# RELATIONSHIP BETWEEN INTEREST RATES AND PERFORMANCE OF NAIROBI SECURITIES EXCHANGE MARKET

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**Abstract**

*Performance of Nairobi Securities Exchange market has remained unpredictable as observed in February, 2006 when the index rose from 4057 to 5774 in January, 2007 and declined to 2475 in February, 2009. This could have led to past investor losses that led to collapse of some investment firms leaving investors in despair. However, literature links interest rates with securities market performance. Further, stable interest rates attract investors who may be oblivious of risks involved in securities trading. Despite this, interest rates have hitherto not been considered as influencing securities market performance. The purpose of the study was to determine the relationship between interest rates and performance of Nairobi Securities exchange market. The specific objectives were to establish the relationship between lending rates as well as deposit rates and market performance. Correlational design and Secondary data between January, 2006 and December, 2010 was utilized. Results indicated that lending rates was negative but not significant predictor ($\beta1=-0.166$, $p>0.05$) while deposit rates was negative and significant predictor ($\beta2=-0.678$, $p<0.05$), interest rates explained 65.7% of the variance in market performance (Adj. $R2=.657$). The study concluded that there exist an inverse relationship between interest rate and market performance.*

*Key words: Interest rates, performance, securities market, lending rates, deposit rates*

## INTRODUCTION

The NSE 20- Share Index has been in use since 1964 and measures the performance of securities of 20 blue-chip companies with strong fundamentals and which have consistently returned positive financial results. The Nairobi Securities Exchange Ltd 20 Share Index is a price weight index. (http://live.mystocks.co.ke/stock=%5EN20I). Interest rate is a rate which is charged or paid for the use of money. An interest rate is often expressed as an annual percentage of the principal. It is calculated by dividing the amount of interest by the amount of principal. For the purpose of this study the researcher will consider both the lending and deposit rates.

## Statement of the Problem

The performance of Nairobi Securities Exchange market continues to remain unpredictable such as the case observed in February 2006 when there was a rise in the index to 4057, further to 5774 in January 2007 and to as low as 2475 in February 2009. This could have led to past losses incurred by investors in Kenya as witnessed during the period January to June 2009 when the market was bearish leading to the collapse of a number of investment firms leaving investors in total despair. If this undesirable situation is not addressed, it could lead to continued loss of investor confidence in Nairobi Securities exchange market which has been hailed as one of the leading securities market in Africa. Despite this situation, foreign exchange rates fluctuation and interest rates have hitherto not been considered as a factor influencing performance of Nairobi Securities exchange market. Moreover, literature reviewed has left theory building impoverished because of contradictory results. This study therefore sought to determine the relationship between interest rates and performance of Nairobi Securities Exchange market.

## Objective of the Study

The overall objective of the study was to determine the relationship between interest rates and performance of Nairobi Securities Exchange Market.

Specific objectives were:
  i.   To establish the relationship between lending rates and performance of Nairobi Securities Exchange Market.
  ii.  To establish the relationship between deposit rates and performance of Nairobi Securities Exchange Market.

**Study Hypothesis**

$H0_1$: Lending rates have no significant relationship with performance of Nairobi Securities Exchange Market

$H0_2$: Deposit rates have no significant relationship with performance of Nairobi Securities Exchange Market

## LITERATURE REVIEW

**Theoretical Literature**

*Interest Rates*

Traditional theories define interest rate as the price of savings determined by demand and supply of loanable funds. It is the rate at which savings are equal to investment assuming the existence of a capital market. The loanable fund theory argues that interest rate is determined by non-monetary factors. It assigns no role to quantity of money or level of income on savings, or to institutional factors such as commercial banks and the government. The liquidity theory, on the other hand, looks at the interest rate as the token paid for abstinence and inconveniences experienced for having to part with an asset whose liquidity is very high. It is a price that equilibrates the desire to hold wealth in the form of cash with the available quantity of cash, and not a reward of savings. Interest rate is a function of income. Its primary role is to help mobilize financial resources and ensure the efficient utilization of resources in the promotion of economic growth and development (Ngugi and Kabubo, 1998).An interest rate is the rate charged or paid for using money. You are charged an interest rate when you borrow money and paid an interest rate when you loan money (placing it in a savings or investment account is like a loan to the bank) (http://credit.about.com/od/gj/g/interestrate.htm).

