Derivatives usage in Egypt: a study of the use of derivative financial instruments by Egyptian companies listed on the Egyptian Stock Exchange

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Background and introduction

1. Introduction

In the absence of market imperfections, risk management cannot create value[1]. There would be no demand for hedging instruments (including derivatives) in the absence of taxes, agency costs, information asymmetry or transaction costs. Financial theory proposes two main sets of explanations for risk management: firstly, risk management is a means to maximize firm value by reducing the costs of financial distress (hedging can allow firms to increase debts capacity and raise funds at lower costs), reducing taxation (reducing earnings volatility and therefore decreasing expected taxes) and reducing the effects of information asymmetry. Secondly, the reasons to hedge can be found by reference to economies of scale: the majority of studies have found a positive correlation between firm size and the use of derivatives, although size is believed to be a constraining factor rather than a determining factor for risk management.

It is proposed by Schiozer and Saito (2009) that firms in emerging economies such as Brazil, Argentina (and arguably Egypt), manage risks for different reasons when compared to mature economies such as the US. Emerging economies are often characterized by high volatility of exchange and interest rates. Additionally, there is often a scarcity of domestic funding that leads firms to raise funds on foreign capital markets to finance investment projects. Foreign denominated debt has always proved to produce significant risk exposure for emerging market firms.

This research was undertaken to gain insight into the use of derivatives by Egyptian firms. The majority of previous research into derivative usage has focused on developed economies with little similar research into emerging economies and even less research into Middle Eastern economies such as Egypt.

A study into elements of the accounting practices by businesses in Egypt needs to be contextualized in terms of the historical, cultural and socio-economic factors that shape the need for accounting and disclosure in Egypt.

The study is arranged as follows: section one introduces development of derivatives markets in Africa, cultural considerations influencing the Egyptian society, economy, stock exchange and the cultural influence on the development of the accounting system in Egypt. The history and development of the Egyptian stock market is also introduced to provide further context to the results of the study. Next we define the derivative financial instruments that are most commonly utilized, the role of derivatives and risk management.

Section two discusses the observations from previous studies conducted on the topic in other countries most notably the USA, United Kingdom, some Western European and Eastern Asia countries and New Zealand.

The third section outlines the research methodology employed to collect and analyse data relevant to this study. The fourth section sets out the analysis and results of the study.

[1] Schiozer, R.F. and Saito, R., (2009), The determinants of currency risk management in Latin American non-financial firms, Emerging Markets Finance & Trade, 45(1), 49-71

1.1.Development of derivatives markets in Africa

The derivatives market in Africa is small; South Africa is the only sub-Saharan country that has an established and active derivatives market. According to Adeglan (2009)2, the market was established to further develop the financial system, enhance liquidity, manage risk, and meet the challenges of globalization.

Similar to other emerging derivatives markets, the development of South Africa's derivatives market arose from the requirement for South African businesses to "self-insure" against volatile capital flows and manage financial risk associated with the high volatility of asset prices.

The South African market comprises two broad categories of derivatives, namely options and futures. Within these two categories a wide range of instruments are identified: warrants, equity futures and options, the agricultural commodity futures and options, interest rate futures and options, currency futures and fixed income derivatives. The fixed income derivatives are made up of bond futures, forward rate agreements (FRAs), vanilla swaps, and standard bond options.

In contrast and according to the African Development Bank, the Egyptian derivatives market is in its embryonic stage3. The Central Bank of Egypt regulates the banking derivatives market and restricts the use of interest rate swaps. The products offered in Egypt are mainly foreign exchange swaps and forwards, with maturities no longer than three years.

1.2.Egyptian culture and its influence over the economy and accounting system

Brief history of the modern Egyptian economy

Egypt is arguably one of the world's oldest civilisations. Egypt was unified around 3000 BC, when the kings of the south of the country absorbed their northern neighbours into a single state, with a newly-founded capital in the north, at Memphis (about 20km - 12 miles - south of modern Cairo). It was after this event, during the first two dynasties, that the ground-rules of Egyptian society were laid and the hieroglyphic script developed.[4]

Modern Egypt evolved from the time of Muhammad Ali's rule in early 19th century and his launching of Egypt's modernization project that involved building a new army and suggesting a new map for Egypt.[5]

Muhammad Ali's dynasty became practically independent from the Ottoman rule, following his warfare campaigns against the Empire and his ability to enlist large scale armies, allowing him to control Egypt as well as parts of North Africa and Middle East. In 1882, the Khedivate of Egypt becomes part of the British sphere of influence in the region, a situation that conflicted with its position as an autonomous vassal state of the Ottoman Empire. The country became a British

[2] Adelegan, O.J., (2009), The Derivatives Market in South Africa: Lessons for sub-Saharan African Countries, Working Paper No. 09/196
[3] http://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/AfDB-Guidebook-EN-web.pdf
[4] http://www.bbc.co.uk/history/ancient/egyptians/great_dynasties_gallery_01.shtml
[5] http://en.wikipedia.org/wiki/History_of_modern_Egypt

protectorate in 1915 and achieved full independence in 1922, becoming a kingdom under the rule of Muhammad Ali's dynasty, lasting until 1952.

Gamal Abdel Nasser established a one party state, known as the Republic of Egypt, following the 1952 Egyptian revolution. Egypt was ruled autocratically by three presidents over the following six decades, by Nasser from 1954 until his death in 1970, by Anwar Sadat from 1971 until his assassination 1981, and by Hosni Mubarak from 1981 until his resignation in the face of the 2011 Egyptian revolution.

From 1991, Mubarak undertook an ambitious domestic economic reform program to reduce the size of the public sector and expand the role of the private sector. During the 1990s, a series of International Monetary Fund arrangements, coupled with massive external debt relief resulting from Egypt's participation in the Gulf War coalition, helped Egypt improve its macroeconomic performance.

The economy of Egypt flourished during the 1990s and 2000s. The Government of Egypt tamed inflation bringing it down from double-digit to a single digit. Gross domestic product (GDP) per capita based on purchasing-power-parity (PPP) increased fourfold between 1981 and 2006, from US$ 1355 in 1981, to US$ 2525 in 1991, to US$ 3686 in 2001 and to an estimated US$ 4535 in 2006.

As of May 2011, the country is under interim military rule; elections were performed on 28 November 2011.

Accounting in Egypt

Egypt is a developing nation at the early stages of transition to a market economy. It is one of the largest economies in the Middle East and its stock market dates back to 1882 and was one of the most active stock markets in the 1950s (Dahawy et al, undated)[6].

Egypt faced a socialist era from about the mid 1950s to the early 1960s that resulted in large scale nationalization of businesses due to the Egyptian government setting a central planned economic model. This resulted in a very dominant public sector. During this time, the Egyptian stock exchange eventually became inactive and remained so for about thirty years. In the 1970s, the Egyptian government started to liberalize the economy and attempted to revive the accounting profession, leading to some regulation over technical matters.

The government issued the Company Act Law in 1981 that allowed the establishment of different types of private companies: joint stock companies, limited liability and limited by shares partnerships. This same law required auditing of the financial statements of private sector companies for the first time. The early financial reports of private sector companies were considered unreliable as the law focused on the type of reports provided, types of records, formats and audit procedures at the expense of raising queries regarding the technical issues such as recording transactions and the accounting measures used.

Increasing deficits in the Egyptian economy resulted in a large scale economic reform program between Egypt, the World Bank and the IMF starting in 1991 that was aimed at increasing

[6] Dahawy, K, Shehata, N.F. and Ramsopher, T, (Undated), The State of Accounting in Egypt: A Case.

privatization and developing the stock market. Elements of the program included reducing state subsidies and diverting them to poorer economies, privatization of state owned companies to reduce the public sector size, and increasing energy and transport prices to more open market, realistic levels.

1.3.Derivative financial instruments defined

What is a derivative?

Modern derivative financial instruments developed from the early 1970s due mostly for demand for risk management and innovation in financial markets to address risks faced by corporations.

In risk management of the underlying assets using financial derivatives, the basic strategy is hedging, that is the trader holds two positions of equal amounts but opposite directions, one in the underlying markets, and the other in the derivatives markets, simultaneously.

This risk management strategy is based on the following reasoning: it is believed that under normal circumstances, prices of underlying assets and their derivatives change roughly in the same direction with basically the same magnitude; hence losses in the underlying assets (derivatives) markets can be offset by gains in the derivatives (underlying assets) markets; therefore losses can be prevented or reduced by combining the risks due to the price changes.

All firms face various types of financial risks in performing their daily activities. Coping with such risks by moving operations across national borders on a constant basis is neither practical nor probable. Derivative markets have made it possible to manage financial risks in a cost effective manner by reducing the total risk in the system or by shifting them to other economic agents who are willing to bear these risks, thus reducing overall risk exposures.[7]

A derivative can be defined as a security whose price is dependent upon or derived from one or more underlying assets. The derivative itself is merely a contract between two or more parties. Its value is determined by fluctuations in the underlying asset. The most common underlying assets include stocks, bonds, commodities, currencies, interest rates and market indexes. Most derivatives are characterized by high leverage.

In the context of the IFRS framework[8], a financial instrument can be defined as: *"Any contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity".*

In terms of the IAS under IAS 39 (currently being replaced by IFRS 99[)] framework, the following is a definition of a 'derivative financial instrument':

> *A financial instrument with all three of the following characteristics:*

[7] De Custer, M.J.K., Durnick, E., Lavern, E. and Lodewyckx, J. (2000), A survey into the use of derivatives by large non-financial firms operating in Belgium
[8] http://download.pwc.com/ie/pubs/financial_instruments_under_ifrs.pdf
[9] International Financial Reporting Standard 9: Financial Instruments

(a) its value changes in response to the change in a specified interest rate, security price, commodity price, foreign exchange rate, index of prices or rates, a credit rating or credit index, or other variable (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

The most commonly found derivatives are as follows:

Forwards

A forward contract is a firm commitment between a buyer and a seller to buy or sell something at a specified time and at a specified price. The contract could be for foreign currency, gold, sugar, oil or any other underlying commodity. A variation on a forward contract is the forward contract for differences where the forward contract is settled in cash based on price movements.

The most common forward contract is known as the forward foreign exchange contract in which the buying party agrees to buy a specified amount of currency A for a specified currency B at a specified date in the future and at a specified exchange rate. The typical maturity dates for such contracts are one week, one month, two months, three months, six and twelve months beyond the spot date.

Futures

Futures are forward contracts traded on an exchange. Under an exchange traded futures contract, the investor (buyer) has to place margin. Initial margin is represents the exchanges view of what the investor could lose on a bad day; it can be likened to a deposit against the following day's losses. Variation margin is the actual movement in the market and must be settled immediately – no built up value therefore accumulates like a forward contract. Futures contracts are 'marked to market' and therefore futures are regarded as the most transparent derivative instruments.

Options

An option gives the holder, on payment of an insurance premium the right, but not the obligation, to buy ('call option') or sell ('put option') something in the future at a specified price and on a specified date or between specified dates. Listed options are known as warrants. Currency options give the holder on the immediate payment of a premium, the right, but not the obligation, to buy a specified amount of currency A and sell a specified amount of currency B at a specified exchange rate and on a specified date or between specified dates[10]. European options give the holder the right to exercise his option only on one date known as the exercise date. American options in contrast allow the holder the right to exercise his option at any time from the deal date up to the exercise date.

[10] Edwards, W. (2000) Key Financial Instruments

Swaps

Currency swaps involves the exchange of principal and interest in one currency for the same in another currency. It is considered to be a foreign exchange transaction and is not required by law to be shown on a company's balance sheet.

Interest rate swaps involves an agreement between two parties where one stream of future interest payments is swapped for another based on a specified principal amount. Interest rate swaps often exchange a fixed payment for a floating payment that is linked to an interest rate (most often the LIBOR). An entity will mostly utilize interest rate swaps to manage exposure to fluctuations in interest rates (interest rate risk).

Employee Share Options (ESOP)

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 asset is the equity of the company that the employee works for. These options are either stock or cash settled.

1.4.Objectives

This study will attempt to analyse the prevalence of derivatives usage by Egyptian companies listed on the Egyptian Stock Exchange.

This study attempts to answer the following research questions: to what extent are derivatives used by listed Egyptian companies? And what types of derivatives (and therefore their function) are used by Egyptian companies?

2. Literature review

2.1. Previous studies on the use of derivative financial instruments

The majority of studies, thus far, into the use of derivative financial instruments can be categorized into two distinct groups: the "Wharton survey style studies", which was a survey-style approach used by Bodner et al in their initial studies of this topic in 1994. The second group of studies relied on analyzing the disclosures of derivative financial instruments in company financial statements known as the 'Annual report style study'.

The analysis presented below represents a chronological summary of the major studies covering the use of derivative financial instruments. The studies have been categorized as either survey style or analysis style. Additionally, the literature review covers studies covering a broad selection of countries in mostly developed economies and emerging economies to a lesser degree.

Bodner, Hayt, Marston and Smithson (1995)

The study by Bodner, Hayt, Marston and Smithson (1995) was commonly regarded as one of the leading surveys into use of derivatives in countries around the world. The *questionnaire style survey* (commonly referred to as the *Wharton survey style study*) attempted to understand the prevalence of derivative use by 2000 large and small cap non financial firms in the USA. The survey achieved a response rate of 35% to the survey that defined derivatives as forwards, futures, and swaps. Banks were specifically excluded as they used and sold derivatives.

The results revealed that larger firms (those with a market value greater than $ 250m) used more derivative instruments (65% of the respondents were larger firms) than smaller firms. The results indicated that the larger firms could absorb the cost of establishing a derivatives program and risk exposures of the smaller firms may be small relative to standard contract sizes. Swaps were found to be the dominant instrument for interest rate risk management while forwards were found to be the leading foreign exchange risk management instrument. Hedging of firm commitment transactions was found to be the dominant reason for using derivatives.

Philips (1995)

Phillips (1995) performed a similar *Wharton style survey* study of members of the Treasury Management Association and their use of derivatives in the USA. He found that 63% of respondents used derivatives and mainly for hedging purposes. Many of the respondents to Phillips survey were financial institutions and this was in contrast to the earlier Bodner et al (1995) survey. Consistent with the Bodner et al (1995) results was the correlation between size of the firm and the prevalence of derivative usage.

