	3	1,120	140.00
5	Construction	2	2	1	20	10.00
6	Electricity & electronics	3	0	0	405	135.00
7	Engineering & industrial	6	5	2	277	46.17
8	General retailers	5	3	1	53.2	10.64
9	Health & household	4	3	1	294	73.50
10	IT hardware & IT services	1	0	0	1	1.00
11	Leisure & hotels	6	3	1	140	23.33
12	Media	8	8	3	413	51.63
13	Metals, mining, oil	16	11	4	1630	101.88
14	Support services	9	6	2	621	69.00
15	Telecoms	7	6	2	49,489	7069.86
16	Transport	1	0	0	58	58.00
17	Utilities, others	2	0	0	287	143.50
	Total	94	67	24	55,341	

⁴⁷ This relates to the total number of annual reports with asset impairment charges, including those firms with more than one asset impairment charge over the period 2003-2008.

⁴⁸ This is the number of annual reports that disclose asset impairment charges by repeat firms during the period 2003-2008.

⁴⁹ This is the number of repeat firms whose annual report discloses asset impairment losses during the period 2003-2008.

For example in the automobile and aerospace sector, out of the seven annual reports containing asset impairment losses, two corporations account for six of the firm years, (BAE Systems reporting in four of those years (2003, 2005, 2006 and 2007) and Rolls Royce reporting in two of the years (2003 and 2004) while GKN only reports impairments in its annual report once (2003) during the sample period. A total of seven annual reports with asset impairment losses are represented by three corporations, two of which have repeatedly reported asset impairment losses in more than one year for the sample period from 2003 to 2008. This can be assessed in the presentation of the rest of the data in table 7.8.

As can be seen from Table 7.8 above, the results have been segmented into a total of 17 different sectors, largely in line with the FTSE classification system, with some consolidation of the sectors with similar activities. From Table 7.8 a total of 94 corporations had impairment charges over the years 2003 to 2008. Out of those 94 annual reports that disclosed impairment charges identified from the FAME database⁵⁰, more than two thirds (67 annual reports disclosing asset impairment charges), totalling 71%, were from corporations that already had impairment charges in one or more of the other years.

⁵⁰ With the exception of 2003-2004 due to the FAME database not separating this information prior to this date.

Of the 67 annual reports disclosing asset impairment charges that are by repeat corporations, the actual number of repeat corporations is only 24 over the sample period. This highlights that a minority of 25.5% of corporations account for 71% of annual reports disclosing asset impairment losses.

This would appear to support the view presented by Zucca and Campbell (1992), Rees *et al* (1996) and Francis *et al* (1996) that corporations' with asset write downs are more likely to have repeated asset write downs in the future.

Additionally, Elliott and Hanna (1996) and Strong and Meyer (1987) find that those corporations with consistent asset write off's perform worse when compared to those corporations that do not have consistent write off's.

Table 7.9 below identifies the total value of impairment and percentage frequency for the sample corporations in their respective sectors.

Table 7.9 Number of Corporations Disclosing Impairments and Total Value of Impairments with Percentage Frequency 2003 to 2008

	Sector	No. Annual reports disclosing impairments	%	Sector total £ms	%
1	Aerospace & auto.	7	7%	391	1%
2	Banks, finance	2	2%	11	0%
3	Beverages, tobacco & food	7	7%	131	0%
4	Chemicals & pharmaceuticals	8	9%	1,120	2%
5	Construction	2	2%	20	0%
6	Electricity & electronics	3	3%	405	1%
7	Engineering & industrial	6	6%	277	1%
8	General retailers	5	5%	53.2	0%
9	Health & household	4	4%	294	1%
10	IT hardware & IT services	1	1%	1	0%
11	Leisure & hotels	6	6%	140	0%
12	Media	8	9%	413	1%
13	Metals, mining, oil	16	17%	1630	3%
14	Support services	9	10%	621	1%
15	Telecoms	7	7%	49,489	89%
16	Transport	1	1%	58	0%
17	Utilities, others	2	2%	287	1%
	Total	94	100%	55,341	100%⁵¹

Table 7.9 extends the information contained in Table 7.8 to quantify the frequency in percentage terms for both the number of asset impairments in each sector and the total value of asset impairments in each sector. The most noticeable fact in Table 7.9 is that the telecoms sector accounts for almost 90% in value of the asset impairment charges throughout this period; this inevitably skews the data when using parametric statistics, which is why non parametric techniques have been used for the analysis in the relevant research questions. Three out of the five asset impairment charges in the telecoms sector relate to Vodafone's asset impairment

⁵¹ This total has a slight difference due to rounding.

losses in the years 2003, 2006 and 2007. While both Cable and Wireless and MMO2 charged large asset impairment losses in 2003. Prior sector specific studies have focused on financial services sectors (Anagnostopoulos and Buckland (2005) and Carroll and Linsmeier (2003)), the property sector (Dietrich *et al.* (2001) and Hermann *et al* (2006)) and the oil and gas sector (Alciatore *et al.*,2000). None of the prior literature appears to focus on the telecoms sector as being particularly vulnerable to large asset impairment charges although this issue was noted by Andrews (2006).

The finding that just three telecoms corporations account for almost 90% of all asset impairment losses over the period from 2003 to 2008 is a startling result in terms of proportionality.

As can also be seen from Table 7.9, after the massive telecoms sector impairment charges, metals, mining and oil followed by chemicals and pharmaceuticals are the largest asset impairment sector both in terms of absolute amounts and percentage, with 3% and 2% respectively, of the total asset impairment charges over the period 2003-2008. Each of the other sectors account for one percent or less of the total. Clearly the impact of the outlier data in the case of the telecoms sector has skewed the data in Table 7.9. If the telecoms sector data is excluded as an outlier, the data can be presented as shown in Table 7.10 below;

Table 7.10 Total Value of Impairments with Percentage Frequency 2003 to 2008 Excluding Outliers

	Sector	No. Annual reports disclosing impairments	%	Sector total £ms	%
1	Aerospace & auto.	7	7%	391	7%
2	Banks, finance	2	2%	11	0%
3	Beverages, tobacco & food	7	7%	131	2%
4	Chemicals & pharmaceuticals	8	9%	1120	19%
5	Construction	2	2%	20	0%
6	Electricity & electronics	3	3%	405	7%
7	Engineering & industrial	6	6%	277	5%
8	General retailers	5	5%	53.2	1%
9	Health & household	4	4%	294	5%
10	IT hardware & IT services	1	1%	1	0%
11	Leisure & hotels	6	6%	140	2%
12	Media	8	9%	413	7%
13	Metals, mining, oil	16	17%	1630	28%
14	Support services	9	10%	621	11%
15	Telecoms	7	exclude	exclude	exclude
16	Transport	1	1%	58	1%
17	Utilities, others	2	2%	287	5%
	Total	94	100%	5852	100%

Table 7.10 presents a more proportionate picture of the results excluding the telecoms sector as an outlier; however, the underlying results do not change in terms of the fact that after telecoms, metals mining and oil and chemicals and pharmaceuticals dominate the asset impairment charges. Perhaps one of the more surprising results is that the IT sector has the lowest amount in terms of asset impairment charges; this is surprising as many technology companies might be viewed as reliant on intangible assets and given the dot.com boom⁵² many IT sector corporations

⁵² The dot.com boom was associated with the period immediately before this study.

suffered heavy losses in the same way that the telecoms corporations did during this sample period.

7.4 Summary Statistics of Sample Corporations

The following section presents the summary statistics for the impairment charge in relation to sales and non-current assets for the sample as a whole and by sector. Table 7.11 below considers the whole sample characteristics in terms of the impairment charges as a percentage of sales and opening year total assets.

Table 7.11 Summary Statistics for Sample of 94 Corporations 2003 to 2008

	Impairment % of sales	Impairment % of assets ⁵³
Mean	7.01%	2.30%
Median	0.36%	0.33%
Max	170.29%	37.45%
Min	0.00%	0.01%
1st Quartile	0.12%	0.12%
3rd Quartile	1.54%	0.97%
STDEV	23.90%	6.33%
VAR	5.71%	0.40%

As can be seen from Table 7.11, the results for the sample as a whole show the huge variation in the impact of the asset impairment charge upon the reported financial information. The greatest impact of the asset impairment charges are in relation to sales as opposed to assets. Also of significance is the large difference between the reported mean and

⁵³ Start of year total assets

median of the results, this is again due to the impact of the outliers in the data set.

Specifically the impairment charge as a percentage of sales has a mean value of 7.01% which is significantly higher than the median of just 0.36%. Given that the 3rd quartile figure is 1.54% this shows that for 75% of the corporations in the sample of 94, the impairment charge reported in the income statement is 1.54% or less of sales. This illustrates the extent to which data is skewed by the impact of outliers and why non parametric techniques have been used in the detailed analysis of the specific research questions⁵⁴, as to exclude the outliers would detract from the richness of the information available and this point is supported by the fact that if the outliers are excluded, the median and quartile results remain significantly the same.

A minority of the prior research reports in the area of asset impairment report asset impairment charges as a percentage of sales. Andrews (2006) evaluates the FTSE 350 corporations and finds that the asset impairment as a percentage of sales has a mean value of 9.78% and the median drops to 1.42% with a 1st and 3rd quartile result of 0.49% and 4.00% respectively. The maximum impairment charge as a percentage of sales in the current study is 170.29%, while in the earlier study by Andrews (2006) this equivalent figure was just over 200%. Clearly the current study in terms of the impact of the asset impairment charge in

⁵⁴ As explained in the methodology Chapter.

relation to sales is considerably lower when compared to this earlier study that evaluated the FTSE 350 corporations as opposed to the FTSE 100 corporations of the current study.

Jordan and Clark (2004) report a median impairment charge as a percentage of sales of 1.51% in their sample of US Fortune 100 companies, which again is considerably higher than the findings in the current study of 0.36%. Jordan and Clark (2004) also report 1st and 3rd quartile results of 0.27% and 5.61% respectively. Again, this represents a higher level than the current findings. Sevin and Schroeder (2005) report a median impairment charge as a percentage of sales of 8.9% from a wide range of listed US companies.

Another US study that reported the asset impairment as a percentage of sales was Bunsis (1997), who found that the mean and median was 10.8% and 4.5% respectively, this is considerably higher for both the mean and median when compared to the current study, although the difference between the mean and median is not as large as there did not appear to be any exceptionally large outliers in the data set used by Bunsis (1997). Quartile results were not reported in this study. Zucca and Campbell (1992) report the asset impairment charge as a percentage of sales with a mean of 13% and a median of 1.6%. Again this represents a large disparity between the reported mean and median and illustrates the variability of reported results.

Given that the current findings report a median impairment loss as a percentage of sales of just 0.36%; this is by far the lowest when compared to these prior reports. A similar result emerges when considering the mean result of the same measure of 7.01%; again this is considerably lower when compared to these earlier reports. This may be an indicator of the asset impairment charge being more manageable or able to be absorbed more easily in terms of the impact upon revenue in the current study than in the other studies and as will be discussed in Chapter Nine, this could be a feature of the UK reporting environment in the context of earnings management and the true and fair view.

In relation to the asset impairment charge as a percentage of assets, a total of ten prior reports provide the mean and/or median result for this statistic. As can be seen in Table 7.11 the current study reports a mean and median impairment charge as a percentage of assets of 2.30% and 0.33% respectively and 1st and 3rd quartile results for the impairment charge as a percentage of assets are 0.12% and 0.97% respectively. Only the prior reports by Andrews (2006) and Jordan and Clark (2004) report quartile results for the impairment charge as a percentage of assets. Andrews (2006) reports 1st and 3rd quartile results of 0.52% and 6.56% respectively for the wider range of FTSE 350 corporations. While Jordan and Clark (2004) reports 1st and 3rd quartile results of 0.15% and 4.60% respectively in the US regulatory environment. The current study illustrates the fact that 75% of the impairment charges are 0.97% of assets or less which again would appear to indicate that overall

impairment charges are 'manageable' when compared to the overall impact upon the reported assets in the financial statements given a materiality threshold of 1% (Elliott and Shaw, 1988). A summary of the prior research reporting the asset impairment charge as a percentage of assets is presented in Table 7.12 below:

Table 7.12 Prior Research Reports Summary Statistics for Mean and Median Percentage Impairment Charge in Relation to Assets

Author(s) ⁵⁵	Sample	Time Period	Write down to total assets		
			Mean	Median	Max
Andrews (2006)	79 firms	2004	14.27%	2.16%	300%
Sevin and Schroeder (2005)	202 firms	2002	NA	7.20%	NA
Jordan and Clark (2004)	Fortune 100	2001-2002	NA	1.01%	NA
Deng and Lev (1998)	375 write offs R+D	1985-1996	18.7%	7.90%	NA
Alciatore, Easton and Spear (1998)	78 firms	1984-1987	NA	6.6% to 19.6%	90.1%
Cotter, Stokes and Wyatt (1998)	82 firms	1993	4.40%	0.30%	NA
Bunsis (1997)	207 write offs	1983-1989	8.50%	8.50%	57.2%
Rees, Gill and Gore (1996)	365 write downs by 277 firms	1987-1992	5.50%	2.60%	40.2%
Francis, Hanna and Vincent (1996)	674 write offs	1989-1992	6.70%	3.60%	NA
Zucca and Campbell (1992)	67 firms	1978-1983	4%	1.50%	63.6%
Elliott and Shaw ⁵⁶ (1988)	240 firms	1982-1985	8.20%	5.00%	NA

⁵⁵ All of these studies are US based, apart from Andrews (UK) and Cotter *et al* (Australian).

⁵⁶ Elliott and Shaw (1988) report the write down as a percentage of non-current assets rather than total assets.

In these prior studies, the mean write down to total assets had a high of 18.7% (Deng and Lev, 1998) and a low of 4% (Zucca and Campbell, 1992). This compares to the mean in the current study of 2.30%, which is considerably lower than the previous reports. The median write off or impairment as a percentage of assets in the prior studies had a high of 7.2%⁵⁷ (Sevin and Schroeder, 2005) and a low of 0.30% (Cotter *et al.*, 1998), although the next lowest is Jordan and Clark (2004) with 1.01%. This compares to the median in the current study of 0.33%.

Another reported metric is the maximum asset impairment charge as a percentage of assets and as can be seen from Table 7.12 above, five reports present this statistic, ranging from 40% (Rees *et al.*, 1996) up to over 300% (Andrews, 2006). This illustrates the variability of the result of the impact of an asset impairment charge. The current study reports a maximum percentage for this statistic of 37.45% which is considerably lower than the majority of the prior studies that report this result.

An important observation that stands out from this descriptive analysis of the characteristics of the data set is that the impact of the asset impairment charge is considerably lower in the current study than in other studies, which may be indicative of the manageability of the asset impairment charges in the current study in terms of the size of the asset impairment charge for the majority of corporations relative to the reported revenue and book value of assets. Given that Elliot and Shaw (1988)

⁵⁷ Alciatore, Easton and Spear (1998) reported a range of median results depending on sector ranging from 6.6% to 19.6%, but not a figure for the whole sample.

define anything over 1% of non-current assets as material and representative of a big bath this could indicate that in the UK setting, large corporations tend to make impairment charges that appear to be more manageable, this could be for a variety of reasons, such as a greater desire to smooth income rather than report 'shocks' to earnings; this result is also interrelated with the choice of valuation method and the notion of conservatism within financial reporting in the UK context and how the application of the 'true and fair view' fits within this paradigm. These issues will be discussed fully in Chapter Nine.

Table 7.13 below shows the mean and median asset impairment charge as a percentage of sales and assets with quartile results for the sample for each sector.

Table 7.13 Sector Summary Statistics for the Sample of Corporations 2003 to 2008

	Sector	Imp % Sales				Imp % Asset			
		Mean	Med	1st Qtr	3rd Qtr	Mean	Med	1st Qtr	3rd Qtr
1	Aerospace & auto.	0.80%	0.41%	0.29%	0.79%	0.71%	0.30%	0.20%	0.63%
2	Banks, finance	0.47%	0.47%	0.40%	0.54%	0.13%	0.13%	0.07%	0.19%
3	Beverages, tobacco & food	0.16%	0.12%	0.06%	0.22%	0.18%	0.14%	0.06%	0.29%
4	Chemicals & pharmaceuticals	13.3%	0.48%	0.23%	17.7%	3.86%	0.46%	0.21%	5.55%
5	Construction	0.23%	0.23%	0.17%	0.29%	0.45%	0.45%	0.31%	0.58%
6	Electricity & electronics	1.19%	1.19%	0.77%	1.60%	0.63%	0.63%	0.56%	0.69%
7	Engineering & industrial	0.65%	0.20%	0.07%	0.90%	0.92%	0.22%	0.10%	1.46%
8	General retailers	0.12%	0.10%	0.02%	0.22%	0.16%	0.10%	0.02%	0.33%
9	Health & household	0.40%	0.29%	0.07%	0.62%	0.43%	0.27%	0.07%	0.63%
10	IT hardware & IT services	NA	NA	NA	NA	NA	NA	NA	NA
11	Leisure & hotels	0.80%	0.62%	0.19%	1.17%	0.37%	0.33%	0.17%	0.51%
12	Media	1.81%	0.93%	0.24%	2.30%	1.68%	0.88%	0.45%	2.22%
13	Metals, mining, oil	2.39%	0.36%	0.09%	0.96%	1.09%	0.23%	0.07%	0.67%
14	Support services	2.34%	0.19%	0.10%	0.75%	3.80%	0.41%	0.10%	1.12%
15	Telecoms	58.2%	37.3%	1.69%	98.2%	13.7%	9.15%	0.29%	24.4%
16	Transport	NA	NA	NA	NA	NA	NA	NA	NA
17	Utilities, others	23%	23%	14.1%	31.9%	1.48%	1.48%	1.24%	1.72%

Table 7.13 gives a useful breakdown of the impact of asset impairment charges across different sectors. Elliott and Shaw (1988) defined a corporation as taking a big bath when the impact of the asset impairment charge was greater than 1% of non-current assets. Table 7.13 illustrates that with the exception of the Telecoms and to a lesser extent the Utilities sectors the asset impairment charge as a percentage of total assets appears to be less than 1% and on this basis would appear to be a manageable amount from the perspective of not having a large impact upon the financial statements. For the other sectors, the median is lower than 1% which again illustrates that for the majority of sectors, the

impairment charge appears manageable. If the mean and quartile results are considered, the extent of big bath accounting according to the Elliott and Shaw (1988) definition appears to increase, but again, care needs to be taken with the mean figure due to the skewed nature of the dataset.

If the 3rd quartile result is considered, two of the seventeen sectors do not have enough data to produce this figure, while out of the remaining fifteen sectors, nine have a 3rd quartile result below this 1% threshold while six have a 3rd quartile result above the threshold. Some might argue (Jordan and Clark, 2004) that 1% is an arbitrary amount and too low in terms of materiality to represent a 'big bath'; if this is the case and a level of 5% of assets is set as an indicator of big bath behaviour, the median and 3rd quartile results only identify the Telecoms sector as potential big bathers, however, as will be discussed later on in this Chapter, the extent of big bath accounting compared to income smoothing will be evaluated in detail.

Additionally, in line with the majority of the prior research in this area, the impairment charge as a percentage of total assets has been used in the current study, whereas Elliott and Shaw (1988) used only non-current assets in their study. The results of the current study evaluated the impairment charge as a percentage of both total assets and non-current assets and using the arbitrary 1% of non-current assets only to define a big bath identified a total of 29 corporations (30.85%) out of the sample of 94 as big bathers.

When the asset impairment charge as a percentage of total assets (as opposed to non-current assets only) is used and the same arbitrary 1% is set to define a big bath, this identified 24 corporations (25.53%) as big bathers from the same sample; this illustrates that to evaluate the presence of a big bath on the basis of total assets or just non-current assets for this sample does not significantly change the results due to the overwhelming observation that for the majority of corporations reporting an asset impairment charge, it appears to be within manageable thresholds. This has implications in respect to the issue of whether corporations in the UK context appear to be engaging in earnings management to smooth income or whether the implementation of an asset impairment charge is more aligned to the desire to reflect a true and fair view of the corporation within the conservative paradigm of the UK reporting context. This point will be fully discussed in Chapter Nine.

This concludes the initial analysis of the descriptive characteristics of the data set and significance of the results identified in this discussion will be considered in detail in Chapter Nine in terms of the impact upon the practice, regulatory and theoretical context of asset impairment reporting. The next section considers the specific research questions one and two of this thesis using the expected earnings methodology explained in Chapter Six.

7.5 Research Questions One and Two

Research questions one and two are;

- *Are earnings management characteristics evident as a result of charging an asset impairment loss?*
- *Does the change in the regulatory environment relating to asset impairment testing result in a change in the earnings management characteristics of the published financial information?*

Both these questions are contemporaneously linked as in order to answer question one, the period prior and post the change in regulation has been considered and also the same period and data has been used to answer question two. Therefore this section evaluates the results for both questions. This section will consider each of the expected earnings methodologies adopted for the data as explained in the methodology chapter, these approaches directly followed prior work by Riedl (2004), Zucca and Campbell (1992), Moses (1987), Jordan and Clark (2004), Beatty and Weber (2005) and Sevin and Schroeder (2005) and indirectly many of the prior reports specifically rely on the principle of expected earnings, return on sales or return on assets in order to establish inferences about earnings management within their sample data (Rees *et*

al (1996), Elliott and Shaw (1988), Cotter *et al* (1998), Loh and Tan (2002) and Francis *et al* (1996)).

7.5.1 Method One Classification

Method one is based on the Riedl (2004) classification of BB and IS and resulted in the highest number of inconclusive instances in terms of the type of earnings management that corporations were engaged in. This could be due to the arbitrary nature of the formula used by Riedl (2004) in terms of whether the result is simply below or above the median of the change in earnings divided by total assets. The method one involved splitting the sample of 94 corporations into two sets, the pre and post the change in the regulatory environment. For both periods, the pre write down earnings are deducted from the expected earnings for all corporations. In the case of pre write down earnings being higher than expected earnings, this will produce a positive value and those corporations with positive values are separated from those corporations that produce a negative value using the same calculation. Those corporations with negative values have pre write down earnings already less than expected earnings. All the results are divided by the total book value of assets in order to act as a deflator.

This provides two sets of data, one with positive values that are potentially income smoothers and another with negative values that are

potentially big bathers. The median for both sets of data is calculated, for both time periods. A corporation is identified as an income smoother if it has a result higher than the median of positive values. Conversely, where a corporation has a result lower than the median of negative values it is identified as a big bather. The method one analysis produced the following results:

Table 7.14 Method One Classification for Big Bath and Income Smoothing Using the Mann Whitney Test

Method One		
2003-2004 Pre change	n=37	%
Income smoothing	15	40%
Big bath	4	11%
Inconclusive	18	49%
Total	37	100%
2005-2008 Post change	n=57	%
Income smoothing	19	33%
Big bath	11	19%
Inconclusive	27	47%
Total		100%
Z	-0.858	
p value	0.1955	

Table 7.14 above provides the result for method one that adopts the Riedl (2004) method for the identification of income smoothers and big bathers and provides an insight into the two research questions posed. During the period prior to the change in regulation, the results indicate a greater propensity for those thirty seven corporations with asset impairment charges to be income smoothers (40%) as opposed to big bathers (11%),

however, method one did produce a high number⁵⁸ of inconclusive results (49%).

Moving to the period post the change in the regulatory environment and as can be seen from Table 7.14 above, the number of corporations reporting asset impairment losses produces a larger sample of fifty seven. This is perhaps to be expected given the longer time frame involved. Post the change of regulation the results indicate an increase in the extent of big bathers (19% compared to 11%) with a decrease in the extent of income smoothing (33% to 40%), with the predominant characteristic for both pre and post the change in the regulatory environment being income smoothing. On the basis of the raw data findings, this result indicates that the extent of big bathers has increased while the extent of income smoothing has decreased post the change in the regulatory environment, the predominant characteristic of earnings management behaviour remains inconclusive and the results do not produce any statistically significant findings.

Performing a Mann Whitney Test of proportions⁵⁹ between the two time periods with a one tailed test of significance for increases in the proportions of the data set produced a p statistic of 0.1955, which at the probability level of 5% is insignificant. Even at a higher probability level of 10% the result would still not be significant. Statistically there is not a greater degree of big bath or income smoothing behaviour post the

⁵⁸ In comparison to the other methods employed on the dataset.

⁵⁹ Using the SPSS software.

change in the regulatory environment when compared to pre the change in the regulatory environment, although as the raw data confirms, there is some shift in the change of characteristics of earnings management in the form of an increase in big bathers and a decrease in income smoothers.

In direct answer to question one of this thesis, this initial result would indicate a greater propensity for income smoothing as opposed to big bath earnings management for corporations implementing an asset impairment charge across the sample as a whole from the period 2003 to 2008, but not at a significant level. In relation to research question two and the issue of whether this behaviour changes post the change in the regulatory environment, as can be seen from Table 7.14, there is no statistically significant difference in earnings management behaviour post the change in the regulatory environment when compared with the pre change regulatory environment, although a small shift to income smoothing is evident. The next chapter will address the disclosed indicators of asset impairment in order to assess the potential drivers of this behaviour from both the perspective of sector behaviour and market expectations, as both these are potentially disclosed within the corporate report as indicators of impairment.

