

FINANCIAL INSTRUMENTS DISCLOSURE: THE ROLE
OF ACCOUNTING STANDARDS

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Abstract

A significant number of studies have pointed to inadequate disclosure of the hedging process by companies of both details of instruments used and the clarity of information. Following the adoption of IFRSs, UK companies started reporting under IAS 32 and 39 from the accounting year beginning from 1st January 2005. This required more relevant information to be disclosed when compared with the requirements of FRS 13 under which UK companies reported prior to 2005. The adoption was consistent with reporting practices of other countries within the EU.

This study investigates the extent to which non-financial sector firms in the UK have complied with the requirements of IAS 32 and 39 and what the value of this disclosure has been to investors. The thesis reports on a sample of 182 firms using content analysis to evaluate reporting level in comparison with the requirements of the standards. The thesis also uses cross sectional analysis of the market model to assess the extent of disclosure on excess returns.

The findings show that companies reported more on derivative use under the international standards than under UK GAAP, suggesting that harmonization of reporting practices are on course in the UK. Secondly, companies that reported financial instruments under these standards have a lower risk-adjusted discount rate. This translates to lower future returns and higher current prices, meaning current increased market values. Further division of companies into those who disclosed at low, medium and high levels, shows that companies that disclosed at medium and high levels have a lower risk-adjusted discount rates. This suggests reduced risk and higher current market values for these firms. These findings supports our earlier findings just as they support the theoretical insight that increased disclosure means increased transparency that should positively affect firm value and vice versa.

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Dedication

This thesis is dedicated to the Almighty God and my family

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Abbreviations

ACCA	Association of Chartered Certified Accountants
APT	Arbitrage Pricing Theory
ASB	Accounting Standard Board
ASC	Accounting Standard Committee
ASSC	Accounting Standards Steering Committee
CAPM	Capital Asset Pricing Model
CIBC	Canadian Imperial Bank of Commerce
CIBC	Canadian Imperial Bank of Commerce
CIMA	Chartered Institute of Management Accountants
ED	Exposure Draft
EMH	Efficient Market Hypothesis
EU	European Union
FASB	Financial Accounting Standards Board
FIDP	Financial Instrument Discussion Paper
FRC	Financial Reporting Council
FRED	Financial reporting exposure draft
FRR	Financial Reporting Release
FRS	Financial Reporting Standards
GAAP	Generally Accepted Accounting Standards
IAS	International Accounting Standards
IASB	International Accounting Standard Board
IASC	International Accounting Standard Committee
ICAEW	Institute of Chartered Accountants, England and Wales
IFIRC	International Financial Reporting Interpretations Committee
IFRS	International Financial Reporting Standard
LSE	London stock Exchange
MSCI	Morgan Stanley Capital International
NPV	Net Present Value
OLS	Ordinary Least Square
PAT	Positive Accounting Theory
SEC	Security and Exchange Commission
SFAS	Statement of Financial Accounting Standards
SIMEX	Singapore International Monetary Exchange
SSAP	Statement of Standard Accounting Practice
WACC	Weighted Average Cost of Capital

Chapter 1: Introduction

This chapter introduces the study by explaining the motivation for the study, problems to be investigated as well as the goals and objectives. Other sections in this introductory part include a description of the methodology chosen and a brief summary of the thesis, which highlights what to expect in other chapters.

1.1. Motivation/Statement of Problem

The issue of whether enough information is being disclosed in annual reports for users of financial information, most especially investors/shareholders has been ongoing for some years in financial reporting. The issue of derivative use in firms and whether managers are disclosing enough information regarding derivative instruments that are being used by non-financial companies to manage financial risks are dominant arguments in financial economics. These arguments arose because of bankruptcies and near collapses, which are derivative-aided, that pervaded the 1990s and 2000s (Dunne and Helliar, 2002 and DaDalt *et al.*, 2002). Examples include the Enron case on energy derivatives as a contributing factor to its collapse, Barings Bank's loss of £927 million speculating in futures contract, Metallgesellschaft AG's future hedge losses of over \$1 billion (Brealey, Myers, Marcus, 2004 p. 678-679; Hogan, 1997) and the recent hedging failure of £391 million in Mitchells and Butlers that led to a loss of £274 million, which eroded shareholders' value by 30% (Financial times, 01/02/08). The loss was so monumental that it wiped out the total profit of the previous two years. Also, substantial empirical studies have documented inadequate reporting of derivative use in companies both in the US and the UK (Roulstone, 1999; Adedeji and Baker, 1999 and Marshall and Weetman, 2002) under various regulatory regimes.

Additionally, the clamour for harmonisation of reporting practices, which calls for reporting financial information under international accounting standards (IFRSs) as against local GAAPs, which is expected to increase what is being reported in annual reports. UK companies started reporting under international standards from the accounting year beginning from or after 1st of January 2005.

All of the above arguments seem to be saying that more information should be disclosed in annual reports. From the perspective of derivative use disasters, relevant information on the hedging process is required in order for shareholders to understand the hedging process and to make financial statements reliable for investment decision-making. From the perspective of harmonisation, financial statements ought to be comparable across companies and geographical divides. Consequently, this thesis has two central motives - to evaluate the extent of information on financial instruments with particular reference to currency derivatives used and disclosed in the first year of adoption. To do this, we use content analysis in order to capture the extent or level of disclosure in comparison with the requirements of relevant standards on financial instruments - IAS 32 and 39. Since the pioneering work of Holsti (1969) on content analysis, the method has been widely used by empirical studies, such as those of Barrett (1976), Cooke (1989) and Marston and Shrives (1991) to investigate and measure the extent of disclosure of items of interest to them (see chapter four for a more comprehensive discussion of the methodology). Secondly, the thesis also evaluates the effect of the level of disclosure on a firm's value of our sample companies using event-study methodology. This is to test the theoretical proposition that more transparent firms should have increased firm value. Event-study methodology is an approach popularised by the empirical works of Dolley (1933), Ball and Brown

(1968) and Fama *et al.*, (1969) which is used to measure the value of a firm through the use of financial market data (also see chapter four for a more comprehensive discussion on the methodology).

1.2. Objectives of the study

The central objective of this study is to expand the literature on disclosure of derivative use from the perspective of compulsory disclosure regime, which harmonization of reporting practices among companies in the EU represents. This is the expected result from analysing what they disclosed in respect of derivative use in their annual reports. This will consequently enable us to measure the extent to which the objectives of IASB are being achieved. We shall also be able to make inferences as to the level of transparency and extent of comparability of financial statements in general based on FASB frameworks and the hedging process in particular based on the expectation of IASB.

The study also examines the impact of increased disclosure on asset pricing in these companies. This tests the theoretical claims in the literature, which argues that increased disclosure means higher transparency, and that this should lead to an increase in shareholders' wealth or a firm's value (Ball and Brown, 1968). The study therefore examines whether there are excess returns, their impacts on the risk-adjusted discount rates and consequently on the market value of our sample companies. This study is an improvement on previous studies in the UK which have examined the extent of disclosure of derivative use in annual reports of firms carried out in both pre- and post-FRS eras, which have been dubbed the voluntary disclosure periods (Adedjei and Baker, 1999 and Marshall and Weetman, 2002). This study examines disclosures under the compulsory regime in which harmonisation is meant to enable comparison of annual reports among companies in the European Union (EU). This is because, for harmonisation to be meaningful, the intended benefits of comparability and improved

usefulness of financial statements must be achieved in accordance with FASB and IASB conceptual frameworks (IASB, 1998 and IASB, 2005).

This study also divided the sample firms based on the level of disclosure and the effect of this level of disclosure on a firm's value. We did this in order to capture their effect on asset pricing and consequently a firm's value. The study therefore also improves on earlier studies (Roulstone, 1999 and Dunne et al., 2004) by using market data to examine the reactions of the market to disclosure of derivative use.

In summary, the research questions are:

1. 'To what extents have UK companies complied with the requirements of IAS 32 and 39?'
2. 'What is the value relevance of disclosure of derivative use by UK non-financial firms under IAS 32 and 39?'

1.3. The choice of Methodology

The research uses both content analysis and event-study methodology.

It searched annual reports of sample companies for the disclosure of the requirements of IAS 32 and 39 to obtain the extent of disclosure in order to operationalise the first method. In doing this, the approach recommended and used by Holsti (1969), Marston and Shrives (1991), Roulstone (1999),

Marshall and Weetman (2002) and Lopes and Rodrigues (2005 and 2007) was adopted. (More on this approach can be found in sections 4.2, 4.2.1.....4.2.4)

Our second approach is the use of the market returns model, which is the normal return model developed in conjunction with portfolio theory (Ball and Brown, 1968; Schwett, 1981; Dimson and Marsh, 1986; Bens and Heltzer, 2004). Our choice of the market model is justified by the lack of size bias, as all our sample companies are large companies quoted on the London Stock Exchange (LSE) in FTSE 350. Dimson and Marsh (1986) suggest that non-existence of size bias is expected to produce robust results in comparison with the constant-mean-return model. We use this model to test two hypotheses with data obtained from our two sources – the annual reports of our sample companies and share returns, in regressions that tested the impact of disclosure under the two standards and level of disclosure with the inclusion of other variables (risk and performance factors) that have been tested by prior studies. (More on this approach can be found in sections 4.3, 4.4, 4.4.1 and 4.4.2)

1.4. Organisation of the thesis

After this introductory part of the study, there are six further chapters, organised as follows: Chapter two presents important theories that underlie the study. In the chapter we discuss and integrate theories such as agency theory, positive accounting theory and theories of regulation. Chapter three traces the history of accounting standards development and discusses issues in fair value, measurement, recognition and collateral disclosures. It also discusses relevant literatures on derivative instruments and their uses, information disclosure and its extent in different countries. In particular, we explore these issues in respect of the UK during and after periods of reporting under FRS 13, periods that have

been generally referred to as voluntary disclosure regimes. Chapter four is the presentation of the research methodology and data gathering, where the two main methods that are later developed into the two empirical chapters are explained. Chapters five and six are the empirical chapters, where the results are presented and reviewed with interpretations offered. Chapter seven is where we provide our conclusions, identify our contributions and suggest areas of future research.

Chapter 2: Theories, Hedging and Speculation

2.1 Theories

2.1.1. Introduction

This study is about the use of derivatives by managers of non-financial firms in the UK, the need for its disclosure in annual reports as well as the effect of the level of disclosure on a firm's value. The study starts from a review of important theories that drive disclosure of relevant and reliable information in accounting. To this extent, agency theory and positive accounting theory, which are the prominent theories in this thesis, will be explored. Their extension to issues of regulation, derivative use and disclosure are also discussed.

A body of regulations has prescribed what should be disclosed at different times in history to shareholders and investors in general. These include the Companies' Act, Accounting Regulations and Security and Exchange Commission (SEC) regulations in the US and the Stock Exchange Listing rules in the UK. These regulatory regimes have largely encouraged disclosure of relevant information in the annual reports as a way of presenting the stewardship of managers to users of accounting information especially shareholders. The rationale for managers' stewardship can be traced to the nature of residual claims and the separation of management and risk-bearing in firms. The separation creates a principal-agency relationship that has been widely discussed in literature, with many of the studies in this area emphasising that agency theory identifies trade-offs of risk sharing and other advantages that should accrue to the principal and agents (Fama, 1980 and Jensen, 1983). They also use the theory to explain the friction between the principal and the agent, which leads to agency problems arising from the inability of the principal to verify the activities of the agent that are unobservable to the principal.

They argue that the consequences, which include agency costs and bonding costs, are useful in explaining the survival of large and complex organisations.

Secondly, positive accounting theory complements agency theory as it is more specific to the issue this thesis is investigating. The theory uses accounting in explaining the relationships between those who provide resources to organisations. Deegan (2009: 257) refers to these parties as managers who are the providers of labour and managerial know-how, shareholders who are the providers of equity capital and the residual claimant and lastly the creditors. The theory also argues that when authority is delegated, the efficiency expected in the performance of tasks will be reduced, especially when remuneration is fixed by the contract between the parties (Watts and Zimmerman, 1978).

We use this chapter to review these two theories which helps us to lead arguments to accounting regulations and disclosure for stewardship.

2.1.2. Agency theory

Corporations as legal entities stand on the pillar of contracts among distinct individuals in terms of individual interests that are often diverse and conflicting (Jensen and Meckling, 1976). Much of what happens in organisations has therefore been largely influenced by the behaviour of these distinct individuals driven by the complex contractual systems.

Agency theory explains the contractual relationship that exists between the shareholders and managers arising from the separation of risk bearing and the control of decision functions in firms. Like most contractual relationships, the agency relationship requires faithfulness from both sides of the contract

for it to be truly enforceable. Analysis of the principal-agent relationship threw up two distinct but complementary issues, which are behavioural in nature for resolution (Jensen, 1986). The first is the issue of how the principal can observe the activities of the agent who performs various processes, operations and makes decisions for the principal in organisations. The second is the issue of conflicting goals between them with both of them having self interest far above that of the other. Since both of them in the relationship are utility maximisers then it is argued that the agent will not act in the best interests of the principal as to do so would minimise his self interest (Jensen and Meckling, 1976; Fama and Jensen, 1983). The two issues discussed above led to the agency problems that call for solutions, which in turn incur agency costs. Agency problems as argued by Jensen and Meckling (1976) arise as a result of conflicts of interest between the parties in a contractual relationship. Agency problems give rise to agency costs which include monitoring and bonding costs. It also includes residual loss which arises as a result of possible decline in the welfare of the principal as a result of differences referred to above. Jensen and Meckling (1976) argue that notwithstanding the incurrence of the above agency costs, there will still be some divergence between the decisions made by the agent and the expectations of the principal that would have maximised the welfare of the principal if the difference had been eliminated or minimised. The import of this argument is that, regardless of the incurrence of agency costs aimed at resolving the agency problems mentioned above, there are still frictions between the principal and the agent in organisations.

Jensen and Smith (2000) analysed the conflict of interest among stockholders, managers and creditors with particular emphasis on the principal agency relationship between stockholders and managers from the perspective of positive theory of agency. This is why they particularly emphasised the issues of residual claims and the separation of management and risk-bearing that characterise organisations.

Agency theory has developed along two approaches: the positivist agency theory popularised by Jensen and Smith (1985 and 2000) and the principal-agent theory with Jensen and Meckling (1976) and Jensen (1983) as proponents. Both perspectives, which we see as two sides of the same coin, are next discussed.

2.1.2.1 Positivist Agency Theory

There are a number of sources of conflicts between managers and shareholders. One arises as a result of management compensation contract. The conflict is basically due to differences in the lifespan of managers and that of the organisations. Positivist agency perspective argues that the structure of contracts limits risks undertaken by agents as a result of fixed compensation or compensation tied to stated measures of performance. The perspective also alludes to how residual claims to net cash flows also bring risks that are controlled with a limited liability clause to the claimants – the shareholders. The principal's unrestricted access to net cash flows throughout the lifespan of the organisation brings with it the possibility of not participating in the processes in the organisation (separability). It also brings with it rights to trade freely the residual claim which helps him to choose which risks to bear and in organisations that offer him residual claims (tradability). The above two conditions, separability and tradability, introduce separation of decision functions and residual risk bearing. According to portfolio theory, the opportunity to trade freely in common stock without any restriction, which leads to ownership of common stock in many companies, actually reduces the risks that shareholders take in organisations. Jensen and Smith refer to this as 'the efficiency in risk bearing' which they argue is an important reason why corporations survive, especially when there are large risks to be borne and activities and processes in organisation require economies of scale (Jensen and Smith, 2000).

Conflicts created by this different horizon can be solved by market-based compensation plans, which ensure that managers collect their remuneration based on the present value of the future stream of cash flows through stock options, stock appreciation rights or other variants of aligning their interest to that of shareholders (Brickley, Bhagat, and Lease, 1985). This way managers' penchant for taking too little risks is reduced as they now have incentives to increase debt, which increases the share value, his option and consequently a firm's value (Jensen and Smith, 2000). Studies have found the use of market-based compensation provisions leading to stock price increases that have been associated with anticipated productive increases, which confirm its suitability to controlling the horizon problems (Larcker, 1983 and Brickley *et al.* 1985).

Another way of reducing conflict of interest is when managers' compensation is tied to accounting measures of performance. This gives managers incentive to use accounting methods that shift future earnings to current periods in order for them to earn huge bonuses. Studies have shown that compensation policies are positively related to accounting policies adopted by managers as they examine the effect of such policies on bonuses to managers (Healy, 1985; Zmijewski and Hagerman, 1981)

A view of this model that is of interest to this study is how information systems can reduce possible opportunism of the agents, thereby moving the agent closer to the interest of the principal. The information effect of conflict of interest between the agent and the principal has been presented from two perspectives. The first is the perspective of the effect of an information system on efficient capital and labour markets as argued by Fama (1980). He argues that the perspective can reduce managers' opportunism. He explains that when managers behave in the interests of the principal as a result of the

release of information hitherto known to managers, it can show in a decrease in cost of equity and consequently cost of capital which results in an increase in a firm's value. This is also consistent with the conclusion of Wolfson (1985) and Barney (1988: 27) that higher level of information should be reflected in the market through a lower cost of equity, which means a higher market value. They argue that more information reduces managerial opportunism and co-aligns the interest of agents and principal because the agent realises that they cannot deceive the agent.

We therefore hypothesise that the disclosure of more information by our sample firms will be reflected in the cost of equity and consequently cost of their capital. This means that as the level of information released increases, cost of capital will be expected to decline, which consequently mean an increase in a firm's value (Fama, 1980; Wolfson, 1985; Barney, 1988: 27 and Jensen and Smith, 2000). This is also consistent with the literature that says more transparent companies should have higher market values (Basu, 1997; Ball *et al.*, 2003; Adam and Fernando, 2006).

2.1.3. Principal-Agent Research

This approach focuses on how optimal contracts are determined between the principal and agent as well as the behaviour of parties in the relationship and outcome of such behaviour. A number of models have been used to explain this approach.

One model put forward by Eisenhardt (1989) is the one that assumes goal conflict between principal and agent, and outcomes that can be reliably measured with the agent been more risk-averse than the principal. The agent's risk-averse nature is a result of his inability to diversify his employment unlike the principal who is able to diversify his risk by investing in other organisations. Two cases, one of

complete information and the other of inadequate information, can be used to describe the model. In the case of complete information, no agency problem arises, but in the case of inadequate information, given the self-interest of the agent, then he may not behave as agreed in the contract.

This leads to an agency problem, because the existence of different goals can result in what is referred to as moral-hazard and adverse-selection problems. Moral hazards arise because the agent may be shirking his responsibility towards the principal. The adverse-selection problem arises because the principal may not be able to verify the claim of the agent as to experience and expertise either during the process of hiring him or while he is working. These problems arise basically because the principal lacks the necessary information as he cannot observe the agent's behaviour.

Both scenarios point to a situation where one party of the contract does not have the required information about processes and transactions that lead into output or results that he expects from the contractual relationship. Eisenhardt (1989) suggests two ways by which the principal can gain entrance into the information system in order to gain knowledge of relevant information in possession of the agent. One is to provide incentives in the contract that will align agents' interests with that of the principal, the price of which is the transfer of risk to the agent. This makes the contract outcome-based, which is negatively related to the information system unless the outcome uncertainty is low such that it becomes attractive to shift risks to the agent. This makes the agent behave in the interest of the principal. The other is to invest in an information system that will reveal agents' information endowments or behaviour to the principal. This makes information purchased positively related to a behaviour-based contract, which reduces both moral-hazard and adverse-selection problems. This is done by giving support to regulations that prescribe the information to be released to the principal. In

the absence of moral-hazard and adverse-selection problems, the agent will also behave in the principal's interest and this is expected to be reflected in the value of the firm.

Conclusion

The two perspectives (positivist-agency and principal-agency) presented the theory from common perspectives of contracting and the agency problem. They both argue the resolution of the agency problem through the alignment of parties' interests using information systems, the control mechanisms especially in managers' compensation plans, and additional costs of monitoring incurred within the organisation, which limit the costs of separation of ownership (Fama and Jensen, 1983). From both the principal-agent and positivist-agency angles the need for information release by the agent to the principal is evident. The emphasis of the theory that the agent is risk-averse and self-interested, and with the existence of information asymmetry, suggests the need for regulation that will prescribe minimum information that managers should disclose. Before we examine regulation and disclosure, we turn to positive accounting theory (PAT) to support our understanding of agency theory. PAT is a fall out from the above issues in agency theory discussed above.

2.1.4. Positive Accounting Theory (PAT)

Positive theories of accounting are those theories that seek to explain and predict specific events and their impact on organisations. PAT attempts to use the political cost hypothesis to explain why firms make disclosures. The theory has its origin from Watts and Zimmerman's papers (1978, 1979) and their subsequent book titled 'Positive Accounting Theory' (1986). The basic assumption of the theory is that individuals act to maximise their own utility and from managers' point of view, because of self

interest, they lobby for the accounting standards that should govern their reporting practices as they affect the value of the firm. Watts (1977) argues that positive theory helps to understand the politics that drive accounting standard-setting process as well as the effects of accounting standards on different users of accounting information. This is consistent with Jensen's (1983) views that positive theory is about the discovery of some aspects of how the world behaves, for example, on accounting practices and how that behaviour affects the value of the firm. Positive theories therefore argue in support of managers' interest in those factors that affect the value of the firm. Managers' interests in a theory that increases a firm's value will only increase managers' wealth if their compensation is tied to an accounting measure of performance which gives managers incentives to use accounting methods that shift future earnings to the current period, so that they can earn substantial bonuses. Their wealth can also increase if share prices increase but their compensation plan will also have to be tied to such increases through stock options or appreciation rights. Watts and Zimmerman (1978) argued that managers with compensation plans tied to a stated measure of performance have an incentive to lobby for, and report under, accounting standards that report current higher cash flows that enhances their wealth while also increasing shareholders' wealth.

A number of studies have documented the strong pressure on standards setters from firms whose activities are to be regulated by accounting standards (Zeff, 1972 and Horngren, 1976). This immense pressure eventually determines which accounting standards see the light of day, which explains managers' eventual compliance or extent of compliance with the requirements of the standards. Belkaoui and Karpik (1989) and Lemon and Cahan (1997) also provide evidence that corporate lobbying precedes financial accounting standards setting in as much as the standards are likely to

affect future cash flows and earnings of the firm. Their evidence supports the political cost hypothesis of Watts and Zimmerman (1978, 1979).

Positive accounting theory is essentially about social disclosures in annual reports and factors that determine the level of disclosure. This was largely found in the argument of Watts and Zimmerman and other writers who attempted to test this argument. Notable among those who attempted to test their argument so closely are Belkaoui and Karpik (1989). Belkaoui and Karpik (1989) follow their argument in their investigation of determinants of social disclosures by using debt/equity measures of social and economic performance in addition to political costs hypothesis used by Watts and Zimmerman. They found size, beta (risk) and leverage significant in the model. This means that the above variables are partly able to explain social disclosures. Both size and beta are the proxies used for political costs, which are central to Watts and Zimmerman's argument. This further means that Belkaoui and Karpik concur with Watts and Zimmerman's argument. This may be because the large firms used in Watts and Zimmerman's paper are largely oil companies, and seven out of 33 companies used by Belkaoui and Karpik (1989) are also from the oil industry. The industry is known to contain large companies usually with large profits and also with political vulnerability arising from associated problems with the industry. The problems include environmental degradation and depletion of resources as well as exploitation of workers that often characterise oil companies. Although Belkaoui and Karpik (1989) uphold Watts and Zimmerman's argument that levels of social spending and/or disclosure by managers are ways of reducing current income, they failed to test the proposition. Both Reiter (1998) and Milne (2002) also criticised studies on social disclosure for failing to establish the wider basis for their findings, as they only used accounting method choices which are consistent with the aim of positive accounting theory. The aim of PAT is to present evidence of self-interested

managers who are using social disclosure/expenditure to manipulate current reported earnings. Such managers are also expected to be interested in accounting methods that will assist the achievement of this objective. Milne (2002) argues that using social disclosure testing positive accounting theory has largely failed to provide any link between social spending and disclosure, and other income-reducing accounting methods.

One way of testing positive accounting theory is actually to examine the effect of political costs and other variables against level of disclosure of derivative use for our sample companies that cut across industries but this thesis is not about factors that determine disclosure. However, the consideration of positive accounting theory in this thesis provides us with a hint that our level of disclosure can be tested against such variables as political cost proxied by size, beta and leverage in future consistent with the suggestions of Watts and Zimmerman (1979) and Belkaoui and Karpik (1989)

Reiter (1998) and Milne (2002) further criticised positive accounting theory on the account that the theory has not been able to justify many of its assumptions. Milne (2002) argues that managers' self interest in seeking to maximise their wealth through political lobbying for accounting standards have largely remained unsubstantiated. They also argued that the theory has failed to explain managers' social and environmental disclosure behaviour, which led to inconclusive proof of what constitute social disclosure. This would have enabled us understand the type of company that opposes accounting standards. The argument of the theory that companies that report high profits will oppose accounting standards that report higher earnings because of a possible increase in political costs, which they contend is a function of reported earnings, has not been proved. Companies with higher earnings are essentially large companies and their managers could not have opposed accounting standards that

should engineer what to disclose. Indeed, studies have documented strong associations between disclosure and firm size, as more transparent firms are expected to have higher market values (Gray *et al.*, 1995 and 2001). The theory is also criticised for its emphasis on reported accounting numbers without making reference to other required disclosures in annual reports, especially narrative disclosures (Patten, 1991).

However, a principal criticism of PAT, that its central assumption that individual action is motivated by self interest although perhaps a valid point, is not a useful criticism. This is because many theories in economics, accounting and finance rely upon such an assumption in order to model behaviour, and its limitations are well recognised.

One dominant criticism of PAT that is of importance to this study is that it does not prescribe alternative ways for practising accountants and researchers on how they should account for various transactions or events (Sterling, 1990; Howieson, 1996 and Milne 2002). This means the status of accounting remains unchanged even with the theory. This is one reason for the adoption of event-study approach, which has its basis in economics and finance to explain and predict the effect of the adoption of IAS 32 and 39 by large UK firms.

The implication of positive accounting theory for this study is that the adoption of the European version of IFRSs in general and IAS 32 and 39 in particular must have been subjected to political lobbying. PAT would suggest that it is in the self interest of managers; hence the objective of this study is to find how it benefits shareholders using the effect on a firm's value as our measure of increase in shareholders' wealth. So we can use insight from the theory to predict and explain the

effect of extent of disclosure on a firm's value consistent with its central focus. This is also consistent with the use of agency theory. The focus of the study is not on factors that determine social disclosure. However, it is expected that if managers have lobbied for the standards, this should show in how much has been eventually disclosed and the effect of disclosure level on a firm's value.

2.1.5. Regulations in firms

Theories of company regulation have been viewed from two perspectives that complement each other. These two perspectives as identified by Posner (1974) are first, for the public interest where there is public demand for intervention to correct failure of market forces for public good. The other perspective arises as a result of demand from interested parties in the stewardship of firms. This second view is what Stigler (1971) and later Peltzman (1976) discuss under agent-capture theory to support the need for information release by agent to the principal. Eisenhardt (1989) develops this under agency theory, arguing that the principal needs to support regulations that prescribe information to be released by the agent in order to reduce both moral-hazard and adverse-selection problems. His argument suggests that there was inadequate information provided from the agent to the principal as a result of self-interest of the agent, who may not have behaved as agreed in the contract. These problems are as a result of the inability of the principal to observe the agent's behaviour, which therefore requires mechanisms that can deliver necessary information to the principal.

A close examination of the above arguments shows that the need for regulation of activities of managers in firms is as a result of the complexity of the economic market, that suggests some possible imperfection which needs intervention if the various parties in the market, and indeed parties to the

contract, will get what might be termed equitable or their fair share of the market. Peltzman (1976) raised an important question of whether regulation of reporting practices can compel managers to release information about the firm in their empirical test. Our response is that with the existence of market imperfection and agency relationships within the firm, the existence of relevant regulation will bring transparency to the activities of managers. Regulations and compliance are beneficial to both the manager and users of financial statements as managers use disclosures to distinguish well-managed companies from badly-managed firms (Verrecchia, 1983; Dye, 1985; Healy and Palepu, 2001).

Regulation of financial reporting became important in view of the need for stewardship reports from the agent to the principal and market failure. Also, some recent developments have stimulated the discussion about financial reporting and disclosure regulations in many economies. These developments include global financial crises and corporate scandal, which often call for reform of existing regulations and increased reporting and disclosure requirements. The Asian Financial crisis of 1997 and the sub-prime mortgage crisis of 2007/2008, and as earlier mentioned, the collapses and near collapses of companies such as Enron in the US and Mitchells and Butlers in the UK are a few examples. Other developments include the adoption of International Financial reporting Standards (IFRS) by accounting standard bodies across the world in order to achieve the objective of harmonisation and convergence of reporting practices among companies across the world.

Three main regulatory sources are the Companies Act, accounting standards and SEC or the Stock Exchange Listing rules; these can be identified as regulations guiding what is disclosed in annual reports for decision making by users of financial statements, especially shareholders. Many studies have alluded to the importance of corporate transparency especially when viewed from the benefits it

brings to financial reporting, shareholders and disclosure regulations (Holthausen and Watts, 2001; Healy and Palepu, 2001). This is mainly to achieve the objective of financial reporting which is to guide and educate users of financial information. The FASB, which is responsible for regulating financial accounting practices and reporting, states the objective as ‘the provision of financial reporting that is useful to present and potential investors, lenders and other creditors in making decisions in their capacity as capital providers’. To achieve this objective of usefulness of financial reporting, FASB made reference to the need for information release to possess the qualitative characteristics of relevance, reliability, comparability and consistency (FASB, 2007). Various regulations of accounting and reporting practices have aimed at achieving this objective.

In the UK, the companies Act 1985 (CA 85) regulates the formation and activities of all British corporations - both limited liability and unlimited-liability companies. In respect of accounting and reporting regulations, the Taxation and Financial Relations committee of the ICAEW was established in 1942 prior to the birth of the accounting standards Board. The committee was saddled with the responsibility of considering and suggesting some aspects of accounts that should be made public to the council for the use of members (The Accountant, 12 December 1942). The ICAEW was later joined in the 1970s by other accounting bodies, such as the Irish and Scottish Institutes, the Association of Certified Accountants (now the ACCA) and the Institute of Cost and Management Accountants (now CIMA). They jointly established the accounting standards steering committee in January 1970. The objective is to develop ‘definitive standards for financial reporting’. This led to the publication of SSAPs, the first (SSAP 1) of which was issued in January 1971. A total of 34 statements were issue from 1971 to 1990 before the ASB was established.

The Accounting Standards Board (ASB) started regulating accounting standards that guide the preparation and presentation of financial statements from 1st August 1990. On taking over, they adopted some of the SSAPs that have been issued by their predecessor – the Accounting Standard Committee (ASC). The financial standards issued by them are known as Financial Reporting Standards (FRSs). A typical standard goes through the exposure draft stage for consultation and is known as a financial reporting exposure draft (FRED). In 2004 the Government took the decision to strengthen the regulatory system in the UK and this led to the adoption of IFRSs. On 12th of March 2002 a resolution was passed by the European parliament that all listed companies within the EU should prepare their financial statements under IAS. Listed companies in the UK were required to present their financial statements using the international accounting standards adopted by the EU for periods commencing on or after 1 January 2005.

Financial reporting in general and its components in particular are regulated in order for financial statements to make sense to users who rely on them for their decision making purposes. Decisions that have to do with optimal allocation of resources cannot be made in the face of inadequate disclosure of relevant information. Akerlof (1970) argues that an information gap between managers and shareholders is a potential problem that can militate against the existence of limited liability companies. This is because the allocation of scarce resources of savers will likely be misplaced because of inability of investors to distinguish between ‘good’ and ‘bad’ firms. To solve this problem, Healy and Palepu (2001) suggested that regulations that require managers to disclose prescribed information in the financial statement about specific components will go a long way in bridging the information gaps. They further argue that this will help users of financial statements in identifying firms that have a need of additional resources with an adequate return, which in turn ensures the

continued existence of the firm. Healy and Palepu's suggestion aligns with the recommendation of Eisenhardt (1989), who suggested the production of optimal contracts between the manager and the shareholder. This, he argues, will provide incentive to managers to disclose fully private information in order not to allow the existence of the misvaluation problem, since their interest is aligned with that of the shareholders. Since disclosing of reliable and relevant information is a means of communicating a firm's performance to investors, especially the residual claimant, there has to be consistency in the way items are treated in the financial statements. Limited companies have a statutory duty to comply with these rules.

2.2 Financial risks, derivative use, hedging and speculation

2.2.1 Macroeconomic risks and the firm

Firms face macroeconomic risks that affect business operations/activities and cycles which may threaten the achievement of its stated objective or its very existence and therefore need to be managed. Such macroeconomic risks, such as movements in exchange rates, interest rates, fluctuations in commodity prices and equity prices affect the fundamentals of firms and so make planning very difficult for managers. This is one of the many problems that management faces in firms, which cannot be attributed to agency issues. Using exchange rate risk as an example, as a firm internationalises its operation in production, sales and product marketing it faces this potential risk for most of its transactions. Taking earnings and cash flows of the firm for instance, the amount of fluctuation in earnings and cash flow affects so many other functions of management that it calls for attention from managers (Stulz, 1985). Such activities such as investment in profitable projects, dividend payments and how much to retain in the business for further growth, are substantially affected by volatility in these variables (Fox, 1977; Horne and McDonald, 2001). The requirements of

the agency contract, that managers should increase shareholders wealth, necessarily mean that they should be able to identify and assess the many risks that firms face in order to design appropriate approaches of how to manage these risks in order to increase shareholders' wealth and consequently the firm's value.

2.2.2 The necessity of risks in firms

A desire to earn above normal profit that is capable of increasing shareholders' wealth will theoretically bring increased risks to the firm, and this is what explains the potential risk that firms face while also justifying the legitimacy of risks in firms. This is because there is the risk-return trade-off that balances the return made to shareholders in response to the risk they face: the higher the risk the higher the return (Tufano, 1998; DeMarzo and Duffie, 1991). The main purpose of a firm investing in risky assets, and indeed its entire purpose therefore is to identify real and profitable projects, such that when discounted at their cost of capital will leave cash flows that will help the achievement of the firm's value for shareholders (Froot *et al.*, 1993). Fite and Pfleiderer (1995) argue that additional risks tend to increase the value for shareholders.

Managers are concerned with the non-diversifiable part of total risk, as this is what shareholders have employed them to manage in order to increase their wealth. Non-diversifiable risks are those risks that cannot be eliminated by adding more assets to an existing portfolio of assets. The diversifiable portion of total risk could be handled by shareholders through addition of new assets to the portfolio. Froot *et al.* (1993) identified two types of non-diversifiable risks as business and financial risks, both of which should be managed by managers. Business risks (or operating risks) result from the operation of the

firm. They argue that managers are expected to be able to manage this type of risk in order to exploit competitive advantage in operation, technology and the market in which they operate.

The other aspect of non-diversifiable risks includes risk brought by the mix of equity and debt as well as those brought as a result of volatility of those financial assets such as interest rates, exchange rates, commodity prices and stock prices. This volatility has become a threat to both the achievement of the objective of the firms and their existence, as the resulting cash flows and earnings of the firms become highly volatile and therefore less valuable to both managers and shareholders (Fite and Pfleiderer, 1995). Stulz (1985), Minton and Schrand (1999) and Allayannis and Weston (2003) report that financial risks arise from adverse changes in the short run in the financial assets, with adverse consequences and/or real losses to shareholders. Considering the magnitude of cash flow of each of these factors (interest rates, commodity prices, equity prices and foreign currency values) that a company undertakes, the need for greater management of the risk involved is justified. The degree of financial risks faced by firms has been established to be positively correlated with firm size (Banz, 1981). He argued that larger firms face increased financial risks arising from product diversification and internationalisation of their operations through offshore branches and subsidiaries. Though the risks are sometimes in the short run, depending on the cash flow exposure to any of the factors, the company may face the risk of outright losses that might undermine the firm's value and shareholders' wealth. Managers should manage these risks using such approaches as they believe could reduce the firm's exposure while also ensuring the achievement of the firm's objectives.

Financial risks as identified above expose the firm to volatility in interest rates, foreign exchange rates and commodity prices that could cause a change in a firm's value. Volatility in interest rates, foreign

exchange rates and commodity prices makes cash flows and earnings unstable. Volatility in cash flows and earnings makes planning for investment and dividend payment very difficult for managers and therefore reduces the value of future cash flows to the firm. Consistent with the objective of shareholders' wealth maximisation and an increase in a firm's value, management of these risks through appropriate approaches would likely assist managers to increase the firm's value, especially as managers enjoy information advantage over the shareholders (Bhattacharya, 1979; Healy and Palepu, 2001). Carey and Hrycray, (1999) and Healy and Palepu (2001) emphasise that reducing risk is not the same thing as managing risks, because firms with lower risks will in the long run earn lower returns because of the risk-return trade-off (Campello *et al.* 2005). Managing risks must create value especially as it is expected to reduce the chances of and the costly process of bankruptcy. It also makes it easier for firms to take on profitable investment projects which enhances the firm's value and shareholders' wealth as the stream of cash flows available from the firm to its shareholders become less volatile and therefore more valuable (Breen and Viswanathan, 1990). Crouby and Brigs (1993) argue that stability in valuable cash flows is one of the two ways a firm can add value to its shareholders, the second being lowering its discount rates.

Some risk management methods have been suggested in the literature. Crouby and Brigs (1993) argue that risk management using derivatives to hedge financial risks actually has value and therefore should be used to manage these macroeconomic risks affecting the operation and life of firms. They were supported by Froot *et al.*, (1993), Tufano (1996), Breen and Viswanathan (1998) and DaDalt *et al.*, (2002), who have also explored benefits of risk management through derivative use.

Other studies (Hall and Liebman, 1998; Green, 2001; and Harrington *et al.*, 2002) hold contrary views that there should be a company-wide risk management package that will confront the entire risks that firms face. According to them, without firm-wide risk management strategy, the deadweight cost brought, and frictions caused, by various activities in the firm cannot achieve the much-needed increase in the firm's cash flow and earnings aimed at increasing the firm's value. Some studies (Geczy *et al.*, 1997 and Fok *et al.* 1997) are however of the opinion that firms should employ other methods of managing risks, such as the use of foreign denominated debts as a natural hedge of foreign revenue, diversification (Fok *et al.*, 1997) and insurance (Merton, 1993). They also suggested that foreign operating cash flow should be used to finance foreign investment opportunities. They suggested other methods, although avoiding the use of derivatives; firms that engage in these strategies will still qualify as hedgers of financial risks that firms face.

However, it appears that managers are fascinated by what they believe are the benefits of derivatives in the management of financial risks. Grant and Marshal (1997) and Mallin *et al.* (2001) document widespread use of derivatives in managing these risks by UK non-financial firms in their survey of derivative users. Their findings are similar to those of Williams (1988) and Bodnar *et al.* (1995) who conducted their own studies in the US. The widespread use of derivative instruments must have been approved by shareholders only if the theoretical benefits of derivative use have been achieved in practice. Studies document such benefits as including the reduction in taxes, costs of financial distress and underinvestment problems (Myers, 1977; Stulz, 1985).

The rationale for corporate risk management can be derived from other angles or sources. Smith and Stulz (1985) and Mayers and Smith (1987) both argue that the rationale derives from firms contractual

commitment to bondholders that a particular risk management policy or asset volatility will be maintained. Following their conjecture of a contractual commitment, it can be said that firms that hedge their risks increase their optimal debt capacity, with the resultant increase in tax benefits brought about by leverage. This has a final positive effect on a firm's value for the benefit of shareholders, since bondholders are paid a fixed return. Although, this is one of the principal reasons for risk management as given by Ross (1973, 1996), the extent to which a company can add more to its capital structure continues to be debated, as too much debt can bring additional financial risks. We also note that risk management carried out for this purpose, though it might theoretically result in an increase in a firm's value, is not likely to reduce risk for equity holders since the higher the leverage the higher the risk faced by firms.

2.2.3 The nature and use of derivatives - Empirical evidence

The existence of risks in firms, and managers desire to manage them, means that managers should seek methods that will assist in the management of risk in order to bring benefits to shareholders. As noted above these risks bring volatility to cash flows and earnings which cannot be left unmanaged because of their effect on planning and firm's value. To manage these risks, studies have documented the availability and use of many methods of risk management. Such methods include the use of foreign debt financing as a financial hedge (Geczy *et al.*, 1997) , insurance (Merton, 1993), as well as the use of foreign operations as a form of hedge against foreign currencies (Fok *et al.*, 1997) which were documented to have been used by listed firms in New Zealand by Berkman *et al.* (1997). They noted that though firms in New Zealand hedged substantially using derivatives, 70% of the firms responded

in the affirmative to the use of foreign debt financing, while 65% said they used foreign operation as a natural hedge.

One way to manage financial risks that has been documented as widespread in the literature is through hedging using derivatives (Allayannis and Ofek, 2001). Smith and Stulz (1985) define hedging as when a firm is trading in a particular future, swap or option market, through the use of derivatives. They also noted that a firm can also hedge through its operating strategies to create the same effect as if it hedged using derivatives. They distinguish between these strategies using their treatment in the financial reports of the firm. While derivative use as a hedging strategy is viewed as ‘off balance sheet’, other operating strategies are referred to as ‘on balance sheet’ strategies and they include when a firm relocates its production facilities abroad or obtains funding in a foreign currency. Other studies see these ‘on balance sheet’ strategies as predetermined as well as natural and therefore strictly define hedging as the use of financial derivatives (Berkman and Bradbury, 1996; Gay and Nam, 1998; Howton and Perfect, 1998).

Derivative use as a hedging strategy has dominated academic debate and empirical researches because of the ‘perceived’ benefits derivative use brings to firms and which is believed leads to an increase in a firm’s value.

Derivatives are financial instruments typically used to manage financial risks faced by large and international firms. They are in contract forms with their values (forward contracts, options and swaps) tied to rate changes in the underlying securities (interest and foreign exchange rates). Using the example of interest rate derivatives, movement in rates can bring unpredictable interest payments over

the loan tenure, which is capable of affecting operational planning in firms. To ameliorate this, the company can enter into interest rate swap contract (fixed-for-floating, or rate tracking) or an interest rate cap contract. These contracts are like insurance policies whereby increase in rates are paid off leaving a fixed effect on interest payments, hence the management of volatility in expected cash flows and earnings of the firm. To this extent, financial derivatives ameliorate or counteract risks. Nevertheless, some important issues surround the nature and use of derivatives especially by non-financial companies who use derivatives in order to reduce their exposures to unexpected fluctuations in currency and/or interest rates.

Three studies carried out on derivative usage have been unanimous in most of their findings. Bodnar *et al.* (1995), whose study was based on US data, found that derivatives usage is common among large firms, with 65% of large firms that responded to their enquiries using derivatives to manage their firms' risk, with only 13% of small firms using derivatives. A second finding is that most of these firms stated they were using derivatives for hedging purposes and not for speculation. Finally, they also claimed they used derivatives to smoothen or reduce volatility in firms' cash flows. Williams (1988), using a different method that included government parastatal, educational institutions as well as large commercial firms found results that concur with the findings of Bodnar *et al.* in the US. He however found a higher percentage of small firms (56% as against 13 % found by Bodnar *et al.*) using derivatives.

