# FACTORS INFLUENCING THE PATRONAGE OF STOCKS ON THE GHANA STOCK MARKET

## BY

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# DECLARATION

I, Martin Kwaku Gyan, hereby declare that this submission is my own work towards the MBA (Finance)  programme and that, to the best of my knowledge; it contains no material previously published by another person nor material which has been accepted for the award of any other degree of the University, except where due acknowledgement has been made in the text.


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# DEDICATION

This thesis is first all, dedicated to the Lord Almighty whose guidance and protection saw me through this academic pursuit.

Secondly, it is dedicated to my parents Augustine K. Yomaah and Agnes Asiedua as well as my lovely wife Mrs Martha Amankwaa Gyan and my three children Prince Yomaah Gyan, Emmanuel Asiedu Gyan and Mary Ankomah Gyan.

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**ABSTRACT**

Generally, extant literature have largely focused on macroeconomic specific variables in determining the driving forces of patronage of stocks on the Ghana stock market albeit differences in results, leaving out how market intrinsic factors can influence patronage. To address this gap, this thesis examines the dynamic relationship between patronage of stocks and some key intrinsic and extrinsic variables. The study applies the Pearson correlations and linear regression to model the linkages between patronage (proxied by volume of trade), inflation (proxied by the consumer price index), stock price (proxied by the GSE composite index), and dividend. First, it is observed that there is a significant positive linear relationship between all explanatory variables and patronage. On the other hand, estimates from the correlation analysis suggest that only stock prices and dividend exert significant influences on investors in their asset allocation and portfolio selection decisions on the Ghana stock market. The findings have important implications for capital structure decisions of firms listed on the Ghana stock market.

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# LIST OF ABBREVIATIONS

| | |
|---|---|
| EMH | Efficient Market Hypothesis |
| GSE | Ghana Stock Exchange |
| CPI | Consumer Price Index |
| FCFE | Free Cash Flow to Equity |
| DDM | Dividend Discount Model |
| CAPM | Capital Asset Pricing Model |
| APT | Arbitrage Pricing Theory |
| M2+ | Broad Money supply |
| VECM | Vector Error Correction Model |
| ASI | All Share Index |
| BoG | Bank of Ghana |
| GSS | Ghana Statistical Service |
| TBR | Treasury Bill Rate |
| CRO | Crude Oil Price |
| EXR | Exchange Rate |
| DCF | Discounted Cash Flow |
| CF | Cash Flow |
| PAT | Patronage |
| INF | Inflation |
| DY | Dividend |
| CI | Composite Index |

## 1.0 BACKGROUND INFORMATION

Stock market analysis has traditionally followed two approaches – fundamental analysis and technical analysis. Under the fundamental approach, the analyst is primarily interested in studying elements such as economic impacts, industry issues and relevant business information like sales, profitability, dividend payment and quality of the management team. Technical dealers, on the other hand, are of the conviction that there is no point analyzing a firm's fundamental information or data for the simple reason that all of these are already accounted for in the stock's price. Technical dealers are sure that all the facts they need about a firm's stock can be obtained from its charts.

By reviewing the company's statement of financial position, statements of cash flows and income, a fundamental forecaster tries to compute a firm's value. In the language of finance, a forecaster tries to compute a firm's intrinsic value. Using this method, the investor can easily make his or her decisions - if a stock is trading below its intrinsic value, it's wise to invest in it.

If the computed value (also called the "intrinsic value") is higher than the market value, the stock is assumed to be undervalued by the market and the investor would purchase that stock. Conversely, if the computed value is lower than the market value, the stock is assumed to be overvalued and the investor would sell the stock. Thus, determining how well a stock might do in the future often requires an analysis of the likely performance of the intrinsic factors inherent in the overall stock.

Malhotra *et al.,* (2013) submits that a stock market and its intrinsic variables are solidly connected. In a well-functioning stock market, share prices are determined by investor expectations about the future performance of the various company specific variables such as dividends, earnings, as well as, the performance of the overall economy. Therefore, expectations about the stock exchange also to a large extend is good indication of the future performance of the national economy as well as the variables inherent in the stocks. The stock market is, therefore, said to be a leading economic indicator. What this means is that when investors have high expectations about the economy, they tend to buy shares thus pushing share prices up. A high performing stock market therefore precedes a strong economy. Analogously, when investors have low expectations about the economy and intrinsic factors of the stocks, they tend to sell their shares thus putting downward pressure on stock prices. Therefore, a downturn in the market often predicts a period of economic and company specific performances slowdown.

The theory of price-efficient capital markets relates to a financial asset market where prices quickly mirror all accessible information. This implies that all publically accessible information is already factored into the price of an asset, so investors can only make or expect a return equal to the equilibrium return, which is necessary to reward them for the risk anticipated. This appears to strongly suggest that investors cannot make abnormal returns. In such a market, one would normally notice that stock prices at any point in time are based on a "correct" assessment of all available information at that time. An essential principle of efficient market theory is that stock prices should almost follow an unplanned pattern; expressed in other words, future movements in prices of stock should not, in a real-world situation, be predictable.

A condition for an efficient market is that the market has to be complete. By completeness we mean that the size of the exchange should be considerably big. Also, all the participants in the exchange should have similar anticipations and should react in a like manner to risk and return trade-offs (Samuels, 1981). For a smaller exchange, like the Ghana stock market, constraints on the part of supply, in addition to the fact that there are few investment funds in Ghana, prevent dealers from coming out with portfolios that are well balanced. The result of this is that, in such a market a slight change in investors' demand may lead to either huge price fluctuations or substantial changes of stock prices from their intrinsic or true economic values. For this reason, Jennergan and Korsvold (1974) conclude that markets that are small in size are expected to be less efficient due to the fact that their volume of trade is low and also trading is not frequent. Whereas Cohen (1983) identifies a spurious connection in stock yields and attributes it mainly to the lack of frequent trading coupled with the non-synchronous nature of trading, Solnik (1973), on the other hand, attributes the nonexistence of weak-form efficiency in smaller European capital markets to small market size and few trading.

Few trading, (trading is not frequent), small volume of trading and inadequately informed market participants with restricted access to dependable information, are predominant characteristics of the Ghana Stock Exchange. Moreover, many of the businesses with shares trading on the Ghana Stock Exchange are small, in the sense that either the outstanding overall number of shares is small or the proportion of those shares really transacted is small. The market efficiency concept suggests that individual agents are sensible or rational and this rationality entails risk aversion, unbiased predictions and timely response to facts. In view of this, in a market that is

not efficient, stock prices are not likely to totally reflect information of important fundamentals such as earnings, dividends etc.

Stock markets are very dynamic and that is why investors and fund managers are always challenged with the problem of correctly forecasting the share prices so as to earn decent returns. Investment in stocks offers the double advantage of liquidity and the opportunity to beat the market and earn more than normal profit. Clearly, the job of forecasting stock prices is not at all a simple one. Stock price movement is not independent in nature. It has been established by researchers that both intrinsic and extrinsic factors have considerable influence on stock price movements. The original study on factors that affect stock prices by Collins (1957) for US banks recognized operating earnings, dividend, net profit, and book value as the major elements determining stock prices. After Collins (1957), there have been a number of efforts to ascertain the determinants of stock prices for various markets.