The same sample was analysed using the Zucca and Campbell (1992) method and as will be seen, the results produce a significantly different outcome to the previous results using the Riedl (2004) method. The

reasons for this will be evaluated in terms of the formula derivation differences between the Riedl (2004) approach and that of Zucca and Campbell (1992).

7.5.2 Method Two Classification

Method two used the Zucca and Campbell (1992) classification and produced more conclusive behaviour in terms of identification of big bathers or income smoothers; this may be due to the less arbitrary nature of the formulation of data in the determination of earnings management behaviour when compared to the Riedl (2004) method. Specifically, as was illustrated in the methodology chapter, Zucca and Campbell (1992) take into account more variables in the determination of their formula and identify behaviour on the basis of comparing deviations from both expected earnings, pre write down earnings and reported earnings, as opposed to just earnings relating to the prior year and pre write down earnings as used by Riedl (2004).

This arguably makes the formula more refined than the Riedl (2004) method, which arbitrarily makes a judgement about income smoothing or big bathing depending on whether the item is above the positive median result in the case of income smoothers and below the negative median result in the case of big bathers.

The pre write down earnings, less the earnings in the prior year divided by assets is calculated and then the output for all corporations is compared with the median result and an arbitrary above or below the median result decides the earnings characteristic. While this would appear to be a logical approach the Zucca and Campbell (1992) method uses the absolute figures individually for each corporation rather than an arbitrary above or below the median result, this would appear to be a more sophisticated approach as can be seen in the methodology chapter.

The sample of 94 corporations' are split in exactly the same way as Method One, into pre and post the change in the regulatory environment. Method Two uses a conditional approach instead of an arbitrary above or below the median result (as used in Method One) in order to identify the earnings characteristic of income smoothing and big bathing. In order for a corporation to be associated with the practice of implementing a big bath, the same criteria in Method One of expected earnings being higher than pre write down earnings should be present, additionally; expected earnings must also be greater than reported earnings.

No deflator is used in this method and hence no arbitrary above or below the median of results is used, instead the condition of expected earnings higher than both pre write down earnings and reported earnings is used to identify the association of the corporation with the practice of big bathing. This test is run for each corporation.

In order to identify the practice of income smoothing, expected earnings should be lower than both pre write down earnings and reported earnings. Again, this is a conditional approach to the identification of the earnings characteristic and in order to meet the criteria for income smoothing, but conditions should be met. Some corporations may have pre write down earnings higher than expected earnings, but any impairment charge may take the reported earnings below expected earnings. Where this happens, the criteria for income smoothing using the Zucca and Campbell (1992) approach has not been met. This test is run for each corporation. The results for method two are shown in Table 7.15 below:

Table 7.15 Method Two Classification for Income Smoothers and Big Bathers Using the Mann Whitney Test

Method Two		
2003-2004 Pre change	n=37	%
Income smoothing	29	78%
Big bath	7	19%
Inconclusive	1	3%
Total	37	100%
2005-2008 Post change	n=57	
Income smoothing	32	56%
Big bath	21	37%
Inconclusive	4	7%
Total	57	100%
Z	-1.772	
p value	0.038	

As can be seen from Table 7.15, using the same sample of 94 corporations produced some strong results in terms of whether the

implementation of an asset impairment charge is aligned to income smoothing or big bath accounting. As Table 7.15 illustrates, prior to the change in the regulatory environment the predominant behaviour appears to be income smoothing (78%) while big bathers only account for 19% and the inconclusive results in this analysis amount to 3%.

Post the change in regulation the data analysis produces a large shift from income smoothing (56%) to big bathers (37%) for the sample of fifty seven corporations in this sub set of the sample. The number of inconclusive observations is 7%. As this analysis demonstrates, the shift to big bath accounting post the change is large, although the predominant characteristic remains income smoothing.

Performing the Mann Whitney Test on this result produces a statistically significant p result of 0.038.

This result demonstrates that at the 5% level of significance for a one tailed test for an increase in the proportions between the two samples that statistically, post the change in the regulatory environment, a higher amount of big bath accounting takes place when compared to the pre change regulatory environment. This result is consistent with prior studies by Riedl (2004), Jordan and Clark (2004), Beatty and Weber (2005) and Sevin and Schroeder (2005) who all considered a change in the regulatory environment in the US context and found a greater propensity for big bath accounting.

However, Francis *et al* (1996) against the background of the introduction of SFAS 121 in the US found fewer propensities for both income smoothing and big bath accounting characteristics with the main driver of impairment being discretionary choice and authoritative guidance in relation to asset impairments.

Using the Method Two with a random walk with drift represented as expected earnings based on the previous three years change in reported earnings as opposed to just using the previous year's reported earnings, produced the following result as shown in Table 7.16:

Table 7.16 Method Two Classification Random Walk with Drift Using the Mann Whitney Test

Method Two with Drift		
2003-2004 Pre change	n=37	%
Income smoothing	20	54%
Big bath	14	38%
Inconclusive	3	8%
Total	37	100%
2005-2008 Post change	n=57	%
Income smoothing	26	46%
Big bath	29	51%
Inconclusive	2	3%
Total	57	100%
Z	-1.365	
p value	0.172	

As can be seen from Table 7.16 above, using a random walk with drift for the previous three years reported earnings in the computation of

expected earnings produces quite a different result, although a clear trend is still apparent in terms of a reduction of income smoothing and an increase in big bath behaviour post the change in the regulatory environment. In the period pre the change in regulatory environment the extent of income smoothing was higher (54%) than big bath accounting (38%), although the difference between the two is smaller when compared to the earlier analysis using the Zucca and Campbell (1992) random walk without drift on the same data set.

In the period post the change in the regulatory environment the amount of big bath accounting (51%) exceeds the amount of income smoothers (46%), while the number of inconclusive observations falls to 3% from 8% over the two time periods.

In terms of the raw data and the research questions, this result indicates that while pre the change in regulation, more income smoothing occurred, this reversed post the change in regulation to a higher degree of big bath accounting. Both Zucca and Campbell data analysis techniques based on a random walk and a random walk with drift point to similar results, however, in terms of statistical significance; the p value for the latter technique is 0.172, which at the 5% level is not statistically significant in terms of an increase in the proportionality of the changes in the characteristics of the two samples.

One important reason for the lower level of statistical significance could be the fact that within this data set, out of 94 corporations reporting income statement asset impairment losses, 67 of those impairment losses were by a total of just 24 corporations, due to these corporations having repeated asset impairment charges.

This may have created noise in the computation of the expected earnings when using the previous three years as a random walk with drift, given the volatility of the earnings with this high proportion of repeat corporations.

This is possibly a reason why it may be better to use just the simple random walk with previous year's earnings as an indicator of expected earnings in the future as this appears to be the most frequently used method in prior studies (Beatty and Weber, 2005). Even so, in terms of the actual results and statistical significance aside, this does still indicate a consistent result.

7.5.3 Method Three Classification

Method three uses the Moses (1987) classification and is similar to the other methods employed earlier with a succinct difference in the outcome as the result produced is called a 'smoothing index' with any positive value associated with income smoothing and any negative value is

associated with big bath behaviour. Method Three compares the difference between pre write down earnings, reported earnings and expected earnings and uses sales as a deflator for proportionality purposes. By contrast, Method One used total book value of assets as a deflator. Arguably sales might be a more suitable proportional deflator than assets, as revenue is more 'current' in terms of values and relativity to the current operating environment and the actual impairment charge, than assets, which can be subject to measurement inconsistencies and not be so relevant when compared to revenue. The fact that Method Three based upon the Moses (1987) classification produced statistically significant results may support this reasoning.

Additionally Moses (1987) does not use the median of results as a benchmark to establish the earnings characteristic like Riedl (2004). Instead, a similar approach to that used by Zucca and Campbell (1992) in Method Two is employed in terms of identifying the earnings characteristic with reference to the absolute values deflated by sales. Method Three clearly has similarities to both of the earlier methods.

Using the Method Three based upon the Moses (1987) formula produced the results as shown below in table 7.17:

Table 7.17 Method Three Classification for Income Smoothers and Big Bathers Using the Mann Whitney Test

Method Three		
2003-2004 Pre change	n=37	%
Income smoothing	30	81%
Big bath	7	19%
Inconclusive	0	0%
Total	37	100%
2005-2008 Post change	n=57	%
Income smoothing	36	63%
Big bath	21	37%
Inconclusive	0	0%
Total	57	100%
Z	-1.846	
p value	0.0325	

As Table 7.17 above shows, the results of this analysis produce some very similar results to the earlier Zucca and Campbell (1992) analysis presented in Table 7.14. The results in Table 7.16 clearly indicate that the predominant characteristic is income smoothing (81%) as opposed to big bath accounting (19%) in the period prior to the change in the regulatory environment. Post the change in the regulatory environment there is a strong shift to big bath accounting (37%) although the predominant characteristic is still income smoothing (63%).

The number of inconclusive results is zero for both periods, which given the fact that the identification of either a positive or negative number is the output this will always be the case. Clearly this presents a more conclusive result than evaluating whether the result is above or below the

median result and this aspect will be critically evaluation in the final chapter, as clearly, all of these methods are not perfect in terms of their reasoning, but they have been used extensively by other authors in order to identify the earnings characteristics of corporations. Overall the results indicate a greater propensity for income smoothing over both periods with 81% and 63% respectively.

In terms of the statistical significance of the shift in the proportionality of the two data sets, as Table 7.16 shows, the analysis produces a p value of 0.0325 which at the 5% level is statistically significant. This confirms the raw data interpretation of the fact that post the change in the regulatory environment a statistically significant higher level of big bath accounting appears to take place. This result is consistent with the other results contained in the earlier sections of this chapter and with prior studies by Riedl (2004), Jordan and Clark (2004), Beatty and Weber (2005) and Sevin and Schroeder (2005) and confirms that a change in the regulations appears to have influenced the extent of big bath accounting and income smoothing when compared to the pre change environment.

The results of this analysis in relation to the two research questions appears to point to the case that overall, asset impairment charges appear to be consistent with income smoothing behaviour, but that post the change in the regulatory environment, a higher degree of big bath accounting appears to be taking place. The next section assesses the

robustness of the results in terms of further analysis of the data in relation to return on sales and return on assets. Various authors, such as Elliott and Shaw (1988), Rees *et al* (1996), Loh and Tan (2002), Francis *et al* (1996), Cotter *et al* (1998), Hayn and Hughes (2006) and Christensen *et al* (2008) have used return on assets as part of a measurement metric in the determination of establishing an earnings characteristic, this usually takes the form of return on assets being part of a series of calculations that trigger the identification of earnings characteristics in relation to asset impairment. Riedl (2004) used return on sales in the determination of establishing an earnings characteristic in his work. Jordan and Clark (2004) and Sevin and Schroeder (2005) use both return on sales and return on assets to identify the practice of big bath accounting, post a change in the US regulatory environment.

7.5.4 Median Return on Sales and Return on Assets

Jordan and Clark (2004) and Sevin and Schroeder (2005) both identify the characteristic of an increase in the extent of big bath accounting by comparing the statistical differences between the median return on sales and the median return on assets for those corporations with and without an asset impairment charge. From this comparison they statistically infer that a greater degree of big bath accounting appears to take place post a change in the regulatory environment relating to asset impairment in the US due to the differences in the reported medians for the two different types of corporations.

Jordan and Clark (2004) and Sevin and Schroeder (2005) do not classify the earnings management characteristics of the impairment behaviour corporations but infer that if the median returns are statistically significantly different to the non impairment corporations, that a higher degree of big bath accounting has occurred post the change in the regulatory environment.

Rees *et al* (1996) also assess changes in the return on assets to identify corporations taking write offs when performance is already depressed, effectively this equates to the identification of big bath behaviour. Rees *et al* (1996) evaluate the median return on assets for a sample of write down firms in the US during the period 1983 to 1987 and find that for those firms with write downs, that their reported performance is already poor, thus the decision to take a write down can be associated with the practice of a big bath. This finding is consistent with the results of the current study.

Cotter *et al* (1998) also assess the change in the return on assets, amongst other variables, to identify earnings characteristics in a sample of Australian firms during 1993. Cotter *et al* (1998) find that a change in performance as measured by changes in return on assets supports the view that those corporations with already depressed earnings are more likely to engage in an asset write off, this would appear to support the earnings characteristic of a big bath, although Cotter *et al* (1998) do not

differentiate between big bath accounting or income smoothing. Instead Cotter *et al* (1998) conclude that corporations are more likely to implement an asset impairment charge in the face of declining performance, as measured by a decline in the return on assets, and also on the basis of their ability to absorb such an impairment charge. The current study does appear to support this finding, while also identifying the earnings characteristic as a big bath or income smoothing.

The analysis in this thesis builds on this earlier work by Rees *et al* (1996), Cotter *et al* (1998), Jordan and Clark (2004) and Sevin and Schroeder (2005) and differentiates between those corporations with impairment charges that appear to be engaging in income smoothing and those corporations that appear to be engaging in big bath accounting and evaluates the differences in median return on sales and median return on assets to assess if the two different types of corporations have statistically significant differences. Logically, one would expect the median returns for income smoothers to be higher than the median returns of big bathers.

This serves as a measure of robustness to confirm the accuracy of the earlier analysis in identification of the different earnings management characteristics of the asset impairment corporations. The corporations were identified as either big bathers or income smoothers from the earlier Moses (1987) analysis and a Mann Whitney test of differences⁶⁰ between

⁶⁰ Using the SPSS software.

the return on sales and return on assets was performed for the whole sample and also for the periods both pre and post the change in the regulatory environment.

The results in the following Tables 7.17, 7.18 and 7.19 show the ROS and ROS for the sample as a whole, the ROS and ROA for the sample pre the change in the regulatory environment and post the change in the regulatory environment respectively below.

Table 7.18 Median Return on Assets and Return on Sales 2003-2008 Using the Mann Whitney Test

2003-2008	Median	Median
	ROA	ROS
Income smoothing (66)	7.08%	9.95%
Big bath (28)	4.69%	4.69% ⁶¹
Z	-2.207	-2.732
p value	0.013	0.003

As can be seen from Table 7.18 above in both the ROA and ROS figures, there is a lower median return for those corporations reporting a big bath as opposed to those with income smoothing. If a level of significance of 5% is set, both results are considered statistically significant, with the p values for ROA and ROS of 0.013 and 0.003 respectively. The ROS result produces a statistically strong p value; this may be due to the issue of, as previously discussed, that sales may be a more accurate measure of economic reality in terms of the proportionality of the reported results

⁶¹ The fact that both median ROA and ROS figures are the same is a coincidence; the base data is different, but it produces identical median results.

as opposed to the book value of assets, which could be subject to measurement bias. However the statistical results are interpreted, the raw data does indeed reflect two important points that support the earlier analysis; namely that the results do differentiate between income smoothers and big bathers and that this is statistically significant.

Using the approach of Rees *et al* (1996), Cotter *et al* (1998), Jordan and Clark (2004) and Sevin and Schroeder (2005) for the sample relating to the pre-change in regulatory environment produced the results shown in Table 7.19 below:

Table 7.19 Median Return on Assets and Return on Sales 2003-2004 Using the Mann Whitney Test

	Median	Median
2003-2004 Pre change	ROA	ROS
Income smoothing (30)	4.63%	7.40%
Big bath (7)	1.77%	3.62%
Z	-2.055	-1.241
p value	0.020	0.107

Table 7.19 shows that prior to the introduction of IFRS 3 and IAS 36 that the big bath corporations had a lower median ROA and ROS when compared to the income smoothers. This verifies the earlier analysis in terms of identification of an earnings characteristic. In terms of statistical significance, at the 5% level, the ROA is significant while the ROS is less so, although if this is relaxed to a 10% level, the median ROS becomes significant. This result is consistent with the findings of using the Zucca and Campbell (1992) random walk model and the Moses (1987) model in

terms of identification of big bath and income smoothing behaviour and so serves to corroborate the earlier analysis robustly.

The results are also consistent with earlier work done by Jordan and Clark (2004) and Sevin and Schroeder (2005) in terms of the implicit extent of the impact of the asset impairment charge on the financial statements and the differences in reported results in a period prior to the change in the regulatory environment. This result indicates that the extent of big bath accounting prior to the change to International Standards did not result in a statistically significant impact on the financial statements of corporations published reports when compared to those corporations that are identified as being income smoothers.

Rees *et al* (1996) also adopted a return on assets approach and found that corporations are also more likely to implement an asset impairment charge when earnings are low, even post the tightening of regulations with the issue of SFAS 121 in the US, effectively finding that these corporations are engaging in big bath behaviour, however, they concluded that this is more as a result of economic circumstances rather than any earnings manipulation, this is an important point that will be returned to in the discussion of the results in Chapter Nine. The results here are in line with Rees *et al* (1996) in terms of finding the characteristic of big bath accounting post a change in the regulatory environment, however, whether this is as a result of manipulation is inevitably closely

related to the valuation method employed and this is something that will be explored in the results of the next chapter.

Jordan and Clark (2004) and Sevin and Schroeder (2005) found a similar result between those corporations with asset impairment charges and those without asset impairment charges. Elliott and Shaw (1988) also found that of those corporations that had implemented an asset impairment charge that resulted in a big bath, their future performance in terms of return on assets and return on equity was below the sector average. A big bath was defined by Elliott and Shaw (1988) as anything that constituted more than 1% of assets. This is in contrast to the majority of other papers in this area that identify of big bathers using an expected earnings approach. The result in this thesis effectively refines these earlier studies in terms of breaking down the asset impairment behaviour into income smoothing or big bath accounting rather than just stating that the change results in all asset impairment charges being associated with big bath accounting. Table 7.20 relates to the period after the change in regulation and is shown below.

Table 7.20 Median Return on Assets and Return on Sales 2005-2008 Using the Mann Whitney Test

	Median	Median
2005-2008 Post change	ROA	ROS
Income smoothing (36)	8.60%	13.37%
Big bath (21)	5.67%	4.85%
Z	-2.233	-3.325
p value	0.013	0.0005

Table 7.20 presents some statistically strong results that serve to corroborate the earlier analysis in terms of the fact that post the change in the regulatory environment, the extent of big bath accounting appears to increase. This can be evidenced by the large and statistically significant differences in the median ROA and ROS figures for this period. These significant differences indicate that the impact of big bath accounting on the published corporate reports after the transition to IFRS 3 and IAS 36 increases and that those income smoothing corporations have significantly higher returns than those big bathers. This is consistent with the earlier analysis and provides some additional robust corroboration of the earlier analysis in relation to answering research questions one and two of this thesis.

Cotter *et al* (1998) also found a similar result to Rees *et al* (1996) in the Australian setting in terms of those corporations with indications of asset impairment are more likely to make an asset impairment charge, thus aligning the corporations published results to the economic environment. Additionally Cotter *et al* (1998) also found that corporations that are more able to absorb an asset impairment charge are more likely to implement one; this effectively results in a lower amount of big bathers, although this was not against the backdrop of a change in the regulatory environment, but rather an assessment of those corporations with asset impairment charges. The results of this thesis, particularly in terms of the earlier descriptive statistics, highlight that overall corporations are able to absorb an asset impairment charge and that also overall the predominant

earnings characteristic amongst asset impairment loss corporations is that of income smoothing rather than big bath accounting, this appears to be in line with the finding of Cotter *et al* (1998).

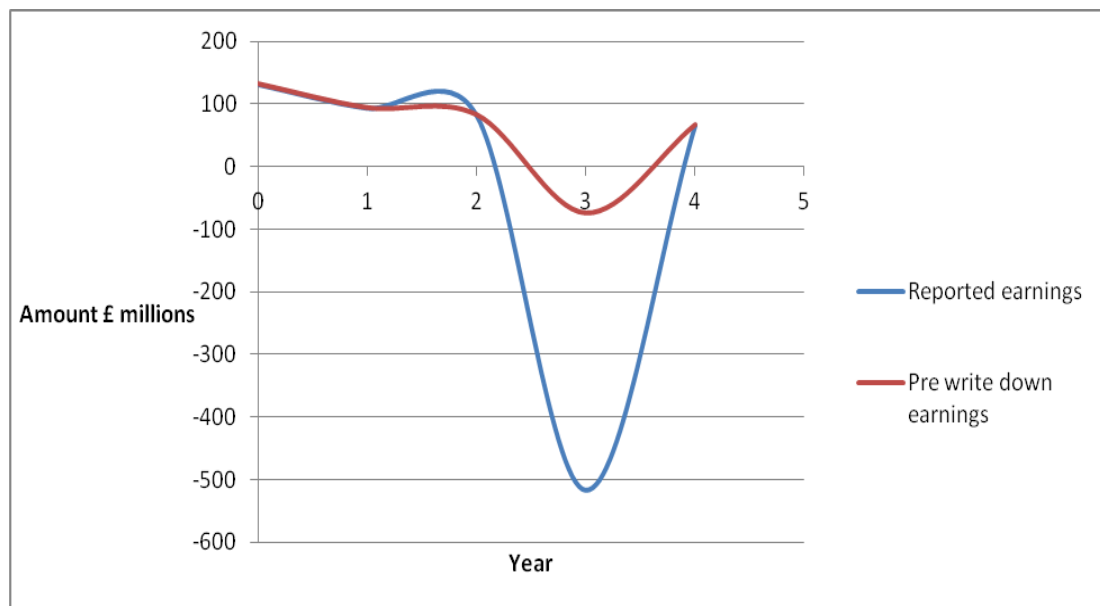
These results are consistent with other reports that have assessed the extent of income smoothing or big bath accounting, such as Moses (1987), Strong and Meyer (1987), Elliott and Shaw (1988), Zucca and Campbell (1992), Easton *et al* (1993), Beattie *et al* (1994), Elliott and Hanna (1996), Francis *et al* (1996), Rees *et al* (1996), Heflin and Warfield (1997), Bunsis (1997), Alciatore *et al* (1998), Cotter *et al* (1998), Deng and Lev (1998), Jordan and Clark (2004), Riedl (2004), Sevin and Schroeder (2005) and Andrews (2006), although many of these prior reports tended to find focus on the issue of big bath accounting as opposed to income smoothing, whereas the current study focuses on both big bath accounting and income smoothing earnings management behaviour.

7.6 Examples of a Big Bath

In terms of identification of a big bath using the methods employed, some useful illustrations can be made using the data obtained in the sample. Hays 2003 annual report is a good illustration of the identification of a big bath. In 2003 Hays reported a loss of £517 million, after an impairment charge of £442.8 million. Expected earnings, based on the previous year's earnings, were £82 million and pre write down earnings were

showing a loss of £72 million, thus already below expected earnings and meeting the criteria for the identification of a big bath, when pre write down earnings are already below expectations, thus taking earnings even lower would be indicative of a big bath and this is implemented in all three of the models explained in the results in Chapter Seven. This analysis is shown in the following graph:

Chart 7.1 Graph Showing a Big Bath at Hays

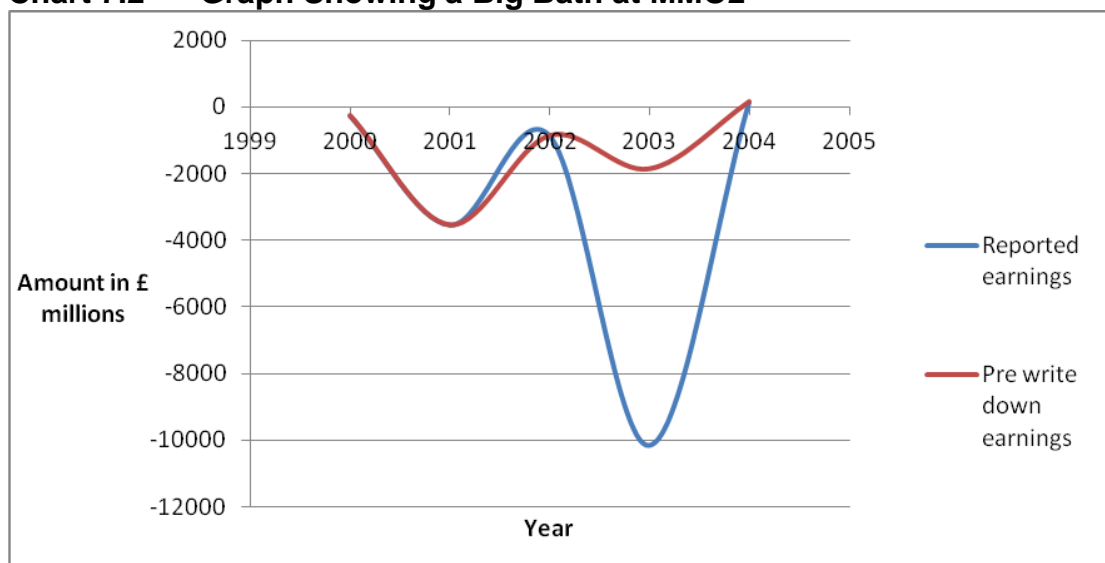


This graph presents a clear view of the process of a big bath and demonstrates the ability of the methods employed to detect such big bath behaviour. The graph highlights the pronounced effect of a big bath in terms of reducing earnings significantly below the prior year's earnings when the current year's earnings prior to the impairment charge are already low.

A large asset impairment charge is commonly associated with the practice of a big bath (Zucca and Campbell, 1992), however, with the models used in this thesis and in previous work, size of the asset impairment loss is not necessarily the key trigger, but rather the expected earnings relative to the pre write down earnings are the key trigger.

