VIABILITY OF FINANCIAL DERIVATIVE (STOCK OPTION) SECURITIES MARKET: A CASE OF NAIROBI STOCK EXCHANGE

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ABSTRACT

Financial markets are, by nature, extremely volatile and hence the risk factor is an important concern for financial agents. To reduce this risk, the concepts of derivatives are products whose values are derived from one basic variable called base. The derivatives market performs a number of economic functions; they help in transferring risks from risk averse investors to risk oriented investors, help in the discovery of future as well as current prices, catalyze entrepreneurial activity, increase the volume traded in markets. This study provides a basic overview of stock option market focusing on its non-existence in Kenya security market. It further sought to find out the viability of establishing financial derivatives market in particular stock option. It also sought to assess the readiness of Nairobi Stock Exchange market and its participants for the development of stock market. When asked if stock option minimize risks, both categories or respondents agreed at 68.5% for individual investors and 82.8% for brokers. The respondents differed on whether option is useful only for large investors. The individual investors disagreed totally, while brokers agreed at 54.6%. On whether there is need for hedging against price change or not, both respondents disagreed at 58.6% for individual investors and 63.6% for brokers. They also disagreed at 96.6% and 66.7% for individual investors and brokers respectively, that there already exists adequate means to minimize stock price risk. Finally, when asked if option trading may not be profitable, the respondents disagreed with a majority of 87.8%. The analysis shows that there are contradictions between brokers and investors on issues and conditions required to establish stock option market, this is mainly manifested by the likely threats that are envisaged by brokers with introduction of stock option market. The study found out that Nairobi Stock Exchange is not technologically ready for stock option market. However, Kenyan security market is found to be viable for stock option market. Findings further illustrated that establishment of stock option market in Nairobi Stock Exchange is viable through Government intervention by developing required infrastructure in terms of modernization of the security markets and enactment of policies and legal framework that entice investors and protect market participants.

Key Words: Derivative, Stock Option, Security Markets, Viability, Financial
**Introduction**

In the 1970s and increasingly in the 1980s and 1990s, the world became a riskier place for the security market. Swings in interest rates widened, and the bonds and stock markets went through some episodes of increased volatility. As a result of these developments, market players are concerned with reducing the risk that they face. Given the greater demand for risk reduction, the process of financial innovation came to the rescue by producing new financial instruments that assist in managing risk better. These instruments, called financial derivatives, have payoffs that are extremely useful risk reduction tools.

The most important financial derivatives used to reduce risk are; forward contracts, financial futures, options and swaps. The study concentrates on the use of option instrument for management of risk. Options on individual stocks are called stock options, and such options have existed for a longtime, while options contracts on financial futures are known as financial futures options. However, one problem with using options is that the investor will have to pay premiums on the options contracts thereby lowering the profits in order to hedge.

The twentieth century, and the beginning of the twenty first century saw a large internationalization of stock markets and never before has change swept so quickly through the worlds financial markets. The never ending developments of the new computer systems for trading, dissemination of information, registration of securities holdings and transaction have created possibilities for large companies to utilize international markets to meet their needs and make option market approach possible (Ayling 1986).

Individuals and entities have increasingly focused efforts on hedging against unfavourable movements in the financial markets through use of derivative instruments. There has been an increased use of derivatives to hedge against the effects of international and domestic price volatility, and growth in sophistication of developing country, financial markets. Developing countries have expressed a desire to explore issues relating to establishment of domestic derivative markets. In a recent survey of 32 emerging markets in Africa carried out by the International Organization of Securities Commissions (IOSCO) development committee’s working group on derivatives, 12 countries already had introduced the derivatives instrument and
13 showed interest in establishing the derivatives markets. According to the Nairobi Stock Exchange Market Fact File Newsletter (2004), Futures and Options Market Segment (FOMS) will be developed and implemented after further research on the necessary operational systems. It further states that, it will provide a mechanism to market participants to hedge against the risk associated with market volatility and that it will have its own specific index.