Bodnar, Hayt and Marston (1996), Wharton Survey of Derivative Usage by US Non-Financial Firms

This *Wharton style survey* study was the follow up to the 1995 survey. Companies who responded were requested in the questionnaire to provide reasons why they did not use derivatives, if they did not make use of financial instruments such as derivatives. The sample group was the same randomly selected 2000 companies and this year included Fortune 500 companies that were not included in

the 1994 survey. In this survey, only 350 firms responded; this was a 50% lower response rate from the previous study.

The study revealed that larger companies (those with market capitalization > $250m) utilized derivatives extensively (59%) while only 13% of smaller market cap companies (those with market caps of <$50m) utilized derivatives. Companies in the Primary products and Manufacturing sectors used derivatives more than other sectors. The most common use for derivatives instruments was for risk management purposes.

The survey showed that firms that use derivatives for hedging purposes rank the importance of four different goals of their hedging strategies as follows: managing volatility in cash flows (most important with a response rate of 49%), managing volatility in accounting earnings (second most with a response rate of 42%), managing the market value of the firm (second least important with a response rate of 8%) and managing balance sheet accounts or ratios (least important with a response rate of 1%).

In terms of not using derivatives, 45% of respondents indicated that their companies did not face risks that warrant use of derivatives. Cost versus benefit was given as the second most important reason not to utilize derivatives. This was cited as one of the top three reasons for not using derivatives by 47% of non-users, with 12% citing this as the primary reason.

The study concludes that currently less than half of all non-financial firms use derivatives, although usage is heavily biased towards larger firms in the commodity and manufacturing sectors.

Berkman, Bradbury and Magan (1997), An International Comparison of Derivative Use

The *Wharton style survey* by Berkman *et al* studied the derivatives use by companies in New Zealand and contrasted these results with the results from the 1995 study by Bodner et al. The results showed that for companies with a market value of equity in excess of $ 250m, the use of derivatives was 100%; in contrast similar sized US firms showed 65% usage rate. Similarly, for smaller firms with market value of equity of less than $50m, the use of derivatives was 36% for New Zealand firms in contrast to 12% by US firms. The study also highlighted several differences in the types of derivative trading preferences between the two countries with 100% of New Zealand respondents opting for over-the-counter hedge products that are in contrast the USA's more active exchange traded derivatives markets.

The major use of derivatives in New Zealand (69% of responses) was to reduce the funding costs for firms that most likely reflected the foreign borrowing preferences by many New Zealand firms. Forward foreign currency contracts were the dominant choice of financial instrument used by the New Zealand firms suggesting their relatively higher exposure to currency fluctuations compared to US comparative firms. The dominant objective for New Zealand use of derivatives is to reduce earnings fluctuations (62%) compared to the US (49%). In this case, there is a possible link to the New Zealand accounting standards that allows firms to account for the short terms hedges at the forward rate.

Grant, K. and Marshall, A.P., (1997), Large UK Companies and Derivatives

The 1997 *Wharton style survey* by Grant and Marshall was the first survey of UK listed non-financial firms and was conducted by the UK Record Treasury Management using date from 1994 and 1995. The response rate was 91 and 55 in each of the respective years. The survey was focussed on Large UK Companies (by market capitalization). The results indicated that roughly 90% of Large UK firms utilized some type of derivative financial instrument. In comparison to Large US companies usage of 65%, the UK usage of 90% usage was significantly higher.

Bodner, Hayt and Marston, (1998), 1998 Wharton Survey of Financial Risk Management by US Non-Financial Firms

The *Wharton style survey* results revealed that the use of derivatives was not widespread. Less than 50% of firms participating in the survey utilized derivatives. It was noted that over the four year period since the previous survey, the firms who had used derivatives in past surveys, had maintained use and increased the intensity thereof; however, there was little evidence to show that more firms had started using the instruments. As in previous surveys, the most commonly used derivatives were foreign currency related [including amongst others uses: on-Balance Sheet exposures hedges (49%), anticipated transactions (42%) and repatriations (40%)].

The currency instruments were followed by interest rate, commodity, and equity derivatives. The purpose of using derivatives was risk management for easily identifiable contractual exposures. Overall, the survey results suggest that firms using derivatives have found benefits from doing so and thus have reduced risks for their businesses. It was suggested by the authors that non use of derivatives was driven mainly by lack of knowledge and negative public perception of derivatives. They further suggested that new financial reporting regimes for derivatives and hedging may influence a shift in derivative usage.

Bodner and Gebhardt, (1999), Derivatives Usage in Risk Management by US and German Non-Financial Firms: A Comparative Survey

The survey was a comparison of the 1995 *Wharton School survey* of US non-financial firms with a 1997 companion survey of German non-financial firms. The study attempted to match US and German firms in terms of their size and industry composition. The results indicated that German firms (78%) used more derivatives than comparable US firms (57%). Both countries utilized foreign currency derivatives the most, followed by interest rate derivatives and commodity derivatives.

Both US and German firms use derivatives mainly for risk management, German firms were focused mainly on managing accounting results while US firms were concerned with managing cash flow volatility. In comparison to the US, the German firms apply stricter internal policies to control and monitor derivative activities within their businesses.

Jalilvand, A. (1999), Why firms use derivatives-Canada

This *Wharton style survey* of 548 of the largest Canadian non-financial firms (by Sales revenue reported) achieved a response rate of 28%. The results indicated that companies disclosed the use of derivatives in their financial statements; the responding firms indicated use of Fowards, Swaps, and Futures. It is of interest to note that multinational companies (88%) in Canada were more likely to

use derivatives than national companies (56%). Firms operating in more regulated industries reported a lower usage rate. Users of derivatives were found to have higher treasury department costs and benchmark their transactions better than non users. Similarly, users of derivatives tend to have more integrated risk management programs than non users.

Prevost, A.K., Rose, LC. and Miller, G (2000), Derivatives Usage and Financial Risk Management in Large and Small Economies: A Comparative Analysis

The *Wharton style survey* by Prevost *et al* 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%. In this survey, 67.1% of the respondents utilized derivative financial instruments compared to the 53% identified by Berkman *et al*. (1997). As in the US based studies Bodner *et al* the motivation to use derivatives in New Zealand was associated with company size, capital structure and liquidity.

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

This *Wharton style survey* was of particular importance to my research as Belgium was considered by Hofstede (1991) as having a moderate power distance (indicative of a cultural hierarchy system as a fact of life) and a extremely high degree of uncertainty avoidance (lack of tolerance for ambiguity and the need for formal rules). Based on the above, the Belgium accounting system should portray statutory control, uniformity, conservatism, and secrecy. This is very similar to the Egypt.

It is suggested by the authors that different degrees of power distance and uncertainty avoidance may result in different rationales for hedging, control and reporting procedures.

The Belgium survey response rate was 65.8% for large firms (market value > $250m) which compares to the 65% from the Bodner *et al* (1995) survey. Belgium financial markets have what is known as Coordination Centres (“CCs”)that account for more than 80% of the Belgium-Luxemburg Economic Union; these CCs provide extensive hedging services with derivatives (78%).

The authors fund ambiguous evidence regarding firm size and derivative usage; on one hand large firms risk exposure are suited to standard contract sizes with more variety of risks to manage via derivatives. Alternatively, the costs of financial distress are less than proportional to firm size, and therefore firm size should be negatively related to the extent of hedging activities.

The Belgium results indicated that on a sector comparison basis, usage of derivatives to hedge risks was very high in the chemical industry. Users of derivatives handled more currencies. Overall, Belgium respondents considered locking in profits and reducing funding costs as the most important hedging rationales. Currency risk is the dominant risk faced by Belgium firms who participated in the survey (96% hedged for currency risks). Interest rate risk is the next category of risks hedged. The above categories of risks are managed by forward exchange contracts, and interest rate swaps. Over-the–counter (“OTC”) options and structured derivatives are also used occasionally. It remains to be seen in this research whether the results from this survey are in some manner related to those from the Egyptian company analysis.

Mallin, Ow-Yong and Reynolds (2001), Derivative usage in UK non-financial listed companies

This was a *Wharton style survey*. The authors presented the results of a 1997 survey sent to 800 firms. A total of 231 responses were received and analysed thus a response of 28.9% was achieved. The clear result from their analysis was that lage firms (by Turnover) used more derivative instruments to hedge risks. This compares favourably with previous similar studies such as Bodner *et al* (1995). Foreign exchange risk was the dominant risk to which OTC Forward derivatives were applied followed by OTC Options and swaps. Interest rate risk was the next most significant basket of risks that UK firms managed. Accounting earnings volatility management was the most important hedging strategy; this is in direct contrast to results from US firm surveys who hedge mainly for cash flow volatility. Cash flow management was the second most important use of derivatives by UK firms. General manufacturing and minerals sectors utilized derivatives to hedge foreign dividends more than 50% of the time. Forwards were reported as the dominant derivative instrument to manage committed transactions.

Bodnar, G.M., de Jong, A., Macrae,V., (2003), The Impact of Institutional Differences on Derivatives Usage: a Comparative Study of US and Dutch Firms

The *Wharton style survey* utilized the 1998 Wharton Survey of Financial Risk Management (*Bodnar et al., 1998*). This data set contains responses of 399 US firms from early 1998 (response rate of 20.7%). The authors used similar survey technique to gather data from 167 listed Dutch firms and produced 84 usable responses (response rate of 50.3%).

The survey results indicated that Dutch firms use derivatives more often to hedge financial risks than US firms for all size and industry classes. Dutch firms indicate a greater exposure to foreign exchange risk than US firms; a result that the author's state is driven by the fact that the Dutch economy is much more open than the US economy. Dutch firms show a lower level of concern with respect to a variety of derivatives usage issues than US firms. This result is consistent with more active analyst and minority shareholders monitoring of the management and stricter disclosure requirements in the USA. Furthermore, Dutch firms are less likely to incorporate their own views or act opportunistically when engaging in derivatives transactions than are US firms.

Bailly, N., Browne, D., Hicks, E., and Skerrat, L. (2003) UK corporate use of derivatives

The *Wharton style survey* was sent out in 1998 to 629 non-financial companies listed on the London Stock Exchange. The response rate was 37.2% that compared to similar US focused studies. Almost 72% of respondents indicated that their companies utilized derivatives. The authors found that derivative usage increased with firm size. In comparison to large US firms (with 59% derivative use), 77% of large UK firms used derivatives to manage risk. Manufacturing industry firms were the highest users of derivatives; theses firms faced foreign exchange price fluctuations. Foreign exchange risk was the most commonly managed exposure hedged by utilizing derivative instruments with the OTC forward being the main instrument type utilized. Swaps were the most preferred derivative to manage interest rate exposure.

Shu, P. and Chen, H., (2003), The Determinants of Derivatives Use: Evidence from Non-Financial Firms in Taiwan

This was an *Annual report style* survey where the authors collected empirical data from the annual financial reports of listed non-financial Taiwanese companies. The period covered was 1997, 1998 and 1999. The authors found that the use of derivatives as reported by companies was 31%, 35% and 37% in each of the respective periods mentioned above. These statistics compare similarly to the previous studies of the US markets that found 35% (in 1994) and 41% (in 1995) from the study by Bodner, Hayt, Marston and Smithson (1995).

In this study, the authors indicated that empirical evidence suggested the major influencing factors as to the use of derivatives included firm size related factors, the ratio of long term debt to total debt, the electronic industry dummy and the export ratio. The electronic industry is so called as it represents 54% of Taiwanese market capitalization and is the largest consumer of derivative financial instruments. The export factor is explained as the export proportion of sales that is connected to the firm's ability to manage the currency risk exposures and explains the dominance of the forward derivatives use. Overall, the dominant international trade focus of Taiwan drives its use and type of derivatives.

Lajili, K. and Zeghal, D., (2005), A Content Analysis of Risk Management Disclosures in Canadian Annual Reports

The *Annual report style* analysis was conducted on TSE 300 Canadian listed firms financial statements. The examination was focused on understanding the risk information disclosures contained in the annual financial statements for 1999. The results showed that foreign exchange risk was a significant reporting risk with hedging using forward contracts as the most preferred derivative. Option contracts were the second most widely used derivative followed by futures contracts. The second most significant risk category as reported was interest rate risk. Derivatives found in the financial statements to manage this risk included swaps and forward contracts.

Milos Sprcic, D., (2007), The use of derivatives as financial risk management instruments: The case of Croatian and Slovenian non financial companies

The author utilized a combination of *Wharton survey style* and *annual report analysis* to conduct his research into Croatian and Slovenian non financial companies used of derivatives in 2005. His response rate of 22% compared similarly with the 1998 Wharton survey by Bodner, Hayt and Marston (1998).

Forwards and swaps were found to be the most important and widely used derivatives amongst the two countries. In these countries, there is more emphasis on managing commodity price risk than foreign currency or interest rate risk. Options are the least utilized. Overall, Slovenian companies were found to have more developed risk management practices when compared to the Croatian firms. The study showed that Croatian and Slovenian hedging rationale for financial risk management behaviour cannot be easily predicted.

Al-Momani, R. and Gharaibeh, M.R., (2008), Foreign exchange risk management practices by Jordanian non-financial firms

This study employed the *Wharton style survey* plus secondary source information found in books, articles, e-papers and dissertations and theses. The objective was to understand the foreign currency risk and international business involvement, legal structure, firm size, sector, and management practices in the Jordanian environment. The response rate was 61% representing 73 of the 120 questionnaires sent out.

The analysis shows that 66 % of the Jordanian firms manage their foreign currency risk. The majority of the firms rely, however, on natural hedging techniques, and the use of more sophisticated techniques such as financial derivatives is not common practice by Jordanian firms. This study also showed a negative correlation between Jordanian firm size and use of risk management techniques. There was a positive correlation between managing exposures in the manufacturing sector and also with firms' international involvement. This would suggest that firms in Jordan with an export and / or import focus would engage in higher degrees of risk management activities. The result of the study conducted by the authors are of particular importance to this research report as the Jordanian risk management culture may be reflective of Egyptian risk management as the two countries share similar wider cultural viewpoints.

Bartram, S. M., Brown, G. W. and Conrad, J, (2008), The Effects of Derivatives on Firm Risk and Value

This was an *Annual report style* survey conducted using the annual reports of firms from either the 2000 or 2001 financial reporting years. Part of their criteria was that annual reports had to be available in English. The authors utilized a sample of 6,888 non-financial firms from 47 countries to examine the effect of derivative use on firms' risk measures and value.