Another good example of a big bath is that of MMO2's 2003 annual report. MMO2 reported a large loss of £10,148 million after an asset impairment charge of £8,300 million in its 2003 annual report; this is one of the largest reported losses in the sample. Expected earnings based on the previous year's earnings were a loss of £850 million, however, pre write down earnings were already below this figure with a loss of £1,484 million. This means the criteria for a big bath is present, with pre write down earnings already below expectations and the impairment charge takes the reported earnings even lower. This can be illustrated in the following graph:

Chart 7.2 Graph Showing a Big Bath at MMO2



As the above graph illustrates, a significant dip in the earnings can be seen in addition to earnings already being depressed and below expectations. This meets the criteria for a big bath and fits in with the initial definition of a big bath in Chapter One and also follows a similar pattern to Hays. Many of the corporations identified in the sample do meet this criteria and do follow this pattern in terms of earnings characteristics, however, not all the corporations identified as having taken a big bath fit so neatly into this pattern and what becomes clear with these two examples is the fact that the size of the asset impairment charge is also associated with a big bath, as the name implies and as has been identified in the literature, this relates to something that is relatively large, however, in the models used, the trigger for a big bath is not necessarily the size of the asset impairment charge, but rather the amount of expected earnings relative to the pre write down earnings. This issue will be critically evaluated in terms of the limitations later in Chapter Ten.

7.7 Examples of Income Smoothing

In terms of identification of the earnings characteristic of income smoothing, some examples from the data sample can be used to illustrate this behaviour also. The criteria for identification of income smoothing using an asset impairment charge is to bring earnings down to a level more in line with expectations when the earnings are already

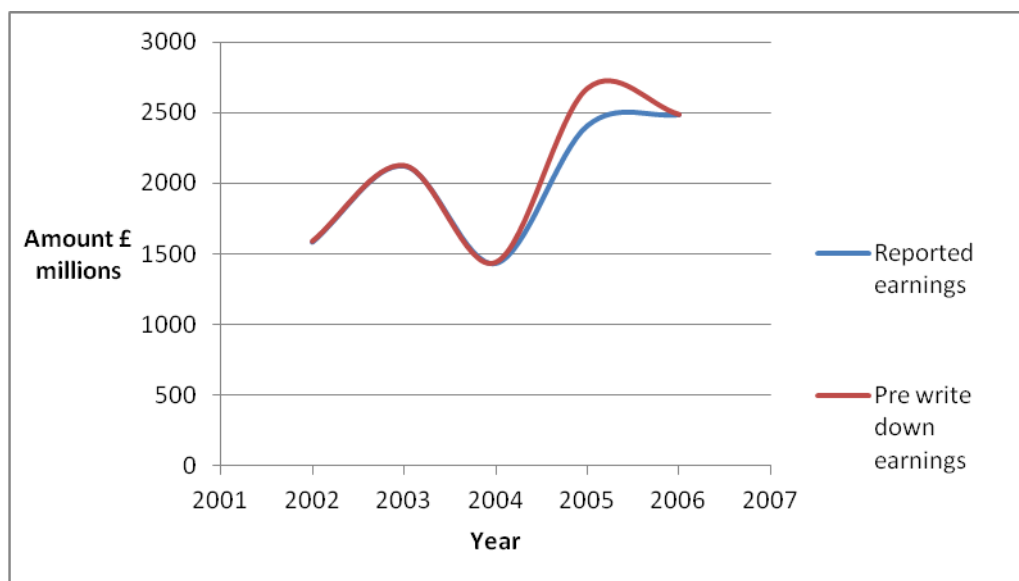
above expectations. The overall objective associated with income smoothing in the literature is to reduce volatility and overall provide a stream of earnings that appear to be steadily rising year on year, with any undue fluctuations upwards or downwards being smoothed out to give results that appear consistent and steady, usually with an underlying trend upwards.

While the process of income smoothing could be an upward or downward adjustment, in the case of income smoothing relating to asset impairment charges, the adjustment is always downwards, given that an asset impairment charge represents a loss in the income statement. In the models used in this thesis, the trigger for income smoothing is when earnings are already above expectations and the asset impairment charge brings this down closer to expectations.

For illustration purposes, the example of Unilever's 2005 annual report will be used. In 2005 Unilever reported an asset impairment charge of £262 million with reported earnings of £2,406 million. Expected earnings based on the previous year's earnings were £1,437 million. Pre write down earnings in the impairment year were £2,668 million, thus being considerably above the expected earnings figure. This meets the criteria for income smoothing, as the impairment charge brings the reported earnings closer to expected earnings.

This can be illustrated in the following graph:

Chart 7.3 Graph Showing Income Smoothing at Unilever



As the above graph illustrates, Unilever's reported earnings and pre write down earnings are the same until the implementation of the asset impairment charge in 2005, the reported earnings and pre write down earnings follow the same path until this point. The earnings are fluctuating prior to 2005, with the overall trend being upwards. In the impairment year pre write down earnings are higher than expected earnings and the impairment charge brings this figure down towards expected earnings. This pattern is common amongst those corporations identified as being income smoothers, it is particularly noticeable that often the prior earnings will be considerably lower than the current year earnings and that an asset impairment charge is implemented when earnings appear to be well above expectations and this presents the

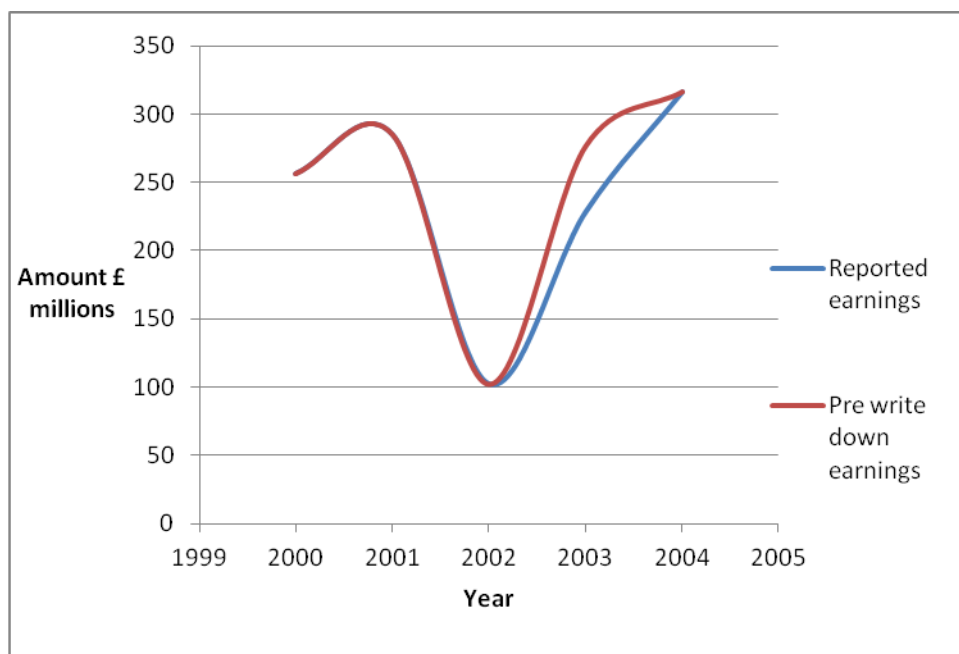
distinctive 'S' shape in the earnings curve that is a key characteristic of income smoothing.

This highlights the ability of the models used to identify the practice of income smoothing and many of the corporations in the sample follow this type of pattern in terms of an asset impairment charge being used to bring earnings down towards expected earnings. However, as with the identification of those corporations that appear to be engaging in big bath accounting, the trigger for identification of an income smoother rests with the position of expected earnings as opposed to the size of the asset impairment charge. Additionally the term income smoothing may also be associated with an asset impairment charge that is not necessarily as large as that associated with a big bath.

WPP is another useful example to illustrate the income smoothing characteristic. WPP's 2003 annual report had an asset impairment charge of £48 million and reported earnings of £228 million. Expected earnings based on the prior year earnings amounted to £102 million, with pre write down earnings in the impairment year of £276 million. This meets the criteria for income smoothing, with pre write down earnings of £276 million well above expected earnings of £102 million. The asset impairment charge of £48 million brings the reported earnings closer to expected earnings.

This can be illustrated in the following graph:

Chart 7.4 Graph Showing Income Smoothing at WPP



As the graph above for WPP illustrates, the reported income after the asset impairment charge has the effect of smoothing income down towards expected earnings, but not below expected earnings. Also noticeable is the fact that prior year earnings are considerably lower than earnings in the impairment year together with the distinctive 'S' curve shape, illustrating the variability of earnings within the overall trend of an increase in earnings. This is a common feature amongst those corporations identified as engaging in income smoothing, although, as will be seen later in this chapter, there are some exceptions that inevitably do not fit into this earnings behaviour, but are still identified as income smoothers in the models.

The asset impairment charge in terms of income smoothing is considered to not be as large as that of a big bath in the literature (Moses, (1987) and Zucca and Campbell (1992)). However, with the models used, the trigger for identification of income smoothing is the position of expected earnings relative to current year pre write down earnings and the extent to which the asset impairment charge brings this figure towards expectations. The asset impairment charge could therefore be relatively large or relatively small (as a percentage of asset book values and earnings) and still be identified as an income smoother. This is an issue that will be critically evaluated later in Chapter Nine.

The return on sales and return on assets were also used to identify the presence of income smoothing and big bath accounting collectively rather than individually, by assessing the differences between return on sales and return on assets between those corporations identified as income smoothers and those identified as big bathers. This analysis provided corroborative supporting evidence that illustrated a significant difference between the ROS and ROA of the two different sets of corporations that did demonstrate the significant differences in returns between those corporations with the different types of earnings management characteristics.

7.8 Summary

This chapter set out to answer the following research questions:

- *Are earnings management characteristics evident as a result of charging an asset impairment loss?*
- *Does the change in the regulatory environment relating to asset impairment testing result in a change in the earnings management characteristics of the published financial information?*

The results provide some strong evidence in relation to the answers for the above questions based on the sample from the FTSE 100 corporations over the sample period using the methods employed.

The descriptive statistics presented at the start of this chapter demonstrated the wide range of sectors impacted by asset impairment losses together with a fairly evenly spread split between tangible and intangible assets being subject to impairment losses. A striking feature of the analysis in this section was the extent of corporations that repeatedly report asset impairment losses (out of the 94 annual reports with asset impairments, 71% were represented by just over 25% of corporations) and the fact that the telecoms sectors dominated the value of asset impairment losses during the sample period, by a massive amount.

On the basis of the findings over the entire sample period and the majority of the methods employed, charging an asset impairment loss

would appear to result in a greater prevalence of income smoothing as opposed to big bath accounting.

When the sample is split between the pre and post regulatory change in the reporting requirements relating to asset impairment and in response to the second research question posed, the results highlight that the change did result in a significant increase in the amount of big bath accounting and a decrease in the extent of income smoothing post the change to IAS 36, but that income smoothing is still the predominant result of charging an asset impairment loss. The next Chapter evaluates research questions three and four that specifically relate to the extent of disclosure and valuation methods employed in respect of the asset impairment charge.

Chapter Eight

8 Results Relating to the Valuation Method, Indicators and Disclosure of the Asset Impairment Charge

This chapter seeks to assess in detail the disclosure characteristics of those corporations reporting asset impairment losses. As identified in the methodology chapter, a combination of both quantitative and qualitative techniques has been employed in order to assess the disclosure levels. Specifically association of the amount of the impairment loss relative to the amount of disclosure, indicator of impairment and valuation method employed is assessed together with evaluation of the disclosure levels and the earnings behaviour. The information gathered to assess these research questions was obtained primarily as a result of inspection of the corporations' annual reports.

Research question three sought to answer the following:

- *Is the valuation basis employed to measure the asset impairment loss and the disclosed cause of the asset impairment loss related to the size of the asset impairment loss?*

This question assesses the difference in the size of the asset impairment loss relative to the valuation method employed using the Kruskal Wallis

test. The Kruskal Wallis test is an extension of the Mann Whitney test of proportions and is non parametric and analyses more than two sets of data for proportionality. This test was implemented to compare the asset impairment losses as a percentage of both assets and sales relative to the valuation method employed, indicator of impairment and earnings behaviour.

Additionally the analysis for research question three included evaluation of the indicators of asset impairment relative to the valuation basis employed, the type of asset impaired and the industry sector within which the impairment occurred. This analysis provides a detailed assessment of the causes of asset impairment in terms of disclosed indicators as per the IAS 36 regulatory framework and the reporting practices of the sample corporations.

The extent of disclosure relating to the asset impairment charge was evaluated in terms of the amount of the asset impairment charge in order to assess the fourth and final research question of this thesis. Research question four sought to answer the following question:

- *Is the extent of disclosure related to the asset impairment loss in the corporate report associated with the amount of the asset impairment loss?*

This research question was empirically evaluated by assessing the number of instances the word 'impairment' appeared in the annual report and correlating this figure with the size of the asset impairment loss relative to both pre write down assets and sales. Key word searches in annual reports have been carried out by authors such as Deegan and Gordon (1996), Zeghal and Ahmed (1990) and Hussainey, Schleicher and Walker (2003). The disclosure was also segmented into statutory and non statutory parts of the annual report.

Finally this chapter also evaluates whether those corporations that have implemented an asset impairment charge have also recently had a change of senior management. This was a supplementary part of the research results that complements both the findings on the disclosed indicators of impairment and the actual magnitude of the asset impairment charge relative to the extent of disclosure. A change of management and its association with asset impairment charging has been investigated by authors such as Strong and Meyer (1987), Elliott and Shaw (1988) and Francis *et al* (1996).

8.1 Valuation Basis and the Size of the Asset Impairment Loss

This part of research question three assesses the association between the valuation bases implemented for the asset impairment loss relative to the size of the asset impairment loss as a percentage of both sales and pre-write down assets. Inspection of the annual reports focused on the

type of asset disclosed and the indicator of impairment, rather than extracting an individual amount for each type of asset impaired.

The data analysis provides an interesting initial result. The vast majority (77 out of the sample of 92) of corporations in the first instance report non-current assets as impaired, being either goodwill or property, plant and equipment, as this is usually the order of inclusion within the annual report. Investments and other intangibles only account for 15 of the initial disclosures of impairment losses, and of these 15, a majority did not report any other non-current assets as impaired, hence the results obtained in Table 8.1.1 do not change significantly if the reduced sample size is used instead of the full sample size.

The results are shown in table 8.1.1 below.

**Table 8.1.1 Valuation Basis and Size of Asset Impairment Loss
Kruskal-Wallis Test**

Valuation Method		N	Mean	Median
Impairment % Sales	Recoverable Amount	30	1.75%	0.25%
	Net Realisable Value	18	12.06%	0.23%
	Value in Use	44	8.38%	0.50%
	Total	92		
Impairment % Assets	Recoverable Amount	30	0.80%	0.31%
	Net Realisable Value	18	2.53%	0.19%
	Value in Use	44	2.61%	0.42%
	Total	92		

Test Statistics^{a,b}

	Impairment % Sales	Impairment % Assets
Chi-Square	4.735	5.686
df	2	2
Sig.	.047	.029

a. Kruskal Wallis Test

b. Grouping Variable: Valuation Method

As table 8.1.1 illustrates, the differences of the asset impairment loss relative to the valuation method employed produces some statistically significant results. When stratifying the impairment loss relative to the primary valuation method⁶² as a percentage of sales, it can be seen that the value in use median is significantly higher (0.50%) than both recoverable amount (0.25%) and net realisable value (0.23%). At the 5% level of significance, this produces a *p* value of 0.047, which demonstrates a significant proportional difference in the median impact of the asset impairment loss relative to the sales.

In relation to the median impairment loss as a percentage of assets stratified into the different valuation methods this also produces some statistically significant results. As can be seen from table 8.1.1, the median impairment loss as a percentage of assets for value in use (0.42%) is significantly higher than both the recoverable amount (0.31%) and net realisable value (0.19%). This produces a statistically strong proportional difference with a *p* value of 0.029, which again demonstrates significance at the 5% level. Breaking down the different valuation bases

⁶² The term primary is used here, as some corporations have disclosed more than one valuation method. This aspect is analysed later in the chapter.

used into asset categories illustrates the issue of the primary valuation method.

Perhaps the most striking issue arising from the analysis in Table 8.1.1 is the fact that when value in use is implemented to measure the impairment loss, this produces the largest median impairment loss relative to both assets and sales. When looking at the mean results this is not the case, mainly due to the large impact of the asset impairment losses in the telecoms sector. This result is striking due to the fact that the literature tends to consider value in use as a method of earnings smoothing to try and minimise the impact of potential losses and several authors, such as Watts (2003a), highlight this as a dangerous practice and counter instinctive to the principle of conservatism. However, these results appear to suggest that when value in use is used to measure an impairment loss it produces a statistically larger loss than both recoverable amount and net realisable value. Table 8.1.2 below identifies how many types of assets are being valued using a particular method in the first instance.

Table 8.1.2 Asset Type and Primary Valuation Method

		Valuation Method			
		Recoverable Amount	Net Realisable Value	Value in Use	Total
Asset Type	Property Plant Equipment	17	9	6	32
	Goodwill	6	6	33	45
	Intangible Other	4	2	5	11
	Investment	3	1	0	4
	Total	30	18	44	92

Given that the decision paradigm in the impairment review process dictates that the impairment loss is measured as the higher of NRV and ViU when the asset is below book value, this points to the fact that for those corporations that are employing ViU they have computed the ViU figure higher than NRV. Even with this higher calculated figure based on the expected discounted future cash flows; the impact of the impairment loss in this sample is still statistically higher than the other valuation methods. Another important aspect of this result is the fact that if the corporations' in the sample had in fact not used ViU this would have produced a higher asset impairment charge using NRV.

Of the 92 corporations identified as disclosing a valuation method, 51 disclosed one valuation method, 30 disclosed two valuation methods while 11 corporations disclosed using all three available valuation methods, this gives a total of 144 disclosed valuation methods from the sample of 92 corporations. The results of the total valuation methods attached to each type of asset are shown below in Table 8.1.3:

Table 8.1.3 Asset Type and Valuation Method Employed

		Valuation Method			
		Recoverable Amount	Net Realisable Value	Value in Use	Total
Asset Type	Property Plant Equipment	22	17	18	57
	Goodwill	7	6	35	48
	Intangible Other	7	5	16	28
	Investment	7	3	1	11
	Total	43	31	70	144

Two different aspects become apparent to the results obtained here; on the one hand, clearly the ViU method is not just being used to smooth income, as the results in the previous chapter demonstrate, while at the same time, if NRV instead of ViU was used, this would have resulted in a higher asset impairment charge and a totally different set of results for this sample. A question that arises as a result of this observation is whether those corporations that are using ViU are attempting to minimise losses in some way, given that if NRV was used instead, this would have produced an even larger impairment loss. If the results are cross tabulated in terms of the relationship between the earnings behaviour and the predominant valuation methods, this demonstrates that value in use is the predominant valuation method for both big bath and income smoothing behaviour. The results are illustrated in table 8.1.4 below.

Table 8.1.4 Behaviour and Valuation Methods

		Behaviour		Total
		Income smoothing	Big bath	
Total valuation methods	Recoverable amount	29	14	43
	Net realisable value	20	11	31
	Value in use	49	21	70
Total		98	46	144

Test Statistics

	Behaviour	Total valuation methods
Chi-square	18.521	16.625
df	1	2
Asymp. Sig.	.000	.000

As the results in table 8.1.4 above illustrate the preferred method of valuation is value in use and this may appear to indicate a high degree of discretionary choice in terms of management's determination of the amount of an asset impairment charge.

The discretionary choice available to corporations when a fair value measurement approach is adopted in the determination of the asset impairment loss is an important factor and this issue is highlighted by authors such as Moses (1987), Strong and Meyer (1987), Beatty and Weber (2005), Cotter *et al* (1998), Zucca and Campbell (1992), Beattie *et al* (1994), Francis *et al* (1996), Peek (2004), Jordan and Clark (2004), Sevin and Schroeder (2005), Walsh *et al* (1991), Elliott and Shaw (1988) and Riedl (2004), Hayn and Hughes (2006), Lapointe-Antunes *et al* (2009) and Jarva (2009). While all of these earlier reports comment about the use of discretionary choice in the determination of an asset write off, it is only the more recent ones that refer to the issue of fair value, as clearly this was not a term widely used until its introduction into the regulatory framework.

The discretionary choice in terms of the amount and timing of any asset write off is a key investigative feature of the prior research and while some of the later papers, such as Jordan and Clark (2004), Riedl (2004), Beatty and Weber (2006), Hayn and Hughes (2006), Lapointe-Antunes *et al* (2009) and Jarva (2009), do refer to the issue of fair value influencing

the propensity of earnings management, these prior papers have not established whether the fair value method employed constitutes a level 1, level 2 or level 3 input, instead they use the term fair value generically. This result is useful in terms of the fact that it identifies the instances of when a subjective level 3 input, such as value in use, has been used to implement an asset impairment charge. This highlights the extent of subjectivity and discretion that is used in the determination of asset impairment charges in the UK context and is in line with the previous research reports that have found management discretion is a determining factor in any decision to write down an asset.

The results in table 8.1.4 highlight that income smoothing is the predominant behaviour amongst asset impairment corporations; this was previously confirmed in the last chapter, even though post a change in the regulatory environment a greater prevalence of big bath accounting appears to be apparent when compared to the pre change regulatory environment, the overall predominant behaviour still remains income smoothing.

The results in table 8.1.4 illustrate that value in use, even when corporations have disclosed more than one valuation method, is still the predominant valuation method. In the cases where corporations only disclose that recoverable amount has been used, when in fact this could be the higher of NRV or ViU, the actual instances of ViU could be higher than the amount identified here. The reporting behaviour disclosed in

table 8.1.4 also mirrors the earlier information obtained in Table 8.1.1, although this behaviour classification only relates to the overall impact of the asset impairment charge for the sample of 92 corporations as this information was based on the expected earnings models and it was not possible to separate behaviour for each asset type or valuation method using expected earnings and total impairment charge, where a company has more than one method of valuation disclosed, the earnings characteristic has effectively been counted two or three times in Table 8.1.4, depending on how many valuation methods the company has disclosed. This was unavoidable, as the earnings behaviour was only calculated based upon the overall impact of the total asset impairment charges relative to reported and expected earnings. The impact of this in relation to conservatism, the true and fair view and the theoretical context of financial reporting will be discussed in the next Chapter.

8.2 Indicators of Asset Impairment

The second part of research question three evaluates the disclosed indicators of impairment in line with IAS 36 indicators of impairment. Previous research has tended to focus on causes of asset impairment, such as adjustment to market values (Elliott and Shaw, 1988), economic circumstances (Bartov, 1993) or a change in management (Strong and Meyer (1987), Elliott and Shaw (1988) and Francis *et al* (1996)) using inferences about the association of the impairment charge to these types of causes as opposed to the actual disclosed indicators.

Riedl (2004) identifies that about half of his sample of 455 asset write down corporations reported restructuring concurrent with the asset write down, but does not identify any other indicators of impairment. Elliott and Shaw (1988) in their sample of 240 corporations identified impairments as non recurring items, intangibles, software and restructuring, however the actual number of corporations attributable to each indicator is not provided.

Hayn and Hughes (2006) assess indicators of impairment from the point of view of the predictive ability of the information in the annual reports, but do not identify the specific disclosed indicators of impairment. However, the author has been unable to identify any prior reports that specifically assess the disclosed indicators of impairment. This appears to be surprising and this underlines the usefulness of the current study in terms of revealing the different types of disclosed indicators of impairment amongst UK FTSE 100 corporations.

IAS 36 categorises external and internal indicators of impairment as;

‘External sources of information

1. *‘during the period, an asset’s market value has declined significantly more than would be expected as a result of the passage of time or normal use.*

2. *significant changes with an adverse effect on the entity have taken place during the period, or will take place in the near future, in the technological, market, economic or legal environment in which the entity operates or in the market to which an asset is dedicated.*
3. *market interest rates or other market rates of return on investments have increased during the period, and those increases are likely to affect the discount rate used in calculating an asset's value in use and decrease the asset's recoverable amount materially.*
4. *the carrying amount of the net assets of the entity is more than its market capitalisation.*

Internal sources of information

5. *evidence is available of obsolescence or physical damage of an asset.*
6. *significant changes with an adverse effect on the entity have taken place during the period, or are expected to take place in the near future, in the extent to which, or manner in which, an asset is used or is expected to be used. These changes include the asset becoming idle, plans to discontinue or restructure the operation to which an asset belongs, plans to dispose of an asset before the previously expected date, and reassessing the useful life of an*

asset as finite rather than indefinite.

7. *evidence is available from internal reporting that indicates that the economic performance of an asset is, or will be, worse than expected.'*

Source: IAS 36 para 12

An initial analysis of the different disclosed indicators of impairment revealed that all types of indicators were present, with the exception of external source number 3, a change in market interest rates.

