**Research Report**

# Derivative usage by listed companies in Ghana and Nigeria - 2008/2009




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**Declaration of originality**

I hereby declare that the contents of this research report, unless specifically indicated to the contrary, are my own work.

Luke Henning

# 1 Introduction

The price volatility of global commodity markets has always been a source of problems for developing countries, especially those that are largely commodity dependent. Other than the "Dutch Disease" phenomenon[1], the developing countries often are at the mercy of price fluctuations as they have previously not had the risk management tools locally to hedge the price risk.[2] More and more countries have begun to, on a national basis, hedge their commodity price exposure. Examples include Ghana hedging cocoa contracts and Malawi using weather derivatives to hedge against droughts. This hedging usually takes place on the major global exchanges and many of the developing countries do not have local exchanges of their own.[3] Nigeria does have a commodity exchange and this exchange is where derivatives are traded.[4] Ghana does not have a commodities exchange but does have an association of cocoa growers that do offer Over-the-Counter (OTC) hedging[5].

According to the International Organization of Securities Commissions (IOSCO)[6]**, i**n the emerging countries derivatives trading make up a great portion (62.46%) of the OTC activity. The majority of OTC derivative contracts in emerging markets are made up of Foreign Exchange Contracts (41.28%), Interest Rate Contracts (29.26%) and Commodity Contracts (25.40%). This is in contrast to developed markets where interest rate derivatives are the predominant contract making up almost three quarters of all OTC contracts according to the Bank of International Settlements (BIS).

In the same IOSCO study[7] listed above 21% of respondents do not apply IAS valuation standards to OTC derivatives. For the purposes of this study Ghana reports based on IFRS whilst Nigeria has their own Statement of Accounting Standards (SAS) that they are required to report under.

This study seeks to establish if companies use derivatives and if so what kinds of derivatives. It does not seek to establish the reasons for derivative usage as is commonly done in Wharton Survey Style study.

## 1.1 Financial Derivatives a definition

There are many official definitions for derivatives. In their most simple form they are any instrument that derives its value from the value of an underlying asset. This is close to the definition listed in the Oxford English Dictionary: *"a financial product (such as a future, option, or warrant) whose value derives from and is dependent on the value of an underlying asset."*

It is also worth mentioning the definition listed by ISDA. They are an authority on derivatives and it is in their definition that we first have reference to risk transfer. *"A derivative is a risk transfer agreement, the value of which is derived from the value of an underlying asset. The*

[1] The economic phenomenon referred to as the "Dutch Disease" is where a commodity rich countries manufacturing sector declines as exploitation of the natural resources rises. This is due to the strengthening of the currency reducing the competitiveness of the local manufacturing sector. The phrase was coined by The Economist in 1977.
[2] Commodity Price Risk Management in Developing Countries, Philippe Chalmin
[3] African Fixed Income and Derivatives Guidebook, African Development Bank, May 2010
[4] www.sec.gov.ng
[5] E-mail and telephonic correspondence on the 31st January with Joseph Winful, Senior Partner KPMG Ghana.
[6] OTC Markets and Derivatives Trading in Emerging Markets, FR07/10, IOSCO, 2010
[7] OTC Markets and Derivatives Trading in Emerging Markets, FR07/10, IOSCO, 2010

*underlying asset could be an interest rate, a physical commodity, a company's equity shares, an equity index, a currency, or virtually any other tradable instrument upon which parties can agree."*[8]

Finally we have the definition as put forward from an accounting and financial reporting perspective. This is of particular importance as the study was conducted by reviewing financial statements for information derivative usage.

According to the IASB a *derivative* is a financial instrument or other contract within the scope of this Standard with all three of the following characteristics:

(a) its value changes in response to the change in a specified interest rate, financial instrument price, commodity price, foreign exchange rate, index of prices or rates, credit rating or credit index, or other variable, provided in the case of a non-financial variable that the variable is not specific to a party to the contract (sometimes called the 'underlying');

(b) it requires no initial net investment or an initial net investment that is smaller than would be required for other types of contracts that would be expected to have a similar response to changes in market factors; and

(c) it is settled at a future date.

(IAS 39.9)



While there are many types of derivatives this study focuses on five key classes: Swaps, Futures, Forwards, Options and Employee Stock Option Programs.

### *Swaps*

A swap contract is defined by ISDA as *"a bilateral agreement to exchange cash flows at specified intervals (payment dates) during the agreed-upon life of the transaction (maturity or tenor)."* Swaps are used to hedge a number of risks including liquidity and exchange rate risks or can also be used for speculation.

Swaps are commonly used when both parties have future cash flow requirements in another currency. For example if Company A operating in Ghana imports goods from Europe they will need Euros at certain periods for purchases. Company B, operating in Europe, needs to supply funding to a local subsidiary in Ghana and so requires Cedis. Company A and Company B could agree to exchange or swap the cash flows on specific dates.

A similar process can be followed to convert floating rate debt to fixed rate debt and vice versa. The most common swaps are currency swaps and interest rate swaps.

### *Futures*

A futures contract allows the buyer to set the price for an underlying asset that the buyer has the obligation to purchase at a set later date. To this end a futures contract must contain the following information: delivery places and dates, volume, technical specifications, and trading and credit procedures.  These are standardised contracts that trade on a regulated exchange. As

[8] ISDA Definition, available at: http://www.isda.org/educat/faqs.html, access date: 17.01.2011.

the counterparty is the exchange the credit risk is to the exchange and this is mitigated through margining and daily marking to market.

### *Forwards*

Forwards are defined by ISDA as *"a customized, bilateral agreement to exchange an asset or cash flows at a specified future settlement date at a forward price agreed on the trade date. One party to the forward is the buyer (long), who agrees to pay the forward price on the settlement date; the other is the seller (short), who agrees to receive the forward price."* While this is the same in most respect to a futures contract, forward contracts do not trade on an exchange. They are referred to as over the counter transactions and as such they do not have standardised contract conditions. The agreement is directly between two parties and there is no requirement for a margin or daily marking to model[9]. Forwards often have currencies, commodities or deposit rates as underlying assets.

### *Options*

An option is a contract that gives the right but not the obligation to purchase or sell an underlying asset at a predetermined 'strike price' at a future date. The right to purchase an underlying asset is known as a call option while the right to sell the underlying asset is called a put.

Options are generally described as European or American. European options are those that can only be exercised on the official end date of the contract. American options are those that may be exercised at any point up until and including the termination date.

### *Employees Stock Option Programs ('ESOPs')*

An ESOP is a program that gives the right but not the obligation to an employee to purchase stock of the company they are employed by and a pre-determined price. It is a call option as described in the section above but where the underlying is the stock of the company that the employee works for. These options are either stock or cash settled.

## 1.2 The history of derivatives

History is littered with examples of derivative usage with many sources claiming differing start dates for the recorded history of derivatives. Professor Don Chance is his brief history of derivatives[10] makes joking reference to the bible and to the story of Jacob in Genesis 29. In the story Jacob trades seven years of labour for the right to marry Rachel. Ironically his first reference also records the as he, Professor Chance, states the first default.

There are other examples that predate his biblical reference. At around 8000 B.C. the people living between the Tigris and the Euphrates developed a system for accounting for value and specifically for the right to commodities. This raised the idea of a barter economy to one with units of exchange.[11] Clay tokens were used to represent the different commodities and quantities

[9] As these instruments do not trader on an exchange they are not market to market. Derivative pricing models are used to evaluate the fair value of a forward contract.
[10] "Essays in Derivatives" by Don Chance (John Wiley & Sons, 1998)
[11] http://www.realmarkits.com/derivatives/3.0history.html

that would be received at a future date and would indicate the quantum. As a way of preventing fraud the tokens were baked into a hollow closed ball. The value was represented on the outside through markings illustrating the contents and an official mark. With the further development of standardised forms of writing and mathematics developed by the Sumerians the tokens were replaced by clay tablets. So the earliest written forward contracts that we have are circa 3500. An excellent example of these contracts dates back to the nineteenth century B.C. "*Thirty wooden (planks?), ten of 3.5 meters each, twenty of 4 meters each, in the month Magrattum Akshak-shemi will give to Damqanum. Before six witnesses (their names are listed). The year that the golden throne of Sin of Warhum was made."*[12]

Thales the Milesian[13] is said to have bought commodity options on the use of olive presses in the ancient Greek Ionian city of Miletus. His success is recorded as early as 580 B.C. This is considered by many to be the first instance of options trading. This differed from the forward style contracts of the Sumerians in that he had the right but not obligation to use the presses.

According to Ernst Juerg Weber[14] it is likely that Sephardic Jews carried derivative trading from Mesopotamia to Spain during Roman times and the first millennium AD. He believes that the Jews also carried derivatives to the Low Countries in the 16th Century.

When next we pick up the story it is 1515. The city of Antwerp is basking in its position as a centre for trade and the city opens the first recorded bourse. Instead of the old trade fairs which were set at specific times of year this opened up a centre for year round trade. This bourse soon became the preferred place of trade in Northern Europe. In 1531 the bourse was moved to a new location. This was a big change as it was away from the docks and warehouses. This meant that the commodities and goods were no longer traded directly but were contracted right. This bourse marked a watershed moment in the way trading would take place from then on.

In Feudal Japan around 1700 Osaka became the centre for the rice trade. Rice auctions were conducted where authorised wholesalers were allowed to bid for rice. The winning bidder would receive a rice voucher for later cash settlement. These vouchers soon became a tradable item in their own right as the wholesalers started a secondary market.

It was around 1730 that the Dojima Rice Exchange was established. This exchange housed two distinct markets; the shomai and choaimai. The shomai market was a spot market also using rice vouchers which had to be settled within four days of the trade. The choaimai though operated very differently. It was the world first example of a regulated futures market. The market had standardised contracts for future harvests of rice recorded by the clearing house. While traders did not have to post margin they did have to have a confirmed line of credit with the clearinghouse. The clearinghouse had to make good in the event of a trader defaulting. The term of the contracts was limited to four months and all contracts had to be settled prior to the closing of the contract period. Settlement was either in cash or by offset against opposing positions. This is still the longest running exchange as it ran for about two hundred years until 1937.

The Chicago Board of Trade (CBOT) was founded in 1848. It was the first exchange in the West that shifted the counterparty credit risk from the individual counterparty to the exchange. This allowed for greater trust and certainty and allowed the market to flourish. Initially the Board was a voluntary association with little active trading activity. Once the CBOT developed

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[12] A Short History of Derivative Security Markets, Ernst Jeurg Weber, 2008. Quoting van de Mieroop, M. The Innovation of Interest. Sumerian Loans, 2005.

[13] Evidence for this trade is anecdotal regarding the life of Thales who was a famous Greek Ionian philosopher.

[14] A Short History of Derivative Security Markets, Ernst Jeurg Weber, 2008.

rules and product standards it became a very popular place to trade in grains. It was only in 1865 though that the CBOT introduced standardised contracts and the exchange really came into its own.

The 1970's gave rise to the derivatives as we know them. With the deregulation of financial markets and the rise of computers able to evaluate the probabilistic valuations of derivatives the market rapidly grew. With their seminal work ("The Pricing of Options and Corporate Liabilities") in 1973, Fischer Black and Myron Scholes established methodologies to help determine option prices. That same year, coincidentally, Chicago Board of Trade opened the Chicago Board Options Exchange.

Electronic trading was launched by the Chicago Mercantile Exchange in 1992 the first major exchange to do so. This allowed the easy trading of options from anywhere. No longer being bound to a physical location helped spur on the explosive expansion of the derivative markets.

Stepping forward to 2009 and according to the ISDA 2009 Derivative usage survey 94 percent of the world's largest corporations report using derivatives to manage business and macroeconomic risks. Of these the most common derivatives used are foreign exchange contracts and interest rate derivatives. The results of the study were that the use of derivatives was consistently high among companies based in developed countries and developed economies. This is illustrated in the table below, taken from the ISDA study:

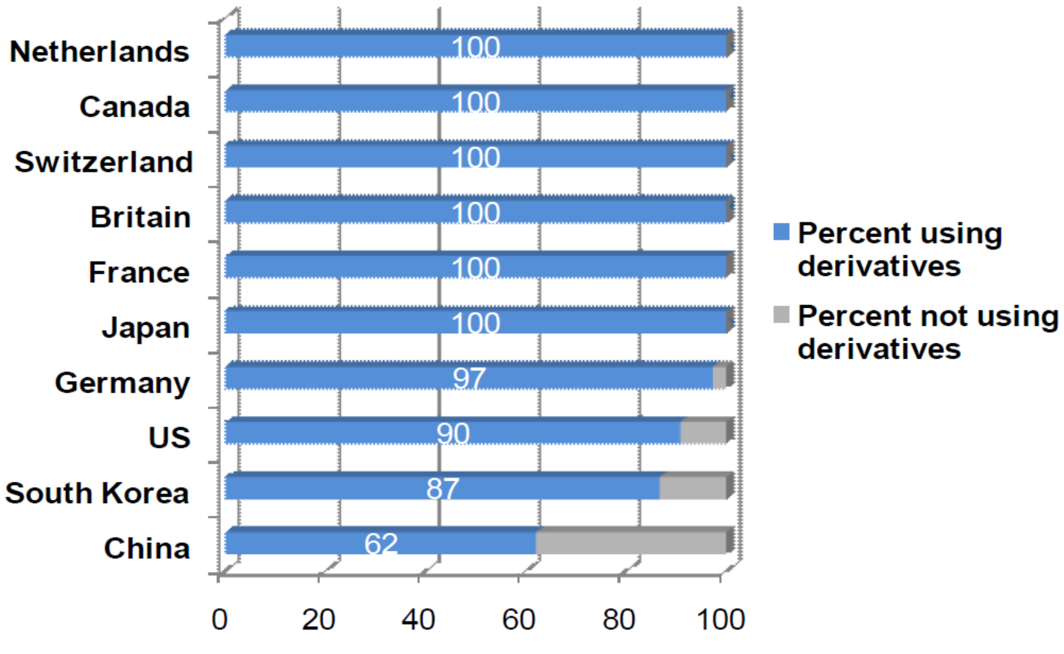


*Figure 1: Top 10 countries for companies using derivatives- Source: ISDA 2009*

As can be seen above the usage in developed markets is consistently above 90% except for the major outlier which is China.

### 1.2.1 The tarring of derivatives post the financial crisis

Over the last ten to twelve years there has been a sharp growth in, especially Over-the-Counter (OTC), derivatives. Interest-rate derivatives contracts make up the majority of Over-the-Counter contracts but in the build up to the financial crisis credit default swap contracts saw very high growth, growing to a notional of $60 trillion by the end of 2007[15].

It was the credit default swap contracts, the leveraging up effect of certain other derivatives as well as the general lack of transparency in the OTC market that helped contribute to the financial crisis. It allowed for a large amount of speculation on credit risk. The lack of transparency when combined with improper reporting and questionable valuation practices helped to exacerbate the crisis when it did happen. No one and that includes the market participants themselves could measure and sort out who was exposed to what. No one could tell how far the rot went and often who the owner was of the credit risk that had been so freely traded within the derivatives. This contributed to the mass panic that ground financial markets to a halt. [16] The contribution of derivative usage to the financial crisis is well documented and there have been numerous books and regulatory reports published on the subject.[17]

## 1.3 Objectives

Against the background of the explosive growth in derivative usage and the questions regarding the transparency of OTC market this study seeks to understand the prevalence of derivative usage in Ghana and Nigeria. These are two market were almost all derivatives are traded over the counter as the only 'derivatives' exchange in West Africa is a commodity exchange in Nigeria. The study also looks at the frequency with which the derivatives are used by listed companies and for what purpose they are used.



[15] FSA, The Turner Review, A Regulatory Response to the Global Banking Crisis, March 2009 available at http://www.fsa.gov.uk/pubs/other/turner_review.pdf.
[16] The Joint Forum, Review of Differentiated Nature and Scope of Financial Regulation-Key Issues and Recommendations, January 2010 available at http://www.iosco.org/library/pubdocs/pdf/IOSCOPD315.pdf.
[17] Financial Stability Board, Improving Financial Regulation, Report of the Financial Stability Board to G20 Leaders, September 2009 available at http://www.financialstabilityboard.org/publications/r_090925b.pdf.

# 2 Literature Review

The related studies can be broadly separated into two classes: those that follow the Wharton Survey approach developed by Bodnar *et al.* 1994 and those that review the financial statements for derivative disclosure information. The majority of papers published are survey studies. The related studies have been charted as a timeline to reflect both the growth in the academic field as well as a progression in the studies and their proliferation internationally.

Appendix C shows a summary table of the usage statistics and response rates for the survey style studies listed in this section.

**Bodnar, Hayt, Marston and Smithson (1995), Wharton Survey of Derivatives Usage by US Nonfinancial Firms, [Wharton Survey Style Study]**

This in many ways was a ground breaking study. It forms the foundation of the numerous survey style derivative usage studies that were to follow relating to a range of countries over the next fifteen years.

The survey was conducted in late 1994 and had 530 usable responses out of a mailing of 2000 non-financial companies. Of the companies that responded 35% said that they did make use of derivatives. As a result of the sample size they were able to separate the companies by size and by industry.

The results showed a clear skew in derivative usage with the majority of derivative usage being recorded for larger companies. In fact the trend of increasing size and increasing derivative usage was clearly evident. Whereas the small companies reported only 12% using derivatives this rose to 65% among large companies. They concluded that this was as a result of the fixed costs associated with starting up a derivatives program.

The same could be said for industries with the concentration of derivative usage being in manufacturing and commodities.

Due to the survey nature they were able to also ask probative questions relating to the types of derivatives as well as the reasons for their use. They found that the derivatives in non-financial firms were not being used for speculative purposes but for hedging.

The primary conclusion that they were able to draw was that the derivative usage, especially among the smaller firms was much lower than what was suggested by the press of the time.

**Phillips, A.L., (1995) Derivatives Practices and Instrument Survey [Wharton Survey Style Study]:** Phillips collected the responses on derivatives usage from the Treasury Management Association. The data showed that 63.2% of the members used derivatives. Unlike the surveys of the Bodnar et al variety this survey also included financial firms. The results of the findings though were similar in that he found that the size of the firm did also influence the prevalence for derivative usage. His study could potentially reflect sampling bias as it was a sample taken from an industry association of companies with active treasuries.

The study found that like in the Bodnar *et al.* 1995 survey the predominant use for derivatives was hedging (70.8%). Unlike the Bodnar *et al.* 1995 survey the other listed uses were for funding and investment. This difference is likely attributed to the inclusion of financial companies in the sample.

