



IS IT WORTH WHILE INVESTING ON THE GHANA STOCK EXCHANGE?

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Abstract

The study discusses the importance of stock market development, determinants of stock market development and the benefits of a successful development, with particular emphasis on emerging markets. The rationale is that, for the Ghana Stock Exchange (GSE) to experience increasing investments there is the need for its successful development. The study has therefore reviewed growth analysis of the Ghana Stock Exchange All Share Index, Market Capitalisation and share traded volumes on the Exchange. As growth indicates how well an exchange may have performed, it also gives prediction as to the future trend movement of the total market; recognising that there are other factors aside growth analysis that provides indication of stock market performance.

The study found that the Ghana Stock Exchange (GSE) All Share Index, market capitalisation and share traded volume in the years under review have grown considerably. It was also found that the Ghanaian economy has enjoyed continuous economic stability, with a single digit inflation rate of 9.6% and real GDP growth rate at 6.4%. Thus, macroeconomic stability is found to be crucial in the developmental process. It is envisaged that the current automation project of the GSE will improve market efficiency and liquidity.

It was further found that, the GSE has supported the economy of Ghana through the funds received by listed firms from listing. As businesses regularly require funds to grow and expand, the GSE have progressively provided listed companies this opportunity. The overall effect is the increasing economic activities being enjoyed by the country. The recommendations of the study include the integration of the GSE into the international market as a result of current trend in globalisation. It also recommends regular market reviews to resolve market irregularities; and the pursuance of continually sound macroeconomic stability by the Ghanaian government.

Key Words: Ghana Stock Exchange, Economic Growth, Share Traded Volume, All share indexes, Market Capitalisation.

Background

In recent times, the search for an appropriate investment avenue is being sought for by businesses and entrepreneurs. This may be because the development of capital markets has been seen as vital for the economic growth and development of most countries. The assumption is that, a well-developed stock market will yield greater investments. One line of research argues against this assertion; however proponents of this view have stress on the importance of capital market development, as stimulating investment opportunities affects economic growth and its sustainability. It is interesting to note that, there are theories providing theoretical basis for the belief that, larger and more efficient stock markets boost economic growth. Central to the efficiency of the capital market therefore is the development of the capital market.

In principle, stock markets are expected to speed up economic growth by providing a boost to domestic savings and increasing the quantity and the quality of investments (Singh, 1997). Thus, stock markets are expected to allocate capital, exert corporate control, ease risk management and encourage savings by providing investors with an additional financial tool that may better meet their risk/return profile and liquidity needs. Hence, better savings mobilization may increase the savings rate (Levine and Zervos, 1998). Stock markets therefore are able to positively influence economic growth through encouraging savings amongst individuals and providing means of financing businesses, particularly those perceived as risky. For instance, emerging markets of the Southeast Asia have used stock markets to mobilise huge saving for investment purposes

The Problem Statement

Investments generally offer enormous benefits to investors, businesses and economies as a whole; particularly those of the stock market. Although some analysts view stock markets, particularly those of developing economies, as “casinos” that have little or no impact on economic growth; some empirical evidence have however suggested that stock market investments have and does support economic growth and its sustainability. It should however be noted that, there are other factors that may influence economic growth and development apart from stock markets.

This research has therefore focused on the basic question: To what extent would investment decisions on the Ghana Stock Exchange support Economic growth.

A critical look at the problem statement revealed another vital question which needs answering; i.e.: Does the Ghana Stock Market have the potential to develop? This question is very critical because if the GSE does develop and sustain itself, it follows then that, investment decisions on it will increase and will undoubtedly support the economic growth and development of the economy.

Looking at recent trends of stock market investments, particularly those of the advanced market, the interesting question is: If investors were aware of the consequences of investing on the stock market, would they still invest?

Research Objectives

The researchers seek to achieve the following objectives at the end of the research:

1. Liquidity in terms of share trade volumes on the Ghana and London stock exchanges,
2. The equity share prices of five Ghanaian listed companies with the GSE All share Index
3. The equity share prices of five listed UK companies with FTSE

Literature Review

Stock Markets and Investment Decisions

The idea here is to bring out the relationship between stock markets and investment in general, particularly those of the equity market. According to Arnold (2005), the objective of investment within the organisation or sector is to create value for its owners; that is the shareholders who in this case are the investors. The rationale behind allocating money to a particular decision or project is to generate a cash inflow in the future, significantly larger than the amount invested. Stock market investments have over the years proved to be of great value to investors, due to its relatively high returns over time. However it is worth mentioning that, the high expected returns on such markets are also associated with some level of risk and uncertainties. Generally, a market can be referred to as an institutional arrangement in which demand and supply meets to establish the exchange of goods and services at an agreed price.

According to Pike et al (1999) a financial market is any system for trading financial assets or claims. In most cases there is no physical market place; thus transactions are being conducted through the use of phones and computers. There are several reasons for developing financial markets, but the most important is to improve financial intermediation, which plays a vital role in economic growth and development.

Pike et al (1999) grouped financial markets into three main categories:

(i) The money market: In this type wholesale funds usually less than one year are channelled from lenders to borrowers. In other words it could mean a market where short term credit instruments are bought and sold. This type of market is mostly dominated by banks, other financial institutions, local government and large companies.