**Statement of the Problem**

High stock volatility is not uncommon especially when the company’s earning is rising or falling. The price of a stock may fluctuate widely within a short span of time even though earnings remain unchanged. Expectations of lower corporate profits in general may cause common stocks to fall in price. Investors judgment is that too much is being paid for earnings in the light of anticipated events. The basis for the reaction is a set of real, tangible events political, social or economic.

In most African countries, except for South Africa, stock exchange markets have not yet developed derivatives market segments; this is a hindrance to the growth of securities markets. From investor’s point of view, this market creates two alternatives these are, hedging portfolio and the derivative security. In practice too, speculating to make money can hardly be conceived without hedging to avoid losses.

In Kenya, individual investors continue to suffer from stock volatility risk, as facilities for hedging against the risk are limited or unknown to them. On the other hand, the securities market has not come up with facilities for this market segment. The current market players such as the brokers, investment bankers among others, continue to gain from stock volatility. In lieu of these, the researcher examines the possibilities of developing stock option market in Kenya.

**General Objective**

To evaluate the viability of establishing stock option segment in Kenya security market.

**Specific Objectives**

To examine the viability of establishment of financial derivative (stock option) in our security market;

To assess the readiness to the development of stock option market;
To provide process and recommendation for the development of stock option market.

**Literature Review**

**Investment Required for Stock Purchase and Value of Equity Wealth**

Emery (1998) notes that investors wealth in a firm through share purchase is a product of the number of shares held and the market price per each share holding the number of shares constant, a fall in price of the shares would lead to a fall in investor’s wealth in a firm. The problem is aggravated by the fact that investor does not dispose shares in a depressed market, as he would lose more. The investor would incur a current loss of depressed value in an attempt to avoid disposing shares at a low price.

According to research by International Finance Corporation (1994), there was found to exist a high risk in the financial market. This has accelerated the pace towards liberalization and global technological advances have required entities and individuals to use new financial techniques and instruments in securities trading. The Kenyan financial market is becoming more developed with the formation of the East Africa community, Uganda Stock Exchange, Tanzania Stock Exchange, cross border listing of stocks and existing global market security changes. Horne (1997), indicates that hedging tools are necessary for development and expansion of a stock exchange.

**Volatility of Stock**

As reported by Waruiru (2000) the stock price for the companies listed on Nairobi Stock Exchange have had a wide price fluctuations. The share index has in addition had wide fluctuations indicating price volatility. The difference between the opening and closing index in 1999 was 674.15, which represents 22.6% change. This has had adverse effects on the ordinary shareholders in form of capital loss. This fluctuation has also made it difficult to undertake forecasting as a basis for decision-making. Emery (1998), states that there is need to forecast future cash flows to determine if they justify the current cost. Due to price fluctuation of ordinary shares, investors are involved in price speculation. Some investors engage technical analysts so as to assist in projection of future prices. The technical analysts base their analysis on the past trends of the stock prices in an effort to project whether the market is bearish or bullish.
According to Shiller (1991), the prices of shares provide a guide to economic activities in the society. The existence of wide fluctuations in share prices is not only of concern to those managing financial portfolios, but also to legislators, regulators, lawyers and corporate managers. According to Murray (1964) the trend of stock prices significantly influences investment decisions. The wide existence of capital loss and inability to forecast cash flows due to market volatility has had adverse effects on the society and economy as a whole. The public has had to withstand enormous losses in form of capital loss after share purchase. This has lowered the demand for shares both for local and foreign investors. Among other problems, this has hampered growth in the Nairobi Stock Exchange, rise in investment and inflow of foreign capital.