Both the lending rates and deposit rates are considered as the main dimensions of interest rates in the present study. Lending rate is the rate at which financial institutions lend money. It constitutes the base from which banks lend money to the final customer.

On the other hand deposit rate refers to the amount of money paid out in interest by a bank or financial institution on cash deposits. Banks pay deposit rates on savings and other investment accounts. A deposit interest rate will often be paid for cash deposited into savings and Money Market accounts (Leader Investment Kenya, 2007).

*Performance of Securities Market*

The financial reform process emphasizes the development of the securities market as an alternative source of long-term capital in emerging markets. Long-term capital is crucial for economic development given the positive relationship between long-term capital and economic

growth (Demirguc-Kunt and Levine, 1996). As a priority therefore, the Kenya government in the 1997/2001 Development Plan noted the need to shift from the expensive short-term finance in favor of cheaper long-term finance for sustainable industrialization to be achieved. The need for long-term capital to finance private investment is not a recent realization in Kenya. As far back as the 1920s, foreigners who dominated the economic activities initiated share trading. Then, at independence, the government set up Development Financial Institutions (DFIs) to close the resource gap for long-term capital, (Adjasi, C. K.& Yartey, C. A, 2007).

Establishment of the capital market regulator and diversification of the money market instruments was also recommended to oversee the development of the capital market and strengthen surveillance of market activities. Consequently, the Capital Market Authority (CMA) was established in 1990, marking a shift from the self-regulatory system to the statutory regulatory system. Further, the securities exchange has in the recent period been lobbying the government to create conducive policy environment to facilitate growth of the economy and the private sector to enhance growth of the stock market. In addition, the divestiture of government parastatals through the securities market is expected to promote growth of the securities market (Ngugi and Njiru, 2005).

Despite the long history and efforts made to revitalize the securities market, growth of the primary market is still very slow. For example, the number of listed firms presently is similar to the number of firms listed at independence and at the beginning of the reform process. Further, the number of traded securities in the market is very minimal, therefore narrowing diversity in sourcing for funds. The 1974/78 Development Plan the government admitted that the financial sector was not playing its role effectively in the development process. Further, in the 1984/88 Development Plan the government adopted mobilization of domestic resources as its theme in an effort to promote the role of the financial sector in financing growth. Moreover, as the government embarked on the reform process in 1984 after failing to make great achievement with the first phase of the reforms, IFC/CBK conducted a survey in 1984 to look into ways of facilitating growth of the capital market. The recommendations of this study became the blueprint in the revitalization of the securities market as an alternative channel for mobilizing long-term capital. Before independence, the securities market experienced tremendous growth in the number of firms listed. For example, the Nairobi Securities Exchange (NSE) had 46 listed companies by 1954, increasing to 50 in 1956. By 1959, the market had a total of 13 new listings and four delistings. During the period, the first firm from the financial sector was listed and locally controlled companies made a significant entry. As noted in the 1967 Economic Survey, the new issues helped to increase availability of sound equity investments in which local people were able to invest their savings, increasing both their activity in the market and holding shares

in these companies. The government, which was enthusiastic about the gains of political independence, took deliberate efforts to encourage the financial system (predominantly the banking sector) to provide credit facilities to those wishing to purchase shares both in the primary and secondary markets. As a result, most of the initial public offers (IPOs) were heavily over-subscribed. However, the period from the year 2000 witnessed listing of the first information technology firm (African Lakes) and sugar firm (Mumias Sugar Company). The two issues fetched about Ksh 1,500 million but unlike the previous offers they were under-subscribed, signaling a growing listing risk (Otuke, 2006).