Table 8.2.1 below illustrates the range of different disclosed indicators of impairment in line with the criteria set out in IAS 36. Environment changes and discontinuation or restructuring appeared to be the most frequently disclosed reasons for impairment. Table 8.2.1 also reflects the fact that 14 corporate reports did not disclose any indication of asset impairment, 63 disclosed one indicator of impairment and 17 corporate reports disclosed two indicators of impairment. Hence 111 different disclosures in relation to indicators are identified from a total of 158 asset disclosures. Disclosure of the indicator of impairment is not mandatory; IAS 36 does recommend some indication be disclosed. Table 8.2.1 below illustrates this finding:

Table 8.2.1 Disclosed Indicators of Impairment 2003 to 2008

	Frequency	Valid Percent
Valid		
None	14	12.6
Market Value	11	9.9
Environment Changes	30	27.0
Carrying Amount	1	.9
Obsolete or Damage	3	2.7
Discontinue or Restructure	34	30.6
Expected Performance	18	16.2
Total	111	100.0

Market value, environment and carrying amount indicators are deemed to be external causes of impairment by IAS 36, while obsolescence/damage, discontinuation/restructuring and expected performance are deemed to be internal causes of impairment by IAS 36. Out of the 80 corporate reports that did disclose an indicator(s) of asset impairment 43% related to external causes while the other 57% related to internal causes. This demonstrates that during the sample period, a higher amount of internal causes are disclosed than external causes, although the difference is not significantly large.

Of those indicators that are deemed external, a change in the environment is attributed as the most frequent cause of asset impairment. This was often associated with a change in the operating environment facing the corporation. Restructuring or discontinuation was by far the largest internal indicator of asset impairment, followed by expected

performance, with very few corporations citing obsolescence or damage as a cause of impairment.

This demonstrates that corporations are choosing to disclose a wide range of indicators of asset impairment and are clearly not unduly or disproportionately blaming impairment on external causes, as this analysis demonstrates that the majority of indicators appear to be caused by internal factors.

This may demonstrate that managers in the UK environment are willing and able to indicate internal causes of asset impairment and take the consequences that this may entail in terms of allocating accountability and responsibility for asset impairment charges on internal, management induced causes, rather than external, unavoidable, causes.

This is an important point and is related to the fact that, as will be seen later in this chapter, unlike many prior reports in the area of impairment that associate an impairment charge with a change in management (and thus in some way absolve the new management from any responsibility for the impairment charge and apportion blame on the previous management), in the UK context, asset impairment charging does not appear to be significantly associated with a change in management. This has ramifications, as will be discussed in the next chapter, for the overriding importance of the true and fair view within the UK context linked to the principle of conservatism and good corporate governance.

8.2.1 Indicators of Asset Impairment and Asset Type

Table 8.2.2 below provides further detail in respect of the indicators of impairment and the types of assets that are disclosed as impaired. The results demonstrate that goodwill and property, plant and equipment are subject to impairment losses due to environment, discontinuation or restructuring reasons most frequently in line with the initial data outlined in table 8.2.1.

Table 8.2.2 below also highlights the fact that out of the 93 corporations that did disclose the type of asset that was impaired, 40 corporations reported one type of asset as impaired; while 41 corporations reported two different types of assets as impaired and a further 12 corporations reported three different types of assets as impaired, with an indicator. This results in a total of 158 types of assets being disclosed as impaired with an identifiable indicator from a sample of 94 corporations, with one corporation not disclosing the type of asset impaired.

Table 8.2.2 cross tabulates the findings relating to indicators of asset impairment with asset types and this is shown below:

**Table 8.2.2 Disclosed Indicators of Impairment and Asset Type
2003 to 2008**

		Asset Type				Total
		Property Plant Equipment	Goodwill	Intangible Other	Investment	
Disclosed	None	8	6	3	2	19
Indicator of Impairment	Market Value	8	4	2	1	15
	Environment Changes	13	15	9	3	40
	Carrying Amount	1	1	0	0	2
	Obsolete or Damage	1	2	0	0	3
	Discontinue or Restructure	20	18	13	3	54
	Expected Performance	11	8	4	2	25
Total		62	54	31	11	158

Test Statistics

	Disclosed Indicator of Impairment	Asset Type
Chi-square	91.210	42.974
df	6	3
Asymp. Sig.	.000	.000

The results in table 8.2.2 above illustrate a higher proportion of disclosed internal causes of asset impairment (58%) when compared to external causes of asset impairment (42%) when this information is categorised into asset types. This may indicate that management are not attempting to unduly apportion blame for asset impairments on external factors that are beyond their control.

An interesting feature of the cross tabulation of the results in table 8.2.2 is the fact that no one particular indicator of impairment appears to be

associated with a particular type of asset, intuitively, one might have expected, for example, goodwill to be associated with either changes in expected performance or a decline in market value, but this appears not to be the case. However, the indicator of environment changes does potentially capture some of these causes, but perhaps in a less explicit manner. What is clear from table 8.2.2 is that the internal indicator of discontinuation or restructuring and the external indicator of environment changes both significantly account for a high proportion of total indicators of impairment, closely followed by expected performance as another internal indicator.

Restructuring charges may have arisen as a direct result of a previous acquisition, with the capitalisation of goodwill and other associated assets subsequently being impaired once the enlarged corporation recognises the implications of any takeover activity and implements either a discontinuation or restructuring of its activities. This may account for the proportionately large number of impairments being due to restructuring or discontinuation charges. Additionally, there is some considerable overlap in the possible interpretation of what might constitute a restructuring charge or what might also be considered as a change in environment. Either of these two indicators could be closely related, as, when an acquisition takes place, certain environmental factors may not be apparent until after the acquisition. This could present a picture that the majority of impairments may take place as a result of intangible assets

being impaired due to lack of synergies as a result of a previous acquisition, but clearly the results here are not conclusive.

8.2.2 Indicators of Asset Impairment and Valuation Method

Table 8.2.3 below further tabulates the indicators of asset impairment with the valuation method. The results illustrate the prevalence of the value in use method and the fact that discontinuation or restructure, environment changes and expected performance are the most frequent indicators of asset impairment.

Table 8.2.3 Disclosed Indicators of Impairment and Valuation Method 2003 to 2008

		Total valuation methods			Total
		Recoverable amount	Net realisable value	Value in use	
Disclosed indicator of impairment	None	8	1	7	16
	Market value	4	6	4	14
	Environment changes	9	10	18	37
	Carrying amount	0	0	2	2
	Obsolete or damage	1	0	2	3
	Discontinue or restructure	16	12	20	48
	Expected performance	5	2	17	24
Total		43	31	70	144

Test Statistics

	Disclosed indicator of impairment	Total valuation methods
Chi-square	83.945	16.625
df	6	2
Asymp. Sig.	.000	.000

Table 8.2.3 illustrates that a total of 144 valuation methods are disclosed out of the 92 corporations identified as disclosing a valuation method, due to the fact that 51 disclosed one valuation method, 30 disclosed two valuation methods while 11 corporations disclosed using all three available valuation methods.

Cross tabulating the indicators of asset impairment with the valuation method employed highlights that ViU is not associated with market values and other external factors, but more with those internal indicators, this could be expected given that ViU is based upon management's budgeting expectations about future cash flows from internal sources within the organisation and again this presents an opportunity for a greater degree of discretion in terms of the amount of the asset impairment charge.

As discussed in Chapter Seven, in relation to table 7.5, for those corporations that only disclosed recoverable amount as the valuation method, given that this figure will be lower than the historical cost and given the fact that no discount rate was disclosed these corporations must have therefore used net realisable value to determine the extent of their asset impairment loss, this leads to the data in table 8.2.2 being simplified to infer that a total of 74 (51.4%) of asset impairments are measured using net realisable value and 70 (48.6%) are measured using value in use, which is a fairly even split and could demonstrate that in the

UK context, there is not an unduly or disproportionately large reliance on subjective ViU calculations in order to quantify the asset impairment loss.

In line with the earlier assessment of causes of asset impairment, no one indicator appears to be associated with a particular valuation method, as there is a proportionate spread of indicators across all valuation methods, however, as the previous analysis also highlighted, the significantly prevalent indicators are environment changes (external) and discontinuation or restructuring (internal).

The different types of disclosed indicators of asset impairment cross tabulated with the different sectors are shown below in table 8.2.4. Of the four sectors with the highest number of reported impairment losses (Metals, mining and oil, support services, media and chemicals and pharmaceuticals) the metals, mining and oil sector appears to cite environment changes as the most frequent indicator while media and chemicals and pharmaceuticals cite discontinuation or restructuring as the most frequent indicator of asset impairment. These indicators may be in line with expectations in terms of the types of sectors and the reasons for their impairment losses given that the metals, mining and oil sectors are prone to changes in their environment as a result of different explorations for raw materials (Alciatore *et al*, 2000).

The results are shown in Table 8.2.4 below:

Table 8.2.4 Disclosed Indicators of Impairment and Sector 2003 to 2008

Sector	Disclosed Indicator of Impairment							Total
	None	Market Value	Environment Changes	Carrying Amount	Obsolete or Damage	Discontinue or Restructure ⁶³	Expected Performance ⁶⁴	
Aerospace & Auto	2	2	0	1	1	0	2	8
Financial Services	0	0	1	0	0	1	0	2
Beverage, Food, Tobacco	1	0	3	0	0	4	1	9
Chemicals, Pharmaceutical	1	1	1	0	0	6	0	9
Construction	0	0	0	0	0	0	2	2
Electricity, Electronics	1	0	2	0	0	0	0	3
Engineering, Industrial	0	0	3	0	0	4	0	7
Retailers	1	0	0	0	0	4	1	6
Health, Household	2	0	1	0	0	2	0	5
IT	0	0	0	0	0	1	0	1
Leisure, Hotels	1	5	0	0	0	0	0	6
Media	1	0	0	0	2	4	3	10
Metals, Mining, Oil	2	1	11	0	0	1	5	20
Support Services	2	0	3	0	0	3	2	10
Telecoms	0	1	5	0	0	3	2	11
Transport	0	0	0	0	0	0	0	0
Utilities, Other	0	1	0	0	0	1	0	2
Total	14	11	30	1	3	34	18	111

As mentioned in relation to table 8.2.1, table 8.2.4 reflects the fact that 14 corporate reports did not disclose any indication of asset impairment, 63 disclosed one indicator of impairment and 17 corporate reports disclosed two indicators of impairment, thus giving a total of 111.

⁶³ Discontinued operations or restructuring.

⁶⁴ Decline in expected performance

Chemicals and pharmaceuticals may be more prone to restructuring as a result of their research and development activities and whether any research and development is discontinued or not (Ballester, Garcia-Ayuso and Livnat, 2003) and the inherent impact this has on the valuation of the corporations assets within this sector together with the inherent expectations about the future performance of any capitalised research assets. However, the chemicals and pharmaceuticals sector only account for 6 disclosed indicator out of the total of 34 for this type of indicator. The rest of the results demonstrate a fairly even spread across all sectors in terms of the cause of impairment being discontinuation or restructuring.

The information obtained from identification of the different sectors and their indicators of asset impairment mirrors the earlier results in terms of the fact that environment changes is the largest external indicator and discontinuation and restructuring changes is the largest internal indicator of impairment. The metals, mining and oil sector stand out as being most impacted by environment changes. Chemical and pharmaceutical are also impacted the most with impairments due to discontinuation or restructuring changes. However, overall impairments can be seen to spread across many sectors and have a wide variety of indicators, despite the predominance of environment and restructuring or discontinuation causes.

8.2.3 Summary for Research Question Three

Research question three attempts to evaluate two key issues:

- Is the valuation basis employed to measure the impairment loss related to the size of the impairment loss?
- Is the disclosed indicator of asset impairment related to the size of the asset impairment loss?

The results obtained from analysis of the annual reports from the sample present a positive response to the first point and a negative response to the second. In relation to whether the valuation basis employed influences the size of the asset impairment loss, it is clear that the implementation of value in use results in a statistically higher impact upon the financial report both in terms of assets and sales, therefore, it can be concluded that value in use does appear to result in higher asset impairment charges and thus can be seen to influence the size of the asset impairment loss.

In relation to the issue of whether any particular indicator of impairment influences the size of the asset impairment loss, this did not produce any statistically significant results and as the findings illustrate, a wide range of indicators are used to explain the causes of the asset impairment loss and no one particular indicator appears to influence the size and impact of the impairment. However, it is clear that both external causes, predominately in the form of environmental indicators, and internal

causes, predominately in the form of discontinuation or restructuring indicators, account for the majority of the causes of impairment of assets.

Interestingly, value in use appears to be proportionately used for both the earnings management characteristic of income smoothing and big bath accounting, and not just the latter. This finding is interesting given the hostility to fair value based upon level 3 inputs that appear to raise concern that this valuation method encourages a greater degree of earnings management in the form of big bath accounting. Although, as previously highlighted, the specific method of value in use has not been separately identified and empirically evaluated, rather the generic implicit assumption of its presence within a fair value measurement regime has been open to criticism (Martin *et al* (2006), Zijl and Whittington (2006), Landsman (2007), Cooper (2007), Broadly (2007) and Penman (2007)).

8.3 Disclosure and Impairment Losses

This section provides an examination of the extent of disclosure in relation to asset impairment charges for the sample corporations using both a quantitative and qualitative approach. A quantitative approach was employed in relation to the extent of asset impairment disclosure relative to the size of the asset impairment loss using a key word search in the annual reports. This type of analysis has been carried out by authors such as Deegan and Gordon (1996), Zeghal and Ahmed (1990) and Hussainey, Schleicher and Walker (2003). Importantly the disclosure

is segmented between statutory and non statutory, as the statutory disclosure tends to be prescriptive in nature, whereas with the non statutory disclosure, corporations have far more discretion in terms of the extent of disclosure. Additionally, a selection of those corporations that have a relatively high asset impairment charge and both high and low levels of disclosure are evaluated and presented. Finally in this section, an evaluation of whether the asset impairment charge is associated with a change in management is considered, this has been investigated in prior literature such as Strong and Meyer (1987), Elliott and Shaw (1988) and Francis *et al* (1996). Research question four sought to answer the following question:

- *Is the extent of disclosure related to the asset impairment loss in the corporate report associated with the amount of the asset impairment loss?*

Summary statistics of the initial findings relating to disclosure reveal that the mean number of times the word impairment appears in the annual report is 52 times, with a maximum of 139 words and a minimum of 3. The majority of corporations in the sample, 75%, have 72 words or less in their disclosure, the upper quartile of results illustrate that these corporations have between 72 up to 139 instances of the word impairment. Some significant findings are revealed in relation to the split between the statutory and non statutory disclosure. The extent of disclosure in the non statutory part of the annual report is far less than

that of the statutory part of the report. This may be due to the fact that the statutory disclosure is quite prescriptive in terms of requirements whereas the non statutory disclosure is completely discretionary on the part of management.

The results of the summary statistics are shown in Table 8.3.1 below:

Table 8.3.1 Summary Statistics for Disclosure of the Word Impairment

	Total	Non statutory	Statutory
Mean	52	10	42
Max	139	55	118
Min	3	0	2
1st quartile	26	1	18
3rd quartile	72	15	60

As Table 8.3.1 above illustrates, the extent of non statutory disclosure appears to be small when compared to the statutory disclosure, but as will be seen in the following sections, corporations choose to disclose more information relative to the impairment charge in the non statutory part of the annual report.

The size of the asset impairment loss relative to sales for the whole sample is evaluated initially. As table 8.3.2 below illustrates the impairment disclosure for the whole annual report when correlated with the size of the impairment charge as a percentage of sales produce a statistically insignificant result with a *p* value of 0.387. This would appear

to suggest little correlation in terms of disclosure relating to impairment losses.

Table 8.3.2 Impairment Disclosure Correlated with Impairment Loss as a % of Sales

	Impairment % Sales	Impairment Words
Impairment Words Spearman Correlation	.096	1.000
Sig. (2-tailed)	.387	
N	94	93.000

This result indicates that upon initial evaluation of the whole annual report in terms of the extent of disclosure relating to impairment, that there is insignificant correlation of the asset impairment loss disclosure relative to sales. From investigation of the actual data, the highest impairment as a percentage of sales was 170.29% and the lowest was minimally immaterial. Using the key word search, the largest extent of disclosure amounted to 139 words and the lowest nil.

A similar result is obtained when performing the same analysis using the impairment as a percentage of assets to assess the size of the impairment loss and correlating this with the key word search relative to impairment.

The results of this analysis are shown in table 8.3.3 below.

Table 8.3.3 Impairment Disclosure Correlated with Impairment Loss as a % of Assets

	Impairment Words	Impairment % Assets
Impairment % Assets Pearson Correlation	.100	1.000
Sig. (2-tailed)	.363	
N	93	94.000

This initial analysis for the whole of the annual report does not produce significant results. The next part of this section splits the disclosure into both statutory and non statutory (or voluntary) disclosure to further evaluate if the extent of disclosure varies within these different parts of the annual report.

8.3.1 Disclosure as a Percentage of Assets

Table 8.3.4 below clearly shows there is not a statistically strong correlation between the size of the reported asset impairment loss and the extent of statutory disclosure, with an insignificant p value of 0.974. This would appear to indicate that corporations focus more on the non statutory or voluntary disclosure in the annual report as opposed to the notes to the accounts and the other statutory sections. This could be due to the fact that the disclosure tends to be quite prescriptive in terms of regulatory requirements, without much scope for deviation from the mandatory disclosure. Table 8.3.4 below shows the relationship between statutory disclosure and the extent of asset impairment losses as a percentage of assets.

Table 8.3.4 Impairment and Statutory Disclosure Correlated with Impairment Loss as a % of Assets

	Impairment % Assets	Impairment Words Statutory
Impairment % Assets Spearman Correlation	1.000	.004
Sig. (2-tailed)		.974
N	94.000	93

The assertion that corporations disclose more in the non statutory part of the annual report the larger the reported asset impairment loss is confirmed by the findings as shown in table 8.3.5 below. When the extent of voluntary disclosure of impairment in the annual report is correlated with the size of the impairment loss as a percentage of assets, a highly significant *p* value of 0.030 is obtained. This suggests that corporations are highly aware that they need to explain in detail the background to the asset impairment write off and they prefer to do this in the non statutory part of the annual report, where they are not constrained by prescriptive regulatory restrictions in terms of explaining the asset impairment loss.

The results show that the higher the asset impairment loss relative to assets the greater the amount of disclosure relating to impairment. The results of the two tailed test also highlight that the lower the asset impairment charge, the lower the level of non statutory disclosure. This has implications in terms of the desire of a corporation to disclose information in the spirit of the true and fair view, however, as the earlier analysis demonstrated.

Table 8.3.5 below demonstrates that where corporations have the freedom to explain the asset impairment loss in the non statutory part of the annual report, they do this proportionately to the actual size of the asset impairment loss.

Table 8.3.5 Impairment and Non Statutory Disclosure Correlated with Impairment Loss as a % of Assets

		Impairment % Assets	Impairment Words Non Statutory
Impairment Words Non Statutory	Spearman Correlation	.237	1.000
	Sig. (2-tailed)	.030	
	N	93	93.000

*Correlation is significant at the 0.05 level (2-tailed).

The extent of non statutory disclosure was narrower in range than the statutory disclosure, with a high key word occurrence of 55 words and a low of zero. This compares with a high key word occurrence for statutory disclosure of 118 words and a low of 2. With the non statutory disclosure having a narrower range but a significantly strong correlation with the asset impairment charge, this would suggest a focused approach to the non statutory disclosure relating to asset impairment charges.

What is clear from this analysis is that corporations are not attempting to hide or minimise the extent of the asset impairment disclosure in the non statutory explanation of the annual report, quite the opposite in fact; corporations appear to be actively engaging in managing the communication aspect of the asset impairment charge relative to the amount of the asset impairment charge.

The mean for the statutory words disclosed was 42, whereas the mean for the non statutory words as only 10. Again, this demonstrates that the statutory disclosure relating to asset impairment does not tend to be sensitive to the actual asset impairment charge and could indicate this type of disclosure is prescriptive and verbose in line with statutory requirements. This can be contrasted with the non statutory disclosure that while being less in terms of volume does appear to be closely associated with the extent of the asset impairment charge. The results still provide statistically significant figures with the exclusion of the outliers in the data set.

8.3.2 Disclosure as a Percentage of Sales

Assessing the extent of disclosure in relation to the impairment as a percentage of sales produces similar results to the earlier analysis of disclosure relative to impairment as a percentage of assets. In fact, this analysis is statistically more significant for the impairment loss as a percentage of sales than the same metric compared to assets.

Table 8.3.6 below illustrates that the extent of statutory disclosure correlated with the size of the impairment as a percentage of sales is not significant with a p value of 0.910; this again highlights perhaps the prescriptive nature of the disclosure in the statutory part of the annual report.

Table 8.3.6 Impairment and Statutory Disclosure Correlated with Impairment Loss as a % of Sales

		Impairment % Sales	Impairment Words Statutory
Impairment Words Statutory	Spearman Correlation	-.013	1.000
	Sig. (2-tailed)	.910	
	N	93	93.000

In contrast to the results obtained above in Table 8.3.6, the extent of non statutory disclosure correlated with the same measurement metric finds a highly significant result of 0.009. This is shown in Table 8.3.7 below.

Table 8.3.7 Impairment and Non Statutory Disclosure Correlated with Impairment Loss as a % of Sales

		Impairment % Sales	Impairment Words Non Statutory
Impairment Words Non Statutory	Spearman Correlation	.286**	1.000
	Sig. (2-tailed)	.009	
	N	93	93.000

**Correlation is significant at the 0.01 level (2-tailed).

This further confirms the earlier analysis that corporations disclose a significantly higher amount of words attributable to impairment the higher the significance of the asset impairment loss and vice versa. The fact that the correlation is statistically significant for the non statutory disclosure as a percentage of both assets and sales provides an interesting link to the notion of a desire for corporations to present a true and fair view of the business and this will be explored in the concluding chapters. Additionally the impairment loss as a percentage of sales provides a higher degree of significance in terms of correlation for the non

statutory part of the annual report. This may be due to the fact that sales could be more current in terms of the economic environment than book value of asset, given that sales relate to the current year while the book value of assets could relate to a wide number of different years and also a wide range of measurement bases.

This finding is in line with other research reports in the area of voluntary disclosure, such as Hirschey and Richardson (2003), Walker and Louvari (2003) and Linsley and Shrivies (2006), although these papers were quite different in focus to the current study, they do demonstrate that voluntary disclosure provided some highly value relevant information for stakeholders.

8.3.3 Statutory and Non Statutory Disclosure

Returning to the original research question that considers if the amount of disclosure relevant to the asset impairment loss increases relative to the size of the asset impairment loss; the overwhelming answer, on the basis of the findings here, would be that the level of disclosure does increase in line with the asset impairment charge. This was found to be the case for the annual report as a whole, without differentiating between the statutory and non statutory disclosure.

A very significant finding has emerged once the disclosure is segmented between statutory and non statutory disclosure. The extent of statutory

disclosure is far higher than the non statutory, but it is not associated with the size of the asset impairment charge. Conversely, the level of non statutory disclosure is far smaller when compared to the statutory disclosure, but is significantly associated with the size of the asset impairment charge. The reasons for this could be wide ranging, but upon investigating the annual reports, it becomes clear that a high proportion of the statutory disclosure relating to impairment is discussed in relation to the accounting policies in the notes as well as in the actual asset schedules where the specific details are given. This could result in the situation of certain explanations and policies being disclosed for statutory reasons, irrespective of the actual size of the asset impairment loss.

In terms of the non statutory disclosure, the management have a completely free hand in which to decide the extent of disclosure relative to the asset impairment charge. They may choose not to mention it all at and leave the shareholders to pick out the important disclosures from the statutory disclosure, or, as has clearly happened with this sample of corporations, the management may decide to explain why they have decided to implement an asset impairment charge in their own words and using their own justification for this, rather than relying on the prescriptive statutory requirements.

Clearly, within the FTSE 100 sample here, the management have overwhelmingly decided to explain and expand, beyond the statutory disclosure requirements, the background to the asset impairment charge

in the non statutory part of the annual report. The management have also decided to discuss more in relation to the asset impairment charge on a voluntary basis, the higher the asset impairment charge. This potentially, as will be discussed in the next chapter, links back to the desire to present a true and fair view of the organisation and not attempt to hide an asset impairment charge in the annual report.

8.3.4 Summary of Key Word Disclosure

A significant finding has emerged as a result of this assessment of disclosure. Given the findings in the earlier section that highlighted a strong correlation between the size of the asset impairment charge and the extent of non statutory disclosure, this appears to support the earlier quantitative findings that corporations with higher asset impairment charges tend to report more detail about the nature and background to the asset impairment charges, although the results indicate there are exceptions to this, with a small number of corporations not reporting much detail in relation to the nature of the impairment charge.

However, it would appear that the overwhelming picture that is confirmed by this analysis is that corporations do not attempt to hide or cover up the impairment charge and that those corporations that are most affected by an asset impairment charge are the ones that try to pro-actively communicate the background, impact and circumstances surrounding the

charge not only in the statutory section of the annual report but also in the voluntary non statutory section also.

This finding is in line with other research reports in the area of voluntary disclosure, such as Hirschey and Richardson (2003), Walker and Louvari (2003) and Linsley and Shrivies (2006), although these papers tended to focus more on reporting of risk and not asset impairment charges. The next section evaluates if impairment charges are associated with a change in management.

8.4 Change in Management and Asset Impairment

This section evaluates whether an asset impairment charge, in particular those charges as identified as a big bath, are associated with a change in the senior management of the corporation. Prior research by Moore (1973), Strong and Meyer (1987), Francis *et al* (1996) and Cotter *et al* (1998) found that asset write offs were often associated with a change in the senior management of the corporation and this important factor is very relevant to the current research and provides an interesting qualitative perspective to the other findings in the thesis with respect to the causes of impairment charges.