**Bodnar, Hayt and Marston's (1996), Wharton Survey of Derivative Usage by US Non-Financial Firms, [Wharton Survey Style Study]:** This was the follow up to the survey of the previous year. It was a more detailed and comprehensive survey and contained questions asking companies who responded that they did not use derivatives their reasons for not doing so. The sample group was the same 2000 companies and Fortune 500 companies not previously included. The response rate was 17.5%, down from the previous year. Of the respondents the overall usage was 41% which was 6% higher than the previous year. The increase was potentially misleading due to the inclusion of a greater proportion of large companies so a comparative sub-sample was tested and the derivative usage among these 162 companies was only an increase in usage from 37% to 38%.

The primary reason given for derivative usage was hedging to manage cash flow (49%) versus second place which was managing accounting earnings (42%). The reasons given for not using derivatives were lack of exposures that would require derivative hedging and lack of knowledge of derivatives.

The survey results reinforced the previous findings that firm size and industry class were the major indicators of derivative usage. Usage was tilted heavily towards larger firms in the commodity and manufacturing sectors.

**Grant, K. and Marshall, A.P., (1997), Large UK Companies and Derivatives, [Wharton Survey Style Study]:** This was the first survey of UK listed non-financial firms and was conducted by Record Treasury Management. It had a much smaller sample with only 91 respondents for 1994 and 55 for 1995. The focus of this survey was large firms and as such the usage of derivatives was expected to be higher than the 41% average usage found by Bodnar *et al.* 1996. The results indicated that approximately 90% of large UK firms used derivatives. This was considerably higher than the 65% usage of derivatives by large American companies.

**Berkman, Bradbury and Magan (1997)**, **An International Comparison of Derivative Use, [Wharton Style Study]:** This is a study of derivatives usage in New Zealand. They had a response rate of 63.7% which was much higher than earlier surveys based on the Bodnar et al type surveys. This could be attributed to the fact that there were much fewer companies as the survey was sent to 124 listed companies of which 79 responses were considered usable. They found that, in comparison with US firms, more New Zealand firms hedged through derivatives (53.1% versus 41%) than their American counterparts by size when compared with the results of Bodnar et al (1995). This is attributed to a higher exposure to currency risk in New Zealand.

**Bodnar, Hayt and Marston, (1998), 1998 Wharton Survey of Derivative Usage by US Non-Financial Firms, [Wharton Survey Style]:** The third edition of the Wharton surveys on derivative usage by US non-financial companies was conducted in 1998. The survey was expanded from the 1996 survey. The sample size had shrunk since 1996 as some of the companies had delisted, merged or ceased to trade. There were no longer 2000 companies but 1928. The response rate was 20.7% comparable with the first survey. The survey predominantly reinforced the earlier findings that size was the major indicator followed by broad sector class. Primary products had the highest utilisation followed by manufacturing and then services. Overall they found that there was comparatively low usage, just over than 50% of companies, but with increasing density of use by derivative users.

**Bodnar, G.M. and Gerbhardt, G., (1999) - Derivatives Usage in Risk Management by US and German Non-Financial Firms: A Comparative Survey, [Wharton Style Survey]:** The survey was conducted in 1997 and was sent to 368 firms with a response rate of 34.2%. The study is a comparison between risk management practices of US and German firms using results from a survey of derivatives usage among German public firms (Gebhardt and Russ, 1999)[18]. Their results indicate that more German firms (78%) use derivatives than US firms do (57%). The general pattern of usage by size and sectors remains comparable only at the higher level across the board. The German and American companies do list a differing primary motive for hedging. The German companies give more focus to the management of accounting earnings rather than cash flow which is the focus of the American companies. The choice of instrument was also different possibly also relating to the accounting reporting. The Germans place more weight on the market view when taking derivative positions. According to the study the differences appear to be as a result of the “greater importance of financial accounting statements in Germany than the US and stricter German corporate policies of control over derivative activities within the firm.” The stated primary reason for not using derivatives also differed in that German firms said they did not use them as they were not needed and not as is the case cited by the American companies that they are hesitant to use them.

**Jalilvand, A. (1999), Why firms use derivatives-Canada[19] [Wharton Style Survey]:** The survey was sent to 548 of the largest Canadian non-financial firms (28% response rate) they found that the companies did disclose derivative usage in their financial statements. Of the respondents 75% of firms in Canada included used derivatives (Fowards, Swaps, and Futures.) The results clearly showed that multinational companies in Canada were more likely to use derivatives (88% versus 56%) and that regulated companies had lower usage (62% versus 83%).

**Alkeback, P. and Hagelin, N. (1999), Derivatives Usage by Non-financial Firms in Sweden with an International Comparison [Wharton Style Survey]:** The survey was sent out in 1996. The response rate (76.6%) for the survey was much higher in Sweden than in the other studies prior to this one. The results were compared to the Bodnar *et al.* Surveys of 1995 and1996 as well as the work of Berkman *et al.* in 1997. The results were consistent with the other studies findings in terms of the effect of firm size on derivative usage. The derivative usage was 52% which was slightly lower than New Zealand but higher than the US. They found that the lack of knowledge about derivatives within the firm is the main concern of Swedish firms when choosing to use derivatives or not.

**Prevost, A.K., Rose, LC. and Miller, G (2000), Derivatives Usage and Financial Risk Management in Large and Small Economies: A Comparative Analysis, [Wharton Style Survey]:** The survey expanded on the work of Berkman *et al.* (1997) with a larger survey sample (334 versus 124) and more usable responses (155 versus 79). The response rate was 46.4% and combined responses from private as well as public firms. They found that 67.1% of respondents used derivatives compared to the 53% identified by Berkman *et al.* (1997) They found that the usage and reasons for use of derivatives in a small economy such as New Zealand was comparable and similar to more developed markets such as the US, UK and Germany based on comparisons with the results of Bodnar and Gebhardt (1998).

**De Ceuster, M.J.K., Durinck, E., Lavern, E. and Lodewyckx, J., (2000), A survey into the use of derivates by large non-financial firms operating in Belgium, [Wharton Style Survey]**: The surveys were sent out in 1997 to 334 large corporations in Belgium. The overall response rate was 28.1%. The results showed that 65.8% of respondents used derivatives. As the focus was on large companies, this is consistent with the findings of Bodnar *et al.* (1995) which

[18] Gebhardt, G. and O. Russ, 1999, “Einsatz von derivativen Finanzinstrumenten im Risikomanagement deutscher Industrieunternehmen”, in G. Gebhardt and B. Pellens, eds., *Rechnungswesen und Kapitalmarkt* (Handelsblatt: Düsseldorf), 23-85.

[19] Canadian Journal of Administrative Sciences 16(3), pages 213-228

reported a 65% usage of derivatives by large companies. Their survey does not discriminate between financial and non-financial firms. They major reason stated for not using derivatives was restrictions placed on treasurers by the board of directors. In contrast to empirical findings in the US, Belgian firms like their German counterparts (Bodnar, G.M. and Gerbhardt, G., (1999)) focus their hedging strategies more on reducing earnings volatility than on reducing cash flow volatility.

**Mallin, Ow-Yong and Reynolds (2001)**, **Derivative usage in UK non-financial listed companies**[20]**, [Wharton Style Survey]:** The survey questionnaire was sent to the financial directors of 800 UK non-financial listed firms in 1997 with a response rate of 28.9%. They found derivative usage among the respondents to be 60%. They found that the primary objective cited by the firms for using derivatives was to manage fluctuations in accounting earnings and that the primary reason for not using derivatives was lack of risk exposure. As with all the previously listed studies size is a clear indicator of usage.

**Bodnar, G. M., de Jong, A. and Macrae, V. (2001), The Impact of Institutional Differences on Derivative Usage: A Comparative Study of US and Dutch Firms, [Wharton Style Study]:** The survey questionnaire was sent to all of the non-financial listed Dutch firms in 1998. The response rate was 50.3%. This paper follows on the work of the earlier survey studies conducted on derivative usage in the US and contrast that with the derivative usage of Dutch non-financial firms. It investigates what differences the institutional differences of shareholder orientation, international trade, disclosure regulation and the reliance on financial markets has on the usage of derivatives. Their key finding is that after adjustment for the differences in sample composition in terms of industry and size that Dutch firms hedge more financial risk than their US counterparts. (60% of the Dutch firms use derivatives against 44% of the US firms) Dutch Firms use the OTC market more than the US and is a smaller market making their results on derivative usage more applicable to Ghana and Nigeria. Unlike with the earlier findings on the German[21], Belgian[22] and UK[23] studies the Dutch are even less focussed on hedging to reduce accounting earnings volatility than the American firms.

**Bailly, N., Browne, D., Hicks, E., and Skerrat, L. (2003) UK corporate use of derivatives:** Although published in 2003 the survey was sent out in 1998. It was sent to 629 companies listed on the London Stock Exchange. This survey excluded financial companies. The response rate was 37.2% (usable responses). The usage rate was 72% overall which was higher than the results of Bodnar *et al.* (1998) for the US and for the UK according to Mallin *et al.* (2001) but considerably lower than the study conducted Record Treasury Management[24]. It should be noted that the Record Treasury Management survey only focussed on large firms and was a small sample.

**Shu, P., Chen, H. (2003), The Determinants of Derivatives Use: Evidence from Non-Financial Firms in Taiwan, [Annual Report Style Survey]:** The survey was based on the listed derivative usage in the financial reports of listed Taiwanese companies. The regulator, Taiwan Securities Futures Committee, requires listed companies to report the trading of derivatives in the footnotes of annual financial reports from January 1996. Companies are

[20] European Journal of Finance 7, ISSN 1351-847X, 2001 Taylor and Francis Ltd, pages 63-91
[21] Bodnar, G.M. and Gerbhardt, G., (1999) - Derivatives Usage in Risk Management by US and German Non-Financial Firms: A Comparative Survey
[22] Prevost, A.K., Rose, LC. and Miller, G (2000), Derivatives Usage and Financial Risk Management in Large and Small Economies: A Comparative Analysis
[23] Mallin, Ow-Yong and Reynolds (2001), Derivative usage in UK non-financial listed companies
[24] See Grant and Marshall 1997.

required to include details on the purpose of the derivatives trades, whether hedging or speculation as well as the type and amount of derivatives used. The study examines the usage of derivatives over a three year period from 1997 to 1999. The study showed a usage of 31% rising to 37% in 1999. This is comparable with the 1995 and 1996 Wharton studies, but is less than that of New Zealand (53%). The usage is sharply skewed towards currency derivatives. The study refuted the argument that derivatives use is primarily limited to the US sophisticated and liquid financial market (Berkman *et al.* 1997). The study consisted of the entire market adjusted for companies with incomplete reporting (336, 338, and 348).

**Marsden, A. And Prevost, A. (2005) Derivative Use, Corporate Governance, and Legislative Change: An Empirical Analysis of New Zealand Listed Companies:** Flowing on from the earlier study Prevost *et al.* 2000, this study looked at the influence of the board of directors on derivative usage. De Ceuster *et al.* (2000) Showed that the constraints placed by the board of directors was a major factor in restricting the use of derivatives. This study went into more detail seeking to identify which type of board compositions restricted the use of derivatives and why. Their findings were that companies with higher growth and more outside directors use fewer derivatives in the wake of legislative amendments.

**Alkeback, P., Hagelin, N., Pramborg, B., Derivative usage by non-financial firms in Sweden 1996 and 2003: What has changed?** This study was conducted on a survey basis attempting to replicate the earlier survey conducted by Alkeback and Hagelin in1999. The study showed that in the four years since the earlier study the usage of derivatives had moved from an estimated 52% of Swedish companies using derivatives to 59%. The survey found that the increase was primarily amongst smaller companies (18% to 34%) and that the earlier issue of lack of understanding was no longer prevalent as a reason for not using derivatives.

**Sheedy, E., (2006), corporate risk management in Hong Kong and Singapore, [Wharton Style Survey]:** This study focussed on non-financial companies listed in Hong Kong and Singapore. The survey had 131 usable responses. The study found that derivatives are used more extensively in Hong Kong (81%) and Singapore (75%) than in the America (50% - Bodnar *et al.* 1998). They are primarily used for managing foreign exchange risk and it was speculated that this was due to the importance of offshore trading and offshore sourcing of funding. The usage differs from the US in that they are more prone to speculation with derivatives often taking market predictions into account when setting size and timing of hedge trades. There is also a much higher level of usage by smaller and medium sized companies versus the usage in the US. The survey has potential bias as it was not based on a mail survey but on interviews. So it is a guided survey and the choice of companies could be influenced by the student recruited to conduct the research.

**El-Masry, A.A., (2006)**, **Derivatives use and risk management practices by UK nonfinancial companies**, **[Wharton Style Survey]:** This survey was initially sent to 401 companies in 2001 with a 43.1% response rate. Of the respondents 67% used derivatives. Overall this survey supports the results of earlier work done in the UK (Mallin *et al.* 2001 Bailly *et al.* 2003, Grant, K. and Marshall, A.P., (1997)) and does not add anything additional to the field.

**Fernandez, V. (2006), Emerging Derivatives Markets: The Case of Chile:** Unlike the other studies listed here their focus was not on the use of survey data or on financial statements. The study was based on statistics obtained from the local exchange and the local central bank. As of

2003 only 10 to 15 percent of the country's 4,800 exporting firms hedge currency risk[25]. This is used to illustrate the low levels of usage by Chilean companies of derivatives. The contracts that are traded are OTC and are predominantly currency forwards against the US Dollar. These contracts were first launched in Chile in 1992. They are primarily traded between financial institutions, pension funds and large non-financial firms.

Stock and index options were launched on the local exchange, Santiago Stock Exchange, in 1990 but were very thinly traded. Futures contracts on the Price Index of Selective Stocks (IPSA) were only traded between 1990 and 1994. Options on stocks were launched in 1994, but only traded in 1994, 1995, and 1998. This is a highly illiquid market. Interest rate and fixed-income derivatives were launched in 1999 but are traded exclusively in the OTC market. *"In our view, low liquidity of spot markets, high trading costs, and stringent regulations governing pension funds appear to be the driving factors in the thinness of the domestic derivatives market."*

**Bartram S., Brown G. and Conrad, J. (2008)**, **The Effects of Derivatives on Firm Risk and Value, [Annual Reports Style]:** This study was based on the financial statements of 6,888 companies listed in 47 countries as found on the Thompsons Analytics database for either 2000 or 2001. The firms in the sample account for 76.8% of global market capitalisation of non-financial firms. The requirement for inclusion was that the annual reports be published in English and be for a non-financial company and that have at least 36 non-missing daily stock returns on DataStream during the year of the annual report. They found in their study that there is strong evidence that the use of financial derivatives reduces both total risk and systematic risk but that the effect on firm value is small.

The test for derivative usage was based on an automated search of the financial statements. A manual sample of 200 firms was used to find appropriate search terms. The list was refined and tested on a sample of 100 companies using derivatives and 100 companies who do not use derivatives. The accuracy of indication was 96% in the sample and this was deemed sufficient. They also identified 1,709 firms with perceived higher probability of error which were checked manually. After these adjustments the study estimated the error rate from a random sample below 2%. Information on the underlying assets and the types of derivative contracts was also collected. The usage of multiple derivatives was given a hedging intensity factor to indicate the level of derivative usage by the firms.

The results are included alongside the result from the study of Ghana and Nigeria in Appendix A.

**Al-Momani, R. and Gharaibeh, M.R., (2008) Foreign exchange risk management practices by Jordanian nonfinancial firms, [Wharton Style Survey]:** The survey was sent to 120 companies and had a 72.5% response rate. The study focussed on the analysis of risk management techniques used to mitigate foreign currency risks by Jordanian firms**.** This survey study is of more relevance to Ghana and Nigeria due to the fact that it is a developing economy and also a principally commodity driven economy. Therefore you would expect some of the same type of risks to be hedged and hence similar derivative usage patterns to an extent. According to the study the use of derivatives for risk management is limited. They believe that this is primarily due to a lack of local skills and experience, it is not permitted and there is a lack of market sophistication.



[25] Chilean Association of Manufacturing Exporters (Asexma)

**Brunsell, Hansson and LiljeBlom (2009), The Use of Derivatives in Nordic[26] Firms, [Wharton Style Survey]:** They sent surveys to all 592 listed companies (Nordic OMX Exchanges) CFOs in the Nordic countries with varying success. Their highest response rate was 24.2% for Sweden and 9.1% for Iceland was the lowest. This study also used other data sources including annual reports which differentiate it from some of the other Bodnar *et al.* 1994 type survey only research studies. They reported on financial and non-financial firms unlike many of their derivative survey predecessors, although they classed them into two distinct groups. Overall the survey showed reported derivative usage of 61.6%. This showed an increase in the use of derivatives over the earlier study of Sweden alone (52%[27]/59%[28]). This study was mainly concerned with the intended use of derivatives, whether for speculation or hedging. They found that the most prevalent motive was hedging but that more than half of the companies do include some form of profit motive.

**Bartram, S.M., Brown, G.W., and Fehle, F., (2009)**, **International Evidence on Financial Derivative Usage, [Annual Reports Style]:** This study follows on from the study by Bartram *et al.* (2008). The study was updated and expanded from 6,888 companies to 7,319 and from covering 47 countries to 50. This increased the coverage of global non-financial market capitalisation from 69% to 80%. This was the first comprehensive global examination of hedging practices and the use of foreign-exchange, interest-rate, and commodity price derivatives. Due to the large sample size and the coverage the significance of the statistical tests for the developed economies and large cap companies was high. The size of the sample also allowed for segregation into specific countries and this provides a useful comparison for the previous studies above. Of importance to the study of small underdeveloped markets such as Nigeria and Ghana they provide some insight into comparable economies. They conclude that firms with less liquid derivatives markets are less likely to hedge. "*This finding is consistent with the assertions of some policy makers that derivatives could be important in limiting the severity of economic downturns in developing economies. Consequently, it is likely that financial policy makers could facilitate corporations' financial risk-management activities by pursuing strategies that encourage the development of local-currency derivatives markets.*"

Their results are reported in Appendix A alongside the findings for Nigeria and Ghana. They provide a useful counterpoint to the studies of more mature markets such as those in Western Europe, the Far East and America.

**In summary:** the studies above consistently show that companies report derivatives as being used predominantly for hedging purposes. Different countries show different attitudes as to what is being hedged, either cash flow or accounting earnings. This seems to depend on the nature of accounting reporting in the respective countries. Countries like the UK and Germany hedge accounting earnings whilst Belgium and America hedge cash flows more often than accounting earnings.

The studies show a consistent link between the size of a firm and their likelihood and frequency of use of derivatives; this is the single biggest indicator of derivative usage. The studies also consistently show industry (outside of financial firms) as the next strongest indicator of derivative usage with primary industries such as mining being the biggest users followed by manufacturing.



