

Determinants of the Uptake of Financial Derivatives by Listed Firms in the Nairobi Securities Exchange (NSE). A Survey of Listed Companies in Kenya

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Abstract

The purpose of the study was the analyse determinants of the uptake of financial derivatives by listed firms in the Nairobi Securities Exchange in Kenya. The study was guided by the following objective; to evaluate the effect of investment on the uptake of financial derivatives by listed firms on the Nairobi Securities Exchange. The study adopted portfolio theory, financial theory and the efficient market hypothesis theory in the theoretical framework. The study applied a descriptive survey research design. The target population was 65 listed companies in the NSE and a sample size of 52 finance managers drawn from this listed companies. Questionnaire administration was employed to collect the required primary data. A pilot study done to test the reliability and validity of the data collection instruments. Data collected was analyzed in the light of the objectives of the study with the aid of SPSS for Data analysis. Multiple regression analysis was applied to test the effect of one variable to the other. Based on the findings, it was recommended that there should be a diversified investment in certain industries makes listed companies diversify their risks by dealing in financial derivatives. The global financial markets should invest in ICT to make it easy for companies to cross border trade in the derivatives? the government of Kenya should invest enough resources to enable the smooth running of the financial derivatives trade. The capital market should be efficient enough to facilitate the global flow of investment between investors. Trade derivatives should be viewed to be a factor in determining the capital investment of a listed entity in the Nairobi Securities. The study is significant to the policy makers at the Nairobi Securities Exchange and also to finance scholars who would want to understand the reasons why there is a slow uptake of financial derivatives at the Nairobi Securities Exchange.

Keywords: Financial derivatives, investments

1.0 Introduction

Financial derivatives are contracts between two parties to buy, sell or exchange (optional or obligatory) standard or non-standard quantity or quantity of an asset or cash flow at a predetermined price on or before a specified date in future (Fraure, 2013). The value of the underlying security or index (the spot market instrument that underlies the derivative) changes continuously and this means that the value of the derivative almost always changes. Financial derivatives are used in mitigating risk. The goal of risk management is to maximize the value of the firm by reducing the negative potential impact of forces beyond the control of management. There are basic approaches to risk management; risk avoidance, risk retention, loss prevention and control and risk transfer (Malz, 2011).

In other words, a derivative is an asset whose value is derived from that of some other asset known as the underlying asset (Chisholm, 2010). According to the Nairobi Securities Exchange derivatives manual (2015), a derivative is a financial instrument whose characteristics and value depend upon the characteristics and value of an underlying asset, typically a commodity, bond, equity or currency. The derivative itself is merely a contract between two or more parties. Astute investors purchase or sell derivatives to manage the risk associated with underlying security to protect against fluctuations in value or to profit from periods of inactivity or decline. According to Bryan and Rafferty (2006), financial derivatives are used and counted as money. Financial derivatives commensurate the values of different forms of financial assets and in process the facilitate continuity across different forms of money.

According to the IMF financial derivatives supplement to the fifth edition balance of payments manual, (1993), financial derivatives are financial instruments that are linked to a specific financial instrument or indicator or commodity, and through which specific financial risks can be traded in financial markets in their own right. Transactions in financial derivatives should be treated as separate transactions rather than as integral parts of the value of underlying transactions to which they may be linked. The value of a financial derivative derives from the price of an underlying item, such as an asset or index.

Unlike debt instruments, no principal amount is advanced to be repaid and no investment income accrues. Financial derivatives are used for a number of purposes including risk management, hedging, arbitrage between markets, and speculation. Financial derivatives enable parties to trade specific financial risks (such as interest rate risk, currency, equity and commodity price risk, and credit risk, etc.) to other entities who are more

willing, or better suited, to take or manage these risks—typically, but not always, without trading in a primary asset or commodity. The risk embodied in a derivatives' contract can be traded either by trading the contract itself, such as with options, or by creating a new contract which embodies risk characteristics that match, in a countervailing manner, those of the existing contract owned. This latter is termed “offsetability”, and occurs in forward markets. “Offsetability” means that it will often be possible to eliminate the risk associated with the derivative by creating a new, but "reverse", contract that has characteristics that countervail the risk of the first derivative. Buying the new derivative is the functional equivalent of selling the first derivative, as the result is the elimination of risk. The ability to replace the risk on the market is therefore considered the equivalent of tradability in demonstrating value. The outlay that would be required to replace the existing derivative contract represents its value—actual offsetting is not required to demonstrate value.

