

## **The Determinants of Stock Market Development: The Case for the Nairobi Stock Exchange**

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### **Abstract**

*This study sought to investigate the determinants of development in the Nairobi Stock Exchange. Secondary data for the period 2005-2009 was used to model the factors influencing the development of the NSE. The regression results found that, macro-economic factors such as stock market liquidity, institutional quality, income per capita, domestic savings and bank development are important determinants of stock market development in the Nairobi Stock Exchange. The regression analysis reported no relationship between stock market development and macroeconomic stability - inflation and private capital flows. The results also show that Institutional quality represented by law and order and bureaucratic quality, democratic accountability and corruption index are important determinants of stock market development because they enhance the viability of external finance. This result suggests that the resolution of political risk can be an important factor in the development of the Nairobi Stock Exchange.*

**Key words:** key Determinants, Stock Market Development, the Nairobi Stock Exchange

### **Introduction**

Financial markets play a fundamental role in the economic development of a country. They are the intermediary link in facilitating the flow of funds from savers to investors. By providing an institutional mechanism for mobilizing domestic savings and efficiently channeling them into productive investments, they lower the cost of capital to investors and accelerate economic growth of the country. Financial intermediation between borrowers and savers is done by commercial banks. This credit market enables debt financing for investments. An alternative method of intermediation is through equity financing. This is only possible through the development of capital markets. Capital markets, which deal with securities such as stocks and bonds, are associated with financial resource mobilization on a long term basis. By raising capital directly from the public, they lower the cost of capital. Capital markets also allow for wider ownership among the public, thereby distributing risks and wealth amongst smaller investors. For investors, they provide an effective vehicle for making investment choices which suit their own preferences of risk and returns based on available information. As such, capital markets help the economy to generate more savings and productive investments. A basic feature of an efficient capital market is constant liquidity, an easy mechanism for entry and exit by investors. This requires sufficient volume and size of transactions in the market (Tuladhar, 1996). The stock market forms a significant component of the financial sector of any economy.

The proponents of stock markets emphasize the importance of having a developed stock market in enhancing the efficiency of investment. A well-functioning stock market is expected to lead to a lower cost of equity capital for firms and allow individuals to more effectively price and hedge risk. Stock markets can attract foreign portfolio capital and increase domestic resource mobilization, expanding the resources available for investment in developing countries. Recognizing the importance of stock market on economic growth, prudential authorities such as World Bank, IMF and ADB undertook stock market development programs for emerging markets in developing countries during 80s and 90s and they found that, emerging stock markets have experienced considerable development since the early 1990s. The market capitalization of emerging market countries has more than doubled over the past decade growing from less than \$2 trillion in 1995 to about \$5 trillion in 2005 (Yartey, 2008). As a percentage of world market capitalization, emerging markets are now more than 12 percent and steadily growing (Standard and Poor, 2005).

The stock market is one of the most important sources for companies to raise funds. This allows businesses to be publicly traded, or raise additional capital for expansion by selling shares of ownership of the company in a public market. The liquidity that an exchange provides affords investors the ability to quickly and easily sell securities. This is an attractive feature of investing in stocks, compared to other less liquid investments such as real estate. History has shown that the price of shares and other assets is an important part of the dynamics of economic activity, and can influence or be an indicator of social mood. An economy where the stock market is on the rise is considered to be an up-and-coming economy. In fact, the stock market is often considered the primary indicator of a country's economic strength and development. Rising share prices, for instance, tend to be associated with increased business investment and vice versa. Share prices also affect the wealth of households and their consumption. Therefore, central banks tend to keep an eye on the control and behavior of the stock market and, in general, on the smooth operation of the financial system functions. Financial stability is the *raison d'être* of central banks. Exchanges also act as the clearinghouse for each transaction, meaning that they collect and deliver the shares, and guarantee payment to the seller of a security. This eliminates the risk to an individual buyer or seller that the counterparty could default on the transaction ([en.wikipedia.org/wiki/Stockmarket](http://en.wikipedia.org/wiki/Stockmarket) 2010).

An emerging market is a financial market of a developing country, usually a small market with a short operating history. These markets are not considered developed like the United States of America, Western Europe and Japan. Emerging Markets have high profit potential and at the same time very risky. Currently, there are 28 emerging markets in the world with the economies of China and India considered by far the two largest. The Association of South East Asian Nations (ASEAN) – China Free Trade Area lunched on January 1, 2010 is the largest regional emerging market in the world. Initially, in the 1970s, these markets were referred to as the less economically developed nations, this was felt by some as not positive enough, the term emerging market was coined by a World Bank Economist, Antoine van Agtmael. According to Emerging Economies Report, The Centre for knowledge Societies give examples of emerging markets as India, China, Indonesia, South Africa, Kenya, Egypt and Brazil (Joshi et al. 2008).

There has been a considerable research on determinants of financial sector development of late. Garcia and Liu (1999), Demirguc-Kunt and Levine (1996), Yartey and Adjasi (2007), and many more have analyzed the relationship between financial market development and macroeconomic variables, financial reform, and other country –specific factors, and the relationships among the development of the various parts of a financial system. It is clear from the previous studies that financial markets tend to develop as the economy grows and financial reform progresses. Stock market development is embodied in the general financial sector development. In other words, stock market complements the development of other parts of the financial system. For example Singh (1997) find positive relationship between economic growth and stock market development and a large number of empirical studies on the role of foreign Direct Investment (FDI) in host countries suggest that FDI is an important source of capital, complements domestic private investment, is usually associated with new job opportunities and enhancement of technology transfer, and boosts overall economic growth in host countries. Adam and Tweneboah (2009) observe a triangular causal relationship that FDI stimulates economic growth, economic growth promotes stock market development; and FDI promote stock market development related study, Errunza (1983) found that foreign capital inflows have long term impact on stock market development and increase investor participation. Foreign investment is associated with institutional and regulatory reform, adequate disclosure and listing requirements and fair trading practices which inspire greater confidence in domestic markets. This increases the investor's base and participation which leads to more capital flows (Yartey, 2008).

The Nairobi Stock Exchange (NSE) was founded in 1954. During the first three years of independence in 1963, the stock market experienced steady growth, rekindling confidence in the market. The exchange also handled a number of highly oversubscribed issues. In 1972, growth of the market halted when the oil crisis introduced inflationary pressures in the economy that depressed the shares. Capital gains tax was introduced in 1975 and suspended in 1985. The Government of Kenya realized the need to design and implement policy reforms to foster sustainable economic development supported by an efficient and stable financial system. In particular, it set out to enhance the role of the private sector in the economy, reduced demand in public enterprises on the exchequer, rationalize the operations of the public sector and broaden the base of local ownership and at the same time enhance capital markets development (NSE Market Fact File 2008). In 1984, a study by IMF/CBK on development of money and capital markets culminated in the formation of The Capital Markets Authority (CMA) in 1989. The overall objective of CMA is to assist in the creation of an enabling environment conducive for the growth and development of the country's capital markets. The first privatization exercise was the sale of 20% government stake in Kenya Commercial Bank. Kenya Airways followed in 1996. To encourage FDIs, the government introduced several incentives for capital markets growth including tax free Venture Capital Funds, removal of capital gains tax on insurance companies' investments, allowance of beneficial ownership by foreigners in local stockbrokers and fund managers (The NSE Market Fact File 2008).