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[26] Denmark, Finland, Iceland, Sweden.
[27] Hagelin and Alkebäck, 1999
[28] Alkebäck *et al.*, 2006

Finally the progression of studies show an increasing trend in the usage of derivatives by companies, especially smaller companies including the density of use, as the markets develop and mature.

As illustrated above there are many studies on the use of derivatives in the more developed markets such as the United Kingdom and America. Whilst there are also studies for Western European countries there are also now emerging studies on derivative markets that are not so developed. These include, as examples, Jordan and parts of Eastern Europe. This paper seeks to contribute to the already extensive research on the use of derivatives by including two countries in an early stage of financial development in terms of modern market sophistication. It looks at which companies report using derivatives in their financial statements in the absence of an existing derivatives exchange as in Ghana and where the exchange is a pure commodity exchange such as in Nigeria.

The study is based not on the Wharton Survey Style which is the more prevalent case but is rather an Annual Report Style study. These are less common, though with the increased electronic reporting and developments in computers it is more likely that studies of large scale derivative usage such as Bartram *et al.* will become more prevalent.

## 2.1 Financial reporting in Ghana

### 2.1.1 The implementation of IFRS in Ghana

Ghana chose to implement IFRS as the reporting standard to replace the Ghana National Accounting Standard (GAS). This was partially as a result of recommendations made by the World Bank and the IMF in their Report on the Observance of Standards and Codes (ROSC) for Ghana (Accounting and Auditing). This report, dated June 19 2004 highlighted inconsistencies between GAS and IAS and recommended the conversion to IFRS.

Ghana implemented IFRS for listed companies in 2007. This was a phased process over two years during which time the use of GAS fell away and was fully replaced by IFRS. For all listed companies, government business enterprises and non listed banks; insurance companies; securities brokers; pension funds and public utilities the implementation was immediate with the companies expected to use IFRS for reporting financial statements for periods ending on or after 31$^{st}$ December 2007. This meant that the majority of companies included in this study had been IFRS compliant for two to three financial years by the end 2009 and were compliant throughout the review period.

For small and medium sized enterprises that did not fall into the first phase of implementation as well government departments were given a two year transition period and had to be fully compliant with IFRS when reporting statements for 2009.[29]

### 2.1.2 IFRS standards applicable to the reporting on financial derivatives

#### *IAS 32 (AC125) Financial Instruments: Presentation*

The intention of *IAS 32* is to improve a readers understanding of the influence of financial instruments on a company's financial position, financial performance and cash flows.

[29] Ghana Web - Business News of 2007-01-23 ( http://mobile.ghanaweb.com/wap/article.php?ID=117783 ) Source Ghana News Agency (GNA)

IAS 32 relates to the reporting of derivatives under IFRS in that it deals with the reporting of financial instruments. *Derivative financial instruments meet the definition of a financial instrument and, accordingly, are within the scope of this Standard. (IAS 32.AG15)* For example: "*Entities shall also apply this Standard to all derivatives linked to interests in subsidiaries, associates or joint ventures." (IAS 32.4 a)*

Not all elements of *IAS 32* are relevant to this study and so only those aspects relating to the disclosure of derivatives have been summarized here.

The standard is designed to complement *IAS 39 Financial Instruments: Recognition and Measurement* and *IFRS 7 Financial Instruments: Disclosures* described in the sections below and should not be considered in isolation.

### Objective of IAS 32

The objective of IAS32 is: *"to establish principles for presenting financial instruments as liabilities or equity and for offsetting financial assets and financial liabilities. It applies to the classification of financial instruments, from the perspective of the issuer, into financial assets, financial liabilities and equity instruments; the classification of related interest, dividends, losses and gains; and the circumstances in which financial assets and financial liabilities should be offset. (IAS 32.2)"*

*IAS 32* is the financial statement that deals with the disclosure and presentation of financial instruments. For the purpose of the standard the International Accounting Standards Board defines a financial instrument as: "*a contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity." (IAS 32. 11)*

Relevant definitions used within *IAS 32* include:

A *financial asset* is any asset that is:

(a) cash;

(b) an equity instrument of another entity;

(c) a contractual right:

(i) to receive cash or another financial asset from another entity; or

(ii) to exchange financial assets or financial liabilities with another entity under conditions that are potentially favourable to the entity; or

(d) a contract that will or may be settled in the entity's own equity instruments and is:

(i) a non-derivative for which the entity is or may be obliged to receive a variable number of the entity's own equity instruments; or

(ii) (ii) a derivative that will or may be settled other than by the exchange of a fixed amount of cash or another financial asset for a fixed number of the entity's own equity instruments. For this purpose the entity's own equity instruments do not include instruments that are themselves contracts for the future receipt or delivery of the entity's own equity instruments.

A *financial liability* is any liability that is:

(a) a contractual obligation:

(i) to deliver cash or another financial asset to another entity; or

(ii) (ii) to exchange financial assets or financial liabilities with another entity under conditions that are potentially unfavourable to the entity; or

(b) a contract that will or may be settled in the entity's own equity instruments and is:

(i) a non-derivative for which the entity is or may be obliged to deliver a variable number of the entity's own equity instruments; or

(ii) a derivative that will or may be settled other than by the exchange of a fixed amount of cash or another financial asset for a fixed number of the entity's own equity instruments. For this purpose the entity's own equity instruments do not include instruments that are themselves contracts for the future receipt or delivery of the entity's own equity instruments.

An *equity instrument* is any contract that evidences a residual interest in the assets of an entity after deducting all of its liabilities.

*Fair value* is the amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arm's length transaction.

*(IAS 32.11)*

The definition of financial instrument used in *IAS 32* is the same the one used in *IAS 39*.

*IAS 32* seeks to fulfil its objective by defining certain elements relating to the presentation of financial instruments. The Standard starts by saying that the issuer of any financial instrument shall classify the instrument, or its component parts as a financial liability, financial asset or equity. This is to be done on initial recognition and should follow the principle of substance over form. The instruments contractual substance should be evaluated with the definitions contained in *IAS 32* when deciding on the classification.

*IAS 32* does not apply to those instruments specifically addressed under *IFRS 2: Share based payments*. It does however apply to share based options where the settlement options allow for cash or exchanging shares for cash. So an ESOP where the shares are not delivered to the staff member but rather where the payment is linked to share price performance but may be cash settled would be reported as a financial liability. *(IAS 32.26 IAS 32.IE17-21)*

IAS 32 does allow offsetting of financial liabilities and financial assets only when there is a clear legally enforceable right to set off and it is the intention of the company to settle on a net basis. *(IAS 32.42)*

Offsetting may only occur if simultaneous settlement takes place. *"Simultaneous settlement of two financial instruments may occur through, for example, the operation of a clearing house in an organised financial market or a face-to-face exchange. In these circumstances the cash flows are, in effect, equivalent to a single net amount and there is no exposure to credit or liquidity risk. In other circumstances, an entity may settle two instruments by receiving and paying separate amounts, becoming exposed to credit risk for the full amount of the asset or liquidity risk for the full amount of the liability. Such risk exposures may be significant even though relatively brief. Accordingly, realisation of a financial asset and settlement of a financial liability are treated as simultaneous only when the transactions occur at the same moment."(IAS32.48)*

Offsetting is not normally considered acceptable when there is more than one counterparty to an agreement such as the case with a portfolio of FECs.

*IAS 32* requires the disclosure of all factors relating to:

- Timing of cash flows
- Quantum of cash flows
- Certainty of cash flows
- Business purpose of the financial instrument
- Risks associated with the instrument as well as management policies for risk management (In conjunction with *IFRS 7*)

It is worth noting that in the guidance provided with *IAS 32*, specifically *AG20*, contracts to buy or sell non-financial items do not meet the definition of a financial instrument.

In the example provided contracts that provide for settlement only by the receipt or delivery of a non-financial item are not financial instruments. They make specific reference to commodity derivatives even those that are exchange traded. *"The ability to buy or sell a commodity contract for cash, the ease with which it may be bought or sold and the possibility of negotiating a cash settlement of the obligation to receive or deliver the commodity do not alter the* *fundamental character of the contract in a way that creates a financial instrument." (IAS 32.AG20)*

Despite the above statement some contracts that can be settled net or in cash or by exchanging financial instruments are within the scope of the Standard as if they were financial instruments according to *AG20*. These however are not clearly defined.

According to the guidance in *AG27*:

- *"A contract that will be settled by the entity receiving or delivering a fixed number of its own shares for no future consideration, or exchanging a fixed number of its own shares for a fixed amount of cash or another financial asset, is an equity instrument."* An example would be an ESOP where the shares are to be bought in cash. However, if the contract requires the company to redeem the shares in cash or financial asset at a determinable date or on demand, then the company must recognise a financial liability for the present value of the redemption amount.
- If a company has the obligation (option or forward) to buy its own shares, for cash, it has a financial liability valued at the present value of the redemption amount.
- A contract that will be settled in cash or another financial asset is financial liability to the company even if value is based on the market price of the company's equity. This is relevant to ESOPs.
- Any contract that will be settled in a variable number of the company's shares where the value is a fixed amount or based on another underlying is then classed as a financial asset or a financial liability.

More guidance on this is provided in Basic of Conclusions *(BC10)* which is not part of *IAS 32* but can be read alongside the Standard for clarification purposes.

### *IAS 39 (AC133) Financial Instruments: Recognition and Measurement*

The definition of financial instruments is the same under *IAS 39* as it is under *IAS 32*.

*IAS 39* is a very broad financial statement coving all financial instruments except those specifically scoped out in *IAS 39.* These include*:*

- interests in subsidiaries, associates, and joint ventures accounted for under *IAS 27*, *IAS 28*, or *IAS 31*;
- employers' rights and obligations under employee benefit plans under *IAS 19*;
- rights and obligations under insurance contracts except those that are principally derivatives;
- financial instruments fall within the ambit *IAS 32* as own equity;
- share-based payment transactions under *IFRS 2*; and
- rights to reimbursement payments under *IAS 37*.

Fundamental to the statement is the definition of fair value. This is defined as" *the amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arm's length transaction." (IAS 39.9)*

There is a defined hierarchy for how to calculate the fair value of an instrument contained in the guidance notes. *(IAS39 AG69-82)*

- *Quoted market prices in an active market are the best evidence of fair value and should be used, where they exist, to measure the financial instrument.*
- *If a market for a financial instrument is not active, an entity establishes fair value by using a valuation technique that makes maximum use of market inputs and includes recent arm's length market transactions, reference to the current fair value of another instrument that is substantially the same, discounted cash flow analysis, and option pricing models. An acceptable valuation technique incorporates all factors that market participants would consider in setting a price and is consistent with accepted economic methodologies for pricing financial instruments.*
- *If there is no active market for an equity instrument and the range of reasonable fair values is significant and these estimates cannot be made reliably, then an entity must measure the equity instrument at cost less impairment.*

We will briefly discuss the issues of valuing derivatives in inactive markets in Section 4.

These are three broad categories of instruments under IAS 39. Those that are valued at fair value with changes in value reflecting in profit and loss; those that are valued at fair value but changes in value are recognised in equity and those that are valued at amortised cost.

The three asset categories are split into:

- those held for trading which fall into the first category or those that have been designated at initial recognition as valued at fair value through profit and loss;
- those classified as available for sale which fall into the second class; and
- loans and receivables as well as held-to-maturity which are valued at amortised cost.

Derivatives may not be classified as held-to-maturity.

Liabilities have two categories namely valued at fair value through profit and loss or those measured at amortised cost using the effective interest rate method. (IAS39.47) Fair valued liabilities also fall into either designated fair value or held for trading.

All derivatives except those that are expressly designated, and qualify, as hedges fall into the first category and are valued at fair value with changes in value reflected in the profit and loss statement. (IAS 39.9) This marks a big change from previous accounting regimes where derivatives where recognised on settlement only.

### *Initial Measurement*

Derivatives should be fair valued like all other assets and liabilities on initial recognition. (IAS 39.43) Post the initial recognition all derivatives fall within the designated or held-for-trading category and as such must be valued at fair value. Changes in the fair value of derivatives are recorded in the statement of profit and loss. There are two exceptions and these are both post initial recognition. If a derivative is designated as a hedging instrument it is measured under the hedge accounting rules contained in IAS 39. If there is no reliable fair value measurement for derivatives on equity instruments where the value is indexed to the equity instrument the derivative should be valued at cost.

### *Hedge Accounting*

Hedge accounting is when a financial instrument (A) and another instrument (B) designed to reduce the risk of the first instrument (A) are accounted for as a single transaction for reporting purposes. In other words only the net position is reported. This is subject to very strict and specific rules under IFRS as described below.

If a company has financial derivatives these would have to be fair valued and changes in fair value recorded in the statement of profit and loss. This could lead to misleading apparent financial volatility. It might also encourage managers to avoid using derivatives to mitigate risks to avoid this volatility which is often seen as a negative signal by the market. To avoid this apparent volatility instruments used to hedge a financial risk may be designated for hedge accounting provided they meet certain criteria.

Hedge accounting may be used provided that the hedging relationship fulfils all of the following criteria *(IAS 39.88)*:

- At the inception of the hedge the hedge is designated as such and formal documentation to this effect is drafted. The document must meet certain standards and levels of detail. This includes items such as the purpose of the hedge as well as what risks are being mitigated and how the hedge effectiveness shall be measured.
- The hedge is expected to be highly effective at hedging and mitigating the risk.
- For cash flow hedges the subject of the hedge must be highly probable and must include exposure to variations in cash flows that will influence profit or loss.
- The effectiveness of the hedge must be able to be reliably measured.
- The hedge is assessed on an ongoing basis and fulfils the requirement in the second point that it be highly effective for all periods that it is designated as a hedge.

### *Hedging Instruments*

A hedging instrument is any designated financial instrument whose fair value or cash flows are expected to offset changes in the fair value or cash flows of the hedged item. *(IAS 39.9)*

The standard is not prescriptive in that all derivative contracts with an external counterparty may be designated as hedging instruments except for some written options detailed AG94. AG94 states that: "*The potential loss on an option that an entity writes could be significantly greater than the potential gain in value of a related hedged item. In other words, a written option is not effective in reducing the profit or loss exposure of a hedged item. Therefore, a written option does not qualify as a hedging instrument unless it is designated as an offset to a purchased option, including one that is embedded in another financial instrument (for example, a written call option used to hedge a callable liability). In contrast, a purchased option has* *potential gains equal to or greater than losses and therefore has the potential to reduce profit or loss exposure from changes in fair values or cash flows. Accordingly, it can qualify as a hedging instrument."* (IAS 39.72)

*For hedge accounting purposes, only instruments that involve a party external to the reporting entity can be designated as a hedging instrument. (IAS 39.73)*

### *Hedged Items*

Hedged item is any designated instrument or firm commitment or highly probable financial transaction with an external party that is at risk to volatility in its fair value or cash flows. (IAS 39.9 and IAS39.80)

### *Effectiveness*

In order for an instrument to be recognised for hedging purposes it must be show to be effective. This means that at each reporting date it must retrospectively have been shown to be negatively correlated in value to the hedged item. (Within 80% and 125% of the items value for the portion that is hedged. There must also be an expectation that the item is still going to be effective going forward if the hedge is continuing.

All portions of the hedge deemed ineffective are recognised in profit or loss.

### *Classification of hedges*

There are different categories of hedges. The three categories are listed below and attract different treatment in the financial statements.

- A hedge is called a fair value hedge if it mitigates a specific risk to fluctuations in fair value of a financial asset or liability or future commitment that could affect profit and loss.
- A hedge is designated as a cash flow hedge when it is used to mitigate the risk of cash flow volatility of a financial asset or liability or a future commitment that could affect profit and loss.
- The third category is the hedge of a net investment in a foreign operation as defined in *IAS 21*.

The fair value gain or loss on a fair value hedging instrument is recognised in profit or loss and will also adjust the carrying value of the hedged item. *(IAS 39.89)*

For cash flow hedges the portion of the gain or loss from the hedging instrument that is deemed effective is recognised in other comprehensive income with the ineffective portion being recognised in profit and loss. *(IAS 39.95)*

A hedge of a net investment in a foreign operation is accounted for in much the same way as a cash flow hedge. *(IAS 39.102)*

A hedge of the foreign currency risk of a firm commitment may be accounted for as a fair value hedge or as a cash flow hedge. (IAS 39.87)

### *Disclosure*

Financial instrument disclosures fell under IAS 32 from 2003. This ran up until 2005 when the IASB issued IFRS 7 *Financial Instruments: Disclosures* which replaced the earlier disclosure requirements contained in of IAS 32 and IAS 30 effective from the 1st of January 2007.

### *Going forward*

The IASB has published a tentative plan to replace IAS39 with IFRS 9 on their website. The table below describes the proposed project plan and is taken from the IASB website.

| Phases | Status |
|---|---|
| **Phase 1: Classification and measurement** | IFRS 9 *Financial Instruments* was published in November 2009 and contained requirements for financial assets. Requirements for financial liabilities were added to IFRS 9 in October 2010. Most of the requirements for financial liabilities were carried forward unchanged from IAS 39. However, some changes were made to the fair value option for financial liabilities to address the issue of own credit risk. |
| **Phase 2: Impairment methodology** | The exposure draft *Amortised Cost and Impairment* was published in November 2009 with a comment deadline of 30 June 2010. |
| **Phase 3: Hedge accounting** | The exposure draft *Hedge Accounting* was published in December 2010 with a comment deadline of 9 March 2011. |

*Table 1: Tentative plan to replace IAS39 with IFRS 9*

According to the IASB the plan includes replacing all requirements under IAS39 by the second quarter of 2011.

Included on their website[30] is the following statement specific to offsetting of financial instruments. "The IASB will also address offsetting of financial assets and liabilities. The boards have decided to jointly issue a separate exposure draft proposing changes to address differences in their standards on balance sheet netting of derivative contracts and other financial instruments that can result in material differences in financial reporting by financial institutions."

## *IFRS2 (AC139) Share based payments*

IFRS 2 requires that companies recognise share-based payments in the financial statements. This includes transactions with employees and third parties settled in cash, other assets, or equity instruments of the company. For the purposes of this study we will focus on dealings with employees. IFRS 2 is of particular relevance to ESOPs. Cash settled share option can fall outside of the scope of IFRS 2 provided they fall within the exception described in the section IAS 32 (AC125) Financial Instruments: Presentation above. The exception focuses on

[30] http://www.ifrs.org/Current+Projects/IASB+Projects/Financial+Instruments+A+Replacement+of+IAS+39+Financial+Instruments+Recognitio/Financial+Instruments+Replacement+of+IAS+39.htm

commodity derivatives that are settled for share based payment. These are excluded and included within the ambit of IAS 32 and IAS 39.

The definitions of particular relevance to this study have been included in the block below. They are taken from the Statement.

