

**THE INFORMATION CONTENT OF THE INTRODUCTION OF
DERIVATIVE TRADING AT THE NAIROBI SECURITIES
EXCHANGE**

BY:

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REG. NO: D61/ 72904/2012**

**A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENT FOR THE DEGREE OF MASTER OF
BUSINESS ADMINISTRATION, UNIVERSITY OF NAIROBI**

NOVEMBER 2013

DECLARATION

This research project is my original work and has not been submitted for academic purposes in any institution of higher learning.

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This research project has been submitted for examination with my approval as the University supervisor.

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DEDICATION

I dedicate this work to my parents Mr. and Mrs. Daniel Rono for their love, support and encouragement, also for their determination to educate me and for their exemplary support and inspiration all through.

ACKNOWLEDGMENTS

I acknowledge the Almighty God for giving me good health and all the provisions I needed during my entire study. Sincere appreciation to my supervisor Mr. Herick Ondigo for continued guidance, valued contribution and input. I would also like to appreciate my family and friends for their continued encouragement and emotional support.

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LIST OF ABBREVIATIONS

ACD:	Autoregressive Conditional Duration
AFN:	Association of Futures Market
ASE:	Athens Securities Exchange
ASEA:	African Securities Exchange Association
ASX:	Australian Securities Exchange
CMA:	Capital Markets Authority
DJIA:	Dow Jones Industry Average
EASEA:	East African Securities Exchange Association
FTSE:	Financial Times and Stock Exchange
GARCH:	Generalized Auto Regressive Conditional Heteroskedasticity
GJR:	Glosten Jagannathan Runkle
IBEX:	Official Index of the Spanish Continuous Market
KOSPI:	Korea Composite Stock Price Index
LIFFE:	London International Financial Futures and Options Exchange
MSCI:	Morgan Stanley Capital International
NSE:	Nairobi Securities Exchange
OLS:	Ordinary Least Squares
SEC:	Securities Exchange Commission
WFE:	World Federation of Exchange

ABSTRACT

This study sought to analyse the information content on derivatives trading announcement at the Nairobi Securities Exchange. The target population of the study were the companies traded in the NSE between 2012 and 2013 which were 56 companies; this is the event window that is before and after the announcement of the derivative trading in Kenya. The study used the all share index. Data was collected from secondary sources. Data on share price and Market value was collected from the NSE. Annual reports of the companies were obtained between 2012 and 2013 which is the study period. This study used the market model in order to analyse the determinants of the information content among companies listed at the NSE. The independent variables include prices of the shares before the introduction of derivatives. The study found out that as a result of the announcement there was increased liquidity in the capital markets and the prices of the assets and stocks were adequate. From the study findings the researcher can conclude that the announcement of derivatives trading had adverse effects on the performance of NSE stock markets. The researcher also found out that on the announcement of derivatives trading there was price discovery at the NSE. Most of the securities prices trading after the announcement of the derivatives trading were affected by the basic supply and demand factors related to the market. On the announcement of derivatives trading improved liquidity among the investors and information asymmetries in the market place was reduced. This is true because the announcement of the derivatives enhanced efficiency and increased liquidity in the new markets. The operation of futures markets or the information content and the introduction of derivative trading in stock markets have produced many important changes in the volatility of the markets and more particularly, in the volatility of the underlying asset. Results obtained prove the decrease in the level of volatility when the derivatives markets were proposed to be introduced as dummy variables. So, a net positive influence is observed from the trading of the derivatives introduction on index. The trading volume of the NSE 20 Share Index also increased on the proposed introduction of derivative markets and this effect appears even when the volume traded on the expirations days is removed. The introduction of derivatives does not represent a problem for the spot market because their impact is beneficial as seen in other countries which have introduced them. From the study findings the researcher recommends that the NSE should move with speed to introduce the use of derivatives markets because this will not only be beneficial to the investors but also it will help in the growth and development of the economy. On the hand the NSE should introduce the derivatives trading because they will go a long way in furnishing investors information content which is necessary in decision making in relation to the NSE trading activities. The researcher recommends that before the NSE introduces derivatives trading it should carry out a researcher to ensure that the benefits to be achieved outweigh risks. From the work done further research can be considered on: Whether derivative trading can lead to companies listed at the NSE manage risks and reduce costs. A comparative study on the determinants of information content and its relationship with a firm's performance as well as the impact of derivatives trading on market volatility. The researcher also recommends a study on whether derivatives can bring about any turnaround in the capital markets operations, creating opportunities to the participants to realize optimal reward from their investments and to manage the associated risk effectively.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The Capital Markets Authority (CMA) confirmed that there will be derivatives trading in Kenya by this year June (2013). This is a follow up of the policy pronouncement that a Futures Exchange would be set up in Kenya. Subsequently in August 2010, a Multi-Sectoral Task Force was established and tasked with developing the policy, institutional and legal framework for establishing a futures market in Kenya. The Task Force completed the assignment and submitted its report in December 2010 following benchmark study tours to Mauritius and India during which it consulted with Futures Exchanges; Intermediaries; Investors and Futures Market Regulatory Authorities.

The C.M.A explained that the establishment of a Futures Exchange will benefit all sectors of the economy by addressing the current volatility of prices of commodities that would be traded in the Futures Exchange. It proposed the Futures Exchange would be incorporated as a demutualized corporate entity to create a new class of investment opportunities that will help elevate the Kenyan economy to a new level in the global economy by facilitating futures trading of multi asset classes including currency, mineral and energy derivatives”

Although derivatives have been extensively used in the field of finance, there are still some criticisms concerning its usage (Arditti, 1996). These are complex tools, which if not properly understood could be wrongly used. Just as they could bring about gains, they also cause losses.

1.1.1 Information Content

Harvey (2011), defined information content effect, as the rise in the stockprice following a dividend signal, or publication of some other related news. It can also be defined as the increase or decrease in the price of a security as a result of new relevant information. Signalling effect suggests that announcements convey information on the firm's future prospects by stimulating changes in share prices which further generate returns to the shareholders. An announcement increase is usually seen by the market as conveying good news meaning that the company has favourable prospects. The reverse is true.

1.1.2 Derivatives Trading Announcement

According to United Nations Commodities Trading Statistics the volume of global commodities trading was estimated at USD 192 Trillion. The derivatives market is much bigger with the total value of derivatives estimated at more than USD 1,000 Trillion. In Africa only South Africa has a vibrant derivatives market while Nigeria is moving towards its implementation. The rest of Africa only has commodities markets in place. Derivatives markets are very important for the development of capital markets in Africa as they can facilitate the management of financial risk exposure, since they allow investors to unbundle and transfer financial risk. In principle, such markets could contribute to a more efficient allocation of capital and cross-border capital flow, create more opportunities for diversification of portfolios, facilitate risk transfer, price discovery, and more public information. Kenya is yet to develop a derivatives market but following the pronouncement during the National Budget speech 2010 that regulations to allow commodities futures trading are going to be put in place, there is reason for optimism (CMA, 2010).

A Derivative is a financial instrument that derives its value from an underlying asset. Derivative is a financial contract whose price/value is dependent upon price of one or more basic underlying asset, these contracts are legally binding agreements made on trading screens of stock exchanges to buy or sell an asset in the future. McDonald (2006), defined derivative as a financial instrument (or more simply, an agreement between two people) that has a value determined by the price of something else. Examples of derivatives include; Options, Swaps Futures and Forwards.

Nagendran (2008,) defined an option as a financial instrument whose value depends upon the value of the underlying assets. Option itself has no value without underlying assets. Option gives the right to the buyer either to sell or to buy the specified underlying assets for a particular price (Exercise / Strike price) on or before a particular date (expiration date). If the right is to buy, it is known as “call option” and if the right is to sell, it is called as “put option”. The buyer of the option has the right but no obligation either to buy or to sell. The option buyer has to exercise the option on or before the expiration date, otherwise, the option expires automatically at the end of the expiration date. Hence, options are also known as contingent claims.