The benefit of securities market in developing countries has been a phenomenon that continues to be debated upon by both policy makers and academicians (Singh, 1997; Kenny and Moss, 1998; Ngugi *et al.*, 2005; Yartey and Adjasi, 2007). This debate has especially gained momentum over the past two decades. The reason for this being an increased interest in development finance for the alleviation of poverty and restructuring of global capital flows (Hearn and Piesse, 2006). In general, Singh (1997) stated that the stock market is meant to be a means of accelerating economic growth through increased domestic saving and improvement of the quality and quantity of investment. To encourage individuals' savings, the securities market provides an additional financial instrument that may better meet their risk preferences as well as liquidity needs. As an avenue for growing companies, Yartey & Adjasi, (2007) observed that the securities market is a source of capital at a lower cost and helps reduce the dependence of companies whose countries have better developed securities markets as it reduces the risk borne in the case of a financial crisis.

The prices of securities around the world do not move together in an exact manner. This is because the economic systems in which securities markets are located have dissimilar environments in terms of taxation, industrial growth, political stability and monetary policies among other factors. Securities markets may experience a general increase in price level referred to as a bull market or general decrease in price level referred to as bear market. Stagnant prices or sudden big price movements downward is referred to as securities market crash (Yartey & Adjasi, 2007).

According to Reilly (1997), the determinants of securities market performance include performance of the economy, monetary policies, fiscal policies, inflation, availability of substitute investments, change of investor preferences and market sentiments. Activities of government and general performance of the economy influence securities market activity and therefore the performance of securities markets. Monetary and fiscal measures enacted by various agencies of national governments influence the aggregate economies of those countries. The resulting economic conditions influence all industries and companies in an economy positively or

negatively which in turn affect the performance of securities markets. Fiscal policy incentives such as tax cuts can encourage spending, whereas additional taxes on income, petroleum products, cigarettes, and alcoholic beverages discourage spending. Increase or decrease in government spending also influence the general economic activity by triggering multiplier effect (Stiglitz, 1989). Monetary policy has implications to the economy. A restrictive monetary policy reduces the supply of funds for working capital and expansion of business. Alternatively a restrictive monetary policy may lead to increased interests rates thus increasing the cost of capital which makes it more expensive for individuals to finance home mortgage and purchase of durable goods (Mendelson *et al*, 1976).

Inflation affects the performance of securities markets as it causes differences between real and nominal interest rates thus changing the spending and saving behavior of consumers and corporations. Unexpected changes in the rate of inflation make it difficult for firms to plan, which inhibits growth and innovations. Beyond the impact of the domestic economy, differential inflation and interest rate influence the trade balance between countries and exchange rate of currencies (Reilly, 1997). Events such as war, political upheavals within or outside a country, or international monetary devaluation produces changes in the business environment that lead to uncertainties and earnings expectations of investors therefore increasing the risk premium of investors (Mendelson *et al*, 1976).

Availability of other investments other than shares traded on the security market affect the security market performance. Securities markets compete for investments with other assets in an economy such as corporate bonds, governments bonds, treasury bills, real estate and foreign equity among others. The influx of government bonds and treasury bills in Kenya, resulted into-the bull-run at the Nairobi Stock Exchange between 2004 and 2006 (www.nse.co.ke).

## Empirical Review on Interest Rates and the Performance of Securities Market

In India, Deepinder (2009) also studied the Correlation and Causality between Securities Market and Macro Economic Variables. He argued that the unusual rise and fall of Bombay Stock Exchange (BSE) Sensitive Index (SENSEX) has received a lot of media attention over last couple of decades in India. Even some policy analyst has designated it as an "indicator" of India's inevitable growth and development. He explores the causal relation between BSE SENSEX and some macroeconomic variables by using correlation, descriptive statistics, unit root stationarity tests and Granger causality. Annual data was applied from 1950 to 2006 for all the variables, like, SENSEX, per capita gross national product (GNP), forex reserves, gross domestic product (GDP), bank rate, wholesale price index (WPI), gross domestic capital

formation, domestic savings, broad money. Sophisticated econometric techniques like unit root tests was used to check out the stationarity and finally Granger causality was applied to study the causal relationship between them. The results that have been found are diversified and vague as correlation between almost all the variables was high, i.e., they are all moving in the same direction, but such a sequence was not followed by the causality analysis thus were not fundamentally supported by each other. This study presented inconsistent and unclear conclusion hence the present study sought to address the inconsistency by analyzing the relationship between exchange rates, interest rates and market performance.

