

EXAMINATION OF THE FACTORS HINDERING THE GROWTH OF DAR ES SALAAM STOCK EXCHANGE

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ABSTRACT

This study reflects on assessment of factors hindering the growth of Dar es Salaam Stock Exchange market. Four examined variables such as money supply exchange rate, inflation rate and interest rate were considered. The study employed quantitative approach where four variables were tested by hypothesis. The multiple regression model is used to relate the macro economic variables and Dar es Salaam stock exchange index. The findings in this study revealed that, four investigated variables in this study, one which is interest rate was found to have the negative relationship with Dar es Salaam Stock Exchange index. The inflation rate, exchange rate and money supply were statistically insignificant explaining the variability of Dar es Salaam Stock Exchange market. The study recommends that, the government should manage well the macro-economic policies in order to give confidence to our investors and attract new investors.

Keyword: Inflation rate, Money supply, Exchange rate, Money supply

INTRODUCTION

A stock exchange market is the center of a network of transactions where buyers and sellers of securities meet at a specified price. Stock market plays a key role in the mobilization of capital in emerging and developed countries, leading to the growth of industry and commerce of the country, as a consequence of liberalized and globalized policies adopted by most emerging and developed government(Talla, 2013).

In effort of Tanzania government's Policy to transform the economy from public government dominant economy to private sector driven economy, it established Dar es Salaam Stock Exchange Market. The establishment of the Dar es Salaam Stock Exchange (Dar es Salaam Stock Exchange) marked an important milestone in the efforts toward the development of a functioning capital market for the mobilization and allocation of long-term capital to the private sector. The Dar es Salaam Stock Exchange was incorporated in September, 1996 as a Company limited by guarantee without a share capital under the company's ordinance (cap.212).The Dar es Salaam Stock Exchange is therefore a non-profit making body created to facilitate the Government's implementation of the economic reforms and in future to encourage the wider share ownership of privatized companies in Tanzania and facilitate raising of medium and long-term capital.

The primary function of any stock market is to play the role of supporting the growth of the industry and economy of the country and it is also the measurement tool that gives the idea about

the industrial growth as well as the stability of the economy with their performance. The rising index or consistent growth in the index is the sign of growing economy and if the index and stock prices are on the falling side or their fluctuations are on the higher side it gives the impression of instability in the economy exist in that country. On the other side we know that the growth of the country is directly related to the economy which consists of various variables like GDP, Foreign Direct Investment, Remittances, Inflation, Interest rate, Money supply, Exchange rate and many others. These variables are the backbone of any economy. The movements in the stock prices are affected by changes in fundamentals of the economy and the expectations about future prospects of these fundamentals, these indices used as a benchmark for the investors or fund managers who compare their return with the market return.

Number of studies had been conducted globally about the influence of macroeconomic variables on the capital markets and various studies had show different result according to different behavior of the capital markets and different macroeconomic variable they chosen. Various scholars and researchers came up with different level or magnitude of observed, stock market performance. The number of studies shows that these stock market indices are affected by macroeconomic variables of the economy with respect to their intensity in different markets. An investor wants to keep himself aware about the behavior of the stock market with the result which is generated after the fluctuation of these key variables. An investor wants to know about the actions which he needs to take and the time when that decision gives him the maximum advantage.

Different theoretical frameworks have been employed by many researches to link changes in macroeconomic variables with stock market returns. This includes the semi strong efficient market hypothesis developed by Fama(1970) and the Arbitrage Pricing Theory(APT).

This study focused on Arbitrage Pricing Theory which was developed by Ross(1976), the Arbitrage Pricing Theory(ATP) is another way of linking macroeconomic variables to stock market return. It is an extension of the Capital Asset Pricing Model (CAPM) which is based on the mean variance framework by the assumption of the process generating and Security. In other words, CAPM is based one factor meaning that there is only one independent variable which is the risk premium of the market. There are similar assumptions between CAPM and APT namely: the assumption of homogenous expectations, perfectly competitive markets and frictionless capital markets.