According to Saunders and Cornett (2011), to understand the essential nature and characteristics of forward and futures contracts, it is compared with spot contracts. A spot contract is an agreement between a buyer and a seller at time 0, when the seller of the asset agrees to deliver it immediately and the buyer agrees to pay for the asset immediately. Saunders and Cornett (2011) defined a Forward contract as a contractual agreement between a buyer and a seller at time 0 to exchange a prespecified asset for cash at a later date. They defined a Future contract as normally arranged through an organized exchange. It is an

agreement between a buyer and seller at time 0 to exchange a standardized, prespecified asset for cash at a later date.

Finally Swaps can be defined as an agreement between two parties to exchange specified periodic cash flows in the future based on some underlying instrument or price. Like forward, futures and option contracts, swaps allow firms to better manage their interest rate, foreign exchange and credit risks (Saunders and Cornett, 2011).

Derivatives depends on who you are, therefore we will look at three distinct perspectives on derivatives: The end-user perspective, these are the corporations, investment managers, and investors who enter into derivative contracts for the reasons such as; to manage risk, speculate, reduce costs, or avoid a rule or regulation. End users have a goal and care about how a derivative helps to meet the goal (McDonald, 2006).

The market-maker perspective, they are intermediaries, traders who will buy derivatives from customers who wish to sell, and sell derivatives to customers who wish to buy. In order to make money, market-makers charge a spread. Market-makers typically hedge risk and thus are deeply concerned about the mathematical details of pricing and hedging (McDonald, 2006).

Finally, we can look at the use of derivatives, the activities of the market-makers, the organization of the markets, the logic of the pricing models, and try to make sense of everything. This is the activity of the economic observer (McDonald, 2006).

Therefore during this study we will focus on the third perspective that is the economic observer. We will look at the introduction of derivative trading announcement in an economic perspective and how it will impact on the NSE.

1.1.3 Informational Content of Derivative Trading Announcement

The derivatives market plays a distinctive and complex role in the functioning of the capital markets, and one which is often not well understood. The hypothesis is that, the presence of derivatives will result in reduced volatility and increased trading volume in the capital raising and capital trading markets (Janelle George, 2009).

The derivatives market also provides the opportunity for arbitrage. It achieves this by generating a link with the underlying markets, and if prices between the two markets are not adequately aligned then arbitrage profits can arise (Hawkesby, 1999). The possibility of arbitrage has positive flow-on effects, as it can increase the liquidity of the derivatives market, as new investors enter to gain arbitrage profits. Moreover, arbitrage ensures that the derivatives markets and the assets in the underlying markets are adequately priced.

Derivatives also have adverse effects to the performance of the Stock Markets. Warren Buffet, described derivatives as double edged swords for business. Derivatives used for speculative purposes can be disastrous for a firm's balance sheet and liquidity, as was the case with Long-Term Capital Management in 1998, American International Group Inc. in 2008, and MF Global in 2011. It is believed to be one of the main reasons for the global financial meltdown in 2008 (Saunders and Cornett 2011).

1.1.4 Nairobi Securities Exchange

The Nairobi Securities Exchange (NSE) is the principle securities exchange in Kenya. Besides equity securities, the NSE offers a platform for the issuance and trading of debt securities. The NSE is a member of the African Securities Exchange Association (ASEA) and

the East African Securities Exchange Association (EASEA). It is an affiliate member of the World Federation of Exchange (WFE) (NSE, 2013).

The examination of the current state of African stock markets indicates (NSE included) the many challenges that these markets face specifically in terms of low capitalization and liquidity (CMA 2010). Thus one of the recommendations made was the introduction of derivative trading in these markets. On 28th February 2013 the Nairobi Securities Exchange (NSE) became an associate member of the Association of Futures Market (AFM).

The Association of Futures Market (AFM) is not-for-profit association founded by ten members: Budapest Commodity Exchange, the Central Clearing House and Depository Limited of Budapest, the Romanian Commodities Exchange, the Buenos Aires Futures Exchange, the Amsterdam Commodity Exchange, South African Futures Exchange, the Warsaw Commodity Exchange and the Malaysian Derivatives Exchange (NSE 2013).

NSE plans to introduce derivative trading in June 2013 so as to increase the instruments traded at the NSE. Establishment of a derivative market in Kenya will enable Kenyan corporate and individuals to manage risk such as fluctuating produce prices, currencies and interest rate more effectively (NSE 2013).

1.2 Research Problem

Literature suggests that if informed traders trade derivatives, possibly due to lower costs and or higher leverage, then we should see price discovery in the derivative trading announcement. Black (1975) states that greater financial leverage in derivatives markets can provide a more effective lower-cost avenue for informed trading. Easley, O'Hara, and

Srinivas (1998) argue that a unidirectional linkage between derivative prices and their underlying stocks is only valid in complete markets. In 2002, the NSE sought to strengthen the institutional arrangement by undertaking senior management and board study tours to gain exposure on the operations and regulation of financial products such as futures and options. Furthermore, the CMA planned that a futures and options market would be established once the establishment of an electronic depository trading and settlement was completed.

Whereas the Automated Trading System (ATS) was established in 2006, it was expected that the derivatives segment would take off sooner. To date, the derivatives market is yet to be operational. As part of the market reforms agenda, the Authority initiated market reforms in 2001 which led to the reorganization of the NSE into four distinct segments: the Main Investments Market Segment (MIMS); Alternative Investments Market Segment (AIMS); Fixed Income Securities Market Segment (FISMS); and the Futures and Options Market Segment (FOMS). To date all but the FOMS remain active.

Elsewhere studies undertaken in the area include, Effect of the Derivative Market on the underlying markets (Janelle, 2009). Local studies in the area have been undertaken by researchers such as Kiyangi (1978) studied forward exchange rate in administered forward marketing in Kenya focusing only on the forward contracts. Nang'aya (2002) studied pricing of options using the black and Scholes model, case of the NSE stock and found out that such a model should be introduced in Kenya. Namale, (2008), sought to determine the extent of use of financial derivatives by commercial banks in Kenya. Finally another study on the area was conducted by (Agala, 2009) studied factors hindering derivatives trading at the Nairobi stock exchange. The studied focused on what made Kenya not to be trading in derivatives.

Despite the literature reviewed above, and considering this is a new area of study in Kenya since derivative trading begins this year. There are research gaps that need to be addressed if conclusions are to be drawn on the impact of derivative trading in Kenya. The study carried out by CMA (2010), only focused on the benefits of derivative trading in Kenya. This study will therefore provide answers to the following questions: What is the information content associated with the announcement of derivative trading at the NSE?

1.3 Objective of the Study

To analyse the information content on derivatives trading announcement at the Nairobi Securities Exchange.

1.4 Value of the Study

The study will be of value to different categories of people. It will be useful to investors such as corporations and investment managers who enter into derivative contracts for the reasons such as: to manage risk, speculate and reduce costs. It will be useful to owners of firms in Kenya as it will add knowledge on the understanding of derivative trading in analysing company performance.

It will benefit managers as they make strategic decisions that could include financial deepening. This study will demonstrate how such decisions would impact on the financial performance of their firms. It will also benefit academicians and researchers by providing more insight into the relationship between derivative trading and the performance of the NSE. It will provide more empirical evidence on the issue which can be used to formulate or validate existing theories on the relationship.

Capital Market Authority, as the body mandated to promote, regulate and facilitate the development of Capital Markets in Kenya would find this study helpful. Development of the capital markets in the country would most certainly be affected by the deepening decisions by firms in the industry. The findings can be used by the CMA to either promote or discourage derivative trading.

The Government will find this study very useful because derivative trading either increases economic growth or lead to economic stagnation or decline.

