

Analysis of Interest Rate and Stock Price in Africa: Case Study of Ghanaian Listed Firms

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Abstract: *In this study, we investigate the impact of interest rate on stock prices in Ghana by employing OLS model with monthly data spanning from January, 2000 to September, 2010. To prove our concept, we used Granger causality to test the direction and the causality between interest rate and stock prices in the context of Ghana. The test results show that there is unidirectional causality between interest rate and stock price. This means that changes in the stock price explains the variations in the interest rate. The empirical results indicated that interest rate definitely has negative effect on stock price in Ghana. The outcome also indicated unidirectional causality between interest rate and stock price.*

Key words: inflation, interest rate, stock price, Ghana stock market

1. Introduction

A broad consensus has emerged in recent decades emphasizing the idea that stock markets occupy a strategic position in both developing and industrialized nations; it has become a significant part of a country's financial system and a common feature of a modern economy (Van-Treek, 2009; Obstfeld, 1986). The prices of stock and other asset are important parts of the dynamics of economic activities and can influence social mood and a business performance. History has shown that performance of a stock market is perhaps the most potent instrument for measuring social or economic developments in any economy. Drabentstott and Meeker (1999) call it a barometer for the economy. Stock market facilitates all the key prospects of the financial system, such as capital mobilization, investment opportunities, risk distribution and exert corporate control. The Ghana Stock Market (GSE) is described as one of the emerging markets, this was established in July 1989 as a private company limited by guarantee under the Companies Code of 1963 (Act 179) and commenced trading on 12th November, 1990 to encourage private investment in Ghana. However, the status of the company was changed to a public company limited by guarantee under the Company's Code in April 1994. The GSE is regulated by the Securities and Exchange Commission, under the Securities Industry Law, PNDCL 333, 1993, as amended. Since its inception, the GSE's listings have been included in the main index, the GSE All-Share Index. In 1993, the GSE was the sixth best index-performing stock market, with a capital appreciation of 116%. In 1994 it was the best index-performing stock market among all emerging markets, gaining 124.3% in its index level. 1995's index growth was a disappointing 6.3%, partly because of high inflation and interest rates. Growth of the index for 1997 was 42%, and at the end of 1998 it was 868.35% per stock. As of October 2006, the market capitalization of the Ghana Stock Exchange was about 111,500 billion cedis (\$11.5 billion). As of December 31, 2007, the GSE's market capitalization was 131,633.22 billion cedis. In 2007, the index appreciated by 31.84%. With a drop of 46.58% in the GSE All-Share index, the Ghana Stock Exchange ended in the year 2009 as the least

performing market in Africa. In the previous year 2008, the gain in the GSE All-Share Index of 58% put Ghana ahead of all the African markets. Due to the continuous improvement at GSE, in 2010, it was adjudged the most innovative African Stock Exchange at the African Investor (Ai) prestigious annual index series awards held at the New York Stock Exchange out of seven African Stock Exchanges nominated.

In the year 2009, the stock market went through a difficult situation and this was against the background of 2008 being one of the best years of the market. The trend that the market went through in 2009 resulted from the effect of the global financial crisis which began was felt in the fourth quarter of 2008 and the fact that in 2009, the Exchange also effectively began migrating from paper certification to electronic book entry securities under the new automated Trading System. That process naturally requires time since investors needed to be convinced to get on board. According to Graham and Harvey (2001), interest rate risk is perceived as the second most important risk factor, only behind market risk. Financial theory states that movements in interest rates affect both the firm's expectations about future corporate cash flows and the discount rate employed to value these cash flows and, hence, the value of a firm. The impact of interest rate fluctuations on the market value of companies has received a great deal of attention in literature, although much of the empirical research has focused on financial institutions because of the particularly interest rate sensitive nature of the banking business (Flannery and James, 1984; Staikouras, 2003 and 2006; Hahm, 2004). The nexus between interest rate and stock price has received attention of researchers from a wide range of areas such as assets pricing and testing stock market efficiency etc. Moreover, developing countries can utilize such an association to attract foreign portfolio investment in their own countries. In Ghana, interest rates decisions are taken by the Monetary Policy Committee of the Bank of Ghana. The official interest rate is the Monetary Policy Rate (MPR). The fundamental principle for the relationship between interest rate and stock market returns is that stock prices and interest rates are negatively correlated. This is due to the fact that

higher interest rate reduces the value of equity as indicated by the dividend discount model. Grinding our view on the above related literatures, the purpose of this study is to investigate the impact of interest rate on stock prices in Ghana, by employing OLS model with monthly data spanning from January, 2000 to September, 2010. Also, this study is to find out the impact of money supply and inflation on stock prices. This paper is organized as follows. Section 2, reveals the related work on interest rate and stock prices using Arbitrage Pricing Theory, Capital Asset Pricing Model and empirical study on Granger causality. Section 3, discusses the model specification, estimation technique to analyze the interest rate and stock prices of Ghanaian firms. Section 4, presents results to show a unidirectional causality between interest rate and stock price followed by conclusion in section 5.