However, Ross(1976) propose a multifactor approach to explaining asset pricing through the arbitrage pricing theory(APT). According to him, the primary influences on stock returns are some economic forces such as(1) unanticipated shifts in risk premiums;(2)changes in the expected level of industrial production; (3)unanticipated inflation and (4) unanticipated movements in the shape of the term structure of interest rate. These factors are denoted with factor specific coefficients that measure the sensitivity of the assets to each factor.APT is a different approach to determining asset prices and it derives its basis from the law of one price. As a matter of fact, in an efficient market, two items that are the same cannot sell at different prices; otherwise an arbitrage opportunity of indexes as shown in the following equation:

$$R_1 = \alpha + \beta_1 X_1 + \beta_2 X_2 \dots \beta_n X_n + \varepsilon$$

Whereby

β = Beta

X = Risk factors

R_1 = Expected level

α = If return for stock (return on market portfolios)

ε = Random error

According to Chen and Ross (1986), individual stock depends on anticipated and unanticipated factors. They believe that most of the return realized by investors is the result of unanticipated events and these factors are related to the overall economic conditions. In fact, although asset returns can also be affected by influences that are not systematic to the economy, returns on large portfolios are mainly influenced by systematic risk because idiosyncratic returns on individual assets are cancelled out through the process of diversification.

Adarmola(2012)found the exchange rate volatility and stock market behavior in Nigeria, applied Johansen's Co integration Technique and Error correction mechanism using quarterly data for the period of 1985 to 2009 and found that Exchange rate exerts significant impact on Nigeria stock market both in the short and in the long run. The study showed that in the short run, exchange rate had a positive significant impact on stock market performance; however the result also showed that in the long run, the relationship is significantly negative.

Using VECM model and yearly time series data for the period 1985 – 2008. Onasanya and Ayoola (2012) found that the stock macroeconomic variables do not significantly influence the return at stock market. Interest rate, specifically was found to be negatively related and insignificant to stock returns in Nigeria.

Owusu – Nantwi and Kuwornu (2011) study of the impact of interest rates on stock market returns indicated that the variable is not significant for the stock market in Ghana. Interest rate as captured by 91- Treasury bill rate indicated a negative relationship with the stock market return when authors employed Ordinary Linear Spares method with monthly data of 1992 – 2011.

Ochieng and Oriwo (2012) studied the relationship between macro – economics variables and stock market growth in Kenya.

Coleman &Agyire-Tetty (2008) try to explore the impact of some macroeconomic variables on the growth of Ghana Stock exchange with the help of quarterly time series data for the period from 1991 to 2005 by using co integration and error correction model. The findings suggest that there is a weak effect of Treasury bill rates and on at the other hand market takes time to respond in inflation scenario. More reliable results can be generated by including some other macro-economic variables like money supply and industrial Production in this study.

Pal and Mittal (2011) examined the long run relationship between two Indian capital markets and some macroeconomic variables such as interest rates, inflation, and exchange rate and gross domestic savings. They use the quarterly data from January 1995 to December 2008 and with the help of unit root test, co integration and error correction mechanism they found out that the inflation rate have the significant impact on both capital markets whereas interest rate and foreign exchange rate have the impact on one capital market. The study can be made for longer period with some other macroeconomic variables gives us more comprehensive results.

Ibrahim & Aziz (2003), explore the relationship between four macroeconomic variables which is money supply, inflation rate, exchange rate and interest rate where they used multiple regression

model and Kuala Lumpur Composite Index (KLCL) through co-integration and vector autoregression model. They took the monthly data of their variables which were real output of inflation rate, money supply, interest rate and exchange rate from 1977 to August 1988 and their model suggest that there is short term relationship as well as long term relationship exist between the macroeconomic variables and the KLCL. They further explore that two variables which were exchange rate and money supply are negatively associated with the stock prices while the other two have positive impact on the index which is inflation rate and interest rate.

Hussainey and Ngoc (2009) explore the effects of domestic and international macroeconomic variables on Vietnamese stock prices. They applied regression model on Vietnam data as well as the US data of some variables which includes Vietnam stock prices, industrial production, CPI, VN basic interest rates and government bond rates for Vietnam while S&P 500, Industrial production, CPI, VN basic interest rates and government bond rates for Vietnam stock prices, Industrial production, CPI, US treasury bill three month rates and long-term government bond data for US. The results of the study suggest that industrial production have the positive impact on Vietnamese stock prices whereas short term and long term both type of interest rates shown insignificant effect on stock prices. The results also suggest that real production activity of US has the significant impact on Vietnamese stock prices.