## 1.1 PROBLEM STATEMENT

The GSE as mentioned earlier on, was established to provide an avenue for businesses to list their stocks and to trade in other financial instruments in that, they may acquire capital for their expansion towards the overall betterment of the Ghanaian economy.

Since its inception, the GSE's performance has varied considerably. The GSE even became more promising between the years of 2002 and 2004. Over this period, the GSE was considered one of the best performing markets in the world. As at the end of the first quarter of the year 2004 the GSE had registered an annual return of 144%. The comparable returns were 33% for Morgan Stanley Capital International Global Index, 32% in Europe and 26% for Standard and Poor in the USA amongst others. Again, the Ghana equity market recorded an outstanding performance in capital

market activity in 2013. The composite index, which measures the overall performance of the market, went up by 78.8%, making it one of the best in Africa between 2010 and 2013.

Against the backdrop of this outstanding performance, there is a growing interest to find out the momentum (strength) behind the performance of the Ghana stock market. Again, management and other major stakeholders of the GSE want to know what accounts for the increased patronage of companies on the Exchange. Despite the growing interest in finding out the strength behind the high patronage, available literature on the possible determinants of patronage on the Ghana stock market have largely focused on external macroeconomic variables leaving key other intrinsic factors like dividends, earnings etc. However, Malhotra *et al.,* (2013) and Balke and Wohar (2014) contend that the intrinsic factors have significant roles to play in the performance of stock markets. It's against this background that this research seeks to establish the impact of both intrinsic and extrinsic factors on patronage of stocks listed on the Ghana Stock Exchange.

## 1.2 RESEARCH OBJECTIVES

The major objective of the research is to find out the driving factors for patronage on the GSE and the specific objectives are:

- To evaluate the extent to which stock prices can influence the patronage of stocks at Ghana Stock Exchange.
- To examine the relationship between patronage of stocks at the stock exchange and the rate of inflation in Ghana.

- To evaluate the extent to which dividends can influence the patronage of stock at the Ghana Stock Exchange.

## 1.3 RESEARCH QUESTIONS

- To what extent can stock prices influence patronage of stocks on the GSE?

- Does inflation rate of the country have a role in the patronage of stock?

- Is dividend a major determinant of patronage of stocks at the Ghana Stock exchange?

## 1.4 JUSTIFICATION OF THE STUDY

This research, apart from contributing to existing literature, will also help business executives and policy makers appreciate the full consequence of current and future decisions, policies and regulations. It will again help investors to make more informed decisions and thereby reduce exposure to risk.

## 1.5 SCOPE OF THE STUDY

The study will use weekly data of volume of trade (a proxy for patronage) as the dependent variable. The independent variables are; Ghana stock exchange composite index-GSE-CI (a proxy for stock market prices), inflation and dividend paid by firms listed on the Ghana Stock Exchange. In all, 156 weekly observations will be used.

## 1.6 LIMITATIONS

One problem, which has confronted researchers, more especially in developing countries like Ghana is unavailability of data on the real variables put forward by the theoretical model. The implication of this is that some of the relevant variables either have to be left out in the empirical model, though with the risk of an omitted variable

bias, or proxies have to be created for such variables. This research study is of no exception. The risk associated with the creation of proxies is that they may not appropriately represent the impact of the actual variables. The result of this is that there will be inconsistent outcomes. Striking a balance between having to select the actual variables with limited data and finding proxies which do not correctly represent the impact of the actual variable poses a major challenge to this study.

To forestall these limitations conversions will be made, where needed, to ensure conformity. These will be done based on the methods used in the compilation of data and their corresponding base year.

These difficulties appear not to have considerably affected the findings made in this research, since they corroborate both the theoretical and empirical knowledge in the analysis of stock markets. Conclusions may therefore be subjected to critique.

## 1.7 ORGANIZATION OF THE STUDY

This research work is categorized into five chapters. Chapter one addresses the introduction to the research. Chapter two is on literature review. Chapter three addresses the methodology. Chapter four talks of the analysis used and Chapter five concludes the study.

# CHAPTER TWO

# LITERATURE REVIEW

## 2.0 INTRODUCTION

Chapter two reviews the literature on this study. Section one deals with some facts about the Ghana stock market. Section two gives us the theoretical literature. Section three reviews the conceptual framework; and section four reviews the empirical literature.

## 2.1 THE GHANA STOCK EXCHANGE

The Ghana Stock Exchange was ushered in as a legal entity on July 25, 1989 as a private company under the Company's Act 1963 (Act 179). Ghana Stock Exchange was the newest among the six (6) exchanges of the Africa south of the Sahara at the commencement of the 1990s: the other five being in Zimbabwe, Kenya, Nigeria, South Africa and La Cote d'Ivoire. On November 12, 1990, after 20 years of waiting, Ghana stock Exchange officially acquired its operating status. In the same period, it inaugurated its floor for trading activities to the general public.

On November 7, 1990, the Ghana Stock Exchange Council or the Council for short, made the rules for regulating the listing of securities of firms on the exchange. These rules were captured in the Legislative Instrument №. 1509, dated January 11, 1991. The membership guidelines were prepared on January 9, 1991, and passed into law, by LI 1510. The guidelines have also got trading and settlement rules. These rules and guidelines are intended to shield the investor. Although the Exchange legally exists as a company limited by guarantee, it has no stockholders as one might expect. Its start-up capital of GH¢17,500.00 was raised by its 34 founder members, comprising 33 firms and one person.

We have 2 classifications of members, viz. licensed dealing members and associate members. The former classification is offered to firms incorporated under the Companies Act, 1963 (Act 179), or partnership formed under the Incorporated Private Partnership Act, 1962, (Act 152), with valid license from the Exchange to transact in financial assets.

Associate membership is offered to any human being who has the capacity, body of persons or qualified associations which, in the judgment of the Council, are respecters of the law, have interest in or share in the objectives of the Exchange. The latter is not licensed to transact in securities. They just intend to identify themselves with the aims of the Exchange and wish to impact positively on its success.

The original certified dealers were National Trust Holding Company (NTHC), Ecobank Stock Brokers Ghana Ltd. and National Stock Brokers Ltd. The NTHC was established in 1976 with powers to purchase, hold, manage and sell securities and other properties, as well as to provide brokerage services and underwrite the issue of shares, bonds and other securities, among other things.

The transactions of GSE is supervised by the Council, consisting of 13 former (licensed dealing members), other members of the Exchange and the general public. Under the Stock Exchange Act, 1971 (Act 384), the term of office for the Council members was one year for a start. However, members of the council are entitled to seek re-election. The council has the obligation to ensure that there is order among the members of the Exchange in accordance with its set of laws. It is the council's task to direct and superintend over the business transaction of the Exchange; to avert engagement in unlawful trading and malpractices; and to ensure that an official up-to-date list of prices is available for the consumption of the general public. The Council,

in accordance with its powers has to approve of the securities to be listed on the Exchange. The Exchange uses the call-over system. It was originally intended to transact business once a week. However, the Council agreed to a second day of trading after the 1st day of trading. This followed a request from the brokers.