In the UK Grant and Marshall (1997), using multiple data from different sources found, *inter alia*, that most firms that use derivatives use them to manage foreign exchange and interest rate risks and not to speculate. They came to this knowledge through answers provided to questions they asked managers

of these firms. Mallin *et al.* 2001 used a - 1997 survey questionnaire they sent to 800 UK non-financial listed firms that cut across size to examine derivative usage among these firms. They report the practice of using derivatives to manage financial risks among large UK firms. They found about 60% of the large firms surveyed using at least one derivatives instrument as against about 30% of small companies using the same instruments. This is consistent with the findings of Bodnar *et al.* (1995) and Williams (1988) both in the US. This is not surprising as they had used Bodnar *et al.* methodology and approach to investigate this issue.

Mallin *et al.*'s (2001) findings are also consistent with those of Grant and Marshall. They also reported that most UK companies that are using derivatives use them to hedge foreign currency and interest rate risks more than equity and commodity risks, going by managers' responses to one of the questions asked in the questionnaire. Consistent with the expected lesson firms might have learnt from reported high profile financial losses arising from derivatives use, many firms indicate that they use derivatives to smooth earnings (53%) and cash flows (38%). Other companies were silent or evasive on the real reason they use derivatives lending credence to the possibility of these managers using derivatives to speculate, just as those who responded could have lied. These findings therefore deviate from the literature that has substantially held that firms use derivatives to reduce volatility in cash flow, although their findings brought added advantage of derivative use to enrich the hedging literature.

Widespread use of derivative instruments in comparison with other methods of risk management has been explained in the literature.

Theoretically, five main justifications have been identified as benefits for corporate hedging, all of which are believed to lead to increase in firm' value consistent with the objective of the firm. These are minimisation of corporate tax liability, reduction of the expected costs of financial distress, amelioration of the conflicts of interest between shareholders and bondholders, as stability in cash flow and earnings make the planning horizon clearer. Others include improving the coordination between financing and investment policy/decision of firms; and maximisation of shareholders' value (Stulz, 1985; Tufano, 1996; Mansi and Reeb, 2002). Basically, hedging has benefits for managers and shareholders depending on an individual firm's financial and operating characteristics. These appear to reduce agency costs as the goals of both shareholders and managers appear aligned by the use of derivatives. The above benefits of, or justification for, hedging using derivatives have been debated in the empirical literature through examination of the relative importance of corporate hedging theories by empirically testing each of the rationales for hedging.

A body of literature has measured the impact of risk reduction approaches by managers for the benefit of shareholders through increase in wealth. Examples of such studies include those of Leland (1994), Tufano (1996), Guay (1999), Mansi and Reeb (2002) and Carter *et al.* (2006). The impacts that are found through analysis of firms' capital structure are: increase in tax benefit of debt, reduction in bankruptcy costs and eliminating the potential costs of underinvestment problem. Smith (1990) argues that underinvestment problem is substantially reduced when investment distortions associated with debt finance is curtailed. These are the benefits of risk management which should give incentives to managers to manage the risks that firms face, given that they are expected to demonstrate their ability to increase shareholders' wealth.

Apart from the above rationale, there are also many theories that have been advanced in the literature of why managers hedge. The logical beginning of the theory of hedging will be from the position of Modigliani and Miller (1958). According to them, in perfect markets hedging does not increase firms' value. They argue that entering into any fairly priced derivatives position does not create value. This means that the corporate position in hedging is not necessary as it does not affect firms' market value. They based their position on the assumption of perfect capital markets, where there is no transaction cost, and free and costless information meaning that shareholders have necessary information and would incur no cost in order to create their portfolio and consequently their desired risk profile. The implication of their conclusion is that individual investors can diversify the investment risk themselves, and therefore it might be irrational to hedge financial risks at the company level. This notion of an ideal market created by Modigliani and Miller (1958) has not only been refuted by them, other studies such as Smith and Stulz (1985), Froot *et al.* (1993), Allayannis and Weston (2001) and DaDalt *et al.* (2002) have also countered their position. Although many of these studies found M & M's argument inconsistent, they have used their work as the bedrock to develop the hedging theory and literature and how it affects firms' value. M & M's paper actually led to the two fundamental issues of whether firms should hedge and whether hedging affects firms' value.

Subsequent studies have therefore attempted to explain these fundamental issues by relating the risk management tool of hedging with firms' value. Many of the above studies premised their argument of the presence of market imperfection in the real world.

In real financial markets, firms face a variety of frictions, such as financial distress and bankruptcy costs, taxes, costly external financing, incomplete contracting and asymmetric information. Hall and

Liebman (1998) identify that the high costs caused by these frictions decrease if a firm's cash flow volatility is reduced. Therefore, they argue that hedging can increase firms' value if cash flow volatility is reduced. They aver that if managers use hedging to reduce the variability of pre-tax profit of their firms, then they are able to reduce their firm's tax liability and consequently increase expected post-tax value of the firm, subject to the cost of the hedge. By this they emphasise the cost-benefit consideration of managers' action so that firm value is not eroded. They noted that if the transaction costs of hedging are lower than the identified benefits then hedging will increase the firm's value. They also evaluated the amount of hedging undertaken in comparison with the hedging cost structure, and concluded that if the amount of hedging to be undertaken is lower than the cost required to hedge then the firm is better off not to hedge.

Smith and Stulz (1985) also advance reasons for hedging in view of the transaction cost of financial distress, especially when it leads to bankruptcy. They argue that hedging using financial derivatives can increase a firm's value by reducing volatility and likelihood of financial distress. They considered a level of debt in the capital structure of the firm, where a firm finds itself in a situation where it cannot repay the debt, given the costly nature of financial distress. They consequently noted that hedging can be used to increase debt capacity and thereby enjoy such advantage that debt brings in capital structure, such as tax advantage of debt.

This is supported by the findings of Hentschel and Kothari (1995) that leverage is positively correlated with derivative use, meaning that highly leveraged companies see the need to use derivatives to hedge their financial risks because of the tax saving from increased debt. Also, both Smith and Stulz (1985) and Myers and Smith (1990) hold the benefits as reducing bankruptcy costs and alleviating the

underinvestment problem. However, it is yet to be seen how risk management through hedging reduces bankruptcy costs when such hedges lead to increases in leverage as Hentschel and Kothari (1995) posited. This is because the opposite appears to be the case, as financial risk becomes aggravated with increased leverage, thereby pushing the firm closer to bankruptcy than away from it as increased leverage increases the risk of the firm.

Ross (1996) argues that if corporate hedging provides an opportunity for increased leverage, and the resultant tax benefits that follow becomes one of the reliable rationales for corporate risk management, it is difficult to see how hedging reduces bankruptcy. This is because as a firm hedge, its leverage increases, but the tax benefit may not be enough to ward off the financial risk that is increased through a lopsided capital structure that demands a larger amount of fixed interest to be paid, regardless of a firm's profit. This is the reason each firm tries to identify what the optimal hedging portfolio should be in the organisation. There is the right mix of capital structure for all firms, meaning that capital structure matters (Graham, 2000). Although what determines the optimal capital structure for an individual firm is debatable, it is generally believed that all firms face risks, some of which could arise as a result of its capital structure. This results from the fulfilment of contractual commitment to bondholders of a specific risk management policy and maintaining a particular level of asset volatility.

Prior to this time, firms have been very reluctant to disclose their hedging position and methods of hedging. It may be that they see it as not strategic enough for disclosure or even as proprietary information for the managers and not for the shareholders. This creates an information gap between them and shareholders and hence the exacerbation of the agency problem. It was only recently that managers were encouraged to disclose this information about their risk management activities and

their methods of hedging. For this reason the majority of earlier empirical studies made use of survey data in their examination of the determinants of corporate hedging. Respondents, mainly managers, were asked whether their firms used derivatives (Dolde, 1995; Nance, Smith and Smithson, 1993). These studies faced the issue of the reliability of their tests of the hedging theories in view of the shortcomings of usage of survey data which are the bias introduced into responses of respondents by both open and closed questions that characterise such surveys. Dolde (1995) argues that both types present difficulty of inference not only in absolute but also in relative terms. This is reinforced by non-disclosure in public documents such as the financial report that could corroborate answers to the survey undertaken. In order to support their findings from the surveys, many of these studies search firms' annual reports for statements that may suggest the firm is hedging by looking for such words like 'hedging', 'derivatives' or 'risk management' to provide qualitative disclosure that will corroborate their survey data (Fok *et al.*, 1997; Wysocki, 1996 and Geczy *et al.*, 1997).

More recently other studies have used quantitative data from annual reports of firms that use derivatives to hedge. This is consequent upon the support of managers by standard setters and relevant regulatory regimes to disclose their derivative use in both the UK and the US. This includes examination of voluntary disclosure of various and relevant accounting standards and their requirements in both the US by the FASB and later in the UK by the IASB. Such studies include Tufano (1996), Berkman and Bradbury (1996), Gay and Nam (1998), Graham (2000) and Allayannis and Ofek (2001).

This thesis also examines the disclosure practices of managers on derivative use as a result of the adoption of reporting under international accounting standards. This is done with particular reference

to derivative use reporting among companies in the UK as a form of compulsory disclosure of derivative use using companies' annual reports.

2.2.4 Hedging and Speculation—arguments and counter-arguments

In the previous section we noted increased usage of derivatives in managing financial risks that firms face as documented by Mallin *et al.* (2001), Dolde (1993), and Grant and Marshall (1997). Many studies have also documented theoretical benefits of derivatives as the rationale for this widespread use e.g. Smith and Stulz (1985) while some have also documented the use of derivatives for hedging and not for speculation e.g. Bodnar *et al.* (1995). However, some others have questioned the relationship between derivative use and their effect on firms' risk e.g. Hagelin and Pramborg (2004) and de Jong *et al.* (2006). Those who questioned it argue that if the motive for derivative use is to hedge firms' exposures then using derivative should reduce firms' risks. There are also stories of collapsed firms as a result of derivative-related disasters, which suggest that they were triggered by speculative activities for the purpose of profit making by managers (Leslie and Wyatt, 1992). Hull (2003) observes that substantial losses were recorded by speculative activities since the 1980s. Companies fingered in these derivative related losses include Barings Bank, Orange County, Mitchells and Butlers, Sumitomo as well as Enron among many others. Many of these firms use derivatives to take positions which were effectively speculating. This means that while some studies argue that the use of derivative instruments is consistent with hedging behaviour of firms e.g. Gay and Nam (1998) and Haushalter (2000), others have argued that managers use derivative instruments to speculate e.g. Campbell and Kracaw (1999) and Alkeback *et al.* (2006).

They noted that in some circumstances, firms have been found to take on additional risks by using derivative instruments. The incentives to increase firms' risks have been put in the domain of both shareholders and managers for the reason suggested by both Positive Accounting Theory and agency theory – self utility maximisation (Nguyen and Faff, 2010). They argue that managers take positions on market movement and accordingly trade as part of their daily operations because they benefit from any realised gains yet do not suffer to the same extent from losses. Such trading arising from taking a view of the market is usually without any underlying position to hedge firms' risks. They contend that this is speculation using derivatives and the effect of this is to increase firms' exposure to financial risks they should manage using derivatives

At this juncture, it is important to examine the difference between hedging and speculation. Hedging has been defined as the taking of offsetting positions in the use of derivatives to gain a balance of an underlying asset (Smith and Stulz, 1985). Instruments such as futures, swap or options are frequently mentioned as useful in hedging risks in currency and interest rate fluctuation. By hedging an attempt is made to eliminate the volatility that could be associated with the price of an asset through the taking of offsetting positions contrary to what the result would have been without taking such positions. By taking the opposite position for instance, on the currency rate fluctuation the risk of exposure to such a fluctuation is substantially reduced as both cash flows and earnings become less volatile. Speculation on the other hand is the profiting from betting on the direction in which an asset or currency/interest rates are expected to move (Adam and Fernando, 2006). This betting may be nothing more than guess work that may or may not materialise. While hedging is usually associated with managing the downside and protecting the upside, thereby smoothening earnings, especially when hedging is done

selectively¹ (Stulz, 1996), speculation is associated with and vulnerable to both the downside and upside of the market. This makes speculation extremely risky which can and has led to the collapse or near collapse of many organizations. Smith and Stulz (1985) describe the activities of speculators as high-risk trading with the inherent tendency of default. Adam and Fernando (2006) noted that although selective hedging is the preferred use of derivative instruments it may not be value maximising for the firm especially when it is done to speculate as a result of comparative information advantage. This is because speculations may lead to unlimited downside risks which if crystallised could lead to substantial losses, possible collapses or near-collapses.

It is generally accepted that business entities, especially non-financial firms, have no business speculating in the market. In the course of their operations they constantly face financial risks such as fluctuation in currency rates and interest rates that they will better manage through a number of methods, and derivative use has been documented as the prefer methods of most managers (Bodnar *et al.*, 1995; Mallin *et al.* 2001). The objectives are to stabilise financial positions of firms, to report informative and reliable performances and reduce the risk profile of the firm. As laudable as the above objectives are because of their nearness to the achievement of firms' objectives and possible improvement in principal-agency relationship, the wrong use of derivative instruments can also lead to mishaps. A thorough examination of derivative-related scandals shows that derivatives were often used as instruments of speculation by managers and that is the reasons such actions achieve the opposite of reducing risk. Although there appears to be a thin line between hedging and speculations using derivatives, they are indeed the exact opposite of one another. As has been pointed out above,

¹ Selective hedging means that organisations/firms should manage the difference between a rise in interest rates or foreign exchange and a fall in either of them. It is the difference between these two that is the gap firms should hedge to reduce risk

speculation achieves the exact opposite of the intended objective and advantages of derivative use by managers in firms. When derivative use is unguided or unregulated, managers may easily carry on speculation alongside the use of derivatives to manage financial risks legitimately. This is what necessitates the need for strong internal control and accounting regulations that will make transparent the hedging process in firms. The expected transparency will discourage speculation and make earnings informative.

In the light of the likelihood of using derivatives to speculate rather than manage risks, many studies have sought to find out the nature of firms that speculate, or whether firms use derivatives to hedge or speculate.

On the nature of firms that use derivative instruments to speculate, Stulz (1996) argues that speculation is noticed when managers hedge fully rather than selectively.

To put full or selective hedging² in clearer perspective, an aspect of managers' behavioural pattern which talks about managerial risk aversion that tends to make managers hedge fully is presented. Full hedging appears injurious to a firm's value as it eliminates the entire risk. Eliminating all risk in firms is not what the managers have been asked to do as this will only provide the shareholders with risk-free returns (Smith and Stulz, 1985). The attendant consequence of full hedging is the indiscriminate sweeping of the total down side and the upside. This affects the return of the firm by reducing such return to risk-free return level. Shareholders will not need managers to do this for them as they can effectively earn this risk-free return by depositing their money in gilts. Stulz (1996) therefore

² Selective hedging means that organisations/firms should manage the difference between a rise in interest rates or foreign exchange and a fall in either of them. It is the difference between these two that is the gap firms should hedge to reduce risk

suggested a model of selective hedging instead of full hedging as this can better predict corporate behaviour of increasing the earning potential of firms. Gay and Nam (1998) also support Stulz's selective hedging hypothesis and noted that it is based on comparative advantage to eliminate only the downside risk.

Fatemi and Glaum (2000) in their empirical work, argue that selective hedging is usually motivated by comparative advantage. They stated that a firm that enjoys advantage in the money market or the foreign exchange market/commodity market should use selective hedging as this will help to eliminate the downside risks and at the same time achieve the benefits of the upside outcomes. The implication of this is that those exposures that enable the firm to benefit from the upside outcomes will not be hedged, while the downside is hedged, thereby producing increased earnings. However, Adam and Fernando (2006) did not find reasonable significant gains beneficial to the firm for their sample firms in their study where they examined companies in the gold mining industry. This means that selective hedging may not be a value-maximising agent as initially posited by Stulz (1996) especially when it is used by firms to speculate as a result of comparative information advantage.

Adam and Fernando (2006) argue that selective hedging done as a result of comparative information advantage will also portray the use of derivatives as speculative instruments instead of using them to hedge financial risks. Speculative activities also manifest when managers move in the direction of an asset or currency instead of moving against it. It involves short-selling such assets or currency when seen as overvalued and waiting for its price to fall and buy the asset or currency back when the price falls, thereby making a profit. This may not happen; rather than make profit, they may indeed incur substantial losses as the price of the asset may continue to rise.

The implication of Adam and Fernando's submission is that speculation, whether characterised by full hedging as against selective hedging, or selective hedging as a result of comparative information advantage, or taking position through short selling overvalued currency, is indeed increasing the risks that firms face rather than reducing it. It aggravates fluctuations in earnings thereby contributing substantial noise that make earnings unreliable and making informed decision-making by users of financial information more difficult.

In practical life, the speculating firm is indeed very difficult to identify. Geczy *et al.* (1997) argue that this is because no firm expressly discloses such activity in its publicly available annual reports. It is also not easy to make inferences from their disclosure of derivative use. So subjecting their annual reports to content analysis may not reveal the use of derivatives to speculate. In order to identify firms that speculate, Geczy *et al.* (1997) used survey data together with data from prior surveys to identify firms that speculate, the extent of speculation and the controls in place. They found the monitoring and control of speculating firms bogus and ineffective. They found that although speculating firms frequently and regularly report their activities to the board of directors, use sophisticated valuation methods, document but rarely follow policies on derivative use, speculating firms are difficult to find in practice. They conclude that although derivative use is good for hedging purposes, managers also use the existence of derivatives to cover their speculative activities without the directors knowing until the usual negative outcome is visible.

Bodnar *et al.* (1995) also sought to find firms that speculate and resorted to an analysis of responses to one of the questions asked by the 1993 Wharton School/CIBC Wood Gundy survey in order to provide evidence of the types of firms that speculate.

The respondents were asked to answer, 'Frequently,' 'Sometimes,' or 'Never.' to the question, 'how often does your market view of (exchange or interest) rates cause you to actively take positions?' Those who answered 'Frequently' were viewed as speculators consistent with the definition of speculative activities given above. Although there could be response bias in answers given by their respondents, they argue that they took necessary steps to avert any serious impact that such biases could bring on their results. Bodnar *et al.* defend this view by identifying two important attributes of their definition of speculation. This includes the use of derivatives not because of its transaction cost advantage but because the firm believes that it has information advantage over the rest of the market. They held that this information advantage is indeed very crucial for speculation to be a positive net present value (NPV) project that is worth embarking on consistent with the earlier definition of making a profit out of it.

Secondly, they maintain that answering 'Frequently' to the question that does not intend to judge as to whether or not speculation is good in the affirmative by some firms actually exposed these firms. Although they agree that most firms set out to use derivatives to hedge risks that firms face, in this process, managers might find that they have some information advantage by comparison with others in the market and therefore begin to speculate. This is because it appears that speculation is costless as the cost of derivative use in organisations will remain fixed within a certain range. Therefore they

argue that with no additional costs, speculation becomes attractive, a sort of positive NPV project for managers as expected profit becomes absolute in what is seemingly a costless transaction.

This is part of the blurring between the speculative and hedging activities of managers. The decision of managers to use derivatives is to use it initially to manage risks. Speculative activities, on the other hand, may present the opportunity of quick profit with little or no cost, because the cost of speculation has already been incurred for the purpose of hedging. Given the operation of derivative use articulated above, shareholders may not know when derivative instruments are been used for hedging or for speculative activities until the damage is done. This is because the speculative activities of managers were not disclosed voluntarily as there were no regulations that compelled managers to disclose it.

The manager has difficulty in distinguishing between using derivatives to hedge and to speculate as they both appear to lead to the same result, i.e. an increase in profit. Speculation appears to provide managers with profit that they need in order to increase firms' earnings and consequently firms' value. They are therefore very quick to look at its likely benefit rather than the additional risks it poses. If managers succeed in increasing current earnings of their firms they become seen as valuable and their compensation may increase in the form of salaries, bonuses and realisation of share options. This self-interest appears to be one reason why it is difficult for managers to make decisions on hedging and speculation of derivative use. Given the above scenario, managers begin active trading based on market views with the aim of making profits but by increasing firms' risks. With the potential risk of financial distress more probable, yet no relevant information on these risks available to shareholders, it can be said speculation with derivatives clearly unsettles the notion of stewardship and the principal-

agent relationship (Geczy *et al.*, 1997; De Ceuster *et al.*, 2000; Mallin *et al.*, 2001; Bodnar *et al.*, 2003; and Alkeback *et al.*, 2006).

A number of factors identify firms that speculate. Firstly, speculating firms hold that they have superior information advantage over the rest of the market and this gives unnecessary confidence to managers (Diamond and Verrecchia, 1981; Stulz 1996) as they believe the information advantage confers comparative advantage over others to bear risk arising from their financial strength. However, many studies (Dolde, 1993; Bodnar *et al.*, 1998; Glaum, 2002; Faulkender, 2005; Adam and Fernando, 2006) have examined the issue of speculation in organisations with the majority of them concluding that speculation is not a value maximising agent but rather reduces firm value. These conclusions contradict the argument of Stulz (1996) on information advantage as a rationale for speculative activities and Campbell and Kracaw (1999) who argued that managers speculate for firms that have financial constraints which they need to overcome. They also conclude that executive ownership of stock or stock options aimed at aligning managers' interests with those of shareholders does provide an incentive for managers not to speculate (Alkeback *et al.*, 2006).

Specifically, most of the above studies carried out surveys in order to identify firms that speculate. The surveys include those of Dolde, (1993), Bodnar *et al.* (1998), Glaum (2002), Faulkender, (2005), Adam and Fernando (2006), Brown *et al.* (2006), Beber and Fabbri (2006) and Faulkender and Chernenko (2007).

The summary of their findings suggests that speculation is a common phenomenon among their sample companies, but that speculation does not generate significant profit to justify the widespread

use of derivatives to speculate. This suggests that speculation is not only risky but also value-minimising and not an activity that managers should engage in. Consequently, speculation by managers, as documented by Stulz (1996), involved their wrong belief that they can outperform the market. This is probably the reason many firms collapsed while others recorded near collapses as a result of *speculative*³ activities.

Some examples: Nick Leeson, a trader in Barings Bank (Singapore office) lost \$1.4 billion or £927m speculating in a futures contract on the Japanese stock market. In the same year, a trader in Daiwa Bank was reported to have managed to hide \$1.1billion losses over a period of 11 years in its New York office. Orange County also lost \$1.6b in its investment account in 1994 through its treasurer, Robert Citron, a 69 year old who was treasurer for more than 24 years. The company was declared the largest municipal bankruptcy in US history. The case of Metallgesellschaft is also disturbing - the company was using the futures market to hedge and they managed to lose well over \$1 billion.⁴

Using the case of Barings bank as an example, Leeson, who was entrusted with the responsibility of trading in Nikkel futures and options, started the bank's operations trading between the Singapore office of the bank and the Japan market in shares and government bonds through Barings Future Singapore (a private limited company) at the Singapore International Monetary Exchange (SIMEX). He made the reporting line to the London accounting and settlement staff ineffective by creating an account that was excluded from the scrutiny of head office staff. This account accumulated all the

³ The cases of Metallgesellschaft AG, Procter and Gamble, Orange County, California and Baring brothers, a blue chip British merchant bank that became insolvent, Sumitomo Corporation and the recent derivative use losses by Mitchells and Butlers are cases in point.

⁴ Source: Dunne and Helliard (2002), Hogan (1997) and Leeson 1996)

losses he incurred. Leeson was not only in charge of trading, he was also in charge of accounting and settlement which protected him from being discovered for so long.

With these horror tales, one is tempted to ask if firms should use derivatives, given that outcomes of improper usage and monitoring can be extremely costly. However, if usage of derivatives is disclosed comprehensively, which should include the objective of the use of particular/specific instruments, the internal control instituted as well as authority levels, relevant issues in fair value, recognition, measurement and remeasurement as they affect financial instruments, some of the cases above could have been avoided. The compulsory disclosure of the hedging process will lay bare the activities of managers in derivative usage. There is evidence that many organisations are simply speculating and not hedging. Even when hedging using derivatives some of these firms are not putting adequate controls in place for monitoring purposes.

From the above, we have a model of firms that venture into speculative activities not deliberately as part of the legitimate decisions that managers should take, but as a consequence of the managers growing powers that governance mechanisms of directors and shareholders have failed to regulate. It cannot easily be detected from the publicly available and statutory annual reports of firms, especially with only voluntary disclosure regimes of the hedging process and derivative use encouraged by relevant accounting standards such as FRS 13 and later IAS 32 and 39 in 2005 with the introduction of IFRS 7 in 2007 in the UK and SFAS 119 and later 133 in the US. This is partly what led to the adoption in many of the EU countries of a sort of compulsory regulation that is likely to improve reporting practices of managers to investors (Tay and Parker, 1990; Street and Gray, 1999; Lin and Wang, 2001; Ali, 2006).

In conclusion, the market and in particular shareholders cannot identify speculation from statutory annual reports, despite other evidence that some companies use derivatives to speculate. This is because speculation cannot be reported expressly on the public document as it does not meet the generally accepted accounting principle (GAAP) for reporting derivative use and the hedging process. This further means that financial statements do not contain information that is important for the use of shareholders and this is partly the reason for the corporate scandals arising from non-reporting of these speculative activities. How then can the use of derivatives for speculative purposes be released to the market and especially the shareholders as claimants of last resort? We argue that, since managers lack legitimacy for the use of derivatives to speculate, statutory regulation in compulsory form might be useful in identifying the speculative activities if the requirements of relevant accounting standards focus on relevant issues impinging on derivative use for hedging purposes. Reported deviation may therefore give clues to other activities of the firm, which may include speculating with derivative instruments.

What roles do the accounting standards, respective countries' local GAAPs or IFRSs have to play in ensuring that the market, and indeed the shareholders, becomes informed about these activities? From the above, we can infer that analysis of financial statement put in the public domain by managers does not reveal firms that speculate. Only firms' financial crises induced by derivatives-related losses of the 1990s and studies using survey data like Geczy *et al.* (1997), the 1998 Wharton School/CIBC Wood Gundy survey (Bodnar *et al.*, 1995, 1996, 1998), Glaum (2002), Faulkender (2005), Brown *et al.* (2006) and Faulkender and Chernenko (2007) identify the use of derivatives for speculative purposes.

Regulation of derivative use will help shareholders as managers will be compelled to disclose relevant information to shareholders. However, regulations alone cannot solve the problem of abuse of derivative use. Compliance needs to be monitored and ensured. Regulatory bodies, auditors and senior executive managers have a role to play in this. On a general note, internal control systems need to be strengthened as many derivative-fuelled disasters have been found to be as a result of weak internal control. Senior executive managers have a responsibility for an effective internal control system within the firm. This therefore calls for increased effectiveness of these managers. The auditors also need to design tests that can detect internal control lapses in order to identify likely abuse of derivative use. The level of disclosure should be audited in comparison with the requirement of relevant standards and findings reported as part of the audit opinion to shareholders. Auditors should also look for clues for possible abuse of derivative instruments.

Lastly, standards setters should not just stop at issuing regulations but should be interested in effective compliance of the regulations they have issued. They should develop appropriate mechanisms that will enable them measure the achievement of the objective of the particular regulation.

From the foregoing, we turn to the issue of disclosure of derivative use in annual reports. The next chapter examines the whole issue of information asymmetry, derivative use and the need to be transparent in reporting the hedging process. The next section argues that disclosure of information is more important when it has to do with the usage of financial instruments such as derivatives, which may be used for management of risks, but could also be used to speculate.

Chapter 3: Accounting Standards – Development and issues in IAS 32 and 39

3.1. Accounting Standards – History of development

Accounting standards evolved as a result of the need for consistency in the way various accounting items are treated in financial statements. This is to make financial statements reliable by users of accounting information who would like to rely on it for economic decision making. Companies have the statutory duty to comply with the requirements of these standards. Accounting standards have developed from respective national needs of different countries. Authors have identified various factors responsible for the creation and development of national accounting standards in these different countries. These factors include: objective of financial reporting, cultural factors, political/legal factors, economic factors, business/transaction complexity and capital market factors (Zeff, 2002). All of these factors, although not agreed by all actors in the accounting profession, have nevertheless been found to contribute to development of accounting standards in many countries.

In the UK, the development of accounting standards can be traced to the 1940s with the establishment of The Taxation and Financial Relations (T & FR) committee of the Institute of Chartered Accountants, England and Wales (ICAEW) in 1942. The committee was to ‘consider and make recommendations for the information of members’ (The Accountant, 12, December 1942). The committee started making recommendations from December 1942, which helped and guided members of the institute on accounting practice. Recommendations for accounting practice continued to be made to the ICAEW members by the T & FR committee until December 1969 when the ICAEW set out plans for accounting standards that would guide financial reporting from the 1970s. This led to the birth of the Accounting Standards Steering Committee (ASSC) with the objective of ‘developing

definitive standards for financial reporting'. From this point, other accounting bodies such as the Irish and Scottish Institutes, The Association of Certified Accountants (now the ACCA) and the Institute of Cost and Management Accountants (now CIMA) became members of the ASSC. Consequently, accounting standards as known today started being issued by the ASSC via Statements of Standard Accounting Practice (SSAP), the first of which was published in January 1971. Until its demise in 1990, 34 statements or revised statements were issued as SSAPs between 1971 and 1990.

The Accounting Standards Board (ASB) was created on the 1st of August, 1990 by the government through the creation of the Financial Reporting Council (FRC). The objective was to promote good financial reporting by companies in the UK. Standards issued are known as Financial Reporting Standards – (FRSs). FRSs started as exposure drafts during which stage interested groups in financial reporting were consulted before the issuance of the standards. The relevant standard governing the disclosure of derivative instruments was FRS13. The ASB took over and adopted some of the SSAPs that were in operation prior to 1990 and continue to issue FRSs until December 2004, before the adoption of International Accounting Standards issued by the International Accounting Standard Board (IASB). The international accounting standards were adopted by the government of the UK with among other objectives: to strengthen the regulatory framework of financial reporting in the UK along with other countries in the European Union through the regulation (EC) No 1606/2002 of July 2002.

The EU adopted international standards for use by companies in the European Union. The international standards, IASs adopted, included IAS 32 and 39. IAS 32 – Financial Instruments: Presentation and Disclosure, and IAS 39 – Financial Instruments: Recognition and Measurement were

the two standards governing the issue of how financial statements should present, disclose, recognise and measure financial instruments. They were adopted in 2004 by the European Union, becoming effective from 1st of January 2005. UK companies were mandated to report under these two standards instead of reporting under FRS 13 (UK GAAP) that was in operation prior to 2005. IFRS 7 was carved out of IAS 32 and became effective in 1st January, 2007 (see appendix 1) as financial instruments: disclosure, while IAS 32 became financial instrument: presentation also on this date.

The Accounting Regulatory Committee of the EU adopted all aspects of IAS 32 in Brussels on 1st of October, 2004. IAS 39 was also adopted with two modifications. The first was that companies should not use IAS 39 fair value option in respect of liabilities, and secondly, the use of fair value should be allowed for hedge accounting on interest rate hedges which are in respect of deposits on a portfolio basis. These two modifications affected only a small number of EU companies following IFRSs. They were also permitted to defer the application of IFRSs until 2007. This is why annual reports of companies that made our sample were searched for statements to confirm adoption of IFRSs (See chapter four). It is important to note that the first modification to IAS 39 was rescinded during the meeting held in June 2005, before the first set of accounts were prepared, leaving only the second amendment standing between what was adopted by the EU and IAS 39 (See appendices 2-4). It is noted that amendments and interpretations to IFRSs are ongoing and from time to time by the International Financial Reporting Interpretations Committee (IFRIC). Such changes may not be captured by a study that examines compliance with the requirement of the two standards in the first year of adoption.

The adoption of international standards by the UK along with other countries in the European Union has the envisaged advantage of increased disclosure when compared with FRSs. This becomes more glaring when relevant standards on financial instruments, FRS 13 and IAS 32 and 39 are compared as local and international GAAPs respectively. While FRS 13 is a disclosure- only standard, IAS 32 was for presentation and disclosure and IAS 39 for recognition and measurement. The adoption also has the added advantage of making financial statements of companies across the EU comparable. Comparability of financial statements becomes very important as global corporations and markets without geographical borders become apparent across the world.

3.2. Issues in developing financial instruments standards

The process of developing and setting standards has been viewed as both a technical and political processes. A technical process because accounting standards seem to provide for how relevant issues in accounting practice can be best handled, and a political process because the decision of how these relevant issues should be treated affects different stakeholders who would like to consider alternatives that might better serve their interests (Zeff, 2002; Durocher *et al.*, 2007). The political process brings about lobbying by various interest groups making representation for changes in the exposure drafts (EDs) especially when the proposed standards are viewed as having economic consequences on their interests. In general terms, the process of setting and developing international standards has always been problematic, especially when it involves reaching agreement with interested parties across geographical divides as well as when it involves setting standards in respect of financial instruments considered one of the contentious issues in accounting practice. The desire of standard-setters to set standards that must be comprehensive so as to achieve global acceptance demands consultation with

various stakeholders which could be countries or groups within different countries. Achieving global acceptability of important and controversial issues such as financial instruments has been found to be very problematic; not only because of its complex nature, but also because of the number of competing groups and interests that must be reconciled (Wilson and Smith, 1997). The political process brings out issues of concern to different interest groups. Sutton (1984) found the decision to lobby rewarding to interested parties especially preparers of financial statements, as the final standards often accommodate their interest (see also Chatham *et al.*, 2010).

Essentially, stakeholders: accountants, regulators, preparers, and users, argue on many issues regarding setting standards relating to financial instruments. This is because financial instruments continue to be an important and contentious accounting topic (Chatham *et al.*, 2010). The argument runs round the issue of disclosure, measurement and remeasurement, recognition and valuation. Stakeholders' arguments are usually about the effect the standards and their prescriptions would likely have on their economic interests. For example, a central issue that links issues in relation to disclosure, valuation and recognition is accounting for financial instruments at fair value, which is a major heading in IAS 32 and 39 and therefore discussed in the next part of this section.

Both IAS 32 and 39 started as Exposure Draft (ED) 40 issued in 1991. The basic principles in ED 40 were issues on initial recognition, subsequent discontinuation with recognition based on the principle of the time risk and reward once a financial asset or liability is transferred. ED 40 was harshly criticised on many fronts, which included the complaints that hedge accounting criteria were both impracticable and did not represent what common risk management stands for. This led to the conclusion by many of the stakeholders that the draft was too inflexible. This gave rise to the

publication of ED 48 in January 1994 in order to reflect comments received on ED 40. Major comments on ED 48 centred around issues in respect of recognition and measurement, while there were less controversy on issues in respect of disclosure and presentation. This led to the approval of these two aspects of financial instruments as IAS 32 in 1995 by the IASC while continuing with the unresolved issues of recognition and measurement (IASC, 1996). The major problem with the issue of recognition and measurement in both ED 40 and ED 48 is the proposal that the fair value model be used for nearly all financial instruments, which is substantially different from the traditional valuation of assets and liabilities through the historical cost model. IASC later issued Financial Instrument Discussion Paper (FIDP) to further propose and discuss the issue of fair value in respect of recognition and measurement in 1997, which they later published as an interim standard on recognition and measurement of financial instruments in consultation with national standard setters (IASC, 1997). IAS 39, which was similar to FAS 133 for financial instruments in the US, was approved in December 1988.

From the foregoing the most important issue of accounting for financial instruments appears to be the provision of IAS 39, that fair value model should be used for nearly all financial instruments, especially where it affects banks. Chatham *et al.*, (2010), who carried out a content analysis of responses from interested parties and groups to ED 40, 48 and subsequent FIDP record that as varied as their responses were the most criticised aspect of the drafts was the proposal that subsequent measurement of all financial assets and liabilities should be at fair value. Other areas of sustained argument, though of less prominence in comparison with the issue of measurement, include issues around recognition and disclosure which are sometimes closely linked with measurement. The argument against the measurement of financial instruments at fair value centres on its likely difficulty

in obtaining fair value for some assets and liabilities especially when the choice of a complex valuation model is made. The argument was further stretched by considering other associated criteria that would potentially make the use of fair value measurement less beneficial to interested parties. These criteria include the cost and benefit of the adoption of fair value model, which they argue tilts in favour of higher costs over benefits.

Other arguments include reliability of the financial statements, possible mismatch of financial instruments with their underlying assets and liabilities, which could arise as a result of valuing financial instruments at fair value and the underlying at historical cost. There was also the issue of possible difficulty in the achievement of financial statements objective which would be distorted, as gains or losses arising from fair valuation will be included in the income statement that normally contains figures that show the performance of management in the ordinary course of business of the firm. For accounting information to be reliable, accounting records and transactions need to be faithfully represented and the prudence concept needs to be upheld. Opponents of the fair value model, especially preparers, accounting professions, financial analysts and the European Union, are of the opinion that its adoption will likely distort the financial position of the firm as a result of the changing value of assets and liabilities. They argue that the value of assets and liabilities will not be representative of their intrinsic values and might therefore lead to earnings management and/or variation in stock prices not as a result of fundamental changes in wealth but as a result of fair valuation with its attendant subjectivity. The above mentioned contentious issues on measurement and fair value accounting are now further explored in conjunction with recognition and collateral disclosures.

3.3. Financial instruments: valuation/measurement, recognition & collateral disclosures.

IAS 39 prescribes that financial assets or liabilities should be recognized only when a firm becomes a party to the contractual provisions of the instrument. However, this depends on provisions in respect of regular purchases or sales which determine when they are recognised or derecognised. The standard states that they should be recognised or derecognised by using either trade date or settlement date accounting (IAS 39.38). It further requires consistent application of accounting methods for the same category of purchases and sale of financial assets, the choice of which depends on the entity's accounting policy. The recognition of financial assets and liabilities should be presented on the balance sheet in total departure from prior practice of non-recognition of derivatives on the company's balance sheet, which was justified by the argument that derivatives have zero cost. However, IAS 39 justifies recognition on the balance sheet because as time passes, changes to the underlying variables become evident, and this causes derivatives to have a positive (asset) or negative (liability) values, which calls for inclusion in the balance sheet for completeness and faithful representation. From the foregoing, one of the benefits of the new rules is the release of more information about an entity's hedging activity, which is not only about disclosure, but also about valuation, recognition as well as disclosure of specific accounting policies used and on what basis. This has implications for the valuation of the entity as more information is disclosed in the financial statements under the adopted international standards. Both investors and analysts are better able to understand what the entity does with derivatives in particular and financial instruments in general. Also, risk management policies and strategies as well as how they hedge critical financial exposures become clearer thereby making the hedging process more transparent.

Some studies have examined the incremental information of the content of annual reports based on information disclosure and formal recognition of financial assets and liabilities. Examples are Lopes and Rodrigues (2005) and (2007), Ahmed *et al.*, (2006) and Niu and Xu, (2009). Niu and Xu (2009) examined the above issues in respect of Canadian firms prior to and after the mandatory recognition requirements and found evidence which suggests that investors' reactions are driven by the extent of information released by firms. Their findings suggest that information released on important issues that surround financial instruments such as recognition, valuation and whether the instruments are collateralized are value-relevant to investors, as they found evidence that suggests accounting numbers help explain stock market returns. Ahmed *et al.* (2006), using a sample of banks that reported under SFAS 133 in the US to examine the effect of disclosure and recognition on firm valuation, found valuation coefficients of their proxy for recognised derivatives significantly positive, while the coefficient of disclosed derivatives, though positive, are not significantly different from zero. This means that issues in recognition and other information on derivative use, in addition to disclosure, led to positive reactions from investors, while also making derivative financial instruments more observable. Their findings are consistent with that of Davis-Friday *et al.*, (1999) who concluded that investors pay more attention to recognised amounts than disclosed amounts meaning that investors rely more on recognised derivative fair value than on the disclosure of derivative fair value.

Lopes and Rodrigues (2007) also examined financial instruments accounting practices among Portuguese companies where they evaluated different aspects of IAS 32 and 39. Two aspects of their study which are of importance to this study are their findings on fair value disclosures and collateral disclosures. On fair value disclosures, they found the majority of their sample companies disclosed fair

value measurement criteria and instruments fair values in the notes to the accounts alongside the nominal values of the instruments. They also found information about collateral disclosures from the majority of their sample companies in the notes to the accounts in all cases. They report that 60% disclosed the value of financial assets pledged as collateral, while 38.3% disclosed important/major terms and conditions about the assets pledged. The implication of the above findings is that recognition and disclosure of financial instruments in annual reports are not substitutes but complement each other, as studies have found both value relevant to investors, which means that where they are together in financial statements they enhance financial reporting and get a positive reaction from investors. With the support for recognition and disclosure of financial instruments, the question is at what value should they be presented in financial statements for faithful representation and completeness of financial information? This takes us to valuation models which we discuss after considering recognition of gains through profit or equity.

3.4. The issue of recognising gains through profit or equity

Derivative instruments are classified as either financial assets or liabilities. Financial assets are further classified by IAS 39 into four on initial recognition for the purpose of determining how a particular financial asset is recognised and measured in the financial statement, which has implication for figures in the financial statements through time. The classifications are:

- a. Financial assets at fair value through profit or loss
- b. Available-for-sale financial assets
- c. Loans and receivables

d. Held-to-maturity investments

IAS 39 requires both financial assets and liabilities that are derivatives to be measured at fair value after initial recognition, except where such derivative assets or liabilities cannot be reliably measured at fair value, in which case they should be measured at cost. The implication of this is that derivative assets and liabilities will have fluctuating figures in the balance sheet with the difference in fair value in profit or loss for financial assets and liabilities. Financial assets (including derivatives) at fair value through profit or loss can either be designated or held for trading. When designated on initial recognition as one to be measured at fair value, changes in fair value must be in profit or loss. Held-for-trading financial assets are derivative instruments that are non-hedging instruments and for which short term profit making has been established. These types of instruments are essentially found with financial services firms which trade in them and not for hedging purposes. In case of financial assets designated as available for sale (non-derivative financial assets), they are also to be measured in the balance sheet on initial recognition but with changes in fair value directly recognised and accumulated in the statement of changes in equity until the asset is derecognised, in which case the accumulated gain or loss hitherto recognised in equity is now recognised in profit or loss. The other two categories in (c) and (d) above are non-derivative financial assets and are required to be recognised and measured at amortised costs.

The implication of the prescription of IAS 39 on financial assets is that derivative instruments that have been recognised at initial recognition should be measured and remeasured continuously at fair value, and changes should be in profit or loss. This compares with the prescribed measurement for available-for-sale financial assets which are also measured at fair value but changes in fair value in

statement of changes reflected in equity. However, the fair value of the instrument is reflected in the balance sheet just like designated derivative instruments.

The prescriptions of IAS 32 and 39 on disclosure, presentation, recognition and measurement are a body of rules that are aimed at providing comprehensive information on financial instruments to users of financial statements. These requirements are expected to make clearer relevant information from managers on the hedging process. However, the debate as to the appropriateness of fair value accounting has thrown up some issues which we now consider.