Identification of a senior executive management change in either the current year or prior year from the sample corporations was implemented through inspection of the annual reports. The type of executive director

change was noted and categorised as Chief Executive Officer (CEO), Chief Financial Officer (CFO) or Executive Director (ED). Additionally a number of corporations also had more than one executive director change and these different combinations of changes were also noted (ED>1). This initial analysis revealed that the majority (almost 60%) of corporations that reported asset impairment charges did not have any change of management. The initial analysis is shown below in Table 8.5.1:

Table 8.5.1 Change of Management for Asset Impairment Corporations

	Frequency	Percent
None	56	59.6
CEO	6	6.4
CFO	8	8.5
ED	9	9.6
CEO & CFO	4	4.3
CEO & ED	5	5.3
CFO & ED	2	2.1
ED > 1	4	4.3
Total	94	100.0

This initial analysis presents a contrast to the expectation based on prior research, such as Moore (1973), Strong and Meyer (1987), Francis *et al* (1996) and Cotter *et al* (1998), that may have been to see some degree of impairment losses being associated with a change in management.

As Table 8.5.1 highlights, this appears not to be the case and when the categories are evaluated, the findings show a disparate range of

management changes taking place, with no single category or combination of categories particularly dominating the management changes. Executive directors do appear to have the most changes, but given that they are the most in number across companies, this fact is probably circumstantial in terms of natural turnover associated with this type of director, rather than any association with charging an impairment loss. A total of four corporations had more than one Executive Manager change, as denoted by the ED>1 acronym in Table 8.5.1 above, while a wide combination of other Director changes was evident, although overall the results indicate that charging an asset impairment loss does not appear to be associated with a change in the senior management of the corporation.

Prior research such as Moore (1973), Strong and Meyer (1987), Francis *et al* (1996) and Cotter *et al* (1998) appear to show that often a big bath is associated with a change in the top management, such as the CEO or CFO. The analysis of a change in management also considered the categories of management with the earnings characteristic of income smoothing or big bathing according to the earlier findings in Chapter Seven.

The results of this are shown below in Table 8.5.2:

Table 8.5.2 Change of Management and Earnings Behaviour

		Behaviour		Total
		Income Smoothing	Big Bath	
Change of management	None	37	19	56
	CEO	5	1	6
	CFO	4	4	8
	ED	8	1	9
	CEO & CFO	3	1	4
	CEO & ED	4	1	5
	CFO & ED	1	1	2
	ED > 1	4	0	4
Total		66	28	94

As can be seen from Table 8.5.2, this appears to point towards even less association of a big bath with a change in management, as only 9 of the corporations identified as having a big bath also have a change of management. A similar result is obtained when the same change of management data is run with the other methodological approaches employed in Chapter Seven. This would appear to support the view of Elliot and Shaw (1988) who find that the phenomenon of big bath accounting does not appear to be as significantly associated with a change in management as opposed to work by authors such as Moore (1973), Strong and Meyer (1987), Francis *et al* (1996) and Cotter *et al* (1998) which show that often a big bath is associated with a change in the top management.

The remaining analysis in this section goes on to statistically confirm what has become apparent, for this particular sample in the UK context, that

asset impairment losses are not significantly associated with a change in management. As Table 8.5.3 below illustrates, there is no significant correlation between earnings behaviour (being either big bath or income smoothing) and a change in management.

Table 8.5.3 Change of Management and Earnings Behaviour Correlation

		Correlations	
		Change of management	Behaviour
Behaviour	Pearson Correlation	-.133	1
	Sig. (2-tailed)	.202	
	N	94	94

A similar finding emerges when a change in management is assessed relative to the size of the impairment loss. In the case of disclosure, a strong correlation was found between the size of the impairment loss and the level of disclosure in relation to the impairment loss, especially in terms of the non statutory disclosure. However, when a similar test is run in terms of the size of the asset impairment loss and the instances of a change in management, there is not a statistically strong relationship between these two elements.

The findings here are different to those of Strong and Meyer (1987) who found that the most important determinant of an asset write down is a change in senior management, especially in the case of a CEO from outside of the organisation.

Table 8.5.4 below illustrates the results of this analysis.

Table 8.5.4 Change of Management and Size of Asset Impairment Loss

		Change of management
Change of management	Spearman Correlation	1
	Sig. (2-tailed)	
	N	94
Impairment % Sales	Spearman Correlation	-.045
	Sig. (2-tailed)	.669
	N	94
Impairment % Assets	Spearman Correlation	-.010
	Sig. (2-tailed)	.921
	N	94

It would appear that this phenomenon is not just associated with the US context, as Cotter *et al* (1998) reported a similar finding of write downs being associated with a change in the senior management in an Australian study. Similarly work by Francis *et al* (1996) in the US context found that write offs are larger and more frequent if there has been a change in management. The findings here do not follow these earlier reports, but rather follow the view of Elliott and Shaw (1998) who find that asset impairment charges are present with a change of management, but they do not appear to be significantly associated with a change in management when compared to the prior work in this area.

This section assessing the extent of any changes in management associated with the asset impairment loss has provided some useful corroborative insight into the issue of asset impairment losses reported by

FTSE 100 corporations, whether management changes influence such losses. This finding provides some supplementary information that forms a relevant link in terms of the disclosure, measurement, valuation and impact of the asset impairment losses on published UK financial reports that could be contemporaneously linked to the important issues of conservatism in financial reporting in the UK context and the overarching objectives of financial reporting in terms of presenting a true and fair view. These important points will be discussed in the next Chapter.

8.5 Summary

This Chapter set out to answer the following research questions:

- *Is the valuation basis employed to measure the asset impairment loss and the disclosed cause of the asset impairment loss related to the size of the asset impairment loss?*
- *Is the extent of disclosure related to the asset impairment loss in the corporate report associated with the amount of the asset impairment loss?*

Value in use was ascertained to be the most widely used method for measuring the asset impairment loss while goodwill was the most

frequently reported asset subject to impairment, although by a small margin.

The third research question aimed to evaluate if the valuation method employed to measure the asset impairment loss influenced in any way the size of the asset impairment loss and on the basis of the analysis the value in use method appeared to result in the highest impairment losses, by a significant margin.

The empirical analysis relating to the fourth and final research question demonstrated that the extent of disclosure in relation to the asset impairment charge increased the higher the asset impairment charge. This was statistically significant for the annual report as a whole and for the non statutory part of the annual report but not in relation to just the statutory disclosure. This indicates that corporations do disclose information relative to the impact of the impairment loss, but only in the non statutory section. Supplementary findings also highlighted the richness of the different types of disclosure by a selection of corporations. Furthermore, asset impairment losses were found not to be significantly associated with a change in the senior management of the corporations in the UK context.

Chapter Nine discusses the implications of these results in relation to the literature discussed in the earlier Chapters.

Chapter Nine

9 Discussion of Results

9.1 Introduction

This Chapter discusses the results of the analysis in Chapters Seven and Eight and evaluates how the results relate to the literature discussed in Chapters Two to Five. The Chapter assesses the results relative to the historical significance of asset impairment losses (Chapter Two), the impact of the results relating to earnings management and conservatism (Chapter Five) and the importance of the results relative to the recognition, measurement and valuation of assets (Chapter Four). Additionally a critical evaluation of the methods employed in the research will be discussed. The theoretical implications of the results (Chapter Three) are discussed in the final Chapter Ten.

The focus of this thesis has been to consider whether big bath accounting or income smoothing is the predominant earnings management behaviour post an asset impairment loss and to also evaluate the impact of a change in the regulatory environment on reporting practice amongst UK FTSE 100 listed corporations. Additionally a detailed assessment of the disclosure relating to asset impairment has been carried out, with a wide range of findings relating to the types of assets that are impaired, the measurement basis used to determine the asset impairment loss, the

different sectors within which asset impairment occurs, whether the extent of disclosure is associated with the size of the asset impairment loss and finally whether a change in the management of the corporation is associated with an asset impairment charge. This Chapter aims to bring all these findings together in terms of providing an integrated assessment of the implications of the results.

9.2 Relevance of the Historical Aspect

The historical aspects behind asset impairment or asset write downs identified from the literature in Chapter Two of the thesis provide some background context to the results in critical areas such as the maintenance of capital concept (Reid (1988) and Mills (1993)), earnings management (Lee, 1975), regulatory control (Napier, 1995), disclosure of information (Baladouni, 1983) and shareholder expectations (Edwards, 1986). The fact that all these factors have been influential in terms of the impact upon financial reporting for so long is clearly an issue for the financial reporting community and the results of this thesis indicate that many of these issues still remain.

The results of the thesis demonstrate that asset impairment is a wide spread activity spread across many different sectors and affecting both tangible and intangible assets. The terms big bath and income smoothing did not exist in the early historical context, however, it is evident that corporations were engaging in asset write offs that could be

associated with the practice of big bath accounting as the early case law examples⁶⁵ provide evidence of corporations not adequately maintaining the capital of the organisation, to such an extent that the shareholders felt the need to raise a legal case against these corporations. This practice also continued, with the advent of the 'railway mania', in the latter part of the 18th Century, as Edwards (1986), Arnold and McCartney (2003) and Pollins (1969) point out.

The results of the current study identify value in use being widely used to recognise impairment losses and does contemporaneously accept the recognition of unrealised losses, while anticipating the future value of an asset with reference to expectations about future cash flows. This represents a change from the early historical practice of corporations managing earnings in order to maximise profits and thus maximise dividend payments by not depreciating assets until they had to as a result of disposal, effectively not upholding the maintenance of capital concept and not recognising unrealised losses (Arnold and McCartney, 2003).

The results of the current study highlight that corporations appear to be recognising a fall in the value of an asset in the form of an asset impairment loss before realisation of the actual loss as a result of any future transaction. This does appear to be accounting for the diminution in the value of assets in a more timely and prudent manner when

⁶⁵ Such as *Binney v. Ince Hall Coal and Cannel Company* (1866), *Mills v. Northern Railway of Buenos Ayres Company* (1870), *Dent v. London Tramways* (1880), *Davison v. Gillies* (1879), *Leeds Estate, Building and Investment Society Ltd. v. Shepherd* (1887) and others.

compared to this earlier historical perspective, however, the use of forward looking information to arrive at the impairment loss may be counter to conservatism (Watts, 2003a) and as the results indicate, some corporations have the propensity to manage earnings with a value in use calculation for impairment losses that may be higher than the net realisable value of the asset.

9.2.1 The Historical True and Fair View

Another important principle that provided an overarching concept to the preparation of published financial statements was the introduction of the requirement for a corporation's balance sheet to show a full and fair view. This was introduced in the first legislation relating to limited companies in the form of the 1844 Joint Stock Companies Act, with various amendments and changes taking place over the next 100 years or so. The Companies Act of 1947 introduced the current requirement for corporations to show a true and fair view, this was subtly different from the earlier 'full and fair view'. The full and fair view could arguably be seen as the first meta-level theoretical construct upon which published financial statements should adhere to from a regulatory perspective. The idea of a true and fair view of the corporation has been labelled as a normative approach to the development of corporate reporting (Beattie *et al*, 1992) and has been discussed in the literature by authors such as Laughlin (1977) Whittington (1996), Alexander (1999) and Quattrone (2000).

9.2.2 Twentieth Century and the Practice of Asset Impairment Testing

The Twentieth century can be characterised by continuing development of the accounting profession and a higher degree of specific guidelines issued by the ICAEW⁶⁶ from 1942 onwards and a refinement of the legislation relating to corporate reports. Although several authors such as Arnold and Matthews (2001) and Edey (1979) consider the first part of the Twentieth century to be responsible for producing less useful information due to the range of available practices to corporations for dealing with items such as depreciation. The introduction of the Companies Act 1947 with the over-arching requirement of providing a 'true and fair' view⁶⁷ of the financial statements together with enhanced disclosure was largely seen as important in terms of providing information that was more useful and relevant to investors for decision making (Edwards and Noguchi, 2004).

The results of this thesis demonstrate a continuing evolution of corporate reporting practices that are affected by changes in the regulatory environment. To illustrate this, the results of the current study highlight that when the change from arbitrary amortisation of goodwill over a

⁶⁶ The ICAEW issued a number of *Recommendations on Accounting Principles* that largely confirmed the practice of the day, while at the same time, attempting to provide some consistency in the preparation of published financial reports.

⁶⁷ Previous Companies Acts had required a 'full and fair' view, but with little additional disclosure requirements.

twenty year⁶⁸ period under FRS 11 shifted to indefinite capitalisation of goodwill under IFRS 3 and IAS 36 subject to annual impairment reviews the number of big bath accounting incidences increased; this may have been as a result of the removal of the arbitrary amortisation of goodwill after the change to IAS 36. This also relates to the notion of conservatism and the important distinction between conditional and unconditional conservatism (Ball and Shivakumar, 2005).

Arnold and Matthews (2001) evaluated the extent of disclosure in relation to depreciation of fixed assets in 1920, 1935 and 1950 for a sample of fifty of the largest listed UK corporations and found a significant increase in the extent of disclosure over the period directly relating to the changes in the regulatory environment, this result is perhaps not surprising, however, Arnold and Matthews (2001) also found a wide range of inconsistency in the reporting behaviours of corporations. The results of the current study show a consistently increasing level of disclosure in relation to impairment of assets depending on the size of the asset impairment loss, but the valuation methods employed to measure the impairment loss are inconsistent and subject to discretionary choice by management, while still in line with the regulatory requirements.

The issue of depreciation is related to that of asset impairment and although no specific research appears to exist in relation to asset write offs during the period the available research discussed here in relation to

⁶⁸ Exceptionally 40 years was allowed.

depreciation of assets and disclosure is relevant to the results of the current study in terms of the issue of disclosure and provision. The results of this thesis highlight the impact of a change in regulations upon the disclosure of reported information and historically the literature also finds a strong link between the regulatory requirements relating to depreciation and the extent of disclosure relating to depreciation.

9.2.3 Summary of the Historical Perspective and Results

The historical perspective usefully demonstrates the importance of the critical issue of asset measurement and valuation and the impact this has on the corporate report. This has been discussed since the earliest corporate reports were made available to shareholders and particularly came to prominence during the 'railway mania' period. The sophistication in the corporate reporting process has increased vastly since these early days, but some of the key issues still remain, not least of which the theoretical context relating to the objectives of corporate reporting which at a meta level may be to present a 'true and fair' view and at the principles level to be conservative within the paradigm of financial reporting to ensure the maintenance of capital concept is upheld in line with the entity theory of corporate reporting (Littleton, 1933). The next section considers the results relative to the literature in relation to asset impairment, conservatism and earnings management.

9.3 Research Question One

The issue of what type of earnings management behaviour is associated with the practice of asset impairment losses is the focus of research question one. As the results in Chapter Seven highlight, over the sample period from 2003 to 2008 the predominant earnings management behaviour overall is that of income smoothing, this is the result of all three methods employed, with method two and method three providing the most significant result, with 61 income smoothers for method two, (66 for method three) and only 28 big bathers identified in the sample of 94 corporations, with the remaining one being inconclusive. This is in contrast to work by Zucca and Campbell (1992) who found that in a discretionary regulatory environment the predominant behaviour as a result of asset write downs was big bath accounting.

Research carried out at the time when asset write offs were discretionary in nature before a change in the regulatory environment by authors such as Strong and Meyer (1987), Elliott and Shaw (1988), Elliott and Hanna (1996), Francis *et al* (1996), Rees *et al* (1996) and Heflin and Warfield (1997) do conclude that asset impairment is clearly used as a form of earnings management and is more likely when earnings are already expected to be low, which can be synonymous with the properties of a big bath.

The results do indicate the existence of big bath accounting, in line with other work in this area, but in the UK context, the extent of big bath accounting associated with an asset impairment charge, does not appear to be as high as prior studies. The existence of big bath accounting is strongly evidenced by the comparison of both the ROA and ROS figures between the two sets of earnings management characteristics, for example, as shown in table 7.17 in Chapter Seven, the median ROS for income smoothers is almost 10%, whereas the same figure for big bathers is only 4.7%, this provides significant corroborative evidence, in addition to the other methods used, that the phenomenon of big bath accounting is present within the FTSE 100 corporations sampled.

In terms of the descriptive statistics shown in Chapter Seven, the results clearly show a more manageable impact of the asset impairment charge, due to the fact that 75% of the sample corporations report an asset impairment charge of less than 1% of total assets, when compared to the other work such as Deng and Lev (1998), Cotter *et al* (1998), Elliott and Shaw (1988), Francis *et al* (1996) and Rees *et al* (1996) who all report considerably larger impairment charges. The results of the current study demonstrate that the impact of asset impairment charges are manageable when compared to the total value of assets and revenue and this appears to support the notion of a higher degree of income smoothing.

Interestingly Cotter *et al* (1998) has the closest results to the current study and finds that management will be more likely to implement an asset impairment charge if the financial statements are able to absorb this charge; this provides further corroborative evidence consistent with the current study and it is noteworthy that the Cotter *et al* (1998) study is Australian and arguably has a closer alignment to the UK context in terms of a principles based approach to corporate reporting as opposed to the US environment that is considered to be more rules based. This finding is also consistent with the early income smoothing literature such as Hepworth (1953), Gordon (1964), Beidleman (1973) and Ronen and Sadan (1980), who all suggest that income smoothing is a form of managing earnings within shareholder expectations in order to avoid volatility within earnings. Empirically the idea of seeking to reduce volatility within reported earnings has been modelled by authors such as Lambert (1984), Dye (1988), Trueman and Titman (1988) and Burgstahler and Dichev (1997).

The finding in Chapter Seven that a majority of corporations who report asset impairment losses have, over a sustained period of time, repeated asset impairment losses is consistent with prior studies such as Zucca and Campbell (1992), Strong and Meyer (1987), Elliott and Shaw (1988) and Elliott and Hanna (1996). The fact that out of the sample of 94 corporate annual reports identified as having disclosed an asset impairment charge from 2003 to 2008, a total of 67 of the annual reports with asset impairment charges were represented by 24 corporations.

This supports the notion that those corporations with asset impairment charges are more likely to have repeated asset impairment charges, given that 25% of corporations account for 71% of annual reports in the sample with asset impairment charges. This fact also has implications relating to the reported earnings of those corporations with repeated asset impairment charges and the notion of expected earnings and this critical aspect will be explored later in the chapter when the limitations of the methods are considered.

On balance, the findings presented in Chapter Seven when considering the asset impairment charges over the entire sample period from 2003 to 2008 appear to lean towards that of income smoothing rather than big bath accounting, however, as the next section illustrates, post the regulatory change in 2005, the balance clearly shifts towards more big bath accounting when compared to the pre change period.

A wider question relating to income smoothing and asset impairment charges is the issue of whether income is actually being smoothed at all, given the multitude of other adjustments within the financial report and this critical aspect will be considered later in this chapter and in the final chapter. Intrinsically linked to this finding is the issue of the asset measurement and the valuation basis used in order to determine the asset impairment charge together with the change in the regulatory

regime and these are significant factors that will be evaluated in the next sections of this chapter.

9.4 Research Question Two

This question set out to evaluate if a change in the regulatory environment impacted the earnings management characteristics of those corporations reporting an asset impairment loss in the form of either an increase or decrease in the extent of big bath accounting and income smoothing. This question provides a pivotal result in terms of the results shown in Chapter Seven and is in line with the prior literature that considers a change in the regulatory environment. Francis *et al* (1996), Rees *et al* (1996), Jordan and Clark (2004), Riedl (2004), Peek (2004), Sevin and Schroeder (2005) and Christensen *et al* (2008) all evaluated the existence of big bath accounting post a change in the regulatory environment in the US⁶⁹ and concluded that the change in the regulatory environment resulted in a higher degree of big bath accounting post the change in the regulatory environment when compared to the pre change period.

The results as shown in Chapter Seven decisively support this view in the UK context also, as significantly after 2005 the extent of big bath accounting as opposed to income smoothing as a result of an asset

⁶⁹ As previously discussed, the introduction of SFAS 142 can be considered a parallel scenario to that of the introduction of IAS 36 in the UK. The two earlier reports from 1996 mentioned here assess the impact of SFAS 121, while the last one by Christensen *et al* (2008) assesses the impact of SFAS 109.

impairment charge increases post the change in the regulatory environment, for example, using method three provides the most significant shift to big bath accounting, with only 7 corporations identified as big bathers prior to the change in regulations and 21 corporations identified as big bathers post the change in regulation, when the effects of proportionality in terms of the differences in sample size both pre and post the change in the regulatory environment are taken into account using the Mann Whitney test, this still produces a significant shift to big bath accounting for both methods two and three. Using method one does produce a shift but to a lesser extent and also this shift is not significant, due to the number of inconclusive results. However, it is also important to note that the predominant earnings characteristic post the change in the regulatory environment remains that of income smoothing, with 36 corporations out of the post change sample of 57 being identified as income smoothers using method three and a similar majority using method two.

Beatty and Weber (2006) report a delay in the timing of asset impairment charges post the adoption of SFAS 142. Jarva (2009) reports that corporations do not appear to be opportunistically managing earnings post the change in the regulatory environment and that impairment charges tend to lag behind economic circumstances, this is similar to the finding presented by Beatty and Weber (2006); however, both these findings indicate that corporations are not necessarily seeking to manipulate the financial statements as a result of impairment charges,

but more attempting to align their financial statements to the economic reality of the corporation. This could be seen to be presenting a true and fair view of the corporation synonymous with the conservatism principle. This critical point will be evaluated later in this chapter and in the final chapter.

Jordan and Clark (2004), Riedl (2004), Sevin and Schroeder (2005) and Christensen *et al* (2008) interpret their findings of an increasing amount of big bath accounting as a greater propensity for manipulation of earnings and subjectivity post the change in the regulatory environment, which is a potentially valid interpretation at the operational level in terms of the mechanical process of a big bath, however, these authors do not appear to focus their results to any underlying theoretical thought in terms of what might be driving this action.

The fact that big bath accounting increases after a change in regulations is empirically evident in the current thesis in the UK setting and also in the earlier research in the US setting by Jordan and Clark (2004), Riedl (2004), Sevin and Schroeder (2005) and Christensen *et al* (2008), however, these latter authors do not evaluate from a theoretical perspective the practice of big bath accounting, although Riedl (2004) does consider the issue of rules versus principles in financial reporting.

Conversely Francis *et al* (1996), Rees *et al* (1996), Beatty and Weber (2006), and Christensen *et al* (2008) and Jarva (2009) do find a greater

degree of write offs post a change in the regulatory environment, but that this appears to be more aligned to reporting a view of the corporation based upon the economic reality of the corporation as opposed to any opportunistic behaviour. Another feature of the data is the fact that overall the impact of the asset impairment charge on the reported financial performance and position appears to be manageable; this was highlighted in the summary statistics of Chapter Seven.

9.4.1 Big Bath Accounting Post the Change in Regulations

Whether the process of implementing a big bath is a form of manipulation of the published financial statements can be questioned from the asymmetrical timeliness of earnings within the principle of conservatism as demonstrated by Basu (1997). If the results of an increasing amount of big bath accounting are viewed from the perspective of representing timelier reporting of losses than would otherwise be the case in the absence of a big bath this can be contemporaneously linked to the important principle of conservatism enshrined within financial reporting. The fact that a big bath reduces earnings and asset values can be associated directly with the principle of conservatism (Watts, 2003a).

Furthermore, the change in the regulatory environment resulting in a greater degree of big bath accounting than the pre change environment, as shown in the results in Chapter Seven, appears to match the criteria of

conditional conservatism developed by Ball and Shivakumar (2005). The decision to implement an asset impairment loss that results in a big bath is conditional on an event that is contemporaneous with an unrealised loss, thus resulting in a more timely recognition of a loss than would otherwise have been the case if the asset had not been impaired (Basu, 1997).

This can be contrasted with the unconditional form of conservatism identified by Ball and Shivakumar (2005) that defines loss recognition as arbitrary, not contemporaneously related to any particular event but attributable to the arbitrary nature of bias in terms of reporting low book values and incomes unconditionally as a result of applying conservatism. This is the case under FRS 11 prior to the change in the regulatory environment, when intangible assets such as goodwill, had to be arbitrarily written off over a 20 year period (maximum of 40 years in limited circumstances). The results in Chapter Seven indicate that unconditional conservatism was more prevalent amongst FTSE 100 corporations that reported asset impairment losses prior to the change in the regulatory environment and that this shifted to conditional conservatism post the change in the regulatory environment.

This shift to conditional conservatism would appear to be reasonable, given the fact that under FRS 11, an arbitrary element of amortisation was present irrespective of the economic reality of the value of the asset, whereas post the transition to IAS 36, intangible assets were only

impaired conditionally on an event that indicated a fall in value. The empirical findings in this thesis support this view strongly. This point will be expanded upon later in the concluding part of this thesis within the Meta level theoretical context of the True and Fair View.

Many earlier reports also link the practice of earnings management, in the form of either a big bath or income smoothing, to management motivation or a change in the management of the corporation. Moore (1973), Strong and Meyer (1987), Francis *et al* (1996) and Cotter *et al* (1998) found that an asset impairment charge was associated with a change in the senior management of the corporation. As the results clearly show in Chapter Eight, in the UK context and time frame considered, asset impairment charges do not appear to be associated with a change in management, this appears to follow the view of Elliott and Shaw (1998) who found less of an association between management changes and asset write offs.