An entity is listed only when the entity has its shares/stocks purchased and sold on the Exchange. An entity applying to be listed on the Exchange must have its application sponsored by a licensed dealing member. The entity needs to act in accordance with the provisions of the Companies Act, 1963 (Act 179), and satisfy specific requirements stipulated in the listing set of laws. Normally, there are two (2) lists. The 1st list is for firms with at least ordinary share/stock value of GH¢10, 000.00 and the second list is for smaller firms with stated capital of GH¢ 5,000.00. In addition, the corporation's capitalization of its floated shares/stock must be at least GH¢ 3,000.00 and for the 2nd list the market capitalization must be at least GH¢1, 500.00. Besides, at least 5 years audited accounts in the case of 1st list must be filed by the entity. However, in the case of 2nd list, the entity must file at least 3 years audited accounts.

## 2.2 THEORETICAL REVIEW

### 2.2.1 Fundamental Analysis of Stocks

The intrinsic (inherent or true) value of a share is the ultimate aim of analyzing a company's basics. Thus, a fancy term for what you accept as the true worth of a stock as opposed to the price at which it is being bought or sold at the stock exchange. If the inherent value is greater than the present stock price, the study is proving that the share is worth greater than the quoted price and hence it is wise to purchase it.

The premise behind the estimation of the intrinsic value of a share is the same despite the different methods or approaches of ascertainment: a business entity is worth all of its discounted cash flows put together (thus, net present value of the future cash receipts and payments). This implies that a business is worth the sum of its expected profits that it can generate in the future. The expected future returns or net cash flows have to be reduced or discounted to factor in the loss of money value over time. This is, the extent by which the $1 receipt in a year's time (thus, t=1) is worth not as much as $1 receipt now. The thought backing inherent/true value equating discounted expected profits is a sensible position if one thinks in relation to the way a firm creates wealth for distribution to its various stakeholders.

In the case of the owner of a small enterprise, the true value of the enterprise is the income he can make from the enterprise annually over the life of the business (as opposed to the growth of the share) Normally his net income from the enterprise is the cash in hand after settling creditors, accruals and salaries, etc,. Consideration should also be given to reinvestment of left over cash in real assets such as new equipment and plants etc. to produce goods and services that suit consumers demand, etc. The ultimate aim of a business is to create wealth, the usual shareholder's wealth maximization principle.

The discounted cash flow concept assumes that investors are reasonable and so no investor will acquire or purchase a business for a value that is above its net present value. Owning a share in a business confers ownership, claim of net assets, a liability etc in a company. For this reason, the above assumption applies to the stock market as well. The question then arises that why are stocks characterized by such unpredictable

changes in their market prices? It is difficult to understand why a share's price can change so significantly whereas the inherent value remains stable.

It is a gospel truth that many potential investors and existing investors do not see shares as representing net present values but rather as market commodities. If you can dispose of the share to another investor at a price greater than you bought it, you will normally not bother about future cash flows. Cynics of this method refer to it as the greater fool theory. This is because the gain one makes from dealing in the shares does not depend on how much the firm is truly worth, rather, it depends on speculation on the possibility of selling to a buyer (the fool). However, a technical trader or the chartist on his part feels strongly that using only company fundamentals instead of trend analysis to determine stock values amounts to putting one's self at the mercy of the stock market.

This argument clearly differentiates the chartist or the tape watcher from the fundamental analyst. A follower of the chartist approach is not directed by value but rather by the market pattern usually presented in the form of charts. So, which procedure will achieve superior results, technical or fundamental evaluations? The response is none of the two. As stated earlier, each approach comes with its own advantages and disadvantages. In most cases, fundamental evaluation is considered as a long-term approach. Trend or technical evaluation on the other hand is often adopted as a short-term approach.

The idea of calculating net present values is widely embraced theoretically, but realizing same in practice is easier said than done. Obviously it is a big hurdle trying to determine how far into the days ahead to predict cash flows. It's very difficult to forecast next month's results, and much more difficult to forecast the outcome of a

business operation over the next ten years. A firm may go bankrupt or remain in business for hundred years. These uncertainties and possibilities are responsible for the numerous models formulated for calculating present values of future cash flows. None fully avoids the complexities occasioned by the unknown future.

## 2.2.2 Multiple Growth FCFE Model

The Multiple Growth Free Cash Flow to Equity (FCFE) model is intended to price a company that is anticipated to progress at a faster rate compared to a steady company in its primary stages and at a steady rate thereafter. It gives the same underlying suppositions about growth compared to the multiple growth dividend discount model (DDM), explained by Miller and Modigliani (1961). Reference to the DDM, the present price of a share can be calculated as the present value of all anticipated free cash flows that can be generated by the share. Both multiple growth FCFE and the multiple growth DDM presuppose that growth will be far above the ground and constant in the primary period and fall thereafter. The value of a share using the multiple growth FCFE model is:

$$P_0 = \sum_{t=1}^{t=N} \frac{FCFE_t}{(1+r)^t} + \frac{P_N}{(1+r)^N} \tag{1}$$

$$P_N = \frac{FCFE_{N+1}}{r-g} \tag{2}$$

Where $FCFE_t$ = Expected FCFE per stock in year or time t

r = rate of return required

$P_N$ = value at the end of year N7

g = rate of growth forever after year N

Stock price is the function of required rate of return and the projected cash flows (Elton and Gruber, 1991).

**2.2.3 Asset Pricing Theory**

This theory attempts to illustrate the link between risk and anticipated or required return. The two most popular equilibrium asset pricing models are the "Capital Asset Pricing Model" (CAPM) in reverence of Markowitz, Sharpe and Miller who developed it and the "Arbitrage Pricing Theory" (APT) model, Ross (1976) established by Stephen Ross in 1976.

In a capital market that is operating properly, a holder of a share must receive adequate compensation for taking the many and diverse risks connected with the investment. The asset pricing model can be expressed in general terms based on risk factors as:

$$E(R_i) = f(F_1, \quad F_2, \quad F_{3, \dots} F_N) \tag{3}$$

Where:      $E(R_i)$         expected rate of return for asset i

                $F_k$             risk factor of k

                N            number of risk factors.

Alternatively, the anticipated profit from an asset or investment is determined by *N* risk factors.

The asset pricing model given by eqn. (3) can be fine-tuned by considering the least anticipated return we would expect from an investment in an asset. The expected return offered on securities such as Treasuries Bills and Government bonds is a risk-free rate of return. Such instruments are considered to have zero non-payment risk. The return required to satisfy investors accepting risk is the addition of risk free rate of return and the market risk premium adjusted for the volatility of the security. This means that a rational investor will request for a premium higher than the zero risk rate

of return since investors have the right to lend and borrow at the risk-free rate. Consequently, the anticipated return that would be acceptable for an investment is:

$$E(R_i) = R_f + \text{Security risk premium} \qquad\qquad (4)$$

Where $R_f$ is the risk-free rate.

The "risk premium", or supplementary profit anticipated in addition to the risk-free rate, is a function of the volatile factors associated with making an investment in the particular asset. Hence, the asset pricing model stated in eqn. (3) can be re-stated in general as:

$$E(R_i) = R_f + f(F_1, F_2, F_3, \dots F_N)\dots\dots\dots (5)$$

## 2.2.4 The Capital Asset Pricing Model (CAPM)

CAPM derived it's origination from economic concepts propounded by the personal researches of F.W. Sharpe, J. Lintner, J. Treynor and John Mossin. CAPM has a single systematic volatile factor – the volatility of market as a whole, usually referred to as the market risk. This is the risk related to investing in a portfolio composed of every asset in the market known as the market portfolio. In the market portfolio, each asset is held in relation to its market value.