The study will contribute to the bulk of knowledge and research at the School of business at the University of Nairobi. It will be useful to students as a basis of reference for any future study in the field of derivatives. It will also expose any knowledge gaps in this field that would give a base for further studies in the topic.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter will present a review of existing literature on the introduction of derivative markets to stock markets so as to give an insight on the previous findings about information content implications of the introduction of derivatives on stock market.

The chapter examines studies carried out in the United States of America, India, Latin America, Europe, Asia, Middle East and South Africa .As the use of derivatives has grown experts have increasingly looked at the influence the derivatives market has on the new markets and the information content effect .

2.2 Theoretical Review

This chapter explains the motivation behind the introduction of financial derivatives product as is manifested in various theories and also the theories on market efficiency. How the establishment of the derivatives market has impacted on market efficiency leading to efficient market hypothesis.

2.2.1 Efficient-Market Hypothesis (EMH)

The concept of efficiency is central to finance. Primarily, the term efficiency is used to describe a market in which relevant information is impounded into the price of financial assets (Dimson and Mussavian, 2000)

According to Eugene Fama, 1965, an "efficient" market is defined as a market where there are large numbers of rational, profit-maximizes actively competing, with each trying to predict future market values of individual securities, and where important current information

is almost freely available to all participants, competition will cause the full effects of new information on intrinsic values to be reflected "instantaneously" in actual prices. Therefore, a market is said to be efficient if prices in that market reflect all available information.

2.2.1.1 Efficient Market Hypothesis

The efficient market hypothesis was widely accepted by academic financial economists; for example, Fama's (1970) influential survey article, "Efficient Capital Markets." It was generally believed that securities markets were extremely efficient in reflecting information about individual stocks and about the stock market as a whole. The accepted view was that when information arises, the news spreads very quickly and is incorporated into the prices of securities without delay. Thus, neither technical analysis, which is the study of past stock prices in an attempt to predict future prices, nor even fundamental analysis, which is the analysis of financial information such as company earnings, asset values, etc., to help investors select "undervalued" stocks, would enable an investor to achieve returns greater than those that could be obtained by holding a randomly selected portfolio of individual stocks with comparable risk.

2.2.1.2 Signalling Effect Theory

Dividend signalling theory suggests that dividend announcements convey information on the firm's future prospects by stimulating changes in share prices which further generate returns to the shareholders. A dividend increase is usually seen by the market as conveying good news meaning that the company has favourable prospects, the reverse is true.

Fuller information could reverse these perceptions. A dividend increase could be due to a shortage of attractive investments, implying that the growth prospects for the company and its dividends are poor. A dividend decrease maybe a positive sign for investors, indicating an abundance of attractive projects and hence good prospects of dividend payments in future. A

company wanting to cut its dividend for reasons of financial prudence often faces a significant decrease in its share price. In other words, we refer this as the “information content of dividend” as suggested by Miller and Modigliani (1961). According to Miller and Modigliani, a company’s value is determined by its expected future earnings and not on current earnings. If dividends are dependent on the permanent component of the earnings, dividends would serve as a surrogate for expected future earnings.

The classic study on dividend signalling suggests that current dividend is dependent on future as well as current and past earnings (Litner, 1956). Although changes in dividends do contain some information to the investors, dividend signalling is not universally applied to all firms.

An early study by Lintner (1956) on dividend signalling showed that changes in earnings will affect dividend payout and managers rarely change their dividend payout in order to achieve the target payout ratio. Miller (1986) argued it was not so much the direction of a dividend change that mattered, but more the difference between the actual dividend payment and the market’s expectations on what the dividend would be.

While early scholars suggested that firms use changes in dividends to convey information on the firms’ financial prospects to the investors, some argued that firms rarely change their dividends regardless of the earnings of the firm. The reasons of such sticky dividend can be explained by two factors:-

(a) Concern of firms in maintaining higher dividends in the future; and

(b) Negative views on dividend decrease, which is associated with decrease in share price

Based on the assertion of firms’ reluctant to change dividends, an increase in dividend signals a favourable expectation on the firm’s future prospects and vice versa.

2.2.2 Theories on the Introduction of Derivative Trading

The following theories are relevant to financial derivatives, these are, liquidity, volatility, information assimilation, price setting, risk level, and depth of the new markets. Moreover, there are dynamics and interrelationships between the various effects to consider, all of which will be discussed in this section.

2.2.2.1 Liquidity Theory

As highlighted by Kavussanos, Visvikis & Alexakis (2008), “the introduction of a derivatives exchange in a capital market is beneficial as derivatives can complete the market and improve efficiency”. One way in which the derivatives market enhances efficiency is that it increases liquidity in the new markets. This is achieved in several ways. Firstly, the CMA (2010) explain derivatives markets as being very essential for the development of capital markets in Africa as they can facilitate the management of financial risk exposure, since they allow investors to unbundle and transfer financial risk. This in turn increases liquidity in the primary market because people are less hesitant to purchase new securities, as there is a greater chance that they can trade them in the secondary market if necessary. Figlewiski (1987) supports this view, stating that investors are more enthusiastic about purchasing the new securities because they can manage their risk easily with futures and options.

Moreover, Levy and Post (2010) reveals that one reason for trading in derivative contracts is to transfer that price risk to another party who is willing to take it. Malkiel (1987) explains that another way in which the derivatives market increases liquidity in the new markets is through arbitrage. By providing a connection with the new markets, investors increase trading of new securities in order to gain arbitrage profits.

The Levy And Post (2010) also point out that liquidity in the new markets is increased because derivatives create an additional trading tool enabling investors to carry out trading strategies which would not have been otherwise possible. For example, the covered call strategy explained by Ross, Westerfield and Jaffe (2005) requires trading both derivatives and the new assets. Without the derivatives market investors cannot adopt such trading strategies and therefore the trading of stocks is less than it could have been, resulting in lower levels of liquidity. However the derivatives market can also have some harmful effects on the liquidity of the new markets. Skinner (1989) and Figlewski (1987) state that the advantages of increased liquidity in the new markets due to hedging, arbitrage and new trading strategies can also be partially offset by lower order flow. The efficiency and low cost attributes of the derivatives market make it a relatively more appealing investment option, as highlighted by Skinner (1989), who states that “it is plausible that an option listing is associated with movement by the informed traders out of the stock market and into the market for options written on the stock”. This can contribute to lower levels of liquidity within the cash markets.

Despite this a greater number of experts place support the positive liquidity effect argument. For instance, Aitken and Segara (2005), Choudhry (2004), Robbani and Bhuyan (2005), Skinner (1989) Chaudhury and Elfakhani (1997), and the Levy And Post (2010) all mention that the derivatives market can increase liquidity in the new markets. It can therefore be broadly acknowledged that the liquidity benefits from hedging, arbitrage and increased trading strategies are greater than the pitfalls from lower order flow, leading to the conclusion that the derivatives market provides a positive liquidity effect on the new markets. Increasing liquidity in the new markets is an extremely valuable function of the derivatives market. It means investors can more easily sell their securities if so desired, without losing large sums of money or significantly affecting the price of the securities. Hawkesby (1999) also points

out that there is a flow on effect - as additional investors are enticed to enter the markets due to the forces described above, liquidity increases, which lures more investors and so on and so forth. Ultimately this increases overall efficiency in the capital markets.

2.2.2.2 Cash Price Volatility Theory

The effect of derivatives trading on the stability of the new cash markets has been widely debated. Theoretical and empirical evidence has been considered, however no definitive verdict has been reached in the academic literature as to whether the derivatives market increases or decreases cash price volatility.