The results of the research showed that across all countries, 60.5% of the firms in the sample used at least one type of derivative. Foreign exchange derivatives were the most common (45.5%), followed by interest rate derivatives (33.1%) and commodity price derivatives (9.8%). Forward contracts are the most used foreign exchange derivatives; swaps were the derivative instrument of choice for interest rate derivatives. Firms that use derivatives have lower estimated values of both total and systematic risk, suggesting that derivatives are used to hedge risk, rather than to speculate.

Of interest to this research, was that the authors bundled together results from Egyptian firm research together with Bahamas, Bermuda, Cayman Islands, Indonesia, Peru, Portugal, Turkey, and Venezuela as they collectively had very few observations that met the testing criteria. Only 21 firms were considered in the group; the results showed total usage at a level of 52.4% with foreign exchange derivatives being used at a frequency of 33%. There was insufficient data available to understand the extent of the Egyptian contribution to the above results.

Bartram, S.M., Brown, G.W. and Fehle, F.R., (2009), International Evidence on Financial Derivatives Usage

The large scale *Annual report style* study involved a global sample of 7319 company results from 50 countries. IAS 39 was the benchmark for companies that were part of the scope. The analysis

included searching non-financial companies annual reports in English for specific mention of the use of derivatives. Results showed 60.3% of global firms used derivatives; 45.2% of firms used foreign exchange derivatives and this was the globally dominant derivative. The Organisation for Economic Co-operations and Development ("OECD") country firms showed a higher usage rate compared to non OECD country firms. Derivatives are used at highest rates in the utility and chemicals industries with consumer goods showing the lowest usage rates.

Overall, the authors found that the decision to utilize derivatives is linked to important financial factors in a firm such as the leverage, debt maturity, holdings of liquid assets, dividend policy and operational hedges. A further important finding was that firms in less liquid derivatives markets typically in middle income countries, are less likely to hedge. From a policy perspective, the use of derivatives could aid in limiting the severity of economic downturns in developing countries. Thus the authors encourage development of local currency derivatives markets.

Summary

The prior studies into the uses of derivative financial instruments have shown that the dominant use of derivatives is for hedging purposes. The size and maturity of economies and markets in various countries reflects some differences in hedging strategies but were mostly aimed at reducing cash flow or accounting earnings variances.

The prior studies show a strong correlation between the use of derivatives and the size of the firm (in market value of equity terms). The firm size also correlates with the likelihood and frequency of derivatives usage.

Prior studies into the likelihood, frequency and use of derivatives were dominated by the so called '*Wharton Survey Style Study*' approach with fewer studies performed using the *'Annual report style study'* approach. Most of the current studies were performed in open economies such as the US, UK and most of Western Europe. Results consistently indicated a positive correlation between more open economies such as Germany and Netherlands and greater use of derivatives. Results from the Dutch study by Bodner, De Jong and Macrae (2001) into derivatives usage by Dutch firms compared to US firms, shows that Dutch firms are less concerned about outside perception of firm decisions and value generation thus are less likely to regard counter party risk as a troubling issue.

3. International Financial Reporting Standards: financial instruments and derivatives

3.1. IAS 32 (AC125) Financial Instruments: Presentation

IAS 32 sets the standards for presentation of financial instruments including derivative financial instruments. The objective [paragraph 2] of this Standard 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.

The principles in this Standard complement the principles for recognising and measuring financial assets and financial liabilities in IAS 39 Financial Instruments: Recognition and Measurement, and for disclosing information about them in IFRS 7 Financial Instruments: Disclosures. [11]

Definitions

The standard defines **financial instruments** as follows:

"A financial instrument is any contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity." The definition of financial instrument used in IAS 32 is the same the one used in IAS 39 (IFRS 9).

Financial Assets

The standard defines financial assets as:

(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) 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 puttable financial instruments classified as equity instruments in accordance with paragraphs 16A and 16B, instruments that impose on the entity an obligation to deliver to another party a pro rata share of the net assets of the entity only on liquidation and are classified as equity instruments in accordance with paragraphs 16C and 16D, or instruments that are 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*

[11] IAS 32 Financial Instruments: Presentation, issued by IASC Foundation, 1 January 2009

(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

Presentation objectives of Standard

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. (See 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.

Disclosure requirements

IAS 32 requires the disclosure of all factors relating to:

a) Timing of cash flows
b) Quantum of cash flows
c) Certainty of cash flows
d) Business purpose of the financial instrument
e) Risks associated with the instrument as well as management policies for risk management (In conjunction with IFRS 7)

In the guidance (AG20) provided with IAS 32, 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.

3.2. IAS 39 (and IFRS 9) Financial Instruments: Recognition and Measurement

The standard[12] read in conjunction with the Annexure A "Application guidance", defines the classification and measurement requirements for financial instruments. The standard excludes several financial instrument types including *inter alia*: interest in subsidiaries and similar investments accounted for in terms of IFRS 10, rights and obligations under leases to which IAS 17 applies and share based payments as contemplated under IFRS 2.

The definitions of the following terms are covered in IFRS 9 and IAS 32: de-recognition, derivatives, equity instrument, fair value, financial assets, financial guarantee contract, financial instrument and financial liability.

Definitions

The standard (section 9 of the standard) defines the recognition and measurement of assets as follows:

a) *"The **amortised cost** of a financial asset or financial liability is the amount at which the financial asset or financial liability is measured at initial recognition minus principal*

[12] International Accounting Standard 39; Financial Instruments: Recognition and Measurement

repayments, plus or minus the cumulative amortisation using the effective interest method of any difference between that initial amount and the maturity amount, and minus any reduction (directly or through the use of an allowance account) for impairment or uncollectibility.

b) *The **effective interest** method is a method of calculating the amortised cost of a financial asset or a financial liability (or group of financial assets or financial liabilities) and of allocating the interest income or interest expense over the relevant period.*
c) *The **effective interest rate** is the rate that exactly discounts estimated future cash payments or receipts through the expected life of the financial instrument or, when appropriate, a shorter period to the net carrying amount of the financial asset or financial liability.*
d) *When calculating the effective interest rate, an entity shall estimate cash flows considering all contractual terms of the financial instrument (for example, prepayment, call and similar options) but shall not consider future credit losses. The calculation includes all fees and points paid or received between parties to the contract that are an integral part of the effective interest rate (see IAS 18 Revenue), transaction costs, and all other premiums or discounts. There is a presumption that the cash flows and the expected life of a group of similar financial instruments can be estimated reliably. However, in those rare cases when it is not possible to estimate reliably the cash flows or the expected life of a financial instrument (or group of financial instruments), the entity shall use the contractual cash flows over the full contractual term of the financial instrument (or group of financial instruments).*
e) ***Transaction costs** are incremental costs that are directly attributable to the acquisition, issue or disposal of a financial asset or financial liability (see Annexure A paragraph AG13). An incremental cost is one that would not have been incurred if the entity had not acquired, issued or disposed of the financial instrument."*

Hedging

The standard describes the relationship between of the hedging instrument and the underlying hedged item and describes how the gain or loss on the hedging instrument should be accounted for in the entities records.

Hedging Instruments

For hedge accounting purposes, only instruments that involve a party external to the reporting entity (i.e. external to the group or individual entity that is being reported on) can be designated as hedging instruments *(section 73 of the standard).*

A single hedging instrument may be designated as a hedge of more than one type of risk provided that (a) the risks hedged can be identified clearly; (b) the effectiveness of the hedge can be demonstrated; and (c) it is possible to ensure that there is specific designation of the hedging instrument and different risk positions. *(section 76 of the standard)*.

Hedging items

According to the section 78:

"A hedged item can be a recognised asset or liability, an unrecognised firm commitment, a highly probable forecast transaction or a net investment in a foreign operation. The hedged item can be (a) a single asset, liability, firm commitment, highly probable forecast transaction or net investment in a foreign operation, (b) a group of assets, liabilities, firm commitments, highly probable forecast transactions or net investments in foreign operations with similar risk characteristics or (c) in a portfolio hedge of interest rate risk only, a portion of the portfolio of financial assets or financial liabilities that share the risk being hedged."

Similar to the instrument inclusion definition, only items that involve an external third party to the entity can be designated as hedged items. The exception to this is foreign currency risk of intra group assets or liabilities that may not be eliminated during consolidation of group entities.

The standard defines further the financial and non financial items. For financial items, the standard stipulates that assets and liabilities may not be designated at a net amount.

Hedge accounting

Sections 85 to 86 of the standard states that: *"hedge accounting recognises the offsetting effects on profit or loss of changes in the fair values of the hedging instrument and the hedged item".*

There are three types of hedging relationships:

" (a) fair value hedge: a hedge of the exposure to changes in fair value of a recognised asset or liability or an unrecognised firm commitment, or an identified portion of such an asset, liability or firm commitment, that is attributable to a particular risk and could affect profit or loss.

(b) cash flow hedge: a hedge of the exposure to variability in cash flows that (i) is attributable to a particular risk associated with a recognised asset or liability (such as all or some future interest payments on variable rate debt) or a highly probable forecast transaction and (ii) could affect profit or loss.

(c) hedge of a net investment in a foreign operation as defined in IAS 21.

The standard provides strict guidelines wherein a hedging relationship (hedged instrument / hedged item) may be accounted for under the hedge accounting as contemplated in the standard.

Current developments

IAS 39 is currently being phased out and replaced by IFRS9 under a current IFRS project that has three phases as gleaned from the IFRS website[13]:

Phases	Status
Phase 1: Classification and measurement	**Original publication** IFRS 9 *Financial Instruments* was published in November

13

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

	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. In December 2011, the Board amended IFRS 9 to require application for annual periods beginning on or after 1 January 2015 and to not require the restatement of comparative-period financial statements upon initial application. **Limited modifications to IFRS 9** On 15 November 2011, the Board tentatively decided to consider making limited modifications to IFRS 9.
Phase 2: Impairment methodology	The supplementary document *Financial Instruments*: *Impairment* was published in January 2011. The comment period closed on 1 April 2011 and re-deliberations are on-going.
Phase 3: Hedge accounting	The exposure draft *Hedge Accounting* was published in December 2010. The comment period closed on 9 March 2011 and re-deliberations have concluded.

On 12 November 2009, the IASB published IFRS 9 Financial Instruments which covers the classification and measurement of financial assets. The Board finalised this phase in time to allow, but not require, early application for 2009 year-end financial statements. On 28 October 2010 the requirements for classifying and measuring financial liabilities were added to IFRS 9. Most of the added requirements were carried forward unchanged from IAS 39. However, the requirements related to the fair value option for financial liabilities were changed to address the issue of own credit risk in response to consistent feedback from users of financial statements and others that the effects of changes in a liability's credit risk ought not to affect profit or loss unless the liability is held for trading.

According to the website, on 15 November 2011, the Board tentatively decided to consider making limited modifications to IFRS 9 on an expedited basis. For more information, visit the Limited modifications to IFRS 9 project page.

More recently, in December 2011, the Board issued Mandatory Effective Date of IFRS 9 and Transition Disclosures, which defers the mandatory effective date of IFRS 9 to annual periods beginning on or after 1 January 2015. Early application of IFRS 9 will continue to be permitted. The Board also amended the transitional provisions to provide relief from restating comparative information and introduced new disclosures to help users of financial statements understand the effect of moving to the IFRS 9 classification and measurement model.

3.3.IFRS 7 Financial Instruments: Disclosures

IFRS 7 was effective as at 1 January 2007. The objective of this IFRS[14] is to require entities to provide disclosures in their financial statements that enable users to evaluate:

> *(a) the significance of financial instruments for the entity's financial position and performance; and*
>
> *(b) the nature and extent of risks arising from financial instruments to which the entity is exposed during the period and at the end of the reporting period, and how the entity manages those risks. The qualitative disclosures describe management's objectives, policies and processes for managing those risks. The quantitative disclosures provide information about the extent to which the entity is exposed to risk, based on information provided internally to the entity's key management personnel. Together, these disclosures provide an overview of the entity's use of financial instruments and the exposures to risks they create*

IFRS 7 categorises financial instrument as:

a) Financial assets or liabilities at fair value through profit and loss;
b) Financial assets at amortised cost
c) Financial liabilities at amortised cost; and
d) Financial assets measured at fair value through other comprehensive income.

IFRS 7 definitions are consistent with those listed in IAS 32 and IAS 39 as well as IFRS 2. Derivatives fall into the category of financial assets and liabilities at fair value and their related risk disclosures.

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. Disclosures on compound financial instruments with multiple embedded derivatives are also contemplated.

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.

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.

Hedge accounting disclosures

[14] Technical Summary: IASC Foundation available from IASB website

Derivatives are often used for hedging purposes and designated as such under IAS39. Their disclosure treatment falls within the scope of IFRS 7. According to section 7.22, the information that must be included includes:

a) A description of each hedge covering the nature of hedging instrument, and fair values of the instrument, and the nature of risks being hedged;
b) 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;
c) 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;
d) For fair value hedges all information relating to fair value changes of the hedging instrument and the hedged item;
e) The hedge ineffectiveness recognised in profit and loss.

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.

a) Level One: quoted prices (unadjusted) in active markets for identical assets or liabilities
b) 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)
c) Level Three: inputs for the asset or liability that are not based on observable market data (unobservable inputs)

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.

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 and responses to:

a) Credit risk,
b) Liquidity risk, and
c) Market risk.

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

3.4. IFRS 2 (AC139) Share based payments

IFRS 2 was issued in February 2004 and prescribes the measurement and recognition principles for all share based payment awards. IFRS 2 applies to transactions with employees and third parties, whether settled in cash, other assets (this is rare but may include gold, for example) or equity instruments. The Standard was recently amended with respect to vesting conditions and cancellations which became effective on 1 January 2009. As of March 2009, the IASB was drafting an amendment regarding group cash-settled awards.

Guiding principles[15]

a) Under IFRS 2, the general principle is that an entity recognizes an expense for goods or services received (or an asset, if the goods or services received meet the criteria for recognizing an asset) with the credit entry recognized either in equity or as a liability (depending on the classification of the share-based payment award);
b) IFRS 2 requires that entities recognize all share-based payment awards in the financial statements based on fair value when the goods and services are received, which is determined at the grant date for share-based payments issued to employees;
c) The over-arching principle is that share-based payments need to be recognized as an expense related to compensation, in the same manner as cash compensation is expensed;
d) The IASB decided to adopt the 'grant date' model and therefore an entity must measure the fair value of a share-based payment award issued to an employee on the grant date;
e) The entity does not adjust the fair value afterwards unless the award is modified.