2. Related Work

2.1 Theoretical Review

The study of (Hamrita & Abdelkader, 2011) has explained that interest rate and stock prices have a negative correlation. This is because an increase in interest rate reduces the present value of future dividend's income, which should depress stock prices. Lower interest rates inspire investments and economic activities, which would cause prices to rise.

The Arbitrage Pricing Theory (APT) and Capital Asset Pricing Model (CAPM) are the two influential theories on asset pricing. The APT can be seen as a "supply-side" model, since its beta coefficients reflect the sensitivity of the underlying asset to economic factors. On the other hand, the CAPM is considered a "demand side" model. Its results, although similar to those of the APT, arise from a maximization problem of each investor's utility function, and from the resulting market equilibrium (investors are considered to be the "consumers" of the assets).

2.2 Empirical Literature Review

Hamrita and Abdelkader (2011) examined the multi-scale relationship between interest rate, exchange rate and stock price using a wavelet transform in US over the period from January 1990 to December 2008. The exchange rate returns and stock index returns were found to have a bidirectional relationship in this period at longer horizons. Using Granger causality and monthly data, Abdalla and Murinde (1996) investigate the relationships between exchange rates and stock prices in India, Korea, Pakistan, and the Philippines. They found a unidirectional causality from exchange rates to stock prices in all countries except the Philippines; where stock prices were reduced using Granger Causality Test.

Tessaromatis (2003) observes the behavior of nominal and real interest rates and monthly total return of 35 industry indices and 10 sector indices as well as four financial times' indices in UK. Results of the linear regressions reveal that interest rate movements are important determinants of equity return variability and all the industries other than forestry and paper, sectors and market portfolios are negatively related to interest rate changes. Statistical outputs

conclude that there are significant differences between interest rate and inflation sensitivities across all economic sectors. Amaresh Das (2005) documents a paper to investigate interrelationship between the stock prices represented by market index and interest rates measured by three months Treasury bills for monthly observations from January 1985 to January 2003 sampling three Asian countries including Bangladesh. Codependence among variables shows that the relationship between stock prices and interest rate is not significant for Bangladesh and Pakistan except India. Results further suggest that the time series data for Bangladesh and Pakistan reflects strongly common cycles. Jefferis and Okeahalam (2000) worked on South Africa, Botswana and Zimbabwe stock market, where higher interest rates are hypothesized to depress stock prices through the substitution effect (interest-bearing assets become more attractive relative to shares), an increase in the discount rate (and hence a reduced present value of future expected returns), or a depressing effect on investment and hence on expected future profits. Lee (1997) used three-year rolling regressions to analyze the relationship between the stock market and the short-term interest rate. He tried to forecast excess returns (i.e. the difference between stock market returns and the risk-free short-run interest rate) on the Standard and Poor 500 index with the short-term interest rate, but found that the relationship is not stable over time. It gradually changes from a significantly negative to no relationship, or even a positive although insignificant relationship. Zordan (2005) said that historical evidence illustrates that stock prices and interest rates are inversely correlated, with cycles observable from 1880's; and more relevant to the period subsequent to World War II. From the late 1940's to the mid 1960's, inflation was low, and interest rates were both low and stable. Stocks did well during this period, both in nominal and real terms. The inverse relationship between interest sensitive asset classes like stocks, bonds, and real estate and commodity prices has been known through history. That relationship can be observed in the 1877 to 1906 cycle, the 1906 to 1920 cycle, the 1920 to 1929 cycle, the 1929 to 1949 cycle, and the 1949 to 1966 cycle.