According to Pekinsey (1945), unlike other forms of securities where fluctuations are within a narrow range, general prices of ordinary shares move widely in the course of a short duration. Horn (1997) notes that in an efficient market share prices are random walk in nature. As new information is disseminated into the stock market share prices change to reflect new information. This normally makes it difficult to predict future returns, which is necessary for decision-making. The financial markets are exceedingly complex in almost all economies due to wide change in economic, political and social cultural factors. In Kenya, the Nairobi Stock Exchange is faced with wide fluctuations in share prices. The power of stock option lies in their versatility. They enable investors to adopt or adjust their position according to any situation that arises. According to Shiller (1989) investing in securities is a form of social activity. The investors spend a substantial time discussing investments and analyzing the securities market. In evaluating a form of investment the investor is concerned with the expected return and risk of the investment.

Dubofsky (1992) observes that the changes in stock prices is random and may not be precisely determined. According to efficient market hypothesis new events occur randomly and are discounted immediately to the extent that forecasting of prices is impaired. The market participants according to Shiller (1991) can be categorized into two groups based on their decision-making regarding stock market and its effect to stock prices. There exists a large group of non-professionals whose marginal research costs are very high that they choose among stocks
on the basis of information about future prospects, which may be wrong. Thus information flows to them in unsystematic manner thus their market activities work towards creating random price fluctuations around an average value.

The second category constitutes the professional who may have a fair idea of future ideas. If the non-professional bid stock significantly higher than the intrinsic value of the shares an event characteristic of a full market arises. The prices will deteriorate as the professionals add substantially to supply in their attempt to profit on the large gap between prices and values. This will lead to wide fluctuations in the stock markets. This has had adverse effects both to the local and foreign investors.

**Hedging and Risk Management**

Hedging is the process of eliminating risks in a particular portfolio through a trade or a series of trades, or contractual agreements. Hedging relates also to the valuation of pricing of derivative security being analyzed in order to replicate a return pattern identical to that of the derivative security. From the investor’s point of view, the hedging portfolio and the derivative security are indistinguishable and therefore have the same value. In practice too, speculation to make money can hardly be conceived without hedging to avoid losses.

According to Jorion and Cheery (1991), hedging will assist one to better plan ahead by projecting cash flows that will not be affected by the whims of financial markets. Hedging involves attempts to manage or control risk. It can be done strictly within the stock options market. There exists volatility in stock process due to the general market movement. According to Walmsley (1988), increasing volatility in the financial markets has led to rise in the importance of risk management techniques using derivative.

According to Walmsley (1988), hedgers motivating element in their participation in options markets is their desire to control or manage risk exposure arising through price fluctuations. The Hedgers view options and other derivative instruments as risk management tools. According to Marshall (1989) risk management will reduce the uncertainties that exist with production, investing and financing decisions. This would enhance efficiency and effectiveness in resource allocation and utilization. According to the Brigham (1988), option trading provides means of
not only protecting investors against adverse price movements in stocks they are buying or selling but also protect them from declines in the value of financial assets held.

**Informational Role of Derivative**

Option markets may play an important role in information discovery. On the theory side, some researchers (Black 1975, Diamond and Verrecchia 1987) show that informed investors may prefer to trade in the option market vis-à-vis the stock market due to reduced economic costs. Other studies argue that informed trading in the low volume option market may lead to adverse selection problems, causing market makers to set larger bid-ask spreads, thereby offsetting the benefits of leverage provided by the option market (Johan et al. 1993). Moreover, a recent study (Easley et al. 1998) models the existence of two equilibrium for the market choices if investors, who can choose to trade in both stock and option markets.

Emphirically, a number of accounting studies show that existence of option markets can improve overall information efficiency. Firms with option listing, the stock price adjustment is more rapid (Jennings and Starks, 1986); market price reactions to earnings announcement are lower (Skinner 1990, and Ho 1993, 1997); and post-announcement price drifts are less pronounced (Bostosan and Skinner 1993). Nevertheless, emphirical evidence is inconclusive as to whether options trading activities themselves are informative.

**Types of Option and Market Participants**

According to Dubofsky (1992) there are two main types of options;

i. American option can be exercised at any time between the date of purchase and the expiration date.

ii. European option is different, in that they can only be exercised at the end of their life.