**Share Option:** A contract that gives the holder the right, but not the obligation, to subscribe to the entity's shares at a fixed or determinable price for a specified period of time.

**Share-based payment arrangement:** An agreement between the entity (or another group entity or any shareholder of any group entity) and another party (including an employee) that entitles the other party to receive:

(a) cash or other assets of the entity for amounts that are based on the price (or value) of equity instruments (including shares or share options) of the entity or another group entity, or

(b) equity instruments (including shares or share options) of the entity or another group entity.

**Cash-settled share-based payment transaction:** A share-based payment transaction in which the entity acquires goods or services by incurring a liability to transfer cash or other assets to the supplier of those goods or services for amounts that are based on the price (or value) of equity instruments (including shares or share options) of the entity or another group entity.

**Equity-settled share-based payment transaction:** A share-based payment transaction in which the entity:

(a) receives goods or services as consideration for its own equity instruments (including shares or share options), or

(b) receives goods or services but has no obligation to settle the transaction with the supplier.

### *Scope*

Although the scope of this IFRS is much broader than share options will focus on this aspect. All equity settled and the majority of cash settled share options will fall within IFRS 2. This includes the case where a company uses the shares of a parent or subsidiary as the basis for the payment. IFRS 2 applies equally to all companies as well regardless of size.

### *Recognition and Measurement*

The company will have to recognise the services that it has received from the employees in the share option program as the services are received. The company has to recognise a corresponding increase in equity if the services were received in an *equity-settled share-based payment transaction* or a liability if the services form part of a *cash-settled share-based payment transaction*. *(IFRS 2.7)*

When a company issues share options it is required to equity and enter an offsetting debit entry to an expense when the payment for services does not represent an asset. The expense should be recognised as it is consumed so it is recognized for past services over the last year generally.

For cash-settled share-based payment transactions the services acquired and associated liability is measured at fair value through profit and loss. This is done at each reporting date and at the end of the contract. *(IFRS 2.30)*

When the services received in a share-based payment transaction do not qualify for recognition as an asset, they are recognised as an expense. *(IFRS 2.8)*

IFRS 2.10 deals specifically with the valuation of share based payments and states: *"For equity-settled share-based payment transactions, the entity shall measure the goods or services received, and the corresponding increase in equity, directly, at the fair value of the goods or services received, unless that fair value cannot be estimated reliably. If the entity cannot estimate reliably the fair value of the goods or services received, the entity shall measure their value, and the corresponding increase in equity, indirectly, by reference to** the fair value of the equity instruments granted."*

In the case of an employee who provides services for the share based payment the measurement is in relation to the fair value of the underlying shares. This is because it is considered, generally, to not be possible to reliably measure the fair value of the services provided. This is especially true for share options relating to incentive programs as it is especially difficult to measure the fair value of potential additional services. The fair value of the equity is measured at grant date.

### *Treatment of vesting conditions*

There are generally conditions attached to share option programs granted to employees. Specifically there is often a vesting period[31]. If the employee is employed for less than a certain period of time they do not receive the benefit of the share options granted. Where this is the case the value of the share option is not adjusted in calculating fair value rather the quantum of shares outstanding that is included in the fair value is reduced to those that have vested and those 'expected to vest'. This means that the potentially dilutive effects of these options are not always clear. The company is required to provide its best estimate of the options expected to vest. *(IFRS 2.19 and IFRS 2.20)*

When the conditions are not vesting period or performance driven but are rather market conditions either vesting or non-vesting then these are included in the calculation of fair value. An example would be if the value of the equity drives the number of shares options exercisable or when the options are exercisable.

If there is no vesting period then the full value is recognized immediately in the financial statements through an increase in equity.

### *Share option valuation*

Appendix B of IFRS 2 provides guidance on the valuation of share option schemes. These are summarized below. *(IFRS 2 B4-B9)*

According to IFRS 2 in many cases market prices are not available. This is because they contain features that are not common in market traded comparative options. Since this is the case the

[31] A vesting condition is one related to performance and/or time of employment.

values are calculated using a mark to model approach using an appropriate option pricing model.

The intention is that the company considers any and all factors that a knowledgeable and willing market participant would take into account if they were valuing the option independently. (Except for vesting conditions that are excluded from the measurement of fair value.) Interestingly the Standard makes specific reference to the Black-Scholes pricing model saying that it could be appropriate for short dated share options. The Standard also specifically states that the effects of expected early exercise must be taken into account.

### *Disclosure*

The principles for the disclosure requirements for IFRS 2 are captured in the following three paragraphs.

*An entity shall disclose information that enables users of the financial statements to understand the nature and extent of share-based payment arrangements that existed during the period. (IFRS 2.44)*

*An entity shall disclose information that enables users of the financial statements to understand how the fair value of the goods or services received, or the fair value of the equity instruments granted, during the period was determined. (IFRS 2.46)*

*An entity shall disclose information that enables users of the financial statements to understand the effect of share-based payment transactions on the entity's profit or loss for the period and on its financial position. (IFRS 2.50)*

This is best demonstrated by the illustrative reporting guidance included in IFRS 2 IG23.

| Type of arrangement | Senior management share option plan | General employee share option plan | Executive share plan | Senior management share appreciation cash plan |
|---|---|---|---|---|
| Date of grant | 1 January 20X4 | 1 January 20X5 | 1 January 20X5 | 1 July 20X5 |
| Number granted | 50,000 | 75,000 | 50,000 | 25,000 |
| Contractual life | 10 years | 10 years | N/A | 10 years |
| Vesting conditions | 1.5 years' service and achievement of a share price target, which was achieved. | Three years' service. | Three years' service and achievement of a target growth in earnings per share. | Three years' service and achievement of a target increase in market share. |

*Table 2: Disclosure example IFRS2.IG23*

| | 20X4 | | 20X5 | |
|---|---|---|---|---|
| | Number of options | Weighted average exercise price | Number of options | Weighted average exercise price |
| Outstanding at start of year | 0 | – | 45,000 | CU40 |
| Granted | 50,000 | CU40 | 75,000 | CU50 |
| Forfeited | (5,000) | CU40 | (8,000) | CU46 |
| Exercised | 0 | – | (4,000) | CU40 |
| Outstanding at end of year | 45,000 | CU40 | 108,000 | CU46 |
| Exercisable at end of year | 0 | CU40 | 38,000 | CU40 |

*Table 3: Further disclosure requirements for IFRS 2 Share based payments*

*The weighted average share price at the date of exercise for share options exercised during the period was CU52. The options outstanding at 31 December 20X5 had an exercise price of CU40 or CU50, and a weighted average remaining contractual life of 8.64 years.*

| | 20X4 CU | 20X5 CU |
|---|---|---|
| Expense arising from share-based payment transactions | 495,000 | 1,105,867 |
| Expense arising from share and share option plans | 495,000 | 1,007,000 |
| Closing balance of liability for cash share appreciation plan | – | 98,867 |
| Expense arising from increase in fair value of liability for cash share appreciation plan | – | 9,200 |

*Table 4: Further disclosure requirements for IFRS 2 Share based payments*

This information is sufficient for us to test the dilution as described in the later section on the research methodology.

### *Effective Date*

IFRS 2 is effective for annual periods beginning on or after 1 January 2005.

In June 2009 the IASB issued amendments to IFRS 2 to clarify accounting for group cash-settled share-based payment transactions. If a subsidiary receives services from employees but its parent or another entity in the group must pay then whether cash settled or not the subsidiary must account for it. Prior to this amendment some companies may not have reported this.

## *IFRS7 (AC144) Financial Instruments: Disclosures*

The objective of IFRS 7 is to set out the disclosure requirements for companies for their financial instruments. It details how these should be captured and reported in the company's financial statements. The statement also covers the requirement for disclosure of financial risks ant their management in the notes to the financial statements.

As stated in IFRS 7 IN2 *"The International Accounting Standards Board believes that users of financial statements need information about an entity's exposure to risks and how those risks are managed. Such information can influence a user's assessment of the financial position and financial performance of an entity or of the amount, timing and uncertainty of its future cash flows. Greater transparency regarding those risks allows users to make more informed judgements about risk and return. "*

This is a comprehensive statement of which only elements are relevant to this study. For that reason the review of IFRS 7 has been restricted to the applicable sections.

*IFRS 7.8* categorises financial instrument as:

- Financial assets or liabilities at fair value through profit and loss;
- Financial assets at amortised cost
- Financial liabilities at amortised cost; and
- Financial assets measured at fair value through other comprehensive income.

The in IFRS 7 definitions are consistent with those listed in IAS 32 and IAS 39 as well as IFRS 2. For the purpose of this study the focus will be on financial assets and liabilities at fair value and their related risk disclosures. This is because this is the category that derivatives fall into. The only other major section of relevance is the reporting relating to hedge accounting as described in IAS 39.

### *Information on the significance of financial instruments*

Disclosures relevant to the reporting of derivatives that relate to the balance sheet include disclosure of the significance of financial instruments for an entity's financial position and performance. *(IFRS 7.7)* This includes disclosures on compound financial instruments with multiple embedded derivatives (IFRS 7.17)

There is only one key disclosure statement for derivative reporting in the statement of comprehensive income, or profit and loss statement. It says that items of income, expense, gains, and losses have to be reported. If the instruments are designated fair value on initial recognition then they must be reported with separate disclosure of gains and losses from those, such as derivatives which are normally valued at fair value. *(IFRS 7.20(a))*

### *Accounting policy disclosures*

The company must report and disclose a note explaining its accounting policies and for the purposes of IFR 7 those relating specifically to financial instruments *(IFRS 7.21)*

### *Hedge accounting disclosures*

Derivatives are often used for hedging purposes and designated as such under IAS39. Their treatment from a disclosure perspective falls within the scope of IFRS 7. The information that must be included is *(IFRS 7.22)*:

- A description of each hedge covering the nature of hedging instrument, and fair values of the instrument, and the nature of risks being hedged.
- Specifically for cash flow hedges the cash flow profile must be disclosed including when they are expected to enter into the determination of profit or loss.
- If the net gain or loss on a hedging instrument in a cash flow hedge has been recognised in other comprehensive income, then the company must disclose the amount that was recognised in other comprehensive income during the period and the corresponding amount that was removed from equity. *(IAS 7.23)*

- For fair value hedges all information relating to fair value changes of the hedging instrument and the hedged item *(IFRS 7.24(a))*
- The hedge ineffectiveness recognised in profit and loss *(IFRS 7.24(b))*

### *Other disclosures*

Other disclosures include the basis for calculation of fair value for the financial assets and liabilities. This will include the derivatives. The fair value calculation within IAS 39 and reported in IFRS 7 has a distinct hierarchy in terms of assumptions and information that may be used. *(IFRS 7.27A-27B)*

- Level One: *quoted prices (unadjusted) in active markets for identical assets or liabilities*
- Level Two: *inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices)*
- Level Three: *inputs for the asset or liability that are not based on observable market data (unobservable inputs)*

IFRS 7 requires disclosures about the level in the fair value hierarchy in which fair value measurements are categorised for the financial assets and liabilities measured at fair value.

**Assets measured at fair value**

| | | **Fair value measurement at end of the reporting period using:** | | |
|---|---|---|---|---|
| **Description** | **31 Dec 20X2** | **Level 1 CU million** | **Level 2 CU million** | **Level 3 CU million** |
| Financial assets at fair value through profit or loss | | | | |
| Trading securities | 100 | 40 | 55 | 5 |
| Trading derivatives | 39 | 17 | 20 | 2 |
| Financial assets at fair value through comprehensive income | | | | |
| Equity investments | 75 | 30 | 40 | 5 |
| **Total** | 214 | 87 | 115 | 12 |

(Note: For liabilities, a similar table might be presented.)

*Table 5: IFRS 7 IG13A an example of the disclosure of fair value by tier of information used in calculation of fair value*

Note that disclosure of fair values is not required for instruments whose fair value cannot be measured reliably. *(IFRS 7.29(a))*

### *Risk Disclosures*

Other than disclosures that relate to the significance of financial assets and liabilities are those disclosures that relate to risk arising from financial assets and liabilities. These can be split between quantitative and qualitative disclosures.

The qualitative disclosures describe the risk exposures for each type of financial instrument along with the management's objectives, policies, and processes for managing those risks. (IFRS 7.33)

The quantitative disclosures show the extent to which the entity is exposed to risk, based on internal information. These disclosures include a summary of data about exposure to each risk type at the reporting date and, as a minimum, disclosures about credit risk, liquidity risk, and market risk and how these risks are managed. Also included is an assessment of intra risk concentration *(IFRS 7.34).* Many financial companies provide more detailed risk and comprehensive disclosures to support their adoption of the Basel II Accord[32].

Detailed disclosure of derivatives is often found in the note disclosures relating to risks and risk management under IFRS 7.

IFRS 7 was effective from 1 January 2007.

## 2.2 Financial reporting in Nigeria

The regulation of financial reporting is the responsibility of the Nigerian Accounting Standards Board. An inspectorate unit was created in 2003 with the signing into law of the Nigerian Accounting Standards Board Act of 2003.

According to the Nigerian Accounting and Standards Board (NASB) Nigerian and Price Waterhouse Coopers[33] companies were not required to report using IFRS for the period under review. Nigeria is in the process of introducing IFRS but in the time period relevant to this study companies were required to report under the Statements of Accounting Standards which were based on some of the IAS.

According to NASB the Nigerian Accounting Standards (SAS) were based on International Accounting Standards when originally proposed. The problem is that the SAS have not kept current and in many cases there are no equivalent SAS comparable to IAS.[34] For example there are no statements covering the aspects of IAS contained in IFRS 7, IAS 32 or IAS 39.

SAS dictates that financial statements are reported on a historical cost basis. As Nigeria does not use fair value accounting there was very little disclosure of derivatives within the financial statements.

The World Bank and IMF conducted a study to evaluate the standard accounting practice in Nigeria. The concluded that while users believe there are only slight improvement needed to fix the gaps between IFRS and SAS, the gaps are quite large. Many investors and other stakeholders do not believe that the Nigerian financial statements are credible.[35] This is borne out by the numerous instances of fraud found by the researchers in Nigerian financial statements.

Nigerian accounting standards applicable to derivative reporting

[32] Basel II is the international standard for risk management for internationally active banks and is adopted in many countries as the basis for banking regulation.
[33] IFRS adoption by country (January 2010), PwC
[34] Report On the Observance of Standards and Codes (ROSC) Nigeria (Accounting and Auditing) June 17, 2004, the World Bank and the International Monetary Fund
[35] Report On the Observance of Standards and Codes (ROSC) Nigeria (Accounting and Auditing) June 17, 2004, the World Bank and the International Monetary Fund

Nigeria does not report the use of derivates except as voluntary note disclosures or on a settlement basis. On settlement the profit or loss is normally incorporated into the line item to which it relates. For example FEC contracts on settlement would have the income or expense consolidated into exchange rate losses or exchange rate gains without any further disclosure.

In the Act governing the IAS 39 and IFRS 7, NASB does make specific mention of penalties relating to the failure to present basic and diluted earnings per share on the face of the income statement. They also state that failure to include an accounting policy for off balance sheet engagement or to disclose the methods used to recognize income on the off balance sheet exposure will lead to penalties and fines.[36]

There is no equivalent SAS to replicate or seek to cover the areas covered under IAS32, IFRS 7 or IAS 39. Below are excerpt from the SAS that are relevant to any derivative exposures.

- SAS 16 does allow for the set off if there is a legally enforceable right to do so and that it was the intention of parties to do so. This would be applicable to swap contracts.[37]
- The company is required to disclose details of ESOPs including shares outstanding under SAS 2 but no valuation is required. The company also must prepare a note on preference shares and any associated conversion options.[38]
- SAS 21 deals with the reporting on Diluted Earnings per Share. Diluted earnings per share must be reported in such a way as to assume full dilution takes place. This includes the effect from share options, preference shares, convertible debt and bonus issues.[39]

In Owojori and Asaolu (2010) they conclude from their research that the accounting systems of multinational organisations conform to the Nigerian accounting standards. They further conclude that the companies that operate in IFRS practicing countries are influenced by IFRS in their preparation of financial statements.[40]

### 2.2.1 Implementation of IFRS in Nigeria

Going forward Nigeria intends to implement IFRS as the standard for reporting for companies listed on the Nigerian Stock Exchange.[41] The intention is that by 2012 listed companies and significant public interest entities will be reporting using IFRS. Public interest entities are to report under IFRS one year later and then medium sized entities are to follow in 2014.

The objective is to have Nigerian companies reporting in line with international practice to improve transparency, especially as the Nigerian market becomes more complex. It is believed by the author's of the roadmap to IFRS implementation that this will help foster foreign direct investment.

The adoption of IFRS came about from the reasons stated above as well as pressure from multi-listed companies. In particular the banks led the way in driving the change to IFRS. This is because many of their financial needed to be re-stated for consolidation at a Group level. As

[36] Public Notice on the Guidelines/Regulations for the Nigerian Accounting Standards Board's Inspectorate Unit, 2005, Nigerian Accounting Standards Board.
[37] SAS 16, Paragraph 70.
[38] SAS 2, Paragraph 18a.
[39] SAS 21, Paragraphs 56b and 49 b-d.
[40] Critical Evaluation of Accounting Systems in Multinational Organizations in Nigeria, A. A. Owojori and T. O. Asaolu, 2010
[41] Report of the Committee on the Road Map to the Adoption of International Financial Reporting Standards in Nigeria, NASB January 2010.

stated below several banks began the conversion process even before the official policy stance became that of IFRS conversion.

*"Citibank, Commerzbank and HSBC are among international financial institutions that are now insisting that Nigerian banks must comply with due diligence and all international accounting requirements for continued relationships with them, BusinessDay has learnt. Specifically, the banks are demanding that their local counterparts adopt the International Financial Reporting Standards (IFRS) and full disclosures of their financials, among others"*[42]

The detailed discussion on the companies and their use of derivatives in both Ghana and Nigeria is contained in Section 4 below.



[42] *News Report, Monday, June 29, 2009 – BusinessDay Nigeria*

# 3 Research Methodology

This study forms part of a much larger study analyzing the use of derivatives by listed companies in Africa. The scope of this particular study is the countries of Ghana and Nigeria. The list of companies was obtained from Bloombergs on the 3rd of May 2010. This list and the associated market capitalisations formed the basis for the selection of companies included in the study.

The intention was to review the financial statements for the financial years 2008 and 2009 and to use these to determine the level of derivative usage within these two countries. For Ghana the entire population of companies was included where data was available. For Nigeria all companies that had a listed market capitalisation listed on Bloombergs 3rd of May 2010 were automatically included in the study, again where data was available. For companies without a market cap listed the company was used if information was available.