Using Johnson's multivariate co-integration test and Innovation accounting techniques, Adam and Tweneboah (2008) examined the role of macroeconomic variables on stock price movement in Ghana by means of Databank Stock Index, Treasury Bill Rate, Consumer Price Index and Exchange Rate as macroeconomic variables. They concluded that there is co-integration between macroeconomic variables identified and stock prices in Ghana indicating a long run relationship. It was evident that macroeconomic variables such as Interest Rate, Treasury bill rate, Money Supply, Exchange Rate, Foreign Direct Investments (FDIs), Consumer Price Index (CPI) etc. have some impact on share price on Stock Exchange Markets in both developed and developing countries where studies have been conducted. It is expected that these findings would also be applicable in Ghana and would be tested accordingly.

3. Methods

The study used time series data which spans from January 2000 to September, 2010 a total of one hundred and twenty

nine (129) months for the model employed in this study. Data on stock price (proxies by all share index), interest rate proxies for 91 days treasury bills, the level of money supply (M2), and inflation rates were all obtained from the Bank of Ghana.

3.1 Model Specification

Following Khan et al., (2012) stock return is dependent on interest rate, the level of money supply (M2) and inflation. The study has modified this as a multiple regression by replacing the stock return with stock price and expresses as:

$$LNSP_t = f(LNINTR_t, LNM2_t, LNINFL_t) \quad (1)$$

$$LNSP_t = \varphi_0 + \beta_1 LNINTR_t + \beta_2 LNM2_t + \beta_3 LNINFL_t + \varepsilon_t \quad (2)$$

SP denotes the stock price at time t, INTR represents interest rate as measured by 91 days treasury bills during the time period t, M2 is the level of money supply and INFL is the inflation rate, whereas t is the time. β_i is the drifting components, ε_t indicates the error term and the LN is natural logarithm which helps estimate the β s in percentage change and also helps reduce heteroscedasticity (Gujarati, 2005).

3.2 Interest Rate

Interest rate (as proxied by 91 days Treasury bill) is the price a borrower pays for the use of money they borrow from a lender/financial institution or fee paid on borrowed assets (Crowley, 2007). As interest rises, bonds turn out to be more attractive given their risk-return features. This encourages investors to switch from the stock market to the money market by buying bonds and selling stocks, hence depressing stock prices. Accordingly, interest rate is expected to have an inverse effect on stock price (i.e. $\beta_1 < 0$).

3.3 Level of Money Supply (M2)

Tobin (1969), quoted in Mishkin (2004 p. 84) analysis that monetary policy can affect the real economy through asset price channel. Expansionary monetary policy increases household's spending capacity which, in part, is spent on stock market, increases the demand for stocks and raises stock prices. Therefore, it is expected that the level of money is positively related to stock price, that is $\beta_2 > 0$.

3.4 Inflation

Increase in inflation rate can cause the real income to decline, whereas low inflation rate helps investors to purchase more assets. Ralph and Eriki (2001) conducted an empirical study on Nigerian stock market and found that a negative relationship exists between stock prices and inflation. On account of this empirical evidence, it is expected that there is a negative relationship between stock price and inflation (i.e. $\beta_3 < 0$).

3.5 Stock Price

Stock price is the cost of purchasing a security on an exchange. Stock prices can be affected by a number of things including volatility in the market, current economic conditions, and popularity of the company. Share prices change because of supply and demand. In this study, stock

price is calculated by finding the average of the stock prices of the listed companies on Ghana Stock Exchange for a particular month during the period of the study.

3.6 Estimation Technique: Granger Causality Test

This is an econometric tool developed by Granger (1969) that looks at identifying causality between a set of variables. As the study sought to check the causality between stock price and interest rate, the causality relations were checked to back up results from the estimation in equation (1). Granger causality test is used to check the causality between stock price and the independent variables concerned. The granger causality between stock price and interest rate is given as follows:

$$Y_t = \omega_{10} + \sum_{i=1}^{M_{11}} \omega_{11} Y_{t-i} + \sum_{j=1}^{M_{12}} \omega_{12} X_{t-j} + \mu_t \quad (3)$$

$$X_t = \omega_{20} + \sum_{i=1}^{M_{21}} \omega_{21} X_{t-i} + \sum_{j=1}^{M_{22}} \omega_{22} Y_{t-j} + v_t \quad (4)$$

Where ω_{10} and ω_{20} are the constant parameters in equation (2) and (3) respectively? The error terms μ_t and v_t is the serially uncorrelated white noise error term with a zero mean and a constant variance. Y_t and X_t are the two variables to be measured; thus the stock price and interest rate. M_{11} , M_{12} , M_{21} , and M_{22} represents the optimal lag length for the variables. If ω_{12} is found statistically significant, then Y Granger causes X and ω_{21} is realized to be meaningful, it means that X Granger causes Y.