In CAPM, the anticipated return on asset $i$ is:

$$E(R_i) = R_f + \beta_i [E(R_M) - R_f] \qquad\dots\dots\dots\dots (6)$$

Where: $E(R_M)$ is the anticipated rate of return on the market portfolio.

$\beta_i$ is the degree of systematic risk $i$ in relation to the market portfolio.

This means that the anticipated return on an asset $i$, based on CAPM, is the same as the risk-free rate plus a security risk premium. The security risk premium is $\beta_i$ [E ($R_M$) – $R_f$]. Alternatively, it can be taken to mean that the market risk premium on the market portfolio is E ($R_M$) – $R_f$, and we apply $\beta_i$ to adjust for the volatility of the asset $i$.

Beta, $\beta_i$, is used to quantify the sensitivity of a company's return to the return of the market. When investors invest in a security that has a beta less than the market beta, it means that if the market increases its returns by 10%; investors will also increase their return proportionate to the beta of the security invested in (return will be less than10%). This is what is called defensive security and is appropriate strategy to adopt when the stock market is bearish. If they also consider their investment in assets with high volatility than the market, then they will have a higher return than the market return if only the returns of the stock market increases and vice versa. This type of security is popularly known as aggressive security and suitable strategy to adopt when the stock exchange is bullish.

Empirical tests of the CAPM in the early days generally sustained its main predictions as beta being the only explanatory factor for the cross-sectional variation across stock portfolios. More recent empirical studies on asset pricing have revealed a number of variations in stock returns besides the market risk variable.

The validity of CAPM is questioned by the outcome of two important empirical tests. Firstly, research has shown that shares with little volatility can have superior returns compared to what CAPM forecasts. It has also been established that shares with extraordinary volatility can give less returns compared to what CAPM forecasts. Secondly, there are other sources of risk which are also priced by the market besides

market volatility. Numerous research works have exposed various other variables that account for asset returns.

At the empirical level, the number of queries made on the validity of CAPM is high. However, an essential document has also questioned the soundness of these empirical tests. Richard Roll illustrates that CAPM can be tested only when the precise elements of the "true" market portfolio are identified. In his view, "determining whether or not the ex ante market portfolio is mean-variance efficient" is the only way CAPM can be validly subjected to test. Based on his study, Roll contends that we cannot have an immediately recognizable test of the capital asset pricing model. This researcher is not saying that the CAPM is not valid. He is of the opinion that there is not likely to be a clear-cut method to prove the CAPM and what it implies as we are unable to determine the exact, theoretical market portfolio and its uniqueness. This is what is referred to as the Roll's critique.

### 2.2.5 Arbitrage Pricing Theory (APT)

An economist Stephen Ross in 1976 developed APT model as a substitute for the CAPM. In the APT model every rational investor is convinced that the stochastic properties of earnings of capital assets are consistent with factors structure (Nantwi *et al.* Ibid). The APT suggests that the anticipated return on an asset is affected by a number of risk elements. Unlike the CAPM, APT model looks beyond market risk to take account of all other risk factors. In a nutshell, the APT model says that the reward on an asset has a linear relationship with H "factors." These factors are not spelt out. The theory goes on to say that the projected return on an asset can be formulated as a linear function of some macroeconomic variables or theoretical market indices, where the sensitivity to variation in each factor is denoted by a factor–

specific beta coefficient. An asset can be appropriately priced using the rate of return resulting from the model and the price so determined will be identical to the projected period end price discounted at the rate *r*, indicated by the model. If the price deviates arbitrage must adjust it to be in line.

The APT model states that the rate of return required by investors in an asset *j* can be expressed as follows:

$$Rj = E(Rj) + \beta j,1 F1 + \beta j,2 F2 + \cdots + \beta j,H FH + ej \tag{7}$$

Where:    *Rj*   =      the rate of return on asset *j*

       *E (Rj)* =      the expected return on asset *j*

       *Fh*     =      the *h*th factor that is common to the returns of all assets

                            (*h* = 1, . . , *H*)

       *βj,h*    =      the sensitivity of the *j*th asset to the *h*th factor

       *ej*      =      the unsystematic return for asset *j*

The following conditions must be fulfilled for equilibrium to exist: Without the use of supplementary funds (money) and without additional risk, it is must be impossible, on average, to increase return from a created portfolio. Basically, this condition ensures that there is no so-called money making machine existing in the market.

The linear relationship below was developed by Stephen Ross as the APT model:

E(Rj ) = Rf + βj,F 1 [E(RF 1) − Rf ] + βj,F 2 [E(RF 2) − Rf ]+· · +βj,FH [E(RFH) −

Rf ]                                                               (8)

Where [E (RFj) − Rf] is the surplus return of the jth volatility factor over the risk-free rate, and may be considered as the value (or security risk premium) for the jth systematic risk factor.

The APT model believes that investors want to be rewarded for every risk factor that systematically impact on the return on an investment.


## 2.3 CONCEPTUAL FRAMEWORK)

Generally, the basic model for valuing stocks is that a stock's price is the present value of the anticipated benefits for holding the stock. Therefore, in finding the relationship between stock patronage and its determinants, we need to understand the economic factors that shape both the expected benefits stream (profits or dividends) and the required rate of return (discount rate or interest rate).

The variables that ultimately affect stock patronage are exogenous and endogenous variables. Exogenous variables are independent variables and reflect the impact of policy variables which are the outcome of government policy. Such policy variables include corporate tax rate, changes in government spending, and change in nominal money or money supply. A fourth exogenous variable, the potential output of the economy is a non-policy variable. It reflects the level of yield the economy would attain assuming that economic resources are fully employed. However, if actual output is less than potential output, it reflects underutilization of capacity; if all resources are fully employed, increase in government spending may be inflationary

According to Michael Kieran, policy variables affect stock market patronage in two ways:

* They have effect on aggregate spending (Y) which in combination with taxation (tx) affects corporate profits. Expected variations in real earnings ($E^*$) are directly linked to variations in the share price (SP).

* Government spending (G) and money supply (M) affect aggregate spending which altogether with the economy's potential yield ($Y^*$) and past variations in prices determine current variations in prices ($\Delta P$). Variations in aggregate spending ($\Delta Y$) and variations in price level ($\Delta P$) determine current account changes in real output ($\Delta X$). $\Delta X$ and $\Delta P$ engender anticipations of inflation and real growth which in turn impacts on the current interest rate (R). Interest rates impacts negatively on stock patronage (SP). As interest rates rise, investors raise the rates of return that they require, causing share prices to fall.

## 2.4 REVIEW OF EMPIRICAL LITERATURE

### 2.4.1 Theoretical Relationship between Stock Prices and Inflation

Inflation is a situation of excessive money in the hands of the public relative to the amount of goods and services that the money can buy such that there is a sustained increase in the general price level resulting in persistent fall in the purchasing power of money (Incoom 2010). Due to frequent fluctuations in inflation around the world and over time, it is important to reflect on the effects of inflation on share prices at the process of share valuation.