(ii) The foreign exchange market: This is a market for the buying and selling of one country's currency against another. Buckley (2004) went on further by identifying the major players in the foreign exchange market as follows: (a) Commercial banks, Investment banks and Merchant banks which may normally be dealing in foreign currency on behalf of their clients engaged in international trade or which may be investing, speculating and/or hedging on their own accounts or for their customers. (b) Central Banks which may be managing their reserves or smoothing fluctuations in their own currencies and (c) Others are foreign exchange brokers, investment funds and corporations.

(iii) The capital/stock market: This is a market that deals with long-term securities such as shares and loans. It is a market for financial assets other than money or near money. This final type will therefore be the one which this study has mostly concentrated on.

McLaney(2003) defines capital market as a title given to markets where long-term finances are raised by businesses, local and national governments. They are primary market for long-term funds to meet permanent or semi-permanent investment needs. The London Stock Exchange, the New York Exchange and the Tokyo stock market are some of the famous institutions for capital markets. Popiel (1990) went on further by dividing the capital market into three areas:

- (a) The non monetary intermediaries which includes a wide range of special institutions such as savings and loans institutions, development banks, mutual funds, investment trusts, insurance companies and pension funds.
- (b) The monetary intermediaries comprising the central and commercial banks, and
- (c) The securities markets, which are mainly the primary markets for stocks and bonds.

Pike et al (1999) is of the view that the capital market has two important functions. These are primary and secondary market functions. The primary market provides new capital for businesses and other activities, usually in the form of share issue to new and/or existing shareholders. The latter where new issues are made to existing shareholders is term as rights issue. Conversely the secondary market is involved in trading of existing securities; thus enabling share and bond holders to dispose of their holding whenever they wish; that is how easy investors have access to liquidity.

McLaney (2003) is of the view that, the most important secondary market tends to be the official Stock Exchange. However, most of these stock exchanges fulfil primary functions as well as secondary functions. An efficient secondary market is therefore necessary for an effective primary market as investors are more interested in how quick and easy they can liquidate their investment whenever necessary. Interestingly, it could further be questioned that: To what extent can stock markets be said as being efficient? This would be of great interest to investors.

Arnold (2005) asserts that, "In an efficient capital market, security (for example shares) prices rationally reflects available information". The efficient market hypothesis (EMH) implies therefore that, when new information is publicized about a firm, it is immediately and rationally absorbed into the share price. For instance, dividend announcements and resignation of a top executive member of company may influence the share price movement of the company. It follows therefore that share prices of listed companies are true reflection of the market value.

Arnold (2005) went on further by presenting three different types of efficiency, these are: (i) Operational efficiency – refers to the cost, speed and reliability of transactions in securities on an exchange. It is desirable that a market carries out its operations at a lower cost as possible, speedily and reliable. (ii) Allocation efficiency – thus in a society where resources are sacred there is the need for a system to help in the allocation of the sacred resources. Stock markets are useful mechanisms for the allocation of a society's resources between competing real investments. (iii) Pricing efficiency – it has been emphasised that the term efficient market hypothesis refers to this type of efficiency. Therefore in a pricing-efficient market investors can expect to earn just a risk-adjusted return from an investment as prices move at once and in an impartial way to any news in the market.

Fama (1970, cited in Arnold, 2005) developed a three grading system to describe the extent to which markets are said to be efficient; which were based on different types of investment approaches apparently intended to produce abnormal returns. This applies to the market efficiency by pricing (i.e. the third type of market efficiency). These three levels are:

1. Weak-form efficiency: - states that current share prices fully reflect the information contained the past share prices. It is therefore not possible to make gains from simply studying past share prices.
2. Semi-strong form efficiency: - states that current market prices reflect not only all past price movements, but all publicly available information. Implying that there is no benefit analysing existing information, such as that given in published accounts after the information has been released.
3. Strong-form efficiency: - here share prices reflect all available information whether or not it is publicly available. Prices are good approximation of the 'true value' of the share.

Among these three levels, researchers have identified the semi-strong form as the idea level of efficiency according to pricing, following series of research findings. But how can an investor describe one particular stock market (say the GSE) as being a weak form, semi-strong form or strong form efficiency; thus markets are regularly being influenced by the day to day activities of companies, market structures and the activities of government.

Role of Stock Markets

In recent times, the contributions of Stock Exchange to the economic well being have been recognised in most parts of the world, as there are now over 90 countries with officially recognised Stock Exchange with many of those countries having more than one exchange (wikipedia.com). Some of the major roles played by the Stock Exchange include: Access to large pool of funds: According to Ntiwaah (2004) the existence of the capital market offers users of funds an avenue for raising funds to finance their activities.

Arnold (2005) also asserts that firms can find funds and grow. Because investors in financial securities with a stock market quotation are assured that they are generally able to sell their shares quickly, easily, cheaply and with reasonable degree of certainty about the price, hence investors are willing to supply funds to firms at a lower cost than they would if selling was slow or expensive. The stock markets therefore encourage investment through the mobilisation of savings; which is vital in economic development. On top of stimulating the investment of domestic savings, stock market is also useful for attracting foreign investments.