Stavarek(2004) examined the nature of casual relation between stock prices and exchange rate in four old EU countries(Austria,France, Germany and the UK) and the four new members (Czech Republic,Hungary,Poland and Slovakia)and in the USA.The data varies for each country depending upon the availability. The monthly data from December 1969 to December 2003 is used for Austria, France, Germany, UK and USA while for Poland it is from December 1993 to December 2003 for Czech Republic December 1994 to December 2003.There are several tests are used like co integration analysis, vector error correction modeling standard Granger casualty test to find out the linkage between exchange rate and stock prices and they conclude that there is no long run relationship exist in first analyzed period covering from 1970 to 1992.In the period from 1993 to 2003 much stronger casualty found out in old EU members and USA because of their strong stock market and exchange rate development. Long run equilibrium does not exist in new EU members due to relative under development markets.

Liu &Sheath (2008) investigates the long run relationship between Chinese stock market and a set of macroeconomic variables which includes industrial prediction, exchange rate, inflation, money supply and interstate. They used secondary data of all variables. Findings of this study suggest that industrial production and money supply have the positive relationship with Chinese stock indices while inflation, interest rate and exchange rate have the negative impact on stock prices. The study recommended that the investors who want to invest in Chinese stock market they should invest for long term horizon because in start term the Chinese stock market is very volatile and risky. Merikas &Merika (2006) try to re-examine hypothesis which suggest the stock market have negative impact on real economic activities in Germany. They collected the data of 41 years from 1960 to 2000 and build the VAR model. They used CPI as the measure of inflation while real rate of return of DAX stock index was used as stock market returns. They conclude that the stock prices are negatively related with the growth of employment in the country while the GDP growth rates have the positive relation with stock market. This study

could be done with adding more variables into the model which generates more appropriate results.

Flannery & Protopapadakis (2002) checked the impact of some macroeconomic factors on aggregate stock returns. They used 17 macroeconomics data announcements starting from 1980 to 1996 and applied GARCH model to find out the impact of these factors on realized returns as well as their volatility. After the analysis they found out that there are six variables in which three are nominal (CPI, PPI and Monetary Aggregate) and three are real (Employment Report, Balance of Trade, and Housing Starts) as strong candidates for risk factors. From three Report, Balance of Trade, and Housing Starts) as strong candidates for risk factors. From three nominal only money supply affect both the level of returns and the volatility the other two normal variables only affect the level of returns. On the other hand all three real macroeconomic variables only affect the volatility of the returns. Fang & Miller (2002) identifies the effect of volatility in Korean exchange market on Korean stock market with the GARCH-M model and the daily of those variables from 3rd of January 1997 to 21st of December, 2000 and they found out that the Korean foreign currency market impact in three different ways on the stock market. The first channel suggests that exchange rate negatively affect stock market returns. Secondly the depreciation volatility positively affects these returns and at last stock market return volatility responds to exchange rate depreciation volatility. If they include some more macroeconomic variables such as money supply or interest rates their result would have much more considerable while taking the decision of investment.

Ahmed & Iman (2007) investigates the relationship between stock market and different macroeconomic variables such as money supply, They use analyze the Monthly data series for the period of July 1997 to June 2005 and they found that generally there exists no long run relationship between stock market index and macroeconomic variables but interest rate change or T-bill growth rate may have some influence on the market return.

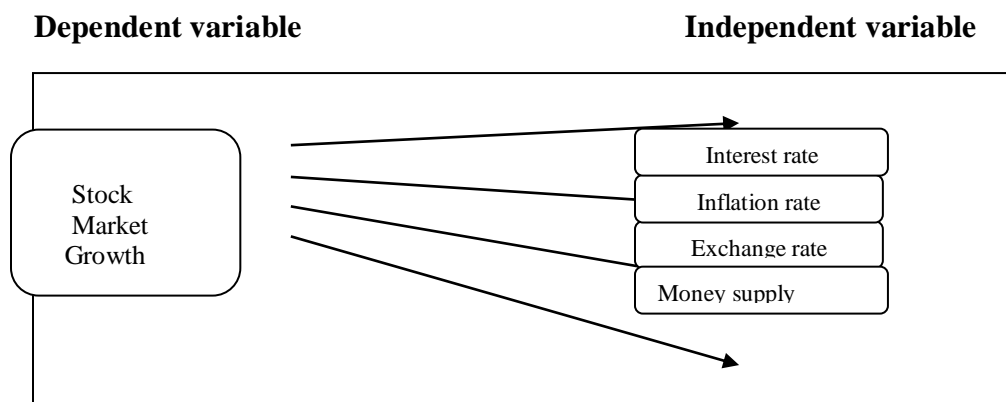


Figure 1: Conceptual framework

2. METHODOLOGY

Variable and Measurement Procedures

Four independent variables are used in this study these are Interest rate, Inflation, Exchange rate