The study by Jyoti and Alain (2000) examined the relationship between the interest rate, exchange rate and stock price in the Jakarta stock exchange. The study was conducted for a five year period from 1993 to 1997 which was divided into three sub periods. Depending on the sub periods being considered, sporadic unidirectional causality from closing stock prices to interest rates and vice versa and weak unidirectional causality from exchange rate to stock price were found. The overall evidence, however, failed to establish any consistent causality relationships between any of the economic variables under study. Hence it seems that Jakarta market efficiently incorporated much of the interest rate and exchange rate information in its price changes at closing stock market index. These results can be used as a measure of stock market efficiency, however with caution, as there are many other dimensions that have to be studied before arriving at any definite conclusion about the efficiency.

The study of Pallegedara and Asankha (2012) examined the dynamic relationships between stock market performance and the interest rates in Sri Lanka during June 2004 to April 2011. They used all share price index in the Colombo stock exchange as a measure of stock market performance indicator and Sri Lanka interbank offer rate as a measure of interest rate. They employed some conventional time series econometric techniques namely Unit root test, cointegration test, vector auto correction model (VECM), Granger-Causality test and Impulse response functions (IRF) to trace out the relationships between stock market index and interest rate. The findings were that stock market performance was negatively associated with interest rate in the long run while no causal relationship was found in the short run.

Though this study made use of the interbank offer rate as a measure of interest rate in Sri Lanka, the current study considered both deposit rate and lending rates as a measure of interest rates in Kenya's economy.

Aurangzeb (2011) studied the factors affecting performance of stock market in South Asia. The data used in the study were collected from the period of 1997 to 2010 of 3 South Asian countries namely, Pakistan, India and Sri Lanka. Regression results indicated that foreign direct investment and exchange rates have significant positive impact on performance of stock

market in South Asian countries while; interest rate has negative and significant impact on performance of stock market in South Asia. Results also indicate the negative but insignificant impact of inflation on stock market performance in South Asia. It was recommended that in order to take the full advantage of stock market and carry on with the international markets well managed macroeconomic policies are necessary in which interest rates and inflation rate are thoroughly monitored and tried to reduce the value as much possible.

Though in this study, interest rates had significant impact and inflation rates had insignificant impact showing contradictory results, the present study sought to determine the effect of interest rates on the performance of securities market in a faster growing economy using pure econometric tools.

In their study, Turan and Liuren (2005) performed a comprehensive analysis of the short-term interest-rate dynamics based on three different data sets and two flexible parametric specifications. They applied generalized autoregressive conditional heteroskedastic (GARCH)-type models with non-normal innovations to capture the potential impact of time-varying volatility and discontinuous interest rate movements. Estimates on both sets of models based on the three interest-rate series were performed using the quasi-maximum likelihood estimation method. They found that non-linearities were strong in the federal funds rate and the seven-day Eurodollar rate, but were much weaker in the three-month Treasury yield. They obtained similar findings when they estimated a two-factor diffusion model with stochastic volatility. They concluded that the conflicting evidence was partially due to the use of different data sets as a proxy for the short rate and the use of different parametric/ non-parametric specifications under which empirical studies perform the statistical tests. Though this study was mainly empirical, the present study therefore sought to use raw data on time deposit and lending rates and apply pure econometric techniques to arrive at the findings and conclusions.

Willem (1995) conducted a comparative empirical study between Ghana, Kenya, Zimbabwe and Nigeria. The sample comprised of four countries, two of the countries with the most advanced financial systems in Sub-Saharan Africa (Kenya and Zimbabwe), and two countries where structural adjustment had been an ongoing process for more than a decade (Kenya and Ghana). Willem applied short-term (less than 3 months) deposit rates and long-term deposit rates (longer than 12 months) from each of the four countries. The empirical findings from the sampled countries established that: (i) lending rates initially adjusted more slowly than deposit rates, creating initial periods during which the gap between lending and deposit rates narrowed, and even became negative in the case of Zimbabwe, and (ii) the level and volatility of interest rates increased after liberalization. In the Kenyan case, the study established that interest rates in Kenya have been fairly stable