In 1994, the NSE 20-Share Index recorded an all-record high of 5030 points on Feb. 18, 1994. The NSE is rated by the International Finance Corporation (IFC) as the best performing market in the world with a return of 179% in dollar terms. An extensive modernization exercise is undertaken, including a move to more spacious premises at the Nation Centre in July 1994, setting up a computerized delivery and settlement system (DASS) and a modern Information Centre. For the first time since the formation of the NSE, the number of stockbrokers increased with the licensing of 8 new brokers. In 1995, The Kenyan Government relaxed restrictions on foreign ownership in locally controlled companies subject to an aggregate limit of 20% with any single holding not exceeding 2.5%. To help encourage foreign portfolio investments these were doubled to 40% and 5% respectively in the June 1995 budget. The entire Exchange Control Act was repealed in December 1995. Seven more stockbrokers are licensed, bringing the number to twenty from the original six (one of which still survives) at the inception of the exchange in 1954. Commission rates were reduced considerably from 2.5% to between 2% and 1% on a sliding scale for equities and 0.0625% for all fixed interest securities. Kenya adopted International Accounting Standards (IAS) in 1999 (The NSE Market Fact File 2008).

Implementation of live trading on the automated trading systems (ATS) at the NSE commenced in September 2006 on September 11<sup>th</sup> 2006 saw the. The ATS is sourced from Millennium Information. Technologies (MIT) of Colombo, Sri Lanka, who are also the suppliers of the Central Depository System. MIT have also supplied similar solutions to the Colombo Stock Exchange and the Mauritius Stock Exchange. To ensure that there were no significant departures from the overall trading principles in our market the NSE ATS solution was customised to uphold the spirit of the Open Outcry Trading Rules in an automated environment. Trading hours also increased from two (10:00 am –12:00 pm) to three hours (10:00 am – 1:00 pm). Other innovations included the removal of the block trades board and introduction of the functionality for the trading of rights in the same manner as equities. Besides trading equities, the ATS is also fully capable of trading immobilised corporate bonds and treasury bonds. The anticipated benefits of the new system include greater transparency in the placement of bids and offers. The system will also improve market surveillance and transmit almost in real time, trading information relating to index movements and price and volume movements of traded securities. More current information will become readily available to a wider constituency of our stakeholders, facilitating the decision making process and lowering the risk of participating in our markets. As such the Exchange views a situation where it will soon have an opportunity to enhance its revenue streams through information vending to our stakeholders (NSE Market Fact File 2008).

November, 2006 saw the signing of a memorandum of understanding (MoU) between the Nairobi Stock Exchange and Uganda Securities Exchange on mass cross listing. The MoU will allow listed companies in both exchanges to dualist. This will facilitate growth and development of the regional securities markets. Some of NSE's listed companies that have dual- listed include: Kenya Airways, East Africa Breweries and Jubilee Holdings. Benefits that accrue to cross listed companies include: access to a wider capital base across the region, a regional presence, resulting in a wider acceptance and recognition of the company brand across the region by company stakeholder- shareholders, employees, customers and regulators) and the prestige of a regional listing (NSE Market Fact File 2008).

NSE has experienced considerable growth with more companies listing oversubscribed Initial Public Offerings (IPO's). These include KenGen Initial Public Offering in May 2006, Scangroup in August 2006 and the historical Safaricom IPO June 2008. Safaricom's IPO was a landmark. Through this IPO, the government realized Kshs. 50 billion. The IPO was oversubscribed by 532% attracting Kshs. 286 billion from both local and foreign investors (The NSE Market Fact File 2008).

Based on performance of the equity market in 2009 in Sub Saharan Africa, the NSE is currently ranked fifth in terms of equity market capitalization (US\$10.96 Million), position one is South Africa's Johannesburg Stock Exchange with equity capitalization of US\$776.686 Million, There has been a remarkable resurgence in equity markets during the first quarter of 2010. The NSE 20 Share Index is up 24.89% to 4,072.93 points as at end of March 2010. This is compared to 3,261.17 points at the beginning of January 2010. The NSE All Share Index (NASI) is up 17.44% TP 84.43 points at the end of March compared to 71.81 points at the start of 2010. Market capitalization is also up 17.44% to stand at Kshs. 893.117 billion. In comparison to the top 5 equity markets in Africa, the NSE has recorded the highest gains of 24%. NSE is therefore the best performing top ranked equity market in Africa during the first quarter of 2010. On 4<sup>th</sup> March 2010, the members of The NSE approved its demutualization at an extra-ordinary general meeting. The members reiterated their commitment towards fostering a vibrant capital market. This resolution to demutualize the Exchange will enable it to effectively play its role in sustainably developing the Kenyan economy. Demutualisation will transform the Exchange and position it to realize its vast potential and attain its vision "To be the leading securities exchange in Africa with a global reach" (The NSE website).

### **Problem of Research**

The stock market has become an essential market playing a vital role in economic prosperity thus fostering capital formation and sustaining economic growth. Stock markets are more than a place to trade securities; they operate as a facilitator between savers and users of capital by means of pooling of funds, sharing risk, and transferring wealth. Stock markets are essential for economic growth as they facilitate the flow of resources to the most productive investment opportunities in other words; they help in terms of efficient allocation of credit in the economy. Demirguc-Kunt and Levine (1996), Singh (1997) and Levine and Zervos (1998) find that stock market growth plays an important role in predicating future economic growth in situations where the stock markets are active. The arguments of Demirguc-Kunt et al. (1996) indicate that economies without well-functioning stock markets may suffer from three types of imperfections: first, opportunities for risk diversification are limited for investors and entrepreneurs, second, firms are unable to optimally structure their financing packages and third, countries without well functioning markets lack information about the prospects of firms whose shares are traded, thereby restricting the promotion of investment and its' efficiency. The proponents of stock markets emphasize the importance of having a developed stock market in enhancing the efficiency of investment. Recognizing the importance of stock market on economic growth, prudential authorities such as World Bank, IMF and ADB undertook stock market development programs for emerging markets in developing countries during 80s and 90s and found that, the emerging stock markets have experienced considerable development since the early 1990s. In light of the above presentation, the importance of Nairobi stock exchange to the entire East African community cannot be overemphasized.

The stock markets in emerging markets have seen considerable development since the early 1990s. The market capitalization of emerging market countries has more than doubled over the past decade growing from less than \$2 trillion in 1995 to about \$5 trillion in 2005. As a percentage of world market capitalization, emerging markets are now more than 12 percent and steadily growing (Standard and Poor, 2005). The rapid development of stock markets in emerging market does not mean that even the most advanced emerging stock markets are mature. In most stock markets, trading occurs in only a few stocks, which account for a considerable part of the total market capitalization. Beyond these actively traded shares, there are serious informational and disclosure deficiencies for other stocks. There are serious weaknesses in the transparency of transactions on these markets. The less developed of the stock markets suffer from a far wider range of such deficits. Compared with the highly organized and properly regulated stock market activity in the US and the UK, most emerging markets do not have such a well functioning market. Not only is there inadequate government regulation, private information gathering and dissemination firms as found in more developed stock markets are inadequate. Moreover, young firms in emerging stock markets do not have a long enough track record to form a reputation. As a result, one expects share prices in emerging markets to be arbitrary and volatile (Tirole, 1991).

Empirical evidence indicates that share prices in emerging markets are considerably more volatile than in advanced markets. Despite this volatility, large corporations have made considerable use of the stock market. For example, the Indian stock market has more than 8,000 listed firms, one of the highest in the World. Financing pattern in emerging markets indicate that, contrary to expectation, emerging market corporations rely heavily on external finance and new equity issues to finance long term investment. This result indicates that stock markets have been successful in providing considerable funds to the top 100 corporations in emerging markets (Singh, 1995).

A study done on the Ghana Stock Exchange (GSE) finds that, institutional factors particularly the legal and regulatory framework that ensure the protection and security of investors are important in the development of the stock market. Additionally, the study analysed the impact of the listing of Ashanti Goldfields Corporation (AGC) on the development of GSE. In addition capital flows by investors from Europe, America and the Far East have boosted the market capitalization. The researcher recommends that Ghana government needs to give fiscal incentives in the form of taxation in favour of listed companies, and to pursue prudent macroeconomic policies, particularly in the area of inflation management, to regularly review the legal and regulatory framework within which the investment laws operate in order to boost the confidence of investors (Osei, 1998).