and Money supply. Interest rate is measured by using Treasury bill as in Adam and Tweneboah (2008) Inflation rate, which is a decline in the real value of money, a loss of purchasing power in medium of exchange; it will be measured by consumer price index as in Aurangzeb, (2012,)Exchange rate is measured by using Tanzania shilling per USD, since most transactions are in USD. Money supply is measured by the volume of currency in economy dependent variable is Stock market growth which will be measured by stock Index as in Adam and Tweneboah (2006) and Talla (2013).

Data Processing and Analysis

To analyse the relation between; macroeconomic variable and stock exchange growth at Dar es Salaam Stock Exchange, multiple regression analysis will be used consistent with Aurangzeb (2010), and (Talla 2013).

$$Sm = B_0 + B_1IR + B_2IF + B_3ER + B_4MS + \varepsilon$$

IR: Interest rate is measured by using Treasury bill: (Talla, 2013)

IF: Inflation is measured by using consumer price Index. (Talla, 2013)

ER: Exchange rate is measured by using Tanzania shilling per USD. (Tala, 2013).

MS: Money Supply will be measured by using volume of Tanzania shilling in economy.

Bo: Is the intercept, and reflect the constant of the equation which measure mean value of SML, if all independent variable are omitted in the model

Bi: Are regressive coefficient of each independent variable (i=1,2,3,4), which measures sensitivity of dependent variable to a unit change in each independent variable.

ε = Is the error term which is assumed to be normally distributed with mean value of 0 and Constant variance σ^2

Sm = The stock market

3. RESULTS AND DISCUSSION

Hypotheses Testing

Multiple regression analysis of the data collected was conducted in order to test the stated hypotheses: T – test was used in the study for the estimate regression coefficient: Also, F ratio and R^2 were used as test statistic for testing the overall significance of the study model: Table 1 presents the results of the hypotheses whereby the study made the following conclusion.

On hypothesis number one: interest rate has no significant impact on stock market (performance) growth of the Dar es Salaam stock exchange. As we can see on table 1 which shows the summary of the results and tested hypothesis. ($P < 0.05$). This mean that, the interest rates of the commercial banks loans has no significant effect on stock market growth in Tanzania. This is due to the fact that, an increase in interest rate will increase on opportunity cost of holding money and investors substitute holding interest bearing securities of share hence falling stock prices. The treasury bill is used as a measure of interest rate of this study. Because investing in treasury bills the interest rate is used as measure of opportunity cost for holding shares. High treasury bills thus tend to compete with stocks and bonds for the resources of investors. The expected relationship between stock prices and treasury bill rates is thus negative (Talla 2013).

Hypothesis number two: Inflation rate has no significant impact on stock market growth of the D.S.E. so that the D.S.E. is rejected as shown on table 1(P<0.05). The study accepted the alternative hypotheses that inflation has significant on stock market growth of the Dar es Salaam stock exchange. Johnson and Diego investigated the effect of changes in the consumer price index on Industrial production and stock return for China. The results of the study indicates a very significant and positive relationship between inflation and real output.

Hypothesis number three. Exchange rate has no significant impact on stock – market growth of Dar es Salaam Stock Exchange is rejected as shown on Table 1 (P<0.05). The study accepted the alternative hypothesis and conducted that Exchange rate is an important determinant of growth of Dar es Salaam Stock Exchange: In a determinant study Boyer (2002) assessed the determinant of Canada Oil and Gas stock return and found that currency against the USD had a negative impact on the oil and gas stock return.

Hypothesis number four: Money supply has no significant impact on stock exchange Market growth of Dar es Salaam Stock Exchange is rejected. The study accepted the alternative hypotheses and conclude that money supply is an important determinant of the Growth of Dar es Salaam Stock Exchange as show on Table 1 (P<0.05). Friedman and Schwartz (1963) explained the relationship between money supply and stock returns by simply hypothesizing the growth rate of money supply would effect the aggregate economy and hence the expected stock returns. An increase in money supply would indicate excess liquidity available for buying securities, resulting in higher security prices. Empirically, hamburger and Kochin (1972) and Kraft (1977) found a strong linkage between the two variables, while cooper and Nozar (1974), found no relation.