**Trading Mechanics**

According to Kaen (1995) option can trade in a formal organized market where there will exist well-defined rules and trading procedures or over the counter with no defined rules or procedures. In an over the counter market trading is by dealers through private arrangements. The dealers will make a profit by offering to buy or sell the option.

In an organized market trading is through an auction system. Only listed stocks options would trade in the organized exchange market. The listed options are standardized and the organized
exchanges are responsible for standardizing the contract terms and overseeing the trading procedures in the options.

In an organized option exchange market contracts are processed through specialized clearing associations. The clearing corporation helps trading through keeping track of the payments and receipts made on each option contract (Dubofsky 1992). The Corporation will also guarantee delivery of stock if the seller defaults, which provide a link between the buyer and the seller. It will break the link on realization that there are matching orders between the buyer and the sellers and that premium has been paid. If the holder of the option intends to exercise the same the corporation will manage the delivery process by assigning a writer an obligation to fulfill the option contract. According to Labuszewski (1988) parties to options can terminate their obligation by taking offsetting positions if the options are trading in an organized exchange market. An individual who had purchased a contract can liquidate their position in the contract by selling their contract while individual’s who had added a contract can liquidate their position by buying identical contract.

**Call Option**

An inspector who intends to purchase shares in future will be concerned about the price appreciation of shares at the date of purchase. The fluctuations in price will lead to an element of risk since the future prices may appreciate affecting this investment decision adversely. Dubofsky (1992) notes that investors purchase call option if they anticipates the market to be bullish. According to Labonzewenski (1988) the fact that the call owner does not have the obligation to exercise the option means they have limited liability. Should the price of the underlying asset fall, they can just walk away from the call contract and never have to acquire the underlying asset.

According to Brown and Reilly (1997) the value of the option is equal to maximum of the difference between the stock market price and exercise price and zero; whichever is maximum (market price – exercise price, 0). This implies that the call option holder will exercise the option only if the market price exceeds the exercise price. If the price exceeds the strike price, then the call owner would be irrational not to exercise it holding market imperfection constant.
This is from the fact that the call owner is receiving a stock with higher market value. Alternatively it would be better to purchase the share in the stock market.

Brown and Reilly (1997) also indicate that the profit or loss from a call purchase would depend on stock price movements. The profit will be the value of an option over and above the premium paid. The right in a call option for the holder will arise in case the investor does not exercise the loss in which case he will lose the premium paid. The loss is limited to premium paid but the profit is unlimited.

**Put Option**

According to Emery (1998) the investor who purchases the option will be concerned about future price depreciation. In an effort to make a capital gain investor purchases stocks with intention of reselling. The investor would lose in case the price of the stock falls in future since the stock loses value both in form of expected cash inflow and economic value. This leads to an element of risk, which is in form of variation in return of the stock.

According to Brown and Reilly (1997) the value of the option is equal to maximum of the difference between the exercise price and the stock market price and zero; whichever is maximum (exercise price-stock market price, 0). This implies that the option holder will exercise the option only if the exercise price exceeds the market price. If the market price is less than the exercise price, the investor will prefer to exercise the option since he will gain more. In this case the put is said to be in the money. Alternatively, if market price were higher than the exercise price, it would be better to sell the share in the stock market. In this case the put option is said to be out of the money. Emery (1998) indicates that the profit from the purchase of stock options will also depend on movements in share market prices. The profit will be the value of the option over and above the premium paid. The profit is unlimited but the stock option holder loss is limited to premium paid in case they fail to exercise the stock option.

**Conditions Necessary for the Development of Stock Options Market**

According to International finance Corporation (1994) the following conditions are necessary for the development of stock options market. Emery (1988), notes there is need to have price variations to stimulate demand for options as a means of hedging against price risk. This will
depend on the industrial and economic environment. The volatility of economic conditions and prices has a strong correlation with demand for derivative instruments, as the demand is mainly to hedge the resulting risk.