The annual reports[43] were reviewed for any disclosure information with a focus on ESOPs, Options, Forwards, Futures or Swaps. The results were populated into a Microsoft Excel workbook. An example of the template used is contained in Appendix B.

The template listed the companies' Market Cap, according to the original sample drawn, as well as the types of derivatives used divided into sub-classes where available. For example Swaps were classified according to either: commodity, interest rate or foreign exchange contracts. The template also recorded the fair value at year end for the derivatives as well as the potential dilutive effect for the ESOPs.

Unlike the Wharton Survey Studies where the data is reliant on the responses of companies the Annual report Style followed here allows for a much broader coverage. The intent was not to sample but to use the full population of listed companies. This is less evident in Nigeria where a larger part of the population of companies post financial statements or have them available through electronic media.

This study included financial services companies but only included derivative usage that was listed for proprietary trading purposes and not trading for clients.

The Section 3.1 gives greater detail on the research resources used to obtain the financial statements. Neither Ghana nor Nigeria has an electronic filing system for financial statements.

## 3.1 Data collection

The list of companies was obtained from Bloombergs on the 3rd of May 2010. This list and the associated market capitalisations formed the basis for the selection of companies included in the study. The market capitalisation was obtained from Reuters for the 31st of December 2009. The figures are included in Appendix A. They are listed in Rand millions.

The following resources were used in an attempt to procure the required financial statements:

- Bloombergs was used as the initial search resource however the company searches returned company details that did not include the notes to the financial statements if there were any financials listed at all.

[43] The sample was based on financial statements published between May 2009 and May 2010.

- The next site used to search for financials was the BFA McGregor portal that lists the financial statements of listed companies in Africa. There were approximately thirty financial statements available between Ghana and Nigeria that fell within the review period.
- The Nigerian Stock Exchange, when called, explained that they did not have electronic records but that the files were available to view by appointment in Lagos. The same was offered by the Ghana Stock Exchange.
- African Financials[44], a free website provided financial statements and had more coverage than either Bloombergs or BFA McGregor. During the course of the study they changed their system to make the financial statements available in an on-line viewer.
- Proshare Nigeria[45] another free site also provided good coverage of financial statements in their investor relations page.
- Since the coverage was at best partial all of the companies' names were used as search terms in Google and Yahoo. The results of these searches were used to find the official company websites. If the company had a website and the website had the financial statements available for download then the financial were downloaded. In some instances the financials were only available online and so were referenced directly from the website.
- The other subscription service used was Thompsons Reuters which had good coverage. This was used to help source the final missing years and companies.

Despite this not all companies financial statements for all years under review were available.

### *Ghana*

For Ghana the table below summarises the number of financial statements that could be found.

| **Population Statistics for Ghana** | |
|---|---|
| Number of companies listed in Ghana | 36 |
| Companies who do not publish electronic copies of their financial statements | 9 |
| Companies with one year of published financial statements | 11 |
| Companies publishing available financial statements for both years | 16 |

*Table 6: Population statistics for Ghana*

A quarter of the companies did not have financial statements available. This left only 27 companies to review. This is approximately a third of the next smallest survey covered in the literature review above. Since it does cover 75% of the market it does provide a good sample to assess the level of derivative usage in Ghana.

44 www.africanfinancials.com
45 www.proshareng.com

*Nigeria*

The financial statements for listed companies in Nigeria were difficult to source. This was primarily due to the fact that most only report by submitting a paper copy to the exchange. In my conversations with staff at the Nigerian Stock Exchange[46] they assured me that they did have the records that I required and that I was welcome to come to Lagos and inspect the documents. They did not have electronic copies. A selection of listed companies did not have websites where they published this information and even some that did have sites did not post their financial statements. This is a well documented problem. As noted by Rafiu Oyesola Salawu (2009) only 54.1% of the listed companies had websites and of the total group of 220 companies only 31 post their financial statements online. Since his survey was conducted more sites have begun posting their financial statements online. There are also service providers who have collected scanned copies of financial statements and charge a subscription to access these. He goes on to note that the companies that predominantly have websites and post their financial statements are financial services companies specifically banking and insurance.

Further complicating the review of financial statements is the stated fact that Nigeria has a high incidence of inaccurate financial reporting[47]. The SEC raised the fact that errors are deliberate and that they usually distort accounting records by either misrepresenting transactions or omitting them from reporting.

| **Population Statistics for Nigeria** | |
|---|---|
| Number of companies listed in Nigeria | 222 |
| Companies who do not publish electronic copies of their financial statements | 137 |
| Companies with one year of published financial statements | 54 |
| Companies publishing available financial statements for both years | 31 |

*Table 7: Population statistics for Nigeria*

Of the 222 listed companies in Nigeria only 85 had available financial statements for at least one of the years under review. This is an effective sample rate of 38.3% which is comparable to the Wharton Survey Style study response rates. There exists a potential bias in the data towards larger companies as the larger companies were more likely to have web-sites where they had investor sections listing their financial statements. The larger companies were also more often listed on data provider services.

[46] Telephonic inquiry for information

[47] "The Incidence of Inaccurate Corporate Financial Reporting in Nigeria Capital Market: The Role of Securities and Exchange Commission in preventing future occurrences." A speech by a representative of the SEC to the Shareholders Association of Ibadan Zone on the 14th of June 2007.

# 4 Analysis

This section deals with the background and environment surrounding derivatives in Ghana and in Nigeria as well as providing details on the findings from the research.

## 4.1 Background to derivative markets in Africa

The Emerging Markets Committee of the International Organisation of Securities Commission conducted a study to examine the current approaches taken in regulating the OTC markets of emerging market country members[48]. It also examines the derivatives trading experience in these countries and the opinions of the local regulatory bodies as to the future of their derivatives markets. The report concludes with unifying suggestions. There is a well documented problem with data transparency in the OTC market, according to the BIS data, the notional amount outstanding was $614,674 billion at the end of 2009.[49] The report's key recommendations applicable to this study are:

- For investor protection the countries should set clear standards for disclosure regarding OTC derivatives.
- Disclosure should cover at least the amount of positions, the notional and the regulators should have ready access to this information.
- The value of the derivatives should be assessed in a realistic manner using as much market information as possible.

These are consistent with the tenets of IFRS and are applied in Ghana but not in Nigeria.

Whilst there is substantial pressure to report derivatives at fair value, especially post the credit crisis, firms did not always have to disclose derivative usage. Prior to the 1990s non-disclosure was the norm (Muller and Verschoor 2007).

Although, according to the United Nations, the use of derivative instruments is not prevalent in Africa some countries (Côte d'Ivoire and Ghana) have sold forward their cocoa for export and some West African countries their cotton exports. *Several reasons have been put forward for the narrow use of these instruments in developing countries: limited know-how and awareness of the alternative instruments available; regulatory and institutional barriers; and creditworthiness problems that make it difficult for developing countries to access financial markets.* [50] The derivatives that are in use (Outside of South Africa are predominantly OTC and are generally illiquid and of short duration. This detracts from the quality of the derivatives as hedging instruments and increases the cost of a hedging strategy due to rolling.[51]

[48] Romania, South Africa, Colombia, Brazil, Argentina, Panama, India, Macedonia, Pakistan, DIFC, Poland, Czech Republic, Korea, Costa Rica, Chile, Chinese Taipei, Kenya, Malaysia, Turkey, Bangladesh, Slovenia, UAE, Albania, China, Ecuador and Barbados

[49] Emerging Markets Committee of the International Organisation of Securities Commissions, 2010, OTC Markets and Derivatives Trading in Emerging Markets, Final Report

[50] UNCTAD (2003a), Economic development in Africa: Trade performance and commodity dependence, United Nations: New York and Geneva.

[51] Rethinking Tropical Agricultural Commodities, UK Department for International Development in collaboration with the Overseas Development Institute, August 2004

According to United Nations Commodities Trading Statistics the volume of global commodities trading was estimated at USD 192 Trillion in 2009. [52] Of the African countries only South Africa has an active derivatives market. Nigeria has a market but it is thinly traded and Kenya announced in 2010[53] that regulations would be put in place to support the trading of commodity futures. Derivatives markets are considered important for the development of capital markets as they can facilitate the risk management allowing investors to transfer financial risk. The derivatives could potentially add depth to the capital markets in Africa.

Many sub-Saharan countries have agriculture as their main source of income. The introduction of derivatives could help mitigate some of the risks arising from the fluctuation in these commodity prices and the seasonal nature of their produce.

## 4.2 Ghana

With the increase in volatility of commodity prices there has been a raft of new risk management techniques developed. These include derivatives designed to risk managed the price exposure to commodities and in crop producing countries, their exposure to adverse weather. A developing, commodity driven economy like Ghana could benefit from these developments and by participating in derivatives markets. For example Malawi purchased drought insurance in the form of weather derivatives to protect their farming sector. [54]

Ghana is a developing financial market and has taken steps to improve the workings of their market. This includes implementing of IFRS as the reporting standard, Basel II (2012)[55] as the bank regulatory standard and listing government securities to deepen the market and implementing electronic trading.[56] These enabling efforts could help Ghana introduce a derivatives market as the demand increases. As of May 2010 the longest tenor of government securities was only three years and there were only two listed bonds and Ghana did not have an interest rate or currencies derivative market[57]. There are some forms of OTC commodity options principally relating to cocoa harvest.[58]

Creating a derivatives market has the additional benefit of adding to market depth and increasing liquidity within the market. Considering that the stock exchange has approximately thirty companies listed the demand for a derivative exchange may be limited. However the improvements listed above and continued financial maturity could help spur foreign direct investments and as such economic growth.

This will need to be coupled with enabling legislation and explicit government support. In 2007 the securities and exchange laws of Ghana did not make provision for derivatives instruments and trading. Osei (2007)[59]



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[52] Capital Markets Authority, A Comparative Analysis Of The Performance Of African Stock Markets For The Period 2008-2009, Volume II, Research, Policy Analysis and Planning Department, June 2010
[53] National Budget Speech 2010, Kenya
[54] Bahgat, A., Fostering the use of Financial Risk Management Products in Developing Countries, Economic Research Papers No.69, African Development Bank, 2002.
[55] Bank of Ghana
[56] Ghana is currently in the process of implementing Basel II as the risk management standard for banks.
[57] African Fixed Income and Derivatives Guidebook, African Development Bank, May 2010
[58] E-mail and telephonic correspondence on the 31st January with Joseph Winful, Senior Partner KPMG Ghana.
[59] Developing A Derivatives Market For Ghana: Issues And Policy Options, Bank of Ghana, Working Paper WP/BOG-2007/02, Osei,V., 2007

Companies listed in Ghana are required to report under IFRS for the financial years ending 2008 and 2009. For many of the companies 2008 was their first year of implementation from the old Ghana accounting standards.

As stated in the section on IFRS 2, the IASB issued amendments in June 2009 to clarify accounting for group cash-settled share-based payment transactions. If a subsidiary receives services from employees but its parent or another entity in the group must pay then whether cash settled or not the subsidiary must account for it. Prior to this amendment some companies may not have reported this. This could influence the publication of details of ESOPs for the financial year 2008 and potentially 2009 as the amendment was not yet in effect.

*Market capitalisation*[60]

The market capitalisation of the companies was assessed in comparison to the sizes listed in Bodnar *et al.* (1995) Of the companies listed on the exchange not all had market capitalisations listed or available for the 31st of December 2009. The number of companies that had a market capitalisation listed was 27 out of 36 or 75%. This does include some clear outliers which appear to be errors in the data. The outliers are highlighted in Appendix A.

| Market capitalisations of listed companies - Ghana | |
|---|---|
| Large Cap (> 250 USD 'm) | 12 |
| Mid Cap (>50 USD 'm <250 USD 'm) | 11 |
| Small Cap (<50 USD 'm) | 4 |
| No listed | 9 |

*Table 8:Market capitalisation of companies in Ghana*

As shown in the table above, the companies were split into predominantly into large (44.4%)[61] and medium (40.7%) caps although this may be as a result of outliers in the large caps. This makes it more appropriate to contrast the derivative usage with the large and medium caps observed in the Bodnar *et al.* (1995) study.

### 4.2.1 Derivative usage in Ghana

The table below summarises the derivative usage reported in Ghana by listed companies in their annual financial statements. Eight companies list the use of derivatives out of a population of 27 companies whose financial statements could be found.

| Derivative Usage in Ghana | |
|---|---|
| Number of companies that use derivatives | 8 |
| Proportion of companies using derivatives[62] | 29.6% |
| More than one derivative type listed | 3 |
| Highest usage density (# derivative types) | 4 |

*Table 9: Derivative usage in Ghana*

[60] The conversion from ZAR ‘m to USD ‘m was based on the mid rate for 31st December 2009 of 1 USD = 7.38 ZAR.

[61] Measured as a proportion of companies with listed market capitalizations on Reuters 31st December 2009.

[62] This is calculated as the number of companies listing the use of derivatives in their financial statements divided by the number of companies with at least one financial statement published in an available format for the financial years under review.

Of the companies that listed the use of derivatives the value at year end in 2009 was not always available. Alternatively there would be reference to derivative usage in the notes to the financial statements but no corresponding line item in the balance sheet or income statement.

Considering that the sample is 75% of listed companies the effective response rate is comparatively high compared to the majority of Wharton Survey Style studies. The result could have some bias though in that it was often the larger companies that had web sites and published electronic copies of their financial statements.

At just under 30% the derivative usage is low but could be considered comparable to the results of Bodnar *et al.* 1995 of 41%%. When contrasted with the large and medium caps usage listed in Bodnar *et al.* (1995), 59% and 48% respectively, the usage in Ghana appears to be lower than the American market sample taken almost 15 years prior to this study.. To improve the comparison with the derivative usage data in Bodnar *et al.* (1995) the proportion of companies in each size category was multiplied by the percentage usage for that size listed in Bodnar *et al.* (1995). This gave comparable weighted usage of 47.7% which when contrasted with the usage of Ghanaian companies still indicates a lower level of comparable usage in Ghana. While America already had an established market for derivatives in 1995 the market was much less developed and so in some ways more comparable with the undeveloped market in Ghana than the later studies also of American companies.

This is borne out by the research of Bartram *et al.* 2009 which shows a much higher level of usage than seen in Ghana by all the countries tabulated individually or the consolidated sub-groups. This can be seen in Appendix A.

Of the eight companies one of the companies had a relatively high density of use by type. The company, EcoBank, had an Employee Stock Option Program, used Forwards Exchange Contracts, and interest rate and currency Swaps.

| **Types of derivatives used in Ghana** | **Number** | **Commodity** | **Currency** | **Interest Rate** |
|---|---|---|---|---|
| Swaps | 3 | 1 | 1 | 2 |
| Futures[63] | 0 | - | - | - |
| Forwards | 5 | 1 | 5 | 0 |
| Options | 0 | - | - | - |
| ESOPs | 3 | - | - | - |

*Table 10: Usage of derivatives by companies in Ghana by type of instrument*

All of the derivatives listed with the exception of the ESOPs, were stated as being used for hedging purposes. The derivative usage was predominantly focussed on hedging currency risks. What is surprising is the low reported usage of commodity derivatives. Ghana is a major commodity producing nation rich in agriculture and in mining resources.

Of the eight companies listed as using derivatives; four were banks, two were in manufacturing, one in mining and one in agriculture. This makes the comparison with the Wharton Survey Style studies more difficult as the majority of them did not include financial services companies which make up half of the derivative users in Ghana according to our study.

[63] As Ghana does not have a derivatives market the use of Futures, which are exchange traded, was not expected.

Five of the companies that reported derivative usage are multinationals that are multi-listed. These companies have access to resources of their larger parent companies. These include skilled resources and knowledge of more sophisticated markets was derivatives are more prevalent. This could explain the seeming link between derivative usage and multi-listing.

## 4.3 Nigeria

Although the mandate of the Nigerian Securities and Exchange[64] Commission does include the regulation of derivative exchanges one does not in practice exist in Nigeria. The only other exchange, other than the stock exchange, listed in Nigeria is the commodities exchange which does deal with derivatives but is treated separately within the Investment and Securities Act of 1999. The second exchange is the Abuja Commodities Exchange and was set up to develop the trading of futures and options on commodities. Other than commodity derivatives, foreign exchange contracts and swaps are subject to a maximum tenor of three years in theory. These are transacted by authorised dealers between themselves and with third parties. Non-deliverable forwards are illiquid and have a maximum tenor of six months. As of May 2010 this was not an active market.

The Nigerian listed companies were not required, nor did they report under IFRS for the financial years ending 2008 and 2009. As mentioned above, the financial statements for Nigerian companies do not allow conclusions to be drawn on the use of derivatives, other than ESOPs. Unser SAS ESOPs must be reported in Nigeria.

Nigeria allows the reporting of abridged financial statements which further reduced the sample of financial reports available.

### *Market capitalisation*[65]

The market capitalisation of the companies was assessed in comparison to the sizes listed in Bodnar *et al.* (1995) Of the companies listed on the exchange not all had market capitalisations listed or available for the 31st of December 2009. The number of companies that had a market capitalisation listed was 117 out of 222 or 52.7%. This does include some clear outliers which appear to be errors in the data. The outliers are highlighted in Appendix A.

| **Market capitalisations of listed companies - Nigeria** | |
|---|---|
| Large Cap (> 250 USD 'm) | 5 |
| Mid Cap (>50 USD 'm <250 USD 'm) | 20 |
| Small Cap (<50 USD 'm) | 92 |
| No listed | 105 |

*Table 11: Market capitalisation of companies in Nigeria*

As shown in the table above, the companies were split into predominantly small cap (78.6%[66]) stock with only 17.1% medium and 4.3% large caps. This makes it more appropriate to contrast the derivative usage with the small caps observed in the Bodnar *et al.* (1995) study.

[64] www.sec.ngr.org
[65] The conversion from ZAR 'm to USD 'm was based on the mid rate for 31st December 2009 of 1 USD = 7.38 ZAR.
[66] Measured as a percentage of companies with listed market capitalizations of Reuters 31st December 2009.

*The commodities exchange in Nigeria*

According to Penings and Meulenberg (1997) commodity exchanges are organised exchanges where derivatives are traded. Although commodity exchanges have been prominent in the USA and Europe there are few in Africa. *In the case of Nigeria, the commodity exchange, which was established in 1999, is yet to commence trading, indicating the need for proper assessment of feasibility and preparation.*[67]

Abuja Securities & Commodity Exchange[68] was a governmental initiative to provide a trading platform for spot and derivative commodity contracts in agricultural produce, solid mineral products and energy.[69]The Exchange is wholly owned by the Federal government as a parastatal under the Federal Ministry of Commerce (FMC)It was set up as an attempt by the federal government to provide additional tools for hedging and to broaden the capital markets.