Testing the Overall Hypothesis

Table 1 is used to test the overall significant of the model, indicates that the study model has an F-value which measure where independent one jointly affecting the dependent variable is statistically significant at 5% level. The R² value of 0.9543 indicates that, the independent variable in the model is jointly explained about 31.59% of the total variability in the dependent variable. Thus explanatory power of the model is great with the adjusted R² = 0.7714.

Tested hypothesis of variables shows that, only interest rate is having significant impact for growth of Dar es Salaam stock exchange whiles the other three variables like inflation rate, exchange rate and money supply has no significant impact on stock market growth of Dar es Salaam stock exchange.

1: Summary of Results of Test of Hypotheses and Related Objectives

Objectives	Hypothesis	Results	Discussion
Objective one To examine the contribution of Interest rate on growth of DAR ES SALAAM	H ₁ : Interest rate has significant impact on stock market growth of (DAR ES SALAAM	P= - 0.597 less than 0.05	Since the P-Value is less than 0.05 or 5% or it is greater than the critical value (5%) we can reject the null hypothesis and we can conclude that Interest rate variable is following a pure

STOCK EXCHANGE	STOCK EXCHANGE)		random walk theory.
Objective two To examine the contribution of inflation rate on growth of DAR ES SALAAM STOCK EXCHANGE.	H ₂ : Inflation rate has no significant impact on stock market growth of (DAR ES SALAAM STOCK EXCHANGE)	P = 0.192 greater than 0.05	Since the P-Value is greater than 0.05 or 5% or it is greater than the critical value (5%) we can accept the null hypothesis and we can conclude that Inflation rate variable is not following a pure random walk theory.
Objective three To examine the contribution of Exchange rate on stock market growth of DAR ES SALAAM STOCK EXCHANGE	H ₃ : Exchange rate has no significant impact on stock market growth of DAR ES SALAAM STOCK EXCHANGE	P = 0.202 greater than 0.05	Since the P-Value is greater than 0.05 or 5% or it is greater than the critical value (5%) we can accept the null hypothesis and we can conclude that Interest rate variable is not following a pure random walk theory.
Objective four To examine the contribution of money supply on growth of DAR ES SALAAM STOCK EXCHANGE	H ₄ : Money supply has no significant impact on stock growth of the DAR ES SALAAM STOCK EXCHANGE	P = 0.719 greater than 0.05	Since the P-Value is greater than 0.05 or 5% or it is greater than the critical value (5%) we can accept the null hypothesis and we can conclude that Interest rate variable is not following a pure random walk theory.

Determinant of Dar es Salaam Stock Exchange Index

Table 2 presents some descriptive statistics of variable used in this study. It shows total number of observation minimum value, maximum value, mean value and standard deviation of all the variables.

The dependant variable which is Dar es Salaam Stock Exchange index, shows the lowest value of 450 and to the highest value of 1,400 during last 228 weeks, mean value of dependent variable is 939:80 and the standard deviation of 366.2557. The minimum value of CPI, i.e inflation rate is 0.04 and maximum of 0.15 which were observed in 2009 and 2010 respectively. The standard deviation of this variable is 0.0374633 and mean rate 0.0895. The minimum value of exchange rate is 900 and maximum value is 1699 which were obtained in 2007 and 2010 respectively.

The minimum value of interest rate is 0.1 and maximum value is 1.136 which were observed in 2006 and 2011. The minimum value of money supply was 4,390 and maximum value 90,000 which was observed in 2007 and 2008 respectively.

Table 2 :Determinant of Dar es Salaam Stock Exchange Index

Descriptive	N	Min	Max	Mean	SD
Interest rate	288	0.1	1.136	0.3297	0.4131421
Exchange rate	288	900	1,699	1,311.34	340.7225
Money supply (Billion)	288	4,390	90,00 0	19,230.93	34,675.53
Inflation rate	288	0.4	0.15	0.089554	0.374633

Source: Dar es Salaam Stock Exchange database

Determinant of Dar es Salaam Stock Exchange index

Table 3 presents regression results of the study where overall, the model explains 0.7714 the variability of Dar es Salaam Stock Exchange index as shown by adjusted R². This means their other variables not captured by our model which explain the 40% variability on the first year. Which was 2006 Adjusted R² stood at 51% and on the second year jumped to 73 before falling to 54% on the third year: On the fourth year stood at 48% fifth year jumped to 70% and in the sixth year stood at 65 %.