Market liquidity is an important necessity of the stock market, which is determined by total capitalization, turnover, and Volume of trading in the market. There is need for a high turnover ratio to enhance the market liquidity. These factors affect the number of transactions in the market and thus the market liquidity (International Finance Corporation 1994). Effective and efficient channels of communication are necessary for stock option trading (International Finance corporation 1994). This is to enhance information dissemination regarding market performance and link the various traders in the market. This calls for existence of telecommunication facilities able to link both local and foreign participation.

The legal framework provides a basis for the smooth operation fulfillment of the economic functions of the stock option trading. The regulatory framework is necessary to assist in the transaction of favourable market and economic conditions into an efficient functioning market place by ensuring a level playing field for all participants. There is need for the exchanges to be subject to regulation to ensure financial safety of the market participants and investor protection (International Finance Corporation 1994). There is need for the general public to be aware of the use of stock options as a means of hedging against risk. Awareness can be enhanced through the academic process, media and dealings in the financial market (Emery 1988).

Option Strategies
Dubofsky (1992) observes that one of the interesting aspects of stock option trading is that there exists a number of strategies available for the investor. According to Laboszewski (1988) different strategies will have different options value due to the inherent characteristics and should be evaluated for optimal selection. The investor should consider the following strategies so as to make an appropriate choice.
Straddle
This involves combination of a put and call option. In this strategy the purchaser buys a call option and put option on the share with the same strike and expiration. This strategy is appropriate when the investor predicts a rise or a fall in price but cannot precisely predict the direction of change. This allows an investor to position the strategy according to their beliefs.
According to Marshall (1989), a straddle involves hedging against price volatility but not on price direction, bearish or bullish market. At expiration the put will be worthless if the call has some intrinsic value or the call will be worthless if a put has some intrinsic value. The options holder breakeven if one of the options intrinsic values is equal to the combined premium paid. The options holder will gain only if one of the options intrinsic values is greater than combined premium paid. The loss is limited to combination of premium paid (Dubofsky 1992).

Spread
This involves taking simultaneously two option positions on the same underlying asset. The investor will simultaneously purchase and sell different options on the same stock. The payoff for the two options will change as the price of the share. According to Labuszewski (1988) this strategy would allow speculation on relative price changes. Horne (1997) indicates that the decision on any of the three alternatives should be contingent on the individual risk objective and stock market expectations.

Capital Markets Authority
In 1984, the Central Bank of Kenya and the International Finance Corporation with the objectives of making recommendations on measures that would ensure active development and strengthening of the financial sector jointly undertook a study on the Development of Money and Capital Markets in Kenya. In November 1988, the Government set up Capital Markets Development Advisory Council and charged it with the role of working out the necessary modalities including the drafting of a bill to establish the Capital Markets Authority (the Authority). In November 1989, the bill was passed in parliament and subsequently received

In September 2002, the Authority launched the Capital Markets Strategic Plan: vision 2002-2005 representing a comprehensive plan of actions aimed at strategic positioning, broadening and deepening the capital markets and making Kenya a leading financial center in the region. The strategic plan outlines a seven-programme reform, agenda, highlights of some main milestones realized and a sequence of the reform measures and action plan for the period 2002-2005.

The seven-programme reform agenda includes the following:-

(a) Establishment of a robust and scalable capital markets infrastructure;

(b) Enhancement of the capital markets institutional arrangement;

(c) Establishment of a robust and facilitative legal and regulatory framework;

(d) Development of new financial products and strengthening of the market structure;

(e) Creating an enabling and facilitative environment for the capital markets;

(f) Training and investor education; and

(g) Establishing an integrated East African capital market.

**Nairobi Stock Exchange**

In Kenya, dealing in shares and stocks started in 1920s when the country was still a British colony. There was however no formal market, no rules and no regulations to govern stock broking activity. Trading took place on gentlemen’s agreement in which standard Commission were charged with clients being obligated to honour their contractual commitment of making good delivery and settling relevant costs.