### 4.3.1 Derivative usage in Nigeria

In reviewing the financial statements the existence of any derivatives was analysed. However due to the historical cost basis of the financial statements and the reporting standards in place in Nigeria this was largely a futile exercise. There is no requirement to report derivatives other than voluntarily except in the case of employee stock option programs.

Therefore the few derivatives that were found were either as a result of dual reporting in either IFRS of US GAAP or due to voluntary disclosure in the notes or of ESOPs.

| **Derivative Usage in Nigeria** | |
|---|---|
| Number of companies that use derivatives | 12 |
| Proportion of companies using derivatives[70] | 14.12% |
| More than one derivative type listed | 3 |

*Table 12: Derivative usage in Nigeria*

Of the 222 listed companies in Nigeria only 85 had available financial statements for the time period under review. Of these 85 companies only twelve listed the use of derivatives. The low reported usage is not surprising due to there being no need to report the use of derivative in the annual financial statements. The usage of derivatives per this study is 14.12%. This is much lower than the usage listed in Bartram *et al.* 2009 which looks at the derivative usage of listed companies globally. Discussions with representatives of KPMGs Nigerian[71] practice give anecdotal evidence of higher derivative usage than this study has found. The existence of a derivatives exchange also supports the hypothesis that the derivative usage is higher than reported.

In comparison to the results for small cap companies derivative usage of 13% found in Bodnar *et al.* (1995) the derivative usage in Nigeria does appear comparable. To improve the

[67] The Derivatives Market in South Africa: Lessons for sub-Saharan African Countries, Olatundun Janet Adelegan, WP/09/196, IMF Working Paper.
[68] Financial Derivatives: Empirical Analysis of Factors that Affect the Demand for Rights (Derivatives) in the Nigerian Stock Market. Oaikhenan and Osunde (2006)
[69] http://www.abujacomex.com/pages/posts/asce-overview374.php
[70] This is calculated as the number of companies listing the use of derivatives in their financial statements divided by the number of companies with at least one financial statement published in an available format for the financial years under review.
[71] Email and telephonic correspondence with Oluwafemi Awotoye, Senior Manager (Audit) KPMG Nigeria 28 January 2011.

comparison with the derivative usage data in Bodnar *et al.* (1995) the proportion of companies in each size category was multiplied by the percentage usage for that size listed in Bodnar *et al.* (1995). This gave comparable weighted usage of 20.9% which when contrasted with the usage of Nigerian companies does indicate a lower level of comparable usage by Nigerian companies even when compared with the American market sample taken almost 15 years prior to the current study.

| **Types of derivatives used in Nigeria** | | | | |
|---|---|---|---|---|
| | **Number** | **Commodity** | **Currency** | **Interest Rate** |
| Swaps | 3 | - | 1 | 2 |
| Futures | 0 | - | - | - |
| Forwards | 2 | - | 2 | - |
| Options | 6 | - | - | - |
| ESOPs[72] | 3 | - | - | - |

*Table 13: Usage of derivatives by companies in Nigeria by type of instrument*

The companies that did list derivative usage were predominantly financial services companies, specifically banks (7) and insurance companies (2). Of the other companies listed as using derivative one was in pharmaceuticals, one in energy and one in agriculture. Only one of the companies that do report derivative usage is a multinational company that is dual listed.

Of the derivatives found six companies listed the use of convertible debt. These contained embedded equity options where the companies had essentially bundled call options on the company's stock with their debt issuance. What can be shown conclusively is that there is a low level of usage by Nigerian companies of ESOPs. These were required to be reported during the period under review. Despite this only three examples of ESOPs were found.

Considering Nigeria's role as oil producing country some commodity derivatives are expected. In their study Jin and Jorion (2006) show that hedging reduces oil and gas producers' sensitivity to oil and gas prices.

Considering the difficulties in obtaining the information and the fact that Nigerian companies do not have to report derivative usage the findings on derivative usage in this study are inconclusive.

[72] These were the only derivatives in Nigeria that require listing in the financial statements according to SAS.

# 5 Conclusions

There are not many derivatives listed in the financial statements of the listed companies in either Ghana or Nigeria.

In the case of Ghana we can be relatively certain that the derivatives would have been reported. They are required to be reported under the International Financial Reporting Standards which Ghanaian companies follow when publishing their financial statements.[73] In Nigeria the evidence is less clear as to the use of derivatives. In Nigeria only the Employee Stock options require reporting[74] as such we cannot be certain that derivatives do not exist but are just not reported. This is because Nigeria at the time of the study did not disclose financial statements using the International Financial Reporting Standards[75] but rather a Nigerian system of reporting that does not make derivative reporting, except on settlement or of Employee Stock Options compulsory.

From the literature reviewed the assumption is often made that as the markets of Ghana and Nigeria develop and become more sophisticated the use of derivatives will increase.[76] Nigeria has already taken the first step by creating a listed commodities exchange and creating the supporting legislature[77]. This exchange though is currently very thinly traded[78].

This study finds that the derivative usage in Ghana is low at 29.6% when compared with usage statistics globally for 2009. They are more akin to the usage in America in the early 1990s when looking at the combined results in Bodnar et al. (1995). When looking at the usage determined on a market cap weighted usage basis the usage by Ghanaian companies is low. The derivative usage in Ghana is driven by multinational companies and half the derivative users are banking institutions. The use of derivatives (other than ESOPs) listed in the financial reports were exclusively for hedging purposes and the most commonly hedged risk was currency risk.

For Nigeria the results were inconclusive due to the lower sample of financial statements available and the fact that the companies were not required to report the use of derivatives. Anecdotal evidence contradicted the low usage of 14.12%. The major reporters of derivatives were financial services companies. Of the derivatives listed they were found to be predominantly embedded conversion rights on company issued debt. The only conclusive finding was that the use of Employee Stock Option Programs was rare. These were required to be reported and only three examples were found.

Finally unlike previous studies on derivative usage where the clear link existed between firm size and derivative usage, there were too few examples of derivative usage to draw such a conclusion.



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[73] The Securities and Exchange Commission Ghana (SECG) and the Ghana Stock Exchange (GSE) regulate financial reporting practices of listed companies.

[74] Email and telephonic correspondence with Oluwafemi Awotoye, Senior Manager (Audit) KPMG Nigeria 28 January 2011 and information contained in SAS 2, Paragraph 18a

[75] http://elibrary.nasbnigeria.org/

[76] The Derivatives Market in South Africa: Lessons for sub-Saharan African Countries, Olatundun Janet Adelegan, WP/09/196, IMF Working Paper. "The average annual growth rate in the number of futures contracts is 82.7 percent, while the underlying value grew by 28.4 percent per year on average during the same period"

[77] The Investment and Securities Act of 1999.

[78] African Fixed Income and Derivatives Guidebook, African Development Bank, May 2010

# 6 Bibliography


1 *A Survey of Derivatives Usage by Large JSE-Listed Non-Financial Companies Anthon Jahreskog – MCom in Financial Management, 2005/2006.*

2 *Penings, J.M. and Meulenberg, M., The financial Industry's Challenges of Developing Commodity Derivatives (1997)*

3 *"Essays in Derivatives" by Don Chance (John Wiley & Sons, 1998)*

4 *Misra, D. and Misra, S.D. Growth in Derivatives in the Indian Stock Market: Hedging versus Speculation, Indian Journal of Economics (July 2005)*

5 *Oaikhenan, H.E. and Osunde, O., Financial Derivatives: Empirical Analysis of Factors That Affect the Demand for Rights (Derivatives) in the Nigerian Stock Market, Journal of Financial Management and Analysis 19(1) 2006: pages 36-44*

6 *Salawu, R.O., Financial Reporting on the Internet by Quoted Companies in Nigeria, 2009*

7 *Gyasi, K. A., Adoption of International Financial Reporting Standards in Developing Countries – The case of Ghana, 2009, Bachelor of Business Administration*

8 *Nigerian Accounting Standards Board Act of 2003*

9 *A practical guide to share-based payment, November 2008, Price Waterhouse Coopers*

10 *Kuprianov, A., 2009 ISDA Derivative Usage Survey, ISDA Research Notes, Number 2, 2009*

11 *OTC Markets and Derivatives Trading in Emerging Markets (Final Report), Emerging Markets Committee of the International Organization of Securities Commissions, FR07/10, July 2010*

12 *BIS, OTC Derivatives Market Activity in the Second Half of 2009 May 2010.*

13 *FSA, The Turner Review: A Regulatory Response to the Global Banking Crisis, March 2009.*

14 *FSB, Improving Financial Regulation, Report of the Financial Stability Board to G20 Leaders, September 2009.*

15 *IOSCO, Objectives and Principles of Securities Regulation, February 2008.*

16 *Global Financial Crisis: Implications for Africa's Financial System by Victor Murinde, Birmingham Business School, prepared for the European Development Report (ERD) 2009 Conference on "Financial markets, adverse shocks and policy responses in fragile countries", to be held on 21-23 May 2009, in Accra, Ghana*

17 *Report On the Observance of Standards and Codes (ROSC) Nigeria (Accounting and Auditing) June 17, 2004, the World Bank and the International Monetary Fund*

18 *Report On the Observance of Standards and Codes (ROSC) Ghana (Accounting and Auditing) June 14, 2004, the World Bank and the International Monetary Fund*

19 *Osei, V., Developing a Derivatives Market for Ghana: Issues and Policy Options, Bank of Ghana Working Paper WP/BOG-2007/02, February 2007.*

20 *Bahgat, A., Fostering the use of Financial Risk Management Products in Developing Countries, Economic Research Papers No.69, African Development Bank, 2002.*

21 *Chalmin, P., Commodity Price Risk Management in Developing Countries,*

22 *Bodnar, Gordon M., Abe de Jong and Victor Macrae. "The Impact of Institutional Differences on Derivative Usage: A Comparative Study of US and Dutch Firms", 2001, ISSN 0924-7815, Discussion Paper*

23 *Al-Momani, R. and Gharaibeh, M.R., Foreign exchange risk management practices by Jordanian nonfinancial firms Journal of Derivatives & Hedge Funds Volume 14 Numbers 3/4 200.*

24 *African Fixed Income and Derivatives Guidebook, African Development Bank, May 2010*

25 *Brunsell, Hansson and LiljeBlom, The Use of Derivatives in Nordic Firms (2009)*

26 *Jin, Y. and P. Jorion, 2006, Firm value and hedging: Evidence from U.S. oil and gas producers, Journal of Finance, 61: 893-919.*

27 *Muller, A., and Verschoor, W.F.C., The Value-relevance of Foreign Currency Derivatives Disclosures July 2007*

28 *Alkeback, P. and Hagelin, N. (1999), ''Derivative usage by non-financial firms in Sweden with an international comparison'', Journal of International Financial Management and Accounting, Vol. 10, pp. 105-20.*

29 *Alkeback, P., Hagelin, N., Pramborg, B., Derivative usage by non-financial firms in Sweden 1996 and 2003: what has changed? Managerial Finance Vol. 32 No. 2, 2006 pp. 101-114*

30 *Fernandez, V., Emerging Derivatives Markets: The Case of Chile Emerging, Markets Finance and Trade, vol. 42, no. 2, March–April 2006, pp. 63–92. © 2006 M.E. Sharpe, Inc. All rights reserved. ISSN 1540–496X/2006*

31 *Bartram, S.M., Brown G., and Conrad J., "The Effects of Derivatives on Firm Risk and Value." Lancaster University and University of North Carolina at Chapel Hill Working Paper. http://mpra.ub.uni-muenchen.de/9831/ , July 2008*

32 *Bartram, S.M. , Brown, G.W., Fehle, F.R , "International Evidence on Financial Derivative Usage" in Financial Management, Spring 2009, pp 185-206*

33 *Berkman, H., Bradbury, M.E. and Magan, S. (1997), ''An international comparison of derivatives use'', Financial Management, Vol. 26, pp. 69-73.*

34 *Bodnar, G.M. and G. Gebhardt, 1999, "Derivatives usage in risk management by US and German non-financial firms: A comparative survey", Journal of International Financial Management and Accounting 10, 153-187.*

35 *Bodnar, G.M., G.S. Hayt, R.C. Marston and C.W. Smithson, 1995, "Wharton survey of derivatives usage by US non-financial firms", Financial Management 24 (Summer), 104-114.*

36 *Bodnar, G.M., G.S. Hayt and R.C. Marston, 1996, "1995 Wharton survey of derivatives usage by US non-financial firms", Financial Management 25 (Winter), 113-133.*

37 *Bodnar, G.M., G.S. Hayt and R.C. Marston, 1998, "1998 Survey of financial risk management by US non-financial firms", Financial Management 27 (Winter), 70-91.*

38 *De Ceuster, M.J.K., E. Durinck, E. Laveren and J. Lodewyckx, 2000, "A survey into the use of derivatives by large non-financial firms operating in Belgium", European Financial Management 6, 301-318.*

39 *Mallin, C., K. Ow-Yong and M. Reynolds, 2001, "Derivatives usage in UK non-financial listed companies", European Journal of Finance, 63-91.*

40 *El-Masry, A.A. (2003), ''A survey of derivatives use by UK non-financial companies'', Working paper. Manchester Business School.*

41 *Grant, K. and Marshall, A.P. (1997), ''Large UK companies and derivatives'', European Financial Management, pp. 191-208.*

42 *Phillips, A.L. (1995), ''1995 Derivatives practices and instruments survey'', Financial Management, pp. 115-25.*

43 *The Derivatives Market in South Africa: Lessons for sub-Saharan African Countries, Olatundun Janet Adelegan, WP/09/196, IMF Working Paper*

44 *http://accounting-financial-tax.com/ifrs/ifrs-chapters/ifrs-7-ias-32-and-39-financial-instruments/*

45 *http://www.ifrs.org/Home.htm*

46 *http://www.ine.otoe.gr/UplDocs/tekmiriosi/international/ias/8_63_ias32-sum.pdf*

47 *http://www.iasplus.com/standard/ias32.htm*

48 *http://www.ifrs.org/Current+Projects/IASB+Projects/Financial+Instruments+A+Replacement+of+IAS+39+Financial+Instruments+Recognitio/Financial+Instruments+Replacement+of+IAS+39.htm*

49 *http://www.iasplus.com/standard/ias32.htm*

50 *http://www.iasplus.com/standard/ias39.htm*

51 *http://www.iasplus.com/standard/ifrs02.htm*

52 *http://www.iasplus.com/standard/ifrs07.htm*

53 *IFRS 2*

54 *IFRS 7*

55 *IAS 39*

56 *IAS 32*

57 *IFRS Adoption by country Price Waterhouse Coopers January 2010*

58 *Obazee, J.O., Nigeria's Approach to IFRS Adoption, Nigerian Accounting Standards Board, 2010.*

59 *Minimum Information to be disclosed in Financial Statements, 2009, Nigerian Accounting Standards Board. www.nasb.org*

# A Tables of Derivative Usage

## Rankings as per Bartram *et al.* (2008)

| Country | Firms | Derivative Usage |
|---|---|---|
| Argentina | 10 | 70% |
| Australia | 301 | 66% |
| Austria | 41 | 56% |
| Belgium | 60 | 50% |
| Brazil | 16 | 81% |
| Canada | 537 | 60% |
| Chile | 13 | 100% |
| China | 32 | 13% |
| Czech Republic | 23 | 26% |
| Denmark | 80 | 88% |
| Finland | 100 | 64% |
| France | 159 | 66% |
| Germany | 395 | 47% |
| Ghana | 36 | 30% |
| Greece | 19 | 21% |
| Hong Kong | 319 | 23% |
| Hungary | 15 | 40% |
| India | 40 | 70% |
| Ireland | 46 | 85% |
| Israel | 48 | 73% |
| Italy | 93 | 61% |
| **All firms** | **6,888** | **61%** |

| Country | Firms | Derivative Usage |
|---|---|---|
| Japan | 366 | 81% |
| Korea, Republic of | 24 | 71% |
| Luxembourg | 11 | 64% |
| Malaysia | 289 | 20% |
| Mexico | 35 | 60% |
| Netherlands | 131 | 57% |
| New Zealand | 39 | 95% |
| Nigeria | 85 | 14% |
| Norway | 85 | 67% |
| Other countries | 21 | 52% |
| Philippines | 12 | 50% |
| Poland | 11 | 46% |
| Singapore | 218 | 56% |
| South Africa | 55 | 89% |
| Spain | 29 | 62% |
| Sweden | 135 | 64% |
| Switzerland | 119 | 77% |
| Thailand | 25 | 72% |
| United Kingdom | 860 | 64% |
| United States | 2,076 | 65% |
| All excl. U.S. | 4,812 | 59% |

## Ranking as per Bartram *et al.* (2009)

| | Number of Firms | All Types of Derivatives (%) | Foreign Exchange (%) | Interest Rate (%) | Commodity (%) |
|---|---|---|---|---|---|
| Australia | 305 | 66.6% | 51.5 | 42.3 | 14.1 |
| Canada | 599 | 59.9% | 45.4 | 27.2 | 18.7 |
| Germany | 413 | 47.0% | 39.2 | 24.2 | 4.6 |
| Japan | 368 | 81.3% | 75.5 | 60.6 | 9.8 |
| United Kingdom | 886 | 64.2% | 54.5 | 36.6 | 3.8 |
| United States | 2231 | 64.9% | 37.7 | 40.4 | 16.3 |
| Ghana | 27 | 29.6% | | | |
| Nigeria | 85 | 14.1% | | | |
| Other countries | 2517 | 53.4% | 44.4 | 23 | 5 |
| United States and Canada | 2830 | 63.8% | 39.3 | 37.6 | 16.8 |
| Europe | 2530 | 61.4% | 50.9 | 32.4 | 5 |
| Asia & Pacific | 1743 | 51.2% | 44.1 | 27.3 | 6 |
| Africa/Middle East | 127 | 78.0% | 74.8 | 22 | 7.9 |
| Latin Amer. /Carib. | 89 | 71.9% | 51.7 | 37.1 | 18 |
| OECD | 6133 | 64.3% | 47.3 | 37.4 | 11.4 |
| Non-OECD | 1186 | 39.6% | 34.6 | 10.8 | 3 |
| Non-US | 5088 | 58.3% | 48.5 | 29.9 | 7.3 |
| Automobiles | 159 | 72.3% | 61.6 | 42.1 | 5 |
| Chemicals | 177 | 78.5% | 68.9 | 48.6 | 16.9 |
| Clothing | 133 | 69.2% | 55.6 | 33.8 | 6.8 |

| | Number of Firms | All Types of Derivatives (%) | Foreign Exchange (%) | Interest Rate (%) | Commodity (%) |
|---|---|---|---|---|---|
| Construction | 443 | 58.0% | 42 | 35.9 | 7 |
| Consumer goods | 281 | 52.0% | 43.4 | 31 | 3.6 |
| Durables | 225 | 59.6% | 53.8 | 30.7 | 5.3 |
| Fabricated products | 56 | 75.0% | 62.5 | 42.9 | 10.7 |
| Food | 358 | 67.3% | 52 | 43.6 | 16.5 |
| Machinery | 929 | 68.7% | 60.6 | 30.1 | 3.3 |
| Mines | 241 | 58.9% | 41.5 | 20.3 | 35.7 |
| Miscellaneous | 2881 | 50.8% | 36.6 | 26.1 | 2.8 |
| Oil | 276 | 71.4% | 38.4 | 38.4 | 50.4 |
| Retail | 403 | 60% | 37.7 | 37.7 | 3.2 |
| Steel | 164 | 73.2% | 60.4 | 43.3 | 30.5 |
| Transportation | 350 | 69.1% | 52.9 | 47.4 | 17.1 |
| Utilities | 243 | 84% | 43.6 | 61.7 | 44.4 |
| All firms | 7319 | 60.3% | 45.2 | 33.1 | 10 |