There are several key factors in particular of which their effect on volatility is disputed. The first factor is speculation. Economists such as Simpson and Ireland (1982), Kawai (1983), and Skinner (1989) argue that the increased speculation which accompanies the derivatives market will stabilise prices, reducing “the frequency and amplitude of price fluctuations” (Kawai, 1983). This is because speculators will drive prices into equilibrium in accordance with the efficient market hypothesis. On the other hand, economists such as Robbani and Bhuyan (2005), Chau, Holmes and Paudyal (2006), and Ely (1991) maintain that the increased speculation can have a destabilising effect on the new markets, because many of the speculators who trade derivatives are inexperienced, unsophisticated investors.

Evidently these investors would not usually trade on the primary and secondary markets and are lured to participate in the derivatives market because of the low cost. Therefore these investors may not always make the most optimal investment decisions, which can cause distorted price levels and contribute to volatility in the new market. The second factor which has varying effects on volatility is increased information flows. The derivatives market promotes greater information flows in the new markets. Damodaran and Lim (1991) recorded

lower levels of volatility following an increase in the amount of information transmitted. In contrast, Chau, Holmes and Paudyal (2008) found that increased information can contribute to additional volatility in the new markets.

Also worth noting is that supplementary ‘trading noise’ drawn from the derivatives market can potentially further exasperate this volatility effect. However empirical evidence drawn from Skinner (1989) and Damodaran and Lim (1991) indicated that in some instances there was a “decrease in the noisiness of information” following the introduction of derivatives. The final factor which has a debatable effect on volatility is the impact of investors trading in derivatives. The presence of the derivatives market means that rather than adjusting their portfolios within the new markets, investors are hedging risk by purchasing derivatives. Levy And Post (2010) maintain that this will result in more stability because “there is no direct market impact pressure in the new share market, and consequently lower volatility than if the trades were taking place in the new securities” .

However Howells and Bain (2002) argue that it means there is a greater chance the new market will not adjust back into equilibrium as investors are not changing their behaviour within this market, and this introduces additional risk into the entire system.

There are several other arguments for less volatility, including a decline in the bid-ask spread after the introduction of derivatives. Chaudhury and Elfakhani (1997) and Bollen (1997) subscribe to this thinking. Ely (2004) argues that because investors can hedge against risk cheaply and efficiently the presence of the derivatives market potentially enables investors to react more quickly to any fluctuations in price, which may lead to less cash price volatility.

In contrast to these views Howells and Bain (2002) suggest that investors who attempt to exploit arbitrage opportunities can also introduce greater volatility into the cash markets, particularly if the degree of their operations is considerably substantial. As emphasised in the theory outlined above the views about volatility are conflicting. However the empirical evidence is more consistent than the theoretical arguments. ASX (2006) established that “the percentage of firms that experienced a decrease in volatility ranged from 62% over the 50-day period to 79% over the 250-day sample” after the introduction of derivatives. Damodaran and Lim (1991) reported a 20% decline in volatility of the stocks surveyed, and Chaudhury and Elfakhani (1997) and Skinner (1989) also recorded empirical results supporting the decreased volatility argument. Dennis and Sim (1999) and Bollen (1998) find no significant volatility effect on the new markets, and of the research conducted no experts provided substantial empirical evidence that the derivatives market created significant price volatility in the new markets. Based on the degree of inconsistent literature and empirical evidence, it is difficult to define exactly what the influence of the derivatives market is on the volatility of the new cash markets. However the evidence leads towards the argument that the derivatives market decreases price liquidity in the new markets.

2.2.2.3. Price Discovery Theory

As explained by Malkiel (1989), Dennis and Sim (1999) and Gereben (2002) the existence of the derivatives market also affects the new markets by playing a ‘price discovery’ role. That is, investors are able to more precisely anticipate future prices of new assets by examining the activity within the derivatives market (Hawkesby, 1999). This is because of the forward looking nature of derivatives and the fact that information is absorbed rapidly in the derivatives markets.

This price discovery role benefits the capital markets as it enables traders to make better “assessments of risk management, portfolio management and budget planning decisions” (Kavussanos et al, 2008). Ultimately better investment choices are made overall.

2.2.2.4. Information Assimilation Theory

In addition to the price discovery role, the derivatives market also provides other important information and this ultimately affects the new markets as investors grasp the latest news from the derivatives market. Damodaran and Lim (1991) found that “empirical examinations of information structure proxies reveal an increase in the amount of information” in the new markets after derivatives have been introduced. Skinner (1991) also documented greater information flows following the listing of derivatives. Information can come in various forms.

For instance, Hawkesby (1999) states that the implied volatilities investors consider when pricing derivatives have a flow on effect on the markets’ expectation of the new asset’s volatility. The derivatives market can also help us to better comprehend any fluctuations in market sentiment (Gereben, 2002) and “new market information regarding returns” (Kavussanos et al, 2008).

2.2.2.5. Market Depth Theory

The derivatives market also promotes greater market depth in the new markets. As mentioned previously, the existence of the derivatives market entices investors to trade in the new markets. Danthine (1978) explains that this increased volume leads to greater depth in the cash markets. The market depth role is closely associated with the liquidity influence, as they are both positive effects which flow from an increase in trading activity. Greater market

depth is incredibly beneficial, as the better the depth of the market the larger the transaction required to affect the price of the security (Danthine, 1978). Ultimately the stability of the cash markets is maintained and the entire capital market profits.

There are several other important contributions that the derivatives market provides for the new markets. Howells and Bain (2002) point out that the derivatives market “contributes to the integration of global capital markets, hence improving the global allocation of savings and fostering higher investment levels”. Furthermore, by providing a cheap and efficient avenue to hedge and speculate, the derivatives market facilitates increased transparency, development and overall functioning in the capital markets (Kavussanos, Visvikis & Alexakis, 2008). This ultimately assists in the completion of the capital markets.

2.3 Types of Derivatives

A derivative has been defined by the Basel Committee on Banking and Supervision (2004) as a contract whose value depends on the price of an underlying assets but which does not require any investment of principal in those assets. As a contract between two counterparties to exchange payments based on an underlying prices or yields, any transfer of ownership of the underlying asset and cash flows becomes unnecessary. Derivatives can also be seen as financial instruments used by all economic agents to invest, speculate and hedge in financial markets, Kothari andHentchel (2001). Derivatives are usually broadly categorized by the relationship between the underlying and the derivative (forwards, options, swaps and futures), the type of underlying (equity derivatives, Foreign exchange derivatives, interest rate derivatives and credit derivatives) and the market in which they trade (exchange traded or over the counter).

There are four major classes of derivatives: futures, forwards, options and swaps contracts. These four types can be combined with each other in order to create a synthetic asset or liability which suits any kind of need. This extreme flexibility and freedom widely explain the incredible growth of these instruments on world financial markets (Allayannis and Weston 2001). The researcher will concentrate on futures and derivatives; this is because Kenya will only start trading in these two derivatives (CMA 2011)

2.3.1 Futures and Forwards

A futures contract is an agreement that requires a party to the agreement either to buy or sell something at a designated future date at a predetermined price. The basic economic function of futures markets is to provide an opportunity for market participants to hedge against the risk of adverse price movements (Fabozzi and Modigliani, 2003).

A forward contract, just like a futures contract, is an agreement for the future delivery of something at a specified price at the end of a designated period of time. Futures contracts are standardized agreements as to a delivery date and quality of the deliverable, and are traded on organized exchanges. A forward contract differs in that it is usually nonstandardized, that is the terms of each contract are negotiated individually between buyer and seller, no clearing house coordinates forward contract trading, and secondary markets are often non-existent or extremely thin. Unlike a futures contract, which is an exchange-traded product, a forward contract is an over-the-counter instrument (Fabozzi and Modigliani, 2003)

2.3.2 Options and Swaps

Options contracts offer another alternative for hedging interest rate and stock market risk or for speculating on changing bond and stock prices. Option contracts are a bit more one-sided than futures contracts. They allow someone to protect against a bad price movement without

giving up all the benefits of a good price movement. A swap is a derivate in which counterparties exchange cash flows of one party's financial instrument for those of the other party's financial instrument. The benefits in question depend on the type of financial instruments involved. For example, in the case of a swap involving two bonds, the benefits in question can be the periodic interest (or coupon) payments associated with the bonds (Fabozzi and Modigliani, 2003).