In 1951, an Estate Agent by the name of Francis Drummond established the first professional stock broking firm. He also approached the then Finance Minister of Kenya, Sir Ernest Vasey and impressed upon him the idea of setting up a stock exchange in East Africa in consideration to then existing situation. The two approached London Stock Exchange officials in July of 1953 and the London officials accepted to recognize setting up of the Nairobi Stock Exchange as an overseas stock exchange.

In 1954, the Nairobi Stock Exchange (NSE) was constituted as a voluntary association of stockbrokers registered under societies Act. The business of dealing in shares was then confined
to the resident European Community, since Africans and Asians were not permitted to trade in securities until after the attainment of independence in 1963.

In the first three years of independence marked by steady economic growth, confidence in the market was once again rekindled and the exchange handled a number of highly oversubscribed public issues. In 1991, NSE was registered under the Companies Act and phases out the “Call Over” trading system in favour of the floor based Open Outcry System.

The NSE 20 share index recorded on all record high of 5030 points on February 18\(^{\text{th}}\) 1994. The NSE was then rated by the International Finance Corporation as the best performing market in the world with a return of 179\% in dollar terms. The Kenya Government relaxed restrictions on foreign ownership in locally controlled companies subject to an aggregate limit of 20\% and an individual limit of 2.5\% in 1995. Currently these limits have been revised to 40\% and 5\% respectively. Trade is conducted on ordinary shares, preference shares, debentures, corporate bonds and Government bonds. Trading takes place on Mondays through Fridays between 10.00 am and 12.00 noon.

**Theoretical Framework**

The Financial market in Kenya is currently the most efficient and stable in East and Central African region. Derivative market provides hedging tools for managing risks incurred from securities, interest rate and currency volatility. With the development of the market, a country acquires large portfolio inflows thereby increasing its market capitalization.

In the 1980s the Government initiated policy reforms, which fostered economic developments with an efficient and stable financial system. This market is regulated by the Government Ministry of Finance (MoF) through Capital Markets Authority (CMA), which set out rules and regulations providing guidelines for the operation and trading activities of the stock exchange market through Nairobi Stock Exchange (NSE). NSE principal objective is to regulate and monitor the trading of stocks on the exchange. It facilitates the trading activities in the exchange floor, ensuring accountability and licensing of the participants. Figure 8 depicts the current situation of the financial security market as shown by the dark line, whereas the dotted line gives the established situation with development of stock option market.
There are various legal and institutional requirements that would be introduced to establish financial derivative segment in the stock exchange. The legal requirement is the amendment of the Investment Act that regulate the financial market, which also established CMA and NSE, to create a Clearing House as an institutional arrangement for the establishing of financial derivative segment. The legislation shall address many of the concerns for the development of the market and create an efficient and market sensitive derivative exchange market. The Clearing House shall be independent and operate under Financial Derivative Market Act according with international standard and market conditions in Kenya.

Other institutions framework that requires to be established are the derivatives brokers, trading advisers, fund managers, traders, and arbitrageurs. Following the rules and regulations that would be enacted by the CMA, some of the current participants in the stock exchange might not trade in the derivative market; however, some of them would be eligible to participate. A Clearing House as an autonomous institution, main objective would be to facilitate contract trading in NSE. Its function would be to provide financial stability by guaranteeing the
performance of all contracts traded. Essentially, it acts as the counter party to all contracts traded by assuming the obligation of a buyer to the original seller and of a seller to the original buyer. This process also allows the original seller and buyer to reverse or close out its position without affecting the original party to the trade. Therefore, the Cleaning House becomes the organization responsible for all settlement procedures arising from stock options trading.

After every trade is executed, details of the trade itself and of the members of the exchange responsible for executing the trade are given to the clearing house. The clearing house ensures that precise details of every transaction are corrected by matching up the deals from both sides of the trade. However, its responsibility goes further than just an operational role. By becoming the counter party to the traders allows trading to proceed swiftly without delays in verifying individual credit limits. Given that there are minimum financial requirements imposed on clearing house members who are also NSE trading members. These cleaning house members will therefore be financial secured.