*14: Source Bartram et al. 2009 and current research*

## Ghana

| Company | Industry | Market capitalisation (Reuters) 31 Dec 2009 (R'm) | Published financials | Derivatives used | Swaps | Forwards | Options | Futures | ESOP |
|---|---|---|---|---|---|---|---|---|---|
| ECOBANK GHANA LIMITED | Banking | N/A | 2008/2009 | Yes | Yes-Interest and Currency | Yes-Currency | No | No | Yes |
| STANDARD CHARTERED BANK GHANA LTD. | Banking | 155290.40 | 2008 | Yes | Yes-Commodity | | | | |
| GHANA COMMERCIAL BANK LTD. | Banking | 3805.96 | 2008/2009 | No | | | | | |
| Guinness Ghana Breweries Ltd. | Brewery | N/A | 2009 | No | | | | | |
| Unilever (Ghana) Ltd. | Manufacturing | 17599.48 | 2008 | Yes | | Yes-Currency | | | |
| Societe General (SG-SSB) Limited | Banking | 2364.01 | 2008/2009 | No | | | | | |
| Fan Milk Limited | Manufacturing | 28658.13 | 2008/2009 | No | | | | | |
| TOTAL PETROLEUM GHANA LIMITED | Oil and Gas | 35112.66 | 2008 | No | | | | | |
| Produce Buying Company Limited | Agriculture | 976.95 | 2008 | No | | | | | |
| SIC Insurance Company Limited | Insurance | 1394.18 | 2008/2009 | No | | | | | |
| Enterprise Insurance limited | Insurance | N/A | 2008/2009 | | | | | | |
| UT Bank Limited | Banking | N/A | 2008/2009 | No | | | | | |
| CAL BANK LTD. | Banking | 1032.73 | 2008/2009 | Yes | No | No | No | No | Yes |
| Ghana Oil Company Limited | Oil and Gas | N/A | 2008/2009 | No | | | | | |
| COCOA PROCESSING COMPANY LIMITED | Agriculture | N/A | 2008 | No | | | | | |
| PZ CUSSONS GHANA | Manufacturing | 5656.04 | 2009 | Yes | | Yes-Currency | | | |
| AYRTON DRUGS MANUFACTURING COMPANY LTD | Pharmaceuticals | 682.94 | No | | | | | | |
| Benso Oil Palm Plantation Limited | Agriculture | 2605.40 | 2008 | Yes | | Yes-Currency | | | |
| Mechanical LLoyd Company Ltd. | Manufacturing | 1032.96 | 2008/2009 | No | | | | | |
| CFAO (Ghana) Ltd. | Distribution | 155.29 | No | | | | | | |
| Starwin Products Limited | Pharmaceuticals | 265.48 | No | | | | | | |
| Sam Wood Ltd. | Publishing | 151.82 | 2008 | No | | | | | |
| Golden Web Ltd. | Agriculture | 259.89 | No | | | | | | |

| Company | Industry | Market capitalisation (Reuters) 31 Dec 2009 (R'm) | Published financials | Derivatives used | Swaps | Forwards | Options | Futures | ESOP |
|---|---|---|---|---|---|---|---|---|---|
| ALUWORKS LTD | Manufacturing | 2286.92 | 2008/2009 | No | | | | | |
| Pioneer Kitchenware Ltd. | Manufacturing | 513.77 | No | | | | | | |
| Accra Brewery Company Ltd. | Brewery | 516.36 | 2008/2009 | No | | | | | |
| Transaction Solutions (Ghana) Limited | ICT | 477.12 | No | | | | | | |
| Camelot Ghana Limited | Manufacturing | 812.62 | 2008/2009 | No | | | | | |
| The Trust Bank Ltd | Banking | 10305.85 | 2008 | No | | | | | |
| Clydestone (Ghana) Limited | ICT | N/A | No | | | | | | |
| HFC BANK (GHANA) LIMITED | Banking | 3148.91 | 2008/2009 | Yes | Yes- Interest | No | No | No | Yes |
| Gold Coast Resources Limited | Mining | N/A | No | | | | | | |
| AFRICAN CHAMPION INDUSTRIES LIMITED | Manufacturing | 668.70 | 2009 | No | | | | | |
| ANGLOGOLD ASHANTI LIMITED | Mining | 1597.69 | No | | | | | | |
| GOLDEN STAR RESOURCES LTD. | Mining | 5293644319.31 | 2008/2009 | Yes | | Yes- Currency and Commodity | | | |
| Intercontinental Bank of Ghana Limited | Banking | N/A | 2008/2009 | No | | | | | |

The figures in red are highlighted as potential errors in the data listed on Reuters. Nine of the companies did not have their market capitalisation information listed on Reuters. The exchange rate used for calculation of the market capitalisations was as at 31st December 2009.

## Nigeria

| Company | Industry | Market capitalisation (Reuters) 31 Dec 2009 (R'm) | Published financials | Derivatives used | Swaps | Forwards | Options | Futures | ESOP |
|---|---|---|---|---|---|---|---|---|---|
| Nigerian Breweries Plc | Brewery | N/A | 2008/2009 | No | | | | | |
| FIRST BANK OF NIGERIA PLC | Banking | N/A | 2008/2009 | Yes | | | | | |
| ZENITH BANK PLC | Banking | N/A | 2008/2009 | No | | | | | |
| GUARANTY TRUST ASSURANCE PLC | Banking | N/A | 2008/2009 | Yes | Yes- Interest Rate | | | | Yes |
| United Bank For Africa Plc | Banking | 531.96 | 2008/2009 | No | | | | | |
| DANGOTE CEMENT PLC | Agriculture | N/A | 2008/2009 | No | | | | | |
| BENUE CEMENT COMPANY Plc | Construction | N/A | 2009 | No | | | | | |
| GUINNESS NIGERIA PLC | Brewery | N/A | 2008/2009 | No | | | | | |
| NESTLE NIGERIA PLC | Manufacturing | N/A | 2008/2009 | No | | | | | |
| Stanbic - IBTC Bank Plc | Banking | 367.94 | 2008/2009 | Yes | | Yes- Currency | | | |
| Access Bank Nigeria Plc | Banking | 374.34 | 2008/2009 | Yes | Yes- Interest Rate | Yes- Currency | | | |
| First City Monument Bank Plc | Banking | N/A | 2009 | No | | | | | |
| DIAMOND BANK NIGERIA LIMITED | Banking | N/A | 2008/2009 | No | | | | | |
| LAFARGE WAPCO PLC | Construction | N/A | 2008/2009 | No | | | | | |
| UNILEVER NIGERIA PLC | Manufacturing | N/A | No | | | | | | |
| Oando PLC | Energy | N/A | 2008/2009 | Yes | | | | | Yes |
| PZ Cussons Nigeria Plc | Manufacturing | N/A | 2008 | No | | | | | |
| UNION BANK OF NIGERIA PLC. | Banking | 295.54 | 2009 | No | | | | | |
| Flour Mills of Nigeria Plc | Agriculture | 1773.21 | 2008/2009 | No | | | | | |
| Fidelity Bank Plc | Banking | N/A | 2009 | No | | | | | |
| DANGOTE CEMENT PLC | Agriculture | N/A | 2008 | No | | | | | |
| uac of Nigeria Plc | Food | N/A | 2009 | No | | | | | |
| OCEANIC BANK INTERNATIONAL PLC | Banking | N/A | 2008 | No | | | | | |

| Company | Industry | Market capitalisation (Reuters) 31 Dec 2009 (R'm) | Published financials | Derivatives used | Swaps | Forwards | Options | Futures | ESOP |
|---|---|---|---|---|---|---|---|---|---|
| Skye Bank Plc | Banking | N/A | 2008/2009 | Yes | Yes- Currency | | Yes- Shares | | |
| Ecobank Nigeria Plc | Banking | 523.59 | 2008 | No | | | | | |
| TOTAL NIGERIA PLC | Oil and Gas | N/A | 2009 | No | | | | | |
| Intercontinental Bank plc | Banking | N/A | 2008 | No | | | | | |
| Platinum Habib Bank Plc | Banking | 65.02 | 2008 | No | | | | | |
| NIGERIAN BOTTLING COMPANY PLC | Manufacturing | N/A | 2008 | No | | | | | |
| JULIUS BERGER NIGERIA PLC | Construction | N/A | 2008/2009 | No | | | | | |
| Afribank Nigeria Plc | Banking | N/A | 2008 | No | | | | | |
| ASHAKA CEMENT PLC | Construction | N/A | 2008 | No | | | | | |
| AFRICAN PETRO | Oil and Gas | N/A | No | | | | | | |
| MOBIL OIL NIGERIA PLC. | Oil and Gas | N/A | 2009 | No | | | | | |
| CONOIL PLC | Oil and Gas | 1360.94 | 2009 | No | | | | | |
| SmithKline Beecham Plc | Pharmaceuticals | N/A | 2008 | No | | | | | |
| Sterling Bank Plc | Banking | 60.58 | 2008/2009 | Yes | | | | | Yes |
| Longman Nigeria Plc | Publishing | 444.78 | 2008/2009 | No | | | | | |
| UACN Property Development Company Plc | Property | 978.22 | 2008/2009 | No | | | | | |
| NATIONAL SPORTS LOTTERY PLC | | 214.26 | No | | | | | | |
| CHEVRON OIL NIGERIA PLC | Oil and Gas | N/A | No | | | | | | |
| CEMENT CO. OF NORTHERN NIGERIA PLC | Construction | 613.73 | 2009 | No | | | | | |
| UNITY BANK PLC | Banking | 41.37 | 2008/2009 | No | | | | | |
| Seven-Up Bottling Company PLC | Manufacturing | N/A | 2008 | No | | | | | |
| NATIONAL SALT COMPANY NIGERIA PLC | Manufacturing | 214.26 | No | | | | | | |
| STARCOMMS PLC | ICT | 86.20 | 2008/2009 | No | | | | | |
| Wema Bank Plc | Banking | N/A | 2009 | No | | | | | |
| CUSTODIAN AND ALLIED INSURANCE PLC | Insurance | N/A | 2008/2009 | Yes | | | Yes- Shares | | |
| Transnational Corporation of Nigeria Plc | Tourism | 24.63 | No | | | | | | |

| Company | Industry | Market capitalisation (Reuters) 31 Dec 2009 (R'm) | Published financials | Derivatives used | Swaps | Forwards | Options | Futures | ESOP |
|---|---|---|---|---|---|---|---|---|---|
| Cadbury Nigeria Plc. | Manufacturing | N/A | 2008 | No | | | | | |
| FINBANK PLC | Banking | N/A | 2008 | No | | | | | |
| OKOMU OIL PALM COMPANY Plc | Manufacturing | N/A | No | | | | | | |
| Spring Bank Plc | Banking | 37.43 | No | | | | | | |
| CONTINENTAL REINSURANCE PLC | Insurance | 56.64 | 2008 | No | | | | | |
| TOURIST COMPANY OF NIGERIA PLC | Tourism | 4685.80 | No | | | | | | |
| NIGERIAN AVIATION HANDLING COMPANY PLC | Aviation | 353.66 | 2008 | No | | | | | |
| PRESTIGE ASSURANCE PLC. | Insurance | N/A | No | | | | | | |
| UNION HOME SAVINGS & LOANS LIMITED | Banking | 41.87 | 2008 | No | | | | | |
| SCOA NIGERIA PLC | Transportation | N/A | No | | | | | | |
| UNIVERSAL INSURANCE COMPANY PLC | Insurance | 24.59 | No | | | | | | |
| A.G. Leventis PLC | Logistics | 121.66 | 2009 | No | | | | | |
| INTERNATIONAL BREWERIES PLC | Brewery | 111.81 | No | | | | | | |
| AVON CROWNCAPS & CONTAINERS PLC. | Manufacturing | N/A | No | | | | | | |
| Chemical and Allied Products plc | Manufacturing | 1377.01 | No | | | | | | |
| BETA GLASS NIG PLC | Manufacturing | 703.07 | No | | | | | | |
| Oasis Insurance Plc | Insurance | 73.39 | No | | | | | | |
| ASO SAVINGS AND LOANS PLC | Banking | 27.58 | 2008/2009 | No | | | | | |
| Presco Plc | Manufacturing | N/A | No | | | | | | |
| Daar Communications Plc | ICT | 27.58 | No | | | | | | |
| CAPITAL HOTELS PLC | Tourism | 67.87 | No | | | | | | |
| GOLDLINK INSURANCE PLC | Insurance | 46.79 | 2008 | No | | | | | |
| INTERCONTINENTAL WAPIC INSURANCE PLC | Insurance | N/A | No | | | | | | |
| B. O. C. GASES NIGERIA PLC | Oil and Gas | 663.97 | No | | | | | | |
| STACO INSURANCE Plc | Insurance | N/A | No | | | | | | |
| Nigerian Bag Manufacturing Company PLC | Manufacturing | 71.42 | 2008 | No | | | | | |
| Vitafoam Nigeria Plc | Manufacturing | 278.30 | 2008/2009 | No | | | | | |
| MUTUAL BENEFIT ASS PLC | Insurance | N/A | No | | | | | | |

| **Company** | **Industry** | **Market capitalisation (Reuters) 31 Dec 2009 (R'm)** | **Published financials** | **Derivatives used** | **Swaps** | **Forwards** | **Options** | **Futures** | **ESOP** |
|---|---|---|---|---|---|---|---|---|---|
| JOHN HOLT PLC | Retail | 457.09 | No | | | | | | |
| R.T. Briscoe (Nigeria) PLC | Retail | N/A | 2009 | No | | | | | |
| INTERNATIONAL ENERGY INSURANCE COMPANY PLC | Energy | 31.03 | No | | | | | | |
| May & Baker Nigeria Plc. | Pharmaceuticals | N/A | 2009 | No | | | | | |
| EQUITY ASSURANCE PLC | Insurance | 24.63 | No | | | | | | |
| Crusader (Nigeria) Plc | Insurance | 77.33 | 2009 | Yes | | | Yes- Shares | | |
| NORTHERN NIGERIA FLOUR MILLS PLC | Agriculture | 1076.24 | No | | | | | | |
| Chellarams Plc | Manufacturing | 695.99 | No | | | | | | |
| NIGER INSURANCE PLC | Insurance | 47.78 | No | | | | | | |
| CONSOLIDATED HALLMARK INSURANCE PLC | Insurance | 24.63 | 2008 | No | | | | | |
| IKEJA HOTEL PLC | Tourism | 42.85 | No | | | | | | |
| Eterna Plc | Oil and Gas | 245.29 | No | | | | | | |
| AIICO INSURANCE PLC. | Insurance | 38.91 | No | | | | | | |
| SOVEREIGN TRUST INSURANCE PLC | Insurance | N/A | No | | | | | | |
| Champion Breweries Plc | Brewery | N/A | No | | | | | | |
| NEM INSURANCE PLC | Insurance | N/A | 2009 | No | | | | | |
| NIGERIAN ROPES PLC. | Manufacturing | 450.20 | No | | | | | | |
| NIGERIAN-GERMAN CHEMICALS PLC | Manufacturing | 740.81 | No | | | | | | |
| CORNERSTONE INSURANCE CO. PLC. | Insurance | 25.61 | 2008 | No | | | | | |
| Union Diagnostic & Clinical Services Plc | Health Care | 30.05 | No | | | | | | |
| Academy Press Plc | Publishing | 265.98 | No | | | | | | |
| UNION DICON SALT PLC | Manufacturing | 295.57 | No | | | | | | |
| LINKAGE ASSURANCE PLC | Insurance | N/A | No | | | | | | |
| UNIVERSITY PRESS PLC | Publishing | 244.80 | 2008/2009 | No | | | | | |
| DEAP CAPITAL MANAGEMENT AND TRUST PLC | Fund | 99.34 | No | | | | | | |
| JOS INTERNATIONAL BREWERIES PLC | Brewery | 192.05 | No | | | | | | |
| SKYE SHELTER FUND PLC | Fund | 5091.38 | No | | | | | | |

| Company | Industry | Market capitalisation (Reuters) 31 Dec 2009 (R'm) | Published financials | Derivatives used | Swaps | Forwards | Options | Futures | ESOP |
|---|---|---|---|---|---|---|---|---|---|
| FTN COCOA PROCESSORS PLC | Agriculture | 25.61 | 2009 | Yes | | | Yes-Shares | | |
| UNIC INSURANCE PLC. | Insurance | N/A | No | | | | | | |
| EKOCORP PLC | Health Care | 275.11 | No | | | | | | |
| ROYAL EXCHANGE ASSURANCE NIGERIA PLC. | Insurance | N/A | 2008/2009 | No | | | | | |
| G. CAPPA PLC | Real Estate | N/A | No | | | | | | |
| MORISON INDUSTRIES PLC. | Manufacturing | N/A | No | | | | | | |
| LAW UNION & ROCK INSURANCE CO. PLC. | Insurance | 25.12 | No | | | | | | |
| STANDARD ALLIANCE INSURANCE PLC | Insurance | N/A | 2009 | No | | | | | |
| TRIPPLE GEE AND COMPANY PLC | Manufacturing | 238.40 | 2008 | No | | | | | |
| C&I Leasing Plc. | Financial Services | 128.07 | 2008/2009 | No | | | | | |
| RED STAR EXPRESS PLC | Transportation | 105.90 | 2009 | No | | | | | |
| ASSOCIATED BUS COMPANY PLC | Transportation | 37.43 | No | | | | | | |
| AIRLINE SERVICES AND LOGISTICS PLC | Aviation | N/A | 2008/2009 | No | | | | | |
| NAMPAK NIGERIA PLC | Manufacturing | 344.30 | 2009 | No | | | | | |
| CUTIX PLC | Manufacturing | N/A | 2009 | No | | | | | |
| BIG TREAT PLC | Manufacturing | 31.03 | 2008 | No | | | | | |
| JAPAUL OIL & MARITIME SERVICES PLC | Construction | 55.66 | 2009 | No | | | | | |
| Nigerian Energy Sector Fund Plc | Fund | N/A | 2008 | No | | | | | |
| ALUMINIUM EXTRUSION INDUSTRIES PLC | Manufacturing | 642.92 | No | | | | | | |
| UNITED NIGERIA TEXTILES PLC | Manufacturing | N/A | No | | | | | | |
| NIGERIAN ENAMELWARE PLC | Manufacturing | 2740.10 | 2008 | No | | | | | |
| CHAMS PLC | ICT | 28.08 | No | | | | | | |
| POLY PRODUCTS (NIGERIA) PLC. | Manufacturing | 230.52 | No | | | | | | |
| PREMIER BREWERIES PLC | Manufacturing | 45.81 | No | | | | | | |
| ALUMACO PLC | Manufacturing | 1362.75 | No | | | | | | |
| ABPLAST PRODUCTS PLC. | Manufacturing | 266.14 | No | | | | | | |