and that a relatively constant gap had been maintained between lending and deposit rates for most of the period. However, it must be borne in mind that, although Kenya was one of the first African countries to implement a SAP, it was only in 1991 that full interest rate liberalization took place. Since then, interest rates have been following a steep upward ascent, with the gap between loan deposit rates shrinking after interest rate liberalization. Willem (1995) further revealed that for the Kenyan case, only changes in contemporaneous short-term interest rates seemed to have any effect on long-term interest rates, but the value of this parameter was smaller than 1 (0.69) which suggested a less than perfect correspondence between short and long rates. Furthermore, the acceptance that lags of short-term interest rates were insignificant, suggested that long-run interest rates do not adjust sluggishly to short-term rates.

The study of Naliniprava and Meghalaya (2011) investigated the market efficiency and causal relationship between selected Macroeconomic variables and the Indian stock market during the period January 2005 to February 2011 by using Ljung-Box Q test, Breusch-Godfrey LM test, Unit Root test, GrangerCausality test. The study confirmed the presence of autocorrelation in the Indian stock market and macro economic variables which implied that the market fell into form of Efficient Market Hypothesis. Further the Granger-causality test showed evidence of bidirectional relationship between interest rate and stock market, exchange rate and stock market, international stock market and BSE volume, exchange rate and BSE volume. So it suggested that any change of exchange rate, interest rate and international market significantly influencing the stock market in the economy and vice versa. The study also reported unidirectional causality running from international stock market to domestic stock market, interest rate, exchange rate and inflation rate indicating sizeable influence in the stock market movement in the considered period. The study points out that the Indian stock market is sensitive towards changing behavior of international market, exchange rate and interest rate in the economy and they can be used to predict stock market price fluctuation. Hence the present study sought to determine if the performance of Nairobi securities exchange market can be affected by the exchange rates and interest rates in Kenya's economy.

## METHODOLOGY

### Research Design

The study adopted correlational case study design. The research attempted to determine and explain the relationship between the variables of the two markets based on systematic comparison aimed at discovering inferences or causal relationships.

**Data**

The study was carried out in Kenya, and monthly secondary data on lending rates, deposit rates and price indices were collected through review of Kenya National Survey Reports covering a period of five years including the 2007 general election period which was very critical in the study since according to Angela and Wilson (2009), NSE market performance just before and after general election is taken to be very different.

**Model Specification**

Multivariate regression was used to analyze the data. The regression model was specified as:

NSE - 20SHARE INDEX$_t$ = $\beta_0$ + $\beta_1(IT_D)_t$ + $\beta_2(IT_L)_t$ + $\varepsilon_t$…………………………………(3.4)

Where: (NSE INDEX)$_t$- Is the NSE 20-Share index measuring the Performance NSE market at time t.

$(IT_D)_t$: Average deposit rate at month $t$

$(IT_L)_t$: Average lending rate at month $t$

$\beta_0\beta_1$ $\beta_2$ are the constants to be estimated.

$\varepsilon_t$- the error term.

**ANALYSIS AND RESULTS**

Because multiple regression analysis was used to test the relationship between interest rates and performance of the Nairobi securities exchange market, the validity of the assumptions of multiple regression analysis in the case of time series data were first checked. The Durbin–Watson test was used to check for autocorrelation, Dickey–Fuller tests were used to test for non-stationarity, and Johansen's test was used to test for cointegration, Variance inflation factors (VIF) were used to test for multicollinearity and Breusch-Pagan test was used to test for heteroskedasticit.

**Stationarity Test**

Table 1: Results of Unit Root investigation (ADF Test)

| Variable | ADF Test | Test Statistic | 1% Critical value | 5% Critical value |
|---|---|---|---|---|
| Average Deposit Rate | At Levels | -1.197500 | -3.546099 | -2.911730 |
| | First Difference | -7.172085 | -3.548208 | -2.912631 |
| Average Lending Rate | At Levels | -1.762984 | -3.546099 | -2.911730 |
| | First Difference | -7.148833 | -3.548208 | -2.912631 |
| Price Index | At Levels | -1.250266 | -3.546099 | -2.911730 |
| | First Difference | -6.887881 | -3.548208 | -2.912631 |

From Table 1, ADF statistics reported that all the variables under consideration contained unit root at level, as ADF statistics did not exceed 1% as well as 5% critical values i.e. they were all non stationary at level. They however became stationary in first difference.