In theory, stocks prices should not be affected by inflation, and increasing inflation should not have effect on stock valuations. According to Irving Fisher (1930), the nominal interest rate *r* can be stated as the addition of anticipated real return ρ and anticipated inflation rate *E (I).*

Linear approximation: $\quad\quad r \approx \rho + E\,(I)$ $\quad\quad\quad\quad\quad\quad\quad\quad\quad$ (9)

Exact methodology: $\quad\quad (1 + r) = (1 + \rho)^{\star}(1 + E\,(I))$ $\quad\quad\quad\quad$ (10)

The nominal interest rate is the one usually seen and cited and denotes the percentage of the borrowed funds that must be paid over a stated period of time to the money lender in respect of the loan facility granted. A real interest rate, on the other hand, is the nominal interest rate that has been modified to incorporate the effect of inflation on the real value of the sum of money borrowed. The real value is what the money can buy over the loan. Because real interest rates are known to be stable, changes in interest rates are the result of changes in the public's anticipations of inflation, and not fluctuations in real interest rates.

The correlation between inflation and the value of traded shares is of serious concern due to its policy implications. The initial investigation on the behavior of the share return was carried out by Fama (1970). Stock markets reflect basic macroeconomic behavior and are therefore considered efficient. This assertion was made by Fama in his theory of efficient market hypothesis.

Chakravarty (2006) studied the link between share price and some key macro variables and gold price in India for the period 1991-2005. The research applied Ganger non-causality test method developed by Toda and Yamamoto (1995). Bhattacharya and Mukherjee (2002) revealed a two-way causation between share price and inflation rate, while index of industrial output drives share prices. Researches indicating a negative correlation between inflation and share prices (Fama, 1981) identify that rising inflation points to a recession in the economy and with this outlook, businesses start disposing their shares. Such upsurge in the supply

of shares then cuts down share prices. As a share indicates a business' future earning strength an anticipated recession in the economy encourages firms to put up shares for sale and thus rising inflation and falling share values go hand in hand. However, a positive link between inflation and share values cannot be ruled out. The reason is that unanticipated inflation pushes the equity value of a company up if there are net debtors (Kessel, 1956; Loannidis et al, 2005).

Using data for the Greek economy Ioannidis *et al.,* (2004), applied ARDL co integration procedure together with Granger causality tests to identify the likely long-term and short-term link between share market prices and inflation and also to find out whether or not the link is positive or negative. The outcome offers proof in favour of a negative long-term causal relationship between the series after 1992. In the context of Turkish economy the coefficients of IPI and CPI do not turn out to be statistically significant in the equation for share prices signifying that they do not explain the share prices (Aga and Kocaman, 2006). The share traders are made up of professional market participants who can purchase and dispose stocks all day long, expecting to make a gain from the differences in share values. The dealers are not actually concerned about the long-term earnings potential or the assets value of the firm. When market participants are sure that others will purchase stocks (hoping that there will be rise in prices), they will also purchase and expect to put up for sale when the prices actually go up. If other traders are of the same conviction and act in a similar way (that is buy shares), the resulting pressure will force the price to go up (Aga and Kocaman, 2006). Usually, share prices go up when the economy is about to enter an upturn and will go down when the economy is about to experience a downturn. At the bearish stage of the stock market where prices of shares are very

low, businesses are unenthusiastic to go to the stock market. Bank finance is the only source of finance that can substitute sufficiently for the capital markets in such times. In the case where there is no adequate bank finance, corporate institutions' investment plans are bound to be hit.

According to the generalized Fisher hypothesis, equity stocks, which indicate part ownership of the real assets in a firm, can protect investors against inflation. As a result, investors will prefer to dispose financial instruments and exchange same for real assets if they feel that anticipated inflation will impact significantly on their investment. In this way nominal stock values must adequately mirror anticipated inflation and the extent positively correlated (Fisher, 1930). The conviction that stock exchange offers protection against upward changes in the general price level signifies that stockholders are completely recompensed for inflation through similar compensating rise in the nominal values of shares. Thus, the real value of gains made on shares is unaffected. The argument in a different perspective is this; the real return made on equity investment is resistant to effects of inflation.

This assertion is strongly acceded by Bodie (1976), who said that equity investment is a protection against inflation. The reason is, equity constitutes ownership of real assets. As a result, the percentage rise in the value of earnings must be fairly similar to the inflation rate. In a nutshell, the real value of a share is not affected in the long-term. Nevertheless, Fama (1981) identified a negative link between inflation and stock returns. He explained that the negative link established is due to two underlying associations between the following; $(a)$ stock returns and anticipated economic activity; and $(b)$ anticipated economic activity and inflation.

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Anticipation of attractive payment of dividend in the future is responsible for the positive relationship between inflation and stock returns. Money demand accounts for the negative relationship between predictable activity and inflation. This argument is certainly valid; and buttressed by convincing practical evidence. Nonetheless, there is something still unanswered in Fama's (1981) empirical results: various measures of real activity did not, by themselves, entirely eliminate the negative inflation and stock returns relationship.

Kaul (1986) established evidence to prove that the relationship between inflation and share returns are dependent on the equilibrium process in the monetary sector and that they fluctuate if the underlying money demand and supply factors undergo a systematic change. Boudoukh and Richardson (1993) establish a strong support for positive link between nominal stock return and inflation at a long horizon. Luintel and Paudyal (2006) found positive relationship between inflation and share returns and that the price elasticity of the share return was greater than unity. This argument is theoretically more conceivable. This is because the nominal return from share investments must surpass the inflation rate in order to completely insulate tax-paying investors if not, investors will experience real wealth losses.

The work of Cohn and Lessard (1980) also compliment the earlier indications that share prices are negatively linked to nominal interest rates and inflation in a number of economies. They however point out that the outcomes cannot be linked to any specific investor behavior. Their outcomes questioned the Fisherian view that equities are real financial assets whose values are impervious to inflation. Fama (1981) and Geske and Roll (1983) give some clarification for the negative relationship between share returns and inflation.

## 2.4.2 Factors that Determine Patronage of Stocks

Equity finance is a popular way by which businesses raise capital for growth, service loan facilities and to meet working capital needs. This is achieved through the sale of shares to investors who have excess liquid assets. Each share entitles the holder to part of the net assets of the firm. Dividends from earnings are paid to shareholders to compensate them for investing in a business, and capital growth is achieved through appreciation in the price of the share.

Investors buy stocks with the motive of realizing capital gains, annual dividend and growth. Although past operating performance is not a guarantee of future results, shares have yielded better average yearly return in the past than other investment assets like bonds and money market instruments. Generally, shares are seen to be more volatile than long-term debts and money market instruments. Several factors lead to low patronage in stocks. For instance, actions of investors (investor psychology) can be a contributing factor. Thus if a big number of investors perceive a nation is at the verge of experiencing a recession, their behaviour can have a considerable effect on the direction of stock market. Another factor affecting stock patronage is business conditions: which has to do with the profitability of the business, an imminent acquisition/merger, or pending legal suit could impact on the interest of investors as well as values of shares. The current circumstances of the economy: unemployment, inflation, changes in disposable incomes, and consumer behaviour affect profitability of a firm and for that matter its share price. Government actions and inactions, decisions on taxation and interest rates, trade policy (domestic and international trade), antitrust litigation, and the budget impact on share prices and hence patronage. Global economic factors also affect stocks. Factors such as foreign

exchange rates, tariffs, or diplomatic relations can cause share prices to fluctuate and therefore influence patronage.