Cherin (1996) stated that in a market economy, the stock market plays the basic function as a source of financing investment and as a signalling mechanism to managers regarding investment decisions. Capital markets additionally play an important role in financial liberalisation and deepening. Primarily, they provide a platform for risk diversification for investors and capital raisers.

The Importance of Investment Decisions

Investment is one of the three main objectives of financial management namely; financing, investment and dividend payouts. Lumby (1999) defines investment decision as one which involves the firm making a cash outlay with the aim of receiving, in return, future cash inflows. Examples of investment decisions that are made by the firm include the following: decisions about buying a new machine, improving on customer service, instituting a staff training scheme among other. Thus the definition refers to expenditures of tangible and intangible assets. Stock market investment decisions like most investment decisions also involve sacrifice now in anticipation for future high returns. But the expected returns may be affected the uncertainties of inflation rate and other market factors. Investments in equities on the stock markets over the years have provided relatively better returns in the long term. The importance of investment decisions may be due to the following factors:

- Large amount of resources are often involved. It involves commitment of huge resource. Hence if a wrong investment decision is made, then the consequences could be huge.
- It is difficult and expensive to reserve once the decision is made.
- Investment decisions can have a direct effect on the ability of the organisation to meet its objectives.

According to Arnold (2005), a firm's survival and prosperity are determined by its ability to re-invent itself through the allocation of capital for productive use which is done through investment. Investment decision is therefore seen by many investment analysts as the most important of all decisions of the firm. It involves strategic, technical, political as well as financial aspect. He found that, the objective of investment within the organisation is to create value for its owners, i.e. shareholders. The rationale behind allocating money to a particular decision or project is to generate a cash inflow in the future, significantly greater than the amount invested.

The importance of investment was also emphasised by the chairman of Kingfisher, in its 2000 annual report. According to Sir J. Banham (2000) noted, "this year was characterised by a record of organic growth and wide range of innovation and investment including £23.3 million costs in e-commerce and other new channel development". Kingfisher did not only invest in stores around the world. It had investment project in building strong retail brands, improving

sourcing and supply chain systems, e-commerce channels to customers and suppliers, achievement and delivery properly, and in whole, a host of other assets and activities designed to create value for shareholders.

Stock Market and Economic Growth

The basic idea here is to find out whether there is a relationship between investments on the stock market and economic growth, by looking at theory and existing literatures. From an economic point of view; Lipsey (1989) defines Economic growth as the increase in an economy's potential or full employment, real income. This definition refers to the growth of total (potential) national income. He went on further to explain that the single most important force leading to long-run increases in living standards is the Economic growth and growth in the population. According to him, the per capita income of a country is the measure of growth in terms of living standards within a particular country.

Harvey (1998) also found that when there are unemployed resources, the economy's actual output is below its potential output. Hence to increase the economy's output in a relatively short term, measures should be put in place to absorb the unemployed resources. However, he further stated that full employment of an economy's resources does not necessarily mean the country will grow or has grown.

Harvey (1998) is of the view that growth is a long term-run phenomenon; thus the potential full-employment of the economy increases over time. The central question that needs answering is: Are there any benefits accruing from economic growth of a country?

Lipsey (1989) have discussed the benefits of Economic growth as follows:

1. Economic growth leads to increase in the standards of living. As indicated earlier, economic growth is the single most important force leading to long-run increases in the standard of living.
2. Economic growth supports income redistribution. The growth will bring about increment and the redistribution of income growth, thereby reducing income inequality without actually lowering an individual's income.
3. Growth changes consumption pattern and bring about an enhanced lifestyle within citizens of a country. That is there are improvements in all aspects of life of the citizenry as they are able to afford to consume more. Also government is able to provide more amenities and recreational centres for the newly affluent citizens.

The above are just a few of the numerous benefits enjoyed from increasing economic growth of countries over time. But does investment have a part to play in the enormous benefits accruing from economic growth?

Stock Market Liquidity

In the market, liquidity has a slightly different meaning although still tied to how easily assets, thus shares of can be converted into cash. The market for stocks are said to be liquid if investors can easily and immediately disposed off the holdings when necessary. It should be noted however that, the process of disposal may be associated with transaction cost, which may usually affect the liquidity in any particular market. Generally, this translates to where the shares are traded and the level of interest that investors have in a particular equity.

Reilly (1989, p. 466) has defined market liquidity as "the ability to buy and sell an asset quickly with little price change from a prior transaction assuming no new information".

According to him, the liquidity of an asset may be determined by asking two vital questions:

1. How long will it take to buy or sell the asset?
2. What will be the purchase or selling price compared to current transaction prices?

Equities that are normally traded on the major exchanges can usually be considered as liquid. A good determinant of market liquidity of any particular security is the number of shares traded and/or the value of the shares traded. Another essential variable that has widely being used to predict market liquidity is the bid-ask spread, which is the difference between the market-marker's bid price and asking price on a security. "Numerous studies have shown that the main determinant of the bid-ask spread, besides price, is the value of trading. It implies then that, the value of trading is highly correlated with the market value of the outstanding securities and the number of security holders". For liquid equities, the spread is often much lesser than 1% of the price; in the case of illiquid shares, the spread can be much larger, amounting to a few percent of the selling price of the share. Goss et al (2002) in a similar vein has defined "liquidity as a market condition whereby both buyers and sellers can trade at a desire price".