Scope of IFRS 2

The following transactions are considered under IFRS 2:

a) **Equity settled share-based payment transactions**: the entity receives good or services and makes payment by way of grant of shares or share options to employees;
b) **Cash-settled share-based payment transactions**: also referred to as 'liability awards' in which the entity receives goods or services and incurs a liability based on the price (or value) of the firms shares or other equity instruments;
c) **Share-based payment transactions with cash alternatives**: in which the entity receives goods or services and either the entity or the counterparty has a choice of settling the transaction in cash, other assets or equity instruments.

IFRS 2 extends beyond employee / firm transactions and covers situations where external suppliers who deliver goods or services may be compensated with shares, share options or other equity instruments of the firm. Specifically in excluded are financial assets.

Excluded from the scope of IFRS 2:

a) Transfer of equity instruments that are not connected to payments for goods or services;

[15] Ernst & Young (2009), IFRS 2 Share-based payment – The essential guide

b) Transactions with shareholders i.e. when shareholders act solely in their capacity as shareholders;
c) Transactions covered in IAS 32 (Financial instruments: presentation);
d) Transactions covered in IAS 39 (IFRS 9) being Financial Instruments: Recognition and Measurement;
e) Share-based payments in connection with business combinations to which IFRS 3 applies.

Recognition and measurement principles

The Standard explains how and when a firm measures the expense (or asset) and whether the firm must remeasure the expense (or asset) dependent on the method of settling the award i.e. equity settled, cash settled or a choice of settlement.

Equity settled awards

a) The firm should measure the fair value of goods or services received and increase equity with the corresponding value;
b) If the value of the goods or services cannot be reliably determined, then the fair value is measured indirectly using the fair value of the equity instrument granted.

The Standard distinguishes between awards to employees and third parties. Employee awards are recognized and valued at the grant date. Third parties awards are determined and measured when the goods or services are received.

Measurement of share based payments[16]

The following table defines the measurement and recognition principles:

Counterparty	Measurement basis	Measurement date	Recognition date
Employee	Fair value of equity instrument awarded	Grant date	Date goods or services received
Non-employee	Fair value of goods or services received	Date goods or services received	Date goods or services received

Vesting and non vesting conditions

The Standard specifies that share-based payments vests upon meeting specified conditions. These conditions may be *service vesting conditions* or *performance vesting conditions*. The classification of a condition is essential to proper accounting for share-based payments.

IFRS 2 recognizes market conditions, non-vesting conditions, non-market vesting conditions and service vesting conditions.

Market conditions: a share-based payment is recognized as an expense when all vesting conditions are fulfilled irrespective of whether the market conditions are satisfied.

[16] Ernst & Young (2009), IFRS 2 Share-based payment – The essential guide

***Non vesting conditions*:** non vesting conditions do not require the granting firm to receive services; awards are expensed immediately.

***Non-market vesting conditions and service vesting conditions*:** in determining the fair value of equity, the firm ignores these conditions and recognizes the award based on the entity recognizing an expense for goods received during the vesting period based on its best estimate of the equity instruments that will vest.

Valuation of share –based payments

IFRS 2 requires firms to use options pricing models to determine the fair value of share-based payment awards in the absence of quoted market prices for shares. Such models may include the Black-Scholes-Merton and Binomial Models.

Disclosure

IFRS 2 requires the following disclosures:

a) The type & scope of agreements existing during the reporting period;
b) Description of agreements;
c) Number & weighted –average exercise price of share options by category (i.e. granted, vested, exercise and forfeited);
d) Average share price of exercised options;
e) Range of exercise prices and life of options outstanding;
f) Method of valuation of fair value of awards;
g) The impact on the income statement and the financial position of liabilities connected to share-based payment awards.

3.5.Egyptian financial reporting and disclosure requirements

Obtaining relevant and useful information and data from Egyptian companies poses a challenge for foreign analysts: language and a relatively closed economy are two impediments to gaining reliable and trustworthy financial statements.

Societal aspects

In order to understand the development and significance of accounting systems in Egypt, it is useful to consider the aspects that underpin the Egyptian society. It is proposed in literature that society and culture influence the accounting and financial reporting regimes in a country. Hofstede's (1984) study developed a four dimensional model of societal values as shown below:

Societal Value	Description
Individualism versus Collectivism	The degree of interdependence the society maintains among individuals. *Individualism* is concerned with a preference for a loosely knit social framework in society wherein individuals are supposed to take care of themselves and the immediate families only. The opposite, *collectivism* stands for a preference for a tightly knit framework in which individuals can expect their relatives, clan or other in-group to look out for them in exchange for unquestioning loyalty.
Large versus Small power distance	How a society handles inequalities amongst people when they occur. People in *large power distance* societies accept a hierarchical order in which everybody has a place, which needs no further justification. People in *small power distance* societies strive for power equalization and demand justification for power inequalities.
Strong versus Weak uncertainty avoidance	How society reacts to the fact that time only runs in one way and that the future is unknown. *Strong uncertainty* avoidance societies maintain rigid codes of belief and behaviour and are intolerant towards deviant persons and ideas. *Weak uncertainty* avoidance societies maintain a more relaxed atmosphere in which practice counts more than principles and deviance is more easily tolerated.
Masculinity versus Femininity	The way in which society allocates social roles to sexes. *Masculinity* stands for the preference in a society for achievement, heroism, assertiveness, and material success. *Femininity*, in the other hand, stands for the preference for relationships, modesty, caring for the weak and quality of life.

Hostede found that Egypt was a collectivist society and it has a very strong power distance culture when comparing it to the USA. Similarly, Egypt has strong uncertainty avoidance and a significantly lower level of individualism when compared to the USA. Studies by Grey and Vint (1995)[17] into the role of culture in setting a country's accounting system suggest that the accounting system of a country reflects its culture.

Gray[18] (1988) used Hofstede's societal model to derive a framework that proposes an interactive accounting process. Gray derived four distinguishing accounting values / subcultures and linked these to Hofstede's cultural variables. The flow from cultural variables to accounting practices through accounting subculture was captured in the table below:

[17] Gray, S. and H. Vint, 1995. The impact of of Culture on Accounting Disclosures: Some international Evidence. *Asia-Pacific Journal of Accounting* December: 33-43

[18] Gray, S.L. 1988. Towards a Theory of Cultural Influence on the Development of Accounting Systems Internationally. *ABACUS* 24 (1):1-15

Societal Values	Accounting Values	Accounting Practice
Individualism / Collectivism →	Professionalism / Statutory Control →	Authority and Enforcement
Power Distance →	Uniformity / Flexibility →	
Uncertainty Avoidance →	Conservatism / Optimism →	Measurement of assets & profits
Masculinity / Femininity →	Secrecy / Transparency →	Information Disclosure

The above work was extended by Perera[19] (1989b) wherein he suggested that the value orientations of the preparers of the financial statements are formed by societal / cultural values. Furthermore, he argued that transferring accounting skills from developed countries to developing countries is unlikely to be successful because developing countries lack adequate professional subcultures to develop standard accounting skills.

Perera (1989b) Larson (1993) and Amenkhienan (1986) proposed that it was close to impossible to completely implement international standards into developing countries. Their argument was based on the fact that the International Accounting Standards Board ("IASB") mainly focuses on developed nations cultures and needs such as the UK and USA, when promulgating standards. The "overnight" mandated adoption of the International Accounting Standards ("IAS") made it impossible for Egyptian society and the Egyptian accounting profession to adapt to international standards. Further studies by Hassan et al (2006) found that over a period from 1995 to 2002, there was a gradual increase in disclosure levels by non financial companies listed on the Egyptian stock exchange.

Based on the results of Hofstede's studies, it is proposed that Egypt is a collectivist society, with a large power distance and strong uncertainty avoidance. Therefore the Egyptian accounting system should portray statutory control, uniformity, conservatism, and secrecy.

Development of accounting standards in Egypt

During the socialist era, the Egyptian government issued laws regulating the financial disclosures under the legislative control and to maintain the central planning economy (Gamal, 2002)[20]. The Uniform Accounting System was implemented in the 1967/1968 annual reports[21]. This system of accounting maintained the secrecy inherent in public sector companies financial reporting as found before the new laws were implemented (Samaha, 2004).[22] Public company results were deemed sensitive and related to national secrecy thus were not published; public companies with losses were prevented from showing these results so as to reduce economic unrest and prevent society from

[19] Perera, M.H.B. 1989b. Towards a Framework to Analyze the Impact of Culture on Acconting. *The International Journal of Accounting* 24: 42-56

[20] Gamal, W. 2002. Book fixing, her and there. *Al-Ahram Weekly On-Line, 600,* August 22-28

[21] Briston, R.J. and El-Ashker, A.A. 1984. The Egyptian accounting system: a case study in Western influence. *The International Journal of Accounting,* 19(2): 129-155.

[22] Samaha, K. 2004. International Accounting Standardsin an emerging capital market: a study of compliance and factors explaining compliance in listed Egyptian companies. Unpublished Ph. D Thesis, University of Manchester.

doubting government's ability to lead effectively. During this time, the accounting profession was not capable of improving the Egyptian financial reporting regulations (Youssef, 2003).[23]

In 1992, law number 95 of 1992, known as the Capital market Law, was issued and imposed the use of International Accounting Standards in private companies. Public companies at this stage were still reporting under the Unified Accounting System. In 1997, the Egyptian Accounting Standards ("EAS") were enacted and implemented (Ragab and Omran, 2006; HassabElnaby et al, 2003). Where accounting related subject matter is not covered in EAS, then IAS was supposed to be applied.

The large scale economic reform program that began in 1991 necessitated the need for the development of accounting measures and reporting standards in response to the evolving open market economy and the demands from foreign investors for more relevant accounting information and reliable financial reporting. In 1997, the Egyptian Society of Accountants and Auditors (ESAA) were primarily responsible for the first set of 19 Egyptian Accounting Standards that were based on the International Accounting Standards. By 2002, there were a total of 22 Egyptian Accounting Standards that were implemented by listed companies; and by 2006 a new set of Egyptian Accounting Standards were released to replace the standards found thus far.

The new Egyptian Accounting Standards comprised of 35 standards modelled on the International Financial Reporting Standards (IFRS). According to Hassan[24] (2008a) there were four exceptions to IFRS namely: EAS 1 (financial statement presentation), EAS 10 (fixed assets and depreciation), EAS 19 (disclosure in financial statements of banks and similar financial entities) and EAS 20 (rules and accounting standards related to finance lease transactions).

EAS 1 was different to IAS in that the Egyptian standards required that the profits to be distributed to employees and directors of the company were to be deducted directly from retained earnings without decreasing the income figure in the income statement; this is in contrast to IAS that requires such expenses to be charged as expenses. This would have a direct impact on earnings per share calculations. Under EAS 10, fixed assets revaluation is not permitted unless specific Egyptian law approves certain situations. This is in contrast to IAS 16. The standard under EAS 19 concerning the disclosure in financial institutions requires the accumulation of a general provision for loans created by decreasing income in the income statement; this contrast to IFRS 7 that requires provisions to be decreased from owner's equity. EAS 20 deals with the accounting treatment of leases that are regulated by Egyptian leasing laws. As leasing is based on legal codes of the Egyptian leasing laws, EAS 20 requires that the lessor keeps the asset in his accounting books and depreciates it while the lessee reports the rental payments as expenses, opposite to IAS 17 requirements.

According to the World Bank[25] (2002) and Abd-Elsalam and Weetman[26] (2003), language was the major difficulty experienced by Egyptians in adopting International Accounting Standards that were

[23] Youssef, S.M.2003. Role of the state as a salient stakeholder in a transition economy: The case of Egypt. *Journal of Academy of Business Economics,* 3(1): 1-13.
[24] Hassan, H. 2008a. The international accounting standards… Where do we stand? *The Executive,* April-June: 28-29
[25] World Bank. 2002. Report on the observance of standards and codes (ROSC). Egypt, Arab Republic: Accounting and auditing. (August).

officially issued in English; Arabic is the dominant language used in Egypt and at the time of implementation of IAS, no official Arabic translation was available in the public records in Egypt.

By 2005, the ESAA had revised 19 EAS and had drafted a further 16 standards. The 35 EAS were subsequently issued. Up until 2006, the 35 issued EAS were matched to the IAS series. The revised and updated EAS were supposed to be applied to financial statements issued on or after 1 January 2007.[27]

According to audit firm Deloitte, owner of the service known as 'IAS Plus' [28], EASs comply with IFRSs, in all material respects, except in certain EASs where the differences are significant mainly due to the applicable Egyptian laws and regulations as explained above.

Egyptian capital market

Law No. 10 of 2009[29] established the Egyptian Financial Supervisory Authority ("EFSA") whose mandate is to supervise non-banking financial markets and instruments (capital markets, derivative markets, insurance business, mortgage finance, financial leasing, factoring and securitization). The Law states that the Authority shall replace the Egyptian Insurance Supervision Authority (EISA), the Capital Market Authority (CMA), and the Mortgage Finance Authority (MFA) as 1 July 2009.

The former CMA was responsible for (and assumed to be a current responsibility of EFSA) promoting transparency by monitoring compliance with disclosure rules by all listed companies and investment funds; this includes ensuring disclosure by market participants and adherence to Egyptian Accounting Standards ("EAS") that are based on IAS.

According to Dahawy and Conover[30] (2007) the CMA promotes the concept of fair trading of securities, reducing fraud and promoting transparency. To achieve these objectives, the CMA conducts surveillance of the market including the level of financial reporting of companies in Egypt. The CMA reviews the individual financial statements and provides an opinion on the degree of disclosure. Depending on the results of the review, the CMA will send a letter to the company's management enquiring as to the missing or erroneous disclosures.

In their study, Dahawy and Conover (2007) considered the disclosure level degree of compliance by the most actively traded companies in Egypt. Their population choice of the most actively traded companies was based on the notion that these companies would have a high degree of compliance since their financial statements would be subject to highest scrutiny by analysts and investors.

The degree of compliance by Egyptian companies was found to be 61% on average. The highest degree of compliance was 76%. Both results are considered low in terms of compliance; consequently this means that these companies did not comply with CMA mandated disclosures that

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[26] Abdelsalam, O.H., and Weetman, P.2003. Introducing International Accounting Standards to an emerging capital market; relative familiarity and language effect in Egypt. *Journal of International Accounting, Auditing and Taxation,* 12: 63-84.