3.5. The theoretical issues involved in 'fair value' valuations.

The debate of issues in fair value accounting must necessarily start from an understanding of the objective of accounting in general and financial reporting in particular. Financial reporting viewed from the perspective of the balance sheet is the provision of information about assets and liabilities of an entity as at the point of the statement. Assets and liabilities of firms are reported using the historical cost convention which it has been argued produce figures that cannot be said to reflect the values of assets and liabilities as at those points. This is the reason accounting standard setters have issued standards with requirements that assets and liabilities should be presented at fair values, and difference in fair values in income statements as either gains or losses. A number of arguments have arisen as a result of this prescription. One key issue in fair values of financial instruments is whether it can be measured reliably, especially when market is illiquid or similar transactions are few. This raises the issue of relevance versus reliability of accounting numbers when fair values or mark-to-market values are used. The IASB argue that there is a cost-benefit trade-off between relevance and reliability of fair

value measurement. Difficulty in measuring many of the financial instruments with sufficient accuracy so that investors can reasonably assess firms' financial position, earnings potential and future cash flows are costs to investors (Cairns, 2006). The cost increases where there is no active market for the particular financial instrument, which means that management would have to estimate the fair value with its attendant subjectivity brought about by the use of discretion.

IASB defined fair value as 'the amount for which an asset could be exchanged or a liability settled, or an equity instrument granted could be exchanged, between knowledgeable, willing parties in an arm's length transaction' (IASB, 2005). This definition is the general definition of fair value by IASB regardless of whether the particular asset or liability is quoted or traded in active markets where its market price can be easily determined. Market value and fair value of assets, liabilities and equity instruments are used to mean the same thing by IASB as the above definition appears to have primarily emphasised quoted prices in active markets before the valuation can be arrived at using other market information through accepted valuation techniques. The first reference to market value is evident in IAS 32, 39, IFRS7 and other IASs such as 16 and 40. Valuation using other market information must be capable of being reliably determined otherwise the use of fair value is prohibited by IFRSs especially in subsequent measurement of assets and liabilities. This provision was expressly stated in both IAS 32 and 39. On initial measurement or when accounting for compound transactions, whenever fair value of assets and liabilities cannot be reliably measured, IAS 39 prescribes that such assets or liabilities be excluded from the financial statement in order not to distort it. In the case of impairment testing, it is expected that fair value should be used. This is to ensure that assets are not overstated. Essentially, IFRSs require the use of fair value of assets and liabilities at initial recognition,

in subsequent measurement and remeasurement and impairment testing as well as in the determination of recoverable amounts of assets.

It will be useful to evaluate the two alternative bases of measurement of assets and liabilities in accounts – historical cost and fair value in respect of one of the above prescriptions of when fair value should be used.

The initial costs of assets and liabilities are also their market or fair values. This is because most transactions in firms are carried out between knowledgeable parties, which mean that historical costs at transaction date will approximate to the fair values of respective assets and liabilities.

However, as assets are depreciated or carried in subsequent years (especially financial instruments to which fair value is principally applied) the carrying amounts often differ significantly from fair values and therefore fail to faithfully represent the economic reality of companies. This necessitates the requirements of IAS 39, Para 38.43, for subsequent measurement of financial assets and liabilities at fair values in order to reflect their likely cash flow under the contract. This is because financial instruments (interest rate swap, forward foreign exchange contract etc.) that are to be carried in a financial report may indeed have zero or very low historical cost in comparison with possible cash flows that could arise from usage of such instruments. This is mainly the area that IFRSs and in particular IAS 39 requires that fair value measurement be used and not on all assets and liabilities as has been claimed by many (Cairns, 2006). This has been found to be a major area of controversy and confusion on fair value measurement as most other areas of the application of fair values have been ongoing for quite some time even under historical cost accounting with IFRS merely emphasising the

recording of initial amount of transactions using fair value. Benston *et al.* (2006) and Lopes and Rodrigues (2007) document widespread adoption of the requirement for fair value measurement by firms as well as its acceptance by their auditors arising from the complexities of transactions that need to be faithfully represented in an informative way in annual reports. The complexities of many business transactions that give rise to assets and liabilities, especially financial instruments, had also been a major consideration by IASC in their emphasis on fair value measurement of assets and liabilities which they see as a further application of prudence concept (IASB, 1998). This is especially so if fair value produces estimates of liabilities, whether financial or non-financial that will crystallise and are eventually paid.

Secondly, the difficulty in understanding the use of fair value on subsequent measurement of assets and liabilities has been found to be responsible for another strand of the argument and confusion, and this is because of lack of extant theory for its application.

The use of fair value measurement has generally been criticised by both academics and practitioners. The criticism can be broadly viewed from four perspectives: pro-cyclicality of fair value, its effects on financial statement of firms in differing periods, the volatility that fair value brings to reported income and the subjectivity it can introduce into financial reporting where there is no active and liquid market for the transaction, asset or liability.

For example, those who criticise fair value for its pro-cyclicality argue that the use of fair value means that changes in market values of assets and liabilities are recognised immediately and depresses asset values thereby aggravating the financial crises of 2007/2008. They argue that bank lending is

dependent on the maintenance of adequate balance sheet ratios for which values of assets play a very important role. As fair value of these assets changes, banks' ability to lend to businesses also changes. This will lead to lending portfolios that are higher in good times and lower in bad times. This points to the fact that pro-cyclicality of fair value counter-balances banks' balance sheet positions in differing periods thereby bringing transparency into their lending, which is a form of check on their operation (IASB, 2007).

The above criticism notwithstanding, the transparency of financial information brought by fair-value accounting is very important to the restoration of financial confidence in firms.

One of the strongest advantages of fair-value accounting is the requirement by IAS 39 that financial instruments that were hitherto off-balance sheet items under historical cost accounting be brought into the balance sheet at their fair value for complete reporting of financial information. Differences in fair value from period to period will also be reflected in the income statement as either profit or loss. Fair value measurement of these assets and liabilities under any method, however subjective, has been found to be more informative in explaining the performance and position of firms than historical cost and here lies its benefit which has been argued is higher than its cost (ICAEW, 2006; Benston *et al.* 2006). Furthermore, the requirement of IAS 39 that hedge effectiveness should be assessed both prospectively and retrospectively also increases the informativeness of fair value accounting as it further refines it through hedge accounting. This is because at each reporting date, changes in the fair value of hedged item in relation to the hedged risk must be highly effective in offsetting the fair value of the hedging instrument thereby effectively matching the underlying to the hedging instrument. This criterion for hedged accounting has consequences for the treatment of gains or losses in the accounts

which give unique information to investors. This requirement is further discussed in the following section on hedge accounting where fair value and cash flow hedge are explained.

3.6. Fair value hedge versus cash flow hedge

Hedge accounting is a method used to eliminate or hedge foreign exchange risk as a result of transactions in foreign currencies. The major thrust of hedge accounting is the utilisation of proper accounting techniques with the resultant quality of having all derivative instruments first reported at fair value in the firm's accounts. It therefore attempts to reduce risk in investments. Hedge accounting can be treated as either fair-value hedge or cash-flow hedge. For a hedged item to qualify for hedge accounting, the item must be effective at each reporting date and must be designated as a hedge at inception (IAS 39. 84). Effectiveness of a hedge item is achieved if the fair value or cash flows of the underlying (e.g. interest rate) that is to be hedged is expected to be highly effective in offsetting changes in the fair value or cash flows of the hedging instrument (interest rate swap) both on a prospective and retrospective basis. If the effectiveness of a hedge cannot be established or a hedge is no longer effective, then hedge accounting must be discontinued (IAS39.91).

IAS 39 defined a fair value hedged as 'a hedge of the exposure to changes in fair value of a recognised asset or liability or an unrecognised firm commitment, or an identified portion of such an asset, liability or firm commitment, that is attributable to a particular risk and could affect profit or loss' (IAS39.86 (a)). In addition, the standard requires that the gain or loss arising from change in fair value of hedging instruments be recognised immediately in profit or loss. An adjustment is also required for the underlying to reflect the new carrying amount of the hedged items in order to present appropriately

the risk that is being hedged in the balance sheet and this should also be recognised in net profit or loss (IAS 39.95). A fair value hedge is therefore a derivative used to hedge the exposure to changes in the fair value of a recognised asset or liability. An example of fair-value hedge is when the market value of a fixed rate bond changes as a result of increase or decrease in interest rates. A hedge of the bond's price risk using interest rate swap can be considered a fair value hedge.

The accounting treatment can be illustrated as follows: The interest rate swap instrument is marked to market, that is, presented at fair value and changes in fair value recognised in the income statement in the period it relates as an unrealised holding gain. The underlying, the fixed interest rate, is also presented at fair value and changes in market interest rate also recognised in income statements as an unrealised holding loss. The treatment of changes in fair value of both the interest rate of the debt and swap instrument provides offsetting entries in income statements. The implication of the above treatment is that the balance sheet of the company will carry the amount of debt liability at fair value while changes in the fair values of the underlying: fixed rate debt and the derivative instrument, in this case interest rate swap, provide an offset in income statement. The above shows that using hedge accounting, especially when the hedges are effective, will not cause income statement volatility but rather reinforces the application of prudence concept which consequently provides additional useful information to investors. The above is an example of how derivative use for hedging is used to reduce volatility in earnings that has been largely argued in theory.

A cash flow hedge is also defined in IAS 39 as 'a hedge of the exposure to variability in cash flows that (i) is attributable to a particular risk associated with a recognised asset or liability (such as all or some future interest payments on variable rate debt) or a highly probable forecast transaction and (ii)

could affect profit or loss (IAS 38.86 (b)). It is designed to hedge the risk inherent in cash transactions, which is likely to affect amounts recorded in net income. There are two divisions of cash flow hedge: effective and ineffective portions. Any portion of a cash flow hedge that is found to be effective has its portion of gain or loss on the hedging instrument reported directly in equity as part of other comprehensive income. It is subsequently removed and included in the profit or loss during which the hedged item affects profit or loss. This is necessary so that changes in the cash flow of the hedged item for the designated risk can be offset. The ineffective portion is then recognised immediately in profit or loss (IAS 39.95).

An example is the hedge of variable interest rate debt with possible volatility as a result of changes (increase or decrease) in interest rate with floating to fixed interest rate swap. The accounting treatment for swap recognises the instrument at fair value and changes in fair value are recognised first in the statement of comprehensive income and then in income statement when the interest payments on hedged debt are made. Swap payments are gradually reduced to reflect payments or receipts and reduced to zero at maturity. Floating rate debt is accounted for by recognising variable interest rate expense in earnings as incurred.

In summary, treatment given to swap change in value and debt change will be offsets in earnings thereby eliminating possible volatility that fluctuating variable interest rates would have brought.

3.7. Disclosure, Information and Transparency

3.7.1. Disclosure of financial Information by management in annual reports

Information in a company's annual reports is of importance to different users of financial statement information in different ways. In the case of shareholders, who are the owners and residual claimants, they need this information in order to make investment decisions. Management who has been given authority to manage the company needs to provide information of their stewardship to shareholders.

Three main regulatory frameworks of financial reporting are identifiable in the UK. These are company law, accounting standards and the requirements of the stock exchange on what companies should disclose for listing purposes (Arnold, 1998). While company law provides a broad framework, the accounting standards and the requirements of the stock exchange detail what should be disclosed in respect of individual items in annual reports, both of which are primarily for current shareholders and potential investors.

The Companies Act as known today can be traced to its beginning in 1948 with its general requirements of 'true and fair view' of financial reports replacing its initial 'true and correct view' of 1844 when it was known as Joint Stock Companies Act. Though the 'true and fair view' concept is arguably clearer and more objective than its predecessor, it is also fraught with differences in interpretation.

Accounting standards give prescriptions of how each accounting item should be disclosed as well as what should be disclosed, following generally accepted accounting principles and bases. This means

that there are accounting standards for each aspect of accounts presented in annual reports. Examples include FRS 13 which is UK GAAP in use until December 2004 in respect of financial instrument disclosure and its equivalent internationally - IAS 32 and 39 which were adopted by the UK with effect from 1st of January, 2005. Also SEC disclosure requirements strengthen what accounting standards require from listed companies. Specific issues such as disclosure of accounting policies and treatment of financial instruments are required by SEC/Stock Exchange rules for transparency.

The rather general prescription of the Companies Act *inter alia* provides justification for the activities of accounting standard setters which set up its first committee (ASC) in 1983. The committee was among other assignments to suggest the quality and quantity of information that would satisfy users of financial information, especially the shareholders. This was to support the use of Generally Accepted Accounting Principles (GAAPs) conventions and bases expected from accountants in order to uphold the 'true and fair view' (Arnold, 1998). The accounting standards committee was replaced by the accounting standards board (ASB) in 1990 and has since been responsible for the issuance of financial reporting standards (FRSs) which became UK GAAP until the recent adoption of the international standards (IFRSs) championed by the European Union (EU) through the international accounting standards board (IASB). The concern of the EU was largely as a result of differences in reporting practices not only within EU countries but also among companies in EU countries, principally arising from the adoption of the countries respective Companies Act and accounting standards by different standard setters within these countries.

This situation gave rise to differences in what and how accounting numbers are reported and explained in the notes to the account (Woods and Marginson, 2004). Various studies found wide differences in

reporting practices of companies within and among countries in the EU and the US in respect of financial instrument reporting. Some of the studies are those of Adedeji and Baker (1999), Roulstone (1999), Marshall and Weetman (2002), Wood and Marginson (2004), Dunne *et al.*, (2004) and Lopes and Rodrigues (2005). The above studies have reported varied degree of problems of understanding, comparability and consistency with derivative disclosures. This means that comparability of annual reports to support the EU desire for both economic and political union will remain largely unachievable if reporting practices are not harmonised. Healy and Palepu, (2001) and Barth *et al.*, (2001) argue that the problems of inadequate information disclosure which make annual reports less informative may hinder the much anticipated capital movement and formation within the European Union.

Roulstone (1999) pointed to the insufficient level of information uncertainty that capital markets are facing in the absence of adequate information. He argues that inadequate information is likely to bias the operation of the capital market because such information distorts what should be the actual or 'true' information about listed companies in the allocation of investible funds. This means that the provision of information to long term suppliers of corporate finance - the shareholders - has not been adequately reinforced by regulatory frameworks, which have instead tended to merely encourage the disclosure of information possessed by managers (Collins *et al.*, 1997, Dechow *et al.*, 2000 and Dye, 2001).

However, coming from an historical perspective and comparing what existed prior to 1948, Wood and Marginson (2004) noted that disclosure in annual reports has tended to 'improve'. What is still a problem is the difference in reporting practices of firms operating under the same reporting

requirements at the same time leading to a different degree of clarity and consistency of firms' information disclosure (Adedeji and Baker, 1999). The explanation of these differences in reporting within the same regulatory environment has continued to be unconvincing. While some argued that it was because of the voluntary nature of the relevant regulations, others pointed to managers' reluctance at giving information they consider private (Roulstone, 1999). The effect of these differences in reporting brings a lot of difficulty in comparing performances of similar organisations because of noticeable gaps between the prescriptions of relevant regulation information disclosure and what managers are disclosing. Another effect of inadequate disclosure is the difficulty in using accounting data for investment decision-making, as accounting figures do not seem to stand for what they are meant to represent (Foster and Vickrey 1978; Al-Darayseh M., 1992 and Easton *et al.*, 2002). However, Healy and Palepu (2001) argue that when the requirements of relevant regulations are followed, financial information becomes informative to investors as they have information they need to make their investment decision.

Where this difference in reporting is too wide, it becomes highly problematic for investors to compare accounting data presented by firms to the capital market in order to estimate both the riskiness of the firm and its value. Understanding the negative effect of inadequate or misleading disclosure of critical as well as relevant information in financial/annual reports is useful in evaluating information asymmetries and disclosure practices of companies in the UK. This is more so when such information has to do with, and is required on the hedging process embarked upon by many large companies.

3.7.2. Information asymmetry and signalling models

Managers are assumed to know more about the firm's current position and future potential than shareholders for at least two obvious reasons (De Angelo, 1988; Healy and Palepu, 2001). Firstly, they are involved in the daily operation of the firm, a situation which is described by agency theory (Demski and Feltham, 1978; Brennan, 1994). Secondly, they have the requisite knowledge/education to be able to manage business concerns as this is arguably why they were employed to manage firms. These two factors mean that they are in possession of information about the firm that outsiders do not have, hence information asymmetry exists between them and the shareholders (Bhushan, 1989; Lang and Lundholm, 1996).

Many questions arise from the above. For example, how should managers get information across to shareholders so that even if they do not know as much as the managers, they are close to the information held by managers? One answer to this question is the practice of disclosing information in companies' annual reports as required by the Companies Acts which, although requiring very little disclosure, identifies annual reports as an important vehicle for such disclosures (Arnold, 1998).

Secondly, the answer to the question of whether managers would be willing to release information in their possession to endowment to the shareholders was found in earlier disclosure regimes as documented by Adedjei and Baker (1999) and Dunne *et al.* (2003). If the manager, who is the agent of shareholders, has been working in the interests of shareholders, there should be no reason for him not to disclose given both the requirements of the Companies Act, provisions of accounting standards and SEC regulation for listed companies. Indeed he has incentives to disclose both for stewardship and for him to demonstrate his expertise or communicate his ability to investors. However, the agency-cost

problem posits that shareholders are not sure that managers will pursue their interests at all time, as agency theory suggests that managers are likely to advance their personal ambition to the detriment of shareholders' interest (Rozeff, 1982; Jensen, 1986).

Theoretically, the existence of information asymmetry makes the pricing of firms' stocks difficult, as investors are unable to estimate firms' future earnings and consequently the price of firms' shares may differ from their intrinsic value. When shareholders are unsure of the intrinsic value of shares their response to calls for further investment is that of uncertainty which might drive share prices down meaning a reduction in firm value. One strand of the disclosure literature assumes that mitigation of information asymmetry lies in the release of as much relevant information as possible in possession of the manager which he can use to signal his performance to the market as well as build shareholder's confidence on the safety of their investment in firms (Healy and Palepu, 2001). Another strand argues that information overload is as bad as lack of disclosure as too much irrelevant information clouds investors understanding and may render financial statements less useful. However, if pertinent information is not released, it may frighten investors. For example, on derivative use they may like to be assured that derivative aided disasters or near collapses does not become the fate of their investment hence their interest in what goes on in the firm.

Many signalling models have been found to be very useful in eliminating the problem of information asymmetry. These are dividend signalling model by Bhattacharya (1979) and capital structures by Miller and Rock (1985), and Williams (1988).

Bhattacharya (1979) argues that using dividend to signal managers' ability to investors is costly and can only be afforded by good firms. This is because only good firms will pay dividends knowing that investors will read the signal to indicate that managers know that investors will expect increased and consistent dividend payments in the future. Managers that pay a cash dividend, therefore, signal that they will continue to have positive future cash flows, which means that good investments are still being undertaken by the firm. Theoretically, only cash dividends can be paid by firms undertaking positive NPV projects which make such payments continuous. Less strong firms cannot make high cash dividends for two reasons: they might have foregone some positive NPV projects, which will make continuous payment of such dividends in future very difficult, or they will need to approach the capital market to finance the investments at extra costs in order to maintain continuous payments of such cash dividends (Harkavy, 1953; Easterbrook, 1984 and Soter *et al.* 1996). Consequently, the dividend signalling model distinguishes good firms from bad firms.

The above also follows the argument of Baker and Powell (1999) that paying dividends is a means of signalling the information content of dividend to investors. Easterbrook (1984) also supported Baker and Powell's argument but pointed out that even dividend changes are a signal to the market by managers about performance and what to expect in the future.

The basic thrust of these signalling models- dividend, capital structure and insurance - could in the same manner be pursued about derivative use disclosure. Full disclosure and reporting of derivatives use can be used by managers to signal relevant information about the hedging process to shareholders, thereby reducing information asymmetry on derivative use.

Consequently, we argue that all signalling models are essentially looking at ways of getting information across to the shareholders in such a way that shareholders are able to appreciate the worth of managers as well as the safety of their investments. They are about what managers have done with the available investments and the expected cash flow which will consequently help them in making investment decisions.

It is possible to conclude that dividends, insurance and indeed capital structure of the firm can be used to signal information held in the hands of the managers to the market, in a world of uncertainty, where there is information asymmetry. These have been extensively discussed in literature. Although this study is not about the examination of signalling models, the aspect of the information content of derivative use disclosure as a signal will be evaluated and its effect on firm's value ascertained. Next we examine the extent to which derivative use disclosure can also be made a signalling tool in the hands of managers.

3.7.3. Derivative use, disclosure and signalling

The existence of information asymmetry, and therefore, the need to signal managers' information endowment to shareholders led to the consideration of the above signalling models, where we use dividend signalling processes to explain the characteristics of signals that managers send to the market.

The process of hedging financial risks that firms face is not visible to shareholders despite the strategic importance of derivative use by firms. This is partly because the process is unobservable by them

beyond what they see in annual reports. Many shareholders know that firms face financial risks that need to be managed with the expertise of professional managers, which calls for principal-agency relationship that we explored at the beginning of this study (DeMarzo and Duffie, 1991). We have also previously discussed the preference of managers to use derivatives to manage/hedge risks that firms face. The intended benefits of risk management using derivatives as have been advanced in both theory and literature has also been presented in parts of this study.

However, the process of hedging using derivatives is unobservable by shareholders beyond what they see in annual reports, which only enables them to know the firm's risk characteristics. Theoretically, informed, rational shareholders would need to know the part of the firm's earnings and cash flow that is contributed by macro-economic variables, like the exchange and interest rates and how managers have managed these risks (Smith and Stulz, 1985). This would consequently enable them to know a firm's earning capacity in the absence of volatility created by these variables.

Signalling theory suggests that managers need to inform them adequately of the stability or riskiness of their firm, or perhaps to alleviate fears of derivative-use disasters. Issues such as the existing or expected risks the firm faces, how the managers intend to manage these risks, the instruments being used, as well as possible effect of the use of these instruments given the change in their -notional (contract) values to their fair values as demanded by relevant standards, should be disclosed to them (Ali, 2006). Also, issues impinging on other relevant requirements of accounting standards under which managers have been mandated to report the use of financial instruments should be adequately reported to shareholders for transparency of the hedging process

In disclosing the above issues and questions, shareholders need to be satisfied that managers are not using laid-down rules (for example the requirements of accounting standards, procedures and internal control instituted for the management of risks) to speculate. They should also be informed about controls that have been put in place to ensure that the benefits of risk management using derivatives as theorised will be achieved. Controls put in place for each instrument in use are of interest to shareholders. The above are major issues thrown up by the hedging process which need to be addressed and disclosed to shareholders for a number of reasons.

Firstly, the wide-spread use of derivative instruments to manage financial risks by large firms as documented by Dolde (1993), Grant and Marshall (1997) and Mallin *et al.*, (2001) and the reported collapse of otherwise profitable business ventures which led to huge loss of substantial investments by the shareholders (see section 2.2.4.) appeared to be justifiable reasons for the demand for greater transparency from the managers on the hedging process (DaDalt *et al.*, 2002). They also argue that the disclosure of the hedging process will give the capital market the opportunity to allocate scarce resources to areas where the resources can be efficiently utilised. Secondly, given the contractual relationship between the managers and shareholders and the consequent agency problems, that there are good reasons that the agent may not act in the best interest of the principal, justifies the demand for transparency in the affairs of the firm (Jensen and Meckling, 1976; Fama and Jensen, 1983; Froot *et al.*, 1994; DeMarzo and Duffie, 1995; DaDalt *et al.*, 2002). This gives prominence to shareholders' rights to know what decisions managers are making in the firm. Managers need to release proprietary information through signalling the hedging process so that shareholders can learn about the ability and expertise of the managers. Analyses of the contributions of the macro economic factors that affect

earnings and managers efforts at managing these variables need to be presented explicitly to the shareholders.

Jensen and Meckling (1976) suggested one way of resolving agency problems is by using financial reports as an important monitoring mechanism, given that it states the earnings, dividends payouts etc., which by extension has consequences for security pricing and firm valuation. They also mentioned the work of external auditors which gives an independent opinion of these figures as two of the ways by which the agent demonstrates to the principal their compliance with the contracts of performance in exchange for the compensation received. Their suggestion becomes part of the justification for disclosure of important information in general and the hedging process in particular in annual reports.

3.7.4. Observing the hedging process

If disclosure of risk management or the hedging process will be a signalling tool like other signalling tools before it, it should be publicly observable. This is when it will be value-maximising for non-financial firms which are not expected to trade in derivatives, yet face huge financial risks which cannot be easily observed by external investors. Managers should have a better view of these risks and may use derivative instruments as a way of managing them. However, investors do not participate in the day-to-day running of the firm and so the question is ‘how will they observe the hedging process?’ In the case of dividends, when managers release information in connection with dividend payment through notice, the information content of dividend signals managers performance to the shareholders.

This means that dividend payment as a signalling tool is observable like its capital structure counterpart, which is known through the annual report. In fact as soon as the management of the firm releases its annual report, investors, both shareholders and debt holders, are able to understand the direction management has taken in respect of the debt-equity mix of the firm and the consequent financial risk the firm faces. In the case of the hedging process, what information can be released to the shareholders that will signal managers' ability and relevant information to the shareholders regarding the process? They need to be able to quantify the level of risks their firm faces. How was the difference between the notional value and fair value of an instrument treated in the accounts? How large is the revaluation surplus of derivative instruments contained in earnings? Can the disclosure of the hedging process be a signalling tool? If yes, it will appear to be a unique one as it might provide information that will affect share prices of the firms that disclose derivative use fully. The hedging process, while not entirely outside the traditional decisions that managers make in firms, is a decision that may indeed reduce firm value, given the other uses that managers may make of financial instruments as discussed in chapter two (also see Fite and Pfleiderer (1995) and Fairchild (2002).

Fairchild (2002) demonstrated how the financial risk management process can reduce the firm's value and incur high transaction costs. What then is the incentive for managers to disclose the hedging process in view of the likelihood of it reducing the firm's value especially when used for speculative activities and/or incurring high transaction costs?

When managers take the kind of decision with the above effect on shareholders' value, managers will have no incentive to disclose the process voluntarily. This could therefore be used to explain the results of voluntary disclosure studies that have been documented in the literature. Such studies

include those of Roulstone (1999), Adediji and Baker (1999), Wong (1999), DaDalt *et al.* (2002), Marshall and Weetman (2002) and Dunne *et al.* (2004).

Roulstone (1999) and Wong (1999) found that managers only disclose what they wanted investors to know under voluntary disclosure regimes in the US. The two studies analysed the content of annual reports which they compared with SFAS 119 and 133 as well as SEC requirements detailed by Financial Reporting Release (FRR) 48, in order to establish the level of disclosure required by these standards. Adediji and Baker (1999) and Dunne *et al.* (2004) found similar results in the case of UK under a different disclosure regime. McIlwraith and Dealy (2000) and Marshall and Weetman (2002) also document similar results in their cross-country comparison of the US and UK. The above studies in respect of the UK and those of cross-country (UK and US) employed both questionnaire methods and analyses of annual reports. They compared managers' responses to the questionnaire with what they disclosed in annual reports and also compared what was disclosed with the requirements of accounting standards and SEC requirements. They further compared both the quantitative and qualitative disclosure of US and UK companies with the requirement of applicable regulation, and found that the information disclosed lacked clarity and transparency, as substantial information asymmetry was found to exist between managers and investors. Before we examine comprehensively reporting practices of managers on derivative use, we evaluate the use of derivatives and the need for disclosure.

3.7.5. Derivative use and the need for disclosure

The Mallin *et al.* (2001) survey of derivative use by large UK non-financial companies used a postal questionnaire survey following Bodnar *et al.*'s (1995, 1996 and 1998) studies in respect of US non-financial firms. They established large-scale use of financial derivatives among large UK companies consistent with the findings of Bodnar *et al.* (1998), whose findings had reported that size is a significant factor among firms that use derivatives. They also established that in addition to using derivatives to smooth cash flow, managers also affirmed that they also use derivatives to smooth earnings. However, they also document that though derivatives are used mainly by large companies; managers/directors were worried that the risks of the particular and proposed derivative transactions were not appropriately evaluated. They were also concerned about the high level of transaction costs incurred in operationalising relevant hedging instruments.

Derivative use involves high transaction costs that might reduce a firm's value. This appears to be one of the likely reasons managers are usually reluctant to disclose the hedging process. To disclose the hedging process will necessarily bring out the cost incurred as well as the benefits derivable from the use of derivatives. There is therefore the need to develop a standard basis in the use of derivatives to manage financial price risk and this appears to have been justified from the above articulations and top-management fears. Therefore, managers need to ascertain that the benefits of using derivatives to manage risks do not only outweigh its costs, but that such benefits are being achieved and are capable of increasing the firm's value.

In developed economies where financial markets have been well developed, the use of derivatives is a natural response to the ever-increasing volatility in financial risks that firms face (Bodnar *et al.*, 1996). The magnitude of the firm's exposure arising from increased global transactions among large firms demanded the creation of innovative and highly specialised derivative instruments by large banks for the use of non-financial firms. Bodnar *et al.* (1998) documented that 83% of large firms surveyed answered in the affirmative to the question of whether they use derivatives to manage financial risks. It is therefore to be expected that management of these firms will invest in staff expertise in the management of derivative instruments. There must be a deliberate attempt by managers to realise that as their risk management activities increase, they must put in place necessary financial strategies, policies and well-trained personnel that will drive and sustain derivative usage so that the desired benefits can be achieved.

3.7.6. Hedging and information value

Investigations for the rationales for corporate hedging which we have explored can be broadly broken into two categories. There are those that investigated how hedging adds to a firm's value through reduction in dispersion in firms' cash flow and earnings. Others are investigations of the effects of hedging on the information environment surrounding the firm.

Those in the first category (Smith and Stulz, 1985; Hall and Liebman, 1998; Breeden and Viswanathan, 1998; Adam and Fernando, 2006; Bartram *et al.*, 2006 and Carter *et al.*, 2006) posit that the elimination of volatility of both earnings and cash flows will help firms overcome substantial costs

associated with financial distress, reduce underinvestment problems associated with costly external financing and lower expected tax liability by stabilising earnings.

Based on their theories, the hedging process could possibly be justified by the effects it has on the decision making environment in which the manager undertakes to enhance shareholders wealth and firm's value. Their position will also further ensure the going-concern attribute of the firm. When volatility in cash flows or earnings is reduced, then managers are able to take robust and profitable decisions (financing and investment) that will increase the firm's value. Appropriate returns that confirm managers' ability will also go to shareholders, thereby aligning dividend policies of such firms with other decisions. But do these figures actually reflect the firm given the possibility of noise in both earnings and cash flows reported by these firms arising from possible use of derivatives to speculate?

The second approach which is essentially an extension of the above considers the effect of hedging on the information environment that surrounds the firm. This approach adopted by Froot *et al.*, (1994); DeMarzo and Duffie, (1995); Geczy *et al.*, (1997) and DaDalt *et al.*, (2002) was premised on the Modigliani and Miller (1958) postulation that in a perfect market with full information, hedging at firm's level is irrelevant, since the shareholders have all the information and they are able to adjust risks to their desire. However, hedging is required because of capital market imperfections and frictions, which mean that shareholders do not have all the information they need and are not therefore able to hedge their own portfolio effectively or without costs. There is indeed information asymmetry arising from the various activities faced by managers in the process of making day-to-day decisions that will help the manager to manage the firm profitably. During this process, they come across some

proprietary information about the present situation in the firm as well as what the future cash flow and earnings of the firm are likely to be.

Some of this information is required by shareholders in order for them to be able to arrive at the value of their share-holding so as to make sound investment decisions. They have to rely on the estimate of earnings and cash flows produced by the manager, the information which the shareholders do not possess. These earnings and cash flows are essentially products of the effects of managerial decisions and ability as well as the effects of firms' exposures to macro economic factors that may not be known to shareholders. Hedging enables managers to reduce the noise in cash flows and earnings, contributed by factors outside of management control. This consequently reduces the information asymmetry that relates to managerial ability and firm's value, but managers need to pass this information to shareholders, especially given the suspicion by shareholders that the manager may not be acting in their best interest as suggested by agency theory.

The informational environment approach is a model that relaxes the assumption of capital market perfection and suggests superior knowledge of managers in respect of the operations and exposures of the firm to the macro economic factors like foreign exchange rates and interest rates. The superior knowledge of managers enables them to choose risk management equilibrium strategies that best suit the firm and which are therefore expected to add to firm's value (Hall and Liebman, 1998; Adam and Fernando, 2006).

Partly to reduce the agency problem and to reduce information asymmetry between managers and shareholders the manager needs to be able to communicate this effectively to the shareholders. By so doing the shareholders will be able to take rational economic decisions thereby assisting the capital

market to allocate scarce resources efficiently to areas where they can be most efficiently utilised (Healy and Palepu, 2001).

By hedging, managers reduce the noise in earnings and cash flows of the firm and communicate their ability/expertise to the shareholders. Further analysing lower variability of earnings as a result of the removal of noise in the earnings of the firm, DeMarzo and Duffie (1995), aligned with the model used by Holmstrom and Costa (1986) by considering the effect of the disclosure environment on managers' incentive to disclose.

They argued that managers have incentives to disclose because it is only then that they can signal their expertise to the shareholders given that the hedging process is otherwise unobservable. According to DeMarzo and Duffie (1995), when managers choose not to disclose they go for total risk minimisation or what they called '*full hedging*' which is not in the best interest of shareholders. This is because hedging reduces variability of earnings with the consequence of having managers' wages variability also reduced. To this extent, managers, especially risk-averse ones, have benefits by hedging risks that firms face in circumstances of non-disclosure. Under full disclosure requirements, which IAS 32 and 39 arguably appear to be, (this will be fully explored in subsequent chapters) managers' incentive to fully minimise the risks that firms face is destroyed and in some cases, managers may not even hedge at all. The rationale is that since hedging reduces noise in firms' earnings, it should signal managerial quality to the market/shareholders under full and compulsory disclosure regime. But this signalling carries with it some variability that tends to make managers' future wages/salaries also variable. Here lies the disincentive of the risk-averse manager to fully hedge firms' risks. But what are the risks faced by the shareholders in an atmosphere of non-disclosure or partial disclosure of the hedging process?

By contrast, what benefits do full disclosures bring to the shareholders? How do the above two scenarios affect capital markets?

From the above, and in order to answer the above questions, the rationale for the findings of Roulstone (1999) and Dunne *et al.* (2004) regarding the existence of information asymmetry under voluntary disclosure requirement becomes important. They found that managers only disclose what they wanted investors to know under voluntary disclosure. This may not be unconnected with the self-protectionist agenda explained above, that is a situation whereby they might have hedged fully in order to reduce the variability in their compensation that could arise from reduced variability in firm's earnings through hedging.

It should be noted however, that full hedging, as against selective hedging, is harmful to shareholders. This is because it involves taking a position as a result of an information advantage, which is essentially speculating (Stulz, 1996; Fatemi and Luft, 2002). Secondly, it also wipes away both downside risks as well as upside potentials thereby leaving shareholders worse off.

This is because the shareholders have arguably taken care of both the upside and the downside potentials in their portfolio selection through diversification of the portfolio by which they have been able to secure for themselves a normal return. What they now require the managers to do is to be able to achieve above normal return that will qualify as enhancing shareholders value or increasing firm's value, is a kind of selective hedging⁵ to take care of the volatility in those macroeconomic variables that are not easily observed and consequently not easy to predict by the shareholders. This is what the

⁵ Selective hedging means that organisation/firms should manage the difference between a rise in interest rates or foreign exchange and a fall in either of them. It is the difference between these two that is the gap firms should hedge to reduce risk

managers are expected to hedge. They want secured jobs and future salaries and wages which provide incentives for them to hedge fully and not selectively and so they do not want the investors/shareholders to observe the hedging process, because the informativeness of the earnings and cash flow that will be produced from such observation will clearly portray managers' activities in terms of whether they have been hedging fully (for themselves) or selectively (for the shareholders) (Fatemi and Luft, 2002).

The above articulates how hedging can be carried out in order to exacerbate/aggravate agency conflict and rather than increasing shareholders value through selective hedging, managers may decide to hedge fully, and this becomes one of the very strong reasons why the hedging process should be disclosed following prescribed requirements that will enable analysts' and shareholders' understanding as well as comparability among companies across industries and major capital markets (Street *et al.*, 1999).

Still on selective hedging as against full hedging and using the exchange rate as an example, a firm that has internationalised its operation which might be having substantial sales outside its domestic operations will be exposed to exchange rate sensitive liabilities than to those that are sensitive to assets. This will bring volatility to its cash flow and earnings thereby creating an underinvestment problem and its future growth. This volatility in exchange rate is what the manager needs to hedge in order to have stable cash flow and earnings and consequently solve the under-investment problem. This will, theoretically, guarantee future and consistent growth of shareholders' wealth and the firm's value and reduce risks.

Selective hedging as articulated above ties into Stulz's (1996) argument and Fatemi and Glaum (2000) counter-argument on this topic as discussed in section 2.2.4.

If financial risks are effectively hedged, shareholders will be expected to reduce their expected rate of return, which in turn will reduce the Weighted Average Cost of Capital (WACC) and consequently increase the firm's value and in the long run, tax payable will be reduced as profit will tend to be 'normal', given the hedging of volatility in the underlying assets. Reduction of corporate tax payable by the firm is a means of maximising firm's value as it leads to an increase in net profit and consequently the portion payable in dividend as well as the retained earnings available for executing positive NPV projects.

3.7.7. Information asymmetry and Voluntary Disclosure

Having discussed the existence of information asymmetry between the managers and shareholders, an investigation of the release of information endowment of the manager to shareholders under voluntary information disclosure is now comprehensively presented.

DaDalt *et al.* (2002) investigated the relationship between the use of derivatives in firms and asymmetric information. They used alternative analyst forecasts as proxies for asymmetric information and found that derivative use and extent of usage are both associated with lower information asymmetry. The implication is that although usage of derivatives and/or extent decreases asymmetric information between managers and shareholders, managers need to disclose relevant issues on the hedging process to showcase their ability to manage firms for profit.

However, they were not concerned with disclosure or extent of disclosure of the hedging process. The model using analyst forecasts which was found to possess significant accuracy and lower dispersion supports the conjecture of DeMarzo and Duffie (1995) as well as that of Breeden and Viswanathan (1998) which was that hedging firms' risks reduces volatility in firms earnings and cash flows and to that extent decreases the level of asymmetric information about these variables.

DaDalt *et al.*'s (2002) conclusion raises another enquiry that this research will examine. The use of analyst forecasts in their model presupposes that shareholders should wait for this forecast or indeed make use of the forecast for their investment decisions. But how do shareholders observe the usage of particular hedging instruments used by their firm without the manager disclosing it? If firms are hedging using derivatives, how is this managerial action communicated to shareholders and indeed analysts? Managers that are willing to communicate information regarding the removal of noise contributed by those exogenous factors to shareholders/market will need to disclose the usage and extent of derivative usage in their firms.

DaDalt *et al.*'s (2002) methodology/model is based on the premise that shareholders need to know the true earnings capacity of their firm as well as the quality of the firms' managers. Hedging reduces the noise in earnings therefore leaving earnings that have only been influenced by management actions, decisions and performances. Two important rationales for hedging by managers are suggested by their conclusion. Firstly, when noise contributed by those exogenous factors to firms' earnings is reduced, then the true earnings arising from firms' operating performance becomes observable by the shareholders through learning the quality of the firms' management. Managers enhance their quality

by hedging those macro-economic risks that are outside their control. Managers therefore have incentives to hedge as both consequences of reduction of noise in earnings and indication of managerial quality have positive effects on their future wages/salaries.

Secondly, by reducing the noisiness contributed by financial risks, managers increase the informativeness of earnings which helps to solve adverse selection problems as a contributor to costly external finance. This second rationale therefore extends the inference made by Froot *et al.* (1993) which is that hedging and its extent should reduce adverse selection problems in order to fully gain the benefits of hedging. The benefit in the reduction of cash flow dispersion which makes internally generated cash flow available to firms' investment reduces the underinvestment problem to a very large extent. The implication of this is that the mitigation of the underinvestment problem can be sustained as a result of the informativeness of firms' profit/earnings. This means that if firms need to approach the capital market for external finance, they will be likely to obtain finance at lower cost as a result of lower asymmetric information brought about by hedging. This is as a result of the provision of better information provided to creditors brought about by noiseless earnings achieved as a result of hedging. This information would not have been known if it were not disclosed. Other rationales for hedging that are closely linked with decreased cash flow and earnings volatility include likely reduction of firms exposure to the costs associated with financial distress, and its tax payable especially when the tax rates are progressive as argued by Froot *et al.* (1993).

The implication of the principal findings of these studies of DeMarzo and Duffie (1995), Breeden and Viswanathan (1998) and DaDalt *et al.* (2002) is that there is an inverse relationship between a firm's derivatives use and information asymmetry. That is, their measures of asymmetric information

decrease (increase) as firms change status from being non-users (users) of derivatives to users (non-users). These findings are particularly true for currency derivatives usage but only weakly extend to interest rate derivatives. Their argument is that there is more inherently higher information asymmetry regarding firms' currency risk exposure than regarding its interest rate risk exposure. This is basically due to the size of these risks that firms typically face as well as accounting and reporting conventions/requirements. Another probable reason is that it is relatively easy to assess exposure to interest rate risk from the annual report and less so with exchange rates.

This strand of findings regarding usage, extent of derivative use as well as disclosure requirements provides part of the justification for this research on the examination of the impact of compulsory accounting standards' for disclosure of the hedging process in particular and financial instrument in general in companies' annual reports.

3.7.8. Voluntary disclosure in annual reports by management

The increase in the use of new and increasingly complex financial instruments by large firms has been documented by past studies. Studies in this category include those of Phillips (1995), Bodnar *et al.* (1995), Berkman and Bradbury (1996), Grant and Marshall (1997), Mallin *et al.* (2001) and Dunne *et al.* (2004). They all documented evidence that the use of derivatives and other financial instruments have been on the increase since the 1980s. Specifically, Mallin *et al.* (2001) documented that many entities employ such instruments to stabilise and transform their financial position, reported performance, and risk profile. They found that over 60% of companies in their sample made reference to the usage of at least one derivative instrument. Many of these studies argue that the activities of

managers in these attempts need to be made known to shareholders and investors through disclosure of timely and reliable information involving the use of these financial instruments, so that the investors are able to assess their company's condition, performance, risk profile and firm's value.

In the past, the interaction of market forces of demand and supply was expected to be able to disclose enough of the required information to investors as the manager is believed to have enough incentive to disclose their activities willingly in order to distinguish themselves from more poorly-run enterprises. This is subsequent to the need for managers to produce financial statements that are useful to investors in making investment decisions as part of the compliance with the contractual relationship between them and shareholders.

However, in view of the fact that the agent (manager) may not have acted for the maximum benefit of the principal (shareholders), how will the manager voluntarily disclose this information, especially when the disclosure will reduce firms' value and/or incur high transaction costs? This is the reason: there seems to be a gap between the supply and demand of risk management disclosures such as in the hedging process as found by studies such as those of Dunne *et al.* (2004), Roulstone (1999), Wong (1999), Adedeji and Baker (1999), Marshall and Weetman (2002) and McIlwraith and Dealy (2000).