Mun *et al* (2008) posit that, stock market liberalisation in terms of foreign direct investment (FDI) helps to attract greater volume of FDI flow into Malaysia, provide portfolio diversification and enable individual firms to engage in specialized production with efficiency gain. They underscore the need for the Malaysian government to develop the domestic equity market as there were evidences that showed that a more developed equity market may provide liquidity that lowers the cost of the foreign capital essential for development, thus, nation with greater development of equity market tends to generate more domestic savings for economic growth. They proposed that in order to boost the confidence of foreigner to invest in the stock market, the Malaysian government should ensure that all public information which is provided by all those public listed companies must be accurate and transparent. Securities Commission of Malaysia to tighten the regulation such as Capital Markets and Services Act 2007 to avoid incidents of inaccurate information. This will be a boost to protect the interest of public by creating a fair and transparent condition for domestic equity market to rebuild the confident of foreigner as well as domestic investors. A more developed stock market does provide incentive for managers to make investment decisions that may affect firm value in the long run. They further enlisted the government to improve the liquidity of stock market by providing more capital market services such as derivative markets, so as to enable firms to acquire much needed capital quickly to facilitate capital allocation for greater investment that lead to economic growth. These markets provide a platform for foreign portfolio investors as well as domestic portfolio investors to diversify their portfolio in domestic equity market (Mun *et al*, 2008).

A study done on a sample of twelve Middle-Eastern and North African (MENA) countries to identify the main macroeconomic determinants of stock market development and the impact of financial intermediary development on stock market capitalization found that saving rate, financial intermediary (specially credit to private sector), stock market liquidity (specially the ration of value traded to GDP) and the stabilization variable (inflation change) are the important determinants of stock market development, while income as well as investment do not prove to be significant. Financial intermediaries and stock markets are complements rather than substitutes in the growth process. The study recommends that, in order to promote stock market development in the region, it is important to encourage savings by appropriate incentives, to improve stock market liquidity, to develop financial intermediaries and to control inflation. The study also examines the impact of financial intermediary development on stock market capitalization and finds that saving rate, financial intermediary (specially credit to private sector), stock market liquidity (specially the ration of value traded to GDP) and the stabilization variable (inflation change) are the important determinants of stock market development, while income as well as investment do not prove to be significant. Financial intermediaries and stock markets are complements rather than substitutes in the growth process (Naceur *et al*, 2005).

Research done on the economic importance of stock markets in Africa in terms of policy options for promoting the development of stock market in Africa finds that stock markets have contributed to the financing of the growth of large corporations in certain African countries. An econometric investigation of the impact of stock markets on growth in selected African countries, however, finds inconclusive evidence even though stock market value traded seem to be positively and significantly associated with growth.

African stock exchanges now face the challenge of integration and need better technical and institutional development to address the problem of low liquidity. Preconditions for successful regional approaches include the harmonization of legislations such as bankruptcy and accounting laws and a liberalized trade regime. Robust electronic trading systems and central depository systems are important. Domestic financial liberalisation such as steps to improve the legal and accounting framework, private sector credit evaluation capabilities, and public sector regulatory oversight would also be beneficial. (Yartey and Adjasi, 2007). There is no study on the NSE to investigate the determinants of its development. This gap is therefore the motivating factor towards this research study.

### Research Focus

While most studies have often focused on the performance of individual company stock prices, no study has devoted much attention to the determinants of stock market development at the NSE, Muga (1974) looked at the history, organization and its role in the Kenyan economy, Muli (1991) studied the systematic risk for the NSE, Njoroge (2001) looked at dividend policies, growth in assets, ROTA and ROE at the NSE. Nangayaj (2003) looked at the pricing options using Black & Scholes Model and Mbugua (2007) looked at the impact of stock exchange automation, volume, volatility and liquidity on stocks. The main objective of the study was to investigate the determinants of the development of the Nairobi Stock Exchange.

### Methodology of Research

#### General Background of Research

This study adopted a descriptive approach. According to Cooper and Schindler (2003) descriptive studies are more formalized and typically structured with clearly stated hypotheses or investigative questions. It serves a variety of research objective such as descriptions of phenomenon or characteristics associated with a subject population, estimates of proportions of a population that have these characteristics and discovery of associations among different variables. Studies by Garcia and Liu (1999) and Yartey (2008) have used a similar research design.

#### Sample of Research

The focus of the study was the NSE. The NSE plays an integral role as far as economic development is concerned. Empirical evidence finds that a well developed stock market can foster economic growth in the long run. This is in line with theories that a well – functioning stock market can promote economic development by fueling the engine of growth through faster capital accumulation and by tuning it through better resource allocation. (Corporale et al, 2004). The NSE is one the fastest growing emerging stock markets and therefore worth studying. The NSE is the ideal market for carrying out this study based on availability, accessibility, and reliability of the data. Data for the last five years (2005-2009) was used.

#### Instrument and Procedures

The study employed secondary data to model the impact of macroeconomics and institutional factors on the development of the NSE. Macroeconomic factors data included income level, savings and investment, stock market liquidity, macroeconomic stability and private capital flows. Institutional factors data will include political risk, bureaucratic quality, law and order, corruption and democratic accountability. Period of data covered was from 2005-2009.

#### Data Analysis

The study used regression analysis to determine the relationship between the variables of study. Studies by Yartey (2008) and Lazaridis and Trofornidis (2006) have used regression analysis while researching on relationship among variables. The regression model below was used determine the impact of each variable in the development of the NSE.

$$V = a (\text{IL}) + b (\text{BSD}) + c (\text{SI}) + d (\text{SML}) + e (\text{MS}) + f (\text{PC}) + g (\text{IQ})$$

Where:	V	stock market development,	IL	income level
	BSD	banking sector development,	SI	savings and investment
	SML	stock market liquidity,	MS	macroeconomic stability
	PC	private capital flows;	IQ	institutional quality



The coefficients a, b, c, d, e, f and g represent the constants to the respective independent variables and indicate the type of relationship between each of the independent variables and the dependent variable. With the model, the study was able to identify the values of the independent variables and predict the future values. The data was analysed using a statistical package: Eviews - version 3.1. Eviews was used to analyse the macroeconomic time series data.

### Results of Research

Before embarking on the details of empirical issues, it's important to examine the data which was collected and used in analysis. Table 1 gives the summary of the descriptive statistics of the data used in this study. Apart from income per capita which is represented in absolute terms in Kshs and macroeconomic stability -inflation which is in percentage, the other variables domestic savings, private capital flows, stock market liquidity, banking sector development and stock market development are represented as a ratio of GDP. Institutional quality is an index reported by World Bank explaining how financial sector are independent from political manipulations.

**Table 1: Summary of descriptive statistics of variables**

	Minimum	Maximum	Mean	Std. Deviation
Stock market development	0.33	0.49	0.4113	0.06727
Banking sector development	0.28	0.33	0.2968	0.02333
Income per capita (Kshs)	40292	57887	49330	7070.5
Stock market liquidity	0.01	0.06	0.0289	.02420
Macroeconomic stability	4.90	17.80	8.1800	5.45500
Private capital flows	0.001	0.02	0.0098	.01173
Institutional quality	0.01	0.16	0.0846	.06218
Domestic savings	0.12	0.15	0.1389	.01463

Source: Research Data (2011)

Most economic data is skewed (non-normal), possibly due to the fact that economic data has a clear floor but no definite ceiling. Also it could be the presence of outliers. The Jarque-bera statistics test is used to test normality of the series. It utilizes the mean based coefficients of skewness and kurtosis to check normality of variables used. Skewness is the tilt in the distribution and should be within the -2 and +2 range for normally distributed series. Kurtosis put simply is the peakedness of a distribution and should be within -3 and +3 range when data is normally distributed. Normality test uses the null hypothesis of normality against the alternative hypothesis of non-normality. If the probability value is less than Jarque-Bera chi-square at the 5% level of significance, the null hypothesis is not rejected. Table 2 gives the normality test of the data used in this study. The normality test shows that macroeconomic stability –inflation, domestic savings, private capital flows, stock market liquidity, banking sector development and institutional quality are not normally distributed while stock market development and private capital flows are normally distributed. This is likely to impair the normality of the residuals forming the long run relationship. This is likely to lead to non normality of residual series.