# CHAPTER THREE

# METHODOLOGY

## 3.0 INTRODUCTION

Chapter three concentrates on the various approaches used in carrying out the study. It details the research outlay and data collection techniques. This chapter also covers the model used to estimate the relationship between stock patronage and each of the following; stock prices of listed companies in Ghana, rate of inflation in Ghana and dividend paid by firms listed on the GSE.

## 3.1 DATA SOURCE

The empirical examination is conducted with the use of weekly time series data obtained from the GSE and the Bank of Ghana. The data period runs from January 2011 to December 2013 and the research was conducted using 156 weekly observations within the three years span. The study employed GSE Composite Index (CI) to proxy for Ghana stock market prices (SP), the arithmetic mean of trade volumes of all stocks listed on the Exchange to proxy for stock patronage (PAT), consumer price index to proxy for inflation and dividend (DY), the arithmetic mean of dividends of all listed equities. We obtain the dividend (DY) series from the relation $D_t = P_{t-1} \, X \, DY_t$ akin to Rangel and Pillay (2007).

## 3.2 DEFINITION OF VARIABLES

**GSE Composite Index:** The research used the GSE -CI to proxy for the Ghana stock market prices. The GSE Composite Index has been used as the broad market indicator of the stock market since January 2011. Its computation relies on the volume

weighted average price of all equities and the market capitalization of the base year period.

**Inflation (proxy by Consumer Price Index-CPI):** Inflation refers to the rise in the general (or average) price level. The calculation of inflation rate needs a benchmark for the overall price level. The most frequently used gauge of the general price level is the consumer price index (CPI) which is an index of the prices of a typical "basket" of consumer goods and services. CPI inflation is affected or determined by factors which are outside the control of economic policy and has tended to be historically volatile. Temporally, shocks or disorders in some areas of the economy can lead to the CPI deviating from its long-term pattern.

In Ghana, the instability in the CPI inflation rate is triggered by such factors as disorders in domestic food production/supply or fluctuations in fuel prices (Mensah 2008). Short-term increases in food and fuel prices and other undesirable occurrences also impact on prices in general. Consequently, the overall inflation rate can rise to double-digit heights, even though the prices of CPI items indicate only slight rises.

**Stock prices:** The cost of a security on an exchange. Share prices can be influenced by a number of things comprising volatility in the market, current economic circumstances and as well as the popularity of the company.

**Dividend yield:** It is a measure of how much cash flow one is generating from each currency invested in an equity position. This measure of profit is usually expressed as dividend as a percentage of market price per share.

## 3.3 SPECIFICATIONS OF THE MATHEMATICAL MODEL AND A-PRIORI ASSUMPTIONS

Based on the objectives of the study, three methodologies are specified. The first is the effect of stock prices on stock patronage; the second relates to the effect of inflation on stock patronage and finally the effect of dividend on patronage of stocks of listed companies in Ghana.

### 3.3.1 Mathematical Model on the Relationship between Patronage and Stock Prices

$$PAT = f(SP) \qquad\qquad\qquad (11)$$

where PAT = Patronage  and  SP= stock price.

A-priori, when the prices of shares go up investors buy more to maximize profit. The price of the individual share is a function of supply and demand. The supply of the stock depends on the number of shares the company has issued. The demand is created by people who want to buy these shares from investors who own them. The more people desire to own a share, the more they are willing to pay for it. However, supply of shares of any company is limited. Investors can only sell shares or stocks that are already owned by other investors. Therefore, if one wants to buy, another person has to sell and the vice versa. If a lot of people then want to purchase at a current price and not a lot of people want to dispose, the price will rise up until more people are willing to sell.  As the price begins to go up, buyers will be willing to buy more. However, the price can rise to a high level that demand may begin to fall and the price will intend fall.

**3.3.2 Mathematical Model on the Relationship between Patronage and Inflation**

This function evaluates the nature of the link between stock patronage and inflation. The analytical literature points out the chance of a negative and a positive correlation between the two. The implicit form of this relationship is given by:

$$PAT_t = f(INF_t) \qquad\qquad (12)$$

Where $INF$ denotes inflation.

Price stability is crucial in finding out whether an economy is steady or not. Inflation has the potential to create uncertainty in an economy which can erase the confidence in both domestic and foreign investors to purchase stocks. Inflation leads to the rise in nominal interest rates which affects the value of interest payment. Unanticipated inflation impacts negatively on the saving abilities of people of a country (Ibrahim and Agbaje, 2013). Low savings culture leads to a fall in demand for shares (equity investment). The fall in demand causes price of equity to fall and thus reduces returns on the shares.

Theoretically, there can also be a positive correlation between inflation and share patronage. When there is high inflation in the economy, government motivates people to save by raising the policy rate also referred as the prime rate. A high policy rate raises the value of all interest yielding assets. This motivates people to buy the domestic stock relative to foreign ones.

**3.3.3 Mathematical Model on the Relationship between Patronage and Dividend**

Basically, investors patronize stocks to either realize capital appreciation or get dividend income. Therefore, a-priori, high dividend paying stocks will attract higher

patronage relative to the other. The mathematical model for the above can therefore be specified as:

PAT= f(DY)                                                                (13)

Where DY = dividend.


## 3.4 ESTIMATION TECHNIQUES

### 3.4.1 Linear Regression

From the fore-going, we assume the theoretical model on the relationship between patronage (PAT), inflation (INF), stock prices (SP), and dividends (DY) to assume a linear function. Thus,

PAT = f(INF, SP, DY)                                                      (14)

Taking logs of equation (14), we obtain:

$$InPAT_t = \beta_0 + \beta_1\, InINF + \beta_2\, InSP + \beta_3\, InDY + \varepsilon_t \qquad\qquad (14.1)$$

Where all variables are as previously defined and $\varepsilon_t$ is the stochastic error term.

### 3.4.2 Correlation Analysis

Correlation evaluates the strength or degree of linear relationship between two variables. The coefficient of correlation measures the strength of (linear) association. The correlation coefficient can be computed from its definition, which is known as the sample correlation coefficient as:

$r$

$$= \frac{n\sum X_i Y_i - (\sum X_i)(Y_i)}{\sqrt{[n\sum X_i^2 - (\sum X_i)^2][n\sum Y_i^2 - (\sum Y_i)^2]}} \qquad\qquad (15)$$

It is important to mention that $r$ is a measure of linear association or linear dependence only; it has no meaning for describing nonlinear relations. Although it is a measure of linear association between two variables, it does not necessarily imply any cause-and-effect relationship. In the regression context, $r^2$ is a more meaningful measure than $r$, for the former tells us the proportion of variation in the dependent variable explained by the explanatory variable(s) and therefore provides an overall measure of the context to which the variation in one variable determines the variation in the other. The latter does not have such value. Moreover, the interpretation of $r$ *(=R)* in a multiple regression model is of dubious values (Gujarati and Porter 2009). A correlation coefficient less than zero indicate a negative relationship between the variables while a correlation coefficient greater than zero indicates a positive relationship between variables.

Some of the properties of $r$ are as follows:

- It can be positive or negative, the sign depending on the sign of the term in the numerator of eqn. (15), which measures the sample covariation of two variables.

- It lays between the limits -1 and +1; that is $-1 \leq r \leq 1$.

- It is symmetrical in nature, that is, the coefficient of correlation between X and Y ($r_{XY}$) is the same as between Y and X ($r_{YX}$).