4. Estimation Procedures

4.1 Unit Root Test

One major problem associated with time series data is their non-stationarity because they are trended. This feature of time series data results in spurious (Asteriou and Hall, 2014) regression results when series are estimated at the levels and hence lead to incorrect conclusions. In such cases, the variables used for the analyses, though may not have any interrelationship, would still result in a very high R^2 and also very high values of ratio. The study therefore tested for the stationary of all the variables using the Augmented Dickey Fuller (ADF) test, by using the test equation with trend and intercept as in equation (4).

$$\Delta y_t = \beta_1 + \beta_2 y_{t-1} + \alpha(t) + \sum \gamma_i \Delta y_{t-i} + \mu_t \quad (5)$$

where Δ is the first difference operator, y_t is the variable under consideration, β_1 is the constant term, β_2 is the coefficient being tested, α is the trend coefficient, $\Delta' Y_i \Delta y_t$ Δi is the summation of all past values of the variable under consideration being employed to eliminate the effect of autocorrelation with γ_i being the coefficient and μ_t is the error term.

4.2 Regression Analysis

According to Hair et al., (1995), regression analysis is a statistical approach that is employed to analyze the relationship between a dependent variable and one or more

independent variables. A multiple regression analysis provides an equation to predict the magnitude of the dependent variable, providing values for the independent variables that explain the largest proportion of variation in the dependent variable. The linear multiple regressions are used to estimate the effect of the independent variables on the dependent variable. One significant aspect of a linear multiple regression models is that both the levels and first difference variables of variables that are stationary at first difference may be included in the regression. Generally, the equation of the linear multiple regression analysis is written as follows:

$$Y'_t = \omega_o + \alpha_1 X_1 + \alpha_2 X_2 + \alpha_n X_n \quad (6)$$

where Y'_t presents the predicted value of the dependent variable; ω_o is the value of the dependent variable when all the independent variables are held constant, that is the Y_t intercept; α represents the regression coefficient; and the X_s are the independent variables.

The Pearson coefficient of determination, or simply “R-squared” in terms of computer output, is usually used to gauge this explained variation. An “R- squared” of ‘0’ indicates that there is no relationship between the independent variables and the dependent variable. This “R-squared” tells the researcher about the perfectness of the multiple regression models and also how well the independent variables included in the model explain the dependent variable. The significance of “R-squared” can be tested through the ‘F’ statistics and its associated probability. The “F” statistics is a test of the null hypothesis that there is no linear relationship between the dependent and independent variables that is “R” squared equals to 0.0 (Hair et al., 1995). The null hypothesis can be rejected if the “F” statistics is high and the level of significance is close to zero. This rejection of the null hypothesis suggests the acceptance of an alternative hypothesis that there is a linear relationship between the dependent and independent variables.

5. Results and Discussion

The descriptive statistics of the variables used in this study are presented in Table 4.1 showing the descriptive statistics of the series. There are 129 observations representing the monthly data points from January 2000 to September 2010. Stock price, inflation, money supply, and the interest rate exhibit normality as indicated by the Jarque-Bera test and the corresponding probability values which are less than 5%.

With the exception of the interest rate, all the series such as stock price, inflation and money supply are negatively skewed. The Standard Deviation of the variables indicates variation or deviation of the series from their mean values. All the series show little deviation from the mean values. This is because the extent of deviation from the mean value is not substantial for stock price, inflation, money supply, and interest rate. Stock price is proxied by All-Share Index average around 8.12% over the 2000-2010 period while the period the rate of inflation also average around 5.11% over the same period. The level of money supply (M2) average around 7.61% over the 2000-2010 periods while the interest rate proxied by 91 days treasure bill averaged 2.99% over

the same period. Other statistics such as the median, maximum and minimum values as well as kurtosis are displayed in Table 4.1.