**Table 2: Normality test of the data used**

Statistics	Stock market development	Banking sector development	Income per capita (Kshs)	Stock market liquidity	Macro-economic stability	Private capital flows	Institutional quality	Domestic savings
Skewness	0.756	-1.019	2.354	0.924	-1.030	1.188	0.991	0.532
Kurtosis	2.797	2.511	10.464	2.103	3.654	3.783	2.585	1.283
Jarque-Bera	3.293	6.410	113.577	6.150	6.810	9.129	5.979	5.950
Probability	0.193	0.041**	0.000*	0.046**	0.033**	0.010	0.050**	0.051**

Source: Research Data (2011)

Note: \*\*Reject hypothesis of normality at 5% level

\*Reject hypothesis of normality at 1% level

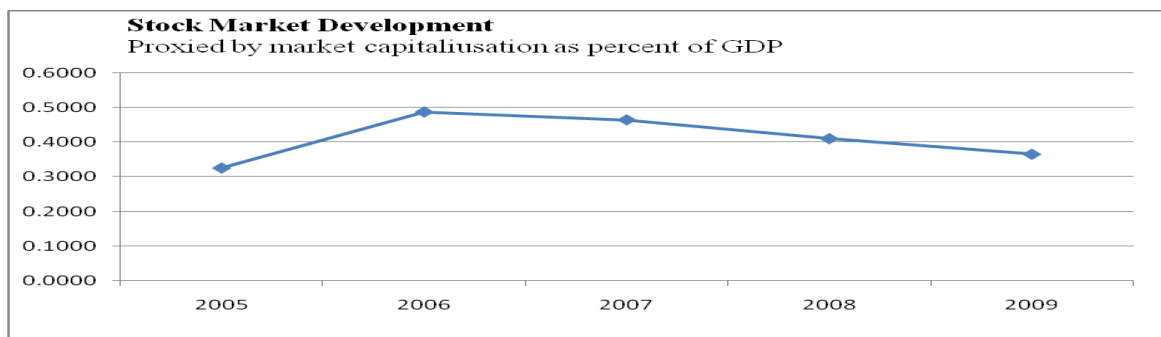
The descriptive statistics among others do give guide on which of the equations is more able to yield better results and highlight on possible problems to encounter. However there is need to supplement the statistics by more incisive quantitative analysis such as the correlation analysis and regression analysis.

For the purpose of showing the trend exhibited by the variables over the study, the variables were plotted. The following section reports the trends of variables in graphical representation.

### Stock Market Development

Dependent variable: stock market development is proxy of market capitalization as a proportion of GDP. The primary role of a stock market is to provide a market where financial instruments can be traded in a regulated environment without constraint. According to Glen et al. (1995) stock market is a vital part of any economic system in which ownership can be bought or sold. A stock exchange and its presence in an economic system can be justified by the following functions it performs- channels savings into investments. It converts investments into cash, thus supplying market liquidity and helps in evaluating and managing securities. Figure 4.1 show that the NSE expanded from 2005 to 2006 before contracting up to 2009.

**Figure 1: Graphical representation of market capitalisation as percentage of GDP**

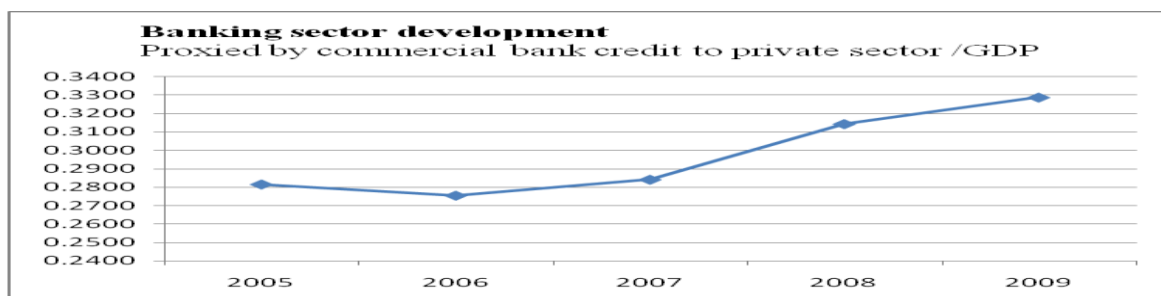


Source: Research Data (2011)

### Banking Sector Development (BSD)

Banking sector is key player in the economic development process. Major players in the sector are commercial banks, Non Financial Banking Institutions (NFBIs), the retirement benefits institutions, and the development finance institutions. To strength the financial sector, the government pledges to reform the sector and play only regulatory role. These reforms were aimed at making credit and other financial services affordable and encourage savings in order to provide a basis for economic growth and eradication of poverty. Banking Sector Development was proxied by the total value of domestic credit provided by the commercial banking system to the private sector relative to GDP. To understand the nature of the relationship between banking sector development and stock market development, the study includes the commercial bank credit to the private sector as a percentage of GDP in the regression. Figure 2 shows that commercial banks credit provided to the private sector has been increasing steadily from 2006 to 2009. From the graphical representation below, it can be concluded that the rise in commercial banks credit provided to the private sector has contributed to development of stock market.

**Figure 2: Graphical representation of commercial banks credit provided to the private sector as percentage of GDP**



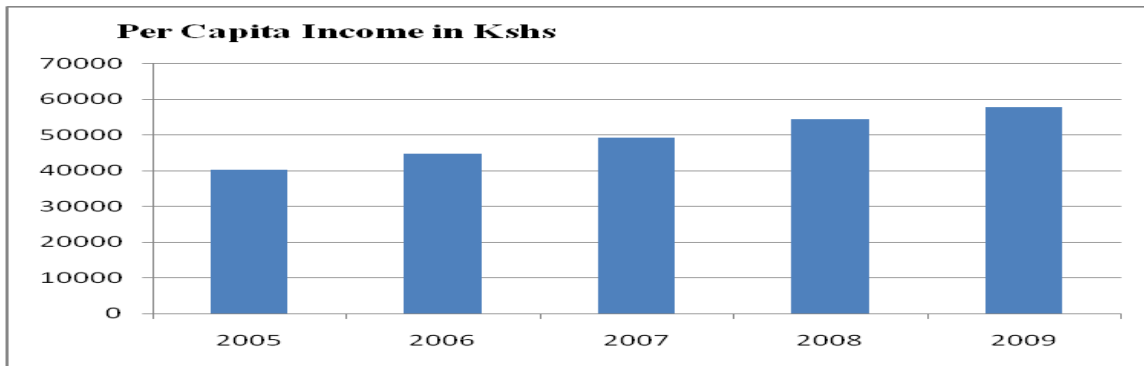
Source: Research Data (2011)



**Income per Capita**

This study uses the GDP per capita in Kshs to measure the income level in the country. The variable indicates the purchasing power parity of the population. Per capita income is a crucial variable in explaining the enforcement of legal rights and the quality of accounting standards which are important determinants of stock market development (La Porta et al (1997). Table 3 shows that per capita income has been increasing steadily since 2005, and hence contributing to development of the stock market.