- It is independent of the origin and scale; that is, if we define $X^{*}_i = aX_i + C$ and $Y^{*}_i = bY_i + d$, where $a > 0$, $b > 0$, and c and d are constants, then r between $X^{*}$ and $Y^{*}$ is the same as that between the original variables X and Y.

If *X* and *Y* are statistically independent, the correlation coefficient between them is zero; but if r=0, it does not mean that two variables are independent. In other words, zero correlation does not necessarily imply independence.

# CHAPTER FOUR

# DATA ANALYSIS AND FINDINGS

## 4.0 INTRODUCTION

Chapter four outlines the outcomes from the estimation of the data of the study thus, the correlation analysis and that of linear regression.

## 4.1 LINEAR REGRESSION ANALYSIS

In this section, we present results of linear regression of Patronage on Stock Price, Inflation and Dividend to estimate the sign and magnitude of relationship among the variables. Table 1 presents the estimation of the relationships among variables. Table 3 present a good-fit of the model as the F-statistics is significant at 1% significance level. Also, the model summary in Table 4 shows that Stock Price, Dividend and Inflation are able to explain the changes in Patronage by 57%.

**Table 1: Unstandardized Linear Coefficients**

|          | β       | Standard Error | t-statistic | Sig   |
|----------|---------|----------------|-------------|-------|
| Constant | 140.025 | 32.418         | 4.319       | 0.00  |
| SP       | 0.256   | 0.021          | 12.416      | 0.00  |
| INF      | 1.937   | 0.764          | 2.537       | 0.012 |
| DY       | 0.635   | 1.931          | 11.226      | 0.00  |

Dependent variable: PAT

Following Table 1, the linear equation for the unstandardized coefficients can be presented as:

$$PAT = 140.025 + 1.937INF_t + 0.256SP_t + 0.635D_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (16)$$

**Table 2: ANOVA**

| Model | | Sum of Squares | DF | Mean Squares | F |
|---|---|---|---|---|---|
| | Sig | | | | |
| 1 | Regression | 934,331.114 | 3 | 311,443.705 | 67.579 |
| | 0.00 | | | | |
| | Residual | 695,893.182 | 151 | 4,608.564 | |
| | Total | 1,630,224.296 | 154 | | |

a. Predictors: Constant, DY, INF, SP
b. Dependent variable: PAT

**Table 3: Summary**

| Model | R | R-Square | Ad-justed R-Squre | Std. Error of the |
|---|---|---|---|---|
| estimates | | | | |
| 1 | 0.757[a] | 0.573 | 0.565 | 67.886 |

a. Predictors: Constant, DY, INF, SP

Table 1 presents the unstandardized linear relationships between Patronage and Stock Price, Inflation, and Dividend. The results show that Dividend, Stock Price, and Inflation have significant positive impact on Patronage of shares of equities on the Ghana Stock market. However, whereas both Stock Price and Dividend Yield show significance at the 1% significance level, Inflation shows significant impact at the 5% significance level. This means that the impact of Stock Price and Dividend Yield on Patronage of equities on the stock market may be more powerful than that of Inflation.

### 4.2.1 Relationship between Patronage and Inflation

From equation (16), the study reveals a positive significant relationship with inflation. Thus, marginal increase in inflation will lead to a corresponding increase in patronage of shares of equities listed on the Ghana stock market. The study shows that a one unit rise in inflation will cause 1.937 units rise in patronage of shares of equities listed on the Ghana stock market. This is because inflationary periods in many instances have led to slow economic activity. This happens as a result of increased cost of borrowing associated with inflation and its effect on cost of production. This then pushes many investors to invest in long term securities like the bond markets or buying shares on the stock exchange. As more investments drift to stocks the total market capitalization of the Ghana Stock Exchange increases and hence higher returns. This underpins why the linear regression results indicated a positive relationship between patronage and inflation.

### 4.2.2 Relationship between Patronage and Stock Prices

Again, in consistent with the theory, the study shows a significant positive relationship between Stock Price and Patronage. As indicated by equation (16), a one unit increase in stock price leads to 0.256 units increase in patronage of shares of securities listed on the Ghana Stock Exchange. This is primarily as a result of the fact that one major objective of shareholders is wealth maximization. This happens through capital gains arising from share price increases. It follows therefore that, all other things held constant, investors would rush to patronize shares which show continuous or periodic surges in prices.

### 4.2.3 Relationship between Patronage and Dividend

Finally, the positive significant relationship between Patronage and Dividend as indicated by equation (16) is in line with theory and available literature. The results indicate that a one unit increase in Dividend will lead to a corresponding 0.635 increase in Patronage of shares of equities on the GSE. This is primarily due to the fact that the cardinal objective of shareholders is their periodic realization of dividend income. As a company shows a significant record of prompt payment of dividends to its classes of shareholders, shares of such companies are likely to attract investors (e.g. those at their prime ages) to invest in their stocks.

The equation (16) also shows that Patronage would have a constant value of 140.025 when SP=0, DY=0 and that of INF=0. There is a clear positive indication that stock prices, dividend yield and that of inflation have an effect on patronage, because an increase in one of this variable would definitely affect the constant value of 140.25 to increase or decrease.

### 4.3 CORRELATION ANALYSIS

**Table 4: Correlation among PAT and SP, INF and DY**

|       | PAT     | INF   | SP         | DY  |
|-------|---------|-------|------------|-----|
| **PAT** | 1       |       |            |     |
| **INF** | 0.113   | 1     |            |     |
| **SP**  | 0.444** | -0.63 | 1          |     |
| **DY**  | 0.357** | 0.35  | -4.194E-1** | 1   |

** Correlation is significant at the 0.01 level (2-tailed).

### 4.3.1 Correlation between Patronage and Stock Prices

From Table 4, the study identified a positive significant relationship between patronage and share price because the Pearson Correlation is 0.444** which depicts that correlation is significant at 0.01 level (2-tailed). Thus, when the price of stock increases, investors tend to patronize more of it with the hope of making much profit in the future.

### 4.3.2 Correlation between Patronage and Inflation

The study shows no significant relationship between patronage and inflation. The reason is that inflation deprives investors and everybody from reaping the true worth of their investments. It comes with rising prices without compensating change in value. You part with more money for less value because high interest rates and firms pushing up prices don't add up to an investment profile. In spite of this, shares do offer investors some protection against inflation. Theoretically, a firm's net profit must grow at the rate of inflation over time. When inflation rate falls, bloated revenues and earnings will also fall. It is a tide that raises and lowers all the boats, yet inflation distorts the value of money creating a very deceptive picture of the real value of money.

### 4.3.3 Correlation between patronage and dividend

In accordance with Table 1, results from Table 4 depict that there is a significant and direct link between patronage and dividend because the Pearson correlation is 0.357** which shows that it is significant at the 0.01 level (2-tailed). This is so because the very objective of investors is to make profit on stock of shares traded. Investors gain dividends based on a proportion of profit made on their stock traded. In simple terms as patronage on stock of shares increases, investors' dividend will automatically increase

## CHAPTER FIVE

## SUMMARY OF FINDING, CONCLUSION AND RECOMMENDATIONS

## 5.0 INTRODUCTION

This chapter summarizes the findings and provides conclusions and recommendations for the study. The major objective of the research was to establish the relationships between patronage of stocks and inflation, dividends, as well as stock prices.

## 5.1 SUMMARY OF FINDINGS

The study revealed some findings after a careful analysis of the data, taking into consideration how patronage is affected by inflation, stock prices and dividend.