Table 1: Descriptive Statistics

	LNSP	LNINFL	LM2	LNINTR
Mean	8.123764	5.105252	7.605209	2.992728
Median	8.511839	5.192957	7.631771	2.985682
Maximum	9.295674	5.945421	9.066688	3.850148
Minimum	6.606245	3.922369	5.973555	2.261763
Std. Dev.	0.870914	0.537145	0.914223	0.492676
Skewness	-0.556121	-0.315163	-0.154727	0.010548
Kurtosis	1.742294	2.160725	1.889389	1.817634
Jarque-Bera	15.15164	5.921605	7.144545	7.516581
Probability	0.000513	0.051777	0.028092	0.023324
Sum	1047.966	658.5775	981.0720	386.0619
Sum Sq. Dev.	97.08680	36.93119	106.9828	31.06943
Observations	129	129	129	129

Source: Author’s computation using Eviews 9.

Test for Stationarity

Note: (***) and (*) denote the rejection of the null hypothesis of unit root at the 1% and 10% significant levels.

Table 2: Results for ADF Unit Root Test

Variables	ADF Levels		Stationarity Status
	Intercept	Intercept+ Trend	
LNSP	-1.880374	-2.193710	-
LNINFL	-4.121604***	-4.197079***	I(0)
LM2	-1.368574	-1.987065	-
LNINTR	-1.414161	-1.722133	-
Variables	ADF FI RST DIFFERENCE		Stationarity Status
	Intercept	Intercept+ Trend	
LNSP	-2.800434*	-2.942167	I(1)
LM2	-2.686021*	-2.944751	I(1)
LNINTR	-6.846528***	-6.820190***	I(1)

Source: Author’s computation using Eviews 9.

OLS Estimation Results

The ordinary least squares estimator is use to find the effect of inflation, interest rate and money supply on stock prices. The regression model includes both the level and first difference variables of series that were stationary at the first difference. The natural logarithm of first difference variables measured the growth rates. Table 4.3 presents the results of the OLS regression.

From table 4.3, inflation has a positive and significant impact on stock price. As a result, a proportionate increase in inflation would lead to a more than proportionate increase in stock price by about 1.17%. This result is significant at 5% significant level. There is a belief that stocks might prove to be a good hedge against inflation (Fama and Schwert, 1977), since stocks represent claims to real asset. Moreover, stocks are widely assumed to be an attractive investment in an inflationary environment, because they are based on real assets. If rates of return on common stocks

move directly with the rate of inflation, investors would be fully compensated for the erosion in purchasing power. This is because common stocks represent a claim to real resources and their value would increase with inflation. However, the results do not meet earlier expectation and contradict the findings of Khan et al., (2012) and Zhao (1999) but a positive impact on inflation on stock prices is also possible (Fama and Schwert, 1977; Adam and Twenenboah, 2008).

The study further revealed that there exists a positive but insignificant relationship between the level of money supply and stock price. The level of money supply has coefficient of 0.049954 which proposes an increase in the level of the stock price of about 0.05% for proportionate increase in the level of money supply. The positive relationship between money supply and stock price supports the Monetary Portfolio Hypothesis (Friedman, 1988) which expects that an increase in money supply will result in an increase in almost all economic activities including the stock market.

Dependent Variable: LNSP
 Methods: Least Squares (Gauss-Newton/Marquardt Steps)
 Sample (Adjusted): 2000M02 2010M09
 Included Observations: 128 after Adjustments

Table 3: OLS Estimation Results

	Coefficient	Std. Error	t-Statistic	Prob.
Constant	2.850818	0.6837SS14	4.169604	0.0001
LNINFL	1.172963	0.564397	2.078259	0.0398
LNINTR	-0.362119	0.084494	-4.285752	0.0000
LNLM2	0.049954	0.329918	0.151414	0.8799
DLNSP	0.352167	0.499183	0.705485	0.4819
DLNINTR	1.097254	0.451403	2.430762	0.0165
DLNM2	-0.421631	0.907365	-0.464677	0.6430
R-squared	0.839684	Prob (F-statistic)		0.000000
Adjusted R-squared	0.831734	Durbin-Watson stat		0.075371
F-statistic	105.6262			