2.4 Event Study

Event studies measure security price changes in response to events. A single event study typically analyses the average security price reaction to instances of the same type of event experienced by many firms. For example, the event could be the announcement of a merger. The event date can vary from one security to another in the same study, with dates measured in "event time". Events give users a wide choice of the latest methods from the financial economics literature in a user-friendly, simple yet flexible and customizable environment (Cowan Research, 2002).

Event study is a statistical method to assess the impact of an event on the value of a firm. For example, the announcement of a merger between two business entities can be analysed to see whether investors believe the merger will create or destroy value. The basic idea is to find the abnormal return attributable to the event being studied by adjusting for the return that stems from the price fluctuation of the market as a whole (Gibson and Black, 1995)

Event studies examine the behaviour of firms' stock prices around corporate events. A vast literature written over the past several decades has become an important part of financial economics. Prior to that time, "there was little evidence on the central issues of corporate

finance. Now we are overwhelmed with results, mostly from event studies” (Fama, 1991). In a corporate context, the usefulness of event studies arises from the fact that the magnitude of abnormal performance at the time of an event provides a measure of the (unanticipated) impact of this type of event on the wealth of the firms’ claimholders. Thus, event studies focusing on announcement effects for a short-horizon around an event provide evidence relevant for understanding corporate policy decisions.

Event studies also serve an important purpose in capital market research as a way of testing market efficiency. Systematically nonzero abnormal security returns that persist after a particular type of corporate event are inconsistent with market efficiency. Accordingly, event studies focusing on long-horizons following an event can provide key evidence on market efficiency (Brown and Warner, 1980, and Fama, 1991).

Beyond financial economics, event studies are useful in related areas. For example, in the accounting literature, the effect of earnings announcements on stock prices has received much attention. In the field of law and economics, event studies are used to examine the effect of regulation, as well as to assess damages in legal liability cases.

Event study is some change, development, announcement that may produce a relatively large change in the price of the asset over some period. An event window is a period over which the event occurs. An estimation window is a period over which parameters are estimated. The event window is to be short relative to the estimation window (Campbell, Lo and MacKinlay, 1997)

2.5 Empirical Review

Various studies on the effects of derivatives listings on the information content of an underlying cash market have been carried out across the world. Overall, the empirical evidence is mixed, and most studies suggest that the introduction of derivatives does not destabilise the underlying market. These studies also show that the introduction of derivatives contracts improves liquidity and reduces informational asymmetries in the market. However, some evidence exists in support of increased volatility with the onset of derivatives trading. Thus, the volatility implications of derivatives are still debatable. In this section, we consider the important and recent literature in this area.

Rahman (2001) examined the impact of index futures trading on the volatility of component stocks for the Dow Jones Industrial Average (DJIA). The study used a simple GARCH model to estimate the conditional volatility of intra-day returns. The empirical results confirm that there is no change in conditional volatility from pre- to post-futures periods.

Chiang and Wang (2002) examined the impact of futures trading on Taiwan spot index volatility. Their study also discussed the macroeconomic and asymmetric effects of futures trading on spot price volatility behaviour. They used an asymmetric time-varying GJR volatility model. Their empirical results showed that the trading of futures on the Taiwan Index has stabilising impacts on spot price volatility, while the trading of Morgan Stanley Capital International (MSCI) Taiwan futures has no effects, except asymmetric response behaviour.

Pilar and Rafael (2002) analysed the effect of the introduction of derivatives on the Ibx-35 Index using a dummy variable and a GJR model to test the impact of the introduction of

derivative markets on the conditional volatility of the underlying asset. They found that although the asymmetry coefficient increased, the conditional volatility of the underlying index declined after derivatives were introduced. Robert and Michael (2002) investigated the impact of the introduction of stock index futures trading on the seasonality of daily returns of the underlying index for seven national markets. The results indicate reduced seasonality with respect to mean returns, thus leading to more efficiency in these markets.

Sung, Taek and Park (2004) studied the effect of the introduction of index futures trading in the Korean markets on spot price volatility and market efficiency of the underlying Korea Composite Stock Price Index (KOSPI 200) stocks relative to the carefully matched non-KOSPI 200 stocks; they found evidence that market volatility was not affected by futures trading, while market efficiency was improved. Taylor (2004) tried to uncover the determinants of trading intensity in futures markets. In particular, the time between adjacent transactions on the FTSE 100 index futures market was modelled using various augmentations of the basic autoregressive conditional duration (ACD). As predicted by various market microstructure theories, he found that the bid-ask spread and transaction volume have a significant impact on subsequent trading intensity. However, there was evidence that a large (small) difference between the market price and the theoretical price of the futures contract, which is known as pricing error, leads to high (low) levels of trading intensity in the subsequent period.

Sibani and Uma (2007) used OLS and GARCH techniques to capture the time-varying nature of volatility and volatility clustering phenomenon of the Nifty Index due to the introduction of futures trading. The results suggest that there are no significant changes in the volatility of the spot market of the Nifty Index, but the structure of volatility changes to some extent. The

study also reported that new information is assimilated into prices more rapidly than before, and there is a decline in the persistence of volatility since the introduction of futures trading.

Floros and Vougas (2006) examined the effect of futures trading on the volatility of the underlying spot market taking the FTSE/ASE-20 and FTSE/ASE Mid 40 Indices in Greece. The results for the FTSE/ASE-20 Index suggest that futures trading have led to decreased stock market volatility, but the results for the FTSE/ASE Mid 40 Index indicate that the introduction of stock index futures has led to increased volatility, while the estimations of the unconditional variances indicate a lower market volatility after the introduction of stock index futures.

Local Studies Conducted in this area is very limited as derivative trading in Kenya is still at its infant stage. Orina (2009) examined the factors hindering the trading of financial Derivatives in the Nairobi Stock Exchange. He concluded that the main factors hindering the trading of financial derivatives in the NSE are the infancy of the NSE market, lack of awareness about financial derivative products and the notion that it is an expensive risk management technique. The regulation and accounting complexities associated with financial derivatives, less developed political structures and government policies to ensure stability of financial systems and complexities in valuing financial derivatives.

Agala (2010) also examined the factors hindering derivatives trading at the NSE. His study further explored the efforts being done by the NSE and the CMA towards the development of the market. This included the findings of the study undertaken by the CMA on the viability of establishing a futures and options market segment at the NSE.

Namale (2012) examined the extent of use of financial derivatives by commercial banks in Kenya. He concluded that there is a positive relationship between financial derivatives trading and financial performance. In addition, there was also a positive relationship between Return on Assets, Return on Equity, profitability plus other variables as discussed and market share, market price to book value, growth in assets, leverage and dummy.

2.6. Summary of the Literature Review

The studies analysed above do not give a clear position regarding the factors hindering the trading of financial derivatives in developing markets such as stock exchanges in Africa. Most of the studies were carried out in developed and emerging markets. The studies focused on other markets and how volatility was affected by the introduction of derivatives. It explains the information content effect in other markets. In the local studies conducted at the University of Nairobi, the research mostly covered the factors hindering the introduction of derivative trading in Kenya. Since derivatives have started its operations in Kenya, this study will thus focus on its impact to the market, how the market will react and how it will influence volatility.