[27] KPMG Hazem Hassan (Egypt), EGYPTIAN ACCOUNTING STANDARDS (EASs) vs IFRSs, Information booklet issued in 2010

[28] http://www.iasplus.com/en/jurisdictions/africa/country62

[29] Central Bank of Egypt, Annual Report 2008/2009

[30] Dahawy, K. Conover, T. 2007. Accounting disclosures in companies listed on the Egyptian Stock Exchange. *Middle Eastern Finance and Economics,* 1: 5-20

are based on international standards. Amongst the findings in this study was the fact that several companies were selective in their choice of standards to implement; this choice was often informed by conflicts between international standards and Egyptian socioeconomic factors. Some of the companies did not implement the insider trading standard because it conflicts with the collectivist nature of the Egyptian society and the way business is conducted in Egypt.

Overall, the disclosure by Egyptian companies was concluded to be low; however this similar to a study by Street and Gray[31] (2001) that showed similar results in other countries.

Little is known about the so called 'closed' economies such as Egypt. The lack of studies into the closed economy markets such as Egypt may be impacted by theory that suggests the Egyptian accounting system portrays statutory control, uniformity, conservatism, and secrecy. The Jordanian results are interesting as that country has a similar cultural and religious background to Egypt.

A preference for secrecy is consistent with strong uncertainty avoidance following from a need to restrict information disclosures so as to avoid conflict and competition and to preserve security. These factors, amongst others, may make a Wharton Survey Style Study highly unlikely in the context of a study into the use of derivatives in the Egyptian market. Thus a preference for the 'Annual report style study' to understand the use of derivatives by Egyptian firms was adopted for the purposes of this study into derivatives usage by Egyptian listed companies. As a result of the choice of methodology, this study will shed little insight into qualitative features such as whether the Egyptian companies have vast or restricted knowledge of derivatives, their benefits and use. Reasons for not using derivatives are also outside the scope of this report.

4. Research Methodology

The scope of this study covers the country of Egypt and in particular the companies listed on the Egyptian Stock Exchange as at December 2010. The list of companies was obtained from the Egyptian Stock Exchange website[32] on or about 16 December 2010. The initial intention was to utilize a full population of the Egyptian listed companies. I placed reliance on the accuracy and completeness of the information provided by the Egyptian Stock Exchange as a direct and credible source of Egyptian company results.

As a proxy to establish upfront whether certain companies did not publish publicly available financial statements, I omitted those companies that failed to submit annual company returns as required by the stock exchange from the population and focussed the research on the listed companies that had submitted corporate results to the Egyptian Stock Exchange as at 16 December 2010 thus resulting in a research population of 175 companies. It was noted that the Egyptian Stock Exchange does not maintain an electronic database of the listed company annual financial statements or such database is not publicly available.

The intention was to research the annual financial statements of the listed companies covering the 2008 and 2009 financial periods; initial research results indicated that it was necessary to extend the

[31] Street, D. and S. Gray. 2001. Observance of International Accounting Standards: Factors Explaining Non Compliance , ACCA Research Report No. 74, The Association of Chartered Certified Accountants, London, UK.
[32] http://www.egyptse.com/english/CorporateResults.aspx

scope of the research to cover the 2010 and 2011 financial periods with the objective of obtaining a better coverage and provide more robust results.

I obtained the market capitalization of the companies identified using the internet resource of Reuters (open source), Bloomberg (open source) or ISI Emerging Markets[33] (subscription service). To the extent possible, the market capitalization value was obtained for the 29 December 2011.

The methodology utilized was to peruse the annual financial statements and / or the annual report of the 175 listed companies to extract information about the company's use of derivative financial instruments with the intention to produce a view of the use of such instruments by the listed Egyptian companies. The research included seeking information in the narrative of the annual financial statements and the notes thereto focussed on **Swaps** (interest rate, commodity and currency swaps), **Forwards** (currency and commodity forwards), Options (currency, commodity and share options), **Futures** (commodities) and **Employee Stock Option Program** ("ESOP").

The information discovered in the available annual financial statements or annual reports was captured into a schedule developed in Microsoft Excel spreadsheet [Appendix A] in order to conduct analysis of the financial instruments utilized. The template developed captured the type of derivative instrument utilized including its fair value (where available), the market capitalization of the company and the dilutive effect of the Employee Stock Option Program (where applicable or available).

Financial services companies and banks were included and where possible, the use of the derivatives was identified in the notes or other parts of the financial statements. The ensuing section discusses in more detail the data collection methodology.

4.1. Data collection

The first source of research was the publicly available financial statements and annual reports found on the internet on the website of the company. This research resulted in many challenges including: the lack of a company public website; websites published in Arabic language only; websites that did not publish financial statements; and other websites that published Arabic language only financial statements or annual reports.

The following data sources were consulted in order of relevance and availability:

a) Internal research through Ernst & Young resources [to identify the best source of public held information];
b) The company website as the most direct source (obtained by using a keyword search in Google or Yahoo internet search engines);
c) Bloomberg[34] internet website [open source];
d) Google Finance[35] web portal [open source];
e) Yahoo Finance[36] web portal [open source];
f) Reuters[37] web portal [open source];

[33] Source: http://site.securities.com/market/market_cap.htm
[34] Source: http://www.bloomberg.com/quote/
[35] Source: http://www.google.com/
[36] Source: http://:yahoo.com/finance

g) ISI Emerging Markets [subscription services]
h) UCT resource to translate a sample of Arabic language financial statements

4.2.Arabic language influence

The research methodology was developed for a study using English as the main language medium. Thus the focus was to obtain as many financial statements in English. Egypt is an Arab country with domestic business conducted in Arabic as the language medium. It was noted that companies with an export focus or with international stakeholders published English financial statements.

To mitigate the challenge of the Arabic language element to the research, a sample of company annual financial statements published in Arabic were selected for translation with the intention of understanding how many of the companies who reported in Arabic disclosed the use of such instruments. The results could serve as an indication of the use of such instruments by all companies who reported in Arabic and could loosely indicate the prevalence of derivatives in Egyptian companies depending on their business focus i.e. domestic versus export or foreign focus.

A random sample of 15 Arabic language annual financial statements from the total of 59 Arabic financial statements found was translated into English language to aid analysis. The sample comprised of firms in the following sectors:

Sector	Market Capitalization (Egyptian Pounds millions)
Food and Beverage	67.76
Travel & Leisure	136.82
Financial Services excluding Banks	150.20
Personal and Household Products	237.03
Construction and Materials	682.53
Banks	1,122.10
Real Estate	1,520.48
Chemicals	7,709.75
Grand Total	EGP 11,626.67
USD equivalent	*$ 1,937.78 m*

From the translation sample that represented 9% of the 175, none of the annual financial statements mentioned derivatives in the text. If we extrapolate this finding into the remaining population of Arabic language financials, then overall a further 44 annual financial statements of the total sample size of 175 companies analysed were deemed to have no derivatives.

Overall, 33% of the sample companies were in Arabic language and deemed to not use derivatives; 41% of companies annual financial statements could not be found or partial reporting was found (for example, a website table showing assets, liabilities and equity in non GAAP format) and therefore we could not make any conclusive findings. The study relied therefore on the remaining 26% of companies financial statements that were found to be published in English. Of the total population of 175 companies, 45 were found to be published in English. For the purposes of this study and the

[37] Source: http://af.reuters.com/news/countries

analysis herein, I shall use the sub set of 45 financial statements to draw results and findings with regard to the analysis of derivative usage by Egyptian companies.

4.3.Islamic Financial Instruments

Islam is the dominant religion in the Middle East. In terms of Islamic religious laws, Muslim investors are prohibited from performing certain financial transactions under *Shariah* principals. The transactions allowable in terms of Islam are known as *"Hallal"* and those that are prohibited are known as *"Haram"*.

The basic principle underlying Islamic financial instruments is that interest usury or "*Riba"* is prohibited on the principle of 'no pain, no gain'.[38] According to Edwardes (2000), there are large structural similarities between pure Islamic banking (and its products) and venture capital finance, non recourse project finance or ordinary equity investment. Just as there is no central global fiscal authority, there is no Islam-wide authority that determines what *Hallal* is and what *Haram* is.

Apart from the principal of no interest, Islamic investments exclude tobacco, alcohol, gaming and other undesirable sectors.

Brief history of Islamic banking

According to Edwardes, small scale interest free savings banks were created in Egypt in 1963. The early banks acted like savings and loan institutions rather than commercial banks. They paid no interest to depositors and charged no interest to borrowers; the investments were mainly targeted at trade and industry. The Nasr Social Bank was established in Egypt in 1971 as an interest free commercial bank, but not with specific reference to Islam.

In 1973, the Islamic Development Bank (IDB) was established by the conference of Islamic finance ministers in Jeddah. The bank opened for operations in 1975 with the purpose of providing intergovernmental banking services. The bank aimed at providing development funds for projects in poorer member countries. It provided fee based financial services and profit sharing financial assistance. Their operations were designed to be explicitly based on *Shariah* principals. Since these early days, several Islamic banks have developed in the Middle East, Malaysia, Philippines, Luxembourg, Denmark, Australia and South Africa.

Principles of Islamic financial instruments

All interest in Islam is prohibited, *Haram*. The Koran distinguishes between interest and trade; it urges Muslims to receive only the principal sum loaned and that principal should only be taken back subject to the ability of the borrower to repay it. The distinction between interest and trade allows various Islamic financial instruments. The following are the essential financial instruments:

Mudaraba

Capital providers (known as *Rubbalmal*) lend money for investments into projects. The profits are shared according to a pre-agreed ratio; however, all losses are suffered by the lender.

[38] Edwardes, W. 2000. Key Financial Instruments. Understanding and innovating in the world of derivatives.

Shirka

These are partnerships between two or more persons either under contract or non-contractually. Losses beyond the contractual agreement are borne by the entrepreneur who goes beyond such limits.

Musharaka

This is financing through equity participation; the partners or co-venturers conduct business through a joint venture, limited partnership to generate a profit. All profits or losses are shared amongst the shareholders according to a pre-determined ratio, often linked to the investment ratio.

Islamic derivatives

At first glance, the principles of Shariah law and requirements of derivatives appear to be opposed. This would place all derivatives as *Haram.* According to Edwards (2000) the financing known as *Baisalam* is the closest form of 'derivative' instrument that is *Halaal*. This form of financing involves the advance payment for goods to be delivered at a later date. This can be regarded as a form of *forward contract*.

5. Observations & Analysis

5.1.Data collection statistics

From the total research population of 175 listed companies the following statistics were evident:

Population stats	Number	Percent	Market cap ($m)	% market cap
Annual Financial Statements found in English language (and therefore analysed)	45	25.7%	$24,729	60.1%
Sample of Arabic language Annual Financial Statements selected for translation (sample covers several Sectors and Market Cap size) with no derivatives noted	15	8.6%	$1,938	4.7%
No Annual Financial Statements found or partial reporting such as non GAAP Annual Financial Statements published on website	71	40.6%	$7,435	18.1%
Annual Financial Statements in Arabic language only not analysed	44	25.1%	$7,062	17.2%
Total	175	100%	$41,164	

Not withstanding the challenge of Arabic language, the sample size of useable financial statements represented over 60% of the market capitalization for the 175 companies chosen for the study.

The relevant population for testing and analysis (45 company financial statements in English as above) represents 25.7% of the population of 175 available annual financial statements; this sub-set however represents 60.1% of the market value of the 175 firms forming the total sample size.

The results of derivative use or non use should be viewed in the context of the relative size of the 45 firms. Previous studies into the use of derivatives, such as Bailly, *et al* (2003) found that derivatives were used more often by large firms.

5.2.Company size and % of market

The market capitalisation of the companies was assessed in comparison to the sizes listed in Bodnar *et al.* (1995) study. Not all market capitalization values could be found. From the sample of 175 firms the following results regarding firm size in terms of market capitalization were found:

Table 1: Companies & size

Size of Company (in Market Capitalization)	Number of companies	% of the total market capitalization
Large Cap (> $250m)	33	81%
Mid Cap (> $50m < $250m)	49	14%
Small Cap (< $50m)	87	5%
Unknown	6	Unknown
Total	175	100%

The 33 large cap firms comprise 81% of the total market cap of all 175 firms that formed part of the sample. Mid cap firms comprised 14% of the total market cap and the remaining 5% was attributed to the small cap firms.

The total market capitalization value by sector of the 175 firms was found to be as follows:

Table 2: Market capitalization by Sector

Sector	Market Cap ($m)
Construction and Materials	10,975
Telecommunications	7,353
Banks	5,393
Chemicals	2,508
Real Estate	2,412
Basic Resources	2,195
Industrial Goods and Services and Automobiles	1,990
Personal and Household Products	1,916
Financial Services excluding Banks	1,894
Food and Beverage	1,716
Oil and Gas	961
Healthcare and Pharmaceuticals	906
Travel & Leisure	379
Technology	239
Utilities	149
Retail	118
Media	79
Grand Total	**41,184**

5.3.The analysis of the use of derivatives in Egypt

Including financial firms

Table 3: Egyptian derivative usage by Size of Firm – including Banks & Financial Services firms

Egyptian use of derivative financial instruments – all firms	Results	% of total
Number of Large cap firms that use derivatives	6	37.5%
Number of Mid cap firms that use derivatives	8	50.0%
Number of Small cap firms that use derivatives	2	12.5%
Total number of companies using derivatives	16	100.0%
Proportion of companies using derivatives	35.6%	

The proportion of 35.6% of firms that use derivatives above represents the proportion of the 16 companies that use derivatives to the sub set of 45 financial statements that could be analysed in English. The results above for large firms of 37.5% are in contrast to the Bodnar *et al.* (1995) results that found 65% of large firms used derivatives. The comparison above is limited as previous studies excluded financial firms.

The market value of all 16 firms using (and trading in) derivatives was $12,688m. The market value of the 10 financial firms was $4,753 (37.5%) of the market value; the market value of the non financial firms was $7,935 (62.5%).

Non financial firms only

Table 4: Egyptian derivative usage by Size of Firm – Non-financial firms

Egyptian use of derivative financial instruments – non financial firms	Results	% of total	Market value ($m)
Number of Large cap firms that use derivatives	2	33.3%	$7,456
Number of Mid cap firms that use derivatives	3	50.0%	$384
Number of Small cap firms that use derivatives	1	16.7%	$95
Total number of companies using derivatives	**6**	**100.0%**	**$7,935**
Proportion of companies using derivatives	13.3%		

The effective use of derivatives by non financial firms in Egypt was found to be very low as only 6 of the 45 firms reported using derivatives producing an effective use rate of 13.3%. The low results were aggravated by the challenge of relatively few companies produced financial statements in English as Arabic is the dominant language used for reporting in Egypt. No evidence was found to conclude on the role of Islamic finance in the decision to use or not use derivatives.