The F – statistic which measure whether independent variable are jointly affecting the dependent variable is statistically significant at 5 % level only at the first year which is 2006. In other periods F – statistic is insignificant. It tells us that, the model is no robust enough to explain the linear relationship between Dar es Salaam Stock Exchange index and the four variables used in this study.

Regression results show that, Interest is negatively related to Dar es Salaam Stock Exchange index in this study in line with the hypothesis. The findings are in line with Aurangzeb (2012) and Talla (2013) whose study found interest rate to be negatively related to their stock exchange market index. The findings in this study imply that as interest rate increases, WhileDar es Salaam Stock Exchange index decreases; since the interest rate gives the opportunity to the investors, To move their investment from Dar es Salaam Stock Exchange market to the Bank deposit and gain maximized return.

A similar but opposite behavior it can be witnessed in case the interest rate decreased, people will find more worth to invest their money at Dar es Salaam Stock Exchange.

Exchange rate exhibited positive coefficient differently from the hypothesized. Increase in exchange rate was also increasing the purchasing power of foreign dealers because they invested the same amount in their local currency but after the conversion the amount will increase and they can purchase more stocks that earlier they can not purchase so ultimately it gives the more liquidity in the Dar es Salaam Stock Exchange: The other reason of this positive impact is that whenever the foreign exchange rate increases, investors were shift their investment from the foreign exchange market to other market due to increase of risk in foreign market. The result are consistent with those reported in Aurungeb (2012 and Talla 2013). The money supply which was negatively hypothesized is positively related to the Dar es Salaam Stock Exchange index in this study.The findings in this study imply that, money supply gives liquidity to the market and

the market will turn into bullish mode and local investors also invest at that time as a the market increases and whenever the liquidity in the Dar es Salaam Stock Exchange increases it will help the Dar es Salaam stock exchange. The results are consistent with those reported in Talla. (2013). Inflation rate which was negatively hypothesized is positively related to Dar es Salaam Stock Exchange index in this study: The findings in this study imply that, the inflation was expected, as it stimulates more supply. Expected inflation happens when demand exceeds supply. Since this is expected, by firm increases in prices would also increase earnings, which would lead them paying more dividends and hence increase the price of their stock as well. The findings are consistent with those reported with Talla (2013).

Table 3 Determinant of Dar es Salaam Stock Exchange Index

Description	Year1	Year2	Year3	Year4	Year5	Year6
Constant	280.495 (0.353)	1304.169 (0.045)	701.392 (0.643)	981.266 (0.087)	2,427 (0.398)	935.826 (0.028)
Exchange Rate	0.151 (0.286)	0.078 (0.596)	0.064 (0.643)	0.228 (0.087)	0.141 (0.398)	0.148 (0.381)
Money Supply	0.029 (0.838)	0.086 (0.0573)	0.419 (0.005)	0.191 (0.150)	0.039 (0.789)	0.143 (0.341)
Inflation rate	0.163 (0.248)	0.332 (0.038)	0.381 (0.011)	0.381 (0.013)	0.003 (0.984)	0.263 (0.104)
Interest rate	-0.379 (0.010)	-0.018 (0.908)	-0.024 (0.859)	-0.064 (0.664)	-0.280 (0.088)	-0.075 (0.669)
F	2.557 (0.053)	1.367 (0.262)	3.206 (0.022)	3.620 (0.012)	0.835 (0.047)	1.631 (0.025)
Adjusted R ²	0.51	0.73	0.54	0.48	0.70	0.65

Source: compiled from Dar es Salaam Stock Exchange data base

Table 4. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Exchange Rate.	288	900	1,699	1,311.34	165.932
Dar es Salaam Stock Exchange.	288	450	1,400	939.80	209.173
Money Supply.	288	4,390	90,000	9,513.35	9,189.215
Inflation Rate.	288	0.4	1.15	8.9554	0.3746.33
Interest Rate.	288	0.1	1.136	0.3297	6.01315
Valid N . (Listwise)	288				

Descriptive statistics analysis.

Table 4. Represents descriptive statistics of the variables used in this study. It shows total number of observations minimum value, maximum value, mean value and standard deviation of all variables. The dependent variable which is Dar es Salaam Stock Exchange Index shows the lowest value of 450 and the highest values of 1400 during last 6 years mean value of dependent variable is 939:80 and standard deviation of 366.256.