**Table 3: Per capita income measuring the purchasing power parity of the population**

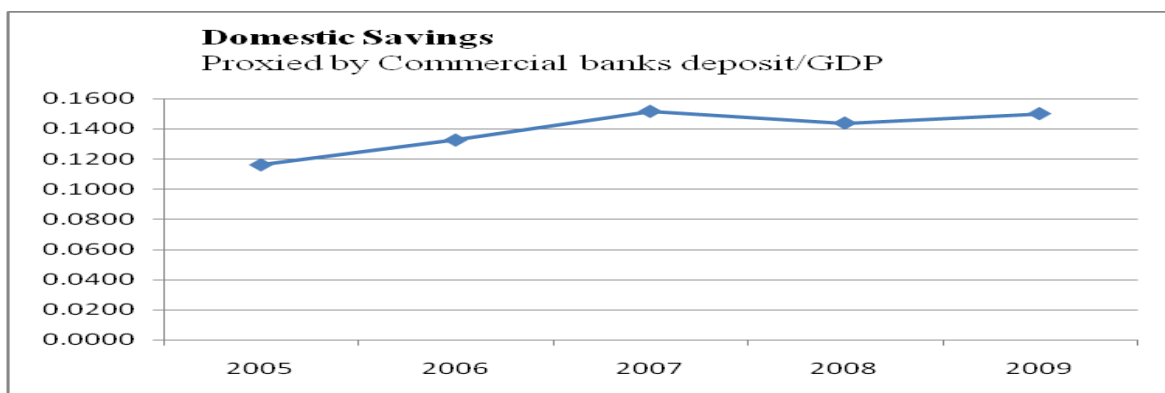


Source: Research Data (2011)

**Domestic Savings**

Domestic savings, by definition, equal the sum of household and enterprise savings. This study used the sum household and enterprise savings which readily available in commercial banks, i.e., demand deposit to commercial banks. The study used gross domestic savings as percentage of GDP. Figure 3 show that domestic saving has been increasing steadily since 2005, and hence contributing to development of the stock market. Through the financial intermediation is a process of pooling the savings from surplus economic agents to deficit economic agents, the stock market is able to expand.

**Figure 4.3: Household and enterprise savings deposits in commercial banks**

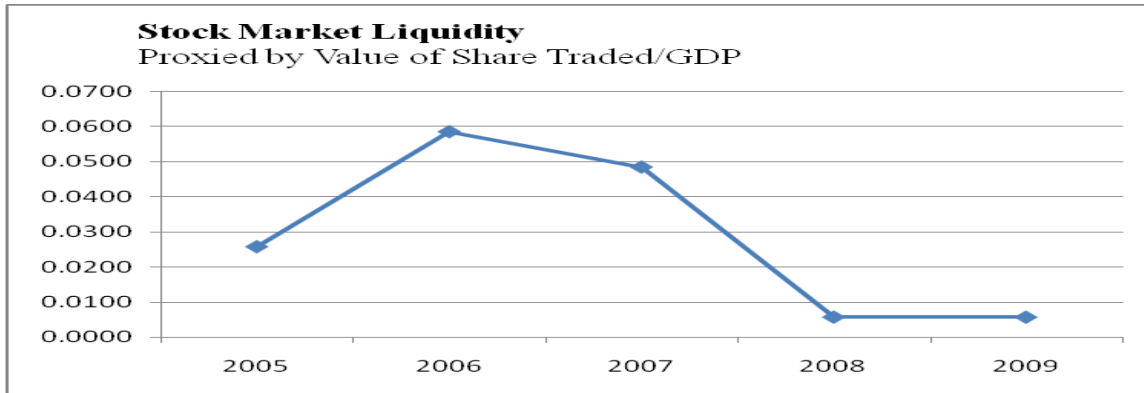


Source: Research Data (2011)

**Stock Market Liquidity**

The study measures stock market liquidity using value shares traded as a percentage of GDP. It measures the liquidity of the company’s share, which is the easy at which the firm’s shares are bought and sold. The quicker and easier it is to buy or sell the share on the market, the more accurately the price reflects all available information. When firm’s share prices reflect all the available information, the firm’s transaction costs will go down and this was expected to have a positive impact on the stock market development. Figure 4 below shows that the liquidity has been on downwards trend since 2006, but stabilized in between 2008 and 2009. This reflects lack of information sharing among firm listed and hence negative impact to stock market development.

**Figure 4: Stock market liquidity measured as value of shares traded as a percentage of GDP**

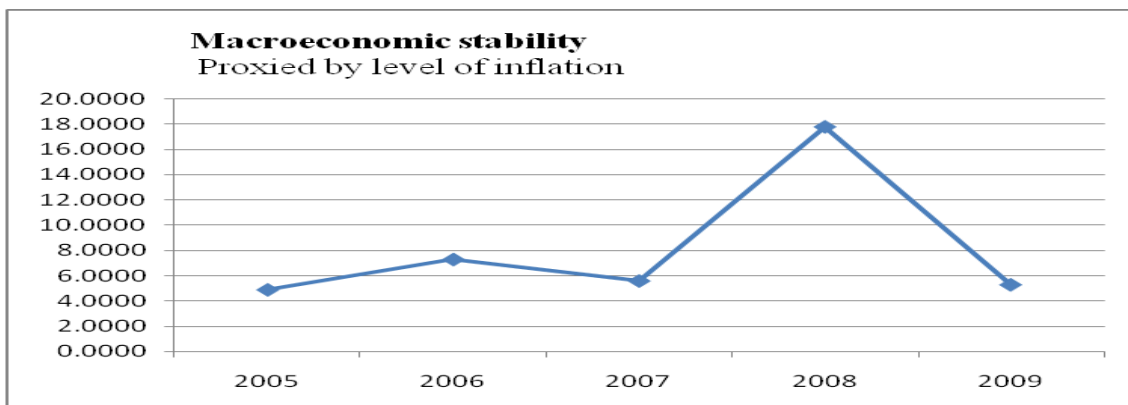


Source: Research Data (2011)

**Macroeconomic Stability**

Broadly, macroeconomic stability is a situation where key economic relationships are in balance and sustainable. Although there is no unique set of thresholds for each macroeconomic variable between stability and instability, there is a continuum of various combinations of level of key macroeconomic variables (growth, inflation, fiscal deficit, current account deficit, international reserves) that could indicate macroeconomic instability. In any economy, macroeconomic stability depends on macroeconomic management of the economy as well as the structure of key markets and sector. The essential idea is that markets are key elements of the institutions that provide the incentive structure of the economy and shape the direction of economic change towards growth, stagnation or decline. A growing economy must have a well-functioning system of markets that can generate correct price signals that determine the flow of resources. A stable macroeconomic environment; characterized by low inflation and predictable inflation. In this study, macroeconomic stability was measured by level inflation rate that prevailed in the country over the study period. Figure 5 below shows that Kenyan economy experienced macroeconomic stability, and therefore investments were less affected by inflation. This also indicates less susceptibility to internal shocks and hence expansion of stock market.

**Figure 5: Trend of level of inflation, 2005 -2009**

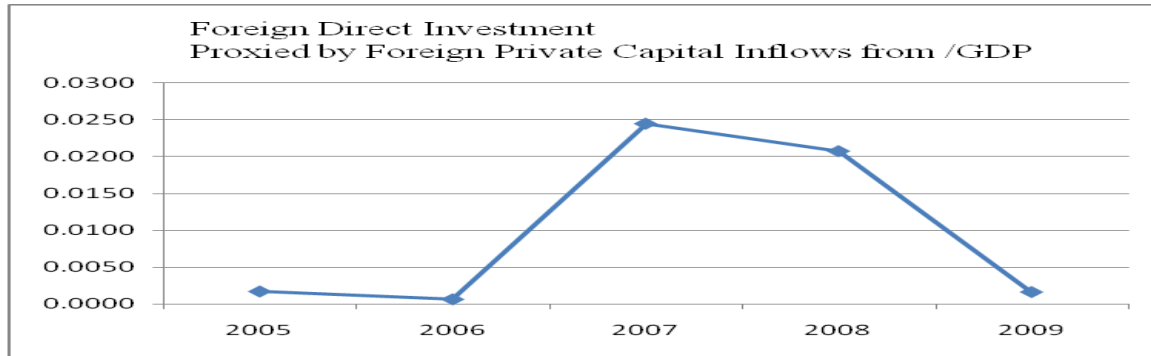


Source: Research Data (2011)

**Foreign Capital Investment**

The fact is foreign direct investment (FDI) plays an important role in the developing of developing countries. FDI can have a positive impact on growth by engaging domestic capital accumulation. Strong domestic investment performance is a sign of high returns to capital, which in turn will attract more foreign capital. FDI also has potential to enhance growth of domestic firms through complementarily in production and productivity spillovers. Private capital flows as percent of GDP were used to measure foreign direct investment. Figure 6 show a downward trend of private capital flows into the country over the study period.