Their findings discussed that, a perfect liquid market therefore, would be one in which transactions could be effected at zero cost (excluding fees relating to commission and clearing house, and margin). It implies that the less liquid the market, the greater the transaction cost. The importance of liquidity has being coined by Fleming (2001, cited in Goss et al, 2002) as follows:

- Liquidity has value to traders, and a comparatively more liquid asset will have a high price than a seemingly less liquid equity.
- Liquidity has value to securities exchange; hence an exchange where contracts are more liquid will enjoy lower transaction cost than a less liquid exchange.

To this end we can say that, a more liquid market is likely to attract increasing trading activities than a relative less liquid market. But the argument here is that, some markets though with low liquidity ratios have experienced continuous increases in market trading. This can be said of the Ghana Stock Exchange where trading volumes has increased in recent time but has low liquidity ratios. The critical question here is: what are the factors impeding low stock market liquidity, particular in emerging markets?

Traditional Indicators of Stock Market Liquidity

(i) Market Capitalisation Ratio (MCR): - this is a measure of the value of listed shares in relation to Gross domestic product (GDP). The assumption here is that, the overall market size should be positively correlated with the ability to mobilise capital and diversify risk. It therefore serves as a proxy to stock market development.

$$\text{MCR} = \frac{\text{Value of Listed Equities}}{\text{GDP}}$$

(ii) Turnover Ratio (TR):- it represents the value of total shares traded in relation to market capitalisation. Though it may not be a direct measure of theoretical definitions of liquidity, high turnover is often used as an indicator of low transaction cost. The turnover ratio complements the market capitalisation ratio.

$$\text{TR} = \frac{\text{Value of Total Shares Traded}}{\text{Market capitalisation}}$$

(iii) Total Value of Shares Traded Ratio (STR):- it presents the total value of shares traded on the stock exchange in relation to Gross domestic product (GDP). As the total value of traded measures the organised trading of firm's equity as a share of national output and therefore should positively reflect liquidity on an economy and a market wide basis.

$$\text{STR} = \frac{\text{Total Value of Shares Traded}}{\text{GDP}}$$

Risk and Uncertainty in Investment Decisions

According to Leicester (2002), no investment is totally safe. Many have the capacity to inflict damage if they go wrong as it happened in the case of Euro-tunnel, according to the Investor Chronicle. In 1996, Euro-tunnel with £8.5bn of debts and interest of £2m per day was forced into negotiation with its 225 banks to try to ensure its financial survival and its investment decision went entirely wrong. However, the capacity for disaster can be reduced by carefully planning as seen in the case of Camelot which successfully created the UK National Lottery.

The failure of most projects stem from the sheer unpredicted ability of the future state of the economic and political environment and hence the size of the cash flow. There are three main ways of dealing with the uncertainty of future cash flows. These are the use of subjective probabilities, sensitivity analysis and scenario analysis.

Methodology

The research has followed both the deductive and inductive research processes. This is because the study looks to be more of a social research; and in most of such researches it is appropriate to adopt both the deductive and inductive research approaches.

The focus on deductive approach looked at developing specific expectations on the basis of general principles on stock market investments. The inductive has focused on developing general stock market principles based on specific observations on the GSE.

The circular relationship between the deductive and inductive enquiry processes made it necessary for the adoption of both approaches.

Data Collection

The researchers use both primary and secondary data collection methods. However the larger part of data collected is mainly secondary in nature. The primary data collected were the views of stock brokers, institutional and individual investors, and governmental organisations.

Primary Data

- Unstructured interviews were used in gathering data that are valid and relevant to the research question from some Stock brokers, institutional investors, governmental institutions and individual investors. The responses were recorded by way of note taking. The main points were identified and discussed. The views collected were in respect of:
 - (i) Institutional factors affecting the GSE
 - (ii) Policy measures to improving on the activities of the Exchange

For privacy purposes, the names of the interviewees have not been stated. The table and chart below provides a percentage representation of the interviewees.

Data Analyses

This research had followed both qualitative and quantitative data analyses, though the research has adopted the phenomenological philosophy. Case studies are particularly suitable for both quantitative and qualitative data analysis. Analyses have used percentages and graphical representations. Various forms of tables, linear regression and correlation have been used to represent movements and trends in indexes, traded volumes and to make comparison in main market indexes. Details are given below:

Growth Analyses

We looked at the trend movement of the All Share index on the GSE and LSE. Analysis has been made by way of percentages in growth; evaluating how the GSE All share index had grown over time. A graphical representation has been used to provide a view of the trend movement in the index over time.

Objective One: - In terms of the Traded volume on the Ghana Stock Exchange and the London Stock Exchange, the rationale was to find out growth pattern in share traded volume from 2002 to 2007 on both markets. I have presented the growth percentages in a table and represented the results in a graphical form.