| Company | Industry | Market capitalisation (Reuters) 31 Dec 2009 (R'm) | Published financials | Derivatives used | Swaps | Forwards | Options | Futures | ESOP |
|---|---|---|---|---|---|---|---|---|---|
| NCR (Nigeria) PLC | ICT | N/A | No | | | | | | |
| Costain West Africa PLC | Construction | 187.17 | 2008/2009 | No | | | | | |
| UTC NIGERIA PLC | Manufacturing | N/A | No | | | | | | |
| BERGER PAINTS NIGERIA PLC | Manufacturing | 157.37 | No | | | | | | |
| Great Nigeria Insurance Plc | Insurance | 24.59 | No | | | | | | |
| LASACO ASSURANCE PLC. | Insurance | 29.06 | No | | | | | | |
| DN MEYER PLC | Manufacturing | 275.31 | No | | | | | | |
| I. P. W. A. PLC | Manufacturing | 71.31 | No | | | | | | |
| INCAR NIGERIA Plc | Retail | N/A | No | | | | | | |
| JULI PLC | Pharmaceuticals | 173.91 | No | | | | | | |
| GREIF NIGERIA PLC | Manufacturing | 741.03 | No | | | | | | |
| FIRST ALUMINIUM NIGERIA PLC | Manufacturing | 24.63 | No | | | | | | |
| PHARMA-DEKO PLC | Pharmaceuticals | 253.85 | No | | | | | | |
| EVANS MEDICAL PLC. | Pharmaceuticals | 52.70 | No | | | | | | |
| AFRICAN PAINTS (NIG.) PLC | Manufacturing | N/A | No | | | | | | |
| DUNLOP NIGERIA PLC | Manufacturing | N/A | No | | | | | | |
| LIVESTOCK FEEDS PLC | Agriculture | N/A | 2009 | No | | | | | |
| GUINEA INSURANCE PLC | Insurance | N/A | No | | | | | | |
| NIGERIAN WIRE AND CABLE PLC. | Construction | 47.70 | No | | | | | | |
| ADSWITCH PLC | Manufacturing | 113.11 | No | | | | | | |
| LENNARDS NIGERIA PLC. | Manufacturing | 209.80 | No | | | | | | |
| ELLAH LAKES PLC | Agriculture | N/A | No | | | | | | |
| NEIMETH INTERNATIONAL PHARMACEUTICALS PLC | Pharmaceuticals | 73.88 | 2008/2009 | Yes | | | Yes-Shares | | |
| P. S. MANDRIDES PLC | Manufacturing | 36.82 | No | | | | | | |
| STUDIO PRESS (NIGERIA) PLC. | Publishing | 148.12 | No | | | | | | |
| Thomas Wyatt Nigeria Plc | Manufacturing | 90.72 | 2008/2009 | No | | | | | |
| INTERLINKED TECHNOLOGIES PLC | ICT | 253.91 | No | | | | | | |

| Company | Industry | Market capitalisation (Reuters) 31 Dec 2009 (R'm) | Published financials | Derivatives used | Swaps | Forwards | Options | Futures | ESOP |
|---|---|---|---|---|---|---|---|---|---|
| VONO PRODUCTS PLC | Manufacturing | N/A | No | | | | | | |
| HALLMARK PAPER PRODUCTS PLC | Manufacturing | 163.94 | No | | | | | | |
| PREMIER BREWERIES PLC | Brewery | 45.81 | No | | | | | | |
| ROADS NIGERIA PLC | Transportation | N/A | 2009 | No | | | | | |
| CAPITAL OIL PLC | Oil and Gas | N/A | No | | | | | | |
| WIGGINS TEAPE Plc | Manufacturing | N/A | No | | | | | | |
| Tantalizers PLC | Tourism | 37.93 | No | | | | | | |
| GOLDEN GUINEA BREWERIES Plc | Brewery | N/A | No | | | | | | |
| NIGERIAN WIRE INDUSTRIES PLC | Construction | N/A | No | | | | | | |
| OMATEK VENTURES PLC | ICT | 24.63 | No | | | | | | |
| ALBARKA AIR PLC | Aviation | N/A | No | | | | | | |
| NEWPAK PLC | Publishing | N/A | No | | | | | | |
| ABOSELDEHYDE LABORATORIES PLC | Manufacturing | N/A | No | | | | | | |
| TROPICAL PETROLEUM PRODUCTS PLC | Oil and Gas | N/A | No | | | | | | |
| SMART PRODUCTS NIGERIA PLC | Agriculture | 74.19 | No | | | | | | |
| HONEYWELL FLOUR MILLS PLC | Agriculture | N/A | No | | | | | | |
| STOKVIS NIG PLC | Agriculture | N/A | No | | | | | | |
| AFROIL PLC. | Oil and Gas | 17770.63 | No | | | | | | |
| IHS NIGERIA PLC | ICT | 208.52 | 2009 | No | | | | | |
| UNION VENTURES & PETROLEUM PLC | Oil and Gas | 30.53 | No | | | | | | |
| West Africa Aluminium Products Plc | Manufacturing | N/A | No | | | | | | |
| RAK UNITY PETROLEUM PLC | Oil and Gas | 25.54 | No | | | | | | |
| FIRST ASSURANCE PLC | Insurance | 29.42 | No | | | | | | |
| Boots Company Nigeria PLC | Pharmaceuticals | N/A | No | | | | | | |
| BECO PETROLEUM PRODUCT PLC | Manufacturing | N/A | 2009 | No | | | | | |
| GUARANTY TRUST ASSURANCE PLC | Insurance | N/A | 2009 | No | | | | | |
| Aviation Development Company Plc | Aviation | N/A | No | | | | | | |
| e-TRANZACT INTERNATIONAL PLC | ICT | 319.08 | No | | | | | | |

| Company | Industry | Market capitalisation (Reuters) 31 Dec 2009 (R'm) | Published financials | Derivatives used | Swaps | Forwards | Options | Futures | ESOP |
|---|---|---|---|---|---|---|---|---|---|
| FIDSON HEALTHCARE PLC | Health Care | 87.68 | No | | | | | | |
| ABBEY BUILDING SOCIETY PLC | Banking | N/A | 2009 | Yes | | | Yes- Shares | | |
| Investment and Allied Assurance Plc | Fund | 24.63 | No | | | | | | |
| Ceramic Manufacturers Nigeria plc | Manufacturing | N/A | No | | | | | | |
| FLEXIBLE PACKAGING PLC | Manufacturing | N/A | No | | | | | | |
| First Capital Investment Trust Plc | Fund | N/A | No | | | | | | |
| West African Glass Industry Plc | Manufacturing | N/A | No | | | | | | |
| TRANS NATIONWIDE EXPRESS PLC | Transportation | 319.41 | No | | | | | | |
| AFRIK PHARMACEUTICALS PLC | Pharmaceuticals | 33.64 | No | | | | | | |
| ARBICO PLC | Construction | 1700.57 | No | | | | | | |
| OKITIPUPA OIL PALM Plc | Oil and Gas | N/A | No | | | | | | |
| AFROMEDIA PLC | ICT | 39.40 | No | | | | | | |
| Regency Alliance Insurance Plc | Insurance | N/A | No | | | | | | |
| Multiverse Resources Plc | Mining | 24.63 | No | | | | | | |
| NIGERIAN TEXTILES MILLS PLC | Manufacturing | N/A | No | | | | | | |
| CAPPA & D?ALBERTO PLC | Construction | 5517.98 | 2009 | No | | | | | |
| Nigerian Sewing Machine Manufacturing Company plc | Manufacturing | N/A | No | | | | | | |
| NIGERIAN CEMENT COMPANY plc | Construction | N/A | No | | | | | | |
| CFAO NIGERIA PLC | Retail | N/A | No | | | | | | |
| UDEOFSON GARMENT FACTORY NIGERIA PLC | Manufacturing | N/A | No | | | | | | |
| AFPRINT NIGERIA PLC | Publishing | N/A | 2008 | No | | | | | |
| CONFIDENCE INSURANCE PLC | Insurance | 33.26 | No | | | | | | |
| KRABO NIGERIA | Manufacturing | N/A | No | | | | | | |
| DAILY TIMES PLC | Publishing | N/A | No | | | | | | |
| Anino International PLC | Pharmaceuticals | N/A | No | | | | | | |
| Rokana Industries Plc | Manufacturing | 30.88 | No | | | | | | |
| Nigeria International Fund Plc | Fund | N/A | No | | | | | | |

| Company | Industry | Market capitalisation (Reuters) 31 Dec 2009 (R'm) | Published financials | Derivatives used | Swaps | Forwards | Options | Futures | ESOP |
|---|---|---|---|---|---|---|---|---|---|
| FOREMOST DAIRIES PLC | Agriculture | N/A | No | | | | | | |
| UnityKapital Assurance Plc | Insurance | N/A | No | | | | | | |
| PORTLAND PAINTS AND PRODUCTS NIGERIA PLC | Manufacturing | N/A | No | | | | | | |
| COURTEVILLE INVESTMENT PLC | Fund | 24.63 | No | | | | | | |
| AFRICAN ALLIANCE INSURANCE PLC | Insurance | 42.85 | No | | | | | | |
| Resort Savings & Loans Plc | Banking | N/A | No | | | | | | |
| MTECH COMMUNICATIONS PLC | ICT | 45.29 | No | | | | | | |
| MASS TELECOM INNOVATION NIGERIA PLC | ICT | 24.63 | No | | | | | | |
| MCNICHOLS PLC | Manufacturing | N/A | No | | | | | | |
| First Inland Bank Nigeria Plc | Banking | N/A | 2008 | No | | | | | |

The figures in red are potentially incorrect as they are clear outliers. The exchange rate used for calculation of the market capitalisations was as at 31st December 2009.

# B Example of Individual Company Findings

| COMPANY | GT Bank | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Industry: Banking | | SWAPS | | | FORWARDS | | OPTIONS | | | FUTURES | ESOP |
| 1 | **Market cap at year-end** | R'm | | | | | | | | | | |
| | | | | | | | | | | | | |
| 2 | **Has the company entered into the following during** | | | | | | | | | | | |
| | **- the financial year ended 2009** | | No | | | No | | No | | | No | Yes |
| | **- the financial year ended 2008** | | Yes | | | No | | No | | | No | Yes |
| | | | Interest | Commodity | Currency | Currency | Commodity | Commodity | Currency | Share | Commodity | |
| 3 | **If so, specify** | | | | | | | | | | | |
| | **- the financial year ended 2009** | | No | No | No | No | No | No | No | No | No | |
| | **- the financial year ended 2008** | | Yes | No | No | No | No | No | No | No | No | |
| | | | | | | | | | | | | |
| 3 | **Quantify the fair value as at the year end** | R'm | | | | | | | | | | |
| | **- 2009** | | | | | | | | | | | 4 540 285 |
| | | | | | | | | | | | | |
| 4 | **Dilutive effect of share options as at end of 2009** | | | | | | | | | | | 0.00% |

# C Literature study comparison table

| Study | Data Year | Countries | Response Rate | Derivative Usage |
|---|---|---|---|---|
| Bodnar, Hayt, Marston and Smithson (1995), Wharton Survey of Derivatives Usage by US Nonfinancial Firms, [Wharton Survey Style Study] | 1994 | United States | 26.5% | 35.0% |
| Phillips, A.L., (1995) Derivatives Practices and Instrument Survey [Wharton Survey Style Study]: | 1995 | United States | | 63.2% |
| Bodnar, Hayt and Marston's (1996), Wharton Survey of Derivative Usage by US Non-Financial Firms, [Wharton Survey Style Study]: | 1995 | United States | 17.5% | 41.0% |
| Grant, K. and Marshall, A.P., (1997), Large UK Companies and Derivatives, [Wharton Survey Style Study]: | 1994/1995 | United Kingdom | | 90.0% |
| Berkman, Bradbury and Magan (1997), An International Comparison of Derivative Use, [Wharton Style Study]: | 1997 | New Zealand | 63.7% | 53.1% |
| Bodnar, Hayt and Marston, (1998), 1998 Wharton Survey of Derivative Usage by US Non-Financial Firms, [Wharton Survey Style]: | 1998 | United States | 20.7% | 50.1% |
| Bodnar, G.M. and Gerbhardt, G., (1999) - Derivatives Usage in Risk Management by US and German Non-Financial Firms: A Comparative Survey, [Wharton Style Survey]: | 1997 | United States and Germany | 34.2% | 57% (US)/78% (Ger) |
| Jalilvand, A. (1999), Why firms use derivatives-Canada | 1999 | Canada | 28.0% | 75.0% |
| Alkeback, P. and Hagelin, N. (1999), Derivatives Usage by Non-financial Firms in Sweden with an International Comparison [Wharton Style Survey]: | 1996 | Sweden | 76.6% | 52.0% |
| Prevost, A.K., Rose, LC. and Miller, G (2000), Derivatives Usage and Financial Risk Management in Large and Small Economies: A Comparative Analysis, [Wharton Style Survey]: | 1999 | New Zealand | 46.4% | 67.1% |

| Study | Data Year | Countries | Response Rate | Derivative Usage |
|---|---|---|---|---|
| De Ceuster, M.J.K., Durinck, E., Lavern, E. and Lodewyckx, J., (2000), A survey into the use of derivates by large non-financial firms operating in Belgium, [Wharton Style Survey] | 1997 | Belgium | 28.1% | 65.8% |
| Mallin, Ow-Yong and Reynolds (2001), Derivative usage in UK non-financial listed companies , [Wharton Style Survey]: | 1997 | United Kingdom | 28.9% | 60.0% |
| Bodnar, G. M., de Jong, A. and Macrae, V. (2001), The Impact of Institutional Differences on Derivative Usage: A Comparative Study of US and Dutch Firms, [Wharton Style Study]: | 1998 | Holland | 50.3% | 60.0% |
| Bailly, N., Browne, D., Hicks, E., and Skerrat, L. (2003) UK corporate use of derivatives | 1998 | United Kingdom | 37.2% | 72.0% |
| Shu, P., Chen, H. (2003), The Determinants of Derivatives Use: Evidence from Non-Financial Firms in Taiwan, [Annual Report Style Survey]: | 1997-1999 | Taiwan and Singapore | n/a | 31%-37% |
| Alkeback, P., Hagelin, N., Pramborg, B., Derivative usage by non-financial firms in Sweden 1996 and 2003: What has changed? | 2003 | Sweden | | 59.0% |
| Sheedy, E., (2006), Corporate risk management in Hong Kong and Singapore, [Wharton Style Survey] | 2006 | Hong Kong and Singapore | | 81% (HK) / 75% (Sing) |
| El-Masry, A.A., (2006), Derivatives use and risk management practices by UK nonfinancial companies, [Wharton Style Survey]: | 2001 | United Kingdom | 43.1% | 67.0% |
| Bartram S., Brown G. and Conrad, J. (2008), The Effects of Derivatives on Firm Risk and Value, [Annual Reports Style]: | 2000/2001 | Global | n/a | 60.5% |
| Al-Momani, R. and Gharaibeh, M.R., (2008) Foreign exchange risk management practices by Jordanian nonfinancial firms, [Wharton Style Survey]: | 2008 | Jordan | 72.5% | n/a |
| Brunsell, Hansson and LiljeBlom (2009), The Use of Derivatives in Nordic Firms, [Wharton Style | 2009 | Denmark, Finland, Iceland, | 9.1%-24.2% | 61.60% |

| Study | Data Year | Countries | Response Rate | Derivative Usage |
|---|---|---|---|---|
| Survey]: | | Sweden. | | |
| Bartram, S.M., Brown, G.W., and Fehle, F., (2009), International Evidence on Financial Derivative Usage, [Annual Reports Style] | 2009 | Global | n/a | 60.3% |

# D Glossary

This section contains the glossary of terms and the details of two key standard setting bodies in international accounting and derivatives trading.

| | |
|---|---|
| IAS | International Accounting Standards |
| IASB | International Accounting Standards Board |
| IFRS | International Financial Reporting Standards |
| SAS | Statement of Accounting Standards |
| ESOP | Employee Stock Option Programme |
| ISDA | International Swaps and Derivatives Association |
| CBOT | Chicago Board of Trade |
| IOSCCO | International Organization of Securities Commissions |
| ROSC | Report on the Observance of Standards and Codes |
| IMF | International Monetary Fund |
| BIS | Bank of International Settlements |
| FEC | Forward Exchange Contract |
| OTC | Over the Counter |

*International Swaps and Derivatives Association (ISDA)*

ISDA caters to the OTC derivatives market and is the largest global financial trade association by number of member firms. Since its inception in 1985, ISDA has been a pioneering force in OTC derivatives driving improved regulation and standardisation. Their goal is to reduce the risks associated with trading derivatives not the risks inherent in the derivatives themselves. They promote transparency within the shrouded OTC market. ISDA developed the standard for OTC derivatives called the ISDA Master Agreement. They are also active in the publication of industry information and thought leadership and are active in public policy.

*The IFRS Foundation and the IASB*

The International Financial Reporting Standards (IFRS) Foundation is an independent, non-governmental non-profit organisation whose objectives are[79]:*"to develop a single set of high quality, understandable, enforceable and globally accepted international financial reporting standards (IFRSs) through its standard-setting body, the IASB; to promote the use and rigorous application of those standards; to take account of the financial reporting needs of emerging economies and small and medium-sized entities (SMEs); and to bring about convergence of national accounting standards and IFRSs to high quality solutions."*

The International Accounting Standards Board (IASB) is the standard setting body of the IFRS and is responsible for the formulation and publication of the IFRS Standards.



[79] http://www.ifrs.org/The+organisation/IASCF+and+IASB.htm