The participants in the market would include the following:

- **Option brokers:** Must be companies incorporated under the Companies Act and licensed under the NSE. They would conduct option broking business; act as intermediaries, between the clients and exchange in a market place. They would trade on behalf of clients as well as execute proprietary trade.

- **Option trading advisers:** acts as adviser to the investors on option trading (option trading adviser representative). They would also manage funds on a discretionary basis on option contracts. The major difference between the option trading advisers and brokers is that option-trading advisers would not be allowed to conduct business as a broker and be direct members of the NSE. They play an advisory role to customers who are interested in participating in the option markets.

- **Option fund managers:** Refers to a person or persons who carry out option fund management business. They contribute to market activity and liquidity. The three main types of traders in option market are; the hedgers, the speculators and arbitrageurs.
Research Methodology

Research Design

The researcher used both qualitative and quantitative research methods of survey and descriptive research study. In the survey, the researcher focused in obtaining information that describes existing phenomena. The survey research is a descriptive research. It involves explaining and exploring the current stock exchange market situation, considering the large population sample size, describe the factors warranting the establishment of stock option market.

Target Population

The population constituted Capital Market Authority that is charged with the responsibility of regulating the market and Nairobi stock exchange, which is responsible for managing the operations of Stock exchange trading. The others were 18 brokers registered with the Nairobi Stock Exchange and 100 individual investors were identified through the assistant of Manager of NSE trading floor on the one hand, and certain brokerage firms which accepted to give the questionnaires to their clients. The total number of respondents was 102.

Sampling Method and Sample Size

The researchers used systematic random sampling methods in collecting data. This method was preferred due to the heterogeneity of the population and the large population sample size. It also provided an efficient system of capturing the variations that exists in the target population and guarantees equal opportunities. The researcher received 100% responses from CMA and NSE. Out of the 18 stockbrokers the researcher obtained data from 12 stockbrokers constituting 66.7% responses. From local individual investors, 29 responded, constituting 29% of the sampled target population.

Research Instruments

Two instruments were used in data collection, the questionnaire and document study. According to Mugenda and Mugenda (1999) questionnaires are developed to address specific objectives, research questions or hypothesis of the study. Bailey (1994) explains that a questionnaire is a standardized method with no interviewer bias and ensures anonymity.

The researcher administered questionnaire. The format of the questionnaire was a hybrid of several structures. It was made up of structured (closed – ended) and unstructured (open- ended) that incorporated contingency questions and matrix questions of Likert type of rating scales.
According to Mugenda (1999), the rating scales consist of numbers and descriptions, which are used to rate or rank the subjective and intangible components in research.

The questionnaires assumed the ‘funnel techniques” by starting with general and open-ended questions, followed by very pertinent questions. This method was to put the respondents at ease, and encourage their participation. The researcher was also involved in studying written material that contained information about financial derivatives. These included primary documents from CMA and NSE, secondary documents like articles written by people on the topics relevant to the area of study. A lot of information was also collected from the internet on the prevailing financial derivative market in other counties, and the accompanying literature. These documents yielded information pertaining to the establishment of stock option market.

**Instrument Validity**

The questionnaire was administered to CMA and NSE. They were checked for internal validity. One set of questionnaire was mailed to two brokers and another set administered by self to the same brokers. Lack of contradiction in their responses indicated that the instrument was valid. Documents used in the study had to be authenticated; they had to bear the logos or indicated to be official documents.

**Reliability**

Repeated application of the questionnaire tested its reliability. Administering the questionnaires first to some of the expected respondents as a pilot tested this. Establishing the consistency of the items of the questionnaire and the documents studied checked reliability of the documents.