Both the Companies' Act and pre-FRS 13 periods have largely made general prescriptions of what managers should disclose to make financial statements useful to users of financial information, but were only encouraged to do so.

Dunne *et al.* (2004) researched into the content of disclosures in companies' annual reports in the UK and found that the extent of transparency surrounding trading and derivatives activities has often been

considered as unsatisfactory by shareholders and investors as the information released is not usually commensurate with the growth and complexity of these activities. Both Berkman and Bradbury (1996) and Mallin *et al.* (2001) have documented increases in the use of complex derivative instruments among companies in their samples, which they argued call for more transparent and increased disclosure in order for shareholders to know managers' activities in respect of these instruments. They further noted that the lack of information about the usage of financial instruments is frequently cited as a reason for the many scandals involving the use of derivatives by managers. Marshal and Weetman (2002) also found a wide gap between the demand for and supply of risk management disclosure of UK and US companies examined. They examined information disclosed in respect of the hedging process in 30 companies in each of the countries and found 39.55% and 46.54% of the requirements of FRS 13 and SFAS 119 as the average the US and UK companies respectively disclosed. They concluded that a large number of important requirements of risk management disclosure are being withheld by managers. Such important requirements documented by them include the pricing strategy of derivative instruments, objectives for managing foreign exchange risk and the level of hedging transaction that require boards' transaction authorisation.

Roulstone (1999) and Wong (1999) explored the supply of foreign exchange risk management disclosures by US companies in relation to SFAS 119, 133 and SEC Release No 48 when disclosure was voluntary. Roulstone (1999) found aspects of qualitative disclosures in respect of risk management inconsistent. This he noted made it difficult for readers of financial statements to understand the 'firms' risk management goals and its ability to achieve those goals. He noted that the market risk disclosures, encouraged but not required under SFAS 119 and 133, improved greatly under FRR No 48 but 'varied widely in detail and clarity.' While many of the firms provided information

regarding their quantitative and qualitative disclosures of market risk, most of them did not discuss the details and limitations of their risk measurement models and disclosures. The varying nature of firms' disclosure makes them inconsistent and difficult for the shareholders to understand the firms' risk management goals and its ability to achieve those goals. Wong (1999) also found a wide gap between quantitative disclosures made by managers about derivatives risk exposure under SFAS 119 and the foreign exchange risk exposure of manufacturing firms.

In the UK, Adedeji and Baker (1999) and McIlwraith and Dealy (2000) observed disclosures made by some UK companies prior to FRS 13 and under FRS 13 respectively. Adedeji and Baker (1999) found that only with narrative disclosure can it be said that there is a positive relationship between the degree of use of derivatives and disclosure, while quantitative disclosure is inconsistent in detail among companies. The implication of their findings under voluntary disclosure of the hedging process is that managers hold substantial information back and so substantial information asymmetry still exists between the managers and the shareholders/investors.

3.7.9. Derivative use reporting before and after FRS 13

In the same year that FRS 13 was introduced, Woods and Marginson (2004) examined the 1999 annual reports of banks in the UK to evaluate the usefulness of the disclosure to users of financial statements.

They measured usefulness in terms of the qualitative characteristics of financial statement information in the ASB Statement of Principles which emphasise such criteria as materiality, relevance, reliability, comparability and understandability. FRS 13 required all listed companies except insurance companies

to disclose information about derivative use in their firms. Its stated objective, which is to ensure that financial statement users are enlightened by their firms as to the nature, scope and implications of derivative usage in firms, calls for evaluation of the extent to which firms complied. To assess reporting quality, Wood and Marginson (2004) used specified criteria by major regulators such as FASB, the IASC and the ASB. According to the ASB's statement of principles, chapter 1, Paragraph 3, 29-31, 'the objective of a financial statement is to provide information...useful for assessing stewardship...and for making economic decisions.'

The usefulness of disclosed information to users of financial statement appeared to be the most important quality, while the criteria stated in the ASB statement of principles arguably only serve to enhance decision usefulness. For example, only material information in firms' reports will be useful to shareholders for investment decisions and so is like a qualifier to the information disclosure requirements of standards on disclosure, i.e. FRS 13. The criteria stipulated by the ASB are very important in order to avoid situations where information disclosed will vary or be too general so that comparability will be made too difficult. Marshal and Weetman (2002) also noted that it is not enough just to disclose.

The critical question of how relevant and useful the disclosure is should be asked. The quality or extent of disclosure needs to be examined and refined to be able to measure and justify the amount of information released by managers as well as its usefulness in making economic decisions. Information asymmetry is clearly not restricted to being lack of disclosure even though it is part of it. There are other critical aspects of information asymmetry that need to be examined and these concern whether or not the information released satisfies the standard criteria as specified by ASB statement of principle.

Marston and Shrives (1991) demonstrated this supposition which we are further interested in evaluating as it relates to IAS 32 and 39. They argue that disclosure of requirements of accounting standards in full can be deemed to satisfy the quality of disclosure. Though arguable, this means that the higher the extent of disclosure, the higher the quality of information released for decision making especially when information released is based on requirements of accounting standards. They also noted that both forms of disclosure, quantitative and qualitative, should be easy to link thereby assisting understanding of the risk profile of the firm by users, especially shareholders. When both qualitative and quantitative disclosures vary greatly for meaningful comparison, analysis of financial statements that should be based on common grounds is hampered, and this makes investment decisions by users of financial statements difficult.

The suggestion is that the quantitative aspect of the disclosure should be standardised for comparability and meaningful analysis based on common grounds. This will be used to evaluate the quality of disclosure of the requirements of IAS 32 and 39 which are the standards at the inception of the adoption of IFRSs. This is because this appears to be the expected/envisaged as this is the achievement meant by the directive that all companies in the UK should comply with the requirements of the two standards from the 1st of January 2005 (Dunne *et al.*, 2004). Also, both qualitative and quantitative information should actually corroborate as well as complement one another, with qualitative aspects adding explanatory detail to seemingly difficult figures so that figures (contract value, notional value and fair value) can be meaningfully understood by shareholders for decision making. This seems to be the intended rationale for the requirement of disclosing both. ASB 1998, Para. 3, expects that quality of disclosure should be sustained in respect of both the qualitative and quantitative disclosure.

This study restricts the examination of the mandated compliance with reporting under IFRSs to the two standards on derivative use, because of the nature of these financial instruments. We are also examining the compliance in respect of the UK because of prior findings of reporting practices in the UK on derivative use by past studies during the pre- and Post-FRS 13 periods (Adedeji and Baker, 1999). These studies have found inadequate disclosure of derivative use given their complexities by managers (see Marshal and Weetman (2002) and Dunne *et al.* (2003, 2004)). We investigate non-financial firms as these are the firms for which IAS 32 and 39 were intended, firms that are supposed to use derivative instruments to manage risks and not to trade in the instruments.

Many of the studies cited above have argued that there is a need for companies across the world to report activities of managers in a standardised manner to enable comparison and evaluation of performances on the same basis. Investors' desire to move their investments across countries for better returns requires that managers' activities in firms should be more transparently carried out. Managers should report with such standards in mind as would enable investors and shareholders to have confidence that their investment is secured and the capital markets are actually performing their roles of distributing or allocating scarce resources to the most deserving areas of the economy (Healy and Palepu, 2001). To achieve this, Europe becomes the logical starting point, and thus studies have seen the decision by the European Union for the adoption of International Accounting standards in their reporting practices as one that is noteworthy (please see Van der Tas (1988) Glaum and Street (2003) and Ball (2006). The intended benefits of this harmonisation of reporting practices to users of financial statements and investors in particular will therefore be explored.

3.7.10. The information gap and the need for more disclosure

Literature on corporate hedging has shown that mitigation of a firm's underinvestment problem and reduction of the expected costs of financial distress are potentially important rationales for a firm's risk management activities. Following the arguments of DeMarzo and Duffie (1995) and Breeden and Viswanathan (1998), this study seeks to explore an additional benefit of hedging, that is, the impact of the hedging process on asymmetric information in respect of firm's earnings. Managers are able to reduce the noisiness of earnings contributed by microeconomic factors like exchange rates such that market participants are presented with a more informative picture of both a firm's earnings capacity and the abilities of its managers. The two studies consider settings where managers have superior knowledge than shareholders in respect of the nature and extent of a firm's various market exposures.

One of the rationales for corporate hedging in financial economics literature is the effect it has on the information environment surrounding the firm. DeMarzo and Duffie (1995) and Breeden and Viswanathan (1998) as we have seen in chapter 2, agree that there is a problem of information asymmetry between managers and shareholders, which is consistent with the provision of the standards. Fama and Pfleiderer (1995, p. 162-163) suggested an uncommon signalling tool that will enable the investors observe the hedging process. They reasoned that understanding the hedging process gives investors clues about the risks the firm faces which reduce asymmetric information. For shareholders who are outsiders that do not participate in the management of the firm, relevant information on the hedging process needs to be disclosed by the managers. Studies on disclosure of important information on the hedging process have found inadequate disclosure under various disclosure regimes. Many of the studies describe information released as lacking in clarity and less

transparent, leaving a substantial information gap between the manager and shareholders/investors (Roulstone, 1999 and Marshall and Weetman, 2002).

Specifically Roulstone (1999) carried out an exploratory analysis of the effect of SEC Financial Reporting Release No. 48 in conjunction with SFAS 119 and 133 for US companies, and found inconsistencies in the qualitative disclosures regarding risk management, which made it difficult to understand the firm's risk-management goals and its ability to achieve those goals. The market risk disclosure that was encouraged (voluntary) but not required under SFAS 119 and 133 was found to vary widely in detail and clarity. While some companies filing their reports provided quantitative and qualitative disclosure of market risks without discussing the details and limitations of their risk measurement models, others merely repeated the quantitative disclosure in the qualitative section. One of the specific findings of Roulstone is that 'certain required or strongly recommended contextual disclosures were almost completely absent'. He noted that some registrants provided 'detailed information regarding how and why risks are hedged and how much hedging was undertaken'. He further noted that many other firms listed and discussed specific instruments used in their hedging process as well as the specific items hedged.

This haphazard and inconsistent disclosure made it difficult to understand the companies' risk management goals and management ability to achieve these goals, which are essentially the requirement and the expectation of SFAS 119 and 133, and SEC release 48. Roulstone explained these inconsistencies and lack of clarity as managerial inexperience of the new regulations and the need to learn the rules. Marshall and Weetman (2002) found his explanation as merely convenient and inadequate, as they also found inadequate reporting practices in respect of derivative use in the UK.

They therefore argue that the reasons given by Roulstone (1999) lack credibility in view of the expertise available within corporate finance departments of many of these firms and the audit of these companies by world-class and international auditing firms, many of whose personnel are involved in the process of developing new disclosure regulations through comments and suggestions before new regulations become effective.

Rather than accepting the explanation of Roulstone (1999), Marshall and Weetman (2002) suggested that the agency-cost problem of corporate finance as well as non-compulsory disclosure requirements may offer more fundamental/empirical explanations. They argued that this is consistent with the theoretical models of information economics, whereby managers will not want to reveal the totality of their information knowledge as they might have hedged in some instances in order to further their personal ambition and not that of shareholders. Given the above scenario, they suggest that the need for a compulsory regulatory framework for disclosure measurement and recognition requirements cannot be overemphasised. Their study therefore posits that the adoption of IFRSs by all non financial companies, with specific requirements that companies are mandated to disclose, will lead to increased disclosure and minimise the information gap between managers and shareholders. The information disclosed will also be expected to have value relevance for investors/shareholders.

3.7.11. Derivative use disclosure by non financial firms - FRS 13 vs. IFRSs

Prior to the introduction of FRS 13 by the ASB in September 1998, which became effective for accounting periods ending on or after 23/03/99, there was a lack of existing standards in the area of derivative use and disclosure in the UK. The story is the same in the US before the introduction of SFAS 119 and 133 and internationally before the introduction of IAS 32 and 39. What existed in both the UK and the US prior to FRS 13 and SFAS 119 respectively can best be described as firms' individual procedures that were largely internal to these organisations, but inconsistent in their applications to similar instruments at different times. This is the reason there was virtually no disclosure of, or disclosures that were misleading on the use of derivative instruments. In the UK, FRS 13 – *'Derivatives and other financial Instruments: Disclosure'* required all quoted firms which used derivatives including all banks and financial institutions, excepting insurance firms, to disclose both qualitative and quantitative information regarding the hedging process. Its stated objective is to ensure that reporting entities 'provide in their financial statements, disclosures that enable users (shareholders, analysts, bondholders etc) to assess the entity's objectives, policies and strategies for holding or issuing financial instruments' (ASB, 1998, Para. 1).

The *quantitative* disclosure required included, with special reference to foreign currency derivatives, the notional amount of the instrument involved as well as its maturity date, currency risk analysis of financial assets and liabilities in the major currencies involved, and the fair value⁶ of financial instruments by categories. Others include the value of financial instruments held for trading, the extent of unrecognised or deferred gains and losses from hedge accounting and whether they will crystallise

⁶ The FASB defines fair value using three levels with the most preferred level being those estimated based on quoted prices of similar instruments in asset and liability forms.

during the next year or not; and lastly, gains and losses from hedge accounting separately identified in the profit and loss account. The above information was required to be disclosed in aggregate formats in respect of all outstanding instruments and to be disclosed in main currency categories. The *qualitative* disclosure required a statement of the financial risks that the firm faced, a statement of the objectives, policies and strategies in using derivatives to address these risks, the role of hedging, the effect of using derivatives on the risk profile of the firm and finally how the quantitative disclosures fit in with these objectives, policies and strategies. This was designed to link the qualitative and quantitative disclosures.

Adedeji and Baker (1999) provide an insight into the reporting practices of firms on derivative use, both prior to and during the adoption of FRS 13, in order to distinguish between information that was or was not disclosed prior to FRS 13, which justified its introduction. This afforded them the opportunity of identifying the additional information released by managers as a result of the requirements of FRS 13. In specific terms, their interest was to establish the extent of the problem that FRS 13 was designed to solve as well as identifying the difficulties that companies may face at the initial introduction of the standard.

They found that the reporting practices of firms prior to the requirements of FRS 13 were far too general. They found less than half of their sample companies disclosed important aspects of derivative use in their annual reports. Their findings show that prior to the introduction of FRS 13, there were no financial reporting mechanisms in relation to the hedging process in place in the UK. This led to their conclusion that only with narrative disclosure can it be said that there is a positive relationship between the degree of use of derivatives and disclosure, while companies disclosed different things in

respect of quantitative aspect just as the level of detail is different among them. The conclusion that could be inferred from their findings under voluntary disclosure of the hedging process is that managers retain substantial information and so substantial information asymmetry exists between the managers and the shareholders/investors.

Also in the UK, in corroborating the findings of Adedeji and Baker (1999), McIlwraith and Dealy (2000) observed disclosures made by some UK companies prior to FRS 13 and under FRS 13 respectively. They found incomplete disclosure of the hedging process, especially explanations on the use of derivatives as well as companies' policies and strategies on such usage, by 50 of the 60 firms sampled.

Marshall and Weetman (2002) reach similar conclusions to both Adedeji and Baker (1999) and McIlwraith and Dealy (2000). Their study, which is on the disclosure practices of foreign exchange risk management in both the US and the UK, found that UK companies only focus on the corporate governance aspect of derivative use in their annual reports.

These findings provided justification for the introduction of FRS 13 in the UK, SFAS 133 in the US and then the decision to harmonise reporting practices among European firms through IAS 32 and 39 for which FRS 13 had to give way. FRS 13 itself had some shortcomings. Notable among the shortcomings is that it was a disclosure-only standard with issues such as recognition, measurement and presentation not emphasised. This implies that most of what will be disclosed, recognised and presented, and the measurement of financial instruments will be largely dependent on the wish of managers, thereby making compliance with FRS 13 largely voluntary. The effect is that derivative use

information in annual reports made comparability of annual reports difficult just as it made it fall short of faithful representation of issues around derivative use.

Mallin *et al.*, (2001) considered it unclear in several areas. The committee that was set up to review it also reached the verdict that many companies that should report under it were not abiding with the guidelines. This meant that many of the companies that should report under FRS 13 reported as if they were in the pre-FRS 13 era. The result was reporting practices that were based on managers' preferences of what should or should not be reported. Hinks (2001) reported that Wiggins plc was asked to restate their accounts, following the requirements of the standard, from 1996 to 2000 and this brought a lot of confusion and wasted resources.

What are the likely roles of International accounting standards given the shortcomings of local GAAP in disclosing important aspects of derivative use to shareholders, especially in the light the acceptance of reporting under these standards? Reporting under an international regulatory regime in general means greater uniform reporting that should enhance comparability. In particular, reporting derivative use under IAS 32 and 39 in the UK means that more information on derivative use will have to be disclosed, as the two standards encompasses relevant information on disclosure, recognition, measurement and presentation. These issues in respect of derivative use are material information, the omission or misstatement of which could affect economic decisions by shareholders. They are therefore capable of making the hedging process more informative. The adoption of the IFRSs in respect of relevant financial instruments by the companies would be expected to bring about more information about these instruments and this means more transparency. Empirical evidence shows that increased transparency arising from more attention to relevant issues, in this case on derivative use for

hedging purposes as detailed by the two relevant international standards, is capable of increasing regulatory scrutiny. This will likely lead to a higher standard of transparency and disclosure resulting from reduced information asymmetry and have a material impact on the cost of capital and higher market value (Healy and Palepu, 2001; Sami and Zhou, 2008). The 2005 rules are as found in Delloitte publications in 2001, 2004 and 2005, Ernst and Young (2004), and the technical summaries of both standards.

One important rationale for this study is the need to extend literature on disclosure of the hedging process under this mandated/compulsory disclosure regime that harmonisation of reporting practices among companies in the EU countries represents, but with particular reference to UK companies. This is the reason our next presentation examines the issue of harmonisation and increased disclosure as well as the issue of comparability that are intended. We would also examine the effect of compulsory disclosure on the information environment of the firm and its extent on firm value. Secondly, Adedeji and Baker (1999) (UK) remarked at the end of their studies that the compulsory disclosure requirements of IAS 39 are topics for future research on the hedging process. It is therefore expected that full and compulsory disclosure of the hedging process should have positive effects on the firm's value. This is because of the informativeness of both the firms' earnings and cash flows.

This study is therefore responding to their call for a more empirical study in this area whilst it also seeks to extend the literature from the consideration of voluntary to the compulsory disclosure requirements of recent accounting standards and what the value relevance of this will be to investors.

3.7.12. The need for more disclosure and justification for harmonisation

Many studies have pointed to the role of increased disclosure in reducing information asymmetry between managers and users of financial information, especially the shareholders. Healy and Palepu (2001) argue that the demand for financial reporting and disclosure, the hedging process included, arising from information asymmetry and agency conflicts between managers and outside investors are real and therefore should be pursued. The transition from reporting derivative use under UK GAAP of FRS to IFRS represents increased good corporate governance as it is expected to bring about adequate, meaningful and comprehensive disclosure of financial information. This means in particular on the hedging process, that the prescriptions of relevant standards if followed are capable of releasing relevant information to users of financial statements because of the comprehensive nature of IFRS. This should lead to transparency of reported earnings and cash flows for investors' investment decision making. FRS 13, under which UK companies reported derivative use up to 2004, was a disclosure-only standard which prescribed less information for disclosure by managers when compared with IAS 32 and 39 that require disclosure and presentation of financial instruments including derivatives, and recognition and measurement of financial instruments which also include hedge accounting.

Although FRS 13 emphasises both narrative and numeric disclosure it does not cover recognition, de-recognition, measurement, valuation of derivative financial instruments and hedge accounting. These shortcomings of FRS 13 led to the findings of both McIlwraith and Dealy (2000) and Marshall and Weetman (2002) in their review of managers reporting practices both in the pre- and post-FRS 13 periods. They found incomplete disclosure with important issues (for example issues in recognition

and measurement) in derivative use not disclosed in the annual reports of their sample companies. Also, while companies were encouraged to disclose their derivative use under FRS 13, it became mandatory to disclose managers' private information in compliance with the adoption of IFRSs and harmonisation of reporting practices among companies in the EU.

With a compulsory regulatory framework that is more comprehensive and mandatory, theoretically managers will be forced to disclose the hedging process in a standardised format. The ASB claimed that this will enhance comparability, reliability, relevance, understandability and materiality of information (ASB, 1999). Arguably, it will be possible to arrive at a view of the usefulness and quality of disclosure of the hedging process in the annual reports of firms, not only among UK listed companies but also in comparison with other listed companies in Europe as the adoption of both IAS 32 and 39 has international acceptability (Marshall and Weetman, 2002; Woods and Marginson, 2004⁷). It is therefore expected that the effect of more complete information released to shareholders will be to help them estimate the intrinsic value of the firm's share. This will be possible through minimising the use of difficult disclosure formats, incomplete disclosure, and different choices from the managers that could be subjective and/or misleading.

The much needed clarity of information is expected to be sustained and shareholders better informed to take economic decisions (Dunne *et al.*, 2004). When information for disclosure is statutorily required and for harmonisation purposes across regions, it retains a form of compulsory nature that might be subjected to official monitoring with a view to measuring compliance or otherwise. This will

⁷They had followed the ASB statement of principle on disclosure of risk management activities and disclosure for financial firms. My study is for non-financial firms. This requires the standardisation of both the numerical data as well as the qualitative aspect for compatibility in order to allow for objectivity and meaningful analysis that is based on common ground for a robust finding grounded in both theory and empirical findings.

then be reported on or commented upon in order to uphold or reject the credibility of the document wherein the information is contained (Choi *et al.*, 1999). They argue that subjecting the hedging process to the auditors' stringent standards/procedures and guidelines will enhance the thoroughness with which the manager will present the statutory requirements.

The traditional roles of the auditor require them, on a test basis, to examine supporting documents or documentary evidence relating to the reported disclosure and in this case of the hedging process. Auditors are only able to do this in respect of those disclosures that are backed by relevant accounting standards. In respect of these types of disclosure requirements, they can check the internal controls put in place by management with a view to assessing its adequacy or otherwise. Companies are obliged to release such internal documents of the firm that will enable them to carry out their various tests. No other person or group of persons has the right to carry out this type of assignment.

Under voluntary disclosure requirements, auditors are not obliged to check thoroughly information disclosed by managers, as such information is regarded as additional to statutorily required information in companies' annual reports. For the usage of financial derivatives as a tool of managing risks in firms to be a signalling tool, both quantitative and qualitative disclosure requirements need to be statutorily and compulsorily disclosed in standard formats, and for a relevant authority (i.e. the auditors) to verify whether such disclosure meet the requirements. This would partly resolve some of the problems of voluntary disclosure as found by Adedeji and Baker (1999).

This study therefore investigates the need for improved measures of disclosure quality under the relevant accounting standards on the management of financial instruments and assesses the impact of improved disclosure quality on firm value.

3.7.13. Convergence/harmonisation of derivative use disclosure and firm value

Studies have reported divergence in reporting practices of companies within countries in the European Union as well as between these countries (See Street and Gray (1999) and Ahmed and Zafarullah (2000)). This has led to the clamour for harmonisation of reporting practices among companies in the EU. In the UK the harmonisation of reporting practices in general and that of derivative use in particular started on the 1st of January 2005. Prior to this date and on derivative use companies in the UK were reporting derivative use under the relevant UK GAAP which was FRS13.

The need for harmonisation is premised on the global economy that we now have - a situation that requires that common business language be spoken by hitherto distinct national economies (Belkaoui, 1994). The global economy now has an effect on the business world in so many ways. In today's global economy, a corporation is likely to have its corporate headquarters in more than one country and its production and distribution networks cutting across countries. Important issues such as the determination of commodity prices, interest rates as well as exchange rates can no longer be handled by one country but will have to incorporate many countries. The effect of the interrelationship between companies in the global economies with different reporting practices was that different sets of accounts have had to be prepared for different countries where they have their presence and have been doing business. If this is not done, they are likely to lose substantial market share as international

investors would want to understand the financial statement of the company they want to invest in. This they cannot do because of lack of comparability of financial information/statement.

Without harmonisation of reporting practices individual companies prepare financial statements under different regulations (accounting standards) which may conflict with each other (Van der Tas, 1988; Aisbitt, 2001). Investors will also need to compare the financial statements of the company with similar companies before they make their investment decisions. The need for harmonisation is apparently to enhance increased understandability of financial statements as well as comparability of financial statements of a company with those of others (Tay and Parker, 1990; and Choi *et al.*, 1999; Tarca, 2002). Comparability will be hampered if companies prepare their financial statements under different regulatory regimes, hence the adoption of IFRSs in reporting items in financial statements (Nobes and Parker, 2002).

The use of derivatives and other financial instruments is being reported under IAS 32 and 39 for harmonisation purposes of derivative use disclosure in annual reports. Consequent upon the adoption of IFRSs for harmonisation purposes, UK companies started reporting under IAS 32 and 39. These two standards require increased disclosure of derivative use in comparison with FRS 13. The same standards will also be used by other companies in other European countries for the intended purpose of comparability of financial statements of these companies.

If the increased disclosure, which the adoption of IAS 32 and 39 represents in comparison with the requirements of FRS 13, is good news for the stock market, then it should affect share prices of companies that have adopted the IFRSs (Basu, 1977; Fama and French, 1993; Ball *et al.*, 2003). Also,

theoretically, if the announcement of this paradigm shift constitutes a means of making managers compulsorily disclose their private information, then compliance with the disclosure requirements or the extent thereof would mean an increase in transparency which will be expected to have associations with movement (increase) in stock prices of our sample firms that use and report derivative use under the international standards. Consequently we posit that firms that disclose more will be expected to have higher market value than those that disclosed at low or medium levels as held for example in Ball and Brown (1968); Basu (1977); Fama and French (1993); and Ball *et al.* (2003). Ball *et al.* (2003) relied on the use of stock returns in their measurement of earnings which they argue reflects the information released with the returns captured. They had scaled their proxy for earnings using market value of equity of their sample firms in order to remove potential size bias in the result. They followed the approach of Basu (1977).

Chapter 4: Methodology, Data and Research design

4.1. Introduction

This chapter details the research methodology and data used in this study to answer our research questions. The chapter also details the hypotheses developed which are the medium used to explain further our findings in providing answers to the research questions. This section introduces the rationale for the adopted methodology followed by the description of our approaches and data.

The adoption of IFRSs under which companies were mandated to report financial information in general and derivative use in particular in annual reports constitutes a regulatory change. One of the important gains expected from the adoption of international standards is the envisaged increased transparency in reporting practices of managers of quoted companies. In particular studies have concluded that the nature of disclosure of derivative use under FRS 13 were limited to the focus of the standard, which was branded ‘a disclosure only’ standard’ which consequently dictated internal controls put in place which has been adjudged inadequate (Adedeji and Baker, 1999 and McIlwraith and Dealy, 2000). The above studies concluded that managers did not make complete disclosure of the hedging process that should typically include issues such as how instruments will be recognised and derecognised, their measurement and remeasurement as well as hedged accounting⁸. Other studies as well as writings in connection with issues in derivative use have also pointed at insufficient disclosure of the hedging process as one of the causes of derivative-aided collapses or near collapses such as those of Enron, Barings bank, Orange County and the recent case of Mitchells and Butlers (Hogan, 1997; Dunne and Helliard, 2002; Financial Times, 2008).

⁸ See chapter 3 on the evolution of this part of IAS 39 from Exposure Draft (ED) 40 and later ED 48.

IAS 32 and 39 which became the regulation guiding the use of financial instruments focuses on these important issues in respect of the hedging process. Issues such as recognition, derecognition, measurement and remeasurement and hedged accounting are detailed in the requirements of the two standards. This is expected to increase transparency of the hedging process especially the use of derivatives.

This is consistent with empirical literature which suggests that investors' decisions may be influenced by economic motives. Consequently reporting under international standards provides a medium that this study uses to examine the stock market's reaction to disclosure of more information on derivative use that compliance with the requirements of the two relevant standards represents. Empirical literature on transparency and disclosure posits that the market would react favourably to more relevant information presented to investors. The literature essentially suggests that investors would perceive as 'good news' relevant information on derivative use because of its nature and the identification of potential risks that firms can face when derivative instruments are used for reasons other than to hedge these risks.

Consequently, this study conceptualises the possible measurement of transparency in companies that use derivatives. Our starting point is the premise that more transparent companies should have higher market values. To test this assertion, we adopt procedures that included the measurement of how much of the requirements of the standards managers have reported on. We followed this with an approach that is capable of measuring the effect of the reporting/disclosure levels of our sample companies. This calls for the use of content analysis and event-study methodology.

The rest of the chapter is organised into five sections as follows. The first section presents a review of content analysis through the examination of empirical models that informed the construction of information items and the calculation of extent of disclosure of our sample firms. In this section we obtained the extent of disclosure that formed the main variable in our model which we constructed in section five of this chapter. The second and third sections discuss regulatory change which it links to the event-study methodology to calculate excess returns. The fourth section describes our data sources and how they were collected, while the fifth section presents the estimation of the market model and also explains other variables.

4.2. Content Analysis and extent of disclosure

This study was carried out in respect of UK non-financial firms. The research seeks to measure the extent of disclosure and the value relevance of levels of disclosure to shareholders of our sample firms. Thus, we need to obtain the disclosure levels of derivative use by companies who use derivatives through their annual reports. The reported use of derivatives is the basic requirement for a company to be in our sample. Secondly, there is also the need to obtain daily returns of these companies. This will enable us to measure the response of investors to the amount of information released by these companies. For this second method we adopt the event-study methodology and the market model in a cross sectional analysis. We use content analysis to identify what companies disclosed in their annual reports and use this to create a disclosure index for each of our sample companies. Studies that examined extent of disclosure of items of interest like ours (Barrett, 1976; Cooke, 1989; Adedeji and Baker, 1999; Dunne, *et al.*, 2004; Wood and Marginson, 2004; and Lopes and Rodrigues 2005, 2007) recognise annual reports as one of the most important sources of organisational information or

corporate reporting that users of financial information rely on, alongside other sources such as through surveys (Firth, 1980; Chow and Wong-Boren, 1987) interim or quarterly report releases, prospectuses and advertisements through media (Lang and Lundholm, 1993).

We analysed the contents of annual reports of our sample companies in line with the requirements of IAS 32 and 39. IAS 32- *financial instruments: presentation and disclosure* and IAS 39-*Financial instruments: Recognition and measurement* were the two accounting standards governing the issue of how financial statements should present, disclose, recognise and measure financial instruments. The requirements were obtained from various sources which included Delloitte iGAAP 2004 and 2005 – IFRS reporting in the UK, Ernst and Young (2004) – GAAP under IFRSs and IFRS/IAS 32 and 39 summaries. These two standards were adopted in 2004 by the European Union but became effective from 1st of January 2005. UK companies were mandated to report under these two standards instead of reporting under FRS 13 (UK GAAP) that was in operation prior to 2005. IFRS 7 was carved out of IAS 32 and became effective in 1/1/2007 (See appendix 1) as *financial instruments: disclosure* while IAS 32 became *financial instrument: presentation* also on this date. The two relevant standards were examined as they stood at the inception of the adoption of international standards for reporting (See chapter 3.1).

Content analysis is a widely used method in accounting research. It is useful in analysing both quantitative and qualitative issues such as ‘social, environmental and developmental disclosures’ in general that are presented through the annual reports (Holsti 1969). It is a technique used in order to make inferences through relative objectivity and identification of specific characteristics of messages contained in both the quantitative and qualitative disclosure. Analysis of firms’ disclosure practices or

information release has been used by studies in order to make inferences on developmental disclosures in accounting/annual reports (Marston and Shrivess, 1991) through the development of disclosure indices. Roulstone (1999), Marshal and Weetman (2002), Woods and Marginson (2004), and Lopes and Rodrigues (2005, 2007) are specific studies that have used content analysis to examine information disclosed in firms' annual reports in order to establish the extent of compliance with relevant regulations in different periods. Historically, its use goes back to the beginning of 20th century in other fields such as law and economics, and has continued to be widely used since then (Holsti, 1969:14). Through the years, many developments have been recorded in the use of content analysis in order to gain wider acceptability. Such a development includes the use of disclosure indices as well as computer content analysis. Marston and Shrivess (1991) attested to the usefulness of disclosure indices when they reviewed studies that have used the methodology, and conclude that the measurement technique is valid as it produces reliable results.

We also obtained support for the adoption of content analysis to obtain our disclosure indices from Copeland and Fredrick (1968), Holsti (1969), Singhvi and Desai (1971), Buzby (1974), Marston and shrive (1991), Krippendorff (1980, 2004) and Lopes and Rodrigues (2005, 2007), who have all attested to the usefulness of content analysis in studies that seek to utilise the quantitative methodology approach to answer their research question, that has to do with extent of information disclosure in annual reports. The critics of content analysis have always argued that quantitative attributes are essential to content analysis and may not suit the analysis of qualitative issues (Kaplan and Goldsen, 1949; Holsti, 1969; Gray, Kouhy and Lavers, 1995).

We developed disclosure indices in order to avoid the more subjective method of counting data items as argued and suggested by Copeland and Fredericks (1968), Belkaoui and Kahl (1978) and adopted by Cooke (1989), Cooke and Wallace (1989), Marshall and Weetman (2002) Wood and Marginson (2004) and Lopes and Rodrigues (2005, 2007) because of possible repetition of words and figures in annual reports. Secondly, we note the subjectivity of this method also when a company is a multinational with many lines of business or segments and has so much to disclose that this will be to the disadvantage of smaller companies with fewer segments and therefore having less to disclose. We counter this shortcoming by scoring a company only when an item of disclosure is relevant to the company. To determine when an item is relevant to a company we look for corroborative evidence in the annual report from both numeric and narrative reporting and in comparison with the requirements of applicable standards as suggested and adopted by studies mentioned above. Cooke (1989) based his selection on disclosures recommended by the International Accounting Standards Committee to examine the extent of disclosure by Swedish companies in his sample. The approach was subsequently used by Roulstone, (1999), Adedeji and Baker (1999), Marshall and Weetman (2002), Woods and Marginson (2004), Dunne *et al.* (2004) and Lopes and Rodrigues (2005, 2007). All - developed checklists appropriate to their studies⁹.

For example, Roulstone (1999) developed checklists used to compare the disclosure about derivatives and market risk made by his sample companies in the US by reference to the requirements of Financial Reporting Release (FRR) 48 issued by the Security Exchange Commission (SEC) and which was based on Financial Accounting Standards (FAS) 119 and 133, the accounting standard guiding the use

⁹ Other studies that used measures constructed by the researcher in order to develop a checklist of information against predetermined requirements which companies are expected to comply with through the release of such information in firm's annual reports including Botosan (1997), Hail (2003) and Francis, Nanda and Olsson (2005).

and reporting of derivatives in the US in 1997. Marshall and Weetman (2002) also documented the extent of information release from information in possession of managers on foreign exchange risk management in the US and UK, through the use of requirements of SFAS 119 for US companies and FRS 13 for UK companies in the construction of their disclosure indices. Consistent with the above literatures, we developed a check list of the requirements of IAS 32 and 39 against which our sample companies were scored with each category distinguishable from the other category and scoring allocated not only on the basis of the existence of the category but also based on its relevance to the particular organization being scored.

The above approach is not without its own problems. The limitations include the arbitrariness in the selection of information items to search for and the rigor required in searching the entire annual report to ensure that nothing is left out. Other limitations include the inability of the approach to capture quality of information released as only the existence of a particular disclosure can be achieved. We addressed the problem of arbitrariness in our choice of what to search for by reference to the requirements of the two accounting standards.

In this research, a company is deemed to be a derivative user if information regarding its derivative usage is found in its annual report. It is important to determine whether the decision to either use derivatives or not has been taken in preference to natural hedge or other forms of risk management. If the decision is to use derivatives, then the question becomes, ‘what is the extent of derivative usage in comparison with the level of disclosure found in the annual reports?’ We did this by reference to the requirements of IAS 32 and 39.

Many variants of content analysis have been used, adapted and evaluated in prior studies such as that of Marston and Shrives (1991). We will discuss two of them that are closest to our need in this study. We note that narrative data in firms' annual reports are an integral part of financial reports and as quantitative data they have information content and can therefore be relied upon for analysis and for inferences/findings. These narrative elements in firms' annual reports can be evaluated in order to capture the information content of this aspect of the hedging process. One important program that has been developed and which is capable of statistically evaluating narrative data is WORDS which is software developed for content analysis. It essentially counts words in a narrative and is used for variants of content analysis that derive data from the content of communication based on the frequency of appearance of certain symbols, words or themes (Copeland and Fredrick, 1968). Buzby (1974) noted that it better suits narrative reporting and that it will produce unreliable results if applied to numeric disclosures. 'WORDS' was used by Wood and Marginson (2004) but they also acknowledged the subjective nature of the method which led to the need for them to use another measure to test the reliability of their results. They also used another method to measure numeric disclosure. The subjective nature and limited use of this variant of content analysis was also referenced by Holsti (1969:31) and Buzby (1974).

Although the importance of narrative aspect of reporting in annual reports has been variously attested to by many studies, text and numbers are both important in derivative disclosure (Breton and Taffler, 2001 and Dunne *et al.*, 2004). Dunne *et al.*, (2004) provide evidence that both analysts and shareholders depend on the narrative aspect to gain understanding of accounting numbers. The requirements of IAS 32 and 39 seek disclosure of both narrative and numeric aspects of derivative use for which a more appropriate variant of content analysis is required.

The second variant of content analysis is the contingency approach. This is a non-frequency technique used for categorical scoring which is better able to capture both numeric and narrative disclosures. This variant was recommended by Holsti 1969:95 and Buzby (1974) as capable of measuring the relative importance and/or the extent of disclosure of items of interest that could be financial (numeric) and non-financial (narrative) in companies' annual reports. This approach has been widely used in literature and is prominent among the studies that have used the approach, including Copeland and Fredrick (1968), Singhvi and Desai (1971), Belkaoui and Kahl (1978), Barrett (1976), Firth (1979), Cooke (1989), Roulstone (1999), Wong, (1999), Adedeji and Baker (1999), and Dunne *et al.* (2004). The approach has been described as a scientific method wherein coding is applied to show the presence or absence of the elements of interest to the researcher. The widespread usage of the approach attests to its usefulness and validity as can be inferred from the numerous studies that have used the approach.

This research is particularly interested in analysing the presence or absence of the requirements of IAS 32 and 39 within the different sections of companies' annual reports rather than on the frequency of its presence, as frequency is not important in itself in this instance. Therefore, we used contingency variant of content analysis, which involves categorical scoring as used by Cooke (1989), Raffournier (1995), Dunne *et al.*,(2004), Marshall and Weetman (2002) and Lopes and Rodrigues (2005, 2007).

Dunne *et al.* (2004) used a categorical scoring approach to research the content of disclosures in companies' annual reports with a view to determining whether it had a material effect on the quantity and quality of information in respect of derivative usage in firms. They sought to examine whether the

requirement of FRS 13 (to ensure the disclosure of relevant information regarding the hedging process) was complied with. In order to achieve this, they used content analysis to compare information release with the requirements of the standard. They also compared disclosure of derivative usage prior to, and following, the introduction of FRS 13. This enabled them to measure additional information released as a result of the introduction and the requirements of the standard. They found inconsistencies in reporting practices of managers in both regimes as managers were only encouraged and not mandated to disclose the hedging process using derivatives.

Marshall and Weetman (2002) also investigated an aspect of financial instrument disclosure - foreign exchange risk disclosure - which was carried out prior to the adoption of FRS 13. They also used categorical scoring to measure the level of disclosure by their sample firms. They found that the explanation offered by the firms in their sample about the use of derivatives, the strategies and the policies instituted appeared 'incomplete'. This is also consistent with the findings of Dunne *et al.* (2004). Others that have used categorical scoring approach of content analysis to obtain managers reporting practices include Adedeji and Baker (1999), Roulstone (1999) and Lopes and Rodrigues (2005).

From the above, the categorical scoring approach of content analysis can be seen to suit circumstances where information release is being investigated against the prescriptions of existing regulations. This study therefore uses a similar methodology to investigate how derivative use is being reported under IAS 32 and 39. We looked for statements and words that complied with the requirements of the two standards within individual and entire annual reports of our sample companies. We used dichotomous procedures with unweighted indices, because weighting of indices is appropriate in surveys when

items of information are perceived as having different degrees of importance to different user groups. Weighting of indices is not adopted in this study because we believe that each item has the same degree of importance to different user groups. Secondly, many studies have used unweighted scores for various other reasons. Firth (1980) and Chow and Wong-Boren (1987) found that in a large number of items in a survey, weighted and unweighted scores give the same results. They argue that this is because the weights attached to each user group in a large survey average out. Cooke (1989) viewed the issue of weighting from users' perspective and posits that where weighting is appropriate but the focus of a study is on all users; weighting would be unwieldy and may not add value, arguing that weighting increases the subjective nature of the dichotomous procedure. This is also consistent with the findings of Spero (1979) who arrived at similar results. The categorical scoring method adopted in this research is unweighted but additive.

The use of categorical scoring that gives the disclosure index scores gives measurements which are ordinal but non-weighted. This also means that in addition to achieving measurement, we also achieve an interval scale. This means that the disclosure of an item does not have a higher weight than the disclosure of another item in the list of categories.

Thus an answer of 'yes' for one item in our list of categories is exactly equal to a 'yes' to another item. A right answer to one item is equivalent to giving a right answer to another item. Siegel (1956, p. 28) provides support for this approach as he notes that to achieve interval scale properties, there must be a common and constant unit of measurement which largely supports unweighted indices. He further suggests the applicability of common parametric statistical tests such as *t*-test and *diagnostic tests* in circumstances of unweighted and additive indices arising from categorical scoring.

This provides justification for the use of a parametric method in this study. The appropriateness of the parametric method is demonstrated by Marston and Shrivess (1991) where they show that when disclosure indices have the attributes of ordinal rather than interval scale, there could be implications for how the scores are processed. This gives rise to the question of the appropriateness of parametric or non-parametric statistical tests. Their argument has implications for weighted disclosure indices which try to achieve measurement on an interval scale. This is because it is debatable whether a score of one to four provided in a typical survey by respondents could be used to rate an item that scored four as being twice as important as an item that scored two. Their explanation is consistent with those of Stevens (1946), Heeren and D'Agostino (1987) and D'Agostino *et al.* (1988) who proposed parametric tests when ordinal data has measurements on an interval scale which is found in categorical scoring of non-weighted indices. Our data and approach satisfy both, hence the use of OLS regressions (parametric) and the application of *t*-test and diagnostic tests in our interpretations of the results of this study.

4.2.1 Empirical model A: Extent of disclosure

This study investigates a sample of 182 UK non-financial sector firms. The research methods adopted in this study are two-fold, leading to two empirical chapters. First, there are comparisons of sample companies' annual reports against a check-list drawn from the requirements of IAS 32 and 39 in order to measure the extent of actual reporting practices' compliance with the requirements of these two international accounting standards in respect of derivative use. This approach follows studies referred to in section 4.2 above, that have used a categorical scoring approach to content analysis to make

inferences on developmental disclosures in accounting reports which they measured against relevant regulations. They all used information published as part of firms' annual reports in order to establish extent of compliance with regulatory requirements.