The study shows that a one unit increase in inflation will lead to a 1.937 units increase in patronage of shares of equities listed on the Ghana stock market. This is because inflationary periods in many instances have led to slow economic activity. This happens as a result of increased cost of borrowing associated with inflation and its effect on cost of production. This then pushes many investors to invest in long term securities like the bond markets or buying shares on the stock exchange.

Again, in accordance with the theory, the study shows a significant positive relationship between stock price and patronage. As indicated by equation (16), a one unit increase in stock price leads to 0.256 units increase in patronage of shares of securities listed on the Ghana Stock Exchange. This is primarily due to the fact that one major objective of shareholders is wealth maximization. Correlation analysis also gave a positive significant relationship between patronage and Stock Price.

Finally, the positive significant relationship between Patronage and Dividend as indicated by equation (16) is in line with theory and available literature. The results

indicate that a one unit increase in Dividend will lead to a corresponding 0.635 increase in Patronage of shares of equities on the GSE. This is primarily due to the fact that the cardinal objective of shareholders is their periodic realization of dividend income. As a company shows a significant record of prompt payment of dividends to its classes of shareholders, shares of such companies are likely to attract investors (e.g. those at their prime ages) to invest in their stocks.

## 5.2 CONCLUSION

This study aimed to investigate the factors influencing the patronage of stocks on the Ghana stock market. The major objective of the research is to find out how patronage on the GSE would be increased. Based on the objective, empirical examination is carried out using weekly time series data from the Ghana Stock Exchange and the Bank of Ghana. The data period covered January 2011 to December 2013 and the research was conducted using 156 weekly observations within the three-year period. The study employed GSE Composite Index (CI) to proxy for Ghana stock market prices (SP), the arithmetic mean of trade volumes of all stocks listed on the exchange to proxy for stock patronage (PAT), the arithmetic mean of dividends of all listed equities for dividend (DY), and consumer price index to proxy for inflation. In achieving the objectives of the study, three methodologies are specified. The first is the effect of stock prices on stock patronage; the second is about the effect of inflation on stock patronage and finally the effect of dividend on patronage of stocks of listed companies in Ghana. All the results from the estimated regression indicated a positive significant relationship between patronage and the macroeconomic variables specifically inflation, stock price and dividend yield. The results indicate that a one unit increase in inflation, stock price and dividend, will lead to a corresponding increase in Patronage of shares of equities on the GSE.

## 5.3 RECOMMENDATIONS

The following recommendations are suggested based on above findings.

Firstly, on account of the significant positive effect of share price on patronage, we recommend that listed firms should undertake measures that would sustain share price increases over time to enhance investors' realization of higher capital gain accumulation. For instance, at the operational level, prudent management and investment decisions may result in higher total earnings which may lead to higher dividend payment. Since the price of a share is a function of expected cash flows, increases in dividends will lead to share price appreciation and hence patronage. Boosting investors' interest in stocks ensures that a very important source of capital, equity, is made available for the growth and expansion of businesses. A vibrant capital market needed for the socio-economic development of Ghana would thrive on stock patronage and the development of the Ghana Stock Exchange.

Secondly, the study has significant implications for capital structure decisions of firms listed on the Ghana stock exchange. On account of the fact that dividends is noted to exert significant positive impact on investors decision to patronize stocks on the exchange, we recommend that listed firms should undertake measures that will enhance dividend payments. In this case, dividend pay-out policies by listed firms may have to be reviewed periodically to resonate with investors believes and choices of securities on the stock market.

Thirdly, we recommend that investors should diversify their stocks to avoid loss of value by investing in one stock. Diversifying stock holdings helps to avoid across the board losses if something goes wrong in a particular industry. Let's say if all your stock holdings were in the homebuilding industry and mortgage interest rate rose to

double digits, it is likely your holdings would suffer. The basis of this advice is that the study revealed that the independent variables (stock price, dividend and inflation) are able to explain the changes in patronage by 57%. A stock that suffers reduced patronage is likely to lose value. These variables are not under the total control of anybody implying that patronage of a particular stock is not predictable and so investors should diversify their stocks.

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# APPENDICE

**Correlations**

|  |  | INF | SP | DY |
|---|---|---|---|---|
| PAT | Pearson Correlation | .113 | .444** | .357** |
|  | Sig. (2-tailed) | .163 | .000 | .000 |
|  | N | 155 | 155 | 155 |

**. Correlation is significant at the 0.01 level (2-tailed).

**Correlations**

|  |  | PAT | SP | DY |
|---|---|---|---|---|
| INF | Pearson Correlation | .113 | -.063 | .035 |
|  | Sig. (2-tailed) | .163 | .439 | .666 |
|  | N | 155 | 155 | 155 |

**Correlations**

|  |  | PAT | INF | DY |
|---|---|---|---|---|
| SP | Pearson Correlation | .444** | -.063 | -4.194E-1** |
|  | Sig. (2-tailed) | .000 | .439 | .000 |
|  | N | 155 | 155 | 155 |

**. Correlation is significant at the 0.01 level (2-tailed).

**Correlations**

|  |  | PAT | INF | SP |
|---|---|---|---|---|
| DY | Pearson Correlation | .357** | .035 | -4.194E-1** |
|  | Sig. (2-tailed) | .000 | .666 | .000 |
|  | N | 155 | 155 | 155 |

**. Correlation is significant at the 0.01 level (2-tailed).

**Correlations**

|  |  | PAT | INF | SP | DY |
|---|---|---|---|---|---|
| PAT | Pearson Correlation | 1 |  |  |  |
|  | Sig. (2-tailed) |  |  |  |  |
|  | N | 155 |  |  |  |
| INF | Pearson Correlation | .113 | 1 |  |  |
|  | Sig. (2-tailed) | .163 |  |  |  |
|  | N | 155 | 155 |  |  |
| SP | Pearson Correlation | .444** | -.063 | 1 |  |
|  | Sig. (2-tailed) | .000 | .439 |  |  |
|  | N | 155 | 155 | 155 |  |
| DY | Pearson Correlation | .357** | .035 | -4.194E-1** | 1 |
|  | Sig. (2-tailed) | .000 | .666 | .000 |  |
|  | N | 155 | 155 | 155 | 155 |

**. Correlation is significant at the 0.01 level (2-tailed).

**Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .757[a] | .573 | .565 | 67.886 |

a. Predictors: (Constant), DY, INF, SP

**ANOVA[b]**

| Model |  | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 934331.114 | 3 | 311443.705 | 67.579 | .000[a] |
|  | Residual | 695893.182 | 151 | 4608.564 |  |  |
|  | Total | 1630224.296 | 154 |  |  |  |

a. Predictors: (Constant), DY, INF, SP

**ANOVA[b]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 934331.114 | 3 | 311443.705 | 67.579 | .000[a] |
| | Residual | 695893.182 | 151 | 4608.564 | | |
| | Total | 1630224.296 | 154 | | | |

b. Dependent Variable: PAT

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 140.025 | 32.418 | | 4.319 | .000 |
| | INF | 1.937 | .764 | .135 | 2.537 | .012 |
| | SP | .256 | .021 | .728 | 12.416 | .000 |
| | DY | 0.635 | 1.931 | .658 | 11.226 | .000 |

a. Dependent Variable: PAT