The result for the small cap firm (16.7%) is similar to Bodnar et al. (1995) results of 13%. We did not match and weigh the companies according to industry classification or firm size when making comparisons to previous studies cited in this report. As discussed in the preceding section, the 2 large firms who reported using derivatives account for 62.5% of the market value of all firms reporting derivative use.There were more mid cap firms using derivatives. This result does not support the previous research findings that found larger firms use derivatives more often.

The largest non financial firm operated in the Construction and Materials sector and had a market value of almost 3 times that of the largest Bank using derivatives. According to the financial statements of this company, *"the Group is exposed to risks related to currency exchange fluctuations, and to changes in interest rates"*[39]. The company used a combination of derivatives including forwards contracts for currencies, currency swaps and interest rate swaps to hedge their risks.

Derivatives used as hedging instruments versus offered for trading

The types of derivatives used by Egyptian firms were categorized into two groups: those used and offered by Banks and Financial Service Companies, and those used by non financial firms. This was done to enhance the analysis and comparison to previous studies.

Table 5: Banks and Financial Services Companies using / offering derivatives

Sector	Market cap ($m)	Number of companies
Banks	3,375	5
Financial Services excluding Banks	1,378	5
Total Banks and Financial Services	**$4,753**	**10**

In the Banking / Financial Services sectors, derivatives can be held either by the firms for their own risk management purposes (hedging) or held for trading. Of the 3 large Banks, only one Bank held derivatives (5%) for hedging purposes; the balance in that Bank and the other Banks was held for trading purposes. The 2 mid cap Banks did not disclose detail regarding the purpose for holding derivative.

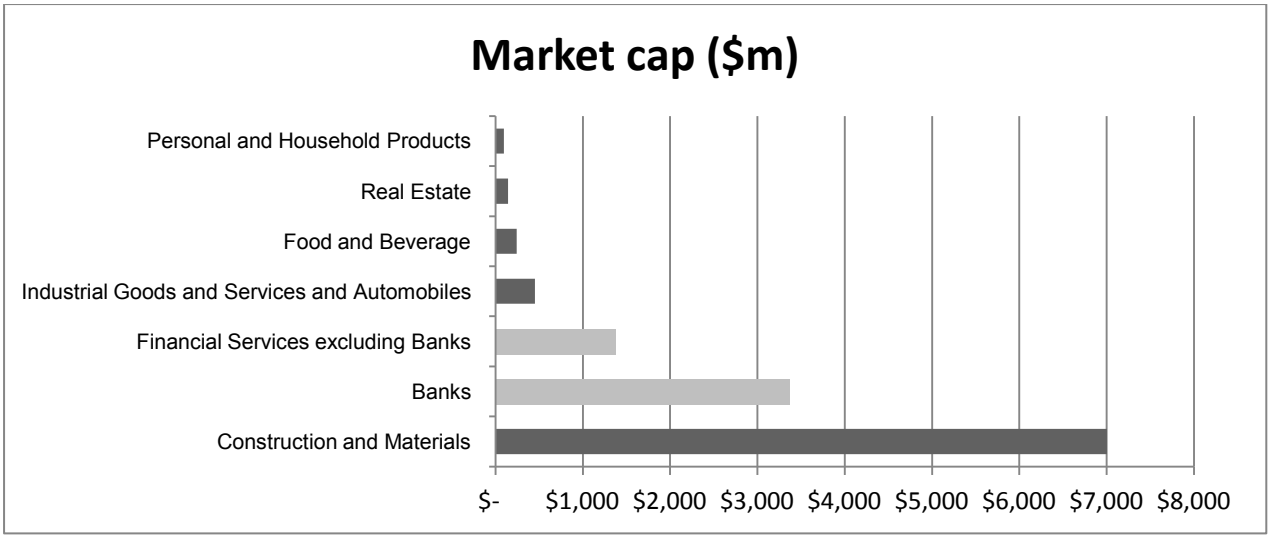
Sector analysis

Table 6: Sector analysis of firms using derivatives

Sector	Market cap ($m)	Number of companies
Construction and Materials	7,005	1
Banks	3,375	5
Financial Services excluding Banks	1,378	5
Industrial Goods and Services and Automobiles	451	1
Food and Beverage	242	1
Real Estate	142	2
Personal and Household Products	95	1
Total firms using derivatives	**12,688**	**16**

The sector analysis of firms using derivatives shows the following characteristics in terms of firm size and correlation to derivative usage:

[39] Annual financial statements of Orascom



If we include the financial firms we see results similar to previous studies including Bodnar *et al.* (1995), where there was a positive relationship between the size of the firm and its use of derivatives. Our study in comparison to the study done by Bodnar *et al.* (1995) includes Banks and Financial Services companies and therefore comparison with our data may prove difficult.

It is proposed in this research analysis that if Banks and Financial Services firms are offering the derivatives as hedging instruments to the Egyptian market, then firms operating in the market are likely utilizing the derivative instruments; our analysis of available annual financial statements corroborated the above to a small degree. It cannot be ruled out that firms transacting in derivatives with these financial firms have the opportunity for speculation using the instruments rather than for hedging purposes.

Derivatives by type

There were 16 usable company results for analysis. 10 of the 16 were Banks and Financial Service companies.

The derivatives by type and frequency used were found to be as follows:

Table 7: Derivatives by type

Category	Type of derivative	Total per category	% to total derivatives	Total excl Banks / Financial	% to total derivatives (excl Banks / Financial)
SWAPS	Interest	8	26%	2	40%
	Commodity	2	6%	0	0%
	Currency	7	23%	1	20%
FORWARDS	Currency	9	29%	2	40%
	Commodity	1	3%	0	0%
OPTIONS	Commodity	0	0%	0	0%
	Currency	4	13%	0	0%
	Share	0	0%	0	0%

FUTURES	Commodity	0	0%	0	0%
Total		**31**		**5**	

The results above indicate that the dominant derivatives are foreign exchange derivatives (65%) followed by interest rate derivatives (26%) and lastly commodity derivatives (9%). These results are similar to those from previous annual report style studies such as Shu, P. and Chen, H., (2003) and Bartram, S. M., Brown, G. W. and Conrad, J. (2008). The limitation to the above comparison however, is that these studies included only non financial company results whereas the results above include the financial firms.

If we disregard the Banks and Financial Services firms from the above, the ratios are 60% foreign exchange derivatives and 40% interest rate derivatives; this is still aligned to the recognized results from prior studies however the small sample size of 5 may influence the results.

The two firms reporting use of currency forward instruments were from the Construction and Materials, and Food and Beverage sectors. This could suggest an export and / or import focus by these firms. The firm in the Construction and Materials sector had the largest market capitalization value of all listed Egyptian companies.

In the study conducted by Bartram, Brown and Fehle (2009), 127 firms from Africa and Middle East indicated that they utilized derivatives in 78% of the firms. The most common derivative being foreign exchange derivatives followed by Interest rate derivatives and then commodity priced derivatives. Their study however did not break out the Middle East split and therefore we cannot determine the extent of Egyptian company results in the above statistics (if any) as a comparison to our results above. On a global basis, their results showed 60.3% of firms used derivatives.

Conclusions

Egyptian companies do not utilize derivatives extensively. The challenge during the research was that Egyptian company annual financial statements were made available mainly in Arabic language (59 financial statements). A sample set of 15 Arabic of the 59 financial statements were translated and there were no derivatives mentioned in the financial statements. Annual financial statements for 71 companies could either not be found or lacked sufficient detail to be included. The Egyptian regulatory environment changed recently with the so called ‘Arab Spring’ that started in 2011; it is anticipated that the change in government will lead to further transparency and accountability in the various economic sectors including public spending.

There were 45 annual financial statements that were published or translated into English and were useful and contained sufficient detail for analysis. These financial statements represented just over 60% of the market value of the Egyptian listed companies; this was considered a positive attribute of the data set. It was noted within the total population of financial statements published in English that companies with an export focus or with international stakeholders published English financial statements.

Within the 45 useful annual financial statements analysed, 10 financial firms used derivatives and held derivatives for trading purposes. Only 6 non-financial firms used derivatives for hedging purposes. This was effectively 13.3% of the total 45 useful firm results. Not withstanding the low levels of derivative use, the main risks hedged were currency risks utilizing currency swaps and

forwards (60%). Interest rate risk was hedged using interest swaps (40%). No observations were made about futures as there is no futures exchange in Egypt.

The use of derivatives is considered low when compared to previous research on developed economies. However, low levels of derivative use in developing economies such as Jordan may help for comparative purposes. Al-Momani, and Gharaibeh (2008) conducted a *Wharton style survey* of Jordanian firm use of derivatives. They found that the majority of the Jordanian firms rely on natural hedging techniques, and the use of more sophisticated techniques such as financial derivatives is not common practice. Their study also showed a negative correlation between Jordanian firm size and use of risk management techniques. There was a positive correlation between managing exposures in the manufacturing sector and also with firms' international involvement. This would suggest that firms in Jordan with an export and / or import focus would engage in higher degrees of risk management activities. Their results are similar to the low use in Egypt suggesting the two countries share a similar view of derivative use; this may be influenced by the similarities in culture and religion, for example.

The research did not show a relationship between the use of derivatives or lack thereof and the influence of Islamic finance. Therefore, this aspect is inconclusive.

Egyptian companies are required to report under the Egyptian Accounting Standards. These standards are to a large degree aligned with IFRS. Derivative reporting was mixed amongst the companies who reported using derivatives. The disclosure requirements in terms of IAS 32 Financial Instruments: Presentation was not observed. Similarly, no observations were made regarding the requirements under IFRS 7 Financial Instruments: Disclosures. In their study, Dahawy and Conover (2007) considered the disclosure level degree of compliance by the most actively traded companies in Egypt and found the disclosure levels to be low. An aggravating factor cited for the slow IAS adoption was language: very few IAS statements were translated into Arabic. In addition to language, several companies were selective in their choice of standards to implement; this choice was often informed by conflicts between international standards and Egyptian socioeconomic factors.

Hostede (1984) found that Egypt (a developing economy) was a collectivist society and it has a very strong power distance culture when comparing it to the USA (as a developed economy). People in large power distance societies accept a hierarchical order in which everybody has a place, which needs no further justification. Similarly, Egypt has strong uncertainty avoidance and a significantly lower level of individualism when compared to the USA. Studies by Grey and Vint (1995) into the role of culture in setting a country's accounting system suggest that the accounting system of a country reflects its culture. These factors suggest that Egyptian firms may avoid using derivatives as they may be considered high risk (due to unfamiliarity) and be in conflict with the strong uncertainty avoidance.

There is scope for further research into the use of financial instruments and derivative use by Egyptian firms. The crucial aspects to consider when performing similar research would include the challenges of Arabic language and translations and the availability of annual reports and financial statements. It may be preferable to conduct a *Wharton survey style* research survey in place of an *annual report style* research. It might be preferable to conduct the research locally in Egypt; this may

produce a better view to the overall derivative use by Egyptian firms or at least corroborate the results of this research.

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Annexure A: Egyptian listed companies in scope

ISIN	Company Name	Sector Name	Last Year Ended per Egypt Stock Exchange	Category	Use of derivatives	IFRS prepared	Egyptian Accounting Standards	Date Market Cap	Market Cap USD m
EGS60111C019	National Development Bank	Banks	31/12/2009	ARABIC only - translated sample	No	Unknown	Unknown	29-Mar-12	$ 136
EGS60182C010	Egyptian Gulf Bank	Banks	31/12/2009	ARABIC only - translated sample	No	Unknown	Unknown	29-Mar-12	$ 51
EGS60322C012	Faisal Islamic Bank of Egypt - In US Dollars	Banks	31/12/2010	ARABIC only	Unknown	Unknown	Unknown	29-Mar-12	$ 38
EGS60101C010	Al Baraka Bank Egypt	Banks	31/12/2010	AFS obtained English	No	No	Yes	29-Mar-12	$ 142
EGS60021C010	Arab Banking Corporation Egypt	Banks	31/12/2010	AFS obtained English	Yes	No	Yes	31-Dec-09	$ 92
EGS60121C018	Commercial International Bank (Egypt)	Banks	31/12/2010	AFS obtained English	Yes	No	Yes	29-Mar-12	$ 2,470
EGS60041C018	Credit Agricole Egypt	Banks	31/12/2010	AFS obtained English	Yes	No	Yes	29-Mar-12	$ 442
EGS60171C013	El Watany Bank of Egypt	Banks	31/12/2010	AFS obtained English	Yes	No	Yes	29-Mar-12	$ 287
EGS60321C014	Faisal Islamic Bank of Egypt - In EGP	Banks	31/12/2010	AFS obtained English	No	No	Yes	29-Mar-12	$ 232
EGS60081C014	National Societe Generale Bank (NSGB)	Banks	31/12/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 1,241
EGS60142C014	Societe Arabe Internationale De Banque (SAIB)	Banks	31/12/2009	ARABIC only	Unknown	Unknown	Unknown	10-Jan-12	$ 35
EGS60231C015	Suez Canal Bank	Banks	31/12/2009	No AFS	Unknown	Unknown	Unknown	29-Dec-12	$ 143
EGS60051C017	Union National Bank - Egypt " UNB-E	Banks	31/12/2010	AFS obtained English	Yes	No	Yes	29-Dec-11	$ 84
EGS3D031C018	Arab Aluminum	Basic Resources	31/12/2010	ARABIC only	Unknown	Unknown	Unknown	29-Dec-11	$ 14
EGS10001C013	Asek Company for Mining - Ascom	Basic Resources	31/12/2009	ARABIC only	Unknown	Unknown	Unknown	29-Dec-11	$ 45
EGS3E181C010	Egypt Aluminum	Basic Resources	30/06/2010	AFS obtained English	No	No	No	29-Dec-11	$ 493
EGS3D061C015	Egyptian Iron & Steel	Basic Resources	30/06/2009	AFS obtained English	No	No	No	29-Dec-11	$ 320
EGS3D041C017	EL Ezz Aldekhela Steel - Alexandria	Basic Resources	31/12/2008	AFS obtained English	no	no	Yes	29-Dec-11	$ 951
EGS3C251C013	Ezz Steel	Basic Resources	31/12/2009	AFS obtained English	No	No	Yes	29-Dec-11	$ 338
EGS36091C014	Paper Middle East (Simo)	Basic Resources	30/06/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 5
EGS36021C011	Rakta Paper Manufacturing	Basic Resources	30/06/2008	ARABIC only	Unknown	Unknown	Unknown	29-Dec-11	$ 31