While the results relating to a change in management do not consider the motivations behind management behaviour, authors such as Dye (1988), Lambert (1984) and Truman and Titman (1988) have considered this aspect relevant to the desire to smooth income and overall they have found that management do have an incentive for the long term performance and value of the corporation to minimise volatility in the form of income smoothing. Given that the results indicate that an asset impairment charge is not associated with a change in the management of the corporation, the motivation of existing management could be seen to

present a true and fair view of the business with a long term growth objective as opposed to a short term reactionary impairment charge as a result of a recent incoming senior manager who may have an interest on improving future results and hence managerial rewards, in the short term.

Beatty and Weber (2006) found that management were motivated by their incentives in relation to the choice of delaying or accelerating an asset impairment charge post the change in the US regulatory environment.

The fact that big bath accounting increases post the change in the regulatory environment and that this is not associated with opportunistic management changes may be indicative of a desire to report timely asset impairment charges. Basu (1997) characterised this as 'bad news' demonstrating asymmetrical timeliness of earnings and the fact that a big bath tends to be timelier than the 'good news' event in line with the conservatism principle. Basu (1997) implies that the practice of big bath accounting results in a greater degree of conservatism within financial reporting and the results obtained here highlight that post the change in the regulatory environment, big bath accounting has increased significantly.

This could therefore be seen to be synonymous with an increase in conservatism. When the distinction between conditional and unconditional conservatism (Ball and Shivakumar, 2005) is considered, this indicates that unrealised loss recognition is timelier and more

relevant to economic circumstances post the change in regulations than pre the change in regulations.

LaFond and Watts (2008) argue that the more information asymmetry, in the form of potential investment opportunities, between inside and outside information holders, the more conservative the financial statements.

LaFond and Watts (2008) highlight that conservatism generates information asymmetry between internal and external stakeholders and that this is desirable from a financial reporting perspective as the information asymmetry leads to greater firm growth in the form of future investment opportunities, the more conservative the financial statements.

LaFond and Watts (2008) specifically highlight the issue of unverifiable gains in published financial reports reducing the amount of information asymmetry between internal and external stakeholders and that this generates less conservatism and significantly is associated with poor firm performance when compared to those firms with more conservatism in their financial reports. This can be summed up usefully with the following quote:

'When relatively more of a firm's gains are unverifiable, the application of the asymmetric verifiability standards generates more conservatism.

When the information asymmetry between equity investors in a firm increases (decreases), the application of the asymmetric verifiability following that increase (decrease) generates more (less) conservatism.'

LaFond and Watts (2008, p449).

LaFond and Watts (2008) empirically prove that those corporations that are less conservative in their financial reporting, in terms of having high amounts of unverifiable gains in their financial reports and hence a decrease in perceived information asymmetry, are the ones most likely not to prosper from future investment projects. This is important in relation to the results obtained from the empirical work in this thesis as the valuation method employed in order to arrive at the asset impairment charge does not influence the earnings management behaviour; however, in the case of unverifiable assets, such as intangibles, these do tend to be written down using ViU.

Roychowdhury and Watts (2007) specifically mention that future research should evaluate whether changes to impairment regulations impact the asymmetrical timeliness of earnings and the impact this has on conservatism. The results of this thesis demonstrate that a change in impairment regulations result in a greater propensity for big bath accounting and that this characteristic, in line with Basu (1997), results in a higher degree of conservatism. When the distinction between conditional and unconditional conservatism is taken into account (Ball and Shivakumar, 2005) the results point to the characteristic of conditional conservatism being present for the sample of corporations and this is in line with the Watts Theory of Conservatism (Roychowdhury and Watts, 2007) and highlights the attractiveness of not reporting a high

degree of unverifiable gains (LaFond and Watts, 2008) in line with the principle of conservatism.

The results obtained here point to a greater degree of conservative financial reporting post the change in the regulatory regime relating to asset impairment, however, the underlying dominant earnings characteristic is still income smoothing.

9.5 Research Question Three

There is a lot of literature (for example, but not exhaustively, Watts (2003a), Bromwich (2005), Cairns (2006), Walton (2006), Zijl and Whittington (2006), Landsman, (2007) and Penman (2007)) that is critical of the adoption of value in use due to the highly subjective nature of the method for calculating a suitable value based on discounted future cash-flows, as these equate to the 'level 3' input defined by the IASB's discussion document 'Fair Value Measurements' that is based on the FASB's SFAS 157 definition of Fair Value. The other measurement choices in the asset impairment decision are historical cost and net realisable value. These measurement bases all directly impact the extent of the asset impairment charge. The other factor that is also evaluated contemporaneously with the measurement base is the disclosed indicator of asset impairment. These two critical areas form the basis of research question three of the thesis, which is stated as;

- *Is the valuation basis employed to measure the asset impairment loss and the disclosed cause of the asset impairment loss related to the size of the asset impairment loss?*

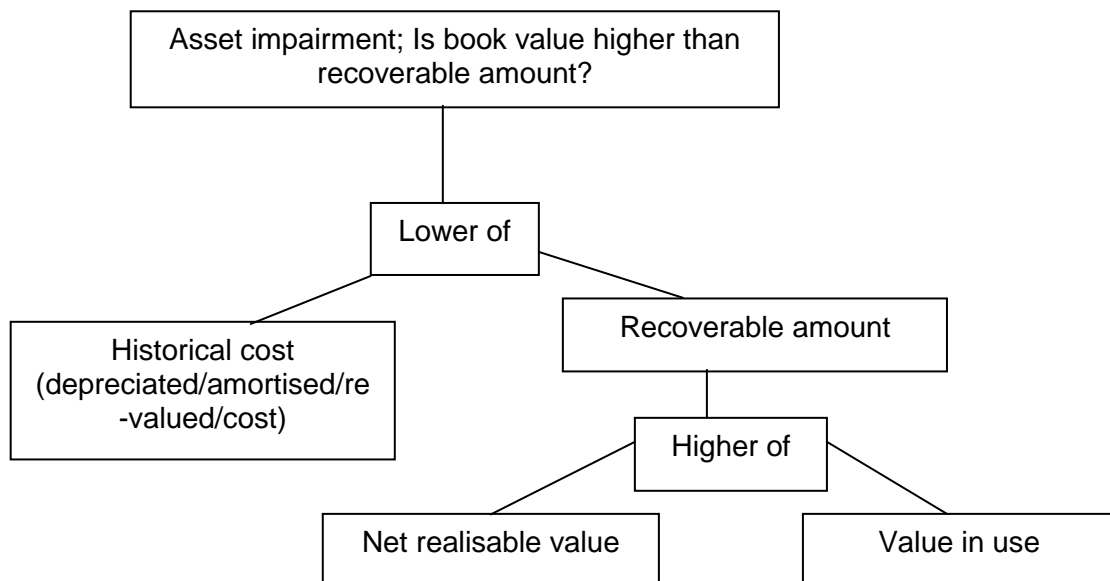
The results outlined in Chapter Seven and Chapter Eight demonstrate that for the sample of corporations, value in use produces a statistically significant higher asset impairment loss than the other valuation methods such as NRV and Recoverable Amount, but that the earnings characteristic in terms of whether the impairment loss is associated with a big bath or more with income smoothing is less clear⁷⁰. In the UK context this appears to counter the suggestion that ViU will detract from conservatism within financial reporting as suggested by Watts (2003a). While the results of this thesis indicate a greater degree of big bath accounting post the change in the regulations from FRS 11 to IAS 36, the issue of whether this amounts to manipulation and opportunistic behaviour (Riedl (2004), Jordan and Clark (2004) and Beatty and Weber (2006)) or a genuine attempt to present more timely and relevant information to stakeholders in line with the principle of conservatism (Basu (1997) and Ball and Shivakumar (2005)) is a key issue linked directly to the application of the measurement and valuation basis employed in order to arrive at the asset impairment loss.

⁷⁰ Although as was seen in the results chapter, the differentiation between income smoothers and big bathers was significant.

9.5.1 Selection of the Measurement Base

As illustrated in Chapter Four, the available measurement bases used in the determination of an asset impairment charge adopts a deprival value approach and this can be traced back to early work by Bonbright (1937). The measurement basis is determined by evaluating if the book value is greater than the recoverable amount of the asset. If the recoverable amount is lower than the book value, then an asset impairment charge should be implemented. This can be shown in the following figure:

Figure 9.1 Measurement Bases used in the Asset Impairment Decision



Source: Author

As Figure 9.1 above clearly shows, the pivotal point for instigating an asset impairment charge would be when there is an indication that the recoverable amount of an asset is less than the book value, which

implicitly will be the historical cost of the asset plus any revaluations (where permitted), less any depreciation or amortisation. This immediately would appear to represent a conservative approach to financial reporting, irrespective of any valuation basis.

In the UK context, ViU, based on the sample, appears to be providing a higher degree of conservatism than the other valuation methods within the asset impairment review process by providing a higher degree of loss recognition. As demonstrated in Table 8.1.1 in Chapter Eight, ViU accounts for more than double the asset impairment charge as a percentage of both sales and assets, with a median of 0.50% and 0.42% respectively, producing a significantly higher asset impairment charge than both recoverable amount and NRV.

This may be indicative of an over-riding implementation of the true and fair view within the UK financial reporting environment, aligned to economic factors, providing a meta-level theoretical foundation (Laughlin (1977), Edey (1977), Whittington (1996)). However, this does not appear to be all pervasive (Alexander, 1999) as it only relates to the impairment decision and importantly ViU is more associated with intangible assets rather than tangible, which by definition present a greater degree of subjectivity and verifiability concerns.

As Table 8.1.1 in Chapter Eight illustrates ViU results in significantly higher asset impairment losses in the impairment review process.

However, while this result in isolation may be counter intuitive to the idea that ViU should promote a conservative approach to financial reporting, it should be highlighted that for those corporations that did use ViU to arrive at their asset impairment loss; this figure must have been higher than NRV. If the corporations had used NRV (subject to information availability) instead of ViU, this would have produced a higher asset impairment charge and correspondingly lower reported earnings and asset values than were actually reported.

Additionally, for the corporations that reported using recoverable amount without specifying NRV or ViU, this implicitly means that, in the absence of a disclosed discount rate, they must have used NRV. This is a reasonable assumption given that the regulations state that when ViU has been used, a discount rate should be disclosed and this, coupled to the fact that the financial statements have been audited, would appear to validate this implicit assumption. This leaves the findings with the result that a fairly even spread of corporations use NRV and ViU, as illustrated in Table 7.7 in Chapter Seven, out of a total of 144 disclosed valuations across the sample of 94 annual reports, 74 related to NRV and 70 related to ViU. Equally important is the fact that ViU is predominately associated with the valuation of intangible assets while NRV is predominately associated with tangible assets.

For the majority of corporations that use NRV for the purposes of determining the asset impairment charge this implicitly means that their

NRV is higher than any calculated ViU figure. Coupled to this the fact that many corporations report using more than one valuation method depending on the type of asset that is impaired and the results become difficult to draw any conclusions based on the information available, despite the initial observation that ViU appears to attract a higher impairment loss.

9.5.2 Behaviour and the Valuation Base

The degree of inconclusiveness in terms of whether ViU is perceived as an opportunity to manipulate the financial statements, whether in the form of a big bath or income smoothing; or report a true and fair view of the corporation by providing value relevant information, may be related to the individual reporting circumstances of each corporation, but the fact that different types of assets are being valued using different valuation methods supports the view that corporations are trying to report asset values with relevance to the information available in line with the asset type within a reflexive framework. This is synonymous with the views of Whittington (1996) and Quattrone (2000), who suggested that the development of accounting theory should evolve over time using a range of measurement approaches rather than steadfastly selecting a particular method and sticking with it.

A critical question that arises with these findings is in relation to the behaviour of management. Using ViU could be perceived in one of the

two characteristics identified above; manipulation or reporting a true and fair view. One could argue that if management wished to avoid implementing an asset impairment loss altogether, when really a true and fair view might indicate that an asset is impaired, this could easily be achieved by creating a ViU valuation figure higher than the book value figure and thus completely avoid an asset impairment charge. For this sample of corporations this is clearly not the case.

However, given that this research only focuses on those corporations with asset impairment charges, the answer to this question only relates to those corporations with asset impairment charges and not those without asset impairment charges. What is clear from the results, is that management are using ViU to implement asset impairment charges, both in the form of income smoothing and big bath accounting, so on the basis of the sample, it would appear that ViU is not being used to deliberately avoid an asset impairment charge, but the question remains open as to whether ViU is being used to minimise asset impairment losses. This would clearly be an interesting area of further research in terms of evaluating corporations that had not implemented an asset impairment charge in addition to those that had implemented an asset impairment charge.

The results indicate a fairly even split between both big bath accounting and income smoothing relevant to the valuation basis employed. For those corporations identified as big bathers, categorised into valuation

bases, as shown in Table 8.1.4, out of the 46 disclosed valuation bases associated with big bath accounting, 25 relate to NRV and 21 relate to ViU.

This translates into a high degree of discretionary choice which is an important factor in the decision to write down an asset as studies such as Moses (1987), Strong and Meyer (1987), Beatty and Weber (2005), Cotter *et al* (1998), Zucca and Campbell (1992), Beattie *et al* (1994), Francis *et al* (1996), Peek (2004), Jordan and Clark (2004), Sevin and Schroeder (2005), Walsh *et al* (1991), Elliott and Shaw (1988) and Riedl (2004), Hayn and Hughes (2006), Lapointe-Antunes *et al* (2009) and Jarva (2009) have shown, however, it does not necessarily translate into a deliberate manipulation, but could be perceived as a desire to provide more timely and value relevant information to the shareholders (Basu (1997), Aboody *et al* (1999), Dietrich *et al* (2001), Carroll and Linsmeier (2003) and Barth (2006)) and the desire to reflect an over-arching true and fair view of the corporation congruent with the regulatory requirements (Alexander, 2003). The detailed measurement and valuation debate may, as Tweedie (1996), Clarke and Dean (2003) and Rosenfield (2005) point out; have overshadowed the importance of a higher meta-level approach to financial reporting.

Also of importance to the measurement and valuation debate is the fact that fair value does not just equate to value in use, but a wide range of different valuation bases, these were discussed in detail in Chapter Four.

Often the literature and criticism relating to the generic term fair value tends to associate fair value with a value in use calculation using forward looking estimates, while in reality, fair value can span the whole range of valuation bases.

9.5.3 Types of Asset and the Valuation Base

Historical cost (or re-valued historical cost) is the starting point for all asset impairment decisions, as it is the book value that is compared with the recoverable amount in order to decide if an impairment loss needs to be implemented. An argument could be made that by definition this is a conservative starting point and any write offs, irrespective of whether they use NRV or ViU will bring the book value down to a lower level.

In the case of intangible assets, such as goodwill, the initial historical cost valuation is effectively frozen in terms of the fact that no upward revaluations may take place, the only adjustment allowed is downwards, usually in the form of an impairment charge.

Upon initial classification, NRV is used a total of 31 (21%) times out of 144 disclosed valuation methods spread across 92 different annual reports, compared to 70 times (49%) for ViU. However, when the combined total using the criteria explained in the previous paragraph is used, including recoverable amount, this increases to 74 times (51%), so clearly the split in terms of the two key valuation bases used to determine

an asset impairment charge is fairly even. While both NRV and ViU are hypothetical estimates and both can be defined as fair value, NRV would tend to be associated with a level 2 input, whereas ViU would tend to be associated with a level 3 input and the factor that determines when one of these methods is used in the calculation of an asset impairment charge is based upon the higher of the two calculations.

This highest value is directly associated with the deprival value concept, yet when the definition of fair value is considered within the context of the IASB discussion document Fair Value Measurements (2006), the instances of when to use a particular a valuation method are governed by the information availability for that particular type of asset, rather than being based upon the higher of any particular method. This may appear to create an inconsistency in reporting practice and the question of whether this encourages manipulation.

The results obtained in this thesis indicate that corporations are using the fair value criteria based upon asset type, given the finding that the majority of tangible assets are valued using NRV and that the majority of intangible assets are valued using ViU. This finding also indicates that corporations are implementing fair value based upon information availability, as tangible assets have a more readily available market valuation than intangible assets. As the results indicate, out of a total to 57 impairments relating to property, plant and equipment, 39 (68%) were valued using NRV, whereas conversely out of a total of 76 impairments

relating to intangible assets, only 25 (33%) were valued using NRV, with the vast majority (51 or 69%) using ViU.

This valuation characteristic dependent on asset type could be related to the issue of corporations desire to present a true and fair view of the asset values in line with information availability and transactional faithfulness in line with the economic reality of the financial report with the FTSE 100 reporting environment.

The results of this thesis clearly show that ViU is widely used, especially in the case of intangible assets. Cooper (2007) explains that despite the limitation inherent in the use of forward looking estimates, certain assets may be more suitable for this type of measurement basis, depending on information availability. Cooper (2007) considers that a primary concern for an investor is the potential of future profits and clearly ViU does provide an indication of expectations about future performance from continued use of an asset.

This raises the question of whether corporations are using ViU to manage earnings and as the results of the empirical work illustrate, in the UK context, ViU is not associated with a particular earnings management characteristic and indeed is used to both smooth income and create a big bath. The issue of whether the results indicate ViU being used to portray a true and fair view of the corporation or conversely are an attempt at manipulation may certainly be inconclusive, but what they do show is that

ViU is not being used to create a large number of big baths, unlike some of the other studies such as Riedl (2004) and Jarva (2009). .

Commentators such as Landsman (2007), Cooper (2007), Broadley (2007) and Penman (2007) do not share the view of Barth (2006) in terms of the over-arching implementation of a fair value approach with the use of estimates based upon management expectations using discounted future cash flows due to the concerns about verifiability of such estimates and the propensity for management to manipulate earnings through the use of such estimates, but this is only one part of the measurement base that can be used in the fair value measurement process.

As the results of this thesis demonstrate, the practice in the UK is to have an upper bound limit based upon historical cost or re-valued historical cost with ViU being used as an indicator of an unrealised loss and not as a basis for unrealised gains. Additionally the valuation method appears to be more aligned to the type of asset as opposed to an earnings characteristic. This may be a further indicator of a desire to present a true and fair view.

Two important points in relation to the practice of asset impairment in the UK context are highlighted in the results of the empirical work in this thesis; firstly, even with ViU, the principle of conservatism is being actively implemented with the upper bound valuation as the starting point for an impairment review and secondly; ViU is being implemented

according to information availability in the market closely related to the asset type.

The issue of trust between the users of the information and the management in terms of how credible any asset impairment loss appears when a ViU calculation has been implemented is also an important point. This is related to the instances of a change in management, the disclosed indicator of the impairment charge and the extent of disclosure relating to the asset impairment charge, as all these factors could have an impact on the level of trust and credibility of the information presented in the financial report when compared to the expectations of the users, primarily the shareholders.

The practice in the UK financial reporting context of FTSE 100 corporations indicates that corporations are measuring and valuing assets within the substance of the fair value paradigm in accordance with the level input hierarchy based upon information availability. Assets that are available to be valued using a level one or level two input are valued using these input criteria and are mainly tangible in nature, while those assets that only have information availability based upon market based perceptions of future expectations in line with level three inputs are valued according to this criteria and are mostly intangible in nature.

These results in the UK context indicate that ViU is not being used to deliberately instigate big baths and this illustrates a different finding to

Riedl (2004), Jordan and Clark (2004) and Jarva (2009) and concerns discussed by Watts (2003a).

9.5.4 Sectors and Asset Impairment

The results also highlight a broad spread of asset impairment losses across many different sectors of the business environment for the sample period from 2003 to 2008 and although the metals, mining and oil sector has the greatest number of asset impairments this is also reflected in the fact that this type of industry has the highest number of corporations for a sector in addition to the fact that this type of industry may be more susceptible to asset impairments due to the nature of the business.

The results relating to sector specific characteristics also revealed the dominance of the telecoms sector in terms of the value of the total asset impairment charges amongst FTSE 100 corporations. The fact that out of a total of £55,341 million reported asset impairments charges over the sample period, £49,489 million of this is attributable to the telecoms sector demonstrates the massive extent of impairments that this sector encountered.

To put this in context 89% of asset impairment charges are represented by just three (equivalent to 3%) corporations in a total of 7 annual reports out of the sample of 94. Vodafone had a total of four annual reports with asset impairment charges totalling £36,075 million during the sample

period, so this single company is responsible for the vast majority of asset impairment charges during the sample period. Additionally Cable and Wireless had two annual reports with a total of £5,114 million asset impairment losses and MMO2 reported an asset impairment of £8,300 million in its 2003 annual report.

This clearly presents a focus of attention in terms of the massive impact of the telecoms asset impairment charges and a case study evaluation of the circumstances behind these headline figures would certainly provide an important aspect to any future research in this area, as none of the other sectors come close in terms of value of impairment losses to these four telecoms giants. Notably MMO2 did not survive after its large impairment loss and was broken up and merged into other businesses in 2005.

Vodafone still continues to trade and is still making large asset impairment losses, with reported impairment losses of £2,100 million in 2010, £6,150 million in 2011 and £4,050 million in 2012, mostly relating to intangible assets. This demonstrates that Vodafone persistently reports massive asset impairment losses and with these continuing impairments, it continues to dominate the share of asset impairment losses on the FTSE 100, not including the banking sector.

The results show that a minority of 24 corporations report repeated asset impairment charges and that they account for a total of 67 of the annual

reports disclosing impairment charges, with the remaining 27 corporations reporting impairments in only one annual report. In addition to the telecoms sector, other sectors with a higher number of repeat asset impairment charges include the metals, mining and oil sector, the media sector, the chemicals and pharmaceutical sector and the aerospace and automotive sector. Some of these sectors have been consolidated for the purposes of the research, but this finding suggests that certain sectors are more susceptible to asset impairment charges than others, however, given the number of repeat corporations reporting asset impairment charges, this may be indicative of a company specific reason for asset impairment rather than a sector specific reason.

This finding demonstrates that in line with other studies, such as Strong and Meyer (1987), Zucca and Campbell (1992), Rees *et al* (1996), Elliott and Hanna (1996) and Francis *et al* (1996) that corporations with asset impairment or asset write down charges are more likely to have repeated asset write downs in the future. This may be further evidence that for the majority of corporations across other sectors, asset impairment losses are small when compared to the total book value of assets and revenue.

9.6 Results and Indicators of Asset Impairment

The results obtained in Chapter Eight show that in terms of disclosed indicators of asset impairment, two indicators dominate the reported causes. As shown in Table 8.2.2 a total of 111 indicators were disclosed

relating to 158 assets disclosures. These can be split into external and internal causes. The most frequently disclosed external cause related to environment changes, with 40 assets being reported as impaired as a result of this indicator. The most frequently reported internal cause related to discontinuation or restructuring with 54 assets being reported as impaired as a result of this indicator. This is a similar result to Francis *et al* (1996) and Jarva (2009) who found that impairments are associated with restructuring charges and Rees *et al* (1996) who found that impairments tend to be associated with a change in the external economic environment. The economic determinants relating to the recognition of intangible assets, as opposed to impairment of assets, was also identified as a key factor by Wyatt (2005) in considering the extent of recognition of intangibles.

However, previous studies, unlike the current one, have not investigated the extent of disclosed indicators of impairment, as they have tended to adopt a behavioural aspect to the identification of the asset impairment charge relating to a change in management or management incentives rather than focusing on the disclosed indicator of asset impairment. This focus on management behaviour is directly linked to the existence of discretionary choice and is also related to indicators of asset impairment and this aspect has been considered in detail by authors such as Beatty *et al* (2002), Elliott and Hanna (1996), Francis *et al* (1996), Rees *et al* (1996), Fields *et al* (2001) and Riedl (2004). Evaluation of whether an asset impairment charge is associated with a change in management

was presented in the results and will also be discussed in the next section of this chapter.

The most frequent external indicator of impairment amongst those corporations disclosing an asset impairment loss is stated in IAS 36 as;

'significant changes with an adverse effect on the entity have taken place during the period, or will take place in the near future, in the technological, market, economic or legal environment in which the entity operates or in the market to which an asset is dedicated.'

(IAS 36 para 12)

This indicator, while being externally orientated, is the one most susceptible to management discretion in terms of estimating a value to attach to such circumstances, as the other indicators are clearly and explicitly related to either market values or carrying values. Values based upon changes in the market, economic or legal environment will require a higher degree of subjective estimation in line with a level three input than those associated with market or carrying values, which tend to be aligned to level one or level two inputs within the fair value hierarchy. So while this indicator may be indicative of an external cause or event, the basis of calculation will be subject to management discretion in terms of arriving at an estimated impairment loss. This may logically lead to the notion that a ViU calculation may be more associated with this indicator of impairment, but as the results show, a fairly even split between NRV and ViU is

disclosed when using this indicator, so it would appear that management are not excessively using ViU in order to calculate an impairment loss when using this particular indicator.

In relation to the indicator based upon environment changes and the type of asset impaired, a higher degree of intangible assets are associated with this indicator than tangible assets, with 24 compared to 13 respectively. On this basis, in the UK context, intangible assets are more susceptible to impairment due to environment indicators than tangible assets, but that the valuation method employed to measure the loss relating to environmental indicators is evenly spread between NRV (19) and ViU (18). This may be an indicator of corporations wishing to report and measure asset impairment losses in line with the economic substance of the loss, rather than an attempt to manipulate the earnings.