**Figure 6: Foreign capital investment measured as private foreign capital inflows as a percentage of GDP**

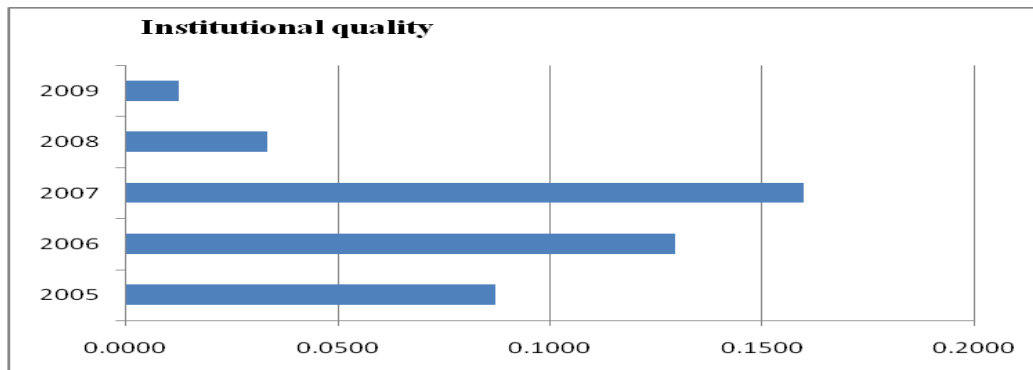


Source: Research Data (2011)

**Institutional Quality**

Political Risk was used as a measure of institutional quality. This is a law and order, bureaucratic quality, democratic accountability and corruption index. The international Country Risk Guide (ICRG) rating system by World Bank was used. The index explains stability of financial institutions and lacks of political manipulation hence their reliability in enhancing operations of stock market. Table 4 reports that in 2008 and 2009, the political risks in country were at minimal hence no risks in investing in stock markets and thus overall development.

**Table 4: Political risk as measure of institutional quality**



Source: Research Data (2011)

**Determinants of Stock Market Development**

Pearson correlation is used to evaluate the relationship between the variables. The correlation matrix is an important indicator that tests the linear relationship, between the variables. The matrix also helps to determine the strength of the variables in the model, that is, which variable best explains the relationship between stock market development and its determinants. This is important and helps in deciding which variable(s) to drop from the equation. Table 5 presents the correlation matrix of the variables in levels. The table shows that there is positive correlation between stock market development and income per capita, macroeconomic stability –inflation, domestic savings, private capital flows, stock market liquidity and Institutional quality. However, stock market development is negatively related to banking sector development, though the strength of relationship is low at -.396. The Pearson correlation coefficient between stock market development and income per capita, macroeconomic stability –inflation, domestic savings, private capital flows, stock market liquidity and institutional quality is 0.017, 0.137, 0.410, 0.365, 0.715 and 0.651 respectively. Except the high correlation coefficients between stock market development and stock market liquidity and institutional quality which show more power of the relationships, the other coefficients show low relationships.

**Table 5: Pearson correlation co-efficient between variables**

	Stock Market Development	Banking Sector Development	Per Capita Income	Stock Market Liquidity	Macroeconomic Stability	Foreign Direct Investment	Institutional Quality	Domestic Savings
Stock Market Development	1							
Banking Sector Development	-.396	1						
Per Capita Income	.017	.903(*)	1					
Stock Market Liquidity	.715	-.877	-.615	1				
Macroeconomic Stability	.137	.349	.374	-.420	1			
Foreign Direct Investment	.365	.054	.291	-.016	.489	1		
Institutional Quality	.631	-.888(*)	-.629	.938(*)	-.386	.244	1	
Domestic Savings	.410	.556	.846	-.170	.195	.565	-.123	1

Source: Research Data (2011)

\* Correlation is significant at the 0.05 level (2-tailed)

The findings in table 5 indicate that stock market development is determined by stock market liquidity and institutional quality. This is because the Pearson correlation coefficient between stock market development and stock market liquidity and institutional quality indicated a high relationship among them. However, over the study period income per capita, macroeconomic stability –inflation, domestic savings and private capital flows, bank development seem not to influence stock market development.

In order to establish the relationships and effects of stock market liquidity and institutional quality, income per capita, macroeconomic stability –inflation, domestic savings and private capital flows, bank development on stock market development, regression analysis was conducted.

Table 6 below summarizes regression results. As indicated in the regression statistics R-squared was 0.724. This means that 72% variations from the expected and actual output (dependent variable: stock market development) are explained by the independent variables. These indicate a good fit of the regression equation 1. Thus, this is a good reflection of the true position that stock market development is determined by the stock market liquidity and institutional quality, income per capita, macroeconomic stability –inflation, domestic savings and private capital flows and bank development. Analysis of Variance shows that  $f$ -calculated is greater than  $f$  – critical ( $2.577 > 0.228$ ). This implies that the regression equation 1 was well specified.

Co-efficient of the regression shows that there is a relationship between stock market developments and stock market liquidity, institutional quality, income per capita, domestic savings and bank development. However, regression analysis coefficient shows no relationship between stock market development and macroeconomic stability –inflation and private capital flows.

**Table 6: Summary of Regression Analysis Results**

<b>Regression Model Summary: Dependent variable stock Market Development</b>			
R Squared	0.7204		
Adjusted R Squared	0.6409		
Observations	5		
<b>ANOVA (Analysis of Variance)</b>			
	<i>Degree of freedom</i>	<i>Sum of Squares</i>	<i>Mean Square</i>
Regression	4	3.299	1.099
Residual	1	1.281	0.426
Total	5	4.580	
Calculated F	2.577		
Significance F	0.2286		
<b>Output of Regression – Co-efficient</b>			
<i>Predictor- Independent Variable</i>	<i>Coefficients</i>	<i>Standard Error</i>	<i>t -Statistics</i>
(Constant)	3.336	1.154	2.891*
Macroeconomic stability	-0.011	-0.030	0.372
Private capital flows	-5.313	-7.836	0.678
Institutional quality	-1.435	-0.716	2.004*
Domestic savings	4.209	2.175	1.935**
Income per capita	1.258	0.636	1.978**
Stock market liquidity	1.764	-0.840	2.101*
Bank sector development	0.02	0.001	2.001*

Source: Research Data (2011)

Note: \* significance at 1%, \*\* significance at 5%

Estimated Equation:

$$\text{Stock market development} = 3.336 - 1.435* \text{political risk} - \text{institutional quality} + 4.209 * \text{domestic savings} + 1.258* \text{income per capita} + 1.764* \text{stock market liquidity} + 0.02* \text{bank development}$$

Table 6 above represents the regression results for the existence of a short run relationship among the variables. The results shows that the coefficients of political risk -institutional quality, domestic savings, and income per capita, stock market liquidity and bank development are statically significance. This implies that these variables have an effect/impact on the stock market development. However, the variables macroeconomic stability and private capital inflows have no impact on stock market development since the coefficients are statically insignificance.

In particular, there is a negative effect of institutional quality on stock market development. 1% rise in political risk leads to 1.435% decline in the stock market development. This is explained by the fact when there is political unrest investors will pull out from investing in stock markets.