**Johansen's Test for Co integration**

Co-integration was used to determine the long run relationship between price index and interest rates. Johansen co integration technique was used and revealed results presented in Table 2.

Table 2: Results of Johansen's Co integration Test

| Variable | Eigen Values | Trace Stat | 5% Critical value |
|---|---|---|---|
| Average Deposit Rate | 0.06923 | 4.3922 | 15.41 |
| | 0.00398 | 0.2313 | 3.76 |
| Average Lending Rate | 0.23164 | 16.4467 | 15.41 |
| | 0.01987 | 1.1641 | 3.76 |

Dependent Variable: Price Index

Results indicated that the trace statistics (likelihood ratio) for the average deposit rates did not exceed the 5% critical value. This implies that there was no co-integrating relation between price index and average deposit rates.

The table however shows that there was co-integration between price index and average lending rate. These are consistent with the findings by Pallegedara and Asankha (2012) showing that stock market performance was negatively associated with interest rate in the long run while no causal relationship was found in the short run.

**Testing for Multicollinearity**

Multicollinearity was examined by regressing each of the independent variables against all other independent variables. Table 3 presents the R-squared statistic and the variance inflation factor (VIF) for each equation.

Table 3: Multicollinearity Results for the Independent and Moderator Variables

| Variable | Auxiliary $R^2$ | VIF |
|---|---|---|
| Average Lending Rate | 0.142 | 1.166 |
| Average Deposit Rate | 0.082 | 1.089 |

Based on the very small values of the $R^2$ and the VIF for all the variables, the data was found to have no issues of multicollinearity.

## Testing for Autocorrelation

The Durbin-Watson statistics were used to test for the presence of autocorrelation. Consequently, the null hypothesis that there was no autocorrelation was tested. A value of the Durbin–Watson statistic close to 2 was adjudged to indicate lack of serial correlation. Each variable was regressed against all the other variables in order to determine the Durbin–Watson statistic for each variable. Table 4 reveals that the variables had no cases of autocorrelation.

Table 4: Results of Autocorrelation Test

| Variable | Durbin-Watson Stat. | Conclusion |
|---|---|---|
| Average Lending Rate | 2.084 | No autocorrelation |
| Average Deposit Rate | 2.060 | No autocorrelation |

## Testing for Heteroskedasticity

Data was also checked for constant variance in the error term. The null hypothesis for this test for each variable was that the variance was constant. A significant heteroskedasticity chi-square value would then indicate evidence of heteroskedasticity. Results are presented in Table 5.

Table 5: Results of the Heteroskedasticity Test

| Variable | . | $Chi^2(1)$ | $Prob > Chi^2$ |
|---|---|---|---|
| Average Lending Rate | | 0.07 | 0.7910 |
| Average Deposit Rate | | 0.01 | 0.9151 |
| Price Index | | 0.23 | 0.6330 |

Results presented in Table 5 reveal that the $chi^2$ (1) statistics for average lending rate, average deposit rate and price index were not significant. This implies that these variables had no heteroskedasticity.

## Results of Regression Equation

To establish the relationship between performance of the Nairobi Securities Exchange market and interest rates, multiple regression analysis was conducted. Regression was therefore run at the first differenced. As shown from the ANOVA table presented in Table 6, the F-test was highly significant ($F_{0.01; 2, 57}$=57.612, p<0.01). This indicates that the hypothesized multiple

regression model was statistically adequate. Thus, the observed $R^2$ was significantly different from zero and the multiple regression equation was a better predictor of price index.