Source: Author's computation using Eviews 9

Furthermore, there exist negative and significant effects of interest rate on stock prices such that a proportionate increase in interest rate would lead to less proportionate fall in stock prices by about 0.36%. This is because a rise in interest rates raises equity capitalization rates, which also lead to lowering stock prices. As interest rises, bonds turn out to be more attractive given their risk-return features; this encourages investors to switch from the stock market to the money market by buying bonds and selling stocks, hence depressing stock prices. When interest rate is reduced, this encourages demand for cash for tentative purpose which may improve the stock market activities. The results confirmed studies by Jefferis and Okeahalam (2000), Crowley (2007), Zordan (2005), Abugri (2008), Adam and Twenenboah (2008). On the other hand, the growth rate of interest rate has a positive and significant effect on stock prices in Ghana with a coefficient of 1.097254. These results support the findings of Lee (1997) and Khan (2012). The study also found a positive but insignificant effect of the growth rate of stock prices on current stock prices which does not affect current stock prices in Ghana. This is also

confirmed in the works of Adam and Twenenboah (2008). Again, given the results in Table 4.3, the stock price is likely to increase by 3% when all other variables are held constant and it is significant at 1%. This implies that the stock price depends on certain variables that must positively influence the stock market prices in Ghana.

Finally from the OLS regression results, the signs of the parameters of the model did not exhibit considerable level of consistency with the exception of interest rate that retained its sign. However, the estimation procedure showed very good results as the R-Square is 83.96% and the R-Bar-Squared is also 83.17%. The R-Square means that over 83.96% of all variations in the stock prices are explained by all the independent variables. The F statistic also proved that all the independent variables are significant at 1%. This means that the explanatory variables do actually have significant influence on the dependent variable. The DW statistic of 0.075371 is evidence enough to dismiss the notion of autocorrelation in the function.

Correlation Matrix

In order to lend more support to the regression analyses by way of attesting to the existence of interrelationship between the variables, Table 4.4 shows correlation between the variables. The table indicates that there is a strong relationship ($r = 0.899$; $P < 0.01$) between stock price and inflation. The relationship is also significantly positive indicating that 0.01 increases in inflation will lead to 0.899 increases in the stock price. Table 4.4 also portrays a positive significant relationship ($r = 0.898$) between stock price and the level of money supply; and the relationship noted is significant at ($P < 0.01$). This implies that if the level of money supply increases, it enhances stock prices to also rise. Finally, it is the class between stock price and interest rate. The study found that there exist moderately significant negative relationship ($r = -0.695$; $P < 0.01$) between stock price and interest rate. This implies that a decline in interest rate has a deleterious effect on stock prices. This is not quite surprising because as it is observed empirically, there is always a strong negative relationship between the two variables.

Table 4: Correlation Matrix

	LNINFL	LNSP	LM2	LNINTR
LNFL	1.000			
LNSP	0.899**	1.000		
LNLM2	0.993**	0.898**	1.000	
LNINTR	-0.640**	-0.695**	-0.645**	1.000

Note: ** indicates that correlation is significant at the 0.01 level

**Source: Author's construct
 Granger Causality**

Table 5: Pairwise Granger Causality Test

	Obs	F-Statistic	Prob.
LNINTR does not Granger cause LNSP	128	4.53135	0.03 52
LNSP does not Granger Cause LNINTR		0.03779	0.84 62

Source: Author's computation using Eviews 9

To determine the direction of causality between stock price and interest rate, the Pairwise Granger Causality test was used. It was appropriate to use the Pairwise Granger Causality test since both stock prices and interest rates are integrated of orders one [I(1)]. The granger causality tests are presented in Table 4.5 above. The test results reveal that there is unidirectional causality between interest rate and stock price. The null analysis shows that interest rate does not affect stock prices, granger causes the stock price. This is rejected at 5% significant level but the null analysis of stock price not granger causing interest rate is not rejected at neither 5% nor 10% level of significance. This means that changes in the stock price is explained by the variations in the interest rate. Hence interest rates serve as a better predictor of changes in the stock prices. This result confirmed studies by Nishat (2004).

6. Conclusion

The global economic crisis in the year 2007 was a wakeup call for scholars in these fields to work harder for a better understanding of this interrelationship. The study therefore set out to investigate the relationship between stock price and other macroeconomic variables like interest rate, inflation, and the level of money supply (M2). The method used for the study was a modeling technique to meet the major goals of the study. The empirical results indicated that interest rate definitely has negative effect on stock price in Ghana. The findings also indicated that there existed a direct relationship between inflation and stock price and it was found significant. Further, the study noticed that the changes in the stock price were variation in interest rate where the changes in stock price do not in turn influence the changes in interest rate. This means that there is unidirectional causality between interest rate and stock price as in the case of Ghana.

Considering the dire need for this study, it suggested that in trying to positively influence the All-Shares Index, government can resort to the use of expansionary fiscal policy measures since it was found that government activities affect the market index positively.

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