Objective Two - Here the ends of year share prices of selected companies on the GSE and LSE in relation to the main market index on each individual market are used in the study. The selections of the companies were made randomly, but the idea was to focus on local companies. The procedure (in the case of the GSE) was that; an average share price for the five equities was calculated - by adding all the share prices and dividing it by five, year by year. The average share prices calculated is then used with the All Share index values.

We tried to find out if the average share price does provide a fair representation of the All Share index, by way of correlation. The rationale is that if the GSE All Share index is a representation of approximately 98% of the total market listings, then the share prices of the selected equities should give a fair reflection of the market; assuming that these are the only equities on the market. Correlation has therefore been used to find out the extent to which these equity prices are reflective of the GSE All Share index.

In objective three, the same rationale and procedure is followed in the case of the FTSE All Share index and the five selected UK equities. The growth percentages are put in a table with a graphical representation. In calculating the correlation, the main indexes are used as the x-values (the dependent variable) and the average prices are used as the y-values (the independent variable).

Furthermore, we have examined the following to see the overall effects that they have on investment decisions on the GSE:

1. Institutional factors affecting the development of the market
2. Market liquidity
3. GSE investor profile
4. Economic stability

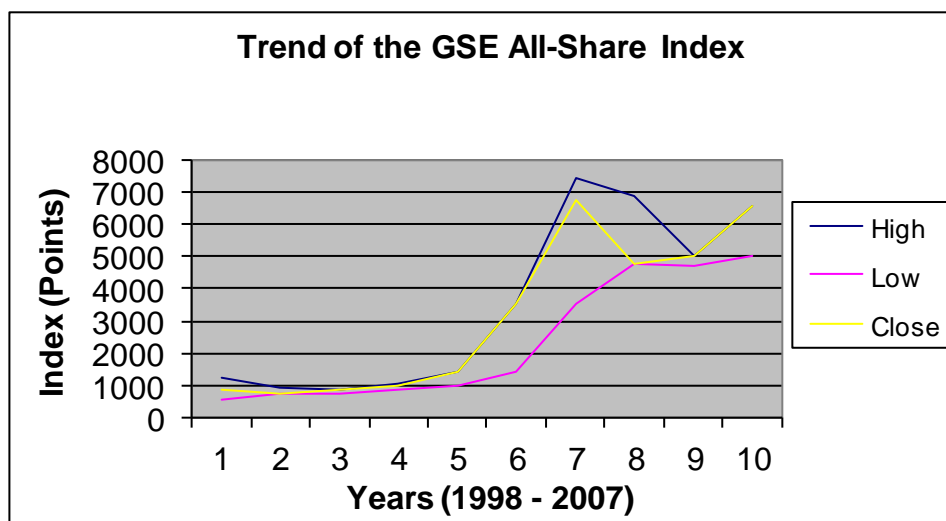
To provide more bases for making conclusions, comparison is made between the GSE All Share Index and the BSE DCI (the Botswana Stock Market Index). A further benchmarking is made of the GSE All Share Index and the BSE DCI, with the BRVM composite (the West Africa regional stock market index).

Findings and discussions are based on the statistical results, percentages and averages have been used to summarize and present results (descriptive statistics).

Growth Analysis

GSE All Share Index

As seen in the preceding chapter, the GSE All Share index, the main market indicator has performed well over the past years. However it should be recognised that, these performances may have experienced regular instability in the index throughout its performance periods. Therefore a look at the trend movement of the Index over a ten year period is presented below.



It is found that, the Index had experienced few variations throughout the time under review. However, ten years growth analysis reveals a 660.04% in growth from 1998 to 2007, despite the few up and downs that may have characterised it.

The GSE All Share Index and FTSE All Share Index

Knowledge of growth pattern in the main market index will be particularly important to investors as it will help provide an idea (recognising that there are other factors) as to the investment potential and future growth pattern in the index on the Exchange. Table 1 provides us with the growth returns on investment of the GSE All Share index and the FTSE All Share index.

Table 1 Main Market Index (Growth Percent)

	2004	2005	2006	2007	2008	2009
GSE All Share	45.96	154.67	91.33	-29.85	4.97	31.84
FTSE All Share	-24.97%	16.57%	9.28%	-1.10%	35.03%	-0.07%

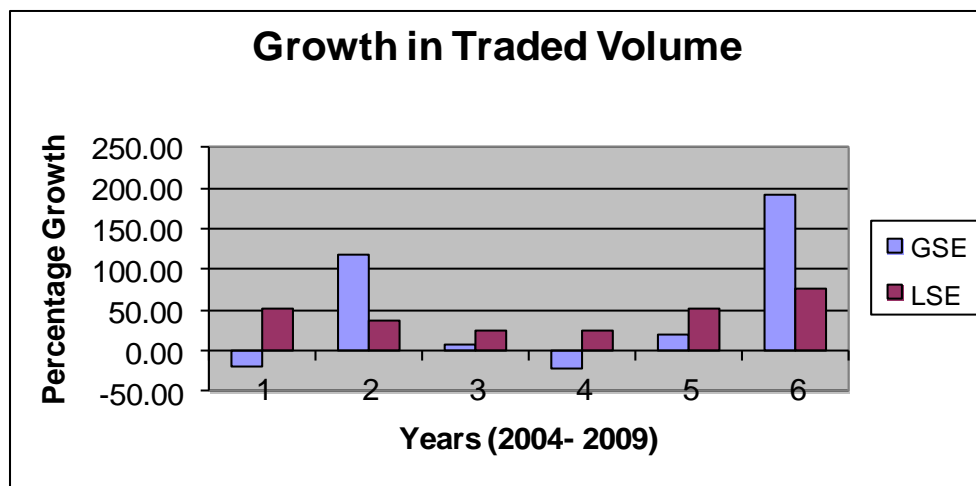
Table 1 indicates that, the GSE All Share index has performed fairly well in terms of total returns on investments. Though there have been some ups and downs in the rate at which the main market index have grown, the performances are said of as remarkable. But these returns may be knocked by the high inflation rates that may have characterised the country in the period under review. The time from 2004 to 2006 have been described as the ‘bullish’ period, when investors had a lot to smile about.