Financial derivatives contracts are usually settled by net payments of cash. This often occurs before maturity for exchange traded contracts such as commodity futures. Cash settlement is a logical consequence of the use of financial derivatives to trade risk independently of ownership of an underlying item. However, some financial derivative contracts, particularly involving foreign currency, are associated with transactions in the underlying item. Non-financial firms engage in corporate risk management on a regular basis, as documented in their annual reports or surveys of derivatives (Jong and Macrae, 2003). For most non-financial firms, the main objective of their risk management activities consists of hedging against foreign exchange rate and interest rate risks, even though firms often also attempt to time hedging decisions based on their market views, a process called selective hedging (Brown, Crabb and Hauchalter, 2006). The fact that derivatives use common practice appears *prima vista* in line with existing positive theories that justify risk management at the firm level as beneficial to the shareholders of a firm in the presence of capital market imperfections. Although these theories suggest several ways through which corporate hedging can increase shareholder wealth. In the modern world there is a huge variety of different derivative products. These are either traded on organized exchanges such as NASDAQ, New York Stock Exchange and London Stock Exchange or agreed directly with dealers in what is known as the over the counter (OTC) markets. There are four types of derivatives traded in the market namely; Futures, Forwards, Swaps and Options.

Futures contract is an agreement made through an organized exchange to buy or sell a fixed amount of underlying commodity or financial asset on a future date or within a range of dates at an agreed price. Some contracts result in physical delivery of underlying asset others are cash settled which means that the difference between the agreed price and the market price of the underlying on the future date is paid in cash. A forward rate agreement (FRA) is a bilateral contract fixing the rate of interest applying to national principal amount of money for an agreed future time period. One party is said to be the FRA buyer and the other the seller. However, the national principal never changes hands. It is simply used to calculate the settlement sum. The buyer is paid a settlement sum by the seller if the reference or benchmark interest rate for the contract periods' turn out to be above that agreed in the contract. On the other hand, the seller is paid a settlement sum by the buyer if the benchmark interest rate turns out to be below the contract rate. A FRA is derivative instrument because its value is derived from the spot or cash market interest rate. ie the interest rates on deposit and loans starting now rather than in the future. Therefore, FRA's are similar to exchange-traded interest rate. Futures contract except FRA's are over-the-counter (OTC) deals. An OTC derivative is legal and binding agreement made directly between two parties. It cannot be freely traded and carries a potential counterparty risk; the risk that the other party might fail to fulfill its obligations.

A swap is a contract between two parties agreeing to exchange cash flows on regular dates where the two payment legs are calculated on a difference basis. A swap is a bilateral over-the-counter (OTC) agreement directly negotiated between two parties, at least one of which is normally a bank or other financial institution. Once made, the contract cannot be freely traded. On the other hand, it can be tailored to meet the needs of a particular counterparty. As with other OTC derivatives there is a potential credit risk that the other party to the deal might default on its obligations. In an equity swap, one payment leg is based on the price of a single stock or on the level of a stock market index. In a commodity swap one leg is based on the price of a physical commodity such as oil. In an interest rate swap (IRS) both payment legs are based on IR. Swaps of all kinds are used by corporations, investors and banks to manage their exposures to interest rates, currency exchange rates, share values, commodity prices and loan default rates. They can also be used to take speculative trading positions. Option is a contract that gives its owner the right, but not the obligation to buy or sell a specified asset at a stipulated price called the strike price. Contracts that give owners the right to buy are referred to as call options and contracts that give the owner the right to sell are called put options. Options include both standardized products that trade on organized exchanges and customized contracts between private parties.