Our index of disclosure included as table 6 is the result of our model of level of disclosure on derivative use based on the requirements of IAS 32 and 39. This is similar to the model of adequate corporate disclosure suggested by Cerf (1961), Holsti (1969) and used by Singhvi and Desai (1971), Dunne *et al.* (2004), Francis *et al.*, (2005) and Lopes and Rodrigues (2005, 2007).

Since the purpose of harmonisation is to facilitate comparability of financial information, a study like this that seeks to measure the extent of disclosure which is an effective measure of the closeness of reporting practices of these companies to one another and hence comparability, is best approached through the use of annual reports. This is therefore what informed our use of annual reports, which we obtained from respective companies' site on which we carried out a comprehensive and detailed analysis of derivative use and disclosure of 182 large non-financial companies in the UK. This is consistent with the conclusion of Tay and Parker (1990) which was also followed by Raffournier (1995), Emenyonu and Gray (1996), Roulstone (1999), Marshal and Weetman (2002), Dunne *et al.* (2004) and Lopes and Rodrigues (2005, 2007) that such procedures adequately measure actual reporting practices in comparison with requirements of relevant standards.

A firm is included in our sample (see section 4.5 for the make-up) if information regarding its derivative usage is found in its annual report. If they decide to use derivatives, then the question of the extent of disclosure in comparison with the requirements of these standards is examined in order to establish compliance or otherwise with the directive that UK companies should report under IAS 32

and 39 with effect from the accounting year starting from 1st of January , 2005 or thereafter. This is for UK companies to report more of the hedging process, as FRS 13, which was in operation from 1999, is a disclosure-only standard which merely emphasised both narrative and numeric disclosure of limited information. No mention was made of recognition and derecognition, measurement, valuation of derivative financial instruments and hedge accounting. These became additional requirements of the international standards which evolved from ED 40, 48 and later became IAS 32 and 39. These additional requirements were examined by Lopes and Rodrigues (2005 and 2007) in respect of Portuguese companies.

Lopes and Rodrigues (2007) examined the extent of disclosure of financial instruments used by Portuguese companies through the use of 54 disclosure indices that included requirements under such captions as cash flow hedging, derivatives fair value, accounting policies, securitisation and repurchase agreements, which partly contains collateral and derecognition, and many others as required by IAS 32 and 39. This study follows a similar methodology but in respect of UK companies. They followed a dichotomous procedure with unweighted scores in order to follow the literature in this area of study, e.g. Cooke (1989) and Raffournier (1995).

The other reason for the adoption of an international standard instead of the local GAAP is to make annual reports of UK companies comparable with others that have adopted IAS under article 4 of the IAS regulation and related interpretations, which are really not different from full IFRS as adopted for use by the IASB from 1st of January 2001 (see chapter 3.1 and appendix 2). Consequently, the first question that is being asked is “to what extent have the UK companies complied with these requirements of IAS 32 and 39 in order to achieve the intended objectives of reporting under the

international standards as detailed above?” In order to answer the above question, for each of the companies in our sample the disclosure ratio or extent of disclosure of the requirements of the standards was established following the dichotomous procedure described above. Details of the procedures undertaken in the construction of the disclosure indices are further presented in the next section.

4.2.2 Construction of Disclosure Items and Scoring

There are two variants of categorical scoring approach of content analysis. The first variant proposed by Copeland and Fredericks (1968) is based on the presentation of information of interest and the scoring ranges from zero to one. The main problem of this approach is that it leads to a scale of disclosure as scores are allocated along the continuum which introduces additional bias into the scoring. The second variant advocated and used by Cooke (1989) and Raffournier (1995) use a dichotomous procedure in which an item is scored one (‘1’) if disclosed otherwise zero is given. Although this is a bit less subjective, Marston and Shrives (1991) argue, and that becomes another methodological problem of this approach, that construction of an index through which companies’ information disclosure is measured is a difficult procedure which often involves subjective judgment. Acknowledging this shortcoming, we made attempts at ensuring that the checklists drawn are applicable to our sample companies before they are scored. To this extent, we followed the suggestion of Cooke (1989) by properly examining the entire annual report of our sample companies before the score is awarded. This is in order to minimise the subjectivity that may be associated with this approach. Categories of disclosure were constructed from the requirements of IAS 32 and 39 in order to identify what to look for in the annual reports of companies in our sample. This is to aid systematic

identification of relevant categories of our indices. We followed an indexing procedure similar to the one introduced and used by Buzby (1974), Singhvi and Desai (1971) and Lopes and Rodrigues (2005, 2007), who constructed relevant categories to evaluate information released in annual reports. They argue that such a checklist helps systematic and objective identification of information of interest in annual reports.

Items of information to be included in the checklist were identified through a review of the two standards and these initially yielded 17 categories which are basically sub-heads in the two standards. These were further subdivided into 42 items after a further review against which our sample companies were check-listed. (Details of the components of the index are in table 4). A scoring sheet was developed in order to measure the extent of information released. We obtained the annual reports of our sample companies for the fiscal year starting from 1st of January 2005 or after, which was searched for relevant items to each of the companies. Their individual score is additive for the reasons explained in section 4.2 and as argued by Cooke (1989). We checked their income statement, balance sheet, cash flow statement, accounting policy section, risk management section, directors' report and notes to the accounts. We are aware of an important methodological problem of this approach that some of the items in our checklist might not be applicable to some companies and therefore only scored companies after ensuring that the item was applicable or relevant, otherwise it was treated as not applicable. We did this in order not to penalise a company for non-disclosure of items that are not relevant to them in the years examined. If a relevant item of disclosure is disclosed, it is scored '1' otherwise; its non-disclosure is scored '0'. The above approach is consistent with a methodological approach in empirical studies such as those of Cooke (1989), Raffournier (1995), Roulstone (1999),

Adedeji and Baker (1999), Dunne *et al.* (2004) and Lopes and Rodrigues (2005, 2007). The total score is calculated for each of our sample companies as follows:

Total disclosure score (TS) for a company is defined as:

$$TS = \sum_{i=1}^n bi \quad (c)$$

Where $bi = 1$ if item i is disclosed, and 0 if item bi is not disclosed;

' n ' is the maximum number of items which is 42

Cooke (1989) Raffournier (1995)

This procedure of considering an item as not disclosed ensures that the dichotomous procedure that is being adopted is only operationalised for applicable items for each of the companies (Cooke, 1989; Marston and Shrives, 1991; Lopes and Rodrigues, 2005 and 2007). This ensures that a company is only included in the analysis of specific items that are applicable to it. For example, on impairment, we searched for information on identified losses of future cash flows in respect of financial assets regardless of whether such losses had been incurred or merely reported as prescribed by IAS 39.92. In some cases we found some companies reflecting the impairment in the initially recognised amount of the asset. IAS 39 prescribes that impairment should be recognised only when incurred but should be reported as soon as its historical loss is ascertained, at which point the value of the asset should be adjusted to reflect its current value.

In summary, the characteristics of our index are that it is dichotomous, unweighted and adjusted for a non-applicable bias as recommended by (Spero, 1979:57) and adopted by Cooke (1989), Raffournier (1995) and Lopes and Rodrigues (2005 and 2007). If this procedure is not adopted, the scoring will tend to favour larger and more diversified companies which use a lot of financial instruments in their

operation, as this will mean that they have more to disclose. In order to conclude that a company has not disclosed a particular item because it is not relevant to it, all relevant sections (as mentioned above) of the annual reports were examined thoroughly, to decide on the relevancy of the item before the conclusion of whether the item is disclosed or not.

4.2.3 Disclosed items Index Score

Items of disclosure from the total disclosure indices constructed are scored and measured in relation to one another. This means that we employed an additive model which is unweighted as explained in section 4.2. The total relevant disclosures made are scaled against the total that the company is expected to disclose, given that some items of disclosure may not be relevant to the company for the reasons given above. We did this in order to adjust maximum score for non- applicability of items. Additionally, scaling the total score of each company with the total relevant to it ensures that no company gains undue advantage for disclosing more because it has a large volume of transactions of financial instruments that probably cover the entire requirements of IAS 32 and 39. The maximum score of each company which is different from one company to another as a result of non-applicability of some indices is stated as follows:

Maximum Score

$$\text{Maximum Score (MS)} = \sum_{i=1}^x bi \quad (b)$$

Where bi = is the disclosure item

x = the number of items applicable to the company

$x \leq 42$.

The Total Index or Disclosure Level for each company which gives a score that is either 0 or 1 can then be arrived at as:

$$TI \text{ or } DLE = \frac{TS}{MS}$$

Lopes and Rodrigues (2007)

The data described above produced the disclosure level of our sample companies, which is the main variable we intend to examine in order to assess the compliance or otherwise by UK non-financial companies. This is with a view to determining the rate of success of the convergence of reporting practices of derivative use. The results obtained from the procedures were therefore used to answer the first research question which is ‘To what extent have the companies complied with the requirements of IAS 32 and 39?’ and this is found in our analysis in chapter five. These results also form the major variable tested in answering the second research question through the instrument of the event-study. We present the list of companies covered in this examination and their market capitalisation as at 31/03/09 in appendix 6 and 10 respectively.

4.3. Regulatory change and excess return

The adoption of the IFRSs in general represents a regulatory change and a commitment by the firms to an increased level of disclosure. In particular, reporting derivative use under IFRSs means anticipated increase in disclosure. While FRS 13 requires a limited degree of disclosure of derivative use IAS 32 and 39 are inclusive of recognition, derecognition, measurement, remeasurement and hedged

accounting. Finance theory suggests that regulatory change and increased information release are expected to increase transparency in firms as a result of disclosing more and should therefore have an impact on companies' market value. This is because disclosing more reduces information asymmetry, which is expected to lower firms' cost of capital (Leuz and Verrecchia, 2000).

The question then is 'to what extent is the adoption of reporting/disclosure practices of derivative use under IAS 32 and 39 value-relevant to shareholders'? It is expected that the amount of information released might have an association with the size of the firm, i.e. its market value. That is, the level of disclosure of our sample companies should affect their share prices. This is because unlike in the US where the disclosure environment is already rich, studies have criticised disclosure levels in the UK under UK Generally Accepted Accounting Principles (UK, GAAP). We therefore tested disclosure level as computed in section 4.2.3 above against excess returns of our sample companies in order to estimate its effect on the firm values of our sample companies. We also use some risk factors that have been established as capable of explaining excess return in our model. Using excess return to proxy changes in market value of firms (positive or negative changes), we posit that the risk adjusted discount rate of our sample companies declines in response to the extent of information released by firms about derivative use in large firms. We adopt this approach in evaluating the value of our sample companies because studies have found it very useful in comparison with other approaches. Binder (1985a) points to the importance and advantages of stock price data as opposed to the use of accounting data in measuring the effect of regulations on companies' firm's values. He emphasises that using asset prices to measure the effect of regulation on a firm's value leads to an increased number of observations and, if the problem of bad model specification is overcome, it can also be used

to eliminate other factors that are company specific, such as board-room politics, from the longer term market-wide shocks.

One of the theoretically perceived shortcomings of accounting data is its short term nature, essentially dealing with historical figures which the measurement of current earnings represents. This is in contrast with the stock prices measurements which estimate future earnings (Ball and Brown, 1968; Schwert, 1981). According to Brown and Warner (1980), when there is a regulation change the exact date of the change needs to be known with accuracy and it is only then that event-study methodology will give accurate results. Event period uncertainty leads to low-power results and this should be avoided. Binder (1985a) noted the difficulty in finding the announcement date as one of the banes of event studies of regulatory changes, because regulatory change processes are gradual, which means they are anticipated by the market. He however agrees that announcements can be carefully studied to produce acceptable and useful event dates after eliminating those processes constituting announcements that may not affect the expectations of shareholders. Brown and Warner (1980) capture the implications of using inaccurate dates of events when they replicate the effects of inexact/inaccurate event date in their studies and found it to substantially decrease the power of event studies. In this study, we know the exact date of regulatory change to be 1st of January 2005 and this partly assists us in avoiding the problem of bad specification of our model, which gave us confidence of likely accurate results (Brown and Warner, 1980). Companies that made our sample have all said they reported under IFRS in this first year of adoption. For example, Amec plc has this to say in respect of the adoption of IAS 32 and 39 on page 103 of their 2005 annual report:

“Application of IAS 32 and 39 from 1 January 2005

Prior to the adoption of IAS 32 and 39, the group did not recognise derivatives. In accordance with IAS 39, derivatives have been recorded at fair value with effect from 1 January 2005.....

The above statement shows that Amec reported under International standards on derivative use. The two standards in operation then (IAS 32 and 39) were mentioned. They also reported at fair value with the effect from 2005, which supports the adoption of fair value option as subsequently endorsed by the EU in the middle of 2005, early enough to be incorporated into the first set of accounts under the international standards (See appendix 2). The endorsement of fair value option practically means that there is no significant difference between IAS 39 as prescribed and IAS 39 as adopted by the EU. This is because fair value option, which was the major difference between them, was subsequently adopted by the EU within the first year of adoption.

Another statement that shows that the company reported under IAS 32 and 39 in their 2005 accounts is as follows:

“As permitted by the transitional provisions of IFRS 1, AMEC elected to adopt IAS 32 and IAS 39, from 1 January 2005.”

For a company to be part of our sample, a similar statement to the above by Amec plc was looked for and obtained from the company’s annual report. We then searched for relevant part of the standards that affect the company in their annual reports.

As to the direction or sign our variables should have, Brown and Warner (1985), La Porta *et al.*, (1999) and Bens and Heltzer, (2004) assert that there is no known and clear direction of returns in a

regulatory change event. Within an industry the effect of regulatory change on the value of the firm may be positive or negative and in different magnitudes. Stigler (1974) and Posner (1974) both argued in favour of what might be likened to the decision of some firms to give effect fully to the disclosure of the new regulation. They also reiterate the extent to which other firms decide to follow the regulation for other reasons, part of which is the cost involved and the agency problem. This, they argued, is what creates asymmetry between these companies even when they are in the same industry. They therefore identified this asymmetry as responsible for the lack of direction of excess return in studies of this nature. This means that the direction of sign of proxy for disclosure level can either be negative or positive. In this, Binder (1985a, 1985b), Fama and French (1992), and Schwert (1981) agree with Stigler and Posner.

Binder (1985b), Jennings (1990) and Beatty and Weber (2005) also noted that regulations usually affect firms in the same industry to a certain degree during the same accounting period which might mean that significant excess return might not be due to the regulation alone but other variables that might be company-specific. This explains the use of such company-specific variables like net sales to measure the efficiency of the utilisation of firms' assets on the value of the firm, and leverage to measure the effect of our sample firms' capital structure on the value of the firm. The use of these other variables is expected to capture the part they played in the excess return of our sample companies, which will be reflected by their coefficients, t-ratios, significant tests as well as other diagnostic tests.

4.4. Empirical model B: The Event-study and its methodology

The event-study methodology was introduced by Fama *et al.* (1969) and Ball and Brown (1968). It is a market-based accounting and finance research methodology that has been widely used in literature. Other studies that have used the approach include Fama and French (1992), La Porta *et al.* (1999), Bens and Heltzer (2004) and Beatty and Weber (2005). It has been used to examine security price behaviour around an announcement or event (Easton, 1985; Liu and Thomas, 2000). Such announcements and events include, but are not limited to, earnings announcements (Fama and Macbeth, 1973; Bernard and Thomas, 1990; Fama, 1998; and Gajewski and Quere, 2001) and accounting rule change (Beaver and Landsman, 1983; Jennings, 1990; Dechow, 1994; and Bens and Heltzer, 2004). It is the generally accepted method of measuring the reaction of security prices in response to an announcement or event. It is often used to test the popular hypothesis that the capital market is efficient in the sense that it rapidly and instantaneously incorporates new information into security prices (EMH) which has continued to be debated. Also, if the EMH is upheld, it is also used to examine the value relevance of the available information to shareholders' wealth and consequently its impact on a firm's value.

The basic statistical format of the methodology which is referred to as the market model, which is still used today, is found in Fama *et al.* (1969) which focused on the measurement of sample securities' mean as well as cumulative mean abnormal return just about the event time. There are some variants of the basic statistical format that have been used in the literature and documented by some of the studies mentioned above. These variants include the market adjusted returns, mean adjusted returns

and market and risk adjusted returns approaches. Several studies have used these extensions to the original models of Ball and Brown (1968) and Fama *et al.* (1969).

Event studies are a means of testing market efficiency because if a non-zero abnormal return occurs on securities systematically and persistently as a result of specific events, market efficiency is jeopardised, meaning that stock prices may not have adjusted quickly in order to reflect fully new information (Brown and Warner, 1980). Fama (1991) and Kothari and Warner (2004) observed that the relationship between a particular event and security prices can provide evidence on market efficiency. The importance of event studies to this study on regulatory change can be inferred from its association to wealth creation for shareholders. The size of excess return arising from a corporate event gives this indication which is a measure of the effect of the event on the wealth of the firms' shareholders (Kothari and Warner, 2004). Two important pioneering papers are important to this study. These are Ball and Brown (1968) and Beaver (1968) both of which examined the information content and timeliness of accounting information as they affect security prices. Ball and Brown (1968) concluded that about 90% of annual earnings have been incorporated into security prices before the release of earnings figures, as security prices may only slightly change when annual reports are released. It is important to note that they agree this information is likely to have been released through other means such as interim results, half yearly results, and prospectuses, which make the magnitude of earnings already known to outsiders. The information content of change in regulation as an event and its probable impact on security prices is slightly different from earnings announcements in that information about derivative use is not released piecemeal but only found in annual reports.

Another study is the work of Fama *et al.* (1969) who examined the reaction of returns to stock splits and reached a conclusion in support of the efficiency of the market. These two studies utilised monthly returns in their models while this study utilised daily returns because of its relative advantage over monthly returns as documented by Brown and Warner (1980, 1985). In operationalising the event-study methodology used in this study, we addressed some important issues that have been raised on the use of event-study methodologies in recent literatures. Brown and Warner (1980, 1985) are two papers that are very useful as they provide a wide ranging approach to event studies, just as Campbell, Lo and MacKinlay (1997) give a very comprehensive insight into important research issues. Some other important and advanced issues in event-study methods are also useful, especially as we gained insights from Barber and Lyon (1997) into the problem of long horizon, and a solution in their method that informed our approach in this study.

We noted that the use of daily return/intraday data instead of monthly return data is a more recent change. Brown and Warner (1985) argue that using daily returns allows for more exact measurement of excess returns thereby making the announcement effect of event studies more informative. Morse (1984) examined the econometric characteristics of using daily versus monthly data to discover the return effects of information and found that many issues examined between monthly and daily data favour the use of daily return data. This partly provides the justification for the use of daily data in this study.

4.4.1 Event-study: Application and hypothesis

We employed an event-study approach in order to answer the second research question which is the focus of the second empirical chapter. We are interested in investigating the value relevance of the expected increased disclosure of derivative use or the hedging process to investors/shareholders. This is because the basic reason legitimising the making and enforcing of disclosure in annual reports is to make transparency possible. Increased disclosure is expected to lead to increase in market value (Basu, 1977; Leuz and Verrecchia, 2000 and Patel *et al.*, 2002). Also, investors need transparency so as to be able to compare performance of companies through analysis of annual reports. The convergence of reporting practices that IAS 32 and 39 in respect of derivative use meant for companies in the UK is therefore expected to assist in comparing annual reports with these comparisons being used to determine where to invest.

Event-study method as an approach seeks to measure the effects of a specific corporate event on stock prices/returns using financial market data in order to evaluate how the event affects the value of a firm. Dolley (1933) examined changes in nominal price arising from effects of stock splits. He found mixed effects: while 57 stocks out of a sample of 95 have their prices increased, 26 stocks have their prices decreased and 12 stocks recorded no effect in their prices. Similarly Ball and Brown (1968) examined the information content of current accounting income numbers, while Beaver (1968) examined the information content of yearly earnings announcements.

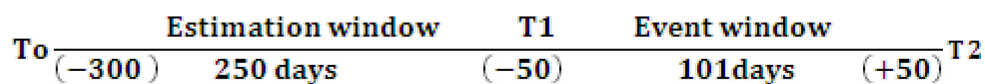
Fama *et al.* (1969) examined the effect of stock splits on returns in order to establish the efficiency of the stock market in its reactions to stock splits. This is after eliminating the simultaneous effect of

dividend increases. The question they asked was whether the process of price adjustment of common equity to new information (stock splits) is consistent with the efficient market hypothesis. They used new information that might be implicit in stock split (if any) to test this process. Specifically, they examined if the returns of the stock split behave unusually during the month of the split. If so, is the split responsible for the unusual behaviour or change? What other variables could have led to the change in return for the unusual behaviour? The above questions were asked because if information release can be associated with abnormal returns in the months surrounding when the report containing the released information was made public, this should show in the estimated regression coefficients and residuals of the security for these months. Their examination of stock prices for 60 months both prior to and after the stock split produced results that suggest that the market responds rapidly to the information content of the stock split, meaning that the EMH is upheld.

Also, Schwert (1981), Beaver and Wayne (1983), Jennings (1990), Dechow (1994), Bens and Heltzer (2004) and Beatty and Weber (2005) used event studies to measure the impact of change in regulatory environment on firms' value. Their studies also demonstrate that when the event-study method is applied the effect of the regulatory change on the common security/equity becomes the focus. Brown and Warner (1980, 1985) also authored two papers that suggested probable solutions to the problem of violating statistical assumptions that underlie early work, so that specific hypotheses can be accommodated. While their 1980 paper explored issues that are performance-related in nature for a sample of monthly trading results, their 1985 paper examined the same issues in respect of data sampled on daily trading results. The above literature cited on event studies represents the two broad categories into which event studies can be divided. While Ball and Brown (1968), Beaver (1968) Schwert (1981) and Kothari and Warner (2004) represent information content event studies which

analysed common security behaviour prior to, during and after the event, Dolley (1933) and Fama *et al.*, (1969) lead the pack of event studies on market efficiency, which is essentially an examination of the common stock behaviour after an event (Dechow, 1994 and Bens and Heltzer, 2004).

This study involves a change in the regulatory environment of the reporting practices of UK non-financial firms that are derivative users who need to disclose by following requirements of IAS 32 and 39. The question is, ‘what is the impact of regulatory change on the value of our sample firms’? Generally speaking it is an examination of the change in the value of the firm arising from the event through conducting a t-test of the change in price of the firm’s common stock. It is therefore a study of the information content of increased information release arising from the regulatory change. This is why it examines the behaviour of the estimated residuals of disclosed information or the extent of disclosure in the days surrounding when the annual reports were released. Our test period is divided into the estimation window and the event window and presented below (see discussion of the estimation and event windows in section 4.5)



Consequently the two hypotheses to be examined are as follow:

First Hypothesis

Null Hypothesis

1. HA₀: Companies that disclosed derivative use under international standards have reduced risk adjusted discount rates

Alternative Hypothesis

2. HA₁: Companies that disclosed derivative use under international standards have increased risk adjusted discount rates.

Second Hypothesis

Null hypothesis

1. HB₀: Firms with higher disclosure level have lower risk adjusted discount rate than firms that disclosed at lower level

Alternative hypothesis

2. HB₁: Firms with higher disclosure level have higher risk adjusted discount rate than firms that disclosed at lower level

4.5. Data Sources/Collection

Our sources of data for this study can be broadly divided into two: The extent of disclosure of derivative use, which is the first major examination in this study, was arrived at through the analysis of the content of annual reports of our sample companies. Companies' annual reports were accessed from respective companies' web sites. Relevant information regarding derivative use was collected from the financial statements: income statement, balance sheet, cash flow statement, and notes to the accounts. Other areas that contained part of this information include the operational and financial review section as well as Chief Executive Officer's (CEO's) or chairman's reports that in some cases talk about risk management practices and the companies' experiences in the current year regarding internal control. This section also talks about the change in reporting from UK GAAP to international standards.

The other source is DataStream, where daily data of security prices of companies in the FTSE 350 were collected in order to estimate individual companies' security prices behaviour around the regulatory change. Stock returns for each company is the consecutive closing prices adjusted for dividends and splits (Fama *et al.*, 1969). Consequently, daily returns already adjusted (to splits and dividends) are taken from the DataStream database. Excess returns are then calculated by taking the percentage change in return index. This means that the return index is constructed assuming that

dividends received in period t are immediately reinvested in the same stock. We did this because of the need to eliminate and/or to adjust for difficult variables like dividend announcements and other company events, such as stock splits that could affect security returns of our sample firms. Both dividend announcements and stock splits have been found to lead to increase in the market price of stocks immediately after the announcement or stock splits (Fama *et al.*, 1969). They found considerable evidence that suggests that the market reacts to dividend implication of splits, which causes price adjustments. With this our main variable which is the disclosure level can be said to have been appropriately tested with the results effectively capturing the effect of the change to IFRSs in reporting derivative use.

We exclude from the entire list of companies that made FTSE 350, all banks, investment companies, insurance and other financial institutions as being subject to standards other than IAS 32 and 39 as a result of trading in financial instruments, leaving us with 224 companies. We also excluded companies that have decided to defer reporting under international standards till a later date, which are 26 companies. Six companies that were found to have outliers were also excluded. We identified outliers through the construction of box plots, histograms and scattered diagrams in order to identify extreme values in the tails of the distribution. We are aware that outliers often contain valuable information and therefore should be investigated carefully. We accommodated some and only removed six companies after discovering that robust regression that does not assume normal distribution of data can ameliorate the effect of many outliers hence their inclusion in this study as recommended by Tukey (1977, p25) and Bera and Jarque (1981). We also require that our sample companies should have daily returns for the entire period of our estimation window, which is set at 250 days, and both the event window and post-event window periods of 101 days, a total of 351 days return data. We calculated this for our

sample companies in four groups depending on their year end. This is what we used to estimate the market model in order to arrive at excess return. Ten companies did not meet this requirement and we therefore eliminated them to arrive at 182 companies used in this study. The 351 days is unique to individual company depending on the accounting year end of such company. Companies with the same accounting year will therefore have the same period. This is a holding period of 1 year which is consistent with the approach of Modigliani and Miller (1958), Schwartz (1959), Brown and Warner (1980, 1985) and Strong (1992). Strong (1992) argues in favour of calculating abnormal returns over a longer periods in circumstances where market reaction is been examined in response to accounting disclosure. His argument is in support of Brown and Warner (1980, 1985) who also employed a holding period of 1 year and 250 days in respect of monthly and daily data respectively in their simulated experiment in order to calculate their estimation periods. Strong (1992) further noted the implied reason for the adoption of the prior 12 months or 250 days when he made reference to the possibility of earnings information being gradually released but with an element of uncertainty, which makes information disclosed only certain when it is eventually announced. The same logic is implicit in the use of event-study in this study. Although, companies were mandated to start reporting from 1st of January 2005, extent of disclosure was not certain until the release of annual reports, and this uncertainty partly explains different levels of disclosure by companies examined. Our estimation period was calculated over a period of 250 days in order to capture the expectation benchmark which can only be rightly specified over the 250 days period before the release of annual reports of companies, which is the announcement day. MacKinlay (1997) emphasises the need to define the event window so that it can cover the period of interest, in order to accommodate sample firms for the examination of periods surrounding the event. He argues that the period of interest is often increased for more days in order to capture the price effect of the event which occurs after the stock market

closes and which in this case is change in reporting derivative use to IFRSs from UK local GAAPs. Consequently, we adopted the adjusted version of the Fama-French methodology (day -300, -50) in computing the estimation window for the market model.

We avoided long horizon tests because of the numerous problems associated with their use. Kothari and Warner (1997) define long horizon tests as tests accumulating or calculating abnormal/excess returns around firms' specific events with the use of multi-years or long observations in the calculation of estimation period (EP) and test period (TP). Strong (1992) made reference to long horizon tests using daily data employed by Dodd *et al.*, (1984), who used 600 observations that can be interpreted as about two and a half years, and others that used weekly and monthly return data that made use of between 2 and 5 years. Kothari and Warner (1997) and Brown and Warner (1980, 1985) argue that using such long observations in the calculation of test period decreases statistical power and accuracy of the results. Kothari and Warner (1997) specifically referred to the difficulty generated in arriving at unbiased estimates of sample mean of cumulative abnormal returns and the estimated standard deviation, the ratio of which gives the t-statistic that is typically used to interpret the result.

4.6. The market model

The market model is the normal performance return model developed in conjunction with portfolio theory. It is virtually identical to the constant-mean-return model with the assumption that investors are risk-averse who would like to maximise their utility, thereby selecting the security they hold based on both the mean and variance of the distribution of returns. The market model is a single period

Capital Asset Pricing Model, which holds that security returns and general market condition are linearly related, i.e. move in the same direction.

Economic models such as Capital Assets Pricing Model and Arbitrage Pricing Theory are generally viewed as causing restrictions on the statistical models by leading to more constrained normal return models. The use of the market model in this thesis is premised on its perceived superiority over both the multi-period CAPM and APT models. MacKinlay (1997) argues that the gains from the use of multifactor models for event studies are generally limited. He explains that, empirically, there is little or no reduction in abnormal return variance arising from the introduction of additional factors, except where sample firms are from the same industry. His conclusion supports his earlier findings, where he produced evidence that multifactor models on their own are unable to explain deviations from the CAPM. Brown and Weinstein (1985) also found no added advantage in the use of multi-factor models over the use of the market model, being a statistically powered model that has been found to be capable of eliminating noticeable biases in both CAPM and APT, hence our reliance and adoption of the market model.

Brown and Weinstein (1985) argue in support of earlier findings of Brown and Warner (1985), who observe that the use of the market model to test for abnormal performance leaves residuals that appear well specified in different situations. MacKinlay (1997) had also observed the departure from the use of multi- period CAPM from the extent of usage in the 1970s arising from the perceived restriction it imposes on the market model. He argues that such restrictions may lead to results of a study becoming sensitive to the specific CAPM restrictions which can be corrected by the use of the market model. Also, the APT which has been used to advance the multifactor models because of its advantage over

CAPM has also been found with little or no additional explanatory power over the market model. Additionally, multi-period CAPM is most suitable for data with non-synchronous trading, when there is the need to measure risk at times when shares are subject to infrequent trading – a characteristic of emerging markets that is not applicable to a study that utilises data from the UK market.

Our choice of the market model is further justified by the non-existence of the size bias as all our sample companies are large companies at the London Stock Exchange. This is consistent with the suggestion of Dimson and Marsh (1986) who argue that reduction of size bias in sample that uses the market is expected to produce robust results.

The market return is given as:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}. \quad (1)$$

Where:

$E[\varepsilon_{it}] = 0$ (zero mean disturbance term in period t)

$\text{Var}[\varepsilon_{it}] = \sigma^2_{\varepsilon i}$

(Morse, 1984; Strong, 1992)

And;

R_{it} is the return of security of firm i in period t deviated from return in period $t-1$

R_{mt} is the market return proxied by the MCSI world return index in the same period t deviated from MCSI in period $t-1$

ε_{it} Is the disturbance/error term or the random component; the error term is assumed to satisfy the usual assumption of linear regression models; while α_i and β_i are the parameters of the market model known as intercept and slope of our parameters which can vary from security to security

Equation 1 systematically decomposes R_{it} into β_i and R_{mt} which are assumed linearly related. The other component of R_{it} is its unsystematic component ε_{it} , which is uncorrelated with market return (R_{mt}). This is expected to fully capture the effect of firm-specific events in the unsystematic component. We estimated α_i and β_i through the use of ordinary least square (OLS) from past data (returns) of our sample companies securities, which results in a predicted excess return of:

$$\varepsilon_{it} = R_{it} - (\alpha_i + \beta_i R_{mt})$$

The adoption of the market model benchmark is based on empirical findings that show that it results in smaller variances of excess returns in comparison with the use of raw returns as well as other variants of return generating models as argued above. It also leads to more powerful statistical tests and lower correlation across security excess returns (Beaver, 1981; Brown and Warner, 1980, 1985). These attributes enable us to move closer to standard statistical tests.

We used the Morgan Stanley Capital International (MSCI) World Index as our proxy for market return. Our decision to use MSCI index instead of LSE index, which more specifically should have been the FTSE 350 index as the benchmark for our market return (R_m), is dictated by the realisation that there is the need to eliminate the likely effect that the regulatory change might bring on the market return (R_m) in the UK market. This decision is therefore in order to eliminate likely effect that the change in regulation might bring on the market return, as the change in regulation, which expectedly should affect all companies in the LSE, will also affect market return hence the use of world index. The likely effect of regulatory change is expected to move the market return in the same direction as those of individual stocks within FTSE 350, most of which constitute our sample. The MSCI is

appropriate for studies that utilise data of companies from developed countries, such as the US and UK, which are therefore expected to correlate with indices from these countries being the major contributors, while also neutralising possible distortions peculiar to the individual countries arising from factors that affect them individually.

We arrived at the excess return for our individual firms using our equation 2 below. We use the percentage change of log of daily returns of firm ‘i’ on day ‘t-1’, and the daily return of the firm on day ‘t’ to arrive at our excess return. The market return was also calculated following the same approach used in arriving at excess return for our individual firm. The market return is therefore the percentage change of log of daily market return for day ‘t’ and day ‘t-1’.

This is mathematically stated as the difference between the actual and expected return:

$$ER_{it} = R_{it} - E(R_{it}) \quad (2)$$

Where:

ER_{it} = the excess return on firm i on day t

R_{it} = each firm’s log of actual return on day t subtracted from its return on day $t-1$. This is stated as

$$\frac{\log p_t - \log p_{(t-1)}}{\log p_{(t-1)}} \quad (2a)$$

$E(R_{it})$ = expected return of firm i on day t is the log of market return for day t deviated from the log of market return for day $t-1$. This is also stated as follows:

$$\frac{\log m_t - \log m_{(t-1)}}{\log m_{(t-1)}} \quad (2b)$$

The choice of the use of logarithm instead of discrete returns is based on both theoretical and empirical reasons. Empirically, the assumption of normal distribution is more likely to be achieved by logarithmic returns than discrete returns with greater conformity with OLS assumptions. The use of logarithm is one way of transforming return data in order to conform to the normal, or Gaussian linear regression model as documented by Fama *et al.* (1969). They noted departures from normality by distributions of returns which they found to be either a little skewed to the right or to the left and suggested that transforming returns data brings the distribution to normality.

If stock return is greater than market return (i.e. (2a) > (2b)) then there is excess return or positive excess return; otherwise there is no excess return or negative excess return.

With the earlier assumption of the independence of the market return, which is arguably guaranteed by both the market model and the use of the MCSI index, the regulatory change effect of the adoption of international standards on derivative use should be fully captured in the unsystematic portion of equation 1 i.e. ϵ_{it} .

Consequently we defined our expected return as $\alpha_i + \beta_i R_{mt}$, hence excess return is:

$$ER_{it} = R_{it} - (\alpha_i + \beta_i R_{mt}) \quad (3)$$

(Strong, 1992)

After accumulating the excess return, as stated above, we then examined the statistical significance (or otherwise), of the mean excess return, using simple t-statistics. With the assumption of cross-sectional independence that we have variously explained above as underlying the use of the market model, we defined our t-statistic as the mean excess return on day t divided by the estimate of its standard error.

The following is the definition of the t-statistics stated in mathematical format:

$$(Mean\ of\ ER_t) / (s(ER_t) / (\sqrt{(N-1)})) \sim t_{N-1}$$

The mean excess return for each day and throughout the event period is stated as:

$$Mean\ of\ ER_t = \frac{1}{N} \sum_{i=1}^N ER_{it}$$

N is the number of the firms in our sample.

We estimate the standard error of the excess return (ER_t) as:

$$s(ER_t) = \sqrt{\sum_{i=1}^N \frac{(ER_{it} - Mean\ of\ ER_t)^2}{(N-1)}}$$

Where

$s(ER_t)$ is the estimated standard error of excess return

N is the total number of our sample firms.

In order to test the above hypotheses, we accumulated the excess return for a total of k days, made up of 101 days from t to $t+k$ (-50 to +50), to arrive at our excess return for each of the companies.

This is mathematically stated as follows:

$$ER_i = \sum_{t=t}^{t+k} ER_{it} \quad (4)$$

This is a cross sectional analysis of the effect of disclosure of derivative use under IAS 32 and 39, under which companies in the UK were mandated to report in respect of financial instruments with effect from 1st January 2005.

With cross sectional attributes therefore, we use t-statistics to estimate the significance of the excess returns.

Excess return for our sample companies is our dependent variable. Our independent variables are two risk factors: size and leverage, which have been used in the literature to explain abnormal return and three other performance factors - earnings surprise, sales growth and free cash flow.

We used percentage change in leverage, earnings and net sales in order to capture the effect of regulatory change brought by changes in reporting other components of our sample companies' financial reports. Our size variable is computed by reference to the logarithm of market capitalisation of our sample companies thereby transforming the variable. Next, we introduce our variables below.

4.6.1. Explanation of variables and model specification

As noted by proponents of information content studies - Ball and Brown, (1968), Beaver, (1968) Foster (1977), Wilson (1986), Ball and Kothari (1991), Amir and Lev (1996) and Vincent (1999), the initial assumption is that the capital markets are informationally efficient such that security prices instantaneously reflect new information in stock prices. However, studies have documented the association between excess returns and some risk factors such as size, leverage, book-to-market

equity, Earnings-Price ratio (E/P) and the market Beta (Fama and French, 1992; Banz, 1981; Bhandari, 1988; Basu, 1983; and Rosenberg, Reid and Lanstein, 1985). The implication of these findings is that stock risks are multidimensional and can be proxied by the above factors.

However, market beta, whether used alone or in conjunction with other risk factors, has been found to have little or no association with excess returns (Fama and French, 1992). The explanation for this finding is that the market beta is already embedded in the regression of stocks' returns on market returns used in arriving at excess return which is now the dependent variable. This means that including it as an independent variable is capable of distorting the explanatory power of other factors that should explain excess return.

Fama and French (1993) also documented the interaction of the other four risk factors as they found that the combination of size and book-to market equity absorbed the roles of leverage and Earnings-Price ratio (E/P) in explaining excess returns. Studies have therefore recommended the use of these variables in such a way as to reduce the possibility of one risk factor absorbing the role of another, in order not to distort the power of the result. Consequently, we employed size and leverage in this study after establishing the high correlation between them and some of the risk factors as empirically documented by previous studies such as Basu (1983) and Rosenberg *et al.* (1985). Risk factors are different ways of understanding share prices from the point of view of their risk and returns as they are all obtained by reference to share price.

We also used three performance factors, which are earnings surprise, free cash flow for firms (FCFF) scaled by market capitalisation and net sales in order to capture the part of excess return contributed by

these performance factors. These performance factors might have contributed to excess returns as many things changed in 2005 and 2006 apart from reporting derivative use under international standards. The result of these other changes might have contributed to excess returns of these companies and therefore the need to capture their effects. Brown and Warner (1980, 1985) found that these firm-specific components enhance the power of the results generated by tests of information content of annual reports. Results of association between excess returns and risk/performance factors have implications for tests of capital market efficiency, and the estimation of firms' cost of capital which we employ in the interpretation of our results.

Next, we explain our independent variables which are five in number in addition to our main variable, which is disclosure level earlier explained in section 4.2.1 to 4.2.3.

Size: Banz (1981) documents an association between market equity which proxies for size and excess returns. Market equity is defined as a firm's shares outstanding multiplied by market price per share. He documents higher average returns for low market equity stocks in his sample. This means that the stocks of small firms had higher risk-adjusted returns than those of large firms. Fama and French (1992) also find a robust and negative relation between size and excess return in both univariate and multivariate tests conducted, which included other risk factors/variables. This, they argue, means that low stock prices which are seen as having poor prospects should have higher expected stock returns arising from higher risk adjusted cost of capital which serves as a penalty for their poor prospects. The conclusion here is that size is a risk factor that should explain excess returns but in different magnitudes, as found by the above studies and supported by Bhandari (1988). One reason for this finding is that few investors desire to hold stock of very small firms as a result of lack of enough

information on their activities and this leads to limited diversification that gives rise to demand for higher risk-adjusted returns by those who hold these stocks.

Leverage: Bhandari (1988) examines the association of leverage with excess returns. He argues that the debt-equity ratio which is a natural proxy for the risk of a firm's stock should be able to explain its expected returns. An increase in the leverage of a firm should increase the risk of financial distress which should be reflected in the equity of the firm, which consequently means that debt equity ratio should be positively correlated with excess returns. He found leverage positively related to expected returns in an equation that included size, which was found to be negatively related to expected returns. His findings in respect of association of size to excess returns confirms size as a risk factor that affects excess returns, which is in agreement with the findings of Banz (1981). In conclusion, size and leverage are two important risk factors that have not been accounted for by beta but are correlated with returns with observation of association, possibly meaning market inefficiencies or information content of the variables.

Many other studies have examined the relation between excess returns and fundamental variables such as earnings, net sales and cash flow with most of them finding positive relations between excess returns and these variables (Chan, Hamao and Lakonishok, 1991; Lev and Thiagarajan, 1993; Kothari, 2001). *A priori*, these studies test for a positive correlation between accounting performance measures such as earnings, cash flow from operation and net sales and stock returns. They utilised these accounting variables in order to link firm's performance with excess returns without assuming any causal connection between accounting information and movement in security prices. The basic question is, in addition to the risk factors considered above, 'how quickly are accounting variables able

to impound changes in information released' which is reflected in security returns over the specific period, which in this case is the period of the release of annual reports after the adoption of IFRS. Net sales and cash flow have both been introduced because of the shortcomings of accounting earnings, which can be easily manipulated by managers and therefore be seen as purer than accounting earnings (Wilson, 1986; Bernard and Stober, 1989). The role of these financial variables (earnings, cash flows and net sales) is to provide information about aspects of securities' returns contributed by the variables. This is used to determine the quality of these variables, which in the case of earnings signifies earnings quality when it is high, and predicts high expected returns (Ohlson, 1979).

Earnings surprise: When the disclosure environment changes, as was the case in respect of change in reporting from local GAAP to reporting under international accounting standards, the expectation is that the value of the firm should also change. This is because a company's asset valuation depends on the available information about the asset and this is expected to affect current and future prices of the asset. Disclosure and its level are sensitive to future prices of securities, which mean that disclosure environments affect the behaviour of stock prices. Both Beaver (1968) and Ball and Brown (1968) have documented changes in stock prices when annual earnings are announced.

Ball and Brown (1968) provided evidence that earnings increases which are seen as good news surprise the market and this led to positive association with security returns. This is the beginning of information content studies which demonstrated that though earnings information leaks through quarterly earnings announcements and other sources, earnings changes or surprises found in annual reports show correlation with security returns. This suggests that only the portion of change (earnings surprise) that has information content should be reflected in excess returns. Lev (1989) reviewed the

literature in respect of the association of earnings and returns and found the correlation between them very low and sometimes insignificant. Bowen *et al.* (1987) also examined the association between unexpected earnings and expected returns, and found low but positive and statistically significant association at 0.5 significant level. Although the relation between earnings and expected returns seems mixed and sometimes weak, casual observation indicates that, depending on magnitude, earnings surprise does affect expected returns.