Traded Volume on GSE and LSE

Trade volume also provides some level of stock or market liquidity, although it may not give a better representation. It was found that, the LSE in terms of traded volume has been fairly stable. However the GSE may not have performed well in some years. As shown in the table and graph below, the GSE in the period under review have experienced wide fluctuations in growth of its traded volume.

Table 2 Percentage Change in Traded Volume

	2004	2005	2006	2007	2008	2009
GSE	-20.20	118.32	8.32	-21.99	20.74	192.23
LSE	51.34%	37.99%	24.24%	25.81%	52.22%	77.48%



GSE Market Capitalisation

Market capitalisation, a traditional indicator of the stock market development has been looked at. It will provide investors with the rate at which the market has grown and future growth potential. The study found that the GSE has grown in terms of market capitalisation from its inception to date. The GSE has therefore become one of the larger in term of market capitalisation in sub-Saharan African. As of March 2008, the GSE market capitalisation stood at approximately \$US 14.39 billion (March 2009 exchange rate figures). A look at the growth percentages indicators the following: 2002 – 104.03%, 2004 – 673.69, 2005 – (5.90%), 2006 – 22.47% and 2007 – 9.95%. We also found that the huge rise in the 2005 capitalisation may have been contributed by the rise in market listing from 25 in 2003 to 29 at the end of 2005. Also the effect of AGC and its simultaneous listings on the LSE, JSE and New York stock market has had a tremendous influence of the market capitalisation of the GSE.

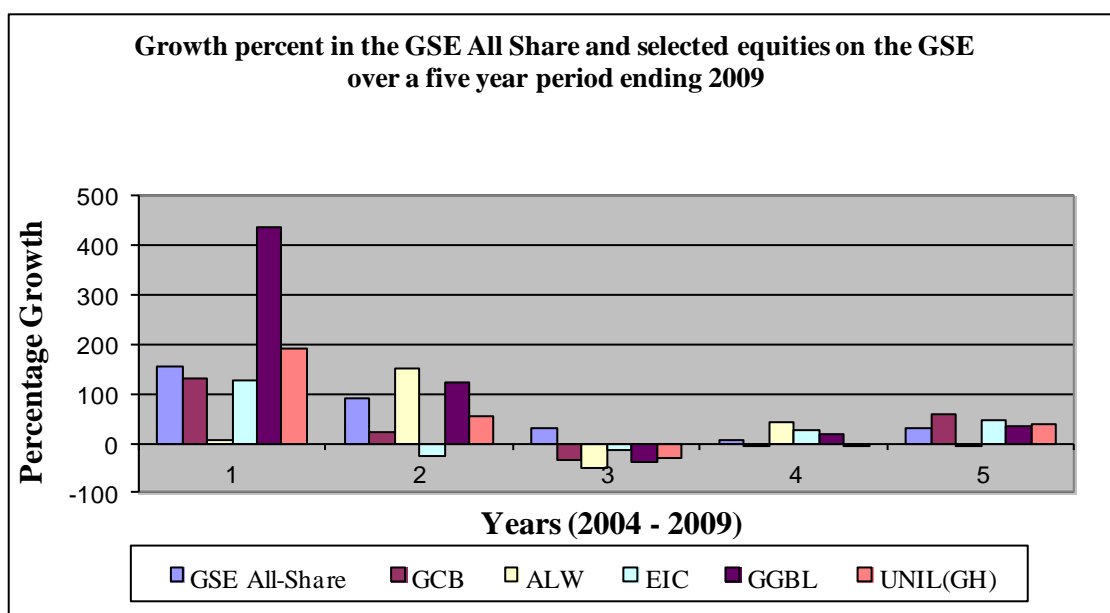


GSE All Share Index and Five GSE Equities

The GSE All Share index is the main market indicator. It is a market-value weighted index and represents approximately 98% of the market listing. I have looked at comparing percentage growth in the five randomly selected equities listed on the GSE with the GSE All Share index. From the table, we can see that in 2004, all the selected equities enjoyed significantly high growth (with the exception ALW which had just 8.11% growth); with the GSE All Share index also growing at 154.67% over the previous year. It can be deduced that at times where the growth performances of the selected equities were not very good it reflected in the growth rate of the GSE All Share index and at certain times this relationship was negative. Hence this study has attempted to find out the extent to which these equity prices are reflective of the GSE All Share index by way of correlation.