The minimum value of the C.P.I ie, inflation rate is 0.04 and maximum of 0.15 which were observed in 2006 and 2010 and mean rate is 8.96 which were observed in 2009 and 2010 respectively. The standard deviation of this variable is 0.374633 and mean rate is 0.896554. The minimum value of exchange rate is 900 and maximum value is 1699 which were obtained in 2007 and 2010 respectively. The standard deviation of this variable is 165.932 and mean rate of 1,311.34. The minimum value of interest rate is 0.1 and maximum value is 113.60 which were observed in 2006 and 2011. Whereby the standard deviation was shown with the variable of 0.4131421 and mean rate of 0.3297 as well. Moreover, the minimum of the money supply was 4,390 and maximum of 90,000 with standard deviation of 9,189.215 and mean rate of 9,513.35 as well. The data taken for conducting this study was collected data of 2006 up to 2011. So, it took six years of observation for the twelve listed companies during that period of 2006 up to 2011

Regression results

Table 5: Model Summaryoverall

Model	R ²	Prob>F	Adjusted R Square	Std. Error of the Estimate	Observation (obs)
1	0.9543	0.3159	0.7714	175.12	6 years

- a. YEAR = 2006 to 2011 (6 years)
 - b. Predictors:(Constant),Interest Rate, Exchange rate, Inflation Rate, Money Supply
- The table 5 shows the model summary of the four computed variable such as inflation, exchange rate, interest rate and money supply. All these variables were recorded from 2006 up to 2011 as data used for regression in this study. The computed regression in this study. The computed regression results show us that, the R square has 0.9548, Root MSE has 175.12, and Adjusted R2has 0.7714 and probability of 0.315.

Table: 6 ANOVA

Source	Sum of squares	Df	Mean square
Model	640047.451	4	160011.863
Residual	30668.7223	1	30668.7223
Total	670716.173	5	134143.235

This table shows the regression result computed to obtain the values of mean square which is 134143.235 as total value whereby 160011.863 obtain from a model and 30668.7223 obtain from

a residual. Also these regression results it tells us the values of sum of squares of 640047.451 as model and 30668.7223 as the value of residual, whereby the total is the sum of model plus residual values which is 670716.173 as total value. Moreover, the df value is 5 as a total value, which is 4 as model and 1 as a residual.

Table 7 Coefficients

Variable	Coefficient	Std Error	t	p>t	95% confidence	Interval
Exchange Rate	1.770868	0.5800155	3.05	0.202	-5.599	9.140664
Money Supply	0.0052667	0.0111407	0.47	0.719	-136289	0.146823 2
Inflation Rate	15179.09	4732.597	3.21	0.192	-449543	75312.44
Interest Rate	577.0485	787.2421	0.73	0.597	-9425.8	10579.91
Constant	-3032.463	1167.35	-2.60	0.234	-17865.1	11800.13

Table 7 shows the stock market growth result after computing variables of inflation, money supply, exchange rate and interest rates for the past observation of six years from 006 up to 2011 as well. From the table of inflation, money supply, exchange rate and interest rates for the past observation of six years from 2006 up to 2011 as well. From the table, the exchange rate bring us the coefficient of 1.770868, standard error of 0.5800155, probability of 0.202, 95% confidence of -5.599, interval of 9.14067 and t is 3.05 money supply brings us the coefficient of 0.0052667: standard error of 0.0111407; probability of 0.719; 95% confidence of -0.1362897 with interval of 0.1468232 and t is 0.47 inflation rate bring us the coefficient of 15179.09; standard error of 4732.597; probability of 0.192; 95% confidence of -44954.26 with an interval of 75312.44 and t is 3.21 interest rate brings out the coefficient of 577.0485, standard error 787.2421, probability of 0.597; 95% confidence of -9425.811 with an interval of 10579.91 and t is 0.73 constant value are -3032.463 as coefficient value of the regression result, standard error of 1167.35, probability of 0.234, 95% confidence of -17865.06 with an interval of 11800.13 and the t value is 0.234.