It is possible to view this low association between earnings surprise and expected returns as demonstrating market inefficiency, a situation of investor irrationality, which is expected to be low and may even be sometimes insignificant as documented by Summers (1986) and DeLong *et al.* (1989).

One other reason for this finding is the usefulness of earnings to investors regardless of the existence of shortcomings in the measurement of earnings. The effect of different accounting measurement and valuation methods which are often arbitrarily employed in arriving at earnings figures, as well as the incidence of earnings manipulation by managers, have been widely mentioned in the literature. These issues make earnings not entirely reliable and may therefore adversely affect the information content of earnings. The indicated weak and unstable relation between expected returns and earnings documented, which shows its information content arising from the reasons given above, suggest a consideration of the effects of other accounting measurement of performance on expected returns.

FCFF/market capitalisation: Chan *et al.* (1991) examined the relation between earnings and free cash flow and excess returns and found association with cash flow in a model that included book-to-market

ratio. But while studies have found positive association between earnings and excess returns, they found negative associations between cash flow and excess returns. Livnat and Zarowin (1990) examined the information content of the cash flow content of earnings and found that the cash flow portion of earnings explains excess returns. This finding has been supported by other studies such as those of Bowen *et al.* (1987), Wilson (1986), Rayburn (1986), Ou and Penman (1989) that examined the relation by decomposing earnings into its cash flow and accrual components and found no increased information content that is different from that found in respect of earnings. But when the accrual component was removed and joint examination of earnings and cash flow conducted, they found the existence of incremental information of cash flow in expected returns (Bernard and Stober, 1989; Livnat and Zarowin, 1990). This means that beyond earnings, financial statements contain information that can predict firms' value or expected returns. The use of cash flow is prompted by its components, which are less manipulative by managers using accounting methods and valuations. It is therefore a purer measure of firms' performance.

Net Sales: The major deficiency in the use of earnings as a performance variable is the possibility of manipulating earnings, which is often referred to as earnings management. Studies have examined the information content of this earnings related variable in order to explain excess returns (e.g. Jordan *et al.*, 2007). This is because a variable like net sales is purer than earnings as it is less prone to manipulation. Jordan *et al.* (2007) document that sales predicts the share price behaviour better than both earnings and free cash flow. Barth *et al.*, (2001) also showed that net sales have higher predictive ability than earnings in measuring the performance of market share prices of firms in their sample. This is because a major predictor of returns and consequently share prices, the free cash flow, which is the determinant of future cash flows and share prices, is indeed determined by sales revenue and in

particular the net sales revenue achieved by the firm (Al-Attar and Hussain, 2004). Many of these studies have suggested that an increase in sales should lead to an increase in share prices and consequently increase firm's value consistent with its effect on cash flow.

Our explanatory variables are therefore: change in leverage (*leverage*), percentage change in net profit, (*earnings surprise*) percentage change in net sales (*net sales*), free cash flow for firm scaled by market capitalisations (*FCFF*), natural logarithm of market capitalization (*size*). These are in addition to our variable of interest which is disclosure level (*DLE*). Data for these variables were all collected from DataStream for the respective firms' year end. Leverage is coded WC08221 by DataStream and defined as long term debt plus short term debt and current part of long-term debt scaled by total capital plus short-term debt and current part of long term debt (Schwartz, 1959; Bhandari, 1988; Koterweg, 2004; and Dimitrov and Jain, 2005). This represents the total debt in the financial structure of the firm which takes account of all liabilities, which is inclusive of ownership claim. This broad definition is needed in order to avoid other definitions of leverage which are essentially narrow, as they may not have taken into account movement between different types of debt as they often limit definition of leverage to stocks and bonds (Fama and French, 1992; and Kayhan and Titman, 2007). This means that we use leverage as our measure of the ratio of debt to total liabilities of our sample companies inclusive of equity. Change in leverage is the difference between leverage in year t and year $t-1$. Year t is the first year of disclosure of derivative use under IAS 32 and 39. This definition of leverage covers the entire breadth and form of debt that an organisation can have.

Size is computed as share price multiplied by share outstanding and is coded MV by Datastream.

Change in earnings is our choice of earnings surprise measure, which we defined as earnings before interest, tax and depreciation/amortisation (EBITDA), coded WC18198. This is in following Collins *et al.* (1994) and Gelb and Zarowin (2002). Banghoj and Plenborg (2008) had also replicated their method to confirm the earnings surprise specification they used in their study and found it to give similar results. The net sales figure is coded WC01001 by DataStream while the FCFFMC is defined as $\text{EBIT} (1 - \text{tax rate}) + \text{capital expenditures (WC04601)} - \text{increase/decrease in NWC (net working capital (Bodie *et al.*, 2008, p.439))}$ and is coded WC04851. We scaled fcff with individual company's market value coded MV by DataStream to arrive at fcffmc as one of our variables. Our justification for scaling FCFF is for stationarity of the variable in order not to give undue advantage to large firms at the expense of relatively smaller firms. Market capitalisation (MC) is defined as share price multiplied by total shares outstanding. The last performance variable is net sales, which have been found to have predictive ability in explaining excess return (Jordan *et al.*, 2007). The net sales figures of our sample firms, which was obtained from DataStream is coded WC1001.

We used changes in leverage, earnings and net sales and not the absolute figures because of the signalling ability of the variables about additional information they contain in respect of the future of the firms, which has been documented to be higher than that of the absolute figures of the variables. In respect of net sales, for example, an increase in net sales of a firm is expected to lead to increase in its current share price arising from increase in the resultant cash flow (Dechow *et al.* 1994).

We arrived at the disclosure level (DLE) by scoring our sample firms following a dichotomous procedure as described in sections 4.2.1 to 4.2.3 above. Next we present our models in this study.

The two equations tested are equations 6 and 7. Equation 6 examines the effect of risk and performance factors explained above, as well as our variable of interest, DLE, on excess returns. Our equation 7 uses N-1 rule to capture the effect of different levels of disclosure on excess returns. The equation serves as a robustness check on equation 6. The build-up to equation 6 is stated in general form in equation 5 as follows:

$$ER_{it} = \alpha + \beta_1 \text{Size} + \beta_2 \text{Change in LEVERAGE}_{it} + \beta_3 \text{Free cash flow for Firm } it + \beta_4 \text{Disclosure Level } it + \beta_5 \text{change in sales } it + \beta_6 \text{change in net profit } it + \epsilon_{it} \quad (5)$$

- Size is market price multiplied by share outstanding
- %change in leverage denoted by CL
- % change in FCFF scaled by market capitalisation denoted by FCFF/MC
- disclosure level is denoted by DLE
- %change in sales denoted by CS
- %change in net profit denoted by ES

Our comprehensive specification of the regression with the adopted notation for our variables is as follows:

$$ER_{it} = \alpha_{it} + \beta_1 \text{size} + \beta_2 \text{CL}_{it} + \frac{\beta_3 \text{FCFF}}{\text{MC}_{it}} + \beta_4 \text{DLE}_{it} + \beta_5 \text{CS}_{it} + \beta_6 \text{ES}_{it} + \epsilon_{it} \quad (6)$$

Where:

- **ER_{it}** is the cumulative excess return for firm i on day -50 to +50. It is the dependent variable.
- **Size_{it}** is defined as a firm's share outstanding multiplied by its market price in year t
- **CL_{it}** is the percentage change in leverage for firm i in years t and (t-1)
- **FCFF/MC_{it}** is the % change in Free cash flow equity scaled by market capitalisation for company i in year t and (t-1)
- **CS_{it}** is the % change in sales for firm i in years t and (t-1)
- **ES_{it}** is the percentage change in net profit for firm i in years t and (t-1)
- **DLE_{it}** is the disclosure rate or extent of disclosure of derivative use following IAS 32 and 39 for firm i in year t
- $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ and β_6 are our estimated regression coefficients
- α it is our constant

Our second equation is where we divided companies that disclosed under international standards into 3 - those that disclosed at low, medium, and high level – and was arrived at by creating three dummy variables. We then use the N-1 rule in order to avoid the problem of multicollinearity and possible negative R² that might reduce the power of our results (Asteriou and Hall 2007: 193). Hence equation 7 below:

$$ER_{it} = K + \beta_1 size + \beta_2 CL_{it} + \frac{\beta_3 FCFF}{MC_{it}} + \beta_4 CS_{it} + \beta_5 ES_{it} + \alpha_2 DUL2_i + \alpha_3 DUM3_i + \alpha_4 DUH4_i + \varepsilon_{it}$$

Where:

- **ER_{it}** *Excess Returns* is the cumulative excess return for firm *i* on day -50 to +50. It is the dependent variable.
- **Size_{it}** is defined as a firm's share outstanding multiplied by its market price in year *t*
- **CL_{it}** is the percentage change in leverage for firm *i* in years (*t*) and (*t*-1)
- **FCFF/MC_{it}** is the % change in Free cash flow equity scaled by market capitalisation for company *i* in year *t* and (*t*-1)
- **CS_{it}** is the % change in sales for firm *i* in years *t* and (*t*-1)
- **ES_{it}** is the percentage change in net profit for firm *i* in years *t* and (*t*-1)
- **DUL_{it}** is the dummy variable used to proxy firms with low level (15% to 40%) of disclosure and it takes dichotomous scoring of 1 otherwise 0.
- **DUM_{it}** is the dummy variable used to proxy firms and it takes dichotomous scoring of '1' if derivative use disclosed is between 41% and 65% otherwise '0'
- **DUH_{it}** as proxy for high level of disclosure and it takes dichotomous scoring of 1 for firms disclosing ≥ 65%, otherwise '0' is given
- $\beta_1, \beta_2, \beta_3, \beta_4, \text{ and } \beta_5$, are our estimated regression coefficients while $\alpha_2, \alpha_3, \text{ and } \alpha_4$ are our coefficients for the dummy variables
- *K* is our constant representing the omitted dummy variable.

With the articulation of our methodology and research design as detailed above, we turn to the interpretations of our results in order to answer our research questions. The next chapter (five) answers research question one while chapter six answers the second research question.

Chapter 5: Results and Interpretations 1: Extent of Disclosure.

5.1. Introduction

This chapter reports on our answer to the first research question. A total of 182 companies' annual reports were examined in order to arrive at the amount of disclosure on their derivative use. Sixty-eight of these companies are from FTSE 100 while the remaining 114 are from FTSE 250 (table 1). All our sample companies are non-financial firms in the UK. We excluded financial companies because IAS 32 and 39 have been specifically recommended for non-financial companies, which means, that different and/or additional standards are applicable to financial companies. This is because they largely use derivatives as part of their stock-in-trade (trading) as well as using it to manage risk (hedging). These make them to be market makers in addition to being derivative users and are therefore to comply with additional regulations. We arrived at 68 and 114 companies (table 3) in the FTSE 100 and 250 respectively after eliminating these financial companies and those companies that have elected not to report under international standards in this first year of adoption, as companies have the choice of deferment to a later date (also see section 4.5).

Our sample is effectively a sample of the largest non-financial companies in the UK by market capitalisation being 52% of the entire FTSE 350 companies (table 1). Their market capitalisation as at 31/03/09 which ranges between £18 million and £90 billion is in appendix 10 and summarised in table 2. Only 1.65% of our sample companies have market value that is less than £100 million. In summary, our sample firms are those that satisfy the three criteria we specified, that is, that they should be non-financial companies, those that have decided to report under international standards and one of the largest companies in the UK.

Table 1: Classification based on size

Market	Number	Sample	% of market
FTSE 100	68	100	68%
FTSE 250	114	250	46%
Total	182	350	52%

Table 1 shows the makeup of our total sample companies by size. 68 companies are from the FTSE 100 representing 68% of the companies in that index, while 114 companies are from the FTSE 250, representing 46% of the total number of companies in that index. Together our sample of 182 companies from the FTSE 350, this represents about 95% of the largest non financial firms in the UK who decided to report under international standards, the proof of which we obtained from their annual reports (see chapter 4.3). Their market capitalisation as at 31st March 2009, which is summarised in table 3 with over 98% of them having over £100m as their market capitalisation, is presented below. It ranges between £18 million and £100 billion.

Table 2: Summary of our sample companies by market capitalisation

No. of Comp.	Range	Range %	
3	£18m - £100m	0.016484	1.65%
52	£101 - £500m	0.285714	28.57%
39	£501m - £1b	0.214286	21.43%
58	£1.1b - £5b	0.318681	31.87%
30	£5.1b - £100b	0.164835	16.48%
182		1	100.00%

Table 3 is the descriptive statistics of our sample companies. The average of disclosure of our entire sample is about 54%, meaning that about 54% of the required information on financial instruments by IAS 32 and 39 were disclosed. This shows that companies are still leaving out some important information on derivative use. However we noted an improvement in disclosure of derivative use by

these companies as Marshall and Weetman (2002) had found average disclosure by UK companies prior to when they were mandated to report under IAS 32 and 39 to be 46.54%.

Table 3: Descriptive statistics of market type classification

Market	Number	Mean	Median	St Dev.	S E mean	Min	Max	T-Ratio[Prob]
TOTAL	182	0.538	0.547	0.129	0.010	0.167	0.833	2.63[.009]
FTSE100	68	0.570	0.571	0.141	0.017	0.167	0.833	4.19[.000]
FTSE250	114	0.519	0.524	0.118	0.011	0.214	0.809	8.45[.000]

*Given both their mean and median scores, this result satisfies tests for normality. T-test result is 2.63 and the probability (p) is 0.009. Degree of Freedom (DF) is equal to $182-2-1 = 179$. The test is therefore significant at 1% significant level.

A further examination of the composition of the mean shows that FTSE 100 companies have higher mean than companies at the FTSE 250 at 57% and 52% respectively. This is consistent with the conclusion of Grant and Marshall (1997) that large companies represented by FTSE 100 companies should disclose more as they are able to absorb the cost of disclosure more easily than relatively smaller companies, although given the sizes of our sample companies, this is likely to be insignificant. They also require more disclosure as a result of their greater usage of additional and more complex derivatives and greater scrutiny by investors (Berkman and Bradbury, 1996). The significant test performed using parametric t-test and non parametric Mann Whitney tests show similar results. The t-test is significant at 1% and indicates no significant difference between the two scores (mean) of FTSE 100 and 250. This result upholds the correlation between size and disclosure. It also shows that there is only a 1 per cent chance that the actual average for this market classification type will be higher or lower than the obtained results. This makes the results significantly different from zero and therefore robust.

Table 4 is the main result of the content analysis of the annual reports based on the categories into which we divided requirements of IAS 32 and 39. We capture the extent of disclosure of each of the

items from our sample companies' annual reports. Since there are 182 companies in our sample we expect the frequency of disclosure of each of the items to conform to this number. However, we are careful not to label an item as non-disclosure if the item is not relevant to a particular company (Cooke, 1989; Marston and Shrides, 1991). Each item is thoroughly analysed by reference to different sections in the annual report and its applicability or otherwise before ascertained for each company as detailed in chapter four.

An item that has not been mentioned in any of the sections (accounts, notes to the accounts and other narrative sections) is seen as not applicable to the company and therefore it will not be expected to be disclosed. For an item to be considered as not disclosed by a company, its applicability to that company would have been ascertained but found not disclosed. If found not applicable, the company will not be scored in the item and this is why we have the second column (total expected disclosure) which ranges from 146 to 182. For example, the need to account for and recognise re-measurement of fair value hedges in profit and loss is relevant to only 146 companies in our sample, and so the remaining 36 companies were excluded from the analysis of the item. This is because these companies mentioned the remeasured value of relevant instruments and treated the difference in the accounts just as they also explained it in the notes to the accounts in compliance with IAS 39, paragraph 38.43 (please see more discussion of this in chapter three, especially 3.3 to 3.6)

Table 4: List of categories in IAS 32 and 39 and scores

CATEGORIES		Total expected disclosure	Actual total disclosure	% of disclosure
1	Initial recognition as financial asset/liability	182	181	99.50%
2	Subsequent measurement at amortised cost (interest rate derivatives)	182	182	100%
3	Subsequent measurement at fair value (currency derivatives)	182	182	100%
4	Impairment: Assessment of impairment	182	154	84.60%
5	Reflected in asset and loss recognised	182	43	23.60%*
6	Objective evidence of impairment	182	17	9.30%*
7	Derecognition (Financial asset): statement on derecognition	182	81	44.50%*
8	Statement on expiry of right to cash flow or substantial transfer of risk and benefit	182	52	28.60%*
9	Derecognition (Financial liability): statement on derecognition	182	70	38.50%*
10	Statement on whether the obligation specified in the contract has been discharged/cancelled/expired.	182	37	20.30%*
11	Hedge accounting: Adoption (Fair value, Cash flow, Net investment)	178	170	95.50%
12	Statement on entity's risk management objective	178	164	92.10%
13	Statement on Strategy for undertaking the hedge	178	156	87.60%
14	Identification of the hedging instrument	178	150	84.30%
15	Statement on the hedged item	178	122	68.50%
16	Statement on the nature of the risk being hedged	178	114	64.00%
17	Description/Statement of how the entity will assess the hedging instrument's effectiveness	178	67	37.60%*
18	Documentation of all the above from the start of the hedge relationship	178	62	34.80%*
19	Statement of whether the forecast transaction being hedged is highly probable	182	30	16.50%*
20	Statement of the assessment of the hedge on an ongoing basis and whether it is highly effective	182	13	7.10%*
21	Statement on whether or not the hedge is highly effective (almost fully offset changes in fair value/cash flow attributable to the hedged risk)	182	14	7.70%*

22	Statement of reliable measurement of hedge effectiveness (fair value/cash flows of the hedging instrument)	178	33	18.50%*
23	Fair value hedge: Statement for measurement and remeasurement	146	110	75.34%
24	Accounted for and recognised in profit and loss	146	106	72.60%
25	Cash flow hedge: Statement of measurement and remeasurement	158	114	72.20%
26	Gain/loss on measurement classified as effective/ineffective	158	119	75.30%
27	Is the effective portion of gain/loss accounted for in equity (statement of changes in equity)	158	109	69%
28	Is the ineffective portion of gain/loss recognised in profit or loss	158	93	58.70%
29	Hedge of a net investment in a foreign operation: Is the portion of gain or loss classified as effective or ineffective	148	78	52.70%
30	Is the effective portion of gain/loss accounted for in equity (statement of changes in equity)	148	66	44.60%*
31	Is the ineffective portion of gain/loss recognized in profit or loss	148	55	37.20%*
32	Contract (notional) value: Disclosure as at balance sheet date scaled by market capitalisation	182	142	78.00%
33	Fair value: disclosure as at balance sheet date scaled by market capitalisation	182	150	82.40%
34	Disclosure about the Terms and Conditions of Financial Instruments	182	174	95.60%
35	Disclosure about fair value of financial instruments	182	178	97.80%
36	Disclosure about Derecognition	182	54	29.70%*
37	Disclosure about collateral	170	15	8.80%*
38	Disclosure about compound financial instruments	182	35	19.20%*
39	Disclosures about financial assets and liabilities at fair value through profit and loss	182	123	67.60%
40	Disclosure about reclassifications	182	97	53.30%
41	Disclosure relating to the income statement and equity	182	99	54.40%
42	Disclosures about impairment: For each significant class of financial asset/liability.	182	14	7.70%*

Column 1 is the list of categories, column 3 is the total score of our sample companies and column 4 is the percentage of our sample companies that disclosed each of the categories. Also, we broadly classified and categorised each type of information released in compliance with IAS 32 and 39 into whether it is quantitative/numeric or qualitative/narrative. While quantitative disclosure is usually found in the balance sheet and income statement, qualitative information is found in the notes to the accounts, risk management section, management reports and some other unclassified part of the annual report. A cursory look at this table shows that 18* out of the 42 categories were poorly reported (Table 4, column 4) by our sample companies while the remaining 24 categories were relatively well reported. This result about disclosure level among non-financial firms, though lower than expected with about 53% to 93% of our sample companies not disclosing some of the items, it nevertheless constitutes an improvement on the findings of past studies. Worst hit are the requirements to provide objective evidence of impairment of derivative instruments which about 90% of our sample firms did not disclose. Others include (1) the requirements to provide statements of the assessment of the hedge on an ongoing basis and whether it is highly effective; (2) statement on whether or not the hedge is highly effective, i.e. whether it has fully offset changes in fair value and cash flow attributable to the hedged risk; (3) statement of reliable measurement of hedge effectiveness, i.e. identifying the hedging instrument as either fair value or cash flow hedge and (4) disclosure of impairment of each significant class of financial asset/liability, with only 7%, 8% 19% and 8% of our sample companies respectively responding to these disclosure requirements.

What can we make of these findings? Both Marshall and Weetman (2002) and Firth (1979) have documented low level of disclosure of derivative use in particular and accounting information in general, respectively during periods of voluntary disclosure. While Marshall and Weetman examined

the disclosure of derivative use under UK GAAP, Firth examined disclosure of relevant information in annual reports pursuant to the requirements of the Companies' Act and SSAPs among companies in the UK. They both found low levels of disclosure. Our findings reveal that disclosure has improved since their studies. Firth found on average that only 19.75% of their sample companies reported the individual items examined as against our own average of 55% of companies in our sample that disclosed the individual items. When we grouped numbers of companies that reported individual items into those that reported below 50% and those that reported above 50%, we found that the average improved. The average number of companies that reported those items that are below 50% is about 26%, meaning that an average of 26% of our sample companies reported those items, while over 78% of the companies reported other items.

While the above two studies found support for their findings in the voluntary nature of disclosure of derivative use as well as other items in annual reports and the attitude of managers not wanting to give away important information because of competitors, which are probably enough valid reasons, our findings cannot be justified under these guises. These findings may be probably due to problems of interpretation and understanding the requirements of the standards in the first year of adoption. This is probably why items listed above, which are highly contentious and complex requirements of the standards have been least reported.

The adoption of IAS 32 and 39 was mandatory for all non-financial companies in the European Union from the 2005 fiscal year, and these companies were therefore expected to comply fully in order for the anticipated objective of comparability to be achieved. These low disclosures of the above requirements are in respect of qualitative disclosures, which are expected to help the understanding of

the hedging process by explaining the figures reported in both the balance sheet and income statements. This provides the first hint that qualitative disclosure reporting in annual reports fell substantially short of the expectations for these two standards. Overall, although the results of the disclosure rate show an improvement in disclosure among non-financial companies in the UK, the number of companies that did not disclose some of the relevant items in spite of it being applicable to them is unexpected. However, the level of disclosure found may be because these companies have the choice of deferring reporting under international standards but have elected to report in the first year of adoption. This means that the option to defer reporting under international standards probably affected what was reported in the first year. This may also be as a result of uncertainty that surrounds how to explain some of the issues around financial instruments by managers, which may mean that requirements of the standards may never be fully reported even beyond the first year of adoption. Although this has consequences, we would like to interpret this result cautiously because the study, which was conducted for a single year and in the first year of adoption of IFRS, might show information that reflect possible initial problems of interpretation and understanding of the standards.

5.2. Qualitative disclosure

Table 5 segregates the categories of disclosure into quantitative and qualitative disclosure requirements of IAS 32 and 39. The enhanced disclosure of these standards as noted above requires not only disclosure of the hedging process, but also how to present what is disclosed, as well as the recognition and measurement of financial instruments recommended that reporting of derivative use should be both in quantitative and qualitative forms. We carried out the analysis of disclosure of quantitative and qualitative reporting of derivative use because of the requirements of the standards

that it should be so presented. Another reason is the need to provide qualitative disclosure because of its perceived usefulness by both analysts and investors in understanding the figures reported on different derivative instruments (Adedeji and Baker, 1999). The need for qualitative disclosure is also underscored by its role in providing completeness of income numbers as it makes financial statements more informative consistent with IASB objective, which seeks for the provision of useful information to users of financial statements.

Table 5: Descriptive Statistics of Qualitative and Quantitative disclosures

Discl. Type	Categories	Mean	Median	St. Dev.	S E Mean	Min	Max
narrative	23	0.428	0.376	0.299	0.062	0.071	0.956
numeric	19	0.700	0.726	0.252	0.058	0.192	1
Total.Discl.	42	0.551	0.566	0.308	0.047	0.071	1

The table shows that 23 out of the 42 categories are narrative aspects of IAS 32 and 39 while the remaining 19 are quantitative disclosures. The qualitative disclosures are essentially statements on the entity's risk management objectives of derivative use of the particular instrument (s), policies in place to ensure minimal exposure to further risk, various strategies in place for undertaking the hedge and the timely measurement and remeasurement of fair value/cash flow hedge of financial instruments as well as a statement of the internal control that will ensure effectiveness of management of derivative instruments. It also includes statements of derecognition of derivatives both in terms of financial assets and liabilities; the reliability of measurement of hedge effectiveness and how the instrument's effectiveness has been assessed.

We also capture the extent of cross referencing of these twin requirements of disclosure in their annual reports, which we found to be very important in order to gain knowledge of issues surrounding the hedging process. The mean disclosure of narrative aspect is about 43% while that of quantitative

aspect is about 70% (table 5). This indicates that the prescriptions of IAS 32 and 39, all of which are important for delivery of information about the whole hedging process by managers, is not being achieved, especially from the perspective of narrative reporting.

In further analysing narrative reporting we found that some of our sample companies did not make narrative reference to the figures presented in the accounts at all. For example, only about 38% of our sample companies gave statements of how they have assessed the effectiveness of the hedging instruments in use, despite presenting the figures whose effectiveness should have been assessed as required by the standards. One of the worst performances of disclosures in narrative form is the requirement that each of the hedging instruments should be collateralised and the asset used as collateral should be disclosed. Only 9% of our sample companies made this disclosure with most companies substantially ignoring it. This may be because managers have not been securing hedging instruments under the previous regime of reporting financial instruments and there was nothing to report in the first year of adoption of the international standards. It may also be because managers are unsure of the type of assets that should be used to collateralise hedging instruments in view of the complexities of many of the instruments. Narrative reporting of derivative use appears to be an area of disclosure that needs to be worked on by standard setters and other bodies that are arguing for harmonisation of reporting practices of companies in the EU.

We also encountered some difficulties in our attempt to link narrative reporting to the numeric disclosure that it relates to. This is because some companies did not give any hint as to where we should check for the explanation of figures in the accounts leading to difficulties in locating the narrative part of disclosure. When cross referencing of the narrative to the numeric is this difficult, it

will not only impede understanding but will also reduce the usefulness of information presented on the hedging process. Also when narrative is presented, it is found to be without any precision and lacks clarity, reducing the possibility of meaningful understandability and comparability by investors it is expressed to inform.

For example, BT group states that:

‘The group’s policy is not to use interest rate, currency exchange rate or cross-currency interest rate derivatives for speculative purposes’ and that ‘the adoption of IAS 32 and 39 was without retrospective application’.

In spite of the above statement, the company went ahead to show the impact of adoption of IAS 39 in their 2006 annual report as it affected year 2005 accounts, which included accumulated reserves and yet claimed that no retrospective application was adopted. The numeric disclosure clearly contradicts the narrative. This haphazard and inconsistent disclosure can only confuse shareholders/investors while obscuring rather than aiding the understanding of the hedging process which is a major objective of IAS 32 and 39. Roulstone (1999) had found a similar situation as he concluded that the qualitative disclosures of the hedging process were inconsistent with quantitative disclosure.

A similar theme can be seen regarding currency risk;

Antofagasta Plc states to confirm its use of derivatives and reporting under the international standards as follows:

‘The group’s objective is to protect its exposure to the fluctuations of the US dollar to sterling.’

This statement could mean so many things, for instance the fluctuation might have led to translation or transaction risks with each requiring different information disclosure which the company did not explain explicitly. The types of instruments used to mitigate this fluctuation were also not stated. Investors are therefore at a loss as to the detail of risk management of this company and this makes

earnings and cash flows of the company contain substantial noise and is therefore less informative. Also, while this company included currency risk in its numeric disclosure in both the income statement and balance sheet, it did not mention anything in the narrative section of its annual report regarding the figures it reported in its accounts. This could be seen as a refusal to explain figures to shareholders in spite of the importance that both analysts and shareholders attach to narrative element of annual reports to aid their understanding of the annual report and for rational investment decisions as argued by Lopes and Rodrigues (2005). It is therefore a violation of the requirements of IAS 32 which emphasises the disclosure of narratives in support of numeric disclosure for verifiability of the makeup of accounting figures in annual reports of companies.

The adoption is of very high significance given the intended benefit of harmonisation both to investors and entire economies of the European Union. Our expectation of improvement in narrative reporting is not met by the reporting practices of our sample companies. This is because, it was thought, that harmonisation of reporting practices among companies in the EU should enhance understanding of not only income numbers in general but transactions that constitute the reported earnings. This is especially true in respect of the hedging process that has not been transparent to investors, which has been found to harbour significant risk. Our findings were found to be far away from this expectation.

One of the worst performances of disclosures in narrative form is the requirement that each of the hedging instruments should be colaterised and the asset used as collateral should be disclosed. Only 9% of our sample companies made this disclosure with most companies substantially ignoring it. Lopes and Rodrigues (2007) surprisingly found that the majority of Portuguese companies in their sample (60%) disclosed the assets used as collateral and the amount, while only 38.2% disclosed

information relating to the terms and conditions associated with the pledged items. This could be because issues in collateralising hedging instruments were part of Portuguese accounting standards on financial instruments before the adoption of international standards. This means Portuguese companies might have been used to reporting the requirement. The opposite is the case in respect of UK GAAP which did not have provision for reporting this information, hence the difference in our findings and Lopes and Rodrigues'. Narrative reporting of derivative use appears to be an area that needs to be worked on by standard setters and other bodies that are arguing for harmonisation of reporting practices of companies in the EU.

Figures in annual reports need to be explained especially when they have been aggregated and/or restated as in the difference between nominal and fair values of derivative instruments. They also need to follow agreed and standardised requirements that will provide for comparability and understandability. Our finding is in support of the findings of Roulstone (1999) and Wood and Marginson (2004) who found low level of reporting financial instruments in many important segments of accounting standards examined by them.

5.3. Quantitative disclosures

Table 5 shows that about 70% of our sample companies disclosed according to the quantitative aspects of the standards. Numeric disclosures were found in the income statement, balance sheet and in notes to the accounts, where some analysis of the hedging instruments used by these firms were carried out in compliance with the requirements of IAS 32 and 39. We note that some of the items, such as how financial assets and liabilities were initially measured and re-measured, the fair value of the instrument

as at the balance sheet dates were all disclosed by all companies in our sample. Others included the hedge accounting method (fair value, cash flow and/or net investment) adopted by our sample companies and disclosure about notional and fair value¹⁰ of financial instruments were disclosed by more than 90% of our sample companies.

With the broad nature of numeric disclosure, the disclosure level found among our sample companies was commendable as the makeup of the figures in the accounts were well explained and analysed in the notes to the accounts. For instance, market risk was correctly categorised according to interest rate, exchange rate, commodity and equity by most of our sample companies in the notes to the accounts, enabling the understanding of figures presented in both their income statement and balance sheet. The extent of disclosure of quantitative aspects conform with the requirements of IAS 32 and 39 and their supplementary notes, though there are gaps between the requirements of the standards and what was reported by many of our sample companies, but this was found mainly on qualitative aspects.

We found enough detail in the makeup of the market risk in the notes to the accounts that explains the exposures of most of our sample firms. These categories were not only presented with their fair values but also with the amount at which they were initially recognised thereby enabling readers to know where derivative instruments started from and how much of the difference had been reported in the income statement as part of the reported earnings. In the first year of the adoption of IAS 32 and 39, this quality of disclosure that can be inferred from the disclosure level of quantitative aspect was good, and may be expected to improve in future years. This is because managers are expected to increasingly understand the technicalities of the standards in subsequent years.

¹⁰ which can best be represented by market values especially where there is active market for the particular financial instrument

5.4. Conclusions

In summary, the extent to which accounting numbers are useful to investors cannot be arrived at by reference to numeric disclosures alone. The argument for the new standards was that both numeric and narrative disclosures are both valuable for investors to reveal fully what companies do with derivatives and therefore must be jointly evaluated, especially as it affects its use. Investors should be given the opportunity to read and interpret annual reports by making reference to relevant sections that can enhance such understanding. Roulstone (1999) and Wood and Marginson (2004) partly support this finding to the extent that they found quantitative disclosure better than qualitative disclosure, which they stated improved in comparison with previous disclosures. It is also similar to their findings, as they noted that it did not meet the requirements of FAS 133 in the US and FRS 13 in the UK.

In this study, too, the disclosure level did not fully meet the requirements of IAS 32 and 39. While we found that both quantitative and qualitative reporting of derivative use under the IFRSs did not fully meet the requirements of the standards, quantitative disclosure is substantially better than qualitative disclosure. The expectation was that companies across the European Union who have agreed to report under the international standard from 2005 will fully comply with the requirements of the regulation they have signed up to. Therefore, we conclude that both quantitative and qualitative aspects need some improvement for reporting practices of companies in the EU to be comparable.

The fact that managers were used to reporting under FRS 13, which is a voluntary disclosure regulation that did not prescribe specific ways to present relevant information in the standard, could also be the reason for the different ways managers presented both quantitative and qualitative information in this first year of adoption. Arguably, managers are not willing to provide what they

regard as proprietary information. On qualitative disclosure this would mean refusing to explain the make-up of figures that would make the hedging process observable. It appears that management of some of these companies may actually be protecting their own interests by not releasing what they consider as proprietary information. It is also possible that managers are hiding their own risk-taking.

It is, however, noteworthy that about 93% of our sample companies disclosed management objectives in using the various derivative instruments employed to manage the risks they face. This is a significant improvement over the findings of Adedeji and Baker (1999). They examined reporting practices of derivative users in the UK in both pre- and post-FRS 13 and found that only about 50% of their sample firms disclosed the objectives of using derivative instruments. Out of the 50% that reported an objective of hedging, non-financial firms in their sample recorded the lowest disclosure among the three categories examined. Our result is therefore an improvement on previous narrative and numeric reporting practices in the UK. However, this does fall well short of the disclosure that might have been expected from compulsory regulation. We therefore expect increased disclosure in subsequent years for the reasons given above.

Chapter 6: Results and Interpretations II: Value Relevance of extent of disclosure

6.1 Introduction

This chapter details the empirical results and interpretations provided for the hypotheses developed in chapter four. We use the market model to calculate excess return. We have two equations. In our first equation, excess return (ER) is our dependent variable while our independent variables are leverage (CL), earnings surprise (ES), free cash flow for firm (FCFF), size, net sales (CS) and our variable of interest: disclosure level (DLE) (See chapter four for their definitions). The first equation (equation 6) was used to answer our second research question in conjunction with our first hypothesis restated in section 6.6 below.

Our second equation (equation 7), which also included the risk and performance factors, divides disclosure level (DLE) into three dummy variables in order to identify the effect of different levels of disclosure on excess return. We divided the variable into low, medium and high levels of disclosure so as to be able to provide support for our result from equation 6 for robustness. We did this through our second hypothesis also stated in chapter four but which can also be found in section 6.5 below. We applied the ‘N-1’ rule to obtain the interaction of the three levels with excess return. We did this to avoid the problem of multicollinearity and possible negative R^2 . We use this rule in order to further obtain evidence of valid results that is free of multicollinearity in order to support our initial evidence of no multicollinearity obtained from our spearman correlation results (see table 7 and 8).

We use coefficients and their signs, standard error, and t-statistics, which are the ratio of mean of our variables to their computed standard deviation as our basis of inference from our results (Brown and

Warner, 1985; Campbel, Lo and MacKinlay, 1997). We also conducted relevant diagnostic tests to validate our models, their assumptions, and results. The concluding part of the chapter discusses our overall observations from the hypotheses and gives some possible reasons for the results obtained.

6.2 Results and Interpretations

Our results and interpretations for this second empirical chapter are divided into five broad sections all of which utilise our evaluated samples. The first part discusses the summary statistics and the correlation coefficients; the second part presents the OLS results and discusses results of our risk and performance factors. The third part details the results of our main variables from equations 6 and 7 through models 1 to 4, using their coefficients, while the fourth part presents our hypotheses testing which we linked with the results of our main variables. The fifth part conducts and discusses diagnostic tests. Each of the sections evaluates the results from two perspectives which are the effects of disclosure levels of our total sample and the division into differences in disclosure of derivative use under the two standards examined, on excess returns and consequently on firm value.

6.3 Variables and Descriptive Statistics

The following table (table 6) presents our descriptive statistics for our variables which are seven in number. We have a total of 182 companies that meet our various criteria for each of the variables. We present the summary statistics of these companies in table 6. The returns for our sample companies were collected from DataStream, while we use the MSCI world index to represent market return, being the appropriate international benchmark and not the FTSE-All-share index. Our justification for the choice of world market index is to avoid likely/possible volatility that the

disclosure might bring to the UK market since the regulation affects most of the companies in the LSE (See chapter 4 part 4.6).

Table 6: Descriptive Statistics for Dependent and Independent Variables

Variables	Mean	Standard Deviation	Minimum	Maximum
Excess Return	-0.003	0.13	-0.47	0.30
Size	18.80	1.44	14.18	23.11
Leverage	-0.72	5.40	-54.37	1.00
FCFF	0.01	0.00	-0.02	0.01
Earnings Surprise	-2.68	22.28	-284.00	47.68
Net sales	-0.14	0.26	-1.10	0.61
DLE	0.54	0.13	0.17	0.83

Table 6 is a presentation of the descriptive statistics of our variables which are seven in number. Excess return (ER) for our sample companies is our dependent variable; We arrived at Excess Returns (ER) by using daily returns defined as the log of daily return of firm i on day $t-1$ subtracted from the daily return of the firm on day t . Market return was similarly calculated. Our independent variables are size - defined as share price multiplied by share outstanding, earnings surprise; net sales; leverage; free cash flow for firm which we scaled by market capitalisation (FCFFMC) disclosure level obtained from the dichotomous procedures adopted in the scoring. Earnings surprise, net sales, and leverage are arrived at using net profit figures, net sales figures and leverage figures for year t which we subtracted from year $t-1$ figures and further divided by figures for year $t-1$. FCFFMC is defined as $EBIT(1 - \text{tax rate}) + \text{capital expenditures} - \text{increase in NWC (net working capital)}$ (Bodie *et al.*, 2008 p.439.) All our independent variables except disclosure levels and dummy variable were from DataStream.

The table presents the characteristics of the variables analysed in this study. Excess return is on the average negative, although weak, but means that cumulatively our sample companies produced negative excess return over the test period on average. The minimum and maximum excess returns further explain this even as the highest and lowest excess returns gave a range that suggests that more of our sample companies posted positive excess returns. The negative earnings surprise is an indication of unfavourable performance on average, and in net profit terms by our sample companies during this period. The negative mean recorded for net sales suggests that sales dropped for our sample companies during this period and this supports negative earnings surprise even as earnings plummeted at a higher rate. The disclosure level shows a positive mean that is higher than 50%, which is more than average in the first year of adoption of IFRS on derivative use. In the descriptive statistic, we have tolerable standard deviations.

6.4 OLS Cross Sectional Regression Results

The Ordinary Least Square (OLS) results of our data are presented and explained in this section. We considered the properties of our sample using OLS empirical estimation procedure to process cross sectional regression with all seven variables for our first equation.

Tables 7, 8 and 9 present our empirical estimations. Tables 7 and 8 present the structure of the correlation between the variables for the two models. The estimates of the relationship between the variables are modest and therefore tolerable. This is a step towards ensuring that our results are not affected by multicollinearity, the presence of which can affect estimates of our individual variables. It should be noted that no collinearity is found among our explanatory variables, meaning that they have little or nothing in common as far as their explanatory power is concerned and so justify their individual inclusion in the equation on the basis of the unique information they possess. Also, excess return is negatively related to disclosure level, lending some support to the presupposition that disclosure lowers investors' risks as there is less uncertainty around the firm and this gives the first hint to the result of our test. This is further corroborated by negative relationships between excess return and medium and high levels of disclosure, while there is a positive relationship between excess return and low level of disclosure (Table 8). The above relationships between excess return and disclosure levels on one hand and excess return and different levels of disclosure (low, medium and high) on the other hand hint at the robustness of our results.

Table 7: Spearman correlation coefficients for model 1

	ES	Net sales	Leverage	FCFF	Excess Return	DLE	Size
ES	1.0000						
Net sales	-0.0591	1.0000					
Leverage	-0.0178	0.0066	1.0000				
FCFF	0.0044	0.2171	0.0184	1.0000			
Excess return	-0.0416	-0.0120	-0.1383	0.0626	1.0000		
DLE	0.1429	0.0414	0.0205	0.0021	-0.1655	1.0000	
Size	-0.0205	0.1882	0.0334	0.0475	0.0605	0.2730	1.0000

Table 8: Spearman correlation coefficients for model 2

	ES	Net sales	Leverage	FCFF	ER	L	M	H	Size
ES	1.0000								
Net sales	-0.0591	1.0000							
Leverage	-0.0178	0.0066	1.0000						
FCFF	0.0044	0.2171	0.0184	1.0000					
ER	-0.0416	-0.0120	-0.1383	0.0626	1.0000				
L	-0.1256	0.0083	-0.0815	0.0260	0.2334	1.0000			
M	0.0622	-0.0561	0.1239	0.0671	-0.1855	-0.6441	1.0000		
H	0.0561	0.0620	-0.0690	-0.1127	-0.0159	-0.2585	-0.5725	1.0000	
Size	-0.0205	0.1882	0.0334	0.0475	0.0605	-0.1610	0.0387	0.2215	1.0000

Tables 7 and 8 present estimated correlation matrix of variables for models 1 and 2. The sample contains 182 non-financial companies. Table 7 shows the correlation matrix for our dependent variable, excess return (ER) and the explanatory variables (earnings surprise, net sales, leverage, cash flows, disclosure level and size.) We arrived at Excess returns (ER) by using daily returns defined as the log of daily return of firm i on day $t-1$ subtracted from the daily return of the firm on day t . Market return was similarly calculated. *Earnings surprise*, net sales, and leverage are arrived at using net profit figures, net sales figures and leverage figures for year t which we subtracted from year $t-1$ figures and further divided by figures for year $t-1$, size defined as share price multiplied by share outstanding, FCFFMC is defined as EBIT $(1 - \text{tax rate}) + \text{capital expenditures} - \text{increase in NWC}$ (net working capital) (Bodie *et al.*, 2008 p.439.)

Tables 9 presents the results of the cross sectional regressions for the full sample and the division of our main variables into low, medium and high levels of disclosure using the Ordinary Least Square method of estimation. Our coefficients are significant in three of our estimations, i.e. leverage, disclosure level (DLE), and size.