Options according to the derivatives education book, NSE (2015) is a contract that gives its owner the right, but not the obligation to buy or sell a specified asset as a stipulated price, called the strike price. Contracts that give owners the right to buy are referred to as call options and contracts that give the owner the right to sell are called put options. Generally derivatives, such as futures, options, forwards and swaps are financial

instruments that derive their value from their underlying assets or instruments such as bonds, equities, commodities, currencies, interest rates, or stock indices. They are often bought or sold in an effort to manage risks or fluctuations in the value of the underlying asset or instrument, but they also serve as investments in their own right. Futures, options and swaps are the most common forms of derivatives.

Most African countries have no derivative markets, with the exception of South Africa and the North African economies of Morocco, Egypt and Tunisia, where the volume of derivative transactions is small but growing (African Development Bank, 2013). Where derivative markets exist in African countries, they are largely in their infancy and mostly focused on foreign-exchange derivative contracts. In South Africa, derivative products include forwards and futures, forward rate agreements, interest-rate swaps, basis swaps, options, equity derivatives, and commodity futures with exchange-based and over-the-counter trade. South Africa's agricultural commodities futures markets sees active trade in maize, wheat, sunflower seeds and soya beans, thereby providing risk-management tools for regional producers as well as pricing benchmarks. A commodities spot and derivatives exchange is being established in Botswana as a hub for pan-African trading. It is expected that the Botswana commodities exchange will catalyse performance in African commodity and financial markets through enhancing price discovery, market transparency and risk management.

Zambia and Malawi also have agricultural commodity exchanges, with the Zambian exchange trading mainly in wheat and maize but also in soya, fertilizer, cement, maize barn, cottonseed and kidney beans. In Kenya, financial derivatives' trading was introduced in 2013 but it has never fully fledged because of simmering challenges that have hindered its growth. Some of the challenges include but not least inadequate market infrastructure, lack of liquidity in contracts introduced etc. In order to understand this challenges more, the researcher will seek to carry out a research on the determinants of the sluggish uptake of financial derivatives by listed companies in the Nairobi Securities Exchange. As aforementioned, derivatives are financial instruments, such as futures, forwards, options and swaps that are used by investors to hedge against risks that may occur in their respective industries. There are two types of risks that may face investors; i.e. market risks and financial risks. To counter these risks, investors may use derivatives to mitigate against them. In Kenya, after the introduction of derivatives, there has been no significant adoption by the investors in the country. Therefore, this study sought to determinants of the uptake of financial derivatives by listed firms in the Nairobi Securities Exchange (NSE) with the specific objective to determine the effect of investment factors on the uptake of financial derivatives in the NSE.

2.0 Effect of investment on the performance of the Nairobi Securities Exchange

Investment decisions are strategic decisions that require a thorough analysis of risk, because the risk management is a basis of decision making. The goal of investing is not just profit in a certain period of time, but depending on the preferences of the decision maker, there should be a compromise between maximizing the expected return on investment and efforts to reduce the risk to a minimum. Analysis and risk assessment is an integral part of any investment process, because during the life of the investment project, there is a risk that the project will not achieve desired result. Bojana Vukovic and Kristina Mijic, (2011).

According to Fazzari et al. (1988), many empirical studies tested the hypothesis that if external financing is available without frictions, a firm's investment should be determined by its investment opportunities, usually proxied by Tobin's Q, and not by its internal resources, captured by a firm's cash flow. The higher sensitivity of investment or firm's growth to internal sources was taken as evidence for the presence of financing constraints, Fazzari et al., (2000) and Carpenter and Petersen, (2002). However, after the results presented by Kaplan and Zingales (1997 and 2000), several studies have criticized the empirical test based on the cash flow sensitivity as a meaningful evidence in favour of the existence of financing constraints. The significance of the cash flow sensitivity of investment, it was argued, may then be the consequence of measurement errors in the usual proxy for investment opportunities, Tobin's Q, and may provide additional information on expected profitability rather than being a signal of financing constraints. For example, Gomes (2001) shows that the existence of financing constraints is not sufficient to establish cash flow as a significant regressor in a standard investment equation, while Ericson and Whited (2000) demonstrate that the investment sensitivity to cash flow in regressions including Tobin's Q is to a large extent due to a measurement error in Q.