After applying the regression model the above results are generated in which coefficient of all variable with their t-statistic and p-value was observed. The tables above shows the value of R-square and the coefficient of determination and it shows that, how many times actual and estimated value are the same small value indicate that the model fits the data well and the R-squared values indicate the model is (okay) good, since the value of R-square adjusted in the table 4.3 suggest which are generated from this model are reliable. As mentioned in the theoretical background, interest rate has no significant impact on stock market growth because interest rate increase by 1% the stock market will decrease by 0.73% so whenever the interest rates in the economy increase the negative trend in the stock market will be observed because interest rate gives the opportunity returns. As in interest rate which offered on deposit decreases investors find more worthwhile to invest their money into other avenues such as stock exchange

and real estate. A similar but opposite behavior is witnessed in the case of an increase in interest rates when interest rate increase people find it more profitable to keep their money in the Bank than to invest it in risky avenues such as the stock market.

The result of inflation suggests that, there is a negative relation exists between inflation result and stock market but this relationship is not significant in this region due to the various reasons. I 'examined that, in this region foreign investment plays a vital role in capital market and local participants are mainly follow the foreign buyers this was the major reason of this significant impact of inflation because there is no impact have been made on purchasing power of foreigners when inflation in the particular economy fluctuate.

Exchange rate shows that have no signification impact on stock market growth. A large foreign exchange reserve increases the money supply and causes the interest rates to drop. The regression results show a positive relationship between foreign exchange reserve and stock market growth. The p-value of 0.202 which is less than significance 0.1 meaning that the exchange of foreign reserve is statistically significant factor, at a significant of 10% level. But insignificant at a significance 5% level. Furthermore the researcher expected a positive relationship between money supply and stock market growth since an increase of the money supply would decrease the discount rate.

There is no positive relationship between the variables, however is found insignificant at 95% level of confidence since P value is 0. 719. Therefore, it can be concluded that, money supply has no effect on the stock market growth of the Dar es salaam stock exchange.

5. Conclusions and Implications and Recommendations

5.1 Conclusion

Of the four variable investigated in this study one which is interest rate is found to have the hypothesized negative relationship with Dar es Salaam Stock Exchange index . Inflation rate, Exchange rate, money supply exhibited positive relationship contrary to the hypothesis. Thus inflation rate, Exchange rate and money supply were statistically insignificant explaining variability of Dar es Salaam Stock Exchange. While Interest rate has statistically influence on Dar es Salaam Stock Exchange index. The rest variables can be explained by inflation rate, Exchange rate, money supply as for about 60%: It appears there are still about 40% of the variable not captured in the model used in this study explaining the rest of the variability.

In this respect, prospective investors at Dar es Salaam Stock Exchange could pursue the strategy to invest at Dar es Salaam Stock Exchange in regard to the interest rate, money supply, inflation rate and Exchange rate. In regard to interest rate perspective investors, should not focus to invest of Dar es Salaam Stock Exchange, and instead should focus to move their, investment from Dar es Salaam Stock Exchange to Bank deposits where, they can gain maximum return: The reasons for this is due to the fueled that, as interest rate increases by one percent, the Dar es Salaam Stock Exchange prices decrease in each of the six years. In regard to money supply, prospective investors should focus to invest at Dar es Salaam Stock Exchange, since any increase

in money supply by one percent the Dar es Salaam Stock Exchange price increase in each of the six years. Thus the investors in this case they will invest to the Dar es Salaam Stock Exchange, also will have higher dividend from the firm and will be able to expand production and sales.

In regards to the prospective investor should focus to invest of Dar es Salaam Stock Exchange. This is due to the fact, an increase of foreign exchange by one percent the Dar es Salaam Stock Exchange will increase in each of investors the six years. Thus prospective investors will shift their investment from foreign exchange market to Dar es Salaam Stock Exchange, due to increase risk in foreign exchange market.

In regard to inflation, prospective investors should focus to invest at Dar es Salaam Stock Exchange: This is due to the fact that an increase of inflation by one percent, the Dar es Salaam Stock Exchange price will increase in each of the six years. This is due to the fact that, this is expected inflation whereby diamond exceed supply, causing increasing in price to stimulate supply. Since this is expected by Firm increase in price would also increase their earning and thus more divided payments to investors.

5.2 Recommendations

Regulatory and participatory institution in the capital market like Dar es Salaam Stock Exchange and CMSA. Should embark on massive public awareness and campaign on the benefit and techniques of making investment in the capital market. The Government, should manage well the macro-economic variable in order to give confidence to the investors. Government should adopt some appropriate measure that could specifically lead to the curbing of Inflation to improving the exchange rate of the Tanzanian shillings.

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