The result of domestic saving coefficient has the correct sign and significant. This indicate that domestic savings affects positively the stock market development at 1% level, which is in line with theory as reflecting financial intermediation role of stack market. An increase in domestic savings by one Kenya shillings leads stock market expansion by Kenya shillings 4.209. This is expected. Savings are directly related to investment. This has a direct link to the level of investment in the economy as the investors add more investment in stock market and increase their production to meet the increased demand. As the economy grows and investment increases, people invest from their earlier savings.

The private sector commercial bank credit to GDP ratio as proxy of banking sector development has the correct sign and is statistically significant at the 1% level. An increase of 1% in commercial bank credit to private sector promotes stock market development savings by 0.02%. These results confirm the existence of financial intermediation as earlier postulated, which contributed to the real savings and hence more investment in stock market.

Consequently, the current experiments with financial liberalization and restructuring that designed to improve the efficiency of financial intermediaries will lead to real savings if credit to productive private sector enterprises increases. This will in turn lead to stock market development as people invest in stocks from savings in banking sector.

The coefficient of per capita income has the correct sign. An increase of 1% in per capita income leads to 1.258% stock market development. These results indicate increase in disposable national income will lead to population investing more in stock market.

The stock market liquidity has the correct sign and is statistically significant at the 1% level. An increase of 1% in stock market liquidity promotes stock market development savings by 1.764%. This reflects increased the level of investment in the economy as the investors add more investment due to increased liquidity as share value appreciate with time.

### ***Discussion***

The primary role of a stock market is to provide a market where financial instruments can be traded in a regulated environment without constraint. According to Glen et al. (1995) stock market is a vital part of any economic system in which ownership can be bought or sold. A stock exchange and its presence in an economic system can be justified by the following functions it performs- channels savings into investments. It converts investments into cash, thus supplying market liquidity and helps in evaluating and managing securities.

This research project sought to investigate the determinants of the development of the Nairobi Stock Exchange. The study adopted a descriptive approach. The focus of the study was the NSE since it was ideal market for carrying out this study based on availability, accessibility, and reliability of the data. Data for the last five years (2005-2009) was used. The study employed secondary data to model the impact of macroeconomics and institutional factors on the development of the NSE. Macroeconomic factors data included income level, savings and investment, stock market liquidity, macroeconomic stability and private capital flows. Institutional factors data included political risk, bureaucratic quality, law and order, corruption and democratic accountability.

The regression results revealed that there is relationship between stock market developments and stock market liquidity, institutional quality, income per capita, domestic savings and bank development. However, regression analysis reported no relationship between stock market development and macroeconomic stability –inflation and private capital flows. Therefore it can be concluded that stock market developments is determined by stock market liquidity, institutional quality, income per capita, domestic savings and bank development.

The study recommended that the share of bank lending which goes to the private sector ought to be increased to avoid public sector programmes crowding out private investment financed through financial saving. This therefore calls for dismantling of any impediments to increased availability of credit to the private sector. The government should address constraints affecting domestic saving. Policy approaches should be geared toward strengthening the banking legal infrastructure, in order to lower costs and risks associated with non-performing loans and addressing the high intermediation margins. This will make banks attractive to savers hence increasing financial savings. There is need for macroeconomic stability, the establishment of conditions that favour private investment and adequate bank supervision, which enhances financial stability and stock market development.

### ***Conclusions***

From the findings above there is relationship between stock market developments and stock market liquidity, institutional quality, income per capita, domestic savings and bank development. However, regression analysis coefficient shows no relationship between stock market development and macroeconomic stability –inflation and private capital flows. Empirical studies by Garcia and Liu (1996) have linked stock market development and economic growth once more underscoring the importance of having a developed stock markets in an economy.

Therefore it can be concluded that stock market developments is determined by stock market liquidity, institutional quality, income per capita, domestic savings and bank development. Any nation that seeks economic growth must focus on developing its stock market.



### **Recommendations for Further Research**

This study found that macroeconomic stability proxied by inflation and foreign private capital inflow has no effects stock market development. Therefore there is need for further research geared toward establishing if macroeconomic instability and foreign private capital inflow affect stock market development. This study focused on the macroeconomic factors as well as the institutional factors as determinants of growth in the NSE, further research need to be done on other factors like the behavioural factors. Further research could also be conducted to include the East African countries to compare different factors affecting stock market growth in the East African Community countries.

### **References**

- Acemoglu, D. and F. Zilibotti 1997, 'Was Prometheus Unbounded by Chance? Risk Diversification and Growth', *Journal of Political Economy*, Vol.105, pp.709-51.
- Ackert Lucy F. 2003, "Emotion and Financial Markets," *Economic Review*, Federal Reserve Bank of Atlanta, Second Quarter 2003, pp. 33-41.
- Adam A.M and Tweneboah G. 2009, "Foreign Direct Investment and Stock Market Development: Ghana's Evidence"
- Adelegan J.O. 2008. "Can Regional Cross-listings Accelerate Stock Market Development? Empirical Evidence from Sub-Saharan Africa."
- Atje, Raymond, and Boyan Jovanovic. 1993. "Stock Markets and Development," *European Economic Review* 37 (2/3), pp. 632-40.
- Ball, R. (2001). *The theory of stock market efficiency: accomplishments and limitations. The New Corporate Finance: Where Theory Meets Practice*, p.20-33. New York: Irwin
- Baumol, J. William, 1960, *The Stock Market and Economic Efficiency*, (New York: Furham University Press).
- Bekart G, Harvey C.R and Lundblad C.T. 2004. "Does Financial Liberalisation Spur Growth?"
- Bencivenga, Valerie R., Bruce D. Smith, and Ross M. Starr. 1995. "Equity Markets, Transactions Costs, and Capital Accumulation: An Illustration" *The World Bank Economic Review* 10 (2). pp. 41-65.
- Berthelemy, Jean-Claude, and Aristomene Varoudakis. 1996. *Financial Development Policy and Growth*, OECD Development Center.
- Bhide, A. (1993),"The Hidden Cost of Stock Market Liquidity', *Journal of Financial Economics*, 34(1): 31-51
- Block and Hirt, 1987. *The Foundations of Financial Management*. Fourth Edition, Irwin.
- Boyd, John and Bruce Smith. 1996. "The Co evolution of the Real and Financial Sectors in the Growth Process" *The World Bank Economic Review* 10 (2).
- Brounen, D., De Jong, & Koedijk, K. (2004). Corporate finance in Europe: Confronting theory and practice. *Financial management (2000)*, 33(4), 71-101.
- Catalán, Mario, Impavido, Gregorio and Musalem, Alberto R., 2000, "Contractual Savings or Stock Market Development Which Leads?" World Bank Policy Research Working Paper No. 421.
- Capasso, Slavatore. 2008 "Endogenous Information Frictions, Stock Market Development and Economic Growth."
- Chen, Sh. & Dodd, J. (2002). Market efficiency, CAPM, and value-relevance of earnings and EVA: A reply to the comment by professor Paulo. *Journal of Managerial Issues*, 14(4), 507-512.
- Corporale G.M, Howells P.G and Soliman A.M, 2004. "Stock Market and Economic Growth: The Causal Linkage" *Journal of Economic Development*, Volume 29.
- De Long, J. Bradford; Shleifer, Andrei; Summers, Lawrence H. and Waldmann, Robert J. "The Size and Incidence of the Losses from Noise Trading," *Journal of Finance*, July 1989, 44 (3), pp. 681-96.
- Demirguc-Kunt, Asli, and Ross Levine. 1996a. "Stock Markets, Corporate Finance and Economic Growth: An Overview," *The World Bank Economic Review* 10 (2)
- Demirguc-Kunt, Asli, and Ross Levine. 1996b. "Stock Market Development and Financial Intermediaries: Stylized Facts," *The World Bank Economic Review* 10 (2), pp. 291-321.