Table 9: OLS regression results with Excess Return as the dependent variable

Variables	Model 1 (eq. 6)	Model 2 (eq7)	Model 3 (without collateral re: eqn.6)	Model 4 (without collateral re: eqn.7)
Intercept	-0.1148 (0.1138)	-0.1315 (0.1135)	-0.1136 (0.1140)	-0.1284 (0.1142)
Size	0.0111* (0.0063)	0.0094 (0.0062)	0.0108* (0.0063)	0.0092 (0.0062)
Leverage	-0.0034*** (0.0009)	-0.0030*** (0.0009)	-0.0034*** (0.0009)	-0.0029*** (0.0009)
FCFF	4.3729 (4.0277)	4.2832 (3.8737)	4.4013 (4.0116)	4.3231 (3.8497)
ES	-0.0001 (0.0002)	-0.0001 (0.0002)	-0.0001 (0.0002)	-0.0001 (0.0002)
Net sales	-0.0217 (0.0392)	-0.0258 (0.0389)	-0.0022 (0.0392)	-0.0257 (0.0388)
DLE	-0.1954*** (0.0705)	----- -----	-0.1887*** (0.0707)	----- -----
Low	----- -----	----- -----	----- -----	----- -----
Medium	----- -----	-0.0764*** (0.0229)	----- -----	-0.0768*** (0.0228)
High	----- -----	-0.0672** (0.0278)	----- -----	-0.0650** (0.0289)
R ²	0.064	0.085	0.062	0.085
N	182	182	182	182
Mean VIF	1.07	1.21	1.07	1.21

Note *** significant at 1%, **Significant at 5%, *Significant at 10%

Standard errors are shown in parentheses. For model 1 our sample consists of 182 non-financial companies who reported under the international standards- IAS 32 and 39 which are examined in this thesis. The dependent variable in the models is excess returns. We calculate excess returns using daily returns which we defined as the natural logarithm of Pt/Pt-1 ratio meaning the log of daily return of firm i on day t-1 subtracted from the daily return of the firm on day t. Earnings surprise (ES), Net Sales, and Leverage are all arrived at using net profit figures, net sales figures and leverage figures for year t which we subtracted from year t-1 figures and further divided by figures for year t-1. Earnings surprise is defined as Earnings before interest; tax and depreciation/amortisation (EBITDA) obtained from DataStream and coded WC18198. FCFFMC is defined as EBIT (1 – tax rate) + capital expenditures – increase in NWC (net working capital). We scaled FCFF with individual company's market value for stationarity so as not to give undue advantage to large firms at the expense of relatively smaller firms. Market capitalisation is defined as share price multiplied by total shares outstanding. Size, as a risk factor is arrived at by multiplying share price by shares outstanding. All our independent variables except disclosure levels were from DataStream. Leverage is coded WC08221 by DataStream and defined as long term debt plus short term debt and current part of Long term debt scaled by total capital plus short term debt and current part of long term debt.

For leverage, the regressions reveal a negative but significant relationship between change in leverage and excess return. Returns decline with negative change in leverage. With average decrease in leverage of -0.72 (table 6) by our sample companies, excess return declined by 0.34%, which is statistically significant. The result can be interpreted as showing that equity returns decrease as leverage decreases, resulting from less risk of financial distress in our sample companies. Although,

this result documents a modest association between leverage and excess return, which confirms leverage as a risk factor that should explain excess return as has been widely documented in the literature (see Basu, 1983; Rosenberg et al., 1985 and Fama and French, 1992), the result should be interpreted with caution for two reasons. First, the decline in the debt/equity ratio of our sample companies during the event period may be a temporary happening which might only be peculiar to the period examined and may therefore not generalisable for the entire financial year of the companies. It may also be as a result of data collected where we found many outliers that could have affected the sign of the variable. Another reason might include the elimination of other risk factors that were positively correlated with leverage but which might have affected the sign.

For size, our result reveals a positive association with excess returns and it is statistically significant. Market equity of our sample firms has positive but low association with excess return, meaning that stocks of these companies have lower risk adjusted returns which is consistent with the findings of Banz (1981) and Bhandari (1988). This means that high stock prices are seen by investors as having high prospects, which should have lower expected returns due to lower risk adjusted cost of capital in order to compensate for good prospects. One suggested reason for this finding is that more investors desire to hold the stock of large firms because of the association between size and information release making them potentially more transparent. Investors expect less surprise from more transparent companies and also see them as less risky and will therefore be satisfied with lower risk adjusted returns as found by the above studies.

The coefficients of net sales and earnings surprise are negative, and that of free cash flow for firms (fcffmc) is positive, but all are not statistically significant.

For net sales, our sample companies recorded negative association with excess return for decreased level of sales as shown by our descriptive statistics, with average net sales of -0.14 (table 6). This supports literature that suggests that increased sales level should lead to positive excess return and vice versa (Barth *et al.*, 2001; Jordan *et al.*, 2007). In this case, reduced levels of sales by our sample companies yielded negative excess returns but are statistically insignificant. However, the result leads us to enquire as to the validity of the decline in net sales of our sample companies during the year 2005 and 2006 before the economic crisis started, which was not expected. This alerts us to the need for caution in interpreting this result. Negative net sales might be peculiar to the event window examined which was a period of 101 days and concentrated on the first quarter of the year when retail sales, in particular, are recognised as declining from the previous quarter. There is also the possibility of unintended error or inaccurate data which could be checked by comparing our data with other sources other than DataStream.

For earnings surprises, companies with a decrease in net profit/earnings have negative excess return, indicating an earnings announcement effect. This is consistent with the findings of Beaver (1968) and Ball and Brown (1968) who had documented positive relationship between positive earnings surprises, which is seen as good news and security returns. Beaver (1968) had concluded that earnings are one of the most important explanatory variables that determine firm's valuations. However, the coefficient of our earnings surprise is negative and the association with excess return very low and insignificant. We note that the findings of Bowen *et al.* (1987) and Lev (1989) appear consistent with our findings but we would like to hold their argument/findings of low and sometimes insignificant association between earnings surprise and excess returns with caution. The negative earnings follow from similar negative

sales that we found which led to our suspicion of the event period examined. The event window for most of our sample companies fell on the first quarter on the year when sales and consequently earnings have been documented to be lower in comparison with other quarters of the year (see Ohlson, 1995). This, together with the possibility of inaccurate data might have affected our results.

For free cash-flow for firm (FCFF), we find a positive association between free cash flow and excess return, consistent with the literature, but the result is insignificant. The positive association found is in support of studies such as those of Rayburn, (1986), Bowen *et al.* (1987) and Ou and Penman, (1989) but they have all found significant association between cash flow and excess returns which technically questions the validity of our results. Their findings follow the presupposition that companies with higher free cash flow are likely to sustain long term growth as they are likely to be able to finance +NPV projects and of course –NPV projects, which could have been rejected, at lower costs (Bodie *et al.* 2008, p 425). Our result, although it has the predicted sign but is statistically insignificant, fails to uphold this supposition. Other studies have documented statistically significant positive association between excess returns and cash flow especially in models that included earnings. This means that the result should be interpreted with caution.

6.5 Results of our main variable

This section interprets our main variables from equations 6 and 7, the results of which are found in table 9 and described as models 1 and 2. Model 1 is where we evaluated the impact of disclosure level on excess return and model 2 is where the disclosure level is divided into those that disclosed at low, medium and high levels through the creation of multiple dummy variables. For the second model, we

use the N-1 rule and therefore did not use all three dummy variables in processing the data in order to avoid the problem of multicollinearity, i.e. dummy trap (Asteriou and Hall, 2007: 193). This is because addition of the three dummy variables will be equal to 1, thereby having the characteristic of linearity with our constant/intercept, which is in this case K . We therefore excluded the low level of disclosure. We did this for two reasons. It has the highest correlation with another variable (medium level of disclosure) and may therefore introduce multicollinearity into our results. Our second justification for its exclusion is that removing it affords us the opportunity of retaining our intercept, the result of which is statistically equal to that of the omitted variable (Low level of disclosure) and thereby avoiding the possibility of having negative R^2 and/or invalid coefficients and other test statistics that can reduce the power of our result (Campbel, Lo and MacKinlay, 1997). Models 3 and 4 in table 9 are repeat regressions where we excluded the requirement that companies should disclose the assets used as collateral and the amount. Although we found support for the inclusion of this item of disclosure in Lopes and Rodrigues (2005, 2007), we excluded it in these repeat regressions, thereby arriving at new disclosure levels and found that it did not affect our results as our coefficients; standard errors and significance levels are all similar to those obtained in our main results and they also retained their signs, thereby validating our results.

6.5.1 Discussion of our main variables

For disclosure levels, (table 9, model 1) the regression results show a negative but significant relationship with excess returns. This means that returns decline with disclosure levels of our sample firms. A level of disclosure of 54% on the average is associated with 19.5% decrease in risk adjusted discount rates of our sample companies, and this is statistically significant.

This appears to be in support of risk-return trade-off hypothesis. Companies that disclose more are transparent and less risky and this therefore means lower risk adjusted discount rate as cost of equity for investors. This is consistent with extant literature that says lower risk-adjusted discount rates mean lower future returns but higher current prices (Hickman, Hunter and Byrd, 2003, p.339-340).

With the inference that our sample companies have higher current prices given lower risk-adjusted discount rate, then it seems reasonable to suggest higher market values for companies in our sample, meaning that increased disclosure that reporting under IFRSs (IAS 32 and 39) represent does signify increase in firm's value. Disclosure level showing improved transparency means that risk level is lower for investors as there is reduced probability of being surprised because of better knowledge of the company, which supports the literature that associate disclosure with transparency and an increase in market value (see Basu, 1977; Leuz and Verrecchia, 2000 and Patel *et al.*, 2002). This means given this scenario, investors are likely to demand a lower risk premium which leads to lower returns and a lower discount rate. Arguably, this may suggest that investors support the use of derivatives by managers to manage risks but want such usage reported in full for transparency. This ties in to theoretical insights on information release in order to reduce information asymmetry between managers and shareholders (DeMarzo and Duffie, 1995; DaDalt *et al.*, 2002 and Froot *et al.*, 1994).

Table 9, model 2 is a repeat of regression estimations for all our variables but replacing disclosure level with three dummy variables representing low, medium and high levels of disclosure- but with the exclusion of low level of disclosure for the reasons stated above (see section 6.5). All five variables –

earning surprise, leverage, size, net sales and free cash flow retained their coefficients and signs as in the first regression estimates.

Excess returns have negative relationships with medium and high levels of disclosure and these are statistically significant. These results appear to reinforce/support our earlier findings that level of disclosure reinforces transparency and that investors gain increased market value from companies that disclosed more information on derivative use. This result is therefore a robustness check that validates our earlier results. The results for medium and high levels of disclosure maintained the negative sign supporting the presupposition that increased transparency is associated with lower risk adjusted discount rate that translate to current higher value of these firms. This explanation is upheld for both levels, especially given the closeness of their coefficients, which give a difference of less than 1% and their standard errors that stand at a difference of 0.49%. For these coefficients to be interpreted differently, the difference in their standard errors must be about 2%. This means that levels of disclosure of derivative use, resulting from disclosure under international standards, have information content as more information representing increased transparency of issues in derivative use signify increase in market values of these companies. In using N-1 rule, the result of the omitted variable equals the result of the intercept which gave a negative coefficient but which is not statistically significant. This means that the result of low level of disclosure is not statistically different from zero which further supports our findings. For robustness of this result, we included low level of disclosure in another model (See appendix 5 for result) and suppressed the intercept and the coefficient of low level of disclosure turned positive and significant at 10% significant level. This means that the risk adjusted discount rate of companies that disclosed at low level is higher and therefore with likely expectation of higher returns by investors in compensation for increased level of risk. The implication

of this finding is that the negative excess return that we reported in our first regression is largely due to companies that reported at medium and high levels.

This supports the findings of Basu (1977), Lang and Lundholm (2000), Leuz and Verrecchia (2000) and Patel *et al.*, (2002) who tested whether information contained in annual reports contains new information using return-based event-study methodology like the one used in this study. They found that the extent of disclosure in annual reports conveys new information to the market, reflected in the share prices of companies in their sample, and in the same direction as our results. This further suggests that investors desire more information on derivative use, which is unsurprising in view of some of the derivative induced-disasters that have been documented in the literature.

These companies' results are more comparable; therefore possibly attract greater investment, and thereby indirectly supporting the principle of harmonisation.

6.6 Hypotheses

The two hypotheses introduced in chapter four are next examined. The two hypotheses are stated in both the null and alternative forms following the usual practice.

Our hypotheses which are coded HA and HB with their nulls and alternatives in respect of our main variables – disclosure level (DLE) for our first hypothesis (HA) and the division of our sample companies into disclosure levels – low, medium and high levels for the second hypothesis (HB) are as presented below:

First Hypothesis

Null Hypothesis (H_A)

3. H_{A0}: Companies that disclosed derivative use under international standards have reduced risk-adjusted discount rates

Alternative Hypothesis

4. H_{A1}: Companies that disclosed derivative use under international standards have increased risk-adjusted discount rates.

Second Hypothesis (H_B)

Null hypothesis

3. H_{B0}: Firms with higher disclosure level have lower risk-adjusted discount rate than firms that disclosed at lower level

Alternative hypothesis

4. H_{B1}: Firms with higher disclosure level have higher risk-adjusted discount rate than firms that disclosed at lower level.

6.6.1 Discussion of hypotheses

The hypotheses sought to evaluate the extent to which investors/shareholders utilise and impound information on derivative use released in annual reports by managers on share prices. This means that this study is interested in the contemporaneous reaction of investors to information release on derivative use in annual reports. This is why we seek to measure the extent to which their current wealth change can be attributed to the change in regulation. In doing this we are also mindful of other possible factors that might have caused their current wealth to change. It is in the light of this that factors such as leverage (CL) (Fama and Macbeth, 1973; Litzenberger and Ramaswamy, 1979; Banz, 1981; Bhandari, 1988; Fama and French, 1992 and Dimitrov and Jain, 2006), earnings surprise (ES)

(Ball and Brown, 1968; Beaver, 1968; Bowen *et al.*, 1987; Collins *et al.*, 1994 and Gelb and Zarowin, 2002), free cash flow for firms (FCFF)) (Jensen, 1989; Rappaport, 1998; Copeland *et al.*, 2000; Copeland and Antikarov, 2000; and Damadoran 2001, Chapter eleven), size (Banz 1981; Bhandari 1988) and net sales (CS) (Barth *et al.*, 2001; Jordan *et al.*, 2007) were included in our equations

To be able to conduct these hypotheses tests we determine the normality of our samples in the different categories. Both our dependent variable - excess return - and the regressors are normally distributed. For example, excess return produced kurtosis and skewness of 3.32 and 0.108 respectively and both are very close to 3 and 0 respectively, indicating normality (see appendix 8). Also, disclosure level which we are testing against excess return produced kurtosis of 2.79 and skewness of 0.025 and both are very close to 3 and 0 respectively, also indicating normality (appendix 8). This suggests that we conduct two tailed tests for our hypotheses. The market adjusted model of excess return and disclosure level of companies were used.

We based our tests of the first (HA) and second hypotheses (HB) on the results in table 9 and the significant levels. The first hypothesis examines our first equation, the result of which shows that companies that disclosed under international standards examined produced negative impact on excess return which we interpreted to mean lower risk-adjusted discount rate for these companies. The result is significant at 1% confidence level ($\alpha \leq 0.01$). This means for hypothesis one, the null hypothesis (HA₀) is accepted and the alternative (HA₁) is rejected.

This means that there is only a 1% chance that we have rejected HA₁ in the case of disclosure level (DLE) when we should have accepted it. The probability of committing type 1 error is indeed very

small therefore reinforcing the validity of our result (Brown and Warner, 1980 and Watsham and Parramore, 1997: 173).

Given the acceptance of H_{A0} our conclusion is therefore that transparency which is depicted by increased disclosure of derivative use actually led to an increase in market value of our sample companies. This is consistent with the findings of Beaver (1968), Basu (1997) and Ball *et al.*, (2003). The consequence of this is that shareholders' wealth improved by increased disclosure of information on derivative use by non-financial firms which the prescriptions of IAS 32 and 39 represent.

The second hypothesis was adopted in order to isolate excess returns on the basis of the extent of disclosure (H_B). The need to test the second main hypothesis H_B became apparent as we found, though unsurprisingly, that some companies disclosed different aspects of the requirements of IAS 32 and 39, hence the need to segregate our sample companies using the level of disclosure in order to know the impact of this different levels of disclosure on excess return. Therefore for H_B we have 33, 115 and 34 companies for low, medium and high levels of disclosure respectively (table 10) into which we applied the N-1 rule, the summary of our result in respect of hypothesis H_B is as presented below:

Table 10: Classification of companies based on extent of disclosure

Variables	Coefficients	Robust std error	t-statistic	P-value
Constant/L	-0.132	0.114	-1.16	0.248
M	-0.076	0.023	-3.33	0.001***
H	-0.067	0.028	-2.42	0.017**

*Note *** significant at 1%, **Significant at 5%, *Significant at 10%*

The equation that gave the results is also as follows:

$$ER_{it} = K + \beta_1 size + \beta_2 CL_{it} + \frac{\beta_3 FCFF}{MC_{it}} + \beta_4 CS_{it} + \beta_5 ES_{it} + \alpha_2 DUL2_i + \alpha_3 DUM3_i +$$

Where:

- **ER_{it}** (**Excess Returns**) is the cumulative excess return for firm *i* on day -50 to +50. It is the dependent variable.
- **Size_{it}** is defined as a firm's share outstanding times its market price in year *t*
- **CL_{it}** is the percentage change in leverage for firm *i* in years (*t*) and (*t*-1)
- **FCFF/MC_{it}** is the % change in Free cash flow equity scaled by market capitalisation for company *i* in year *t* and (*t*-1)
- **CS_{it}** is the % change in sales for firm *i* in years *t* and (*t*-1)
- **ES_{it}** is the percentage change in net profit for firm *i* in years *t* and (*t*-1)
- **DUL_{it}** is the dummy variable used to proxy firms with low level (15% to 40%) of disclosure and it takes dichotomous scoring of 1 otherwise 0.
- **DUM_{it}** is the dummy variable used to proxy firms and it takes dichotomous scoring of '1' if derivative use disclosed is between 41% and 65% otherwise '0'
- **DUH_{it}** as proxy for high level of disclosure and it takes dichotomous scoring of 1 for firms disclosing ≥ 65%, otherwise '0' is given
- $\beta_1, \beta_2, \beta_3, \beta_4, \text{ and } \beta_5$, are our estimated regression coefficients while α_2, α_3 , and α_4 are our coefficients for the dummy variables
- *K* is our constant representing the omitted dummy variable.

In equation 7 that produced the results in table 10, multiple dummy variables (DUL, DUM, DUH) were created for low, medium and high levels of disclosure and regressed. We followed the rule of N-1 by not using all the three dummy variables in order to avoid the problem of multicollinearity (dummy variable trap) as D1+D2+D3 are expected to be equal to 1 (Asteriou and Hall 2007: 193).

The omitted 3rd variable represents the constant of our original model which is *K*. The remaining two dummy variables replaced the disclosure level, which is our main variable as flow control in the model. This is in order to isolate the impact of the extent of disclosure on firm value.

The general rule is:

If DUL₂ takes on 1; DUM₃ = DUH₄ = 0

- The constant for low level of disclosure which is K is equal to the coefficient of that level which is α_2 ;
- For medium and high level, the constants and coefficients are β_1 and α_3 ; and β_1 and α_4 respectively.

In table 10 two of our dummy variables give the expected and negative coefficients which are significant at 1% and 5% significant levels. Our constant, which represents the omitted variable, low level of disclosure also produced a negative coefficient but statistically insignificant. While the medium level of disclosure is significant at 1%, high level of disclosure is significant at 5% (that is, $\alpha \leq .01$ and 0.05). We went further to include low level of disclosure and suppressed the intercept in another equation in order to validate the above result; the result turned positive and became significant thereby supporting the first result reported (appendix 5). Even when our data was controlled for robustness in order to highlight the behaviour of standard errors after controlling for pertinent factors in the OLS regression model, the results do not change, meaning that our model is well specified and therefore sustained.

We tested our second hypothesis (HB) in order to find out whether there is a significant difference between these firms based on high, medium and low levels of disclosure.

Our null hypothesis is stated below:

$$HBo : \alpha_2 = \alpha_3 = \alpha_4 = 0$$

The null hypothesis means that *there is no excess return*

The alternative hypothesis is:

$$HB1 : \alpha_2, \alpha_3, \alpha_4 \neq 0$$

The alternative hypothesis means *there is excess return*

For those companies that disclosed at different levels, we found significant difference between them and those that disclosed at medium and high levels. Companies with low level of disclosure also have negative excess return but this is insignificant.

Using the principle of the Risk-Return trade off, investors perceive companies that disclosed at low level as probably more risky for using derivatives and not disclosing enough, as they might be hiding important information that should be useful to investors in making rational economic decisions. The more the disclosure the less risky investors perceive the company and so the lower the return they will require.

Using negative excess returns to explain firm's value, companies that disclosed at medium and high levels seem to have lower risk adjusted discount rate, lower future returns but higher current market prices that translate to increased firm's value. This means that investors' value increased disclosure of derivative use in firms. They seem to be happy with increased requirements of international standards' prescriptions of what should be disclosed on derivative use in annual reports. This is consistent with the findings of Patel *et al.*, 2002 who found similar results in circumstances that need the establishment of the effect of disclosure and its levels on firm market value, and Banz (1981) who found lower association between the common stock of large firms and lower risk-adjusted returns than he found for small firms. This means that they hold a similar conclusion with our findings that companies with higher disclosure will have higher current market value. Ball *et al.*, (2003) also found that the extent of disclosure and the attendant transparencies is useful in predicting the size of stock returns.

For the medium and high levels of disclosure, the p-values are 0.001 and 0.017 respectively meaning that if the true $\alpha_3 = 0$ and $\alpha_4 = 0$, there is a very small probability for $\hat{\alpha}_3$ and $\hat{\alpha}_4$ to be equal to or greater than the OLS estimate (less than 1% and 5% respectively). This can only arise purely by chance when the true values of α_3 and α_4 are zero. Also using the usual significance level criteria we can conclude in respect of medium and high levels of disclosure that their coefficients are significantly different from zero at 1% and 5% significance levels, which means that the null hypothesis should be rejected. The alternative hypothesis is therefore accepted that the coefficients are not equal to zero at 1% and 5% significance level ($\alpha \leq .01, 0.05$) (table 10) meaning that there is excess return. Companies that disclosed at medium and high levels are significantly different from those that disclosed at low levels of disclosure. This means that the t-statistic is statistically significant and suggests that companies that reported derivative use at medium and high levels in compliance with the requirements of IAS 32 and 39 actually reported negative returns during the event window.

For low levels of disclosure, the result shows a p-value of 0.248. This means that α_2 has higher probabilities of being equal to or greater than the OLS results (about 25%). There is 25% probability/chance of observing our estimated values of α_2 , which is greater than or equal to the OLS estimates. Furthermore, we could have arrived at the estimated results ($\hat{\alpha}_2$) by chance with higher probabilities in spite of the likelihood of its true values (α_2) being zero.

Using the significance level to interpret this result, low levels of disclosure is not significant at 10% ($\alpha_2 > .10$) meaning that its coefficient is not significantly different from zero at 10% level of

significance and so we can reject the alternative hypothesis that the coefficient is actually zero at the 10% level of significance. For this level of disclosure therefore we accept the null hypothesis, i.e. that its coefficient is equal to zero and therefore statistically insignificant. The differences in our sample values and the hypothesised values are likely to be a result of sampling variation or chance. The verdict of negative excess return is what we have in respect of our sample companies that disclosed at medium and high levels during the event window.

Consistent with the literature, e.g. (Brown and Warner, 1985; and Watsham and Parramore, 1997 p. 172-173) we went further to look at the probability of checking if we have made type I or II error, i.e. rejecting the null hypothesis when it is true as we did in the case of medium and high levels of disclosure. We therefore examined whether H_0 is true and yet rejected it as in the case of medium and high levels of disclosure, or accepted it, as in the case of low level of disclosure following the suggestion of Brown and Warner (1980). They had experimented with a simulation process using all three performance estimation measures (mean adjusted returns, market adjusted returns and market and risk adjusted returns models) at 1%, 5% and 10% significance levels and found that the probability of committing a type I or II error is prevalent at 5% level of significance. All the three estimation methods have also been found to achieve rejection rates that are not significantly different from one another. They checked for robustness of their result by using two non-parametric versions of t-test; a sign test and a Wilcoxon signed rank test. They found serious problems with the use of non-parametric versions as they did not reject both the null and the alternative hypotheses at the right levels of significance. They also did not reject the null hypothesis at the right frequency when compared with the t-test. Our results are therefore consistent with their conclusion that non-parametric tests cannot provide robustness for detecting type I and II errors, hence our reliance on the t-test which we applied

to the market model that we used in this study. We therefore rely on the fact that our significance levels are at 1% and 5% in this study, which means that the probability of committing any of type I or II error is highly unlikely.

To concretise this conclusion, we carried out further diagnostic tests, such as Ramsey RESET to test for omitted variables (ovtest). This is the formal test for functional form to test the null hypothesis that the patterns in the residuals cannot be explained by powers of the fitted value. Others include test of model fit in order to identify how well our estimates have been predicted by our model (linktest), heteroscedasticity for which we applied the robust regression, variance inflation factor (VIF) which measures the collinearity of individual variable with other variables in the model and Jarque-Bera test for normality in residuals, that is, that error terms are normally distributed. Results of diagnostic tests carried out are as follow:

6.7. Diagnostic tests

6.7.1 Functional Form Test (Ramsey RESET – ovtest) - Test of omitted variables

We test for the possibility of omitted variables; the Ramsey RESET (Regression Specification Error Test) which is a test of mis-specification produced the following result.

**Table 11: Functional Form Test (Ramsey RESET – ovtest) –
Test of omitted variables**

Ramsey RESET test using powers of the fitted values of excess return
Ho: model has no omitted variables
F(3, 172) = 0.61
Prob > F = 0.6062

The test produced an insignificant result which means that we can reject the hypothesis that there are omitted variables. The null hypothesis tested is accepted that the patterns in the residuals cannot be explained by powers of the fitted values. Having established that our model does not have omitted variables, we conducted additional tests to establish the fit of our model through the Jarque-Bera test for normality of our residual, and linktest in order to further support the result of model specification above.

6.7.2 Jarque-Bera (JB) test for normality in residuals

Jarque-Bera (JB) is given as shown in table 12 below, (see appendix 8 for Statistics of residuals):

Table 12: Test for normality of residuals

$$JB = N * \left[\frac{skewness^2}{6} + \frac{(Kurtosis - 3)^2}{24} \right]$$

$$JB = 182 * \left[\frac{(-0.29909)^2}{6} + \frac{(3.56 - 3)^2}{24} \right] = 5.09$$

The statistic has a χ^2 (X^2) distribution with 2 degrees of freedom, (one for skewness and one for kurtosis)

Our hypotheses are:

H₀ = Residuals are normally distributed

H₁ = Residuals are not normally distributed

From tables critical value at 5% level for 2 degrees of freedom is 5.99, so **JB < (X^2) critical**, so accept null that residuals are normally distributed

This supports the result obtained in the functional form test that there are no omitted variables in our model

6.7.3 Test of model fit (linktest)

We also carried out link test which is a regression of the dependent variable on the predictive value in order to find out if it predicts the true value well. To do this the added predicted value ($\hat{y}$) should give a coefficient that is very close to one and should be significant and the predicted value squared ($\hat{y}^2$) should not be significant otherwise it means there are omitted variables in the model

If our model predicts the true value well then the predicted value of $\hat{y}$ will be near one. The result which is stated below shows that the added predicted value ($\hat{y}$) is significant but its square ($\hat{y}^2$) is insignificant. The coefficient (the slope) of the first predicted value is also very close to one. This means that we reject the hypothesis that we have omitted variables

Table 13: Test of model Fit

Variables	Coefficients	std error	t-statistic	P-value
$\hat{y}$	1.0030	0.3095	3.24	0.001***
$\hat{y}^2$	-0.0703	2.8115	-0.03	0.980
Constant	0.0001	0.0101	0.01	0.993

*Note *** significant at 1%,*

6.7.4 Test of variance inflation factor (and tolerance)

The test is a measure of the individual independent variable's collinearity with other independent variables in the model, which is associated with the variance of the regression coefficient of the independent variables. In order to further uphold our initial observation of no multicollinearity which we established in section 6.4, we test for multicollinearity by calculating variance inflation factors (VIF) for the variables. The calculated variance inflation factors are as presented in table 14. Tolerance for our independent variable is $1 - \text{VIF}$ and represents the proportion of variance in our independent variable that is not related to other independent variables in our model. For both variance inflation

factor and tolerance, we document acceptable level which confirms that our model does not suffer from multicollinearity. VIF become worrisome when the coefficient of any of the variables is equal to or greater than 10.

Table 14: Variance inflation factors (VIF) for equations 6 and 7

Variables	VIF (eqn. 6)	1/VIF (eqn. 6)	VIF (eqn. 7)	1/VIF (eqn. 7)
Size	1.12	0.891035	1.11	0.904342
Leverage	1.00	0.998069	1.02	0.982493
FCFF	1.05	0.952099	1.07	0.935009
Earnings Surprise	1.09	0.972021	1.02	0.977495
Net sales	1.03	0.917978	1.09	0.913972
DLE	1.11	0.903064	-----	
High			1.62	0.615924
Medium			1.55	0.646954
Mean Vif	1.07		1.21	

The variance inflation factors (VIF) for our variables and in the two equations are below 10 meaning that multicollinearity is not a major concern with our model.

6.7.5 Heteroscedasticity

The problem of heteroscedasticity and that of autocorrelation are very similar. What autocorrelation is for time series, heteroscedasticity is for cross-sectional analysis. However, they have been used to corroborate one another in studies of this type (Asteriou and Hall, 2007 and Watsham and Parramore, 1997 p.191). Their existence in OLS estimates both lead to consequences for the results obtained. The estimates obtained in the result might still be linear and unbiased but may nevertheless be inefficient. This is because they may not have the minimum variance of all unbiased estimators. This is the reason

these statistical tests should be conducted in order to relate the heteroscedasticity variance with its associated explanatory variable (s).

Although we have used robust standard errors which, in Stata, eliminate the problem of heteroscedasticity, we also test the residuals for heteroscedasticity by Breusch-Pagan test before resulting to estimating our figures through robust regression. The result is as stated below.

Table 15: Testing for heteroscedasticity variance and associated explanatory variables

Breusch-Pagan / Cook-Weisberg test for heteroscedasticity
Ho: Constant variance
Variables: fitted values of excessreturn

chi2(1) = 1.17
Prob > chi2 = 0.2791

This means that we accept the null hypothesis and reject the alternative hypothesis. This is to say that the variance of error term is constant for all values of the independent variables however large or small. This further implies that our regression coefficients are the best, linear and unbiased or minimum variance estimates and are therefore the most efficient coefficients. There indeed appears to be no missing relevant regressor in this model. This result also signifies normality of our variables. This is consistent with the conclusion of Fama (1973) that the existence of constant variance in a linear market model signifies normality of the variables. We also document that our variables satisfy the normality assumption in appendix 8 with the right skewness and kurtosis for our variables using mvtest (normality test). The return variable in particular satisfies this condition as a result of transforming it logarithmically as suggested by theory. We introduced the need for this transformation in section 4.6. Stapleton and Subrahmanyam (1983) also argue that when a linear market model results

in homoscedasticity for each stock of the sample as found in this result, multivariate normality is implied. Fama (1973) argues that multivariate normality has very close affinity with market model linearity.

In general, the estimates of our equations conform fairly well to the assumptions of the linear regression model as can be inferred from the above diagnostic tests. Finally, our specified equation in this study satisfies all known OLS criteria and this gives our results power. This consequently means that our results (coefficients, t-ratios, significant tests and diagnostic tests) are as found and explained in relation to excess returns of our sample companies.

Chapter 7: Contribution and Future Research

7.1 Chapter Overview

Chapter seven presents the empirical findings in two parts from our two empirical chapters five and six. It also explains the contributions as well as the limitations of the study. Based on the results and interpretations of the study, we make suggestions for future research in this area.

7.2. Empirical findings

7.2.1 Overall findings from chapter five

Our findings show that companies reported derivative use more extensively under the international standards than under UK GAAP, suggesting that compulsory disclosure has made a difference in reporting financial instruments in general and derivative use in particular in the UK.

Specifically,

1. While our expectation of full disclosure of derivative use (as prescribed by relevant standards) as the ultimate expectation for effective harmonisation of reporting practices in the EU for comparability has not been met, we report improvement in derivative use reporting among UK companies in the first year of adoption of IAS 32 and 39. Secondly, we infer that mandatory disclosure requirements in annual reports is more effective than voluntary disclosure requirements, which the international standards (IAS 32 and 39) and UK GAAP (FRS 13) represent respectively. We therefore expect increase in disclosure rate in subsequent years and

in particular on derivative use, consistent with the results that show managers disclose more in compliance with the requirement of accounting standards. Managers are expected to increasingly understand the technicalities of the standards in subsequent years.

2. This result about disclosure level among non-financial firms, though lower than expected, with from 53% to 93% of our sample companies not disclosing individual items, it nevertheless constitutes an improvement on the findings of past studies. Worst hit is the requirement to provide objective evidence of impairment of derivative instruments which about 90% of our sample firms did not disclose. Our result also upholds the correlation between size and disclosure.
3. These low disclosures of the above requirements are in respect of qualitative disclosures which are expected to help the understanding of the hedging process by explaining the figures reported in both the balance sheet and income statements. This provides the first hint that qualitative disclosure reporting in annual reports fell substantially short of the expectations for the two standards examined. Overall, although the results of the disclosure rate show an improvement among non-financial companies in the UK, the number of companies that did not disclose some of the relevant items in spite of it being applicable to them is unexpected. Any expectation that managers of these companies would seize the opportunity to make their activities more transparent in order to gain investors' confidence has been confounded.
4. The mandated adoption of international standards is the achievement of the call for harmonisation of reporting practices, the requirements of which can arguably be said to be

production of relevant information which managers are expected to follow. Since it is compulsory for all, it arguably means that none will be at a disadvantage by reporting under these standards and this, again arguably, should lead to increase in the amount of information released. This is consistent with the findings of this study. This shows increase in transparency in the way derivative use is reported under this new reporting regime which also moves closer to the achievement of FASB framework and the expectation of IASB. Increase in prescribed information disclosed means more useful information is available to users of financial information. Specifically, this study examines the first year of adoption which could be seen as a learning period for preparers of annual reports. UK companies have been reporting under FRS 13, which is a disclosure-only standard as against IAS 32 and 39 that are inclusive of disclosure, presentation, recognition and measurement. We infer a gradual but steady alignment of reporting practices among non-financial companies in the UK in the first year of adoption of IFRSs as shown by our index of information released on derivative use. We document that almost all companies disclosed three items while over 90% of our sample companies disclosed four or more.

5. We also capture the extent of cross referencing of these twin requirements of disclosure which we found to be very important in order to enhance the verifiability as well as understandability of the hedging process. The mean disclosure of narrative aspect is about 43%, while that of quantitative aspect is about 70% (table 5). This indicates that the prescriptions of IAS 32 and 39, all of which are important for a holistic reporting of the hedging process by managers, is not being achieved especially from the perspective of narrative reporting. One of the worst performances of disclosures in narrative form is the requirement that each of the hedging

instruments should be collateralised and the asset used as collateral should be disclosed. Only 9% of our sample companies made this disclosure with most companies substantially ignoring it. Narrative reporting of derivative use appears to be an area of disclosure to be worked on by standard setters and other bodies that are arguing for harmonisation of reporting practices of companies in the EU.

We therefore infer that the mean of disclosure level arrived at in table 2, which is 54%, is largely as a result of the low level at which narratives were presented by our sample companies on derivative use. This makes reliability and comparability very difficult because of lack of corroborative evidence that can make the figures verifiable. Lack of reliability diminishes the relevance of accounting numbers as it causes difficulty in comparing annual reports. This hinders the objective of financial reporting as stated by the FASB. Our verdict is therefore that companies provided narrative aspect of disclosure in the way they wanted, leading to substantial difference in narrative reporting of derivative use by these companies.

6. While we found that both quantitative and qualitative reporting of derivative use under the IFRSs did not meet the requirements of the standards, thereby falling short of the comparability objectives of harmonisation, quantitative disclosure is substantially better than qualitative disclosure. Therefore we conclude that both need some improvement for reporting practices of companies to be comparable.
7. Our result is a significant improvement over the findings of Adediji and Baker (1999). They examined reporting practices of derivative users in the UK in both pre and post-FRS 13 and

found that only about 50% of their sample firms disclosed the objectives of using derivative instrument reported by them. Out of the 50% that reported objective of hedging, non-financial firms in their sample recorded the lowest disclosure among the three categories examined. Our result is therefore an improvement on both narrative and numeric reporting practices in the UK, and this shows that harmonisation of reporting in annual reports is on course in the first year of adoption of IFRSs.

Lastly and in this section, we note Jensen and Meckling's argument that notwithstanding the incurrence of agency costs incurred to solve agency problems, there will still be some divergence between decisions made by the agent and the expectation of shareholders. This is upheld in this thesis. While shareholders expected full compliance with the requirements of IASs, managers partially complied, meaning that there are still frictions between them.

7.2.2. Overall findings from chapter six

Our overall findings from chapter six on our second research question suggest as follows:

- Excess returns decline for companies that report derivative use under international standards and this is statistically significant. This means that these companies have higher market values. The decline in excess returns is an indication that these companies have a lower risk-adjusted discount rate that translates to lower future returns but higher current prices meaning current increased firm's market value. This supports the literature which associates increased levels of relevant information with improved transparency and therefore it ensues there exist low levels of risk for investors (Lang and Lundholm, 2000; Patel *et al.*, 2002). This result may be interpreted in the light of the literature which argues that investors want more relevant

information on derivative use which is unsurprising in view of the effects of derivative aided disasters on shareholders that have been documented in the literature. This means that the result is consistent with the theoretical insight on increased information release that reduces information asymmetry between managers and shareholders as documented by Froot *et al.*, (1994) and DaDalt *et al.*, (2002)

- Excess returns are lower for companies that disclosed derivative use at medium and high levels and they are statistically significant, meaning higher market value for these companies. These results support our earlier findings just as they support the theoretical insight that increased disclosure means increased transparency that should positively affect firm's value. Excess return are higher for firms that disclosed at low level and this is significant, meaning higher risk adjusted discount rate and lower market value. This suggests that derivative use without full disclosure may worry investors who may be unsure about how derivatives are being used. However, the result of this section is slightly ambiguous when considering low levels of disclosure as we expected a negative and significant association for full support of our earlier result. This means that the result should be interpreted with caution.

From both the principal-agent and positivist agency angles, the need for information release by the agent to the principal is evident and our results are linked to insights from these strands of agency theory. Some of the insights linked to different strands of agency theory also hold true for positive accounting theory.

The above findings can be linked to a component of positivist agency theory – managerial compensation/conflict resolution which explains how information systems can reduce possible opportunism of the agent, thereby aligning the interest of the agent with that of the principal (Fama, 1980; Wolfson, 1985; and Barney, 1988: 27). Their argument that release of more information hitherto in possession of managers to shareholders reduces managerial opportunism which should translate to lower/decrease in the cost of equity appears upheld as can be inferred from lower risk adjusted discount rate documented in this study.

Secondly, Jensen and Smith's (1985 and 2000) argument that the effect of the separation of decision management from decision control resulting into effective checkmate increases the value of the company because of reduced agency costs can be extended to compulsory disclosure of financial instruments. Compulsory disclosure of IAS 32 and 39 as a result of their adoption can be seen as an effective checkmate of the managers because they now have a list of what to report on financial instruments which is expected to reduce monitoring cost and increase benefits passed to shareholders. This has increased the extent of disclosure with reduced risk-adjusted discount rate that translates to higher current value for the firms to the benefits of shareholders.

Also, and from the principal-agent strand, Eisenhardt's (1989) suggestion that the principal will support an information system that will reveal agents' information endowments/behaviour to the principal appears sustained. The principal rewarded companies that disclosed more information on derivative use by demanding lower risk-adjusted returns, which translate to lower cost of capital and current market value for those companies. This makes information released positively related to the behaviour of the manager (agent) with the expectation of reduction in moral hazard and adverse

selection problems as argued by Stigler (1971) and Peltzman (1976). They argue that the agent is expected to behave in the interests of the principal in the absence of moral hazard and adverse selection problems and that is expected to reflect in firm's value which appears sustained in this study. The result shows the support of the principal to regulations which in this case is requirements of accounting standards which prescribe information to be released to the principal by the agent.

Using insights from positive accounting theory and given the practice of most firms of aligning managers' interest with those of shareholders through share options or tying their compensation to company performance, it is not difficult or surprising that we found increase in what was reported by the managers as argued by Watts (1977). Watts and Zimmerman's argument that managers have incentive to report under accounting standards that increase earnings and cash flow also supports the positive effect of the level of disclosure on firm value. Lower cost of equity documented means more projects, many of which would have been rejected, can be undertaken leading to additional cash flow and earnings for the company.

This thesis documents a modest increase in reporting derivative use in the UK in the first year of reporting under international standards as discussed in chapter five and the modest increase in information release which signifies improved transparency positively affected the market values of these companies as discussed in chapter six. The link between these two chapters supports theoretical insights on information asymmetry, which Healy and Palepu (2001) argue can be mitigated by the release of as much relevant information in order to retain the confidence of shareholders, transparency and firm's value.

In summary, our result shows that levels of information release on derivative use, resulting from disclosure under international standards, have information content as more information representing increased transparency of issues in derivative use signify increase in market values of these companies and vice versa. Our findings therefore confirm the presupposition that disclosure and transparency go hand in hand

7.3 Contributions

The study has provided insights into a number of areas. The first is the finding that disclosure of derivative use improved in post-IFRS adoption as found by the rate of disclosure calculated in our first empirical chapter (chapter five). Disclosure under the IFRSs represents compulsory and increased disclosure when compared with the requirements of UK GAAP – FRS 13, which was a disclosure-only standard and under a voluntary regime. This is an important finding as it promises convergence of reporting practices not only with companies in the UK, but also among companies in the EU. The study therefore documents a modest improvement in reporting practices in comparison with similar studies under voluntary regimes¹¹. This thesis is therefore important as it shows that managers responded to international regulations which they see as compulsory. It also suggests market forces are relevant as companies can be priced out of the market if they do not comply with regulations on disclosure, hence the enthusiasm and the increased disclosure of derivative use by them and documented by this thesis.

¹¹ These are Adedeji and Baker (1999), Marshall and Weetman (2002) and Dunne *et al.* (2004) who all examined reporting practices of derivative use by UK companies and found disclosure levels that are substantially lower than 50% of the requirements of FRS 13.

Another major contribution is that we found investors distinguishing between companies that disclosed more information and those that disclosed at lower levels, despite weaknesses of qualitative disclosure. While they attached lower risks and higher current market values to companies that disclosed more, they saw companies that disclose less as more risky. This is shown by the negative excess returns for more disclosure, which suggests that investors attach lower risk to companies that disclose more on derivative use and increased risk to companies that disclosed less information on derivative use. This provides evidence that investors seek more information on derivative use and therefore feel safer with companies that disclose this information.