ISIN	Company Name	Sector Name	Last Year Ended per Egypt Stock Exchange	Category	Use of derivatives	IFRS prepared	Egyptian Accounting Standards	Date Market Cap	Market Cap USD m
EGS38211C016	Misr Chemical Industries	Chemicals	30/06/2010	ARABIC only - translated sample	No	Unknown	Unknown	29-Mar-12	$ 43
EGS380S1C017	Sidi Kerir Petrochemicals	Chemicals	31/12/2008	ARABIC only - translated sample	No	Unknown	Unknown	29-Mar-12	$ 1,242
EGS38191C010	Abou Kir Fertilizers	Chemicals	30/06/2009	ARABIC only	Unknown	Unknown	Unknown	29-Dec-11	$ 1,079
EGS38201C017	Egyptian Chemical Industries (Kima)	Chemicals	30/06/2010	AFS obtained English	no	no	no	29-Dec-11	$ 23
EGS38381C017	Egyptian Financial & Industrial	Chemicals	31/12/2008	AFS obtained English	No	no	Yes	29-Dec-11	$ 103
EGS38411C012	Kafr El Zayat Pesticides	Chemicals	31/12/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 10
EGS51191C012	Samad Misr -EGYFERT	Chemicals	31/12/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 9
EGS3C151C015	Arab Ceramics (Aracemco)	Construction and Materials	31/12/2010	ARABIC only - translated sample	No	Unknown	Unknown	29-Mar-12	
EGS21451C017	Delta Construction & Rebuilding	Construction and Materials	31/12/2010	ARABIC only - translated sample	No	Unknown	Unknown	29-Mar-12	$ 26
EGS21531C016	Upper Egypt Contracting	Construction and Materials	30/06/2009	ARABIC only - translated sample	No	Unknown	Unknown	29-Mar-12	$ 87
EGS3H051C012	Alexandria Cement	Construction and Materials	31/12/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 530
EGS22181C019	Egyptian Contracting (Mokhtar Ibrahim)	Construction and Materials	30/06/2010	AFS obtained English	No	No	No	31-Dec-09	$ 125
EGS23141C012	Egyptian for Developing Building Materials	Construction and Materials	31/12/2009	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 9
EGS3C071C015	El Ezz Porcelain (Gemma)	Construction and Materials	31/12/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 17
EGS21541C015	Giza General Contracting	Construction and Materials	31/12/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 19
EGS23111C015	Nasr Company for Civil Works	Construction and Materials	30/06/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 17
EGS38311C014	Paint & Chemicals Industries (Pachin)	Construction and Materials	30/06/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 110
EGS3A221C018	Rubex Plastics	Construction and Materials	31/12/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 6
EGS3C401C014	Sinai Cement	Construction and Materials	31/12/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 334
EGS3C351C011	Southern Valley Cement	Construction and Materials	31/12/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 246

ISIN	Company Name	Sector Name	Last Year Ended per Egypt Stock Exchange	Category	Use of derivatives	IFRS prepared	Egyptian Accounting Standards	Date Market Cap	Market Cap USD m
EGS3C181C012	Suez Cement	Construction and Materials	31/12/2009	AFS obtained English	No	No	Yes	29-Dec-11	$ 684
EGS3C311C015	Torah Cement	Construction and Materials	31/12/2009	AFS obtained English	No	No	Unknown	29-Dec-11	$ 379
EGS3E071C013	Acrow Misr	Construction and Materials	31/12/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 19
EGS3C161C014	Lecico Egypt	Construction and Materials	31/12/2010	AFS obtained English	No	Yes	Unknown	29-Dec-11	$ 77
EGS3C371C019	Misr Beni Suef Cement	Construction and Materials	31/12/2009	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 403
EGS3C391C017	Misr Cement (Qena)	Construction and Materials	31/12/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 445
EGS3G061C012	Misr Conditioning (Miraco)	Construction and Materials	31/12/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 145
EGS3C121C018	National Cement	Construction and Materials	30/06/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 291
EGS65901C018	Orascom Construction Industries (OCI)	Construction and Materials	31/12/2010	AFS obtained English	Yes	No	Yes	29-Dec-11	$ 7,005
EGS69021C011	El Ahli Investment and Development	Financial Services excluding Banks	31/12/2010	ARABIC only - translated sample	No	Unknown	Unknown	29-Mar-12	$ 25
EGS672I2C014	Al Arafa For Investment And Consultancies	Financial Services excluding Banks	31/01/2011	AFS obtained English	Yes	No	Yes	29-Dec-11	$ 21
EGS675S1C011	Amer Group Holding	Financial Services excluding Banks	31/12/2010	AFS obtained English	No	No	Yes	Unknown	
EGS67221C019	Arab Gathering Investment	Financial Services excluding Banks	31/12/2010	ARABIC only	Unknown	Unknown	Unknown	29-Dec-11	$ 52
EGS21351C019	Arabia Investments,Development,Fin. Inv. Holding Comp.-Cash	Financial Services excluding Banks	31/12/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 46
EGS21351C027	Arabia Investments,Development,Fin. Inv. Holding Comp.-Kind	Financial Services excluding Banks	31/12/2010	No AFS	Unknown	Unknown	Unknown	Unknown	
EGS73541C012	Citadel Capital - Common Shares	Financial Services excluding Banks	31/12/2009	AFS obtained English	Mentioned in Notes but no financial disclosure	No	Yes	29-Dec-11	$ 211
EGS73541P048	Citadel Capital - Preferred Shares	Financial Services excluding Banks	31/12/2009	AFS obtained English	Mentioned in Notes but no financial disclosure	No	Yes	Unknown	
EGS63031C016	Delta Insurance	Financial Services excluding Banks	30/06/2010	ARABIC only	Unknown	Unknown	Unknown	29-Dec-11	$ 16

ISIN	Company Name	Sector Name	Last Year Ended per Egypt Stock Exchange	Category	Use of derivatives	IFRS prepared	Egyptian Accounting Standards	Date Market Cap	Market Cap USD m
EGS69101C011	Egyptian Financial Group-Hermes Holding Company	Financial Services excluding Banks	31/12/2010	AFS obtained English	Yes	No	Yes	29-Dec-11	$ 798
EGS69082C013	Egyptian Kuwaiti Holding	Financial Services excluding Banks	31/12/2009	AFS obtained English	Yes	No	Yes	29-Dec-11	$ 137
EGS67181C015	Egyptians Abroad for Investment & Development	Financial Services excluding Banks	31/12/2010	ARABIC only	Unknown	Unknown	Unknown	29-Dec-11	$ 22
EGS69011C012	El Kahera El Watania Investment	Financial Services excluding Banks	31/12/2009	ARABIC only	Unknown	Unknown	Unknown	29-Dec-11	$ 8
EGS60241C014	Export Development Bank of Egypt (EDBE)	Financial Services excluding Banks	30/06/2010	AFS obtained English	No	No	Unknown	29-Dec-11	$ 105
EGS60301C016	Housing & Development Bank	Financial Services excluding Banks	31/12/2009	AFS obtained English	Mentioned in Notes but no financial disclosure	No	Unknown	29-Dec-11	$ 211
EGS63041C015	Mohandes Insurance	Financial Services excluding Banks	30/06/2010	ARABIC only	Unknown	Unknown	Unknown	29-Dec-11	$ 19
EGS69182C011	Naeem Holding	Financial Services excluding Banks	31/12/2009	ARABIC only	Unknown	Unknown	Unknown	29-Dec-11	$ 12
EGS691L1C018	Pioneers Holding	Financial Services excluding Banks	31/12/2010	AFS obtained English	No	No	Yes	29-Dec-11	$ 185
EGS691A1C011	Prime Holding	Financial Services excluding Banks	31/12/2010	AFS obtained English	No	No	Yes	29-Dec-11	$ 13
EGS67031C012	Saudi Egyptian Investment & Finance	Financial Services excluding Banks	31/12/2010	ARABIC only	Unknown	Unknown	Unknown	29-Dec-11	$ 12
EGS30471C014	Alexandria Flour Mills	Food and Beverage	30/06/2010	ARABIC only - translated sample	No	Unknown	Unknown	29-Mar-12	$ 11
EGS30211C014	AJWA for Food Industries company Egypt	Food and Beverage	31/12/2009	No AFS	Unknown	Unknown	Unknown	25-Sep-11	$ 56
EGS30481C013	Bisco Misr	Food and Beverage	31/12/2010	No AFS	Unknown	Unknown	Unknown	25-Dec-11	$ 56
EGS30581C010	Cairo Oils & Soap	Food and Beverage	30/06/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 13
EGS02051C018	Cairo Poultry	Food and Beverage	31/12/2010	AFS obtained English	Mentioned in Notes but no financial disclosure	No	Yes	29-Dec-11	$ 242
EGS30201C015	Delta Sugar	Food and Beverage	31/12/2010	ARABIC only	Unknown	Unknown	Unknown	29-Dec-11	$ 348
EGS30351C018	East Delta Flour Mills	Food and Beverage	03/06/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 32
EGS02211C018	Egypt for Poultry	Food and Beverage	31/03/2011	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 13
EGS30431C018	Egyptian Starch & Glucose	Food and Beverage	31/12/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 33
EGS300L1C011	El Nasr For Manufacturing Agricultural Crops	Food and Beverage	31/03/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 20

ISIN	Company Name	Sector Name	Last Year Ended per Egypt Stock Exchange	Category	Use of derivatives	IFRS prepared	Egyptian Accounting Standards	Date Market Cap	Market Cap USD m
EGS38251C012	Extracted Oils	Food and Beverage	30/06/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 20
EGS07061C012	International Agricultural Products	Food and Beverage	30/06/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 31
EGS02021C011	Ismailia Misr Poultry	Food and Beverage	31/12/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 51
EGS01041C010	Ismailia National Food Industries	Food and Beverage	31/12/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 5
EGS30901C010	Juhayna Food Industries	Food and Beverage	31/12/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 472
EGS02091C014	Mansourah Poultry	Food and Beverage	31/12/2009	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 12
EGS30421C019	Middle & West Delta Flour Mills	Food and Beverage	30/06/2008	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 44
EGS30401C011	Middle Egypt Flour Mills	Food and Beverage	30/06/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 20
EGS38421C011	Misr Oils & Soap	Food and Beverage	30/06/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 11
EGS30761C026	National company for maize products	Food and Beverage	31/12/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 67
EGS30361C017	North Cairo Mills	Food and Beverage	30/06/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 27
EGS52041C018	Northern Upper Egypt Development & Agricultural Production	Food and Beverage	31/12/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 5
EGS30291C016	Sharkia National Food	Food and Beverage	31/12/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 13
EGS30411C010	South Cairo & Giza Mills & Bakeries	Food and Beverage	30/06/2010	AFS obtained English	No	No	Unknown	29-Dec-11	$ 12
EGS30221C013	The Arab Dairy Products Co. ARAB DAIRY	Food and Beverage	31/12/2009	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 46
EGS30451C016	Upper Egypt Flour Mills	Food and Beverage	30/06/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 57
EGS38281C019	Medical Union Pharmaceuticals	Healthcare and Pharmaceuticals	31/12/2010	AFS obtained English	No	No	Unknown	29-Dec-11	$ 149
EGS38351C010	Memphis Pharmaceuticals	Healthcare and Pharmaceuticals	30/06/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 14
EGS38331C012	Nile Pharmaceuticals	Healthcare and Pharmaceuticals	30/06/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 39
EGS72011C017	Nozha International Hospital	Healthcare and Pharmaceuticals	31/12/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 10
EGS38461C017	Advanced Pharmaceutical Packaging Co. (APP)	Healthcare and Pharmaceuticals	31/12/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	
EGS72081C010	Alexandria New Medical Center	Healthcare and Pharmaceuticals	31/12/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 22
EGS38341C011	Alexandria Pharmaceuticals	Healthcare and Pharmaceuticals	30/06/2008	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 33
EGS38321C013	Arab Pharmaceuticals	Healthcare and Pharmaceuticals	30/06/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 13
EGS38391C016	Cairo Pharmaceuticals	Healthcare and Pharmaceuticals	30/06/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 43
EGS38081C013	Egyptian International Pharmaceuticals (EIPICO)	Healthcare and Pharmaceuticals	31/12/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 449
EGS38171C012	Glaxo Smith Kline	Healthcare and	31/12/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 134

ISIN	Company Name	Sector Name	Last Year Ended per Egypt Stock Exchange	Category	Use of derivatives	IFRS prepared	Egyptian Accounting Standards	Date Market Cap	Market Cap USD m
		Pharmaceuticals							
EGS42111C012	Alexandria Containers and goods	Industrial Goods and Services and Automobiles	30/06/2008	AFS obtained English	No	No	Unknown	29-Dec-11	$ 255
EGS44031C010	Canal Shipping Agencies	Industrial Goods and Services and Automobiles	03/06/2010	AFS obtained English	No	No	No	29-Dec-11	$ 188
EGS3G231C011	Egyptian Electrical Cables	Industrial Goods and Services and Automobiles	31/12/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 71
EGS42051C010	Egyptian Transport (EGYTRANS)	Industrial Goods and Services and Automobiles	31/12/2010	AFS obtained English	No	No	Yes	29-Dec-11	$ 15
EGS3G191C017	El Nasr Transformers (El Maco)	Industrial Goods and Services and Automobiles	31/12/2010	AFS obtained English	No	No	Unknown	29-Dec-11	$ 44
EGS3G0Z1C014	ELSWEDY ELECTRIC	Industrial Goods and Services and Automobiles	31/12/2010	AFS obtained English	No	No	Yes	29-Dec-11	$ 772
EGS3F021C017	Engineering Industries (ICON)	Industrial Goods and Services and Automobiles	31/12/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 13
EGS44012C010	Maridive & oil services	Industrial Goods and Services and Automobiles	31/12/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 72
EGS3A0A1C016	Modern Shorouk Printing & Packaging	Industrial Goods and Services and Automobiles	31/12/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 20
EGS36041C019	Suez Bags	Industrial Goods and Services and Automobiles	31/12/2009	AFS obtained English	Unknown	Unknown	Unknown	29-Dec-11	$ 60
EGS47021C018	United Arab Shipping	Industrial Goods and Services and Automobiles	30/06/2008	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 19
EGS38161C013	Universal For Paper and Packaging Materials (Unipack	Industrial Goods and Services and Automobiles	31/12/2009	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 10
EGS673T1C012	GB AUTO	Industrial Goods and Services and Automobiles	31/12/2010	AFS obtained English	Mentioned in Notes but no financial disclosure	No	Yes	29-Dec-11	$ 451