The conclusions drawn from the literature indicate that the derivatives market leads to greater liquidity, less volatility, better price discovery, information assimilation, and market depth in the new markets. We can therefore assume that the derivatives market has a beneficial impact on the new markets, with many theorists endorsing this and claiming the presence of derivatives boosts efficiency in the new markets and completes the capital market. We can also assume that the information content effect will be positive that is markets will react positive to the introduction of derivatives. This suggests that we should promote and advance the use of derivatives within the capital markets.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

A research methodology guides the researcher in collecting, analysing and interpreting observed facts (Bless and Achola, 1988). Therefore this chapter illustrates how the research was carried out. This chapter provides the research design that was adopted in this study with its defence as well.

3.2 Research Design

According to McMillan and Schumacher (2001), a research design is a plan for selecting subjects, research sites and data collection procedures to answer the research questions.

The researcher used descriptive research; this is because it portrays an accurate profile of persons, events or situations and surveys allowing the collection of large amount of data from a sizeable population in a highly economical way. It allows one to collect quantitative data which was analysed quantitatively using descriptive and inferential statistics (Barbie, 1995). Surveys are concerned with describing, recording, analysing and interpreting conditions that either exist or existed.

Therefore, the research was conducted through an event study research design. Event study analysis is a branch of econometrics which attempts to measure the effects of economic events on the value of firms by examining stock market data. Providing that share prices reflect the underlying economic values of assets, changes in equity values properly captured expected changes in the economic profitability of the firm (Beverley, 2007).

This design is adopted because it has the ability of attempting to measure the effects of economic events on the value of firms by examining stock market data. Also this study considers the effect on stock prices on announcements of derivative trading; this can be established with event study methodology.

3.3 Population

Mugenda and Mugenda (1999), defines population as an entire group of individuals, events or objects having common observable characteristics. The target population of the study were the companies traded in the NSE between 2012 and 2013 were 54 companies see appendix II; The study used the all share index.

3.4 Sample

Gay (1992) states that 10% of a population is considered to be minimum. With this in mind, 35% of companies traded in the all share index are considered as an appropriate sample size. Since at least 54 companies are listed in that index the researcher carried out the study on NSE 20 share index see appendix I. The choice of the companies was made on the assumption that they were the most traded companies at the NSE and information gathered sufficiently answered the research question.

3.5 Data Collection

Data was collected from secondary sources. Data on share price and Market value was collected from the NSE. Annual reports of the companies were obtained between 2012 and 2013 which is the study period. All the companies under the study were assumed to have been continually in business between 2012 and 2013 to ensure that the sampling frame is

current and complete. The event window will be 180 days, 60 days before the event and 60 days after the event.

3.6 Data Analysis

This study used the market model in order to analyse the determinants of derivative use among companies listed at the NSE. The independent variables include prices of the shares before the introduction of derivatives. The dependent variable is the share price of the companies after the introduction of derivatives. This model showed the information content on the introduction of derivative trading to NSE based on performance of the stock price of the companies, data for 20 companies for the period 2012 to 2013 is used. A total of 20 cases were observed. The data will be obtained from the Nairobi Securities Exchange (NSE).

3.6.1 Analytical Model

The 'market model builds on the actual returns of a reference market and the correlation of the firm's stock with the reference market (Schimmer, 2012). Equation (1) describes the model formally. The abnormal return on a distinct day within the event window represents the difference between the actual stock return ($R_{i,t}$) on that day and the normal return, which is predicted based on two inputs; the typical relationship between the firm's stock and its reference index (expressed by the α and β parameters), and the actual reference market's return ($R_{m,t}$).

$$AR_{i,t} = R_{i,t} - (\alpha_i + \beta_i R_{m,t}) \quad (1)$$

Typical abnormal returns associated with the distinct point of time before or after the introduction of derivative trading defined as follows.

$$AAR = \frac{1}{N} \sum_{i=1}^N AR_{i,t} \quad (2)$$

To measure the total impact of the introduction of derivative trading over the event window, the researcher adds up individual abnormal returns to create a 'cumulative abnormal return'. Equation (2) formally shows this practice.

$$CAR = \sum_{t=1}^n AR_{i,t} \quad (3)$$

The study holds multiple observations, the researcher further calculate 'cumulative average abnormal returns (CAARs)', which represent the mean values of the introduction of derivative trading. The presented CAARs represent the average stock market responses (in percent) to the introduction of derivative trading.

$$CAAR = \frac{1}{n} \sum_{i=1}^n CAR(t_1, t_2) \quad (4)$$

The T-test was used to test the significance of the cumulative average abnormal returns (CAARs). These tests were conducted at 95% level of confidence ($\alpha=0.05$)

CHAPTER FOUR

DATA ANALYSIS AND FINDINGS

4.1 Introduction

This chapter deals with data analysis and presentation of the findings. It covers the financial the response rate and the empirical discussion.

4.2 Response Rate

The study utilized secondary data gathered from the firms listed in the NSE. The research studied the data on share price and market value of 20 firms targeted for this study. Since all the expected data from all the targeted firms was available the response rate was therefore 100%. The table 4.1 below illustrates the number of firms and their sectoral classification that the study used for analysis.

Table 4.1 Sectoral Classification

Main investment segment	Total Number
Agricultural sector	4
Commercial and service sector	4
Financial sector	4
Industrial sector	4
Alternative investment market segment	4
Total	20

Source: Research Findings

4.3 Findings

This study examined the information content of the introduction of derivative trading at the Nairobi Securities Exchange underlying index the NSE 20 Share Index. The data that was used was the daily closing prices of NSE 20 Share Index, NSE All Share Index and how different stock prices changed for a period between January 2012 and January 2013 covering one year. The researcher used information gathered from NSE, with the help of excel worksheet and the SPSS software the researcher was able to estimate the market model to assist in analysing derivatives trading announcement on information content.

The researcher found out the following summary of output from the data analysed on 20 listed companies targeted for this study.

Table 4.2 Regression Statistics for 20 Companies

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Observation
1	.757 ^a	.711	.686	.214	20

Source: Research Findings

4.3.1 Interpretation of the Output from the Standard Multiple Regression

In the model provided above, R square tells how much of the variance in the dependent variable in this case information content which is basically the rise or fall in stock price following the announcement of derivative trading is explained in the model with other variables of Total Mastery and Total PCOISS. In this case the value is 0.711 expressed as a percentage, which means that the model explains 71.1% of the variance in perceived change in stock price vis-a-vis the independent variable derivative trading.

SPSS also provides an Adjusted R Square value in the output. It corrects the R square to provide a better estimate of the true population value. In this case, the value is 0.686. In all the estimated model coefficients, the R-values were less than .05 (i.e. $0.5 > R$) implying that derivatives trading tested significantly has an influence on the information content at 5% significance level. This is so because once the announcement was made the assumption is that it is seen by the market as conveying good news about a company. This stimulates changes in share prices which are further seen to generate better returns to shareholders.

The fitted model was diagnosed and found that the regression was statistically significant at 5% significance level. This shows that the combination of these derivative trading factors also called explanatory variables significantly affect the response variable information content.

The study found out that on the announcement of derivative trading there was a reduced volatility in trading stocks, the trading volumes also increased to a large extent in capital raising and capital trading markets. The researcher also found out that as a result of the announcement there was increased liquidity in the capital markets and the prices of the assets and stocks were adequate. From the study findings the researcher can conclude that the announcement of derivatives trading had adverse effects on the performance of NSE stock markets.