The other most frequent internal indicator of impairment is defined as being an internal cause relating to discontinuation or restructuring and is stated in IAS 36 as;

'significant changes with an adverse effect on the entity have taken place during the period, or are expected to take place in the near future, in the extent to which, or manner in which, an asset is used or is expected to be used. These changes include the asset becoming idle, plans to discontinue or restructure the operation to which an asset belongs, plans

to dispose of an asset before the previously expected date, and reassessing the useful life of an asset as finite rather than indefinite.'

(IAS 36 para 12)

The other internal indicators are impairment due to obsolete or damaged assets and internal reporting that predicts worse than expected performance. The worse than expected performance attracted the second highest number of internal indicators in the results and the third highest overall out of all the indicators.

Arguably the indicator of expected performance from internal causes, such as internal reporting, will inevitably be related to external causes, such as the most common external indicator relating to environmental causes, due to the fact that any estimate of expected performance will be dependent on both internal and external causes. Consequently there is some overlap in terms of indicators and whether they relate to internal or external causes cannot always be easily differentiated when estimating expected future performance, as in reality, both internal and external causes influence expected future performance.

Asset impairment due to restructuring has been found to be a significant cause by other authors such as Elliott and Shaw (1988), Francis *et al* (1996), Chaney *et al* (1998) and Riedl (2004) and the results in this thesis demonstrate commonality with these earlier findings that strongly associate asset impairment or asset write offs with the instance of a

company restructuring or discontinuing its operations. Many of the corporations in the current study clearly stated that impairment was due to either subsidiaries or operations being shut down, being prepared for disposal and restructuring.

Intangible assets represented the majority of indicators (31 for intangible compared to 20 for tangible) due to discontinuation or restructuring. In contrast to the external environmental indicator discussed earlier, in the case of internal restructuring or discontinuation impairment losses, the valuation basis used to measure this indicator is predominately NRV (28) and not ViU (20). This paints a similar picture to the indicator of environmental causes discussed earlier, in terms of corporations wishing to report and measure asset impairment losses in line with the economic substance of the loss, rather than an attempt to manipulate the earnings with the use of a subjective ViU based valuation.

Significantly the impairment indicator of the carrying amount being less than the market capitalisation attracted the lowest level of disclosed external indicators, while the indicator of obsolescence or damage attracted the lowest level of disclosed internal indicators. This results in only one corporation having a subsidiary valued in its financial statements at a higher amount than its market capitalisation; this again points toward the fact that the principle of conservatism is enshrined within the financial reporting process in terms of practice. Impairment due to obsolescence or damage is not so clear to interpret as far as the results here are

concerned; this clearly shows that not many corporations have impairments due to this indicator.

No one particular indicator dominates the causes, but as already highlighted, environment changes and discontinuation or restructuring charges, followed by expected performance appear to be the most prevalent indicators, and it is interesting to note that these three indicators appear to be the most closely associated to management discretion in terms of propensity to estimate amounts subjectively. This is in line with the prior literature such as Beatty *et al* (2002), Elliott and Hanna (1996), Francis *et al* (1996), Rees *et al* (1996), Fields *et al* (2001) and Riedl (2004) that emphasise the discretionary nature of write off decisions.

9.6.1 Sectors and Indicators of Impairment

The results relating to indicators of asset impairment also show a wide spread of indicators across many different sectors. As Table 8.2.4 illustrates, the metals, mining and oil sector dominates the number of different disclosed indicators, with a total of 20 different indicators, with environment changes being the predominant indicator with 11 instances. Telecoms have the second highest number of disclosed indicators with 11 indicators, spread across many different categories of indicators. The media and support sectors both have a total of 10 different indicators, again spread across many different categories. While these results are

more difficult to interpret clearly when compared to the clarity of the asset type and valuation method employed, they do demonstrate that a wide range of indicators are used across a wide range of sectors. Market value and carrying amount were two of the least used indicators in the sample and this perhaps is surprising given the widespread use of NRV.

9.6.2 Summary of Research Question Three

The findings for research question three present a wide variety of results in relation to the question:

- *Is the valuation basis employed to measure the asset impairment loss and the disclosed cause of the asset impairment loss related to the size of the asset impairment loss?*

The valuation basis of ViU is associated with a higher degree of asset impairment losses upon initial investigation. However, when the asset categories are taken into account, the valuation basis is more aligned to the asset type rather than size of the asset impairment loss. The dominant factor, as is clearly seen in the results, is that the telecoms sector dominates the asset impairment losses considerably in terms of size and that the impairments in this sector relate to intangible assets. In terms of the number of different reported impairments rather than the actual size, the results demonstrate that environment and restructuring indicators are the most common disclosed indicators of impairment. The

finding that the valuation base is associated with asset type based upon information availability may be further evidence of a desire to report a true and fair view within the UK context.

9.7 Research Question Four

The final research question of the thesis provides further corroborative evidence of the desire in the UK context to communicate a true and fair view to the shareholders and other interested users through additional voluntary disclosure relating to asset impairment losses in direct proportion to the magnitude of the asset impairment loss. While the statutory disclosure appears descriptive and unresponsive to the degree of the asset impairment charge, the results clearly indicate a strong desire for corporations to disclose a greater amount of narrative relating to the asset impairment charge the greater the asset impairment charge, this appears to be a desire and willingness to communicate potential 'bad news' that may be a concern to potential users. Research question four is stated as;

- *Is the extent of disclosure related to the asset impairment loss in the corporate report associated with the amount of the asset impairment loss?*

As identified in the literature review of Chapter Five of this thesis, few reports have specifically explored the disclosure relating to asset

impairment charges but many reports have addressed different areas of disclosure, for example Deegan and Rankin (1996) and Beattie and Jones (1999) have evaluated CSR and Berretta and Bozzolan (2004) and Linsley and Shrivies (2006) have evaluated risk.

The significant factor arising from the empirical results relating to the extent of disclosure is the fact that corporations disclose a proportionate amount of non statutory disclosure relevant to the amount of the asset impairment charge. While overall the correlation was positively significant in relation to the impairment charge to the total disclosure, once the extent of disclosure between statutory and non statutory was differentiated, it became clear that a significant characteristic emerged.

The non statutory disclosure was highly positively related to the extent of the asset impairment charge, while the statutory disclosure was not. This is despite the fact that the actual extent of disclosure in the statutory section of the annual report was far greater than in the non statutory part of the report.

This result relating to disclosure provides further corroborative evidence of the characteristics relating to the practice of asset impairment within the UK context. For this sample of corporations over the time frame studied, a rich picture appears to be emerging, taking into account the earlier findings relating to research questions one to three and this finding. Using an integrated interpretation of the results highlights the fact

that they all appear to be inter-linked, particularly in terms of the earnings characteristics of the sample corporations, the valuation method employed for different types of assets and now the extent of non statutory disclosure relative to the asset impairment charge.

Given that the valuation method selected appears to be more related to the economic substance of the impaired asset rather than any particular earnings characteristic provides a different finding to prior literature such as Riedl (2004) and Jordan and Clark (2004) and is counter intuitive to the concerns discussed by Watts (2003a), Landsman (2007), Cooper (2007), Broadley (2007) and Penman (2007).

The fact that disclosure levels are highly positively correlated with the level of the asset impairment charge provides further corroborative evidence. That in the UK, the practice of asset impairment appears to be more aligned to an attempt to report a true and fair view of the financial state of the company rather than a deliberate manipulation of the financial information based upon opportunistic behaviour.

This point may be further evidenced in terms of the fact that these results indicate that while post the change in the regulatory context a greater extent of big bath accounting is taking place, the over-riding earnings characteristic is of income smoothing upon implementation of an asset impairment charge. The use of ViU is not primarily associated with big bath accounting. The issue of opportunistic behaviour can be further

evidenced by the instances of a change in management and this is the subject of the next section.

9.8A Change of Management and Asset Impairment

As the results show in Chapter Eight, there is no evidence in the UK context, for the sample corporations, that asset impairment losses are strongly associated with a change in the management of the corporation. This finding produces a different result to the work by authors such as Moore (1973), Strong and Meyer (1987), Francis *et al* (1996) and Cotter *et al* (1998), who suggest that often an asset write off, particularly a big bath, is associated with a change in management as an opportunity to 'wipe the slate clean' with a large one off write off, that may also have the impact of improving future performance and thus future bonuses of the new management. This could be viewed as opportunistic behaviour. However, as the results show, in the UK context, asset impairment losses are not significantly associated with a change in management, this appears to be in line with the finding by Elliott and Shaw (1998) who also concluded that asset write offs tended to be associated with a change in the economic circumstances of the corporation rather than any deliberate manipulation of the financial statements for personal gain or recognition of new incoming management.

When the earnings characteristic of big bath and income smoothing is differentiated in terms of any association with a change in management,

the results remain unchanged. Similarly there is no significant association with the size of the asset impairment loss and a change of management.

This finding is again significant and provides further complementary evidence that appears to build up a picture in terms of the practice of asset impairment losses amongst FTSE 100 corporations that links to the earlier points discussed in relation to a desire to present a true and fair view of the economic circumstances of the corporation rather than behaving in a manipulative and opportunistic nature. The fact that a change of management is not associated with asset impairment losses may indicate that while clearly management do have discretionary choices, the motive for these is not as a direct result of a recent change in management.

This may be indicative of a desire to show a transparent view of the corporation, as was found to be the case in the extent of disclosure relative to the asset impairment charge, as well as the choice of valuation method relative to the asset type. Contemporaneously linked to these important points is the finding that contrary to prior reports, ViU is not predominately associated with big bath accounting, but rather in the UK context the asset type based upon information availability appears to be driving the choice of valuation method implemented.

9.9 Limitations of the Methods and Areas for Future Research

The methods employed to establish the presence of big bath accounting and income smoothing on the basis of an expected earnings approach have been used widely by other authors such as Moses (1987), Walsh *et al* (1991), Zucca and Campbell (1992), Beattie *et al* (1994), Rees *et al* (1996), Riedl (2004) and Peek (2004). As the methodology chapter highlighted, the three methods employed in this thesis adopt the expected earnings approach using the random walk concept that hypothesises that last year's earnings are as good a predictor as any for the estimate of current year's earnings.

In the case of method two, a simple random walk was used and also a random walk with drift using the average earnings for the previous three years was used (Zucca and Campbell (1992), Beattie *et al* (2004) and Christensen *et al* (2008)). The authors that use the expected earnings approach in order to identify the earnings characteristics of income smoothing and big bath accounting rely on the random walk approach as the trigger in the initial identification of the earnings characteristic. Many authors then go on to base a wide range of assertions relating to the earnings characteristic using this initial identification using an expected earnings approach. The use of expected earnings is a critical part of the identification of whether the earnings are characterised as income smoothing or big baths.

9.9.1 Income Smoothing Anomalies and Areas for Future Research

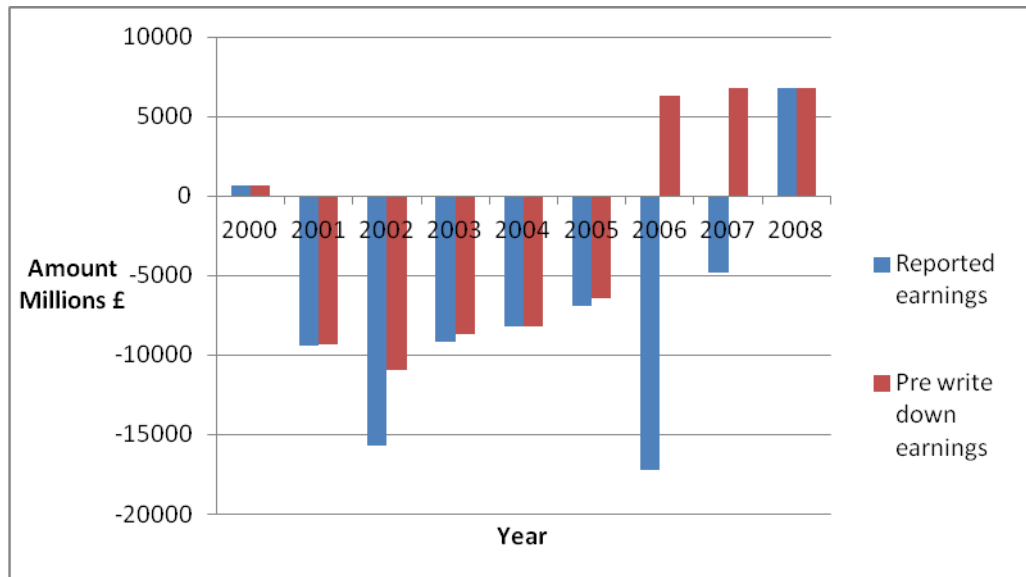
As has been shown with the examples in this chapter and also in the methodology chapter income smoothing is identified when current year pre write down earnings are higher than expected earnings and the asset impairment charge takes this figure closer to expected earnings. A critical factor here is that the size of the asset impairment charge is not taken into account, but rather the direction of the asset impairment charge relative to the position of the expected earnings.

This can lead to corporations having what might appear to be a big bath in terms of the size of the asset impairment charge, but because the current year earnings are sufficiently large and prior year earnings are depressed, the characteristic of income smoothing or an inconclusive result is identified, when intuitively, if a corporation has a large write off, this would tend to be associated with a big bath rather than income smoothing.

A good example of such a case in the sample data is that of Vodafone. This company has repeated asset impairment losses throughout the sample period, with impairments reported in 2003, 2005, 2006 and 2007. The amounts disclosed as impaired represent some of the largest in the sample, being £485 million in 2003, £475 million in 2005, rising to a staggering £23,515 million in 2006 and finally £11,600 million in 2007.

These impairments should fit the definition of a big bath, just by their very extreme large size, yet, due to the noise in the prior years' reported earnings due to the fact that Vodafone has repeated asset impairments, the earnings characteristic identified, using all the methods, is that of income smoothing or an inconclusive result. The reason for this is clearly the fact that for each impairment year, pre write down earnings are higher than the previous year's earnings and not lower than expected earnings, hence the criteria for the identification of a big bath is not present at the very start of the process. This can be illustrated by way of a graph and this is shown in Figure 9.5 below:

Chart 9.5 Graph Showing Vodafone's Repeated Asset Impairments



As the graph above illustrates, Vodafone has a series of consecutive large impairment charges. It should be noted that the data 2001 and 2002 is outside of the sample data period, but has been included here for

completeness of the graph and was also included in the computation of the expected earnings using the random walk with drift method. For each of the asset impairment years, the expected earnings in the form of the reported prior year earnings are lower than the pre write down earnings of the impairment year, this therefore does not meet the model criteria of a big bath, as pre write down earnings are higher than expected earnings. This either produces an inconclusive result or is indicative of income smoothing, when in reality given the magnitude of the asset impairment charge, this would tend to point towards repeated big bath behaviour.

If 2006 is taken as an example, this can be summarised using the method one formula developed by Riedl (2004) as follows:

$$\frac{\text{PWE} - \text{EPY}}{\text{Total assets}} = \begin{matrix} \text{If above median of positive values} \\ \text{If below median of negative values} \end{matrix} = \begin{matrix} \text{IS} \\ \text{BB} \end{matrix}$$

Where, for Vodafone, the figures are (all in £ millions):

$$\frac{6,232 - -6,938}{126,738} = 0.10431 = \text{IS}$$

IS as above median of positive values, median = 0.043441

As can be seen, this produces a result above the median of all positive figures in the sample, so using method one, classifies Vodafone's 2006 annual report as an income smoother, despite the fact it has a massive asset impairment charge that would appear to be more characteristic of a big bath. The same outcome arises with method three, purely due to the

fact that the starting point for the identification of the earnings characteristic is pre write down earnings being considerably higher than expected earnings. Clearly if the starting point was vice versa, this would have had the chance of being classified as a big bather, but this is not the case with this particular corporation and this particular data set. All of the prior studies go on to infer many different outputs on the basis of this initial classification criteria and while for many corporations, such as those identified earlier, do fit neatly or nearly neatly into the classic income smoothing or big bath behaviour pattern, clearly not all of them do, as this example illustrates.

Using the same data for Vodafone for Method Two that adopts the Zucca and Campbell (1992) approach, the following result is produced:

Where	[PWE < EE] and [RE < EE]	=	BB	or
Where	[PWE > EE] and [RE > EE]	=	IS	
Where:	PWE =	Pre write down earnings		
	EE =	Expected earnings		
	RE =	Reported earnings		
	BB =	Big bath accounting		
	IS =	Income smoothing		

Where	[6282 < -6938] and [-17233 < -6938]	=	BB
or			
Where	[6282 > -6938] and [-17233 > -6938]	=	IS

Clearly, as the above figures illustrate, neither of the conditions are met for income smoothing or big bath accounting. In the case of a big bath, the first criteria is not met, as expected earnings of minus £6,938 million are lower than pre write down earnings of £6,282 million, so on this basis

the selection of a big bath is rejected, even though the second part of the criteria is met, with expected earnings of minus £6,938 million being higher than reported earnings of minus £17,233 million, after the large asset impairment charge of £23,515 million.

Additionally, as can be seen from the figures above, the criteria for the characteristic of income smoothing is not met either, as reported earnings are considerably less than expected earnings. This therefore produces an inconclusive result using Method Two, in which the characteristic of big bath accounting and income smoothing is not selected. Method Two using the random walk produced a total of 4 inconclusive results out of the sample of 94 corporations, so this clearly demonstrates the unusual nature of the asset impairment charge such as Vodafone's and also illustrates the fact that the majority of corporations did fit into a classification of either income smoothing or big bath accounting.

This is clearly a limitation when a company has exceptional earnings characteristics such as Vodafone over the sample period and while this may be against expectations, in terms of the impact upon the results of this thesis, it would actually add to the significance of the impact of a greater degree of big bath accounting taking place post the change in regulations rather than weaken any result. So while this may be a surprising limitation of the models employed with an extreme example, this limitation does not detract from the validity of the underlying results.

What is apparent is that size of the asset impairment charge should be taken into account in order to identify the earnings characteristic. Elliott and Shaw (1988) define a big bath as anything of 1% or more in relation to the book value of assets and this does seem a reasonable approach in terms of relevance of the size of the asset impairment charge from a materiality perspective. If this approach is taken it produces a total number of 24 big bathers out of the sample of 94, which is close to the 28 big bathers identified using methods one and two of this thesis and considerably higher than the 15 big bathers identified using method one. Although the 24 corporations identified as big bathers using the book value of pre write down assets are not directly the same as those identified in Chapter Seven, this does produce some further corroborative evidence about the earnings characteristics of the sample as a whole using different methods.

Another approach could be to consider the impact of the asset impairment charge relative to the pre write down earnings rather than using a random walk approach using prior year earnings, this is particularly relevant when corporations in the sample, such as the one under consideration, have repeated asset impairment charges that create noise in the stream of prior year earnings to the extent that an incorrect classification may be recorded. If this approach is adopted, with a threshold set of 5% of pre write down earnings being considered sufficient to be defined as a big bath in terms of the impact upon the earnings, the number of big bathers identified in the sample amount to a

total of 48 out of the sample of 94. Even when the materiality threshold is raised to impairment charges of 10% or more of pre write down earnings, this still identifies a total of 36 out of the sample of 94 as big bathers.

This large difference using the asset impairment charge as a percentage of pre write down earnings as opposed to identifying the earnings characteristic on the basis of expected earnings when compared to the methods employed in this thesis and to the identification of a big bath as 1% of book value of pre write down earnings is clearly significant.

This is a crucial point in terms of the ability of a corporation to absorb the asset impairment charge. This demonstrates that while the asset impairment charge as a percentage of both assets and revenues may be comparatively small, as the results in Chapter Seven highlighted, with a median of just 0.33% of assets and 0.36% of sales as shown in Table 7.11, when the asset impairment charge is considered relative to the actual earnings of the corporations, this suddenly becomes far higher at both a 5% and 10% materiality level and demonstrates that in terms of earnings, asset impairment charges have a high impact.

This is clearly an important area for consideration in terms of future research, with the emphasis on current year earnings rather than expected earnings based upon prior year earnings. This becomes even more apparent when the issue of noise in the expected earnings is taken into account due to the fact that 71% of the annual reports in the sample

are by corporations that have repeated asset impairments represented by a minority of 25% of corporations.

However, overall the three models used do appear to support the identification of income smoothing and big bath accounting, despite these limitations, and this assertion is confirmed when considering the ROA and ROS figures as further indications of the earnings management behaviour. The wider question of whether income smoothing is taking place at all and is a reflection of an attempt to faithfully represent the true and fair view of the business will be considered in the final concluding chapter of this thesis.

9.9.2 Big Bath Anomalies and Areas for Future Research

A big bath is identified using a similar method to that of income smoothing, with the key difference in terms of the expected earnings already being below pre write down earnings serving as the trigger for the identification of a big bath. This is the method used by other authors such as Zucca and Campbell (1992) and Riedl (2004). Again, the critical issue is that the trigger for a big bath is not necessarily the size of the asset impairment charge but rather the fact that pre write down earnings must already be lower than expected earnings. Method One of this thesis using the Riedl (2004) approach, does try and compensate for this issue by deflating the absolute numbers by the value of assets and then selecting those corporations that are below the median.

This does partly address the size issue in relation to identification of a big bath; however, using an arbitrary above or below the median of negative results could also result in unique characteristics of the data set being overlooked, for example, if the median represents a sample set with a particularly high or low level of asset impairment charges. The Method Two (Zucca and Campbell, 1992) and Method Three (Moses, 1987) approaches in this thesis use the full sample of those corporations that display the characteristic of having earnings already depressed prior to the impairment loss to identify the characteristic of big bath accounting, with the latter using sales as deflator.

The fact that Method One produced the highest number of inconclusive results and that Methods Two and Three produced the most conclusive results could be a reflection of the weakness of Method One. Given that two out of the three methods employed⁷¹ produced statistically significant results in terms of supporting the view that big bath accounting did increase post the change in the regulations may be interpreted as a weakness of the Method One. This view is also supported by the fact that the differences in the ROA and ROS figures also provide strong evidence to indicate the existence of big bath accounting across the sample corporations.

⁷¹ Method two employed both a random walk and a random walk with drift, with the former simple random walk method producing statistically significant results while the random walk with drift produced more inconclusive results. This could be due to the effect of repeated asset impairment charges upon the previous three years worth of earnings.

The size of the asset impairment loss and the association of this with the behaviour of a big bath is an important critical factor and, in the same context as the identification of the characteristic of income smoothing, the methods employed to identify big bath accounting purely on the basis of when pre write down earnings are already depressed and below expected earnings and the operation of the big bath takes these earnings even lower. The actual size of the asset impairment loss relative to the overall impact upon the corporations reported results, such as earnings or assets, is not taken into account.

This could therefore result in the categorisation of a big bath when the intuitive characteristics of a big bath, such as a large asset impairment charge, may not necessarily be present. Peek (2004) manages to address this problem in his study in which he clearly identifies those corporations with large big baths and those corporations with smaller big baths and this is one possible approach to overcome this problem. Peek (2004) uses an approach of below the median of the difference between pre write down earnings and expected earnings for large big baths and above the median for the same measurement metric for small big baths. This would result in a higher recognition of big baths for Method One, which has the highest number of inconclusive results.

Additionally, Method Three adopts a similar approach to Peek (2004) by not using an arbitrary above or below the median in order to classify the earnings management characteristic and this method has the least

number of inconclusive results. Although the term small big bath may be contradictory, this phenomenon could certainly be identified in this sample using the expected earnings approach. This is an area that could be investigated in any future research.

Another approach, as was highlighted in the previous section relating to income smoothing and Vodafone, could be to identify a big bath on the basis of its impact upon the financial statements, for example with reference to pre write down earnings in the current year or book value of assets. This would capture the essence of a definition of a big bath in terms of the magnitude and size of the asset impairment charge. This would also address the issue of the manageability of the asset impairment charge, as clearly this has been an important issue in relation to the impact of the asset impairment charge upon the reported information.

The fact that when the impact of the asset impairment charge as a percentage of pre write down current year earnings is used and 5% is set as a significant level of impact⁷² this produces a result of 48 big bathers out of the entire sample of 94 and even when the significance is relaxed to 10% of pre write down earnings, 36 annual reports are identified as big bathers. Both these results are considerably higher than the reported 28

⁷² 5% is used as often this is considered a material amount for the purposes of an audit. Additionally, while no prior literature appears to exist in terms of the impairment charge as a percentage of pre write down earnings, Elliott and Shaw (1988) do define a big bath as 1% of pre write down book value of assets, so 5% of earnings may seem appropriate relative to this amount.

big bathers in the sample using the expected earnings approach of Methods Two and Three.

Given the identified limitations of using the random walk approach with prior year earnings equivalent to expectations using current year pre write down earnings instead may be more representative of the impact of the asset impairment charge on the reported information. This is clearly worthy of further investigation in terms of a future area for research.

This approach would also complement the important corroborative statistical significance relating to the ROA and ROS data, which tends to demonstrate the existence of big bath accounting.