Table 3 Growths (%) in Selected Equity Prices and the GSE All Share Index

	2004	2005	2006	2007	2008
GCB	132.37	24.24	-33.60	-6.35	58.43
ALW	8.11	150	-49.97	44.93	-2.08
EIC	128.26	-23.81	-14.3	28.62	47.43
GGBL	483.10	124.78	-39.04	19.45	33
UNIL (GH)	192.22	56.68	-30	-2.6	40.67
GSE All Share	154.67	91.33	29.85	4.97	31.84



Correlation

The discussions of the study looked at the relationship between the selected equity prices and the GSE All Share index. The rationale is that if the GSE All Share index is a representation of approximately 98% of the total market listings, then the prices of the selected equities should provide fair reflection of the market. Correlation has therefore been used to find out the extent to which these equity prices are reflective of the GSE All Share index. The procedure followed has been described in chapter three.

Year	Index (points) (x)	Average Price (GH cedi) (y)
2004	1395.31	3534.20
2005	3553.42	8472.20
2006	6798.59	12570.00
2007	4769.02	8348.20
2008	5006.02	9325.80
2009	<u>6599.77</u>	<u>12700.00</u>
	<u>28,122.13</u>	<u>54,950.40</u>
x^2		y^2
1,946,889.996		12,490,569.64
12,626,793.70		71,778,172.84
46,220,825.99		158,004,900.00
22,743,551.76		69,692,443.24
25,060,236.24		86,970,545.64
<u>43,556,964.05</u>		<u>161,290,000.00</u>
<u>152,155,261.73</u>		<u>560,226,631.36</u>
		xy
		4,931,304.602
		30,105,284.92
		85,458,276.30
		39,812,732.76
		46685141.32
		<u>83,817,079.00</u>
		<u>290,809,818.91</u>

Correlation formula:

$$r = \frac{n\sum xy - \sum x \sum y}{\sqrt{n\sum x^2 - (\sum x)^2} * \sqrt{n\sum y^2 - (\sum y)^2}}$$

$$r = \frac{6 * 290,809,818.91 - 28,211.13 * 54,950.40}{\sqrt{6 * 152,155,261.73 - (28,211.13)^2} * \sqrt{6 * 560,226,631.36 - (54,950.40)^2}}$$

$$= \frac{194,646,035.5}{200,034,841.3}$$

= 0.97 (to 2 decimal places)

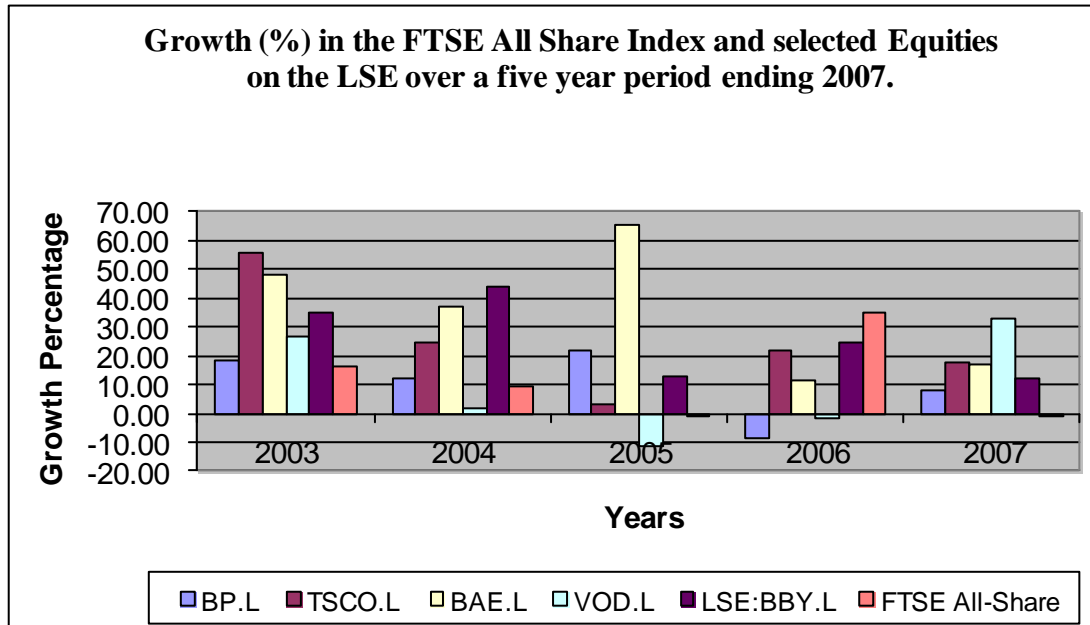
The results show that there is a strong correlation between the equities and the All Share index; It implies that there is a greater representation (i.e. approximately 97%) of equities on the GSE in the main market index (GSE All Share). Therefore this result gives an indication that the GSE All Share index adequately reflects the total market listings. Hence it provides a good basis to assert that the randomly selected equities are adequately captured in the GSE All Share. Price fluctuations will equally influence the All Share index. .