Likewise, Altı (2003) shows that investment can be sensitive to changes in cash flow in the benchmark case where financing is frictionless. In this respect, Bond et al. (2003) indicate that if the role of cash flow as proxy of future profitability is similar across countries, interpreting higher cash flow sensitivities in a country as an effect of financing constraints is less ambiguous and differences in the estimated coefficients of the cash flow variable across countries are more likely to reflect differences in financing constraints. In this article, we will focus not only on the link between investment and cash flow but also on other balance sheet indicators, namely the leverage level and the debt-servicing payments, to analyze the impact of financial factors on firm's investment decisions of firms. In this respect, in the seminal paper, Meyers (1977) analyses possible externalities generated by debt on shareholders and management optimal investment strategy. More generally, debt overhang

models explain two distinct sorts of implications: ex post (once the debt burden is in place), they suggest that highly leveraged firms will be particularly discouraged to invest further, especially if new investment is financed by issuing claims that are junior to the existing debt. Ex ante, they explain why even low-leveraged firms may be reluctant to raise much debt, even if this means foregoing some current investment projects. The empirical evidence on the impact of leverage on investment is less extensive than that focusing on the sensitivity of investment to cash flow variations. In Bond and Meghir (1994) the external financing cost is shown to be dependent on the level of indebtedness by capital unit. In the same line, Estrada and Valle's (1998) test, for a sample of Spanish companies, a model that considers the level of net indebtedness as a determinant of the external financing cost.

Lang et al. (1996) and Aivazian et al. (2005), using US and Canadian data respectively, show that leverage is negatively related to investment and that this negative effect is significantly stronger for firms with low growth opportunities than those with high growth opportunities. Likewise, Whited (1992) finds that firms with higher leverage and higher ratio of interest expenses to cash flow (that should therefore be more financially constrained than the others) have higher investment cash flow sensitivity. In the same line, results in Benito and Hernando (2007) and Hernando and Martinez-Carrascal (2008) indicate that the impact of indebtedness -and debt burden- on investment is non-linear and becomes relatively more intense when financial pressure exceeds a certain threshold. For the UK, Marchica and Mura (2007) investigate explicitly the impact of a distinct leverage policy on the investment ability of firms and find that the way the level of external debt influences a company's ability to invest may differ depending on whether the company is below or above its target leverage. Our paper is closely related to the work of Benito and Hernando (2007) and Hernando and Martinez-Carrascal (2008), which analyze the impact of alternative measures of financial pressure on the investment and employment decisions of Spanish firms. We follow their choice of financial indicators to proxy firms' financial pressure and analyze their impact on investment decisions for a set of firms operating in six euro area countries, as it will be explained the following section

3.0 Methodology

The study adopted descriptive survey research design. The research study targeted a population of 65 listed companies in the Nairobi Securities Exchange as at March 2016. The target was the finance managers or Chief Finance Officers as they are well versed with the financial management of their respective companies. Census was applied since the population was small. The structural questionnaires was used to collect data. The questionnaire was self-administered through drop and pick from the respondents, addressed to the respective listed companies. With the aid of SPSS version 20, both descriptive and inferential statistics were applied in data analysis. The study applied the generated standard multiple regression and hierarchical multiple regression for the inferential statistical data analysis.

4.0 Results

Table 1 below represents the descriptive statistics of investment variables of the study. Table 4.10 shows that 8.8 percent of respondent's strongly disagreed, 23.8 percent disagreed, 32.5 percent being neutral, 23 percent agreed and 12.1 percent strongly agreed that listed companies in the Nairobi Securities Exchange view trading of financial derivatives as an investment. The table also shows that 20 percent of respondents strongly disagreed, 31.3 percent disagreed, 19.6 being neutral, 18.8 agreed and 10.4 percent strongly agreed that having diversified investment in certain industries make listed companies diversify their risks by dealing and trading of financial derivatives. Further, 14.6 percent strongly disagreed, 24.6 percent disagree while 26.7 percent being neutral, 21.3 percent agreed and 12.9 percent strongly agreed that investment in information technology has greatly helped companies in dealing with financial derivatives.