- Devereux, Michael B., and Gregor W. Smith. 1994. "International Risk Sharing and Economic Growth," *International Economic Review* 35 (4), pp. 535-50.
- Errunza, V.R., 1983. "Emerging Markets - A New Opportunity for Improving Global Portfolio Performance", *Financial Analysts Journal*, Vol. 39 (5), 51-58.
- Fama, E. & French, K. (1996). The CAPM is wanted, dead or alive. *The Journal of Finance*, 51(5), P. 1947-1958.
- Garcia, Valeriano F. 1986. "A Critical Inquiry into Argentine Economic History 1946- 1970" Garland Publishing Co. New York.
- Garcia, F. Valeriano, and Liu Lin, 1999, "Macroeconomic Determinants of Stock Market Development," *Journal of Applied Economics*. Vol.2 (1), pp.29-59.
- Gitman Lawrence J, 2006, "*Principles of Managerial Finance*" 11<sup>th</sup> Edition. Pearson.
- Goldsmith, Raymond W. 1969. *Financial Structure and Development*, New Haven, CN: Yale University Press.
- Gurley, John, and Edward Shaw. 1955. "Financial Aspects of Economic Development," *American Economic Review*, pp. 515-38.
- Gurley, John, and Edward Shaw. 1960. *Money in a Theory of Finance*, Washington, DC: Brookings Institutions.
- Gurley, John, and Edward Shaw. 1967. "Financial Structure and Economic Development," *Economic Development and Cultural Change* 34 (2), pp. 333-46.
- Hooper V, Sim A.B and Uppal A. 2005. "Governance and Stock Market Performance"
- Jensen, M., and Meckling, W. 1976. Theory of the firm: managerial behavior, agency costs and ownership structure. *Journal of Financial Economics* 3, 305-360.
- Jensen, M, and Erhard, W. 2010. "*Beyond Agency Theory: The Hidden and Heretofore Inaccessible Power of Integrity*."
- Joshi S, Sood A.D, Soans N, Denfeld Z, Mitra S.S and Harp G. 2008 "*Emerging Economies Report*, The Centre for Knowledge Societies."
- King, Robert G., and Ross Levine. 1993a. "Finance and Growth: Schumpeter Might Be Right," *Quarterly Journal of Economics* 108, No. 3, pp. 717- 38.
- King, Robert G., and Ross Levine. 1993b. "Finance, Entrepreneurship and Growth: Theory and Evidence," *Journal of Monetary Economics* 32, pp. 513-42.
- King, Robert G., and Ross Levine. 1993c. "*Financial Intermediation and Economic Development*," in C. Mayer and X. Vives, eds, *Capital Markets and Financial Intermediation* (Cambridge University Press, Cambridge).
- La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer and Robert Vishny, 1996. "*Law and Finance*" NBER, WP No. 5661.
- La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer (1997), 'Legal Determinants of External Finance', *Journal of Finance*, 52(3): 1131-50.
- Lazaridis I and Tryforidid D. 2006. "Relationship between Working Capital Management and Profitability of Listed Companies in the Athens Stock Exchange".
- Levine, Ross. 1991. "Stock Markets, Growth, and Tax Policy." *Journal of Finance* 46 (4): 445-65.
- Levine, Ross. 1997. "Financial Development and Economic Growth: Views and Agenda," *Journal of Economic Literature* 35 (2), pp. 688-726.
- Levine, Ross and Sara Zervos. 1996. "Stock Market Development and Long- Run Growth" *The World Bank Economic Review*, Vol. 10, No.2.
- Levine, Ross and Sara Zervos. 1998. "*Stock markets, Banks, and Economic Growth*" The World Bank Policy Research Working Paper No. 1690.
- Liu, Lin, 1998. "*Financial Development and Economic Growth: A Literature Review*," Mimeograph. The World Bank, Washington, DC.
- McKinnon, Ronald I. 1973. *Money and Capital in Economic Development*, Washington, DC: The Brookings Institution.
- Miller, Merton. 1991. *Financial Innovations and Market Volatility*. Blackwell, Cambridge.

- Modigliani, F., and Miller, M.H. 1958. "The Cost of Capital, Corporation Finance, and the Theory of Investment" *American Economic Review*, 48 (3): 261-297
- Mun H.W, Siong E, C and Thing T.C. 2008. "Stock Market and Economic Growth in Malaysia: Causality Test." *Journal of Asian Social Science* Vol 4, No. 4.
- Musau R.C. 2002 "*The Impact of Financial Liberalization on Selected Financial Sector Development Indicators in Kenya*." Unpublished Thesis, University of Nairobi
- Naceur, S.B, Ghazouani, S, O and Mohammed M., 2005 "The Determinants of Stock Market Development in the MENA Region."
- Nairobi Stock Exchange Website [www.nse.co.ke](http://www.nse.co.ke)
- Ness, Walter and Martinez, Alfonso. 1997. "*The Stock Market in Argentina and Brazil*", *The World Bank Policy Research Working Paper*. Washington, DC.
- Obstfeld, Maurice. 1994. "Risk-Taking, Global Diversification, and Growth." *American Economic Review* 85(5), pp. 1310-29.
- Olson, Jr., Mancur. 1996. "Big Bills Left on the Sidewalk: Why Some Nationals are Rich, and Others Poor," *Journal of Economic Perspectives* 10 (2).
- Osei Kofi A. 1998. "*Analysis of factors affecting the development of an emerging capitalmarket: The case of the Ghana stock market*" AERC Research Paper 76, African Economic Research Consortium, Nairobi.
- Pardy, R. (1992), '*Institutional Reform in Emerging Securities Markets*', *Policy Research Working Papers (Financial Policy and Systems)*, World Bank, Working Paper Series, 907.
- Pagano, Marco. 1993. "Financial Markets and Growth: An Overview," *European economic Review* 37, pp. 613-22.
- Perotti, E. and Oijen P (1999), '*Privatization, Political Risk and Stock Market Development in Emerging Economies*', CEPR Discussion Paper 2243, London.
- Saint-Paul G. (1992), 'Technological Choice, Financial Markets and Economic Development', *European Economic Review*, Vol.36, No.4, pp.763-81
- Sarkar, Prabirjit, 2007 "Trend of Legal Globalisation and Stock Market Development."
- Sett, Kiranjit and Sarkhel, Jaydeb, 2010 "Macroeconomic Variables, Financial Sector Development and Capital Structure of Indian Private Corporate Sector during the Period 1981-2007."
- Shaw, Edward S. 1973. *Financial Deepening in Economic Development*, New York: Oxford University Press.
- Smith, Clifford W. and Jensen, Michael C., 2002 "Stockholder, Manager, and Creditor Interests: Applications of Agency Theory"
- Singh, A. 1997. "Stock Markets, Financial Liberalization and Economic Development," *Economic Journal* 107, pp. 771-82.
- Standard and Poor, 2005, *Global Stock Market Factbook 2005*, New York. Stock market [en.wikipedia.org/wiki/Thomson](http://en.wikipedia.org/wiki/Thomson), Grace S. 2007." *A Taxonomy of Selected Finance Theories*."
- Tirole, Jean, 1991, "*Privatisation in Eastern Europe: Incentives and the Economics of Transition*" In Blanchard, O.J AND Fisher, S.S (Eds) *NBER Macroeconomics Annual 1991*, (Cambridge, A: The Mit Press).
- Teacher, Anita. 1996. "*Capital Markets Development in Nepal: Lessons Learned*."
- Van Nieuwerburgh, Stijn, Buelens, Frans and Cuyvers, Ludo. 2005 "Stock Market Development and Economic Growth in Belgium"
- Yartey C.A and Adjasi C.K. 2007. "*Stock Market Development in Sub-Saharan Africa: Critical Issues and Challenges*." IMF Working Paper No. 07/209.
- Yartey, Charles Amo. 2008. "*Determinants of Stock Market Development in Emerging Economies: Is South Africa Different?*" IMF Working Paper No. 08/32.