ISIN	Company Name	Sector Name	Last Year Ended per Egypt Stock Exchange	Category	Use of derivatives	IFRS prepared	Egyptian Accounting Standards	Date Market Cap	Market Cap USD m
EGS78021C010	Egyptian Media Production City	Media	31/12/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 79
EGS380P1C010	Alexandria Mineral Oils Company	Oil and Gas	30/06/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 961
EGS33061C010	El Nasr Clothes & Textiles (Kabo)	Personal and Household Products	30/06/2010	ARABIC only - translated sample	No	Unknown	Unknown	29-Mar-12	$ 40
EGS32041C013	Alexandria Spinning & Weaving (SPINALEX)	Personal and Household Products	30/06/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 44
EGS32221C011	Arab Cotton Ginning	Personal and Household Products	30/06/2010	AFS obtained English	Yes	No	Yes	29-Dec-11	$ 95
EGS32331C018	ARAB POLVARA SPINNING & WEAVING CO.	Personal and Household Products	31/12/2008	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 23
EGS3C111C019	Ceramic & Porcelain	Personal and Household Products	30/06/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 36
EGS37091C013	Eastern Tobacco	Personal and Household Products	30/06/2010	AFS obtained English	No	No	Yes	29-Dec-11	$ 773
EGS32131C012	Nile Cotton Ginning	Personal and Household Products	30/06/2010	No AFS	Unknown	Unknown	unknown	15-Dec-11	$ 58
EGS69031C010	Olympic Group Financial Investments	Personal and Household Products	31/12/2010	AFS obtained English	No	No	No	18-Dec-11	$ 398
EGS33041C012	Oriental Weavers	Personal and Household Products	31/12/2010	AFS obtained English	No	No	Yes	29-Dec-11	$ 450
EGS65211C012	Egyptian Real Estate Group	Real Estate	31/12/2010	ARABIC only - translated sample	No	Unknown	Unknown	29-Mar-12	$ 16
EGS65071C010	El Kahera Housing	Real Estate	31/12/2010	ARABIC only - translated sample	No	Unknown	Unknown	29-Mar-12	$ 75
EGS65091C018	El Shams Housing & Urbanization	Real Estate	31/12/2009	ARABIC only - translated sample	No	Unknown	Unknown	29-Mar-12	$ 56
EGS65061C011	United Housing & Development	Real Estate	31/12/2008	ARABIC only - translated sample	No	Unknown	Unknown	29-Mar-12	$ 106
EGS65112C012	Arab Investment Urbanization	Real Estate	31/12/2010	No AFS	Unknown	Unknown	Unknown	03-Mar-12	$ 14
EGS70021C018	Cairo Development and Investment	Real Estate	31/12/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 9
EGS65541C012	Cairo Investment & Real Estate Development	Real Estate	31/12/2010	AFS obtained English	Mentioned in Notes but no financial disclosure	No	Yes	29-Dec-11	$ 22
EGS65081C019	Development & Engineering Consultants	Real Estate	31/12/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 23

ISIN	Company Name	Sector Name	Last Year Ended per Egypt Stock Exchange	Category	Use of derivatives	IFRS prepared	Egyptian Accounting Standards	Date Market Cap	Market Cap USD m
EGS65341C017	Egyptians Housing Development & Reconstruction	Real Estate	31/12/2010	No AFS	Unknown	Unknown	Unknown	29-Dec-11	$ 32
EGS01081C016	General Company For Land Reclamation,Development & Reconstruction	Real Estate	30/06/2010	ARABIC only	Unknown	Unknown	Unknown	29-Dec-11	$ 46
EGS65461C013	Gharbia Islamic Housing Development	Real Estate	31/12/2010	ARABIC only	Unknown	Unknown	Unknown	29-Dec-11	$ 7
EGS651B1C018	Gulf Canadian Real Estate Investment Co.	Real Estate	31/12/2009	ARABIC only	Unknown	Unknown	Unknown	29-Dec-11	$ 10
EGS65591C017	Heliopolis Housing	Real Estate	30/06/2010	ARABIC only	Unknown	Unknown	Unknown	29-Dec-11	$ 205
EGS67191C014	International Co For Investment & Development	Real Estate	31/12/2010	ARABIC only	Unknown	Unknown	Unknown	29-Dec-11	$ 11
EGS65571C019	Medinet Nasr Housing	Real Estate	30/06/2010	ARABIC only	Unknown	Unknown	Unknown	29-Dec-11	$ 191
EGS65441C015	Mena Touristic & Real Estate Investment	Real Estate	31/12/2010	ARABIC only	Unknown	Unknown	Unknown	29-Dec-11	$ 19
EGS652L1C015	Namaa for Development and Real Estate Investment Co.	Real Estate	31/12/2009	ARABIC only	Unknown	Unknown	Unknown	29-Dec-11	$ 96
EGS65131C012	National Housing for Professional Syndicates	Real Estate	31/12/2010	ARABIC only	Unknown	Unknown	Unknown	29-Dec-11	$ 39
EGS65511C015	National Real Estate Bank for Development	Real Estate	31/12/2010	ARABIC only	Unknown	Unknown	Unknown	29-Dec-11	$ 13
EGS655L1C012	Palm Hills Development Company	Real Estate	31/12/2010	ARABIC only	Unknown	Unknown	Unknown	29-Dec-11	$ 190
EGS65851C015	Six of October Development & Investment (SODIC)	Real Estate	31/12/2009	AFS obtained English	Mentioned in Notes but no financial disclosure	No	Yes	29-Dec-11	$ 120
EGS691S1C011	T M G Holding	Real Estate	31/12/2010	AFS obtained English	No	No	Yes	29-Dec-11	$ 1,018
EGS01071C017	Wadi Kom Ombo Land Reclamation	Real Estate	30/06/2010	ARABIC only	Unknown	Unknown	Unknown	29-Dec-11	$ 12
EGS21171C011	Zahraa Maadi Investment & Development	Real Estate	31/12/2010	ARABIC only	Unknown	Unknown	Unknown	29-Dec-11	$ 82
EGS52051C017	B-Tech	Retail	31/12/2010	ARABIC only	Unknown	Unknown	Unknown	29-Dec-11	$ 35
EGS30441C017	General Silos & Storage	Retail	30/06/2009	ARABIC only	Unknown	Unknown	Unknown	29-Dec-11	$ 37
EGS53051C016	Misr Duty Free Shops	Retail	30/06/2009	No AFS	Unknown	Unknown	Unknown	13-Dec-11	$ 47
EGS48022C015	Egyptian Satellites (NileSat)	Technology	31/12/2010	ARABIC only	Unknown	Unknown	Unknown	27-Dec-11	$ 30
EGS690C1C010	Raya Holding For Technology And Communications	Technology	31/12/2010	ARABIC only	Unknown	Unknown	Unknown	29-Dec-11	$ 36
EGS740C1C010	Sues Canal Company For Technology Settling	Technology	31/08/2010	ARABIC only	Unknown	Unknown	Unknown	29-Dec-11	$ 173
EGS48011C018	Egyptian Company for Mobile Services (MobiNil)	Telecommunications	31/12/2010	ARABIC only	Unknown	Unknown	Unknown	29-Dec-11	$ 1,304
EGS74081C018	Orascom Telecom Holding (OT)	Telecommunications	31/12/2010	ARABIC only	Unknown	Unknown	Unknown	22-Jan-12	$ 2,291
EGS48031C016	Telecom Egypt	Telecommunications	31/12/2010	AFS obtained English	No	No	Yes	29-Dec-11	$ 3,758

ISIN	Company Name	Sector Name	Last Year Ended per Egypt Stock Exchange	Category	Use of derivatives	IFRS prepared	Egyptian Accounting Standards	Date Market Cap	Market Cap USD m
EGS70081C012	Misr Hotels	Travel & Leisure	30/06/2010	ARABIC only - translated sample	No	Unknown	Unknown	29-Mar-12	$ 23
EGS70431C019	Egyptian for Tourism Resorts	Travel & Leisure	31/12/2010	ARABIC only	Unknown	Unknown	Unknown	29-Dec-11	$ 147
EGS70062C012	Guezira Hotels & Tourism	Travel & Leisure	31/12/2009	ARABIC only	Unknown	Unknown	Unknown	19-Dec-11	$ 9
EGS70321C012	Orascom Hotels And Development	Travel & Leisure	31/12/2009	ARABIC only	Unknown	Unknown	Unknown	Unknown	
EGS70331C011	Pyramisa Hotels	Travel & Leisure	31/12/2010	ARABIC only	Unknown	Unknown	Unknown	29-Dec-11	$ 40
EGS70271C019	Remco for Touristic Villages Construction	Travel & Leisure	31/12/2010	ARABIC only	Unknown	Unknown	Unknown	29-Dec-11	$ 66
EGS70281C018	Rowad Tourism (Al Rowad)	Travel & Leisure	31/12/2010	ARABIC only	Unknown	Unknown	Unknown	29-Dec-11	$ 23
EGS70571C012	Sharm Dreams Co. for Tourism Investment	Travel & Leisure	31/12/2010	ARABIC only	Unknown	Unknown	Unknown	29-Dec-11	$ 64
EGS65021C015	Tourism Urbanization	Travel & Leisure	31/12/2010	ARABIC only	Unknown	Unknown	Unknown	27-Dec-11	$ 6
EGS79072C012	TransOceans Tours	Travel & Leisure	31/12/2010	ARABIC only	Unknown	Unknown	Unknown	29-Dec-11	$ 2
EGS39011C019	Natural Gas & Mining Project (Egypt Gas)	Utilities	31/12/2010	ARABIC only	Unknown	Unknown	Unknown	29-Dec-11	$ 149

Annexure B: Example of company data collection

	Orascom Construction Group												
	Industry: Construction and Materials		SWAPS			FORWARDS		OPTIONS				FUTURES	ESOP
1	**Market cap at year-end**	**$m**	$									7,005	
2	**Has the company entered into the following during**												
	- the financial year ended 2009		Yes			Yes							
	- the financial year ended 2008												
			Interest	**Commodity**	**Currency**	**Currency**	**Commodity**	**Commodity**	**Currency**	**Share**	**Commodity**		
3	**If so, specify**												
	- the financial year ended 2009		Yes		Yes	Yes							
	- the financial year ended 2008												
3	**Quantify the fair value as at the year end - assets**	**$m**											
	- 2009		Cannot establish			Cannot establish							44
4	**Dilutive effect of share options as at end of 2009**												1.64%

Annexure C: Literature review - comparison of prior studies

Authors	Study type	Country	Response rate	Usage rate
Bodner, Hayt, Marston and Smithson (1995)	Wharton survey style	USA	26.5%	35%
Philips (1995)	Wharton survey style	USA		63%
Bodnar, Hayt and Marston (1996), Wharton Survey of Derivative Usage by US Non-Financial Firms	Wharton survey style	USA	17.5%	41.0%
Berkman, Bradbury and Magan (1997), An International Comparison of Derivative Use	Wharton survey style	USA and New Zealand	63.7%	53.1%
Grant, K. and Marshall, A.P., (1997), Large UK Companies and Derivatives	Wharton survey style	UK		90.0%
Bodner, Hayt and Marston, (1998), 1998 Wharton Survey of Financial Risk Management by US Non-Financial Firms	Wharton survey style	USA	20.7%	50.1%
Bodner and Gebhardt, (1999), Derivatives Usage in Risk Management by US and German Non-Financial Firms: A Comparative Survey	Wharton survey style	USA and Germany	34.2%	USA 57% Germany 78%
Jalilvand, A. (1999), Why firms use derivatives-Canada	Wharton survey style	Canada	28.0%	75.0%
Prevost, A.K., Rose, LC. and Miller, G (2000), Derivatives Usage and Financial Risk Management in Large and Small Economies: A Comparative Analysis	Wharton survey style	New Zealand	46.4%	67.1%
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 survey style	Belgium	28.1%	65.8%
Mallin, Ow-Yong and Reynolds (2001), Derivative usage in UK non-financial listed companies	Wharton survey style	UK	28.9%	60.0%
Bodnar, G.M., de Jong, A., Macrae,V., (2003), The Impact of Institutional Differences on Derivatives Usage: a Comparative Study of US and Dutch Firms	Wharton survey style	USA and Holland	50.3%	60.0%
Bailly, N., Browne, D., Hicks, E., and Skerrat, L. (2003) UK corporate use of derivatives	Wharton survey style	UK	37.2%	72.0%
Shu, P. and Chen, H., (2003), The Determinants of Derivatives Use: Evidence from Non-Financial Firms in Taiwan	Annual report style	Taiwan		From 31% to 37%
Lajili, K. and Zeghal, D., (2005), A Content Analysis	Annual report style	Canada		

of Risk Management Disclosures in Canadian Annual Reports				
Milos Sprcic, D., (2007), The use of derivatives as financial risk management instruments: The case of Croatian and Slovenian non financial companies	Wharton survey style	Croatia and Slovenia	22%	Slovenia 65.9% Croatia 43%
Al-Momani, R. and Gharaibeh, M.R., (2008), Foreign exchange risk management practices by Jordanian non-financial firms	Wharton survey style	Jordan	61%	
Bartram, S. M., Brown, G. W. and Conrad, J, (2008), The Effects of Derivatives on Firm Risk and Value	Annual report style	47 countries		60.5%
Bartram, S.M., Brown, G.W. and Fehle, F.R., (2009), International Evidence on Financial Derivatives Usage	Annual report style	50 countries		60.3%

Annexure D: Egyptian results in the context of 2009 results

(Bartram, S.M., Brown, G.W. and Fehle, F.R., (2009), International Evidence on Financial Derivatives Usage)

Country	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
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
Egypt[40]	175	35.6%	65	26	10
Egypt[41]- non financial	175	13.3%	60	40	0
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
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

[40] The results include Banks and Financial Services companies

[41] These results exclude Banks and Financial Services companies

Country	Number of Firms	All Types of Derivatives (%)	Foreign Exchange (%)	Interest Rate (%)	Commodity (%)
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