The table 1 further reveals that 12.5 percent strongly disagreed, 12.9percent disagreed, 25.8 being neutral, 21.3 percent agreed and 27.5 percent of the respondents strongly agreed that the government of Kenya has invested enough resources to enable the smooth running and trading of financial derivatives. Further 6.7 percent strongly disagreed, 22.1 percent disagreed, while 27.9 were neutral, 14.6 percent agreed and 22.1 percent strongly agreed that the capital market is efficient enough to facilitate the global flow of investment between investors. Finally, 15.4 percent strongly disagreed, 17.4 percent disagreed, 15.6 being neutral, 28.2 percent agreed and 23.4 percent of the respondents strongly agreed that derivatives trade is viewed as a factor in determining the capital investment of a listed entity in the NSE.

Table 1: Respondents on Effect of Investment on Financial Derivatives

		SD	D	N	A	SA
Do listed companies in the NSE view trading in the financial derivatives as an investment?	Percentage %	8.8	23.8	32.5	23	12.1
Does having diversified investment in certain industries make listed companies diversify their risks by dealing in financial derivatives?	Percentage %	10.4	18.8	19.6	31.3	20
Has the global financial markets invested in the ICT to make it easy for companies to cross border trade in the derivatives?	Percentage %	14.6	12.9	26.7	21.3	24.6
Has the government of Kenya invested enough resources to enable the smooth running of the financial derivatives trade?	Percentage %	12.5	12.9	25.8	21.3	27.5
Is the capital market efficient enough to facilitate the global flow of investment between investors?	Percentage %	6.7	22.1	27.9	14.6	28.8
Should derivatives trade be viewed to be a factor in determining the capital investment of a listed entity in the Nairobi Securities Exchange?	Percentage %	15.4	17.4	15.6	28.2	23.4

Correlation Results

This study conceptualized that investment influenced the slow uptake of financial derivatives in the Nairobi Securities Exchange. A Pearson correlation was conducted to establish the degree of relationships between the real estate investment and the independent variables. The Pearson correlation coefficient ranges from 0 (if no relationship exists) to 1 (for a perfect relationship). The results are shown in Table 2 below. The table showed that all the predictor variable in this study was significantly related (all had $p < 0.001$) with the dependent construct (real estate investment).

Table 2: Pair wise correlations analysis results

Variable	R	Uptake of financial derivative
Investment factors		.704*

* = correlation significant at .01 level (2-tailed)

This means that all the independent variable are likely to influence the uptake of financial derivatives. The relationship between each independent variable and dependent variable was positive. This means that the variable move together in the same direction, that is, they increase or decrease together. Investment factors had a strong effect on uptake of financial derivatives.

Since the regression the results of p-values of the coefficients of the independent variables were less than 0.01 (0.00), it indicates .357 for investment factors. It applied that the major determinants of uptake of financial derivatives was investment factors.

Results obtained from the analysis indicated that when uptake of financial derivatives was regressed on investment factors. The B coefficient for investment factors was also positive (0.357) and multiple regression tests, in which the t-test for investment factors was found to be significant ($t = 3.48, p < 0.001$). This showed that there is a significant positive relationship between investment factors and uptake of financial derivatives. Thus, the null hypothesis that investment factors have no effect on uptake of financial derivatives was rejected.

5.0 Conclusion and Recommendation

The study further concludes that investment factors significantly affect level of the uptake of financial derivatives. It was evident that favorable investment system, low minimum requirements for investment favors listed entities and had positive effect on the uptake of financial derivatives.

In conclusion, it was evident that most of the financial derivative polices in the country are not favorable for the investors. This imply that there slow uptakes of financial derivatives. Inducement to partake in the financial derivatives trade by the government should come in terms of making the trade less tedious by removing some of the processes that investors feel are not necessary.

Based on the findings, it was recommended that there should be a diversified investment in certain

industries makes listed companies diversify their risks by dealing in financial derivatives. The global financial markets should invest in ICT to make it easy for companies to cross border trade in the derivatives? the government of Kenya should invest enough resources to enable the smooth running of the financial derivatives trade. The capital market should be efficient enough to facilitate the global flow of investment between investors. Trade derivatives should be viewed to be a factor in determining the capital investment of a listed entity in the Nairobi Securities.

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