Table 6: ANOVA[a]

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 29792381.233 | 2 | 14896190.617 | 57.612 | .000[b] |
| | Residual | 14737933.385 | 57 | 258560.235 | | |
| | Total | 44530314.618 | 59 | | | |

a. Dependent Variable: Price Index

b. Predictors: (Constant), Average Deposit Rate, Average Lending Rate

Results presented in Table 6 which displays the model summary show that the interest rates together explained 65.7% of the variance in price index (Adj. $R^2$=.657). In addition, the Durbin-Watson statistic of 2.4744 suggests that the residuals of the interest rates were uncorrelated.

Table 7: Model Summary[b]

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|---|---|---|---|---|---|
| 1 | .818[a] | .669 | .657 | 508.488 | 2.474 |

a. Predictors: (Constant), Average Deposit Rate, Average Lending Rate

b. Dependent Variable: Price Index

Table 7 presents results of the regression analysis in which price index was regressed on the two measures of interest rates i.e lending rates and deposit rates.

Table 8: Coefficients[a]

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 15778.248 | 1756.815 | | 8.981 | .000 |
| | Lending Rate | -251.149 | 196.447 | -.166 | -1.278 | .206 |
| | Deposit Rate | -1746.435 | 334.388 | -.678 | -5.223 | .000 |

a. Dependent Variable: Price Index

Table 8 indicates that the lending rates ($\beta_1$=-0.166, p>0.05) was negative but not significant predictor of price index while deposit rates ($\beta_2$=-0.678, p<0.05) was negative and significant predictors of price index.

Furthermore, the regression equation showed that a unit standard deviation increase in lending rate was likely to decrease the standard deviation of the price index by 0.166. Similarly, a unit standard deviation increase in the average deposit rate was likely to result in a 0.678 decrease in the standard deviation of the price index.

## DISCUSSIONS

The finding that average lending rate and deposit rate were negatively related to the market performance was not consistent with the findings by Jyoti and Alain (2000) who examined the relationship between the interest rate, exchange rate and stock price in the Jakarta stock exchange for a five year period from 1993 to 1997 which was divided into three sub periods. Depending on the sub periods being considered, they established that sporadic unidirectional causality from closing stock prices to interest rates and vice versa were found. The finding that there exist inverse relationship between interest rates and market performance is consistent with the findings by Pallegedara and Asankha (2012) who examined the dynamic relationships between stock market performance and the interest rates in Sri Lanka during June 2004 to April 2011. They used all share price index in the Colombo stock exchange as a measure of stock market performance indicator and Sri Lanka interbank offer rate as a measure of interest rate. They employed some conventional time series econometric techniques namely Unit root test, cointegration test, vector auto correction model (VECM), Granger-Causality test and Impulse response functions (IRF) to trace out the relationships between stock market index and interest rate. The findings were that stock market performance was negatively associated with interest rate in the long run.The findings of inverse relationship between interest rates and market performance are further consistent with those of Aurangzeb (2011) who studied the factors affecting performance of stock market in South Asia. The data used in the study were collected from the period of 1997 to 2010 of 3 South Asian countries namely, Pakistan, India and Sri Lanka. Regression results indicated that foreign direct investment and exchange rates have significant positive impact on performance of stock market in South Asian countries while; interest rate has negative and significant impact on performance of stock market in South Asia. The findings that an increase in interest rates was likely to reduce performance of the securities markets further reflect the findings by Reilly (1997), who reported that unexpected changes in the rate of inflation make it difficult for firms to plan, which inhibits growth and innovations. These findings further support the views by Schwert (1990) indicating that securities market volatility jumps dramatically during security markets crash and returns to low pre-crash levels quickly.

## CONCLUSIONS AND RECOMMENDATIONS

The study concluded that there exist an inverse relationship between interest rate and performance of Nairobi Securities Exchange Market. Moreover, it was established that lending rate was not a significant predictor of price index while deposit rate significantly predicted price index. It further revealed that both lending and interest rates were inversely related to performance of Nairobi Securities Exchange Market measured by NSE-20 Share index.

Based on the study conclusion that there exist an inverse relationship between interest rate and performance of Nairobi Securities Exchange Market, the study recommended that investors in the securities market should take into consideration the trends of interest rates since whenever the rates are lower, there is an increase in market performance. This could be attributable to desire to invest due to increase money supply in the market.

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