The implication of the contributions presented in the above two paragraphs is that investors are not happy with the information gap between them and the manager on the use of derivative instruments. They prefer that managers disclose more of such information in order not to face surprises that have characterised derivative use collapses or near collapses. This preference is also capable of reducing the monitoring burden of the principal (shareholders) and consequently the agency costs. An important contribution of this study therefore is that increased disclosure of managers' information endowment can ameliorate some of the agency problems and increase investors' confidence in managers' ability, reported earnings and cash flows of the firm as suggested by agency theory. In this sense, the result shows that information release by managers as argued by both positivist and principal agency literature, which shows managers' preferences and reduces information asymmetry, also reduces the agency cost and problem.

Another major contribution of this study is that during the period that represents the release of annual reports of our sample companies, we found evidence that the market sought and responded to credible

information on derivative use. This is reflected in the sign, coefficients and significant difference found in excess returns of our sample companies, both in the first and second categories (table 9, models 1 and 2). While this supports the findings in Ball and Brown (1968), Beaver (1968) and Lang and Lundholm (1993) that the release of annual reports that contain earnings and other accounting numbers do lead to changes in security prices, it contradicts EMH generally, especially semi-strong-form efficiency and the conclusions of Stice (1991) who held that investors do not immediately impound information from annual reports, as such information would have previously been used in asset pricing before the release of annual reports.

This contribution is very important as it is the first study, to the best of our knowledge, which shows that investors' information on derivative use is reflected in share prices. This thesis therefore provides evidence that supports numerous and documented anomalies on market efficiencies. It might therefore mean fundamental analysis techniques, concentrating on derivative use, could generate excess returns. It is important to point out that though the excess returns found were instantaneous (as required for a valid conclusion in this regard) it was not substantial enough to dismiss the theory that the EMH is efficient in the semi-strong form.

Another significant contribution of this study is the use of event-study approach to examine how disclosure and its extent can be used to evaluate the risk-return trade-off hypothesis. This was done by linking the risk-adjusted returns of firms to current market prices of these firms using the Gordon's Growth model of Discounted Cash flow (DCF) valuation methodology. The DCF valuation methodology holds that negative excess returns which translate to lower risk-adjusted discount rates means lower future returns but higher current prices and vice versa (Gordon, 1959; Hickman, Hunter

and Byrd, 2003, p.339-340). This is a unique methodological approach and therefore a significant contribution that can be used by future researches in accounting to examine the effect of disclosure of other items of interest on both the risk and value of companies.

Another modest contribution of this study is the seeming effectiveness in the adoption of IFRSs as represented by increase in disclosure of derivative use, as prescribed by IAS 32 and 39. This appears to provide support for the expectations of IASC, whose recommendation the IASB adopted. It shows increased support for the harmonisation of reporting practices as canvassed by the body and as adopted by the EU, which came into operation in the UK on the 1st of January 2005. This contribution is therefore important as it provides the IASB with possible feedback on the harmonisation project, meaning that resources on new accounting regulations are not wasted and indeed capable of increasing shareholders wealth.

7.4 Limitations of the research

The limitations of this study which emerged in the process of conducting the study can be broadly discussed from the following perspectives – the problem of confounding variables, model used, obtained signs of our variables, assumptions made and possible violation, risk proxies, limitations due to the use of content analysis and limitations due to event study approach.

- i. **Confounding variables:** The market model used in this thesis does not explicitly accommodate confounding events like dividend, stock split and earnings announcements. These confounding events exist during the examination period uncaptured by event studies beyond daily returns collected which we assumed has been adjusted for dividend and splits

as defined by DataStream. This leaves earnings announcements notwithstanding the conclusion of Ball and Brown (1968) that 90% of annual earnings have been incorporated in security prices/returns before earnings figures are released. Apart from this, there are other company events largely unaccounted for as many things might have happened during the examination period. This means that by not capturing these additional events our estimation might have been affected. This effect is likely to have a significant impact on the results of our empirical tests. Studies have documented the need to remove these confounding event dates from the estimation period for reliability of the market model to be sustained (see Thompson *et al.* 1988; Kothari and Warner, 2004). The use of size-controlled portfolio approach which is capable of modelling confounding variables within event studies would have been useful in taking care of the confounding variables. However, the approach also controls size bias which is not needed in a study that uses large companies such as this. This means that we are unable to fully capture the effect of confounding variables on excess return.

- ii. **Model:** In using the market model, we relied on its documented advantages over other performance measures as argued by Brown and Weinstein (1985) and Brown and Warner (1985). These other measures such as the constant-mean return model and market adjusted return approach could have been used alongside the market model thereby enabling a comparison of results produced with those of the market model for robustness of findings. This is especially so when the Market Adjusted Return Approach has been found to be a refinement of the market model notwithstanding the conclusion of Brown and Warner (1980) who found no evidence to support this finding as a result of the complexity in

operationalising it. However, using other models would have increased our confidence in the results.

- iii. **Signs:** Signs obtained for our risk factors especially leverage in the two equations are not the predicted signs. Positive correlations between excess return and leverage and size have been variously documented in the literature and theory (see Banz, 1981 and Bhandari, 1988). One possible explanation for our findings could be as a result of the decline in debt/equity ratio of our sample firms as shown in the descriptive statistics which might be temporary within the financial year of our sample companies¹². We have the predicted signs for net sales, free cash flow and earnings surprise but they are statistically insignificant. This means that the results are not different from zero. Studies have found association between excess return and cash flow in models that included earnings with statistical significance (see Bernard and Stober, 1989 and Livnat and Zarowin, 1990) just as we have in our model (although we obtained statistical insignificance in our result). In addition to the reason mentioned on page 197, another reason is that we might have obtained these results as a result of unintended error or inaccurate data. This limitation could have been partly avoided had data used been verified with other data sources other than DataStream.
- iv. **Assumption violation:** We considered many issues before selecting empirical models used in this study. However, some of our assumptions need to be discussed directly as they affect the use of the market model in this study.

¹² please see further explanations on page 196 to 198

Two of such assumptions are the assumption of cross-sectional independence of excess returns and unequal variances as they affect the current study.

The first assumption might have been violated for two reasons. First, when sample companies cluster along size and industry dimensions, the assumption may be jeopardized (see Collins and Dent, 1984). This study does not use companies along industry division thereby avoiding an aspect that could have challenged this assumption out rightly.

However, our sample companies are large companies in the FTSE 350 which is a dimension that is capable of violating this assumption. We take solace in the considerable dispersion found in the market values of the lowest and highest capitalized companies (see table 2) which we believe are potentially able to ameliorate what could have been an outright violation of the assumption.

The second issue is unequal variances which violates the assumption of homoscedasticity used in OLS. It is assumed that our dependent variable (excess return) has equal variances with our independent variables across their different levels. In this study we found unequal variances between our dependent variable and independent variables which we attempted to address through the Breusch-Pagan Test, the result of which supports the assumption. However, we are aware of the debate as to the appropriateness of the test we conducted to validate this assumption. While some studies (see Chandra and Balachandran, 1990) support our approach others suggested that the Jaffe Standardized Residual Test (JSR) should have been conducted (see Strong, 1992) in order to document the cross-correlations of standard error in the sample excess returns. Others equally argue that the unequal variance can be safely ignored within the event period (see Bernard and Thomas, 1990). In

this study, we assume equal variances especially as other statistical tests have not indicated any problem in the unequal variances in our sample.

- v. **Risk proxies:** In this thesis, we used only two risk factors – size and leverage. Studies have recommended more risk factors such as book-to-market equity (BE/ME) and price-earnings (P/E) ratios in regressions that seek to explain abnormal/excess returns (see Fama and French, 1992 and 1993). Also, many of these studies argue that using more risk factors, especially where they are not correlated with one another strengthens the obtained results especially through improvement of R^2 with increased goodness of fit of the model (see Banz, 1981). If this was done additional information about how well the regression line approximates the real data points could have been obtained. However, we used only these two because we found high correlation between leverage and book-to-market equity which means that one of the factors will absorb the role of the other hence our decision to drop one (see Basu, 1983 and Rosenberg et *al.*, 1985).

Other limitations are those that arose as a result of the use of content analysis and event study methodologies.

vi. **Limitations of content analysis:**

We constructed checklists or disclosure indices against which we scored our sample companies. An important limitation of the study therefore has to do with the index construction process adopted. We were very painstaking and careful in the scoring process

but errors may still have occurred. As highlighted at the beginning of this thesis, this study examined reporting practices of UK non-financial companies in the first year of adoption which means that annual reports of only one year were utilized in the study. The use of annual reports of more years after the adoption would be interesting, as it would highlight the evolution of disclosure practices and extent of compliance by companies over time. Also, the fact that the annual report is not the only means by which companies release information on financial instruments is also a shortcoming of this study. However, we believe that this study has provided insights into a number of areas in spite of the above shortcomings.

Limitations of content analysis also include the poor links between text and numbers not explicitly addressed, which may have an impact if done correctly. Another limitation is the inability of the approach to capture quality of information released as only the existence of a particular disclosure can be documented by categorical scoring approach used (Francis et al., 2005). There is also the issue of weighting of responses not used in this study. Although weighting has been argued not to have any clear added advantage over unweighted indices (Firth, 1980; Chow and Wong-Boren, 1987), weighting can show substantial differences in disclosure of different items which we are missing in this study. However, this difference may or may not be important because of possible added subjectivity as argued by Spero (1979).

Furthermore, we looked for relevant items in our checklist in sections of annual reports of our sample companies and if found were deemed to be applicable to the firm and so the

firm was scored on this basis. There could be possible error in that some might have needed to report but did not show anything that would lead us to conclude so. It is possible that data collected, though it might be right, could have been unintentionally misused or interpreted by the researcher.

vii. **Limitations of event studies:** Event studies are not without limitations. The limitations can be grouped into the following five parts:

1. The role of sampling interval: This is about different sampling intervals between stock returns which could be daily or monthly and which raises the question of which of the two raises the power of the tests. Both MacKinlay (1997) and Brown and Warner (1985) simulated the two sampling intervals with over two hundred securities. They found substantial decrease in the power of the test that used monthly stock returns in comparison with daily stock returns. For MacKinlay (1997), the power of daily stock return was 0.96; while that of monthly stock return was 0.12. This explains our use of daily stock return in order to overcome this important limitation of event studies.
2. Sample selection: This is also a major problem in the applicability of event-study methodologies. There is the need to select the right sample to be used, while also identifying appropriate hypothesis to be tested in respect of these samples. We are mindful of this limitation in selecting large non-financial companies in LSE and in dividing our sample firms into levels of disclosure, which helped in specifying appropriate hypotheses which we tested.

3. Market efficiency: A well known limitation of event-study which is considered in this study is the assumption in information studies that security markets are efficient and that prices reflect fully the available information. Although there have been many documented anomalies, those found should be interpreted with caution. We have been cautious in interpreting our result in the light of the size of excess return documented in this study
4. Non-synchronous trading: Non-synchronous trading effects in event-study arise when prices are assumed to be recorded at the same time interval or when there is infrequent trading. Although all prices used in event-study methodology are the closing prices of individual securities, the closing prices do not occur at the same time. While the closing price of security *A* may occur before noon that of security *B* may occur later in the day. By referring to daily prices in event-study, we are implicitly and therefore incorrectly inferring synchronous trading. Dimson (1979) found that non-synchronous trading introduces biases in the OLS estimate of beta (β) thereby making it inconsistent. However, he found evidence that biased β moves in opposing directions depending on whether the securities are frequently or infrequently traded. Infrequent trading is a characteristic of trading in illiquid security market which is typical of emerging markets that is not applicable to a study that utilizes data from the UK market. Brown and Warner (1985) further discuss this issue in their results by noting that the use of the OLS market model ensures that the model coefficients do not lead to misspecification of event-study methodologies even if the researcher has failed to take the non-synchronous trading into account. They argue that this

is because a bias that results in estimating β is effectively compensated for by an opposite bias in α .

5. Archival / changing data: Important issues in the use of data include likely misuse of data, selection bias and unintentional errors. There is also the ever changing nature of data used in event-study methodology especially in relation to the central issue to be investigated. In the case of this study, the relevant standards investigated were IAS 32 and 39 which came to effect on 1 January 2005. IFRS 7 became effective in 2007 which means that doing the study again with IFRS 7 in mind might give a different effect which we are unable to predict in this study.

In conclusion, we attempt to ensure the robustness of our results by paying substantial attention to the above limitations through the provision of extenuating solutions which included the various statistical tests conducted that confirm the validity of our result. Specifically, our statistical analyses in chapters five and six are based on, and satisfy, well-known assumptions that the returns of our sample companies are normally distributed as can be found in appendix 8 with the right skewness and kurtosis using mvtest (normality test). Secondly, we rely on the conclusion of Brown and Warner (1985), who carried out a simulation process with daily data and obtained results that confirmed that methodologies based on OLS market model using daily data are well specified under different conditions just as it out-performed other estimation models such as mean adjusted returns procedure when daily return data is used. However, the research problem examined in this study is one of such complexity that it is impossible to ensure that the methodology completely eliminates all possible biases and other

problems. Thus, future research could usefully adopt other methodologies and variations upon the one used here to further test the results obtained in this study.

7.5 Future Research

Some future research can and should be undertaken in this area of study. Areas of study relevant to this thesis include financial reporting, derivative use and disclosure, as well as harmonisation. The use of event-study where we use stock returns as our dependent variable can be re-examined using other factors that can proxy for risk and market value of the firm. Also the areas where our results have contradicted existing theory are ripe for future research – both to test the accuracy of our findings and to see whether the models do require revision. We have reported instantaneous reflection of share prices to the extent of disclosure of derivative use, but the adjustment is not of a substantial size. Future research should seek to look at this more closely and one particular method that would probably be of considerable benefit would be to extend the timeframe to over a year. This will enable future studies to establish whether there are consistent and continuing upward or downward adjustments subsequent to the first change that we recorded in this study.

In this study we used the first year of adoption of international standards to obtain disclosure level and compared this with what has been documented in the literature to arrive at our conclusion of increase in disclosure level. Other studies could examine disclosure levels over a period of 3 or 5 years inclusive of the 1st year of adoption, among UK non-financial companies, in order to establish trends and conclude whether the disclosure rate is increasing or decreasing. This examination can also be in respect of two or more countries in the EU in order to establish the extent to which convergence is

being achieved in the EU as well as the rate with which individual countries complied. This will enable future studies to isolate other factors that have contributed to compliance with the IFRSs.

A study that examines disclosure and its extent has different ways of obtaining what is reported. In this study we chose a variant of content analysis which is the use of categorical scoring of items that we are interested in capturing which in this case are the IFRSs on derivative use. Studies on disclosure would question this approach. For example, Wood and Marginson (2004) used a system of content analysis called WORDS to capture managers' reporting practices, by subjecting what was reported to counting and arriving at the extent of particular disclosure they were interested in. The use of WORDS to replicate this type of study and categorical scoring that we used will further extend literature in arriving at the appropriateness of these variants of content analysis. Some of the reports used generic statements; a more nuanced qualitative study might pick out the impact of such.

Also, we used stock returns in this study to arrive at excess returns as our dependent variable. Other studies (Dechow *et al.*, 1994; Jordan *et al.*, 2007) have suggested the use of raw stock prices to arrive at movement in stock price and hence firms' market value. This variation, although it should not impact upon the findings, will enable a comparison with this study.

Again, this study has used relevant international standards (IAS 32 and 39) on derivative use in order to measure the extent of compliance with reporting under international standards. Other studies can examine more than a single component of financial reporting, e.g. IAS 2 on inventories, IAS 7 on cash flow statement, IAS 18 on revenue and IAS 27 on issues in group accounting, and examine the extent of compliance. If, in the future, there is a single major change to accounting disclosure, then the effect

of that may be more pronounced and the question of how changes in accounting information affects market returns may be more transparent. This further work will also show the direction the adoption is taking and can then extend the findings of this thesis.

7.6 Summary

In this chapter, we articulated the study's contributions, limitations and suggested some areas that need further research. Our contributions follow from the purpose of the study. We also highlighted a future research area that could examine and obtain disclosure levels and their value relevance. This can be examined over more than one year that this study covered and among other countries in the EU to deliver a cross-country comparison in the build-up to full harmonisation of reporting practices. This is applicable not only to derivative use but also to other items of interest in companies' annual reports.

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Appendices

Appendix 1: Summaries of International Financial reporting Standards

IFRS 7 FINANCIAL INSTRUMENTS: DISCLOSURES

HISTORY OF IFRS 7

Project on bank disclosures carried over from IASC and merged into the project to develop IFRS 7

22 July 2004	Exposure Draft ED 7 <i>Financial Instruments: Disclosures</i> Click for Press Release on ED (PDF 31k).
18 August 2005	IFRS 7 <i>Financial Instruments: Disclosures</i> issued Click for IASB Press Release (PDF 57k).
1 January 2007	Effective date of IFRS 7
13 October 2008	Amendment to IFRS 7 for disclosures relating to reclassifications of financial assets Click for More Information about this Amendment
1 July 2008	Effective date of the October 2008 reclassifications amendment
23 December 2008	Exposure Draft of proposed amendments to IFRS 7 issued 15 January 2009 comment deadline on exposure draft
5 March 2009	Amendment to IFRS 7 enhancing enhancing disclosures about fair value and liquidity risk
1 January 2009	Effective date of the foregoing amendments

Appendix 2: CMF16015-Accounting for financial instruments IAS 32 and 39: adoption and implementation of IAS 32 and 39

EU adoption and UK implementation

In October 2004, the EU adopted IAS 39 in an amended form. It is with this amended standard that the consolidated accounts of listed companies will have to comply. Two areas of the IASB standard were not adopted (known as “carve outs”):

- Entities cannot avail themselves of the option of measuring financial liabilities (other than those held for trading) at fair value (see [CFM16240](#))
- The requirements of IAS 39 with respect to "macro hedging" ([CFM16315](#)) are relaxed.

In November 2005, following the June 2005 amendment to IAS 39 on the fair value option (see [CFM16005](#)) the EU rescinded the first carve out above and adopted the relevant IAS 39 provisions without qualification; the second carve out remains.

The position under FRS 25 and FRS 26 for the major areas in accounting for financial instruments is summarised below.

Recognition and derecognition

The derecognition provisions in IAS 39 are not yet incorporated into FRS 26, although the Accounting Standards Board (ASB) issued an exposure draft of proposals in April 2005 to do so. There is thus no change for the time being to the existing UK requirements on recognition and derecognition – in other words, FRS 5 is retained.

Measurement and hedge accounting

FRS 26 implements the measurement and hedge accounting requirements of IAS 39 in their full version, rather than the version adopted by the EU. It is effective for accounting periods starting on or after 1 January 2005 for listed companies still following UK GAAP. For other companies it is effective from 2006, although they may choose to adopt the standard earlier.

However, companies applying FRS 26 will still be subject to companies legislation, which places restrictions on fair value accounting for financial liabilities. Thus companies will not be able to avail themselves of the full fair value option, although the ASB has issued guidance on the extent to which liabilities may be accounted for at fair value in order to show a true and fair view.

Presentation

From 1 January 2005, all UK entities would be required to comply with the IAS 32's presentation requirements ([CFM16060](#) outlines what these are), which are embodied in FRS 25. UITF 11 (Capital instruments: issuer call options), UITF 33 (Obligations in capital instruments) and UITF 37 (Purchase and sale of own shares) were withdrawn, and most of FRS 4 (Capital Instruments).

Disclosure

The disclosure requirements of FRS 25 will apply from 1 January 2005 for companies applying the measurement and hedging requirements in FRS 26. For other companies, they will not apply until 2007, and for such companies FRS 13 will remain in force for the time being. The ASB has issued proposals to bring disclosure requirements into line by IFRS 7 – see [CFM16005](#).

Appendix 3: October 2004: ARC endorses IAS 39 with two parts modified

<http://www.iasplus.com/restruct/euro2004.htm#oct2004>

October 2004: ARC endorses IAS 39 with two parts modified

At its meeting in Brussels on 1 October 2004, the Accounting Regulatory Committee of the European Commission voted to recommend endorsement of IAS 39 for use in Europe, with two modifications. The modifications (1) prohibit use of the IAS 39 fair value option as it applies to liabilities, and (2) allow using fair value hedge accounting for interest rate hedges of core deposits on a portfolio basis. With respect to hedging of core deposits, EU member states can elect to require the unmodified version of IAS 39. Further, if a Member State permits the modified version, companies can elect to apply the unmodified IAS 39. Click to download the published [ARC Opinion](#) (PDF 13k). The fair value option as it applies to liabilities is regarded as inconsistent with the IV Accounting Directive and therefore the modification is required for all companies. Even though IFRSs become mandatory in Europe in 2005, the ARC has yet to vote on endorsement of the revised versions of 14 IASs that were adopted by the IASB in December 2003 as part of its Improvements Project (to date, the EC has endorsed only the pre-2003 versions). Nor has the ARC endorsed IAS 32, IFRSs 2 through 5, or IFRIC 1. These are expected to be considered at ARC's 30 November 2004 meeting.

(PLEASE SEE APPENDIX 2 ABOVE)

Appendix 4: Summaries of International Financial Reporting Standards - History of IAS 32

IAS 32 FINANCIAL INSTRUMENTS: PRESENTATION – HISTORY OF IAS 32

September 1991	Exposure Draft E40 <i>Financial Instruments</i>
January 1994	E40 was modified and re-exposed as Exposure Draft E48, <i>Financial Instruments</i>
June 1995	The disclosure and presentation portion of E48 was adopted as IAS 32 <i>Financial Instruments: Disclosure and Presentation</i> . Work on recognition and measurement continued.
1 January 1996	Effective Date of IAS 32 (1995)
December 1998	IAS 32 was revised by IAS 39, effective 1 January 2001.
17 December 2003	Revised version of IAS 32 issued by the IASB <i>The summary of IAS 32 below reflects the revisions.</i>
1 January 2005	Effective date of IAS 32 (Revised 2003)
18 August 2005	Disclosure provisions of IAS 32 are replaced by IFRS 7 Financial Instruments: Disclosures effective 1 January 2007 Title of IAS 32 changed to <i>Financial Instruments: Presentation</i>
22 June 2006	Exposure Draft of proposed amendments relating to Puttable Instruments and Obligations Arising on Liquidation IAS 32 amended for Puttable Instruments and Obligations Arising on Liquidation
14 February 2008	<i>The summary below has been updated to reflect this amendment.</i> Special edition IAS Plus Newsletter on Amendments to IAS 32 and IAS 1 on puttable financial instruments and obligations arising on liquidation (PDF 101k).
1 January 2009	Effective date of amendments for puttable instruments and obligations arising on liquidation

RELATED INTERPRETATIONS

- IAS 32 (Revised 2003) superseded [SIC 5 Classification of Financial Instruments - Contingent Settlement Provisions](#)
- IAS 32 (Revised 2003) superseded [SIC 16 Share Capital - Reacquired Own Equity Instruments](#) (Treasury Shares)
- IAS 32 (Revised 2003) superseded [SIC 17 Equity - Costs of an Equity Transaction](#)

Appendix 5: low level of disclosure suppressing the constant

```
. reg excessreturn earningssurprise netsales leverage fcff medium high low, noconstant
```

Source	SS	df	MS			
Model	.236349884	7	.033764269	Number of obs =	182	
Residual	2.88371287	175	.016478359	F(7, 175) =	2.05	
Total	3.12006276	182	.017143202	Prob > F =	0.0515	
				R-squared =	0.0758	
				Adj R-squared =	0.0388	
				Root MSE =	.12837	

excessreturn	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
earningssu~e	-.0001149	.0004329	-0.27	0.791	-.0009693	.0007395
netsales	-.0168423	.0385908	-0.44	0.663	-.0930056	.059321
leverage	-.0028588	.0017813	-1.60	0.110	-.0063744	.0006568
fcff	4.513364	4.763826	0.95	0.345	-4.888584	13.91531
medium	-.0302222	.0147664	-2.05	0.042	-.0593653	-.0010791
high	-.0144105	.0226582	-0.64	0.526	-.0591289	.030308
low	.0424459	.0218694	1.94	0.054	-.0007159	.0856077

Appendix 6: Our sample companies

1	AEGIS GROUP	31	BUNZL	61	DSG INTERNATIONAL
2	AGGREKO	32	BURBERRY GROUP	62	EASYJET
3	AMEC	33	CABLE & WIRELESS	63	ELECTROCOMP plc
4	ANGLO AMERICAN	34	CADBURY	64	ELEMENTIS
5	ANTOFAGASTA	35	CAPITA GROUP	65	ENTERPRISE INNS
6	ARM HOLDINGS	36	CARILLION	66	EUROMONEY INSTL.INVESTOR
7	ARRIVA	37	CARNIVAL	67	FIRST GROUP
8	ASHTREAD GROUP	38	CARPETRIGHT	68	FORTH PORTS
9	ASSOC. BRIT.FOODS	39	CARPHONE WHSE.GP.	69	G4S
10	ASTRAZENECA	40	CATTLES	70	GAME GROUP
11	ATKINS(WS)	41	CENTRICA	71	GENUS
12	AVEVA GROUP	42	CHARTER INTL.	72	GKN
13	BABCOCK INTL.	43	CHEMRING GROUP	73	GLAXOSMITHKLINE
14	BAE SYSTEMS	44	CHLORIDE GROUP	74	GO-AHEAD GROUP
15	BALFOUR BEATTY	45	COBHAM	75	GREAT PORT ESTATE
16	BBA AVIATION	46	COLT TELECOM GRP	76	GREENE KING
17	BERKELEY GP.HDG.	47	COMPASS GROUP	77	HALFORDS GROUP
18	BG GROUP	48	COOKSON GROUP	78	HALMA
19	BHP BILLITON	49	CRODA INTER.	79	HAMMERSON
20	BIG YELLOW GROUP	50	CSR	80	HELICAL BAR
21	BODYCOTE	51	DAEJAN HOLDINGS	81	HMV GROUP
22	BP	52	DAILY MAIL 'A'	82	HOME RETAIL GRP
23	BRITISH AIRWAYS	53	DAIRY CREST	83	HUNTING
24	BRIT-AME TOBACCO	54	DANA PETROLEUM	84	ICAP
25	BRITISH LAND	55	DAVIS SERVICE GRP	85	IMI
26	BRIT SKY BCAST.GP	56	DE LA RUE	86	IMPERI TOBACCO GP.
27	BRIXTON	57	DERWENT LONDON	87	INCHCAPE
28	BROWN (N) GROUP	58	DIAGEO	88	INFORMA
29	BSS GROUP	59	DIGNITY	89	ICTL.HTLS.GP.
30	BT GROUP	60	DIMENSION DATA HDG.	90	INTER. POWER

91	INTERSERVE	121	PEARSON	152	SPECTRIS
92	INTERTEK GROUP	122	PENNON GROUP	153	SPIRAX-SARCO
93	INVENSYS	123	PERSIMMON	154	SPIRENT COMM.
94	ITE GROUP	124	PREMIER FARNELL	155	SSL INTERNATIONAL
95	ITV	125	PREMIER OIL	156	STAGECOACH GRP
96	JKX OIL & GAS	126	PUNCH TAVERNS	157	TATE & LYLE
97	JOHNSON MATTHEY	127	PZ CUSSONS	158	TESCO
98	KELLER	128	RANDGOLD RESOURC	159	TOMKINS
99	KESA ELECTRICALS	129	RANK GROUP	160	TR PROPERTY INV.
100	KIER GROUP	130	RECKITT BENCKISER	161	TRAVIS PERKINS
101	KINGFISHER	131	REED ELSEVIER	162	TULLOW OIL
102	LADBROKES	132	RENISHAW	163	ULTRA ELECTS HDG.
103	LAND SECURITIES GP	133	RENTOKIL INITIAL	164	UNILEVER (UK)
104	LIBERTY INTL.	134	REXAM	165	UNITED BUSINESS MEDIA
105	LOGICA	135	RIO TINTO	166	UNITED UTILITIE GP
106	LONMIN	136	ROLLS-ROYCE GROUP	167	VEDANTA RESOURC
107	MAN GROUP	137	ROTORK	168	VENTURE PRODUCTI
108	MARKS&SPENCER GP	138	RPS GROUP	169	VICTREX
109	MARSTON'S	139	SABMILLER	170	VODAFONE GROUP
110	MEGGITT	140	SAGE GROUP	171	VT GROUP
111	MELROSE	141	SAINSBURY (J)	172	WEIR GROUP
112	MISYS	142	SCOT.& SOUTHERN ENERGY	173	WETHERSPOON (JD)
113	MITCHELLS&BUTLERS	143	SEGRO	174	WH SMITH
114	MORGAN CRUCIBLE	144	SERCO GROUP	175	WHITBREAD
115	MOTHERCARE	145	SHAFTESBURY	176	WILLIAM HILL
116	NATIONAL EXPRESS	146	SHANKS GROUP	177	WINCANTON
117	NATIONAL GRID	147	SHIRE	178	WOLSELEY
118	NEXT	148	SIG	179	WOOD GROUP (JOHN)
119	NORTHERN FOODS	149	SMITH & NEPHEW	180	WPP GROUP
120	NORTHU. WATER GP.	150	SMITH (DS)	181	XSTRATA
		151	SMITHS GROUP	182	YELL GROUP

Appendix 7: OLS results from equations 6 (model 1) and 7 (Model 2)

```
. reg excessreturn earningssurprise netsales leverage fcff disclosurelevels size,
```

Source	SS	df	MS	Number of obs =	182
Model	.199617268	6	.033269545	F(6, 175) =	1.99
Residual	2.91894	175	.016679657	Prob > F =	0.0688
				R-squared =	0.0640
				Adj R-squared =	0.0319
Total	3.11855726	181	.017229598	Root MSE =	.12915

excessreturn	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
earningssu~e	-.0001001	.0001946	-0.51	0.608	-.0004843	.0002841
netsales	-.0216638	.0392079	-0.55	0.581	-.099045	.0557174
leverage	-.0033968	.0009339	-3.64	0.000	-.0052399	-.0015537
fcff	4.372872	4.027734	1.09	0.279	-3.576314	12.32206
disclosure~s	-.195373	.0704761	-2.77	0.006	-.3344655	-.0562805
size	.0110692	.0063224	1.75	0.082	-.0014088	.0235472
_cons	-.1148045	.1137518	-1.01	0.314	-.3393065	.1096975

```
. reg excessreturn earningssurprise netsales leverage fcff medium high size, robust
```

Linear regression

```
Number of obs = 182
F( 7, 174) = 3.92
Prob > F = 0.0005
R-squared = 0.0850
Root MSE = .12806
```

excessreturn	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
earningssu~e	-.0000934	.0001527	-0.61	0.542	-.0003948	.0002081
netsales	-.0257779	.0388887	-0.66	0.508	-.1025323	.0509764
leverage	-.002946	.0009334	-3.16	0.002	-.0047882	-.0011038
fcff	4.283253	3.873717	1.11	0.270	-3.362269	11.92877
medium	-.076432	.0229412	-3.33	0.001	-.1217109	-.0311532
high	-.0672135	.0278231	-2.42	0.017	-.1221278	-.0122992
size	.009413	.0061457	1.53	0.127	-.0027168	.0215427
_cons	-.1315373	.1134469	-1.16	0.248	-.3554465	.0923719

Appendix 8: Statistics of Residuals; mvtest normality for excess return, disclosure level and size

```
. mvtest normality excessreturn, stats(dhansen hzirkler kurtosis skewness)
Test for multivariate normality
Mardia mSkewness = .1082722    chi2(1) = 3.394    Prob>chi2 = 0.0654
Mardia mKurtosis = 3.320562    chi2(1) = 0.779    Prob>chi2 = 0.3774
Henze-Zirkler = .2249429    chi2(1) = 0.281    Prob>chi2 = 0.5959
Doornik-Hansen = 3.629    Prob>chi2 = 0.1630

. mvtest normality disclosurelevels, stats(dhansen hzirkler kurtosis skewness)
Test for multivariate normality
Mardia mSkewness = .0247856    chi2(1) = 0.777    Prob>chi2 = 0.3781
Mardia mKurtosis = 2.793698    chi2(1) = 0.323    Prob>chi2 = 0.5700
Henze-Zirkler = .3816783    chi2(1) = 0.076    Prob>chi2 = 0.7825
Doornik-Hansen = 0.989    Prob>chi2 = 0.6100

. mvtest normality size, stats(dhansen hzirkler kurtosis skewness)
Test for multivariate normality
Mardia mSkewness = .1242893    chi2(1) = 3.896    Prob>chi2 = 0.0484
Mardia mKurtosis = 3.330011    chi2(1) = 0.826    Prob>chi2 = 0.3635
Henze-Zirkler = 1.67318    chi2(1) = 6.402    Prob>chi2 = 0.0114
Doornik-Hansen = 4.018    Prob>chi2 = 0.1341
```

```
. su res, detail
```

Residuals				
	Percentiles	Smallest		
1%	-.3982342	-.4623833		
5%	-.2086959	-.3982342		
10%	-.161073	-.2817146	obs	182
25%	-.0791352	-.2358846	Sum of Wgt.	182
50%	.0018658		Mean	-2.37e-11
		Largest	Std. Dev.	.1269911
75%	.0869096	.246443		
90%	.1630624	.2600653	Variance	.0161267
95%	.2017695	.2993987	Skewness	-.2990854
99%	.2993987	.3239834	Kurtosis	3.558825

Appendix 9: OLS results from equations 6 (model 3) and 7 (Model 4)

```
. reg excessreturn earnings surprise netsales leverage fcff disclosurelevel size
```

Source	SS	df	MS	Number of obs =	182
Model	.191671364	6	.031945227	F(6, 175) =	1.91
Residual	2.9268859	175	.016725062	Prob > F =	0.0816
				R-squared =	0.0615
				Adj R-squared =	0.0293
Total	3.11855726	181	.017229598	Root MSE =	.12933

excessreturn	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]
earnings surprise	-.0001072	.0001953	-0.55	0.584	-.0004925 .0002782
netsales	-.022199	.0391478	-0.57	0.571	-.0994616 .0550636
leverage	-.0034071	.0009212	-3.70	0.000	-.0052252 -.0015891
fcff	4.401302	4.01159	1.10	0.274	-3.516021 12.31863
disclosurelevel	-.1886892	.0707334	-2.67	0.008	-.3282896 -.0490889
size	.0107847	.0063238	1.71	0.090	-.001696 .0232655
_cons	-.1135541	.1140917	-1.00	0.321	-.3387269 .1116186

```
. reg excessreturn earnings surprise netsales leverage fcff size medium high, robust
```

Linear regression

```
Number of obs = 182
F( 7, 174) = 3.98
Prob > F = 0.0005
R-squared = 0.0854
Root MSE = .12803
```

excessreturn	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]
earnings surprise	-.0000943	.0001527	-0.62	0.538	-.0003958 .0002071
netsales	-.0257067	.0387936	-0.66	0.508	-.1022732 .0508598
leverage	-.0029263	.000923	-3.17	0.002	-.0047481 -.0011045
fcff	4.323089	3.849737	1.12	0.263	-3.275105 11.92128
size	.0092395	.0061882	1.49	0.137	-.0029742 .0214532
medium	-.0767916	.0227633	-3.37	0.001	-.1217194 -.0318639
high	-.0650264	.0288768	-2.25	0.026	-.1220203 -.0080325
_cons	-.1283494	.1142038	-1.12	0.263	-.3537524 .0970537

Appendix 10: Our sample Companies and their market capitalisation from the London Stock Exchange (LSE) as at 31/03/09

Company		Mkt cap£m	Company		Mkt cap£m
1	AEGIS GROUP	958.20921	31	BUNZL	1793.2219
2	AGGREKO	1331.5964	32	BURBERRY GROUP	1218.8365
3	AMEC PLC	1768.6936	33	CABLE & WIRELESS	3504.0439
4	ANGLO AMERICAN	15725.811	34	CADBURY PLC	7165.8987
5	ANTOFAGASTA	4973.647	35	CAPITA GROUP	4179.5212
6	ARM HLDGS	1294.5703	36	CARILLION PLC	957.62243
7	ARRIVA	732.82099	37	CARNIVAL	3365.851
8	ASHTREAD GROUP	201.62422	38	CARPETRIGHT	280.17243
9	ASSOC. BRITISH FOODS	5072.76	39	CARPHONE WAREHOUSE GP	1139.2178
10	ASTRAZENECA PLC	35769.444	40	CATTLES	18.094911
11	ATKINS(WS)	497.0259	41	CENTRICA PLC	11611.389
12	AVEVA GROUP	380.57772	42	CHARTER INTERNATI	753.4465
13	BABCOCK INTER. GP.	982.44611	43	CHEMRING GROUP	668.26374
14	BAE SYSTEMS	11794.821	44	CHLORIDE GROUP	326.02226
15	BALFOUR BEATTY	1563.0515	45	COBHAM	1948.1266
16	BBA AVIATION PLC	339.67319	46	COLT TELECOM GP	770.26654
17	BERKELEY GP HLDGS	1120.6678	47	COMPASS GROUP	5931.1467
18	BG GROUP	35545.282	48	COOKSON GROUP	448.26596
19	BHP BILLITON	30567.054	49	CRODA INTERNATIONAL	721.81961
20	BIG YELLOW GROUP	217.86805	50	CSR PLC	324.02264
21	BODYCOTE PLC	231.17857	51	DAEJAN HLDGS	305.951
22	BRITISH AIRWAYS	1619.1511	52	DAILY MAIL & GEN	896.66911
23	BRITISH AMERICAN TOBACCO	32204.166	53	DAIRY CREST GROUP	348.43822
24	BRITISH BROADCASTING GP	7598.5727	54	DANA PETROLEUM	955.98618
25	BRITISH LAND CO PLC	3075.0039	55	DAVIS SERVICE GP.	444.78418
26	BRIXTON PLC	48.141946	56	DE LA RUE	933.30528
27	BROWN(N.)GROUP	514.12243	57	DERWENT LONDON	668.78253
28	BSS GROUP	355.60963	58	DIAGEO	19809.698
29	BP	88843.203	59	DIGNITY PLC	339.29238
30	BT GROUP	6047.2277	60	DIMENSION D. HLDGS	690.41778

Company		Mkt cap£m	Company		Mkt cap£m
61	DSG INTERNATIONAL	369.57902	91	INTERSERVE	232.48596
62	EASYJET	1176.9675	92	INTERTEK GROUP	1391.0659
63	ELECTROCOMPONENTS	543.585	93	INVENSYS PLC	1323.899
64	ELEMENTIS	122.77027	94	ITE GROUP	160.52037
65	ENTERPRISE INNS	344.15471	95	ITV	738.93465
66	EUROMONEY INST. INVESTOR	222.39649	96	JKX OIL & GAS	344.75883
67	FIRSTGROUP	1288.4539	97	JOHNSON MATTHEY	2260.5355
68	FORTH PORTS	413.52482	98	KELLER GROUP	314.34374
69	G4S PLC	2730.4818	99	KESA ELECTRICALS	499.10391
70	GAME GROUP PLC	519.88872	100	KIER GROUP	326.37757
71	GENUS	314.37425	101	KINGFISHER	3506.511
72	GKN	480.77337	102	LADBROKES	1102.2972
73	GLAXOSMITHKLINE	56989.712	103	LAND SECURITIES GP	3305.4746
74	GO-AHEAD GROUP	468.96104	104	LIBERTY INTERNATIONAL	1412.0926
75	GREAT PORT ESTATES	441.23578	105	LOGICA PLC	1014.6663
76	GREENE KING	657.42089	106	LONMIN	2229.0404
77	HALFORDS GROUP	613.09813	107	MAN GROUP	3697.94
78	HALMA	615.10706	108	MARKS & SPENCER GP	4695.9761
79	HAMMERSON PLC	1773.965	109	MARSTON'S PLC	367.15161
80	HELICAL BAR PLC	307.87516	110	MEGGITT	853.62852
81	HMV GROUP	548.51185	111	MELROSE	422.94876
82	HOME RETAIL GROUP PLC	1968.034	112	MISYS	689.07232
83	HUNTING	526.53312	113	MITCHELLS & BUTLERS	972.12374
84	ICAP	1958.8618	114	MORGAN CRUCIBLE CO	226.94388
85	IMI	868.19904	115	MOTHERCARE	338.24863
86	IMPERIAL TOBACCO GROUP	15931.499	116	NATIONAL EXPRESS GP.	231.26688
87	INCHCAPE PLC	345.66796	117	NATIONAL GRID	13107.235
88	INFORMA	1115.3567	118	NEXT	2615.5181
89	INTERCONT. HOTELS GP	1519.3524	119	NORTHERN FOODS	239.01788
90	INTERNATIONAL POWER	3196.9015	120	NORTHUMBRIAN WATER GP	1131.8965

Company		Mkt cap£m	Company		Mkt cap£m
121	PEARSON	5643.6578	152	SPECTRIS	464.08982
122	PENNON GROUP	1417.3866	153	SPIRAX-SARCO ENGRG	636.40728
123	PERSIMMON	1044.3102	154	SPIRENT COMMS	334.55145
124	PREMIER FARNELL	433.42893	155	SSL INTERNATIONAL	947.86927
125	PREMIER OIL	843.72727	156	STAGECOACH GROUP	854.98019
126	PUNCH TAVERNS	154.90723	157	TATE & LYLE	1190.2643
127	PZ CUSSONS	669.94525	158	TESCO	26241.357
128	RANDGOLD RESOURCES	3957.6482	159	TOMKINS	1063.5943
129	RANK GROUP	284.9435	160	TR PROPERTY	322.7452
130	RECKITT BENCKISER GP	18551.919	161	TRAVIS PERKINS	540.23345
131	REED ELSEVIER	5523.5871	162	TULLOW OIL PLC	6409.691
132	RENISHAW	180.908	163	ULTRA ELECTR. HLDGS	741.98663
133	RENTOKIL INITIAL	805.50202	164	UNILEVER	16931.882
134	REXAM	1733.1353	165	UNITED BUS. MEDIA	1037.9015
135	RIO TINTO	23535.046	166	UNITED UTILITIES GP	3263.7362
136	ROLLS ROYCE GROUP	5386.3345	167	VEDANTA RESOURCES	1911.5692
137	ROTORK	735.276	168	VENTURE PRODUCTION	1196.4276
138	RPS GROUP	331.87526	169	VICTREX	421.10373
139	SABMILLER	16319.611	170	VODAFONE GROUP	64602.392
140	SAGE GROUP	2214.1599	171	VT GROUP	830.06434
141	SAINSBURY(J)	5436.6639	172	WEIR GROUP	868.84733
142	SCOTTISH&SOUTHERN ENERGY	10585.923	173	WETHERSPOON(J.D.)	587.35484
143	SEGRO PLC	1290.7454	174	WH SMITH PLC	557.99729
144	SERCO GROUP	1769.6283	175	WHITBREAD	1384.5812
145	SHAFTESBURY PLC	393.78586	176	WILLIAM HILL PLC	1185.8355
146	SHANKS GROUP	131.52517	177	WINCANTON	198.99804
147	SHIRE PLC	4827.1217	178	WOLSELEY	1516.5041
148	SIG	141.71469	179	WOOD GROUP(JOHN)	1183.6738
149	SMITH & NEPHEW	3834.7772	180	WPP PLC	4942.7528
150	SMITH(DS)	196.5196	181	XSTRATA PLC	13661.81
151	SMITHS GROUP	2594.0689	182	YELL GROUP	96.846675