To assess the statistical significance of the result, it is necessary to look in the table below: ANOVA. This tests the null hypothesis that Regression (R) in the population equals 0. The model presented here reaches statistical significance of 0 i.e, [Sig = .000, this means $p < .0005$

Table 4.3 ANOVA ^a

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	44.867	8	5.607	32.723	.000 ^b
	Residual	4.122	24	.171		
	Total	48.980	32			

Source: Research Findings

4.3.2 Evaluating each of the Changes in Variables

The researcher also sought to find out the coefficients of some variables. Some of the variables that were considered include stock prices before/after derivatives announcement, NSE 20 Share Index before/after derivatives announcement and NSE ALL Share Index before/after derivatives announcement. These variables considered below were considered because they were used to elaborate on the impact of derivative trading announcement at the NSE. Table 4.4 below indicates the ‘Coefficients’ found:

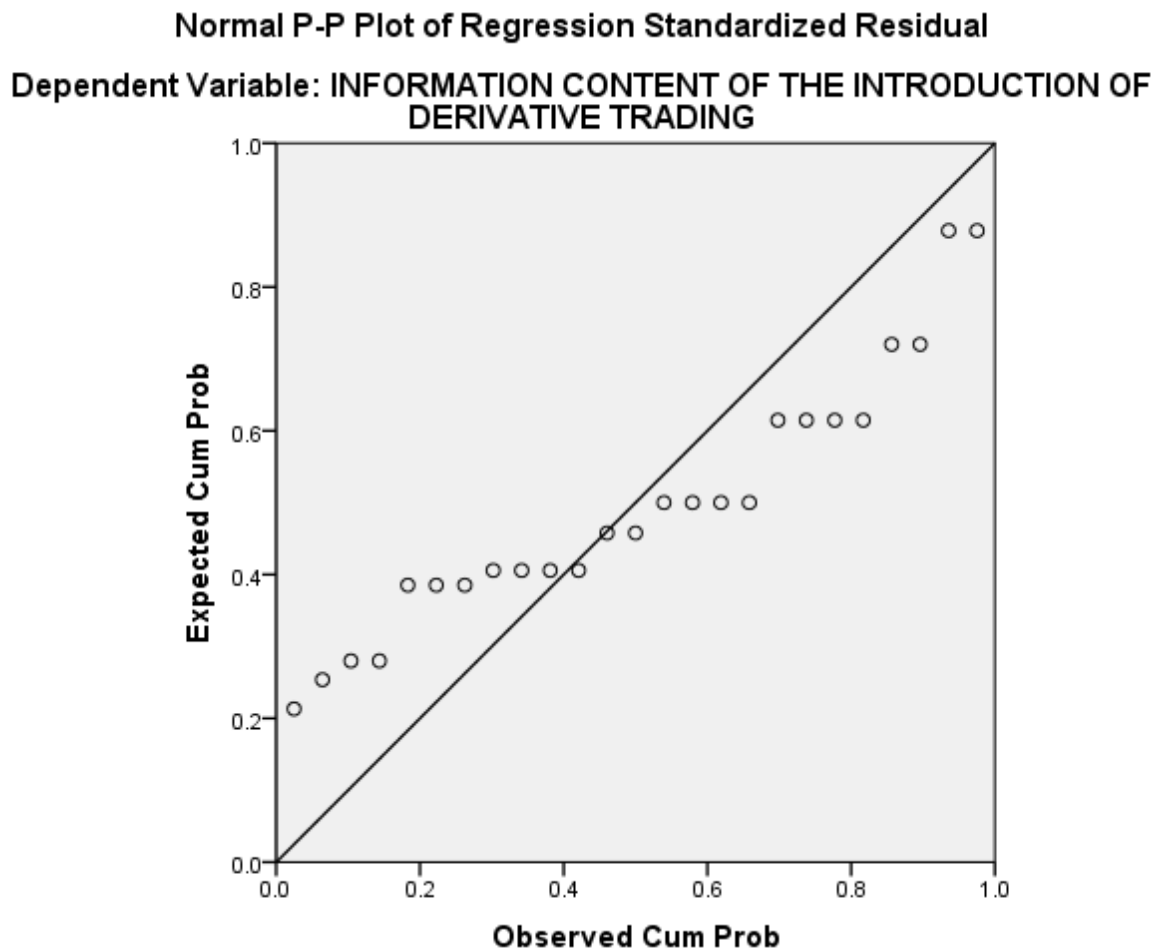
Table 4.4 Variable Models Analysis

Coefficients^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.122	.302		.403	.690
Stock prices before derivatives announcement	-.075	.368	-.053	-.204	.840
Stock prices after derivatives announcement	-.224	.301	-.128	-.745	.463
NSE 20 Share Index before derivatives announcement	.453	.174	.437	.609	.015
NSE 20 Share Index after derivatives announcement	.332	.366	.296	.908	.373
NSE ALL Share Index before derivatives announcement	.383	.260	.321	1.474	.153
NSE ALL Share Index after derivatives announcement	-.465	.294	-.278	-1.579	.127

Source: Research Findings

In this case, the researcher was interested in finding out the changes that occurred as a result of derivative trading announcement at the NSE. Therefore, the researcher uses the Beta values and chooses the largest of them (ignoring the negative signs), which is 0.465, which is for NSE ALL Share Index after derivatives announcement. This means that NSE ALL Share Index after derivatives trading announcement was the most affected, when the variance explained by all other variables in the model is controlled for.

Figure 4.1 The Fitted Regression Model Chart



Source: Research Findings

The predicting variable generates a positive regression as shown in the chart above. The normal probability plot of the regression standardized residuals is presented in the plot for

analysis. In this chart, the points lie in a reasonable straight diagonal line from bottom left to top right as shown. This suggests that no major deviation of the variables or the predictors from normality. This then implies a positive regression for the predictors considered are positively by the announcement of derivatives trading at the NSE.

4.4 Interpretation of the Findings

It is clear from the study findings that derivatives markets are very important for the development of capital markets as they can facilitate the management of financial risk exposure. NSE as a matter of urgency needs to introduce the derivatives markets in order for them to be able to compete effectively internationally.

The findings also indicate that with the introduction of derivatives markets investors will be able to unbundle and transfer financial risk. These markets will contribute to a more efficient allocation of capital and cross-border capital flow, create more opportunities for diversification of portfolios as well as facilitate risk transfer and price discovery. The introduction of derivatives will be beneficial to the country at large it is important for it to be embraced by the NSE.

The researcher also found out that on the announcement of derivatives trading there was price discovery at the NSE. Most of the securities prices trading after the announcement of the derivatives trading were affected by the basic supply and demand factors related to the market. The researcher also found out that on the announcement of derivatives trading improved liquidity among the investors and information asymmetries in the market place was reduced. This is true because the announcement of the derivatives enhanced efficiency and increased liquidity in the new markets. As a result of the announcement of derivatives trading the researcher also found out that investors and companies were able to manage their financial risk exposure because they are able to unbundle and transfer financial risk owing to the fact

that there is information symmetry. This is so because people in the primary market are less hesitant to buy new securities as they have another chance of trading them in the secondary market.

The study found out that the introduction of derivative trading at Nairobi Securities Exchange are considered as additional means for informed traders to trade on their information and for others to discover that information thus could be important to the would be investors. Once derivatives trading are introduced and working at the Nairobi Securities Exchange may not only lead the underlying assets in imparting information, they may also provide information that simply cannot be inferred from the markets in underlying assets. When this happens the likelihood of the informed traders profiting at the cost of noise or liquidity traders is minimized if not done away with. With the information-motivated trading may also be driven by differential information or differential interpretation of the same information by informed traders.

The researcher found that the introduction of derivatives trading cannot be considered as redundant in a market with information-related frictions. The implication is that the distribution of non-price derivatives market activity may be helpful for other purposes where the physical instead of the risk-neutral distribution of the underlying asset is needed.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of the finding and discussions of the study. It also covers the recommendations for further studies on related issues on the study not well covered as well as recommendations on matters of the information content of the introduction of derivatives trading. The study finally addresses the limitations of the conclusions of this study.

5.2 Summary

The announcement of derivative trading there was a reduced volatility in trading stocks, the trading volumes also increased to a large extent in capital raising and capital trading markets. The researcher also found out that as a result of the announcement there was increased liquidity in the capital markets and the prices of the assets and stocks were adequate. From the study findings the researcher can conclude that the announcement of derivatives trading had adverse effects on the performance of NSE stock markets.