These are all possible approaches that would serve to strengthen the results rather than dilute them. So clearly while the use of expected earnings has been widely used in the past for a wide range of inferences relating to identification of earnings characteristics, it may not be the ideal method upon which to base a wide range of inferences. As this section has highlighted, the logic of the random walk approach may be open to question, but it is widely used, not just in the type of study evaluated in this thesis but also in a wide range of Finance related studies, so the implications of the expected earnings approach based upon previous year's earnings or a combination of previous year's earnings is clearly wide ranging.

However, on balance when used with other methods, what is clear is that the characteristic of big bath accounting does indeed increase post the change in the regulatory environment and income smoothing appears to be the dominant characteristic, if this can be considered an earnings management characteristic and this point will be evaluated in the final chapter.

9.9.3 Limitations of the Content Analysis

The limitations of this part of the analysis may relate to the fact that a word count in terms of the number of instances the key word appeared was carried out as opposed to the number of sentences or paragraphs. As was highlighted in the Methodology Chapter, the method employed in this thesis was justified on the basis of a word count providing an objective and unambiguous measurement of the extent of the disclosure relating to the key word. An area of further research could be to conduct a content analysis on the basis of sentences and paragraphs. This may serve to provide additional evidence of the correlation of the size of the asset impairment loss relevant to the extent of disclosure. Given that the key word appeared in a sentence and paragraph relating to impairment, the results might intuitively support the existing results, but clearly this is subject to further empirical work. Additionally the content analysis used in this thesis represents one methodology amongst several different methodologies, so that no one particular method is being overly relied upon in order to draw inferences from the results, but rather a range of

different methodologies are being employed and an integrated interpretation of the results using different methodologies is provided.

9.10 Summary

This Chapter has highlighted a range of findings that have appeared from the results. In isolation, each question has been answered with varying degrees of conclusiveness. Within the financial reporting environment it becomes difficult to draw conclusions from any one particular result in isolation. However, when the inter-relatedness of each question becomes integrated into a larger picture, a rich theme of findings can be drawn out of the empirical qualitative and quantitative work undertaken. As has been seen, a core theme in terms of whether, in the UK FTSE 100 context, corporations have a strong desire to report in accordance with the doctrine of the true and fair view while upholding the principle of conservatism that is enshrined within the financial reporting paradigm, is an interesting proposition. The next Chapter summarises the thesis and draws conclusions in terms of the contribution to the literature and knowledge from the user perspective, regulatory perspective, practice perspective and finally the theoretical perspective.

Chapter Ten

10 Summary and Conclusions

10.1 Introduction

This thesis provides a rich picture of the asset impairment practices amongst UK corporations. The findings and subsequent discussion draw together a wide range of issues in relation to the practice of asset impairment charges amongst FSTE 100 corporations and how this relates to earnings management both pre and post the change in regulations. The effect of the measurement and valuation method upon the earnings characteristics and asset type together with the extent of disclosure in relation to asset impairment losses have also been evaluated. Finally the association of a change of management and reported asset impairment losses was considered. This chapter seeks to synthesise these wide range of findings in terms of the contribution this study makes to the extant literature from a user perspective, regulatory perspective, practice perspective and finally draw some conclusions relative to the theoretical context within the financial reporting environment. This chapter also provides an assessment of the originality of the thesis.

10.2 User perspective

The user perspective for financial reporting focuses on the shareholders of the corporation, but increasingly users are perceived to be far more

wide ranging than just the shareholders. However, the IASB and ASB consider, in their concept documents, that the needs of shareholders can implicitly satisfy a wide range of user needs; this in many respects brings the issue back to the objectives of corporate reporting and what the aim of the corporate report is as a communication tool to these users.

The relevance of asset impairment losses to the objectives of corporate reporting are wide ranging. As has been seen throughout this thesis, asset impairment losses relate to the information utility of corporate reports in terms of conservatism, measurement and valuation bases, earnings behaviour, communication of information and also management changes. Phase A of the joint update project of the IASB conceptual framework was completed in September 2010 after a lengthy debate and this to a certain extent clarified the objectives of financial reporting with the following statement:

'To provide financial information about the reporting entity that is useful to existing and potential investors, lenders and other creditors in making decisions about providing resources to the entity.'

(IFRS Framework, Chapter 1, para 2)

The objectives introduced in the new IFRS Framework document are very similar to the objectives stated in the ASB's Statement of Principles in terms of identifying investors, both present and potential, with other lenders and creditors as the primary users and anybody else who

requires information as a secondary user. After a considerable feedback exercise by the IASB during which over 120 comment letters were received just in relation to Phase A of the updating process the objective of financial reporting was stated as providing information to users to enable them to make decisions about providing resources to an entity, including accountability of an entity's management.

The qualitative characteristics have also shifted in the latest conceptual framework chapter to a two tier identification of qualitative characteristics divided into fundamental qualitative characteristics and enhancing qualitative characteristics. Relevance and faithful representation are identified as the fundamental qualitative characteristics, with the characteristic of reliability being replaced with faithful representation. This move attracted some criticism in the form of comment letters from practitioners (such as the ICAEW), users (such as CRUF), preparers (G100), regulators (ASB) and academics (British Accounting Association) as faithful representation was considered a less widely understood and applicable characteristic than that of reliability.

However, the term faithful representation is associated with the overarching true and fair view requirement as well as being aligned to directors responsibilities in the US via the implementation of the Sarbannes-Oxley Act. The impairment of assets has many linkages with the notion of presenting a faithful representation of the corporation. The enhancing qualitative characteristics were maintained from the previous

Framework document as comparability, timeliness, verifiability and understand ability.

The Entity perspective as a theoretical context is identified as the primary focus of financial reporting in the new IFRS Framework document and thus focuses upon those providers of capital to the corporation as the primary user. The relevance of financial information from a user perspective is the balance between providing information that is sufficiently up to date with economic circumstances and this may include past performance, present circumstances and future prospects.

As the results from this thesis demonstrate, in the UK context, corporations are attempting to provide relevant information dependent upon asset type, as tangible assets are predominantly measured using NRV market values, while intangible assets are predominantly measured using ViU with discounted cash flow forecasts. This raises a question in terms of verifiability, however, as the results have also shown, the use of ViU does not produce a significantly higher degree of big bath accounting or income smoothing. This fact is evidenced by the value relevant levels of disclosure together with the fact that the management has not changed noticeably with an asset impairment charge. This reduces the likelihood of opportunistic behaviour and results in behaviour that could be perceived as goal congruent with the objectives of financial reporting in the form of providing information that faithfully represents the corporation.

From the user perspective the results also indicate that while a greater degree of big bath accounting does take place post the change in regulations, the overall effect of asset impairments fits into the earnings management category of income smoothing with an attempt to manage volatility and unexpected changes in performance. However, concurrent with this perspective is the fact that the results demonstrate an upper bound measurement of asset impairment limited to book value and this consequently can be associated with the desirable characteristic of conservatism within the financial reports (Watts, 2003a).

To summarise the findings relevant of the user perspective, the process of asset impairment is still a conservative one, even with the use of ViU. Although the extent of big bath accounting has increased with the advent of IAS 36 in the UK, this does not appear to have created excessive manipulation of the financial statements, given the associated levels of disclosure, the overall manageability of the asset impairment charges and the lack of opportunistic based management change motivated impairments. Additionally the valuation method is more dependent upon asset type and information availability. All these facts point towards the user perspective as being more informed and providing a greater degree of representational faithfulness in terms of the economic circumstances of the corporation based upon conditional conservatism as opposed to arbitrary amortisation which could be associated with unconditional conservatism, as a result of a change in the asset impairment loss recognition process.

10.3 Regulatory perspective

A core output from the empirical work of this thesis was to investigate if any particular change in financial reporting practice took place as a result of the change in the regulations from FRS 11 to IAS 36. As the results clearly demonstrate, the process of big bath accounting appears to have increased post the change in regulation. However, in terms of whether this shift is interpreted as a form of earnings manipulation or more an alignment of the financial report to the economic circumstances of the corporation is less clear.

The fact that arbitrary amortisation of goodwill over a specified twenty year period is no longer a requirement has resulted in alignment of the reported impairment reflecting a decrease in the value of intangibles. This decrease is conditional on the presence of an indicator and is synonymous with conditional conservatism in the case of intangibles. The fact that the process of a big bath reduces the book value of assets is also synonymous with conservatism.

Of importance also is the fact that the majority of asset impairments in this study do not significantly impact upon the reported financial statements and therefore may have been classified as income smoothers, when in fact, all they are is merely a reflection of the asset value rather than any particular relationship to earnings management.

While the phenomenon of big bath accounting has clearly been identified in the sample corporations, the process of income smoothing is far more succinct and overall has far less of an impact upon the reported financial performance.

The regulators have, in their various concept documents, always stopped short of recommending a particular measurement and valuation method for a particular asset type on the grounds of the unique circumstances of each corporation, its accounting policy choice and how it uses its assets. IAS 36 uses the deprival value approach with the upper bound being conservatively book value. Within this constraint, the highest and best use approach is adopted.

As the results of this thesis demonstrate, this approach has been implemented by UK corporations as adopting a ViU method for intangible assets and an NRV method for tangible assets, thereby the corporations have self selected a prescribed valuation method broadly based upon the asset type and information availability. This implicitly results in a fair value approach being taken in the asset impairment loss calculation. Despite the many reservations about this approach, in the UK context, this has not resulted in a high degree of ViU calculations being used to smooth income rather than recognise a larger big bath, as would be expected.

This appears to be synonymous with the desire for UK corporations to present a true and fair view based upon the information available to faithfully represent the economic circumstances of the corporation. Additionally the fact that corporations are disclosing more information relative to the impact of the asset impairment loss and this is not associated with an opportunistic change of management, points towards a concern for good corporate governance and a desire to present a true and fair view. This argument is also supported by the Efficient Market Theory in market based studies by authors such as Song and Yi (2010).

One of the areas that could be improved from a regulatory perspective and that is apparent in the results is the inconsistency in terms of the different types of definitions used to communicate the indicator of impairment. Most of the corporations are following the recommended disclosure of a discount rate in the cases where ViU has been used, but the background to how these DCF figures are produced and the assumptions upon which they are based appears to be very inconsistent, with some corporations providing in depth detail, while others are providing very little.

Clearly the fact that the extent of statutory disclosure is not related to the extent of the asset impairment charge in the same manner as the non statutory disclosure, may appear to indicate that corporations are self regulating the extent of explanation and disclosure in the non statutory section of the annual report and leaving the statutory disclosure with a

prescriptive amount of narrative that is not sensitive to the circumstances surrounding the asset impairment charge.

Additionally upon reading the annual reports, it is often far from clear as to which indicator of impairment, in line with IAS 36 or FRS 11, a particular disclosed indicator may fit. This is something that could be addressed from a regulatory perspective in terms of providing clear and unambiguous guidelines for corporations to follow for their explanations of the cause of the asset impairment loss. Clearly corporations are attempting to do this via communication in the non statutory part of the annual report and it would be good to have a greater degree of consistency in terms of identification of the indicators of asset impairment charges.

10.4 Practice perspective

As the results have demonstrated, the practice of asset impairment loss recognition provides a wide range of outcomes that have many implications in terms of the practical implementation of the regulations from the point of view of the preparers of the financial reports. The results here demonstrate that an increase in the extent of big bath accounting appears to have developed post the change in the regulations; this does not necessarily mean that corporations have deliberately set out to manipulate the financial statements with the use of big bath accounting. When the wider picture of the results is considered,

the extent of asset impairment losses across the sample corporations may be indicative of a desire to portray the economic circumstances of the corporation while still upholding the principle of conservatism within financial reporting within the spirit of the over-arching true and fair view requirement.

Importantly the management and accountants of the corporations who have implemented the change in the regulatory environment relating to asset impairment, in addition to the auditors who have provided an opinion on the information within the financial statements, may be seen to have acted responsibly in terms of not using subjective ViU calculations to unduly create a big bath or unduly smooth income, but rather to chose a valuation method suitable to the type of asset that is impaired based upon information availability.

Furthermore, when the extent of disclosure is taken into account with the discretionary choice available in the determination of the asset impairment loss via the use of the valuation method, corporations appear to be self regulating both these aspects of the asset impairment loss recognition process. This can be evidenced by providing levels of disclosure commensurate with the extent of the asset impairment charge together with a selection of a valuation method dependent on information availability linked to the economic circumstances of the corporation, rather than opportunistic manipulation of the information with the use of subjective ViU calculations.

Coupled to this fact is that management do not appear to be using big bath accounting as an excuse for management changes and a rich picture emerges of the practice of asset impairment loss recognition being implemented to provide value relevant information to the stakeholders of a corporation that is aligned to a true and fair view.

Additionally, the principle of conservatism enshrined within financial reporting is also being upheld and this is represented by sound corporate governance practices that serve to promote and provide confidence to investors and the wider stakeholder community in the form of providing information that is useful and trustworthy for the purposes of making economic decisions.

10.5 Theoretical context

To sum up the Thesis it is useful to re-visit some of the key theoretical issues outlined in Chapter Three and relate these to the findings within the thesis. While the results of the empirical work do provide some answers to the research questions, for instance:

- Asset impairment losses are predominately small relative to both sales and book value of assets.

- Post the change in the regulatory environment a higher degree of big bath accounting appears to be taking place as a result of asset impairment charges.
- The dominant earnings management characteristic as a result of an asset impairment charge is income smoothing.
- The choice of valuation method is closely related to the type of asset and the information available in terms of valuing that asset.
- The level of voluntary disclosure increases in line with the size of the asset impairment loss.
- Asset impairment losses are not significantly associated with a change of management.

These findings in isolation are interesting, but combined together a theme develops in terms of a certain characteristic present within UK financial reports.

Authors such as Laughlin (1977), Peasnell (1982), Whittington (1996), Buckmaster and Jones (1997), Page and Spira (1999), Bryer (1999), Alexander (1999), Macve (1999), Quattrone (2000) and Alexander (2003) comment that the absence of an over-arching *theory* for corporate reporting in itself leads to inconsistency in the financial reporting and regulatory process, and this causes subjectivity in the reporting process. Subjectivity within corporate reporting is a practical reality within the principles based practice of preparing accounts.

The principles, such as maintenance of capital (Aiken and Ardern, 2005), conservatism (Watts, 2003a), economic income (Revsine, 1981) and the numerous permutations relating to measurement and valuation are all clearly related to an over-arching theoretical context, however, often these principles and methods are confused as being 'accounting theory' (Higson (2003) p22 quoting (Hylton (1962:22)) when in practice they relate more to how corporate reports should account for certain items within the financial report and over time different circumstances will require different accounting treatments due to the evolutionary nature of financial reporting (Edey (1977), Baxter (1981), Whittington (1996), Tweedie (1996) and Rosenfield (2005)).

Several authors such as Edey (1977), Laughlin (1977), Alexander (1999) and Quattrone (2000) have put forward hierarchical knowledge based views of corporate reporting that adopt an over-arching meta-level approach to theoretical thought that draw on the epistemology of accounting practice. This highlights the importance of the 'true and fair view' opinion that is stated by auditors within the financial report (Higson, 2003) and can be related to the representational faithfulness that is inherently required within the corporate report (Alexander and Archer, 2003).

The results of the empirical work of this thesis highlight the different principles at play⁷³ within financial reporting practice in the UK environment with regard to asset impairment losses. An over-arching theoretical application of the true and fair view could also be implicitly present from the results on the basis of the ontological properties that form the basis of the epistemology of the corporate reporting environment.

The importance of conservatism within the asset impairment review process, as the literature highlights, has a significant role that underlines the information asymmetry within the financial report and hence provides some 'boundary value' (LaFond and Watts, 2008). For investors in terms of their market valuation of the corporation, conservatism also provides a wide range of other functions within financial reporting such as contracting, income measurement, and litigation and regulatory constructs, (Watts, 2003a). All of which could be a possible reason for the existence of conservatism within the asset impairment review process.

The findings of this thesis have demonstrated that the mechanical process of asset impairment tests and its subsequent implementation results in the concept of conservatism being upheld. This is a well established concept upon which corporate reports have been based,

⁷³ Principles such as conservatism, capital maintenance and application of different valuation methods are evident in each of the research question answers.

along with the other concepts of going concern, accruals and consistency.

In the wider Meta level context, based on the findings of this thesis in the UK context, the true and fair view appears to have had an over-arching application in the asset impairment process. This is despite all the criticism and uncertainty surrounding the adoption of ViU alongside indefinite capitalisation of intangible assets leading to manipulation and avoidance of asset impairment charges.

This is congruent with the evolutionary nature of the detailed rules within financial reporting while still upholding the supremacy of the true and fair view for those corporations implementing an asset impairment loss. The next section considers the originality of the thesis.

10.6 An Assessment of the Originality of this Thesis

The primary requirement for a PhD thesis is that it make 'an original contribution to knowledge' (Phillips and Pugh, 2000). Originality can be manifest in a wide variety of ways. A review of the literature (Phillips and Pugh, (2000) and Collis and Hussey, (2009)) revealed at least 20:

1. Setting down a major piece of new information in writing for the first time
2. Continuing a previous, original, piece of work
3. Carrying out original work (designed by a supervisor)

4. Providing a single original technique, observation, or result, in an otherwise unoriginal but competent piece of research
5. Showing originality in testing somebody else's idea
6. Carrying out empirical work that has not been done before
7. Producing a novel synthesis of existing work
8. Using existing material to provide a new interpretation
9. Trying out something that has previously only been done abroad
10. Taking a particular technique and applying it in a new area
11. Bringing new evidence to bear on an old issue
12. Being cross-disciplinary and using different methodologies
13. Looking at areas that people in the discipline have not looked at before
14. Adding to knowledge in a way that has not been done before
15. Worthy, in part, of publication
16. Originality as demonstrated by the topic researched or the methodology employed
17. Evidence of an original investigation or the testing of ideas
18. Competence in independent work or experimentation
19. An understanding of appropriate techniques
20. Demonstrating an ability to make critical use of published work and source materials.

This thesis is original in a number of respects, covering the majority of the 20 attributes listed above. These are described below with references to the criteria where appropriate.

The empirical work in the thesis in terms of providing a detailed assessment of the practice of asset impairment losses and their associated disclosure in the UK FTSE 100 corporations does not appear to have been done before when doing a search of the literature. Additionally the detailed assessment of the changes in earnings management characteristics post the change from FRS 11 to IAS 36 in 2005 in the UK has not been studied before. This therefore highlights the originality of the thesis in terms of setting down a major piece of new information for the first time (Point 1).

The thesis is also partially relevant to point 3, in terms of carrying out original work, with the exception of the fact that the techniques were not designed by any supervisor, but rather a combination of existing techniques and methods used to analyse original information (Points 4 and 5). The idea for the thesis arose out of a prior ACCA grant funded project (Andrews, 2006) and this provides relevance to point 2 in terms of continuation of a previous, original piece of work in the area of asset impairment, although in terms of originality, a totally different data set and methodology were employed in the current thesis when compared to this earlier work by the current author.

The methods employed do relate to other people's ideas (Riedl (2004), Moses (1987) and Zucca and Campbell (1992), for example) but have been employed in an original context that produces empirical work that has not been done before; this relates to points 5 and 6.

The methods employed used existing secondary data in the form of the annual reports and the FAME database and were collated, analysed and interpreted, using established methodologies; this relates to point 8 in terms of using existing material to provide a new interpretation. In this context existing material relates to the fact that secondary data was used in the empirical work for this thesis and it was transformed into data suitable for interpretation of the research questions using established methodologies.

A change in the regulatory environment and the impact upon earnings management characteristics formed a focus for part of the empirical work relating to this thesis. This aspect of the thesis was motivated by earlier work in the US by authors such as Riedl (2004), Beatty and Weber (2006), Jordan and Clark (2004) and Jarva (2009) who all examined an earlier parallel regulatory change in the US financial reporting environment relating to fair value and asset impairment. This meets the criteria for point 9 in terms of applying research that has been done abroad.

In terms of the content analysis of this thesis, this used the technique adopted by Linsley and Shrivies (2006) in relation to risk reporting disclosure and applied it to the area of asset impairment disclosure. Additionally the quantitative and qualitative techniques employed in this

thesis have been applied in different areas and contexts and this relates to point 10.

Chapter Two demonstrated the historical significance of accounting for write offs and reporting the diminution in value of assets in published financial reports. This demonstrates that asset impairment is indeed an old issue, even though the word impairment was not used explicitly, the idea of writing off or writing down assets and the question of how to measure and value assets has been a contentious one for a considerable period of time. This is also demonstrated throughout the literature relating to the theoretical context in Chapter Three and the measurement and valuation of assets in Chapter Four. The empirical work in this thesis brings new evidence in the UK context to an old issue, thus satisfying the criteria of point 11.

The empirical work in this thesis is not explicitly cross-disciplinary; however, it does combine a range of different methodologies and partially meets the criteria for point 12. The thesis has looked at the area of asset impairment in considerable detail, from both an earnings management perspective and a comprehensive disclosure perspective and this has not been done previously, in the UK context. This originality meets the criteria in points 13, 14, 16 and 17 above.

Finally in this section, the extensive methods employed using the rich range of information demonstrates competence in independent work and

an understanding of appropriate techniques in order to provide answers to the research questions. This provides originality evidence for points 18 and 19.

The extensive review of a wide range of literature in this thesis also demonstrates the ability to make critical use of published work. The use of the secondary data also demonstrates the ability to make critical use of source materials. These two points provide evidence for the criteria in point 20. It is also hoped to submit some of this work for publication and this will provide originality in the context of point 15. The final section concludes the chapter and the thesis.

10.7 Conclusion

This thesis has provided a comprehensive evaluation of the practice of asset impairment amongst the UK's largest corporations. The thesis has demonstrated the complex background to the measurement and valuation of assets and the relationship of these methods to the theoretical context of financial reporting. The empirical work has identified earnings management characteristics of big bath accounting and income smoothing as a result of asset impairment losses. The extent of disclosure has been comprehensively evaluated to provide a view of corporations that disclose information in their annual reports relative to the size of the asset impairment charges.

The thesis provides a wide range of findings that contribute to the literature across a wide range of perspectives that has implications for users, regulators, practitioners and academics by providing a diverse range of empirical findings relating to the practice of asset impairment. The extent of earnings management, disclosure and the theoretical context have a complex interrelated thread that spans a wide range of issues relevant to the financial reporting environment and this will continue to be an area rich for future research.

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12 Appendix

12.1 List of Corporations with Asset Impairment Charges

Sample of Corporations Used in the Thesis

	Company	Impairment £m
1	Amec	7.0
2	Anglo American	69.2
3	Anglo American	67.9
4	Associated British foods	5.0
5	Astra Zenica	21.3
6	Astra Zenica	60.0
7	Astra Zenica	9.0
8	BAE Systems	20.0
9	BAE Systems	34.0
10	BAE Systems	148.0
11	BAE Systems	45.0
12	Balfour Beatty	4.0
13	Balfour Beatty	16.0
14	BG	14.0
15	BHP Billiton	16.0
16	BHP Billiton	62.0
17	BHP Billiton	20.0
18	BHP Billiton	3.0
19	Boots Group	0.2
20	BP	56.0
21	BP	34.0
22	British Airways	58.0
23	British American Tobacco	58.0
24	British Land Company	240.0
25	Cable & Wireless	5106.0
26	Cable and Wireless	8.0
27	Cairn Energy	29.6
28	Centrica	65.0
29	Compass	95.0
30	Daily Mail & General Trust	9.4
31	Daily Mail & General Trust	48.3
32	Daily Mail & General Trust	165.0
33	Daily Mail & General Trust	59.2

34	G4S	3.0
35	GKN	94.0
36	GlaxoSmithKline	119.0
37	GlaxoSmithKline	56.0
38	GUS	19.0
39	Hays	442.8
40	Hays	4.0
41	Hilton Group	11.3
42	Icap	2.7
43	Icap	8.0
44	Imperial Tobacco	21.0
45	InterContinental Hotels Group	28.0
46	InterContinental Hotels Group	7.0
47	InterContinental Hotels Group	73.0
48	International Power	47.0
49	Invensys	1.0
50	Kingfisher	24.0
51	Kingfisher	8.0
52	Kingfisher	2.0
53	Lonmin	4.0
54	mmO2	8300.0
55	National Grid Transco	293.0
56	Reckitt Benckiser	3.0
57	Reckitt Benckiser	2.0
58	Reckitt Benckiser	27.0
59	Reuters	44.0
60	Reuters	3.0
61	Rexam	6.0
62	Rexam	50.0
63	Rexam	1.0
64	Rexam	17.0
65	Rio Tinto	408.0
66	Rio Tinto	120.6
67	Rio Tinto	11.0
68	Rolls-Royce Group	33.0
69	Rolls-Royce Group	17.0
70	SABMiller	4.0
71	SABMiller	29.0
72	SABMiller	3.0
73	SABMiller	11.0
74	Severn Trent	47.0
75	Shire Pharmaceuticals	311.9
76	Shire Pharmaceuticals	93.7
77	Shire Pharmaceuticals	448.8
78	Smiths Group	2.2

79	Thomas Cook	5.5
80	Tomkins	72.9
81	Tomkins	0.4
82	Tomkins	5.9
83	Unilever	262.0
84	Vedanta	10.3
85	Vodafone	475.0
86	Vodafone	485.0
87	Vodafone	23515.0
88	Vodafone	11600.0
89	Whitbread	15.5
90	Wolseley	186.0
91	Wolseley	5.0
92	WPP Group	36.0
93	WPP Group	48.2
94	Xstrata	704.0