FTSE All Share Index and Five LSE Equities

Comparing percentage growth in five randomly selected equities listed on the London Stock Exchange with the FTSE All Share index. The same rationale and procedure in 4.1 above is used here.

Table 4. Growth (%) in selected Equities and the FTSE All Share Index

	2004	2005	2006	2007	2008
BP.L	18.59	12.14	21.85	-8.32	8.37
TSCO.L	55.74	24.83	3.03	22.02	17.99
BAE.L	47.91	37.00	65.62	11.53	16.97
VOD.L	27.07	1.98	-11.15	-1.35	32.72
LSE:BBY.L	34.88	44.28	12.93	24.44	12.25
FTSE All Share	16.57	9.28	-1.1	35.03	-0.07



Correlation

Year	Index (points) (x)	Average Price (£) (y)
2002	1893.7	189.56
2003	2207.4	251.16
2004	2412.3	307.39
2005	2385.71	366.34
2006	3221.05	396.45
2007	3219.05	455.06
	x²	y²
	3586099.69	35934.5101
	4872614.76	63080.34096
	5819191.29	94486.153
	5691612.204	134202.0649
	10377546.82	157172.6025
	10362282.9	207079.6036
	40,709,347.66	691,955.28
		xy
		358977.35
		554406.17
		741507.25
		873971.46
		1277132
		1464860.9
		5,270,855.07

Correlation formula:

$$r = \frac{n\sum xy - \sum x \sum y}{\sqrt{n\sum x^2 - (\sum x)^2} * \sqrt{n\sum y^2 - (\sum y)^2}}$$

$$= \frac{1,468,283.12}{1,602,366.598} = 0.92 \text{ (to 2 decimal places)}$$

They also shows that there is strong correlation between the FTSE All Share index and listed equities; which implies that there is a fairly good representation (i.e. approximately 92%) of equities on the LSE in the main market index (FTSE All Share). But these selected equities are just a few of the large listings on the LSE. But it provides a good basis that the equities are adequately represented in the FTSE All Share. However there is a 6% difference (98% - 92%) which might represent the influences of other major stock market on the LSE, particularly as a result of similarities in market operations.

Bench Marking of the GSE All Share index

Comparison is made of the GSE with other African indicators to provide us with an idea of how the All Share Index has performed. First the Botswana Stock Market index (BSE DCI) is used. The BSE was found around the same time like the GSE, with nearly the same market listings.

The GSE may fall short of the BSE by six listings. Therefore comparing their main market index will provide a fairly good reflection of how the markets have done. The comparison is made from 2002 to 2007.

Conclusion and Recommendations

The Ghana government should progressively maintain and follow prudent macroeconomic policies. Macroeconomic instability creates economic uncertainties, which affects the general investment climate, hence development of the stock market.

The move towards the integration of African stock markets is a step in the right direction. However with the current trend of globalization, the GSE must aim at integration into the international market. This will also call for stronger shareholder protection and security monitoring, hence the need for its setting up. This will appeal to more international and local investors in their search for alternative investment avenues. Regular reviews of the general activities of the Exchange should be carried out as a way of checks and balances. This will help in resolving unidentified structural anomalies.

After a careful research analysis, the following conclusions and recommendations are made:

In terms of traded volume; the GSE have not really enjoyed consistency in its growth as it has experienced negative percent growth rates. Stability may not have been achieved as a result of the fluctuations. However growth percent in the LSE have been positive in the period under review. It could be said that the LSE has enjoyed some level of stability.

The GSE All Share index and market capitalisation on the GSE have witnessed remarkable improvements, with just few fluctuations in growth rates. Stability can be said to have been achieved in these directions.

Growth has been fairly encouraging in the randomly selected equities on the GSE. And that these equities were reflective of the GSE All Share index, which is the main market indicator. Similarly those of the LSE were reflective of the FTSE All Share index.

In the case of the GSE All Share index against the BSE DCI (Botswana Stock Market Index) and the BRVM Composite (West African Regional Stock Market Index); the GSE All Share had on average performed better relative to the others. The All Share index was therefore worth investing in the year under review.

The low liquidity level on the GSE is a major factor affecting investment decisions on it. As the extent of stock market development will predict its investment decisions, it follows that the relative low investment decisions on the GSE may be attributed to its level of development.

The continuous stability of the Ghana economy is seen to have assisted in the investments made on the GSE, in the year under review, hence its development. The economy has progressively being supported by the continuous existence and performance of listed businesses through the finance provided through the exchange. The functioning of these listed companies on the exchange has supported the economy through the provision of jobs, firms performing their societal role in the provision of basic amenities for their communities.

With the recent evolution of crude oil in Ghana and the subsequent listing of the Ghana Oil Company limited (GOIL) in November 2007, it is envisage that the successful development of the GSE will better support the economy. That is through the increasing investments that will take place on the Exchange from its development.

On the whole, it can be said that it is worth investing on the GSE with the findings reviewed. But it is worth mentioning that the GSE and the Ghanaian economy have their own problems, which may serve as a deterrent when considering making investments on it. It should be recognised that the case of developing economies may be different from those of developed economies. It is worth mentioning that like every institutional structure there may be ups and downs that needs considering before any course of action is taken.

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