The researcher used the Beta values and chooses the largest of them (ignoring the negative signs), which is 0.465, which is for NSE ALL Share Index after derivatives announcement. This means that NSE ALL Share Index after derivatives trading announcement was the most affected, when the variance explained by all other variables in the model is controlled for. The researcher also found out that on the announcement of derivatives trading there was price discovery at the NSE. Most of the securities prices trading after the announcement of the derivatives trading were affected by the basic supply and demand factors related to the market.

On the announcement of derivatives trading improved liquidity among the investors and information asymmetries in the market place was reduced. This is true because the announcement of the derivatives enhanced efficiency and increased liquidity in the new markets. As a result of the announcement of derivatives trading the researcher also found out that investors and companies were able to manage their financial risk exposure because they are able to unbundle and transfer financial risk owing to the fact that there is information symmetry. This is so because people in the primary market are less hesitant to buy new securities as they have another chance of trading them in the secondary market.

5.3 Conclusion

The operation of futures markets or the information content and the introduction of derivative trading in stock markets have produced many important changes in the volatility of the markets and more particularly, in the volatility of the underlying asset. Many studies have shown that the introduction of futures markets leads to a decrease in the volatility of the underlying index. They support that this is because of the increase in the market liquidity. The investors could hedge their positions due to the increased market liquidity and thus, reduce their risk. In contrast, many studies concluded that the underlying volatility has not changed after the introduction of derivative trading while other studies suggested that the volatility increased.

In summary, a great many papers, both theoretical and empirical, have addressed the question of how speculation in general, and derivative securities in particular, impact the underlying information content. The theoretical research has revealed that there are many different aspects of the relationship between cash and derivative markets. Although many models predict that the introduction of derivatives should have a stabilizing effect, this result

normally requires restrictive assumptions. At the end of the day, the theoretical literature gives ambiguous predictions about the effects of derivatives markets. As for the empirical literature, research has uncovered several stylized facts, most of which suggest that derivatives tend to help stabilize prices and improve liquidity in the underlying market, and that some price discovery occurs in derivative markets. It should be noted, however, that there are also many studies that come to the conclusion that derivatives have had no significant impact on cash markets.

In this study the possible effect of the introduction of derivatives on the NSE 20 Share Index on the underlying market has been examined. The study used different ARCH conditional volatility models to analyze the volatility of the underlying market. Results obtained prove the decrease in the level of volatility when the derivatives markets were proposed to be introduced as dummy variables. So, a net positive influence is observed from the trading of the derivatives introduction on index. The trading volume of the NSE 20 Share Index also increased on the proposed introduction of derivative markets and this effect appears even when the volume traded on the expirations days is removed. The introduction of derivatives does not represent a problem for the spot market because their impact is beneficial as seen in other countries which have introduced them. These conclusions contradict the popular belief that derivatives market trading increases the volatility and reduce the liquidity of the underlying market. As Antoniou and Holmes (1995) assert, it is necessary to emphasize that derivative markets already have a special regulation and that to impose greater restrictions, if this is not necessary, would have a negative impact on the development of the financial markets and therefore it would support a potential decrease in the efficiency of the markets. Finally, the introduction of derivative markets in markets possessing characteristics such as

small size and scarce liquidity could help to stabilize their spot markets, expanding the investment opportunity set and improving the daily operation of the market.

It can be concluded that greater financial leverage in the derivatives markets is likely to provide a more effective lower-cost avenue for any informed trading. The unidirectional linkage between derivative prices and their underlying stocks is only valid in complete markets and can not be achieved at the NSE.

5.4 Recommendations for Policy

From the study findings the researcher recommends that the NSE should move with speed to introduce the use of derivatives markets because this will not only be beneficial to the investors but also it will help in the growth and development of the economy.

On the hand the NSE should introduce the derivatives trading because they will go a long way in furnishing investors information content which is necessary in decision making in relation to the NSE trading activities.

This study recommends the adoption of derivatives trading at NSE in that it is likely to lead to improved market efficiency.

Finally, the researcher recommends that the all government departments should support the introduction of a derivatives market in the Kenya because this can lead to stabilization effect on risk as detected in other markets. The researcher recommends that before the NSE introduces derivatives trading it should carry out a research to ensure that the benefits to be achieved outweigh risks.

5.5 Limitations of the Study

Time was a limiting factor for the researcher since he is in full time employment and therefore did not have adequate time especially in the collection of data.

Further, data from NSE was insufficient to be used to answer the research objectives sufficiently.

In addition, limited resources on the part of the researcher were another limitation. The research lacked adequate funding for conducting the research.

5.6 Recommendations for Further Research

From the work done further research can be considered on: Whether derivative trading can lead to companies listed at the NSE manage risks and reduce costs.

A comparative study on the determinants of information content and its relationship with a firm`s performance as well as the impact of derivatives trading on market volatility.

The researcher also recommends a study on whether derivatives can bring about any turnaround in the capital markets operations, creating opportunities to the participants to realize optimal reward from their investments and to manage the associated risk effectively.

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APPENDICES

APPENDIX I: LIST OF COMPANIES IN THE NSE 20 SHARE INDEX AS AT 2012

1. Agricultural Sector

1. Rea Vipingo
2. Sasini

2. Commercial and Services Sector

3. CMC Holdings
4. Kenya Airways
5. Safaricom
6. Nation Media Group

3. Finance and Investment Sector

7. Barclays Bank of Kenya
8. Equity Bank
9. Kenya Commercial Bank
10. Standard Chartered Bank
11. Co-operative Bank of Kenya

4. Industrial and Allied Sector

12. Bamburi Cement
13. British American Tobacco
14. KenGen
15. East African Breweries
16. East African Cables
17. Kenya Power and Lighting Company
18. Athi River Mining
19. Mumias Sugar

5. Alternative Investment Market Segment

20. Express Kenya

(Source: PRESS RELEASE, NSE 2012)

APPENDIX II: LIST OF COMPANIES IN THE NSE ALL SHARE INDEX

Agricultural Sector

1. Rea Vipingo
2. Sasini
3. Kakuzi

Commercial and Services Sector

4. CMC Holdings
5. Access Kenya
6. Car and General
7. Hutchings Bremer Ltd
8. Marshalls (E.A)
9. Scangroup
10. Standard Group
11. TPS Eastern Africa (Serena)
12. Uchumi Supermarket
13. Kenya Airways
14. Safaricom
15. Nation Media Group

Finance and Investment Sector

16. Barclays Bank of Kenya
17. Centum Investments Company
18. CFC Stanbic Holdings
19. Diamond Trust Bank
20. Housing Finance
21. Jubilee Holdings
22. Kenya Re-Insurance Corporation
23. National Bank of Kenya

24. NIC Bank
25. Olympia Capital Holdings
26. Pan-Africa Insurance Holdings
27. Equity Bank
28. Kenya Commercial Bank
29. Standard Chartered Bank
30. Co-operative Bank of Kenya

Industrial and Allied Sector

31. Bamburi Cement
32. British American Tobacco
33. KenGen
34. East African Breweries
35. East African Cables
36. Kenya Power and Lighting Company
37. Athi River Mining
38. Mumias Sugar
39. BOC Kenya
40. Carbacid Investments
41. Crown Berger
42. E.A Cables
43. E.A Portland Cement
44. Eveready East Africa
45. Kenol Kobil
46. Sameer Africa
47. Total Kenya

48. Unga Group

Alternative Investment Market Segment

49. Express Kenya

50. A. Baumann and Company

51. City Trust

52. Eaagads Limtes

53. Williamson Tea Kenya

54. Kapchorua Tea

55. Kenya Orchards

56. Limuru Tea

(Source: PRESS RELEASE, NSE 2012)