**Data Collection**

The questionnaires were administered to the sampled respondents. The data for the research emanated from administered questionnaires responses and outcome from the secondary sources studies. The data collected was coded by assigning each answer a number in case of closed-ended questions. For open-ended questions, codes that paraphrased the meaning of the verbal responses were constructed after data collection. This preserved the informational content. Non-responses were expected and therefore the researcher provided a code for them. The output of all those were scaled using ‘Likert scaling method’ This involved coding all responses so that a higher score on a particular item indicated a strong agreement. The scale for each respondent was computed by summing up the scores to all questions. These data was thereafter analyzed.
Data Analysis Techniques

The researcher used descriptive statistics to analyze the data. This provided a description of the sampled data. The descriptive statistics, techniques used were average, percentages, variance and standard deviation.

The Findings of the Study

This study examined the respondents understanding of the various types of financial derivatives instruments, there sources of information from which they learnt about them and their importance as techniques of hedging against share price risks. Conditions deemed necessary for the development of stock option market were posed to the respondents to find their perception concerning the development of the stock option market. Finally, the respondent’s views on the viability of the market were sort through direct questions on option trading. In order to examine the above issues the study collected data by administering questionnaires and interviewing local individual investors, brokers, staff or CMA and NSE.

This study utilized descriptive statistical analysis in arriving at the development of viability of stock option market in NSE. The study found that 91.7% of the respondents have heard of the financial derivatives instruments. The level of familiarity with the instruments was also at 53.5%. The study found out that the respondents were more familiar with forward contracts and futures as compared to the others. When asked about the preferred techniques for minimizing risk, the respondents preferred forward contracts at 57.5%, followed by options at 53.8% and thirdly, futures at 45%. The high preference for forward contracts is attributed to its high familiarity to the respondents and the fact that it is currently being traded in the market. The respondents highly agreed at about 93% that there is no existing means of hedging. Their preferred hedging instrument was option with a majority of 62.1%.

The researcher asked questions on conditions necessary for the establishment of option market. These were necessary conditions, but there absence need not imply that the market is not viable, as they are infrastructure that can be availed with the establishment of the market. 66.7% of the respondents were of the view that these conditions are not available. From the study the respondents differed on the opinion of complexity of option trading, with local individual
investors at 58.6% feeling it is not complex and brokers at 80% feeling it is complex. They also differed on whether option trading can eliminate risk. The individual investors agreed at 93.2% that it could eliminate risk while brokers disagreed at 54.6% that it could not eliminate risk.

This study inquired if Kenyan market was ready for stock option market. The respondent’s views on this differed yet again. Individual investors believe Kenya is ready at 89.7% while brokers disagree at 54.6%. When asked if stock option minimize risks, both categories of respondents agreed at 68.5% for individual investors and 82.8 for brokers. The respondents differed on whether option is useful only for large investors. The individual investors disagreed totally while brokers agreed at 54.6%. On whether there is need for hedging against price change or not, both respondents disagreed at 58.6% for individual investors and 63.6% for brokers. They also disagreed at 96.6% and 66.7% for individual investors and brokers respectively, that there already exists adequate means to minimize stock price risk. Finally, when asked if option trading may not be profitable, the respondents disagreed with a majority of 87.8%.

**Recommendations**

Evidence indicates that there is high level of understanding of the financial derivatives instruments available in the market and that the investors are familiar with them. Further, the difference in opinion on preferred techniques, complexity of option trading, on whether option trading would eliminate risk shows the extent of threats expected if this market was to be established by the current participants in the market. The analysis also shows that country still lacks the necessary infrastructure for the option market.

The study thus recommends that the government should expand the existing stock exchange to encourage more investment and improve on the technology currently being used. This will provide the necessary conditions for establishment of option market. Legal framework and policies on how the option market would be managed and operated should be formulated, to allay the threats as evidenced between the individual investors and brokers. The government through the Ministry of Finance and the Capital Markets Authority should make it a core objective of enhancing the development of Nairobi Stock Exchange through provision of infrastructure and policies that encourage investors. The investors are ready for the option